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STS6435 640x512 Thermal Imaging Sight User Manual



Chapter 1 Introduction

Preface:

▼ Thanks

Thank you for choosing our uncooled 640X512 Thermal Imaging Sight (hereinafter referred to as Sight), this Sight is stable performance, environmental adaptability, simple operation.

In order to take advantage of the functions provided by the Sight immediately, we recommend that you read this manual carefully. The purpose of this manual is to familiarize you with the performance of the Sight and to guide you to use the Sight quickly.

This manual provides the necessary information to use this product correctly. Please inform us if there is any more information needed.

▼ Safety Precautions

This product is manufactured on a safe basis and is not liable for any damage or accident caused by misuse, misuse or unauthorized alteration.

* May cause the customer side of the accident;

* May cause the product itself accident;

Both describe that such acts that cause an accident should not occur or should be avoided in advance.

▼ Warning

The contents are subject to change without notice.

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Please inform if you are not understand or omitted.

▼ To open the package Make sure each product contains the following accessories

SN	Item	Quantity
1	Sight (CR123A battery not included due to custom control)	1 Set
2	Battery Charger	1 PCS
3	Standard cables	1 PCS
4	Carry Case	1 PCS
5	QC Certification	1 Copy
6	User manual	1 Copy

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▼ Main Features

WIFI

E compass

Video Record

Picatinny guide rail

640x512/12um thermal imaging

Operating temperature -40 °C~55 °C;

Warning!

- * Read this manual carefully and use it carefully to avoid accidents.
- * Please use this product in a safe circumstance.
- * Do not point the Sight to a high-intensity energy source (including sunlight, laser-emitting devices, and the source of these devices), or an infrared detector that may adversely affect the Sight and may damage or permanently damage the Sight.
- * For long-term storage, please kept in a dry environment, that ambient should not be too hot or too cold.
- * Do not install or dock the cable when the sight power is on.
- * When using the Sight or Sight is on, please release of static electricity before touch, so as not to interfere the normal operate of the Sight.
- * Do not use liquid that are dissolved to clear the cable or other components.
- * Do not push to hard to clean lens. Otherwise it may damage the anti-reflective film.
- * Storage temperature: -55 °C to 70 °C.
- * Operating temperature: -40 °C to 55 °C.
- * Do not use or store this product in a strong electromagnetic field.
- * Do not place Sight in easy fall position.
- * Do not disassemble the product by yourself.
- * Do not use or store this product in the presence of toxic gases, combustible gases, explosive gases, corrosive gases or vapors.
- * Immediately stop the operation if the abnormality is found.

Chapter 2 Sight Overview

Principle:

All objects in nature are the existence of temperature difference, and has a different radiation capacity, resulting in its infrared radiation intensity difference. Thermal imaging technology works by the optical system to receive infrared radiation from the scene by the detector point by point to different locations of the infrared radiation into a time-varying electrical signals, and then through the signal processing by the display of the image. Complete the function of converting light (infrared) - electric - light (visible light).

The surface of the object at different points due to temperature or emissivity difference generated by the difference between the infrared radiation into a visible image technology, known as infrared thermal imaging technology, referred to as thermal imaging technology. Infrared thermal imagers and line scanners made using thermal imaging technology can be used to detect and search for captures and track targets. The images obtained are rich in information and are concealed by passive observation and are not easily disturbed. In the no ambient light night use.

The principle of Sight is based on the object of this infrared radiation characteristics, through the lens convergence of infrared energy to the sensor, the sensor and then converted into electrical signals, the microprocessor to deal with the electrical signal, converted into images

Functions:

1. Observation distance

Under conditions of visibility of 10km, humidity of 60%, and background impermeability, the temperature difference between the target and the background is 3 °C. The recognition distance for the side of medium-sized trucks is 800m, and for upright adults person is 400m.

2. Eyepiece visibility adjustment range: (-5~+3) diopter;

3. Gross weight: 550g (including battery);

4. Size: 190mm × 52mm × 70mm/56.5 (length, width, height), including eye mask and Picatinny rail ;

5. Boot time: 30 seconds;

6. Power supply method: CR123A battery, 4 units;

7. Operating time: 4 hours (at 20 °C);

8. Environmental adaptability

(1) Storage temperature -55 °C~70 °C;

(2) Operating temperature -40 °C~55 °C (*Please use low temperature battery) ;

9. Usage requirements:

It has control functions such as brightness contrast adjustment, focusing,

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infrared image polarity conversion, segmentation adjustment, media storage, playback, retrieval, and deletion, with a storage capacity of no less than 1 hour for videos and 5000 images.

10. Electrical interface: TYPE-C interface;

11. Mechanical interface: Picatinny guide rail buckle (*optional) ;

Technical specifications:

1 Thermal module

Items	Subject	Parameter
Detector	Detector type	Uncooled VOx detector
	Resolution	640*512 FPA
	Pixel size	12μm
	Wave length	7~14μm
	NETD	45mk
Optical	Focal Length	35mm F1
	Field of View	12.5°×10°±5%
	Focus	Manual
	Focus range	50m~∞

2 Display

Items	Subject	Parameter
Display	Catalog	Sight
	Type	OLED
	Resolution	1024*768
	Size	0.39 inches
	Eye relief	38mm

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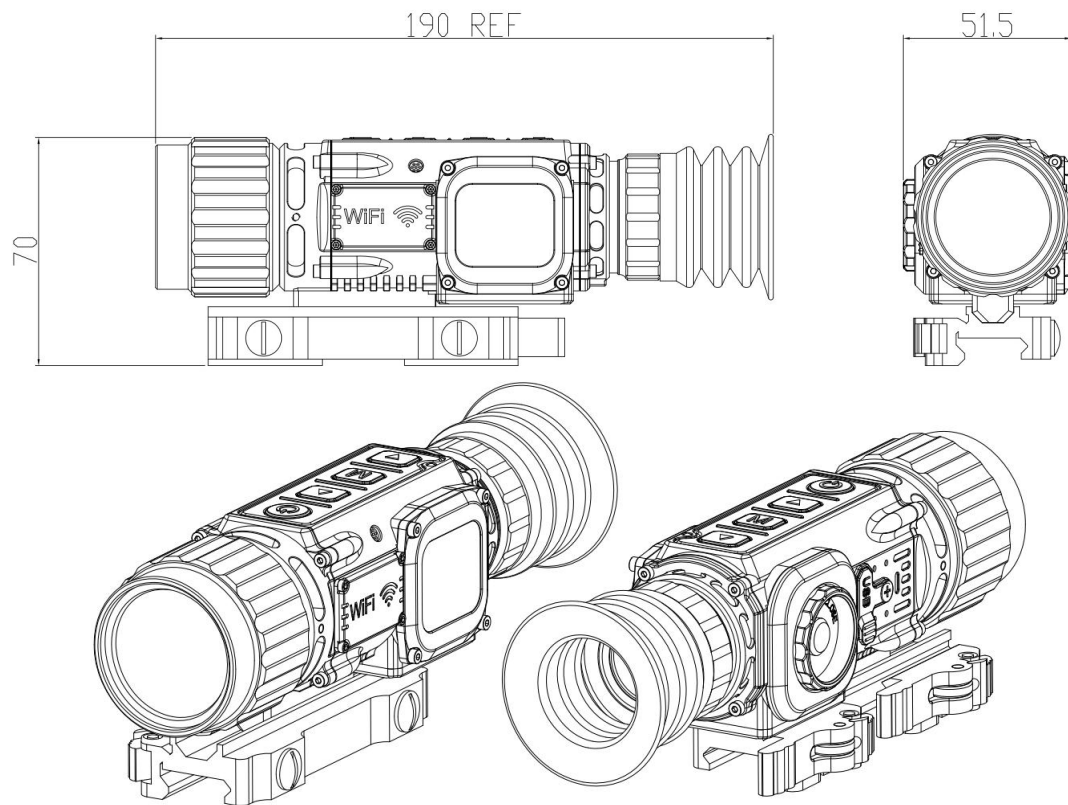
	Diopter adjustment range	-5～+3
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3. Storage

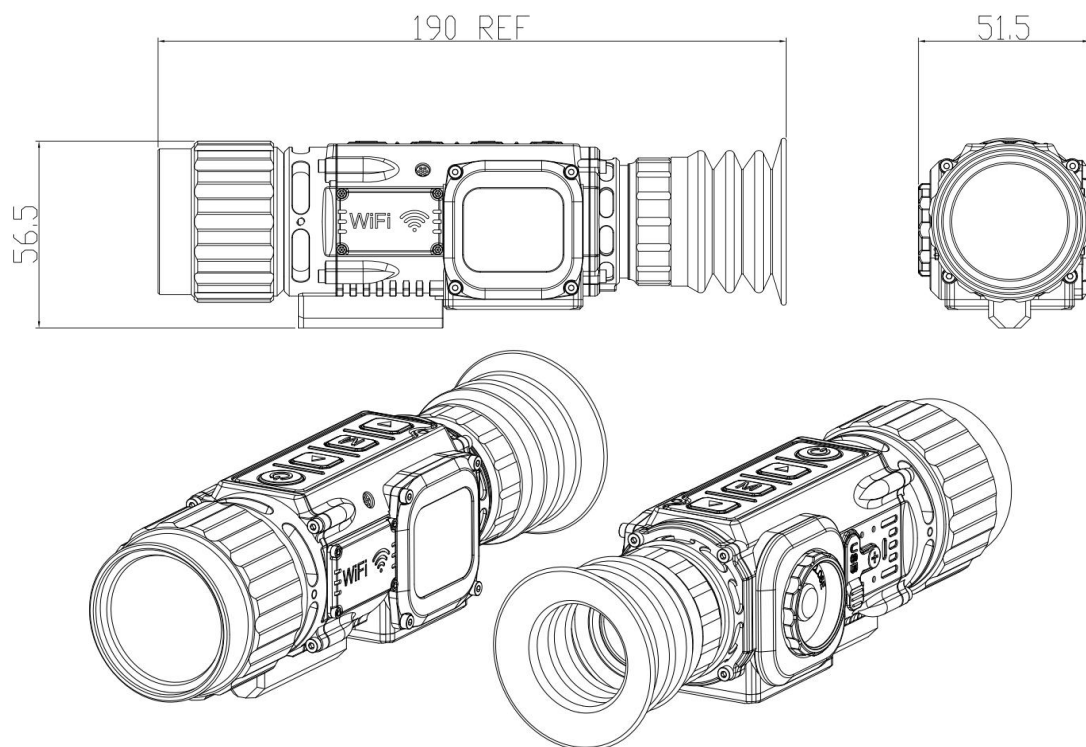
Items	Subject	Parameter
Performance	Video	Recordable in image observation mode
	Storage capacity	32GB (*64GB optional)
	Browsing	Browsed/Deleted/Exported

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Sketch and Size



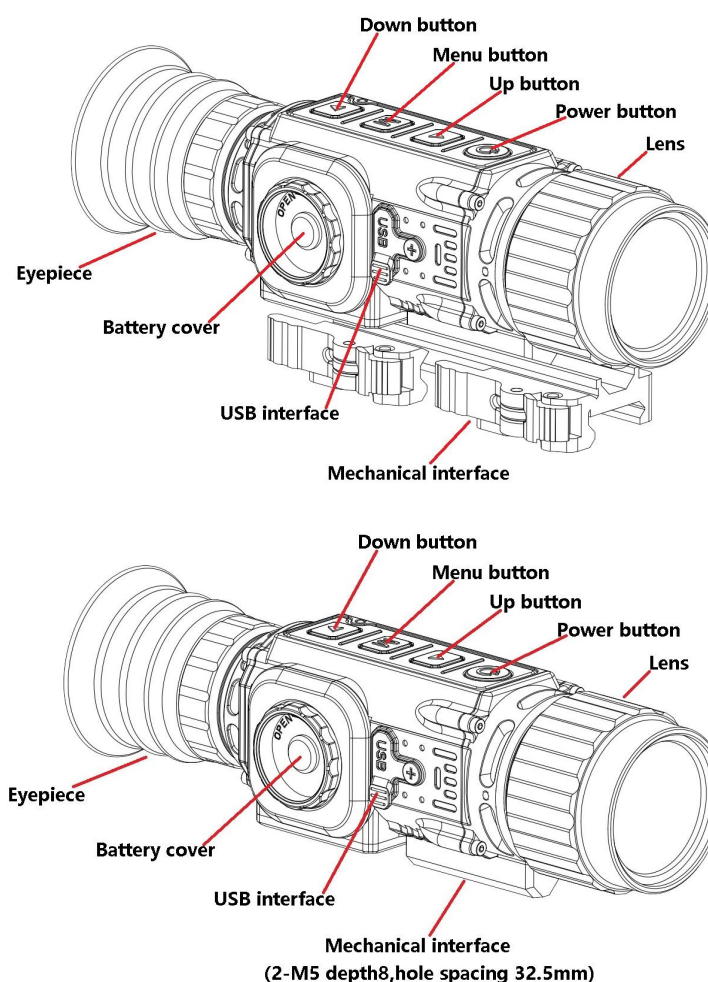
Picatinny guide rail buckle Installed



No Picatinny guide rail buckle Installed

Chapter 3 Use of Sight

1.Component instructions:



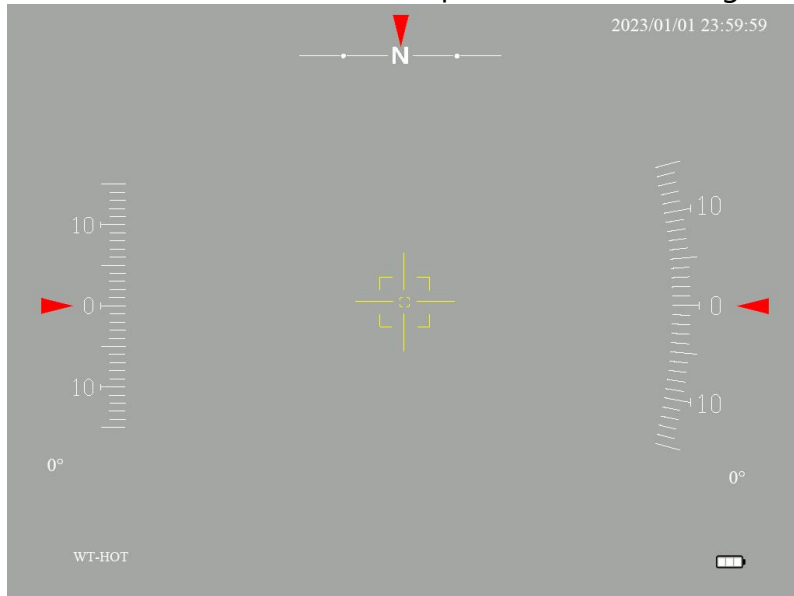
2.Key instructions:

No.	Instructions	Preview interface		Menu interface	Playback interface
		Short press	press 3 seconds	Short press	Short press
1	Power button	Screen sleep/wake up	Power On/Power off	Back	Back
2	Up button	/	Zoom Cycle switching	Options +1	Previous file
3	Menu button	Main menu	Sighting menu	Option Settings	Play/Pause
4	Down button	Take a photo	Video start/Video stop	Options -1	Next file

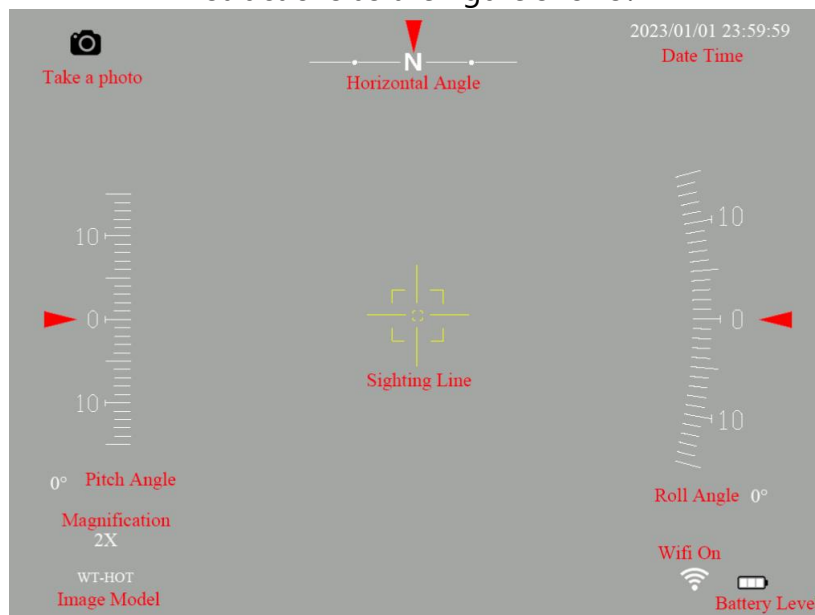
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3.Power on and off

Install the battery correctly (The positive pole of four batteries faces outward) ,then press [power] until turn on with display, and press 3 seconds to shut down. Default Preview interface after power-on, as the figure shows:



instructions as the figure shows:



4 Button function in Preview interface:

- 4.1.Press [power]: Screen sleep/wake up , press the button, the screen sleeping, and then press the button again it wake up and reset display.
- 4.2. press [power] 3 seconds: Power off.
- 4.3. press [up] 3 seconds :Image zoom, press the button 3 seconds can be image magnification 1/2/3/4 times switch, display in the lower left corner, the default is 1X, [1X] is not displayed.

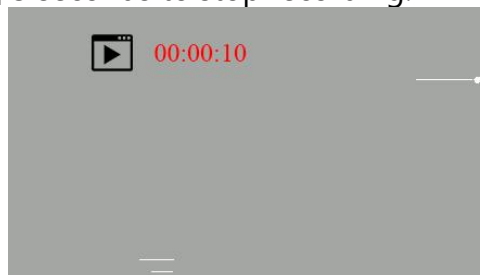
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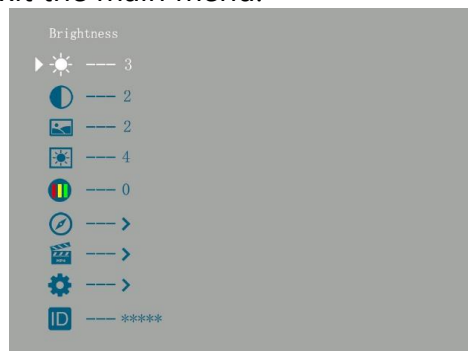
4.4. Press [down]: Take photos, press the button to take a photo, the upper left corner there is a photo icon display and automatically hide.



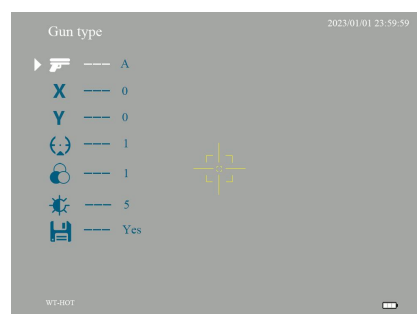
4.5. press [down] 3 seconds : Video recording, press 3 seconds to take video record, the upper left corner there is a video icon followed by the recording time; press [down key] 3 seconds to stop recording.



4.6. Press [menu]: Main menu, press [menu] button to get into the main menu, press [power] key to exit the main menu.

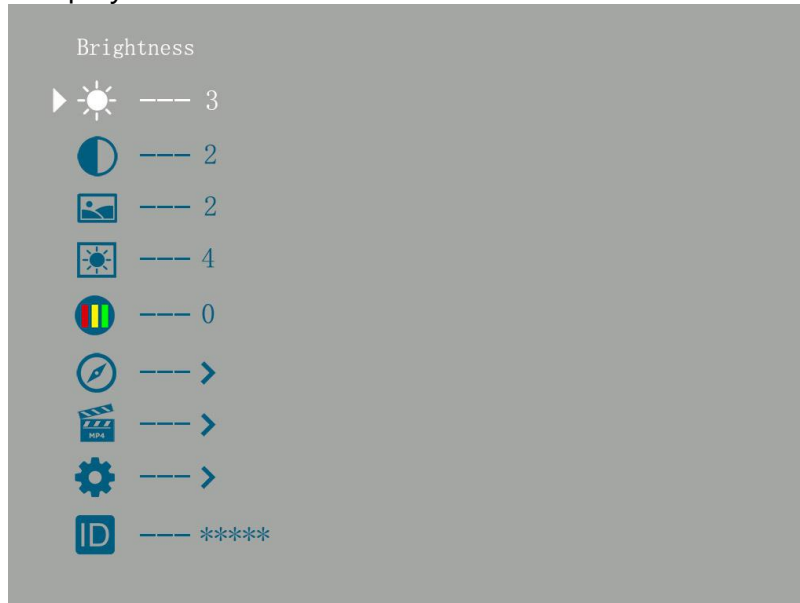


4.7. Press [menu] 3 seconds : Sighting menu, press the button to get into the sighting menu.



5.Main menu

In the main menu, press [down] to switch down and press [up] to switch up, press [menu] to select and press [power] to exit.the name of the menu item will be displayed above:



5.1. Image Brightness: select the **Brightness** item, then press [menu], adjustable value as white character display,adjust the value down and up by pressing [up] and [down], the value range is 1~10, press [menu key] exit value setting and return main menu.

5.2. Image Contrast: select the **Contrast** item, then press [menu], adjustable value as white character display,adjust the value down and up by pressing the [up] and [down], the value range is 1~10, press [menu] exit value setting and return main menu.

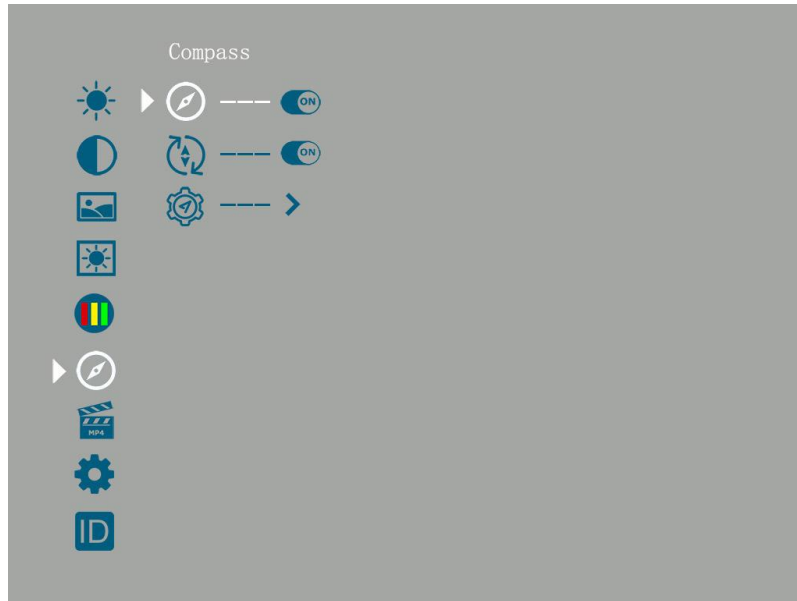
5.3. Image Sharpness : select the image **Sharpness** item, press [menu], adjustable the value as white character display,adjust the value down and up by pressing the [up] and [down], the value range is 1~4; press [menu] exit value setting and return main menu.

5.4. OLED Brightness: select the **OLED** item, press [menu], adjustable value as white character display,adjust the value down and up by pressing the [up] and [down], the value range is 1~7; press [menu] exit value setting and return main menu.

5.5 Image mode: Select the **Modes Change** item, press [menu], adjustable value as white character display,adjust the value down and up by pressing the [up] and [down], the value range is 0~4; press [menu] exit value setting and return main menu.

5.6. Compass and posture : Select the **Compass and posture** item, press [menu] into submenu., and press [power] return.

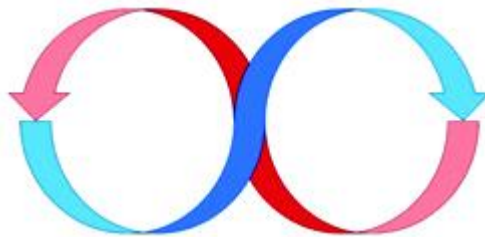
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5.6.1 Compass: turn on and off the compass horizontal Angle scroll.

5.6.2 Posture: turn on and off the pitch + roll Angle scroll bar display.

5.6.3: Compass calibration: use the "Figure 8 calibration method". as much as possible to let the device in normal direction point to all 8 quadrants of space, press [Power] button to delete the prompt box and complete the correction. When finish.



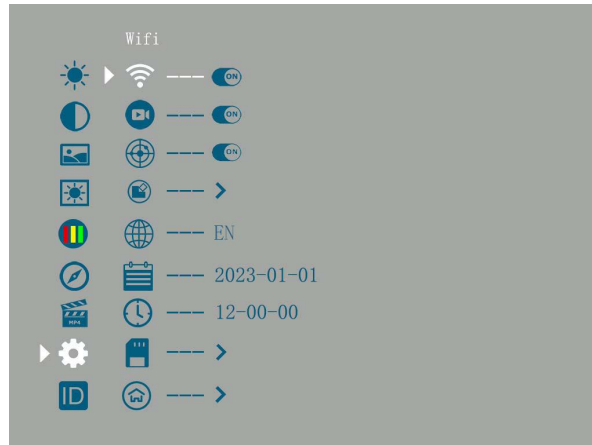
5.7 Media Play back: Select the **Play back** item, press [menu] into submenu, press [up] and [down] to select **Video** or **Photo** album.

5.7.1 Video: press [up] and [down] to select the file, press [menu] to full screen display. press [up] and [down] to select item, and press [menu] to operate. press [power] return.

5.7.2. Photo: press [up] and [down] to select the file, press [menu] to full screen display. press [up] and [down] to select item, and press [menu] to operate. press [power] return.

5.8. Settings: Select the **setting** item, press [menu] into submenu, press [up] and [down] to select, [menu] into and confirm the setting, and press [power] return.

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5.9.1 WIFI switch: press the [up] and [down] to switch on and off WIFI. When the WIFI function is enabled, there will be a WIFI icon next to the battery label in the preview interface.

5.9.2 CVBS OUT: *press the [up] and [down] to switch on and off CVBS output. Optional!

5.9.3 Pointer : *press the [up] and [down] to switch on and off the laser designator. Optional!

5.9.4 Blind Pixel Compensation: select the **Blind Pixel Compensation** item and press [menu] into, press [menu] to switch automatic or manual calibration mode, press [up] to confirm the selection.

5.9.4.1 Automatic calibration mode: Adjust the threshold parameter by press [up] and [down], the default is 512, close the lens cover according to the prompt and press the menu key to start the automatic correction. If the correction effect is not satisfactory, press the menu key not to save the calibration result and exit, otherwise, press 3 seconds the menu key to save the calibration result and exit.

5.9.4.2 Manual calibration mode: press the [menu] to switch operation items, and press [up] and [down] to adjust various parameters. X is the horizontal coordinate and Y is the vertical coordinate; repair select "YES" to correct the Pixel, and "NO" for not. Save select "YES" to saved and "NO" for not.

5.9.5 Language: press the [up] and [down] to switch the language.

5.9.6 Date: press the [up] and [down] to adjust the date, and. [menu] switch the digit position

5.9.7 Time: press the [up] and [down] to adjust the time, and. [menu] switch the digit position

5.9.8 Memory Card: short press [menu] into submenu.

5.9.8.1 Total Memory: total capacity display.

5.9.8.1 Free Memory: remaining capacity display.

5.9.8.3 Format: format opinion, [menu] switch and [power] exit.

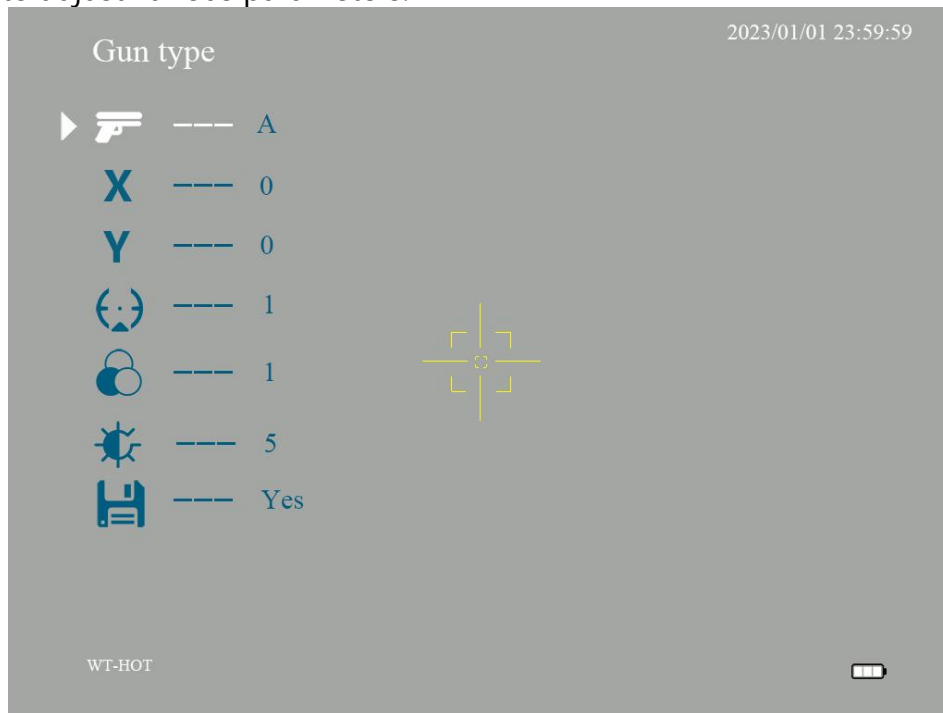
5.9.9 Reset Setting: press [menu] to exit and press [menu key] 3 seconds to start reset.

5.10. ID: the serial number, fixed at factory, can not be modified.

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6.Sighting menu

In the Preview interface, press [menu] 3 seconds to go in Sighting menu, press [power] to exit line-sighting press the [menu] to switch operation items, and press [up] key and [down] key to adjust various parameters.



6.1. Gun type: Select the **Gun type** item, then press [menu], adjustable value as white character display,adjust the value down and up by pressing [up] and [down], press [menu] key exit value setting and return menu.

6.2. Offset center X: Select the **Offset center X** item, then press [menu], adjustable value as white character display,adjust the value down and up by pressing [up] and [down], the position and value of the cross will change, press [menu key] exit value setting and return menu.

6.3. Offset center Y: Select the **Offset center Y** item, then press [menu], adjustable value as white character display,adjust the value down and up by pressing [up] and [down], the position and value of the cross will change, press [menu key] exit value setting and return menu.

6.4. Cross type: Select the **Cross type** item, then press [menu], adjustable value as white character display,adjust the value down and up by pressing [up] and [down], press [menu] key exit value setting and return menu.

6.5. Cross color: Select the **Cross color** item, then press [menu], adjustable value as white character display,adjust the value down and up by pressing [up] and [down], press [menu] key exit value setting and return menu.

6.6. Cross brightness: Select the **Cross brightness** item, then press [menu], adjustable value as white character display,adjust the value down and up by pressing [up] and [down], press [menu] key exit value setting and return menu.

6.7. Save: Select the **Save** item, then press [menu], adjustable value as white character display,adjust the value down and up by pressing [up] and [down], press [menu] key exit value setting and return menu.