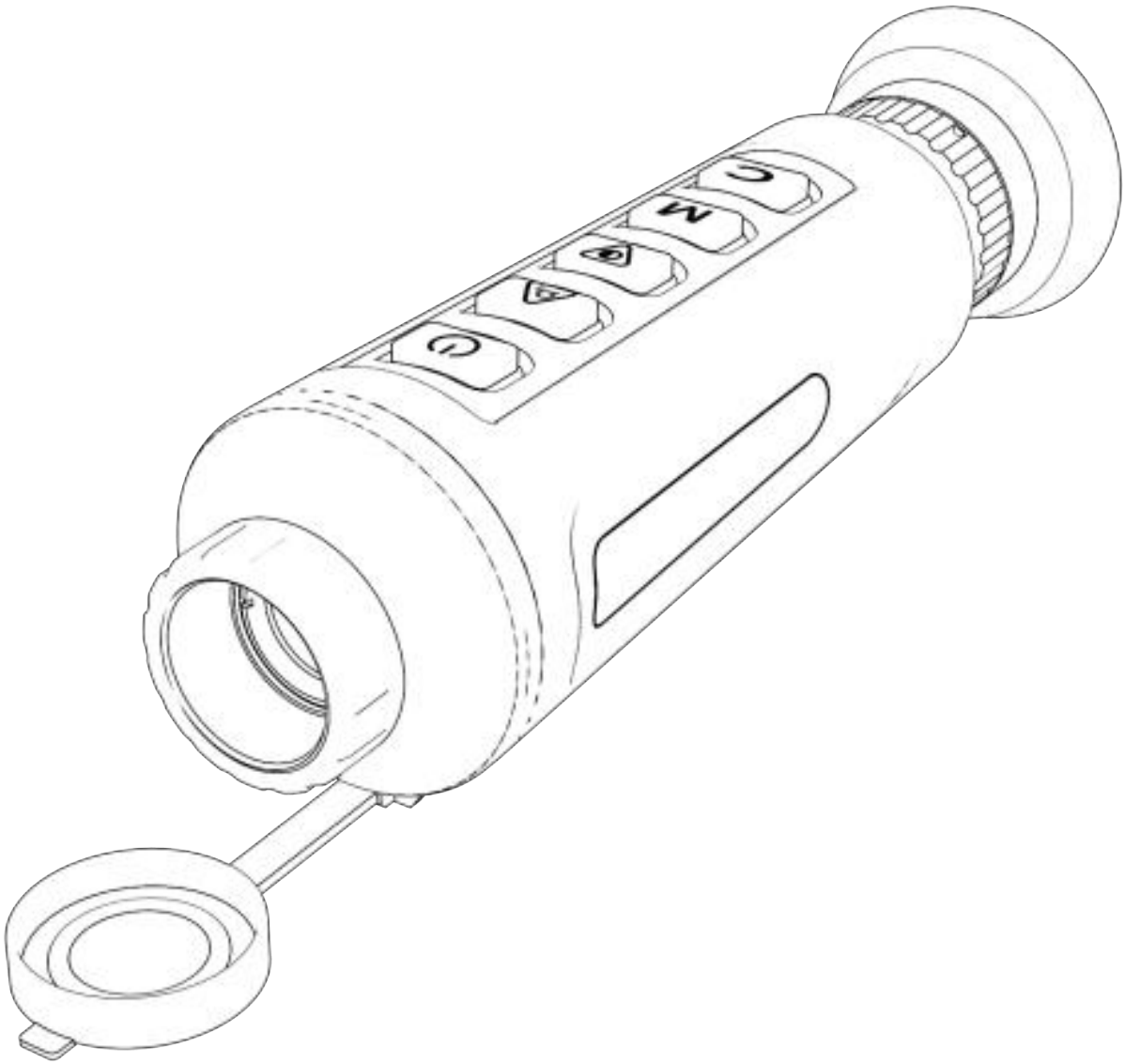
Thermal Monocular

Enjoy every moment without the fear of the night



CE-2 Series

Product User Manual

Preview

The purpose of this section is to ensure that the user can use the product correctly through this manual to avoid danger or property damage during operation. Before using this product, please read the product manual carefully and keep it properly for future reference. This manual is applicable to monocular handheld observation thermal imager (equipment for short), and describes the specific use of the equipment.

Symbol Conventions

The symbols that may be found in this document are defined as follows.

Symbol	Description
Danger	Indicates a hazardous situation which, if not avoided, will or could result in death or serious injury.
Caution	Indicates a potentially hazardous situation which, if not avoided, could result in equipment damage, data loss, performance degradation, or unexpected results.
Note	Provides additional information to emphasize or supplement important points of the main text.

Safety Instruction

Danger

- During the installation and use of the equipment, all electrical safety regulations of the country and the region of use must be strictly observed. Use the power supply that matches and meets the SELV (safety extra-low voltage) requirements, and the equipment uses DC5V 2A power supply.
- Please use the power adapter provided by the regular manufacturer. See the product parameter table for the specific requirements of the power adapter. It is recommended that each device be equipped with an independent power adapter (if the load of the adapter is exceeded, it may generate too much heat or cause fire).
- When wiring, disassembling and other operations, please disconnect the power supply of the equipment and do not operate with power.

- In order to avoid heat accumulation, please keep the ventilation around the equipment smooth.
- Do not touch the heat dissipation parts of the product directly to avoid scalding.
- If the equipment emits smoke, odor or noise, please disconnect the power supply of the equipment immediately and contact the dealer or service center in time.
- Do not place the battery near the heat source or fire source to avoid direct sunlight.
- Do not swallow the battery to avoid chemical burns.
- If the removable battery is built in the equipment, please use the battery with the correct specification. Improper use may cause explosion hazard. After the battery is installed or removed, it is required to close the battery compartment safely.
- Do not place the battery within the reach of children.
- If the equipment is laser equipment, do not shoot the laser directly into the human eye to avoid possible injury to the human eye; If the laser irradiates combustible objects at a close distance, it may cause fire hazards. Please keep a certain safe distance during installation.
- After the laser light is turned on, it is strictly forbidden to aim the laser at objects with strong reflection such as glass and reflector to avoid damaging the thermal imaging probe by laser reflection.

Caution

- Please avoid falling objects onto the equipment or vibrating the equipment vigorously, and keep the equipment away from the place where there is magnetic interference.
- Avoid installing the equipment in the place where the surface vibration or impact is easy (ignoring this item may damage the equipment).
- Do not use the product in extremely hot, extremely cold, dusty, corrosive, high-salinity or high-humidity environment. Please refer to the product parameter table for specific temperature and humidity requirements.
- The charging environment of the device battery is required to be above 0 ℃, otherwise the charging function will be automatically turned off.
- Do not aim the lens at strong light sources, such as the sun, incandescent lamps and other high-temperature targets, otherwise the lens or thermal imaging detector will be damaged.
- The equipment shall be stored in a dry and non-corrosive environment. Avoid storing the equipment in places such as direct sunlight, poor ventilation or near heat sources (such as heaters and heating). Ignoring this item may cause fire hazard.

- The equipment stored for a long time shall be powered on for inspection every half a year, and the power on time shall not be less than 3h each time.
- When cleaning the lens, please use a dry soft cotton cloth or lens wiping paper to wipe the surface to avoid scratching the lens by hard objects.
- If you connect the product to the Internet at your own risk, including but not limited to the possibility that the product may suffer from network attacks, hacker attacks, virus infection, etc., the company will not be responsible for the product's abnormal work, information disclosure and other problems caused by this, but the company will provide you with product-related technical support in a timely manner.
- The device may face network security problems when accessing the Internet. Please strengthen the protection of personal information and data security. When you find that the device may have potential network security hazards, please contact us in time.
- Please keep all the original packaging materials of the equipment properly so that if there is a problem, the equipment can be packaged with packaging materials and sent to the service center for treatment. The company will not be responsible for accidental damage during transportation caused by non-raw packaging materials.

1 Product Introduction

1.1 Description

The handheld thermal monocular camera is a handheld device with functions of observation, highest temperature target tracking, distance measurement, and so on. The high-sensitivity built- in thermal detector provides you with clear view even in total darkness. The device is mainly applied to outdoor scenarios such as hunting, searching and rescue, hiking, and travel.

1.2 Key Features

- High-performance processing chip and image detail enhancement technology are adopted.
- Support 800*600 resolution OLED display.
- Built-in rechargeable lithium battery can last for 9.5 hours after charging.
- Equipped with USB power cable for charging.
- Small and exquisite, easy to carry.

1.3 Main Functions

Hot spot tracking

Detect and mark the highest temperature in the scene.

Network Function

Support hot spots, add thermal imager through mobile phone APP, and realize the functions such as capturing, recording and parameter configuration.

Storage Capacity

Build in Storage(up to 32G), support recording and screen capture.

Digital Zoom

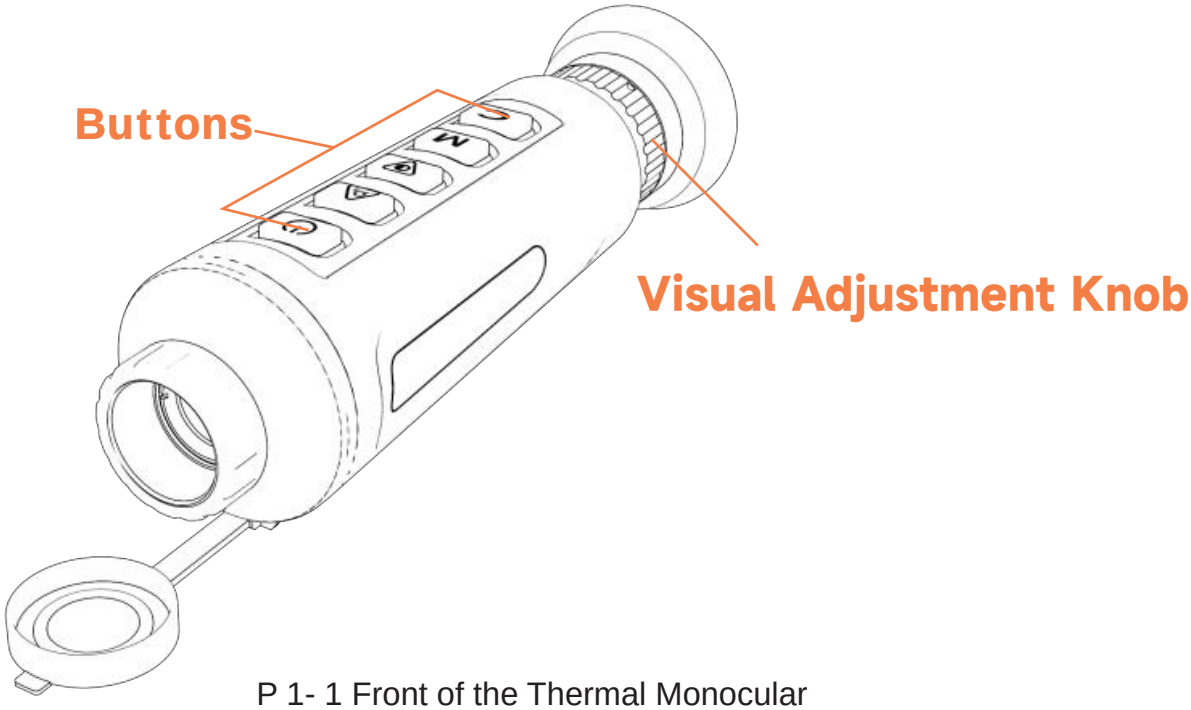
Support 1X、2X, 4X ,8X

Laser Lamp

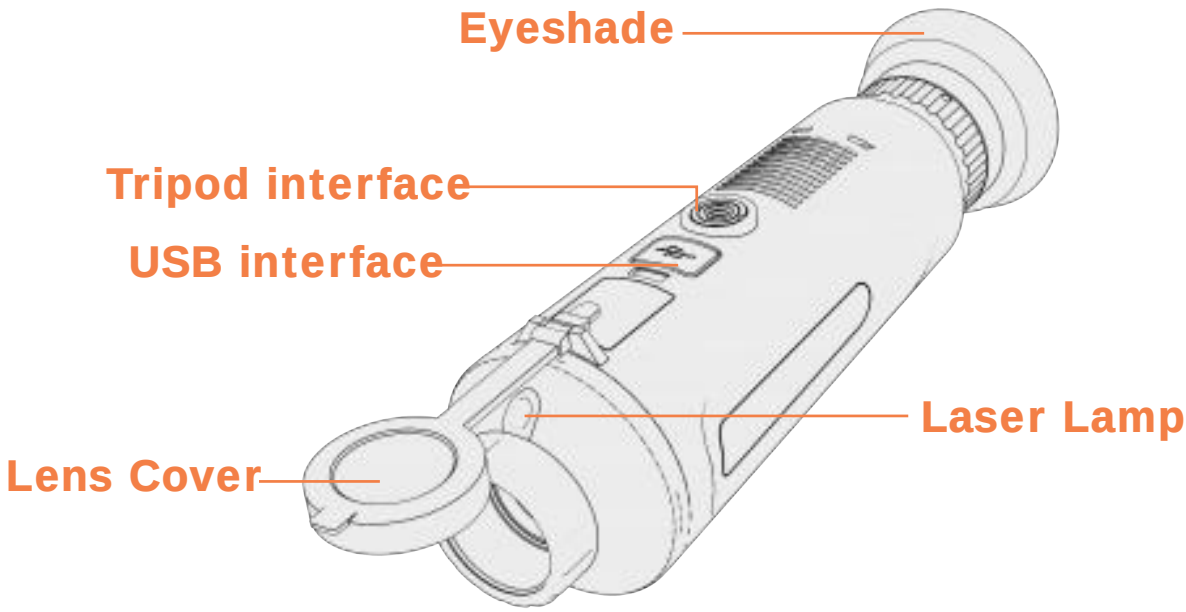
It is used to indicate the orientation. After the laser lamp is turned on, do not shine on the eyes to avoid eye injury caused by the laser.

1.4 Product Appearance

1.4.1 Interface



P 1- 1 Front of the Thermal Monocular

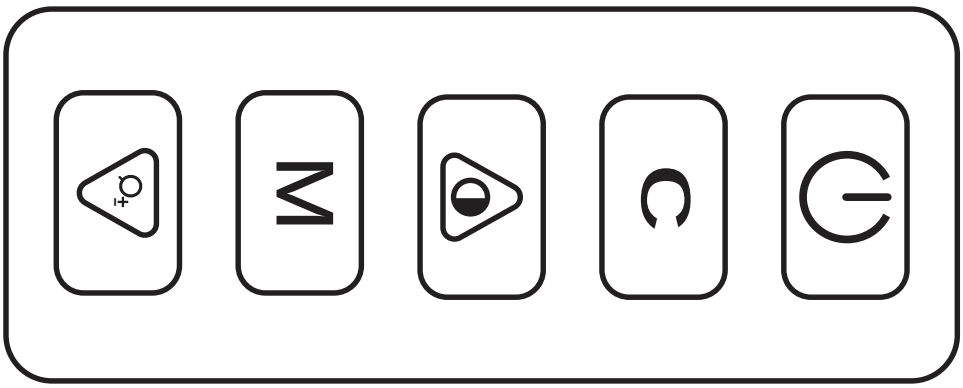


P 1-2 Back of the Thermal Monocular

- Lens cover: Dust protection. Please don’t forget to cover the lens protection after using.
- Power indicator: Indicator light is red when charging, green when full
- Vision adjustment knob: Adjust according to the user's vision.
- USB interface: Connect to USB power cable to charge.

1.4.2 Button instruction

Panel button of thermal imager.



P 1-3 Button on the Thermal Monocular

G 1- 1 Button function definition

⏻	Power	Press: Turn on/off the IR; Hold: Power on/off
C	CVBS	Hold: switch CVBS
◑	Pseudo/Record	Press: Pseudo color; Hold: video Recording on/off
M	Mode	Press: Confirm; Hold: Enter/Quit the menu
🔍±	Zoom/Capture	Press: zoom Hold : Capture

There are five physical keys on the panel of the thermal imager, including power key, shooting key, variable multiple key, mode key and menu key.

Danger After entering the thermal imager menu, please refer to the menu description for the specific definition of keys

2 Preparation

Take out the equipment accessories, read the instructions carefully, and understand the precautions and use methods of the equipment.

2.1 Charge

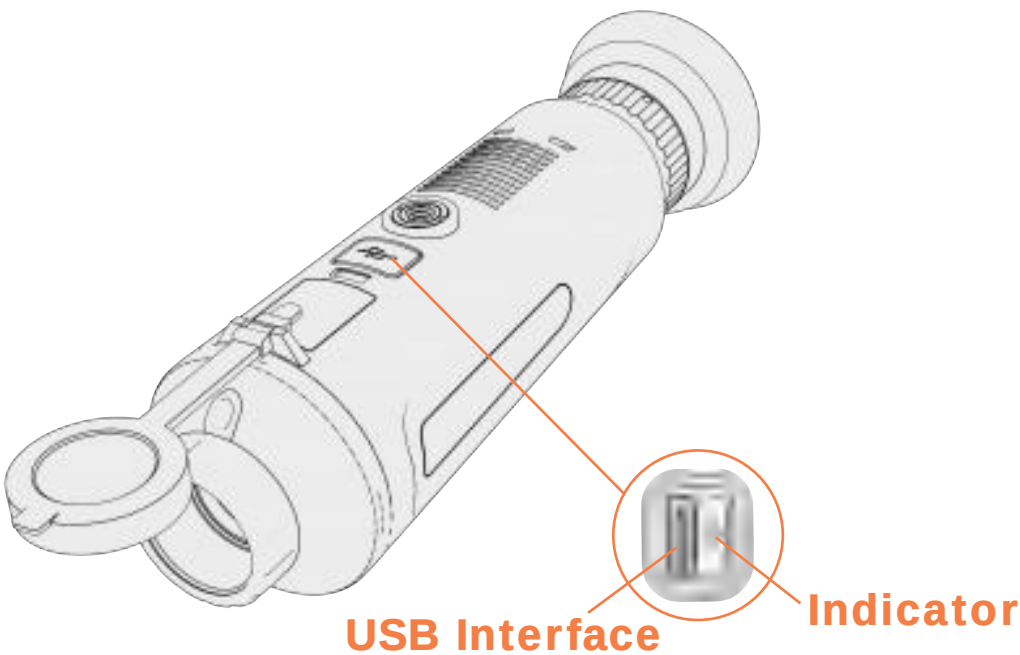
After the thermal imager is turned on, the battery power information is displayed in the upper right corner of the screen. When the screen shows the reminder of the remaining power, it means that the battery of the device is low. Please charge it in time to prevent delay in normal operation.

Precondition

· The charging environment of the thermal imager battery is required to be 0 ℃~45 ℃, otherwise the charging function will be automatically turned off.
· Please use the standard USB power cable to charge the thermal imager.

Operation Procedures

1. Please open the USB connector sealing cover on the back of the device when charging.
2. Connect the USB power cable to the USB interface of the device for charging.



G 2- 1 USB interface

- Red light is always on: charging status.
- Red light off: Charging full status.
- Red light blinking: Charging fault status.
- Bluetooth blinking: Serial number not authorized or device upgrade status.

2.2 Switch On/Off

This section describes how to start and shut down the device.

Switch On

Danger	The thermal imager needs to be connected to a USB power cable or the battery power of the thermal imager is sufficient.

When the thermal imager is off, press and hold ⏻ for 5 seconds on the device to enter the device startup interface, and then enter the main preview interface about 5 seconds.

Switch Off

When the device is on, press and hold ⏻ for 2 seconds， the device will be off.

2.3 Menu Instruction

In the main preview interface, press and hold the M Button to enter the main menu.

P 2-2 Button Operation Guide

· Press ☼± cursor moves up.
· Press ◑ cursor move down.
· Press M to confirm, hold to quit.

3 Image adjustment

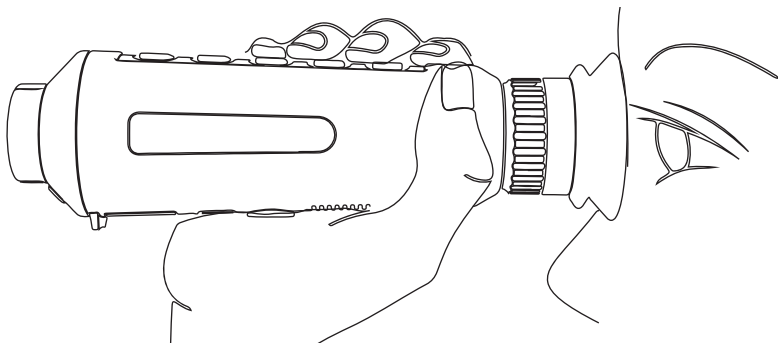
By adjusting the pseudo-color mode, brightness and scene mode, the image display can be optimized.

3.1 Visual Adjustment

By adjusting the visual adjustment knob, the scene image can be clear.

Operation Procedures

1.Aim the thermal imager lens at the scene to be observed.
2.Adjust the visibility adjustment knob clockwise or counterclockwise to adjust the image.



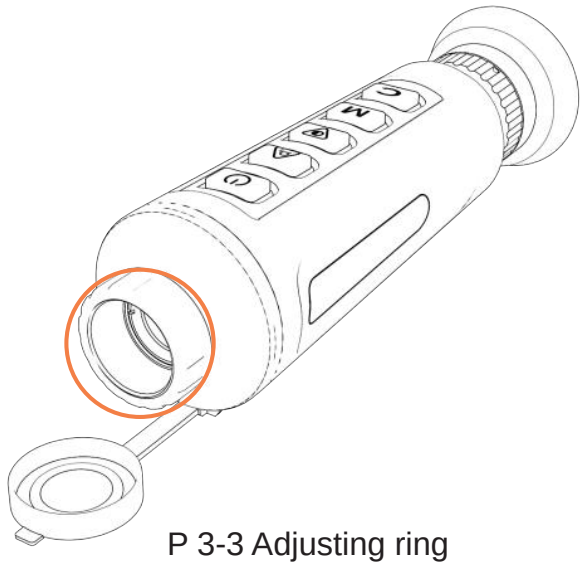
P 3- 1 observation

Danger When focusing manually, please do not touch the lens surface to avoid the lens being dirty and affecting the

P 3-2 Adjustment of visibility

3.2 Focus Adjustment

Some thermal imagers support focusing, and adjust the image through the adjusting ring on the thermal imaging lens. This function is subject to the actual equipment.



P 3-3 Adjusting ring

3.3 Brightness Adjustment

Used to adjust the brightness of the image display. Press and hold M to enter the main menu. Select Image, select Brightness and make 1 2 3 4 5 brightness adjustment, which indicates that the brightness of the thermal imaging camera image is getting brighter and brighter, and the display effect is as follows, with the opposite effect for the image in black heat mode.

P 3-3 Brightness adjustment in white-hot mode

3.4 Contrast Adjustment

Press and hold M to enter the main menu. Under the Image menu, select Contrast for a 1 2 3 4 5 contrast adjustment, indicating that the thermal imaging camera image contrast is becoming more pronounced

3.5 Pseudo Color Adjustment

For the same scene or target, select different pseudo color modes, and the display effect is different. In the main preview interface, short press ◑ to switch pseudo color mode.

White Heat Indicates that objects with high temperatures in the scene appear white; the higher the temperature, the whiter the colors in the image.
Black Heat Indicates that objects with high temperatures in the scene appear black, and the higher the temperature, the blacker the colors in the image.
Iron Red Indicates that objects with high temperatures in the scene are shown in iron red. The higher the temperature, the higher the color in the image.
Red Heat Indicates that objects with high temperatures in the scene show red heat, and the higher the temperature, the hotter the color in the image.
Green Heat Indicates that objects in the scene with high temperatures show green-red, and the higher the temperature, the higher the color in the image will be green-red





3.6 Scene Mode

Normal The screen is default, heat source objects and background are displayed by default

Outline The screen is brighter, the outline of the heat source is shown clearly, the background is not obvious

City City streets, heat source objects and background are shown.

Forest Inside the forest, the heat source is more visible and the heat source is highlighted, the background is not very visible

Rainforest Inside a rainy forest, the heat source is more visible highlighting the heat source, the background display is not very obvious

Birdwatching For quick detection of heat targets. The higher the temperature, the more obvious the contrast between the target and the background.

Normal

Outline

City

Forest

Rainforest

Birdwatching

3.7 AI Super Resolution On/Off

AI super resolution on/off, default on, AI super resolution technology, is to enhance the display effect to be close to the display effect of sensor for 384*288 display effect is close.

4 Hot Spot Tracking

Indicates real-time tracking of the highest temperature point in the scene.

Operation Procedures

1.Hold the M key to enter the main menu.
2. Select to enable hotspot tracking.

Display Instruction

A hotspot icon s displayed on the image. If the scene change, the hotspot icon will automatically locate the highest temperature point in the scene.

5 Recording and Capture

When previewing real-time images, you can manually record or capture the pictures that need to be saved.

5.1 Recording

Operation Procedures

1.On the observation interface, hold the ◑ button to start the recording.

2. Hold the ◑ button again to stop recording. After the recording is stopped, the image will show that the recording has been saved.

The time information will be displayed in the upper left corner of the image.

Follow-up

For video file export methods, refer to the File Export section.

5.2 Capture

Observation interface, Press the key, indicating the capture.

- If the capture is successful, the image will freeze for 1 second and it will be displayed on the image that the photo has been saved.
- Please refer to Exporting Files for how to export the captured file.

5.3 Recording Information

Recorded files can be viewed from your computer or APP!
Connect to computer via USB to typec, open hotspot via machine, APP connection

5.4 Capture information

You can view the photo files from your computer and APP!
Connect to computer via USB to TYPE, turn on hotspot via machine, APP connection!

5.5 File Export

To export video and Capture files.

Operation Procedures

1. Connect the camera to the computer via the USB power cable.
The driver will be installed automatically the first time the camera and computer are connected.
2. Go to the computer's disk, open the camera disk at Removable Storage Devices, and go to the Thermal Device disk. 3. Select the exported file and copy it to your computer.
Capture file View through image viewing software. Video file Play it on the player.
4. Disconnect the USB power cable from the computer.
When the camera is connected to the computer, the camera can display images, but cannot operate functions such as video recording, image capture and hotspot.

6 Network

The phone scans the QR code to download the APP

Android	IOS

Hotspot Connection

The thermal imager connects to the hot spot of the mobile phone for network connection.

Operation Procedures

Procedure 1. Press M to enter the main menu.
2. Select Press M to switch to Hotspot.
3. Turn on WLAN on your cell phone and connect to the camera's hotspot.
- WIFI name: CENV-********
- WIFI Password: 12345678.
4. Add the access device according to the software interface prompts.

The device connects to the cell phone hotspot

Operating Procedure

1. Press M to enter the main menu.
2. Select the menu and choose the WIFI option.
3. Set the cell phone hotspot parameters.
- Hotspot name: CENV (uppercase)
- Password: 12345678.
4. The device automatically connects to the cell phone hotspot.

7 Sharpness adjustment

Press and hold M to enter the Main Menu Under the Image Color menu, select Sharpness for 1 2 3 4 5 Sharpness Adjustment, which indicates that the sharpness of the camera image is becoming more and more pronounced.

8 NUC

Used to correct the non-uniformity of the image to keep the image uniform.

Operation Procedure

1. Press and hold M to enter the main menu.
2. Select Calibration Press M briefly to select calibration mode.
- Automatic mode: the camera will be calibrated regularly after powering on according to the device program.
3. Press and hold M to save and exit.

9 Equipment Timing

Used to adjust the calibration device time.

Operation steps

Long press M to enter the main menu.
2、Date Set the year, month and day on the screen, whether it is displayed or not.
3、Time Set the time on the screen, whether it is displayed or not.
4、Date Setting Set the time on the screen.
5、Time Setting Set the year, month and day on the top of the screen, and the time format option, set 12 hours and 24 hours.

10 External CVBS Screen

The external CVBS display screen is used to enlarge and expand the image of the thermal imager, so as to view the image details. This function is subject to the actual device.

Pre-condition

· The CVBS cable used to connect the device and external screen is special. Please check before purchase.
· Please connect the cable before the device is powered on. The USB interface of the device cannot be hot-swapped.

Operation Procedures

1. Connect up the CVBS screen.
2. Hold C button to switch.
3. When disconnecting the CVBS screen, hold C button to switch back to the OLED screen.

Result

The image of the device will be displayed on the external CVBS display screen.

11 System Maintenance

11.1 PC Upgrade procedure

Long press M to enter the main menu, select Settings, select PC upgrade
1. Please get the upgrade package of the device first (MD5 and IMG)
2. Connect the camera to the computer via the USB power cable.
3. Enter the computer and open the camera disk at Removable Storage Devices.
4. Copy the upgrade files to the root directory of the disk.
5. Disconnect the USB power cable from the computer.
6. Select Main Menu PC Upgrade
7. During the upgrade process, the blue light will keep blinking.
8. After the upgrade is completed, the machine will restart automatically.

11.2 USB Upgrade procedure

Long press M to enter the main menu, select Settings, and choose USB Upgrade.

1. Please get the upgrade package of your device first.
2.Copy MD5 and IMG to USB disk.
3.Connect the USB flash disk through USB to typec, insert it into the machine
4.Select main menu USB upgrade
5. During the upgrade process, the blue light will keep blinking
6. After the upgrade is completed, the machine will automatically reboot.

11.3 version information

Check machine model, serial number, version information, hardware information

11.4 scheduled shutdown

After setting the time, the machine will be shut down according to the set time when no one is operating it

procedure

Press and hold M to enter the main menu, select Settings, and choose Auto Power Off.

Separately can be set, off. 1 minute. 5 minutes. 10 minutes. 20 minutes. 30 minutes.

Warranty card

Dear Customer
Thanks for your purchase of our product, in order to offer you full enjoyment of our sincere service, please read the following service terms carefully.
Article 1. Hdanige guaranteed to keep limited warranty and lifetime maintenance to Thermal Imaging System
1. We provide warranty within 24 months since the date of sale, you will enjoy free repair for the device under the warranty, malfunction device shall be sent to us by customer to repair (If device is damaged by purposed action , non-proper usage or force majeure damage , repairs are not covered under warranty)
2. Beyond the 24 months of warranty, product failures implement charging lifetime maintenance.
Article 2 .Respond time
1. To respond within 72 hours since date we received the malfunction device.
2. Before customer send the device to us, please confirm with our staff or dealer. Otherwise, customer shall respond for the untimely maintenance if happen.
3. This card and the relevant invoice copy shall be send to us together with the device when needs to repair.
4. Unauthorized disassembly, removed the sealed label, shall be charged as the regulation for the maintenance fees and the components costs.
5. Any device failures after unauthorized modification will not be accepted.

Hdanige will not provide free repair for the following situations:
1. Periodic inspection, maintenance, repair or replacement of parts due to normal wear and tear.
2. The product was connected to the wrong power connection (e.g., over voltage) or obvious artificial damage, like screen damage or shell damage.
3. Due to the damage caused by the flood, fire, lightning and other force majeure.
4. Machine repaired by unauthorized institutions.
5. Any change listed above shall subject to the relevant regulation.

E-mail: service@hadanigetech.com
Web: www.hdanigetech.com
Manufacturer Add: 619,Jinhuiqiu Building, Langshan 2nd Rd, Nanshan Dist, Shenzhen, 518000, China

Product Information

Model	
MFG No.	
The Date of Purchase	

Customer Information

Name	
Tel	
Add	

Maintenance Records

Date	Failure	Result	Contact Person

FCC WARNING

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

—Reorient or relocate the receiving antenna.

—Increase the separation between the equipment and receiver.

—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

—Consult the dealer or an experienced radio/TV technician for help.

Note: The Grantee is not responsible for any changes or modifications not expressly approved by the party responsible for compliance. such modifications could void the user's authority to operate the equipment.

The device has been evaluated to meet general RF exposure requirement.

This equipment complies with FCC's RF radiation exposure limits set forth for an uncontrolled environment. This device and its antenna(s) must not be co-located or conjunction with any other antenna or transmitter