

# **BINOCULAR FUSION THERMAL IMAGER OPERATION INSTRUCTIONS**



***T-Scope***

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## Summary

The integrated technology such as ultra-low illumination COMS, infrared thermal imager, electronic compasses, GPS, video compression storage and control are used for the binocular fusion thermal imager (hereinafter referred to the thermal imager), which can be used for tactical reconnaissance day and night, monitoring and identifying camouflage targets. It is characteristic of a small size, convenience in taking and good adaptation to environments. The thermal imager is easy to carry by a single person for front observation, and is also suitable for setting up a fixed observation station for observation, day and night observation, photographing and video recording of targets. It can be widely used in patrol, investigation, law enforcement, anti smuggling, anti drug, forest fire prevention, emergency search and rescue and other occasions.

## Safety Operation and Maintenance

Cautions in the use of the device:

(1) It is forbidden to directly observe the sun when this device is used;

(2) In the case of any unknown situation such as failure in the device, please contact the manufacturer. Please do not dismantle it unless authorized.

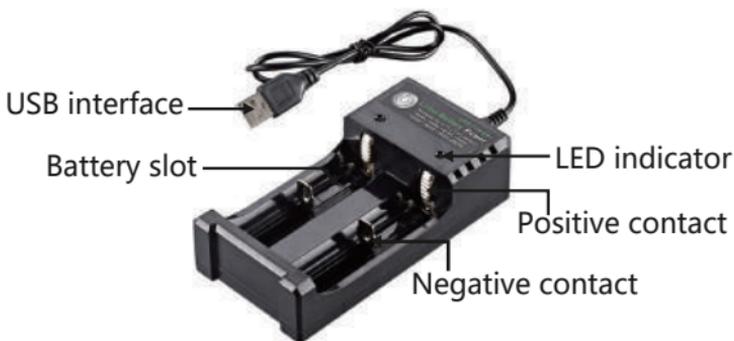
Daily maintenance of the device:

(3) Please wipe the device after it has been used so as not to allow water stains or dirt to remain on the surface of the device and on the objective lens, and cover the lens cap;

(4) When the device lies idle for long, please take the battery out of the device, and store it together with other components.

## Charging the Battery

1. Unscrew the battery cover and take out the batteries.
2. Used the charger from the original manufacturer to charge the batteries. Install the batteries properly according to the polarity as shown on the charger.
3. After it is fully charged, disconnect power supply for the charger, and remove the batteries.

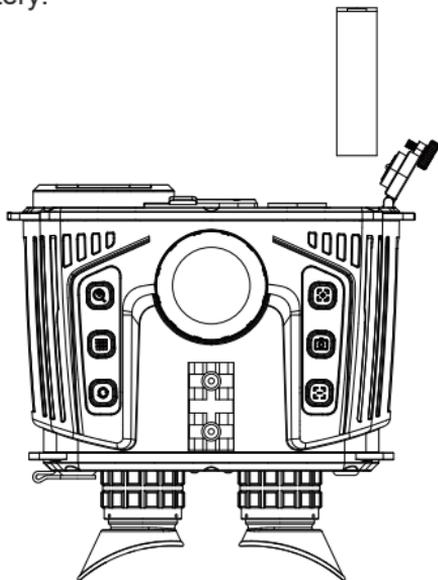


Prompt: When this product lies idle for long, it shall be charged at least every three months to prevent irreversible loss of capacity due to too low battery power arising from its own discharge as it is kept too long.

## Installing the Battery

- (1) Turn the battery compartment knob counterclockwise to open the battery compartment cover;
- (2) Install the battery by strictly following the indicative direction of the negative and positive poles on the battery compartment cover (with negative and positive pole indication at the place of battery installation);
- (3) Close the battery compartment cover, and turn the battery compartment knob clockwise until it is locked up.

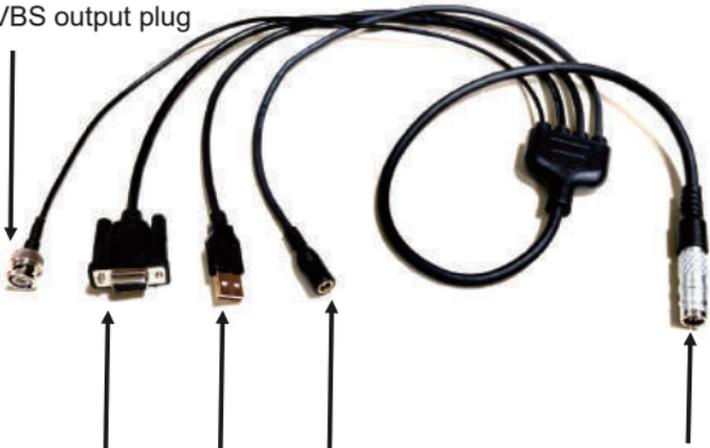
Note: 1. Please do not use the battery whose insulating layer is damaged; 2. If the battery's positive and negative poles are wrongly connected, the device will be unable to work, and that will damage the battery.



## Description of the Connecting Wires

For the data cord attached with the device, connect one end to the device's aviation jack, with the other end to be plugged into the corresponding jack as required.

CVBS output plug



RS 232 plug

USD plug

DC 12V output plug

Aviation jack

## Product Description

### 1. Instruction to Structure

In visual structures of the product, they mainly consist of CMOS, infrared thermal imaging, battery compartments, buttons, eyepieces, GPS modules and WIFI modules.

Infrared thermal imaging sensor  
(open the protective cover)

Low light camera

Battery cap

Digital amplification

Focusing +

Menu/  
Mode switching

Shooting/  
Confirm

Palette switching

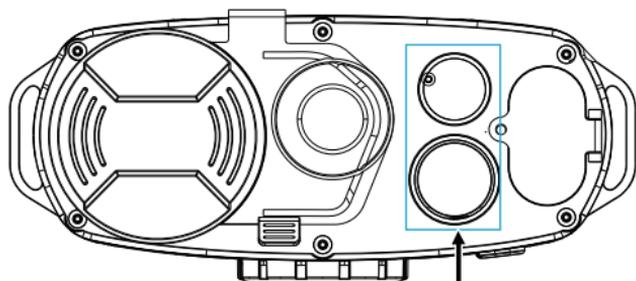
Focusing -

Aviation jack

Power switch

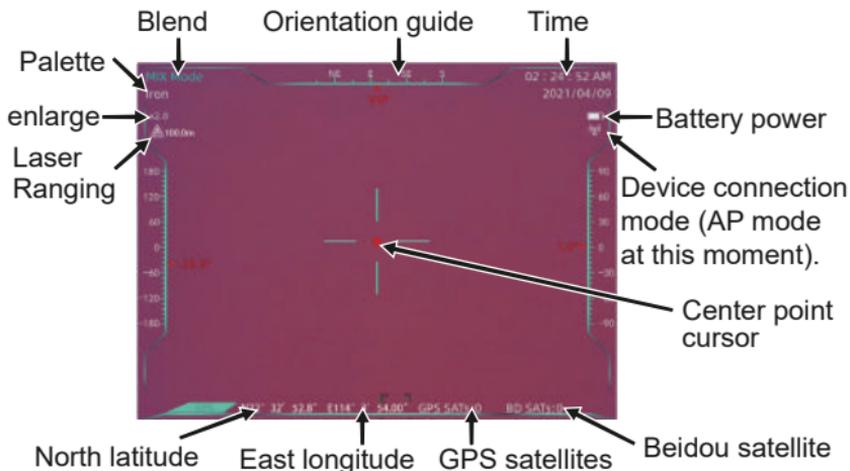
Eyepiece eye mask

Eyepiece focusing ring



Laser ranging

## 2. Display Description



Standby connection mode: When the “ ” icon is displayed, it means the device is connected to AP (hotspot) mode (the device defaults to AP mode); when the “ ” icon is displayed, it means the device is connected to STA (station) mode;

When the icon is flashing, Indicates that the mode is being switched.

Note: Mode switching needs to be operated on the APP.

## Safety cautions in laser ranging:

- (1) Do not look directly at the laser beam when using this module.
- (2) Do not use lens cone or other additional optical devices to operate the module so as to avoid increasing eye damage.
- (3) Do not place the module directly in the vehicle exposed to the sun or in the environment with strong ultraviolet rays or near the heat source, which may cause uncontrollable impact on the module.

## Cautions in laser ranging:

Remarks: Factors affecting ranging capability, ranging response speed and ranging accuracy include:

- (1) Target reflectivity: Generally, the higher the target reflectivity, the better the ranging capability and the faster the ranging response speed;
- (2) Target shape: when the reflection surface area of the measurement target is too small or uneven, the ranging ability and ranging response speed will be reduced correspondingly;
- (3) Measurement angle: when the laser angle is vertically irradiated on the reflection surface of the measurement target, the better the ranging ability, the faster the ranging response speed; conversely, the ranging ability and the ranging response speed will decrease;
- (4) When used at extreme measurement angles, it cannot ensure that the ranging capability and ranging response speed specified in this manual can be reached;

Measurement environment: The factors that affect the ranging ability and response speed also include the sunshine intensity, the concentration of water vapor and suspended particles in the air, and

the angle of deviation from the sunlight; (in case of rain, fog, snow and haze, the range will be reduced.) the range of this series of ranging telescopes is defined under the following conditions:

(1) The measurement target has medium reflectivity, such as the wall of the building.

(2) The reflection surface of the measurement target is perpendicular to the laser emission direction.

(3) The measured weather is clear but not under direct sunlight.

(4) The area of reflecting surface shall not be less than 2m \* 2m.

## Performance Indices

Infrared		
Model	T-Scope	T-Scope
Detector type	Amorphous silicon uncooled infrared focal plane	Vanadium Oxide Uncooled Infrared Focal Plane
Resolution	384x288	640x512
Pixel size	12um	12µm
Field angle	5.3°x 4°	8.8°x7.0°
Working band	8-14um	
NETD	<40mk@25°C, @f/1.0	
Focal length	50mm	
Frame rate	≤50Hz	
Focus mode	Electric focus	
Basic magnification	2.5	
Detection distance		
Characters (1.7mx0.5mx0.3m)	2361m	
Vehicles (4.5mx2.0mx1.5m)	6250m	
Identification distance		
Characters (1.7mx0.5mx0.3m)	590m	
Vehicles (4.5mx2.0mx1.5m)	1563m	
Shimmer		
Detector type	Ultra-low illumination CMOS	
Resolution	1920x1080	
Field angle	21°x16°	
Pixel size	4.0um	

Focal length	35mm
Frame rate	≤30Hz
Focus mode	Focus free
Display	
Display screen type	OLED
Resolution	1024x768
Display screen size	0.39 inches
Display screen mode	Infrared/shimmer/dual light fusion/ picture in pictures
Electron doubling	1x /2x /4x
Visual control	±4SD
Color palette	Rainbow, iron red, cold color, white hot, and black hot
Other functions	
WIFI	2.4G image transmission
Electronic compass	Square angle display
Positioning	GPS/BD
Ranging	
Ranging range	10m-2500m
Ranging accuracy	<400m, ±1m; >400m, 0.4%
Storage	
Capacity	Built-in 16G eMMC (Note: the usable storage capacity is less than this value, because the system software occupies a certain space)
Shooting	Supported
Video recording	Supported
Picture/Video format	JPG/MP4
Interface	
CVBS output	PAL system video output
USB interface	Export pictures and videos

External power supply	DC 12V/1A
Power supply	
Detachable rechargeable lithium battery	3200mAhx2 (battery model 18650)
Battery charging mode	Standalone charging stand
Overall power consumption	≤6W
Endurance duration	≥4 hours
Operating/storage environment	
Operating temperature	-20℃ to 50℃
Storage temperature	-30℃ to 70℃
Shock	≤30g
Protection level	IP66
Overall dimension/Weight	
Overall dimension	192.8mmx86.9mmx189.6mm
Weight	1.65kg (including batteries)

## Description of Basic Operation

### 1. Device Power on/off and Interface Adjustment

Shortly press the power switch, and you can see the screen is lit from the eyepiece;

If the characters on the display interface are fuzzy, you can adjust the eyepiece focusing ring and rotate left and right until the characters on the interface are clear;

After the device is normally activated, you can go to the actual operation interface;

If power off is required, shortly press the power switch, and the device is normally off, and there is no display on the screen.

## 2. Button Operation

- After normal power on, if there is no menu display, press the “” button for amplification, with images switching in cycle in 1X, 2X and 4X.

Long press the “” key to enable the laser ranging function.

- Press the “” button to be able to switch the color palette: rainbow, iron red, cold color, black hot and white hot.

- Press the “” button to be able to switch the mode: shimmer mode, infrared mode, blend mode and picture in pictures mode.

Long press the “” button, and the menu is displayed on the screen. Now, it is the menu mode. Press the “” button to exit the menu mode.

- Press the “” “” button to play the role as image focusing.

- Press “” button for image snapshot. Long press the “” button to record videos, and long press press this button once again to exit video recording.

# Menu Introduction

Long press the “  ” button to go to the menu. They are respectively: image, color palette, time and setting.

## 1. Image Menu

### 1.1 View Images

Go to the menu, select image icon, press the “  ” to go to the image list, press the “  ” or “  ” button to select image, and press the “  ” to go to the image.

While viewing an image, press the “  ” to view the previous image, press the “  ” to view the next image, and press the “  ” to return.

### 1.2 Delete Images

When viewing an image, press the “  ”, and “delete image” is displayed on the screen. Press the “  ” or “  ” button to select whether to delete the image, and press the “  ” again for confirmation.

## 2. Color Palette Menu

### 2.1 Description of Color Palette

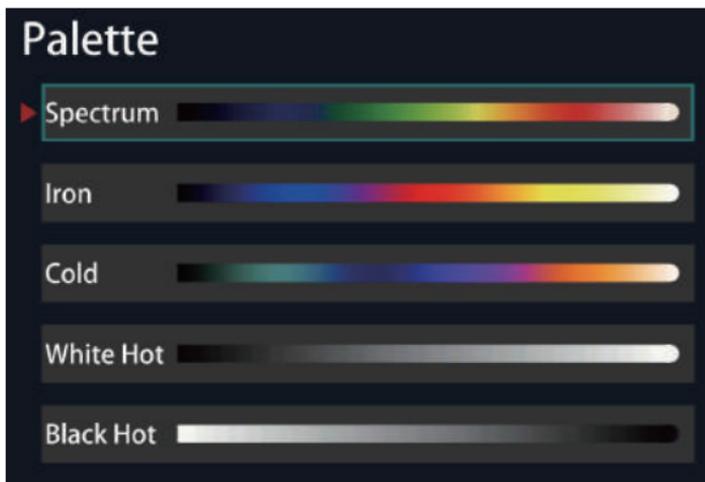
The color palette can be used to change the pseudo color display of infrared images on the display screen. Some palettes are more suitable for specific applications, and can be set as needed. Color palette is divided into: rainbow, iron red, cold color, white hot, black hot as five color palettes. These palettes work best with high thermal contrast and provide additional color contrast between high and low temperatures.

Selecting the appropriate palette can better show the details of the target object. For rainbow, iron red and cool colors, the palette focuses on displaying colors. The palette is very suitable for high thermal contrast and is used to improve the color contrast between high temperature and low temperature.

However, the white hot and black hot palette provides uniform linear colors.

## 2.2 Color Palette Application

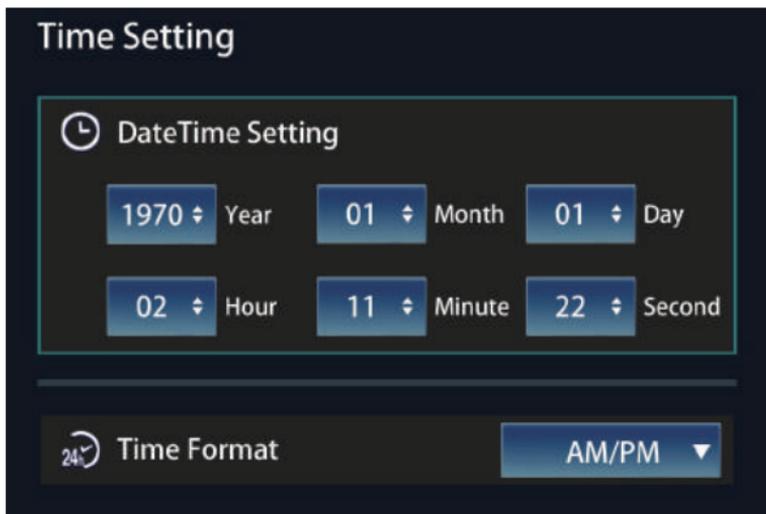
Go to the menu, select the color palette icon, press the “” to go to the color palette list, press the “” or “” button to select the color palette, and then press the “” to choose the color palette. Press the “” button to return.



### 3. Time Menu

Go to the menu, select the time icon, press the “” to go to time setting, press the “” or “” button to select time setting or time format. Choose it and press the “” button to go to the setting. After the setting is finished, press the “” button for confirmation, and press the “” button to return.

Among them, “” or “” plays a role as increasing/ decreasing values, and functioning as moving up/down in the list.



## 4. Setting

Go to the menu, select the setting icon, press the “” button to go to setting, press the “” or “” button to select the setting option, and press “” to go to setting, and press “” to return.

Hot spot tracking switch: Press the “” button to switch off the hot spot tracking, and press this button once again to activate the hot spot tracking.

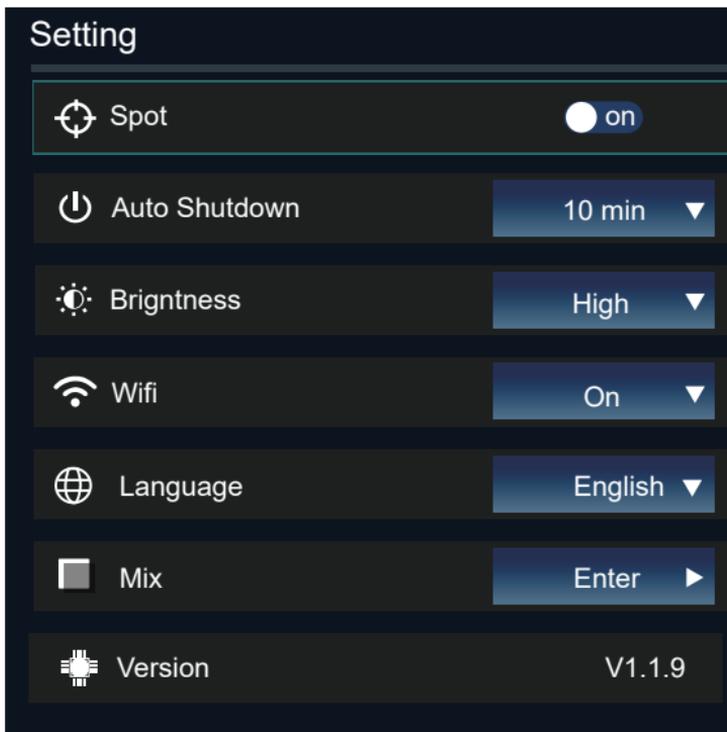
Automatic power off: Press the “” button to pop up the drop-down, and they are 5 minutes, 10 minutes, never respectively, press the “” or “” button to select the power off time and press “” for confirmation.

Brightness setting: Press the “” button to pop up drop-down, and they are low brightness, medium brightness, and high brightness respectively. Press the “” or “” button to select brightness, and press “” for confirmation.

Wifi switch setting: Press the “” button to pop up drop-down, on or off. Press the “” or “” button to select wifi on/off. Press “” for confirmation.

Language: press the “” key to pop up the drop-down list, which is Chinese, English and Russian respectively. Press the “” or “” key to select the language, and press “” for confirmation

Mixing mode: Press the “” key to enter the blending mode, and use the “” and “” keys to move the image up and down. If you need to adjust the left and right direction, please press the “” key to switch to the left and right mode, and then press the “” and “” keys to move the image to the left and right.



## Connecting WIFI

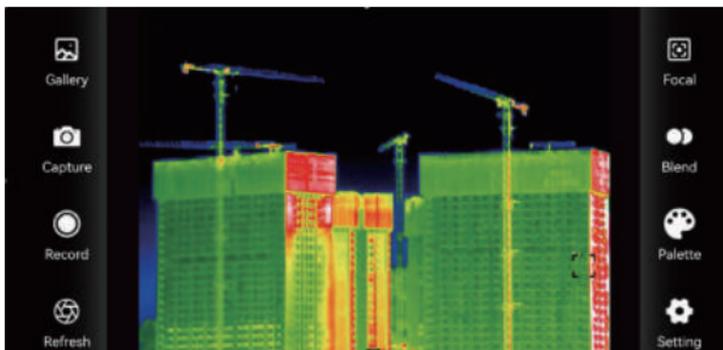
Please download the app from your phone and select Google Download.



Scan QR code to download the App

Connect the device hotspot after the device is powered on.

The default connection hotspot name of this device: Thermal-XXXX (XXXX is the last four digits of the device MAC) After connecting to the hotspot, open the APP software to enter the interface, the interface is displayed as follows:



“  ” Gallery, view pictures and videos.

When entering the picture list/video list, check the picture/video and click “  ” at the top right to delete or share the picture/video.

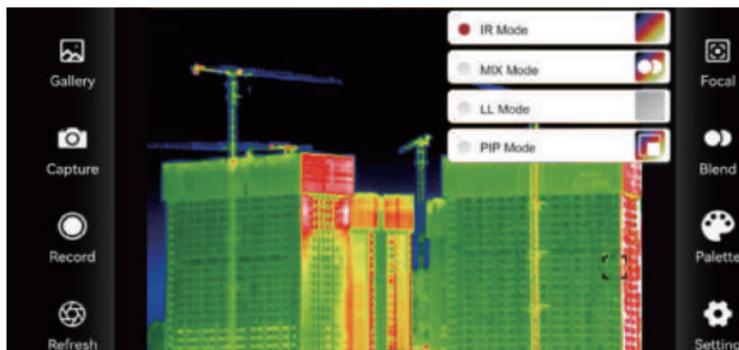
“  ” Snap the image.

“  ” Record, click this icon to record video, click again to end recording.

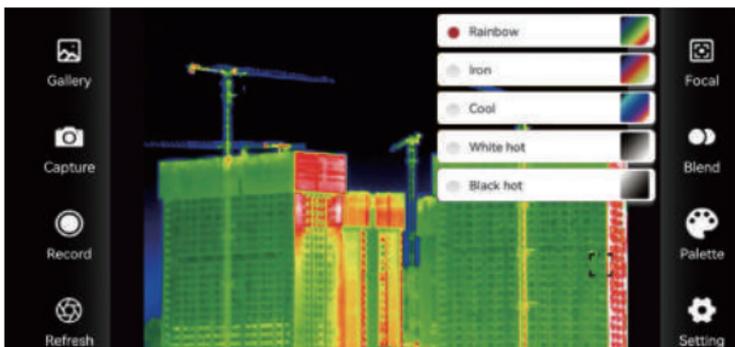
“  ” Refresh, refresh block.

“  ” Focal, adjust the focus to make the image clearer.

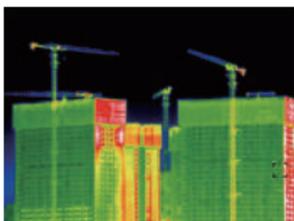
Click the “  ” icon to change the mode, which can be set to four modes: infrared, mixed, low-light, and picture-in-picture, as shown in the figure below.



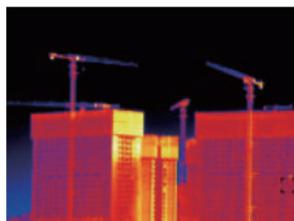
Click the “  ” palette icon to set as rainbow, iron red, cool color, white hot, black hot five color palettes, as shown in the figure below.



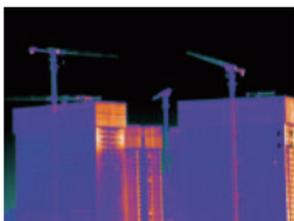
The palette work best with high thermal contrast and provide additional color contrast between high and low temperatures. The following are the image effects of the same object and five color palettes.



Rainbow



Iron Red



Cool Color

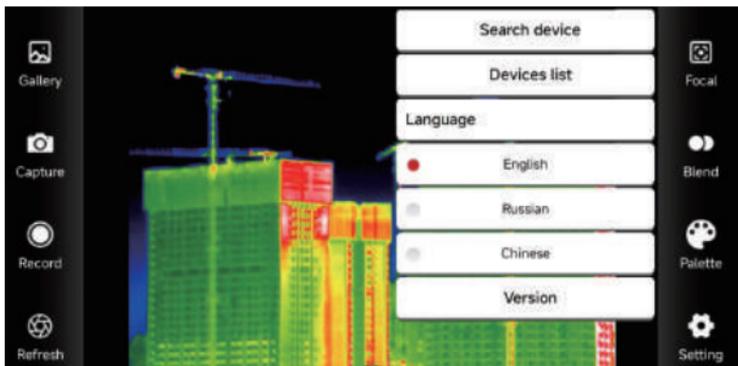


White Hot



Black Hot

Click the “  ” setting icon to search for devices, view the device list, switch between Chinese , English languages and Russian respectively, as shown in the figure below.



**Search device:** Search for the current device and connect automatically.

**Device list:** Enter the device list, click Search, when multiple devices are found, select the device to be connected in the list.

**Version Information:** View version information.

**Select the connection mode:** Enter the device list and click Settings, you can choose AP (hotspot) mode or STA (station) mode (the default AP mode of the device);

After selecting the mode, enter the name and password below, and click OK.

**Note:** When using the default hotspot for the first time, just connect to the default hotspot without entering a password. If you need to set a password, you can select AP mode in the settings and set a password.



# ABOUT US

ABOUT US

## EVER VIEW



When it comes to quality, we ensure that every product meets the highest standards so that every customer can experience our commitment to excellence. When facing customers, we always put their needs and satisfaction first and provide a service experience that exceeds expectations.

### Our Mission

Customer first, excellent quality



Become the world's leading technical solution provider in the field of night vision and thermal imaging, lead the future with innovation, become a model of sustainable development in the industry, and promote industry progress.

### Our Vision

Innovation driven, sustainable development



We adhere to the principles of honesty and transparency, make products serve customers, give back to customers with quality, continue to innovate, and promote technological development.

### Our Values

Integrity, responsibility, win-win, enterprising



Customer first, excellent quality,  
innovation driven, sustainable  
development, integrity, responsibility, win-  
win, enterprising



### Working Hours

Monday - Friday 7:24 Hours

Saturday 09:00 - 18:00

Sunday 09:00 - 18:00

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(+44) 7716 497182

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### Our Gallery

