Thermal Imaging Monocular
User manual

PTI335A

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Summary

The TH-RXY500 outdoor thermal image telescope takes advanced uncooled focal plane infrared detector and high-quality optical lenses as the core. Combined with convenient and fast operating system, it has a small appearance design, fully functional expansion spare parts, long service life, firmess and durability, so it is suitable for various environments, and creates a "clear imaging, simple operation and easy to carry" infrared thermal imaging tools for users.This product is used for field animal observation, search and rescue, police law enforcement investigation, night patrol, outdoor sports, personalsecurity, etc.

This product functions as photo taking and videos. You can browse the photos or videos taken through this unit or USB connected computer, so that several persons can observe at the same time creating possibilities for more applications.

Cautions and Safe Maintenance

In order that this product is properly used, please read the operation instructions carefully:

- Never dismantle or refit this product without authorization.
- Do not use this product in the flammable, explosive, humid or corrosive environment.
- This product contains precision electronic and sensitive optical devices. Please do not make it collide or fall so as not to cause any damage.
- The housing of this product must be cleaned with wet cloth or weak soap. Do not use abrasives, isopropanol or solvents for cleaning. Optical lens cleaners must be used for lenses and screens.
- There will be minor clacks every several seconds while this product works. This is the sound uttered by lenses, which is a normal case.
- Warning: Do not look directly at the sun with lenses, for this will damage the optical lenses.

Performance Indicators

Infrared detector	Detector type	Amorphous silicon uncooled infrared focal plane	
	Resolution	384×288	
	Pixel size	17μm×17μm	
	Operating band	8~14μm	
	Performance (NEDT)	< 40mk (50Hz, F/1, 300K)TFPA 25°C(± 5°C)	
	Performance (Scene dynamic)	> 50°C (50Hz, F/1, 300K)TFPA 25°C(± 5°C)	
	Frame rate	60Hz	
Infrared objective lens	Focus mode	Manual focusing	
	F coefficient	1.0	
	Effective imaging surface	Φ8.2mm	Φ8.2mm
	Focal length	25mm	35mm
	Field angle	14.9°×11.2°	10.7°×8.0°
	Focusing range	＞1.0m	＞1.0m
Eyepiece	Focal distance	22.0mm	
	Eye relief	30.8mm	
	Exit-pupil diameter	6mm	
	Visual adjustment	±4SD	
	Apparent magnification	12.5X	
Display	Display screen type	LCOS	
	Resolution	1280×960	
	Display screen size	0.4 inch	

System function	Electron doubling	×2/×4	
	Color palette	White hot, black hot, rainbow, hot metal, yellow saturation and bird watching mode	
	Brightness adjustment	10 levels	
	Contrast ratio adjustment	10 levels	
	Image detail mode	2 types and 5 levels	
	Photo taking	Supported	
	Camera shooting	Supported	
	Picture in pictures	Supported	
	WIFI	Supported	
	Hotspot tracking	Supported	
	Language	Chinese and English	
	Standby	Supported	
	Laser lamp	Supported	
	Lighting lamp	Supported	
Detection distance	Infrared objective lens	25mm objective lens	35mm objective lens
	Character	≤1667m	≤2333m
	Boar	≤1471m	≤2059m
	Vehicles	≤2501m	≤3500m
Identification distance	Character	≤416m	≤583m
	Boar	≤367m	≤515m
	Vehicles	≤626m	≤875m
Storage	Built-in memory	Standard configuration 16G (supporting 16G/32G/64G/128G)	
	Image format	JPG	
	Video format	MP4	

Interface	CVBS output	Supported, SMA base interface	
	USB interface	TYPE-C exporting pictures, videos and battery charging function	
Power supply	Non removable rechargeable lithium battery	18650/3500mAh	
	Overall power supply	≤2W	
	Endurance time	≤5.5 hours	
Operating/ Storage environment	Operating temperature	-20℃ ~ +50℃	
	Storage temperature	-30℃ ~ +60℃	
	Impact resistance	≤30g	
	Protection level	≤IP65	
Overall dimension/ Weight	Overall dimension	187*67*67mm	198*67*67mm
	Weight	503g±5g	513g±5g

Description of Menu Operation

1，Main menu: Long press the menu button for 2 seconds to enter the main menu, press the Up button or Down button to select, press the menu button for confirmation, press theshooting button to quit the main menu, or if there is nooperation within 30 seconds, quit the main menu.

2，Main menu interface: color palette, hotspot tracking, magnification, brightness, contrast, detail mode, WiFi, picture in picture, pictures and system.

3，Color palette: 6 color palettes, white heat, black heat, rainbow, hot metal, yellow saturation and bird watching mode, with the default value as white heat. Press the Up button or Down button for selection, and press the menu button for confirmation, and return to the main menu.

4，Hot spot tracing: on, off, default value as off. Press the Up button or Down button to select on or off, and press the menu button for confirmation and return to the main menu,

5，Brightness: 10 levels (0-9), with the default value as 4 levels. Press the Up button or Down button to select，press the menu button for confirmation and return to the main menu，and the corresponding brightness icon displays.

6，Contrast: 10 levels (0-9), with the default value as 6 levels. Press the Up button or Down button to select，press the menu button for confirmation and return to the main menu，and the corresponding contrast icon displays.

7，Detail mode: (Edge and detail) with the default value as the edge mode, 3 levels, image detail mode, only one mode can be displayed, and two modes cannot be displayed simultaneously.

a. Edge: Press the Up button or Down button to select edges, press the menu button to conform entering the second layer of menu (0, 1, 2, 3, 4). Press Up button or Down button for selection and press the Menu button for confirmation and return to the previous menu，and press Shooting button to return to the main menu.

b. Detail: Press the Up button or Down button to select details, press the menu button to conform entering the second layer of menu (0, 1, 2, 3, 4). Press the Up button or Down button for selection，and press the Menu button for

confirmation and return to the previous menu，and press the shooting button to return to the main menu.

8，WIFI: on, off, default value as off. Press the Up button or Down button to select on or off, press the menu button for confirmation and return to the main menu, and corresponding WIFI icon displays.

9，Picture in picture: on, off, default value as off. Press the Up button or Down button to select on or off, and press the menu button for confirmation and return to the main menu.

10，Picture: (picture and video) default value as picture

a. Press the Up button or Down button to select pictures, press the menu button to confirm entering the picture list, press the Up button or Down button for selection，shortly press the shooting button to return to the previous menu, long press the shooting button for 2 seconds to delete the corresponding picture. Press the menu button to enter the corresponding picture browsing, and press the menu button again to return to the picture list.

b. Press the Up button or Down button to select video, press the menu button to confirm entering the video list，press the Up button or Down button for selection，shortly press the shooting button to return to the previous menu，long

press the shooting button for 2 seconds to delete the corresponding video. Press the menu button to enter the corresponding video browsing, and press the menu button again to return to the video list.

11. System: Menu (shutter correction, laser, LED, video output, status icon, language, date, reset and about)

a. Press the Up button or Down button for selection, press the menu button for confirmation, and press the shooting button to return to the previous menu.

b. Shutter correction: (Automatic shutter, manual shutter, semi-automatic shutter) default value as semi-automatic shutter and press the Up button or Down button for selection, and press the Menu button for confirmation and return to the previous menu.

c. Laser: (on, off) default value as off

Press the Up button or Down button for selection, and press the Menu button for confirmation and return to the previous menu.

d. LED: (on, off) default value as off

Press the Up button or Down button for selection, and press the Menu button for confirmation and return to the previous menu.

e. Video output: (on, off) default value as off

Press the Up button or Down button for selection, and press the Menu button for confirmation and return to the previous menu.

f. Status icon: (on, off) default value as on

Press the Up button or Down button for selection, and press the Menu button for confirmation and return to the previous menu.

g. Language: (Chinese, English) default value as Chinese

Press the Up button or Down button for selection, and press the Menu button for confirmation and return to the previous menu.
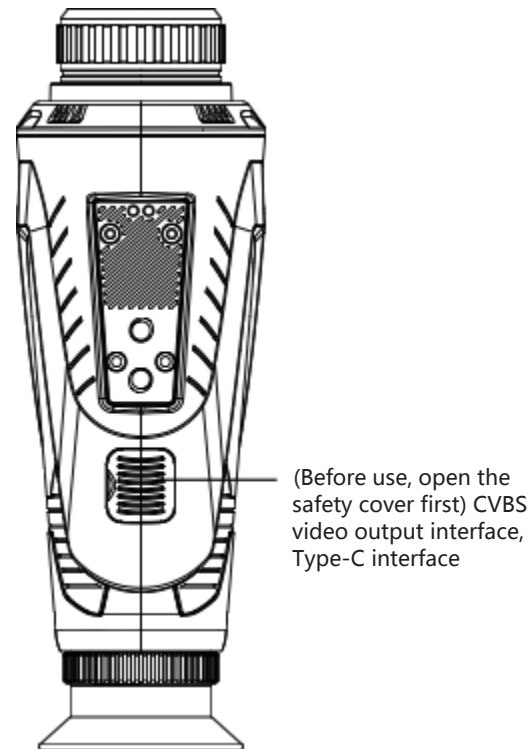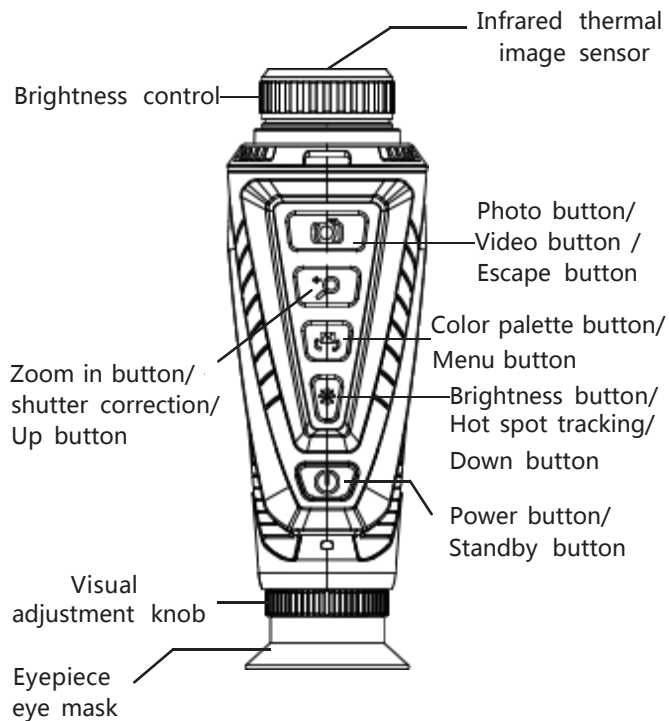
h. Date: (year, month, date, hour, minute, second) default value as no change in parameters

Press the Up button or Down button to select year, month, date, hour, minute and second, press the menu button for confirmation, press the shooting button to return to the previous menu, press the Up button or Down button to select corresponding parameters, and press the Menu button for confirmation and return to the previous menu.

i.Reset (on, off) default value as off

Press the Up button or Down button for selection, and all parameters restore to the default value. Press the Menu button for confirmation and return to the previous menu.

Product Stuctures

Infrared thermal image sensor

Brightness control

Photo button/
Video button /
Escape button

Color palette button/
Menu button

Zoom in button/
shutter correction/
Up button

Brightness button/
Hot spot tracking/
Down button

Power button/
Standby button

Visual
adjustment knob

Eyepiece
eye mask

(Before use, open the
safety cover first) CVBS
video output interface,
Type-C interface

Button Function Operation

1. Power supply (standby): Long press the power supply key for 3 seconds to switch the machine on and off, short press the power key to enter standby, and then short press the power key to exit standby, power on or standby, and the power indicator is on

2. Shooting (Viedo recording): Shortly press the shooting button for photographing function, the photographing icon flashes once, there is the photographing status. If the magnification is X2, then press X2 for picture storage. If the magnification is X4, press X4 for picture storage, long press the shooting button for 2 seconds for video recording, the video icon flashes, and long press the shooting button for 2 seconds for video recording to end and exit. The video icon is off, and the recording status is not affected by the magnification.

3. Zoom in (Up button): Shortly press the zoom in button, X1, X2 and X4 switch, and the corresponding zoom in icon will be displayed. In the manual or semi-automatic state, long press the zoom in button for 2 seconds to manually correct the shutter once.

4. Color palette (menu): Color palette (menu): Shortly press the palette button, white heat, black heat, rainbow, hot metal, yellow saturation, bird watching mode and color palette switch, and long press the color palette button for 2 seconds to enter the menu mode.

5. Brightness (Down button): Shortly press the brightness button, and brightness 10 levels are switched, and corresponding brightness icon is displayed. Long press the button for 2 seconds to turn on or off the hotspot tracking function.

Application of Color Palettes

The palette menu can change the pseudo color of infrared thermal image, and provide 6 color palettes: rainbow, hot metal, white heat, black heat, yellow saturation and bird watching mode.
The selection of suitable color palette can display details of the target. For rainbow, hot metal color palette focuses on the display of colors, so it is very suitable to high heat contrast used to improve the color contrast between high temperature and low temperature. Then the color palette of white heat provides uniform linear colors.

Image effect shot by six color palettes:

Rainbow

Hot metal

Black heat

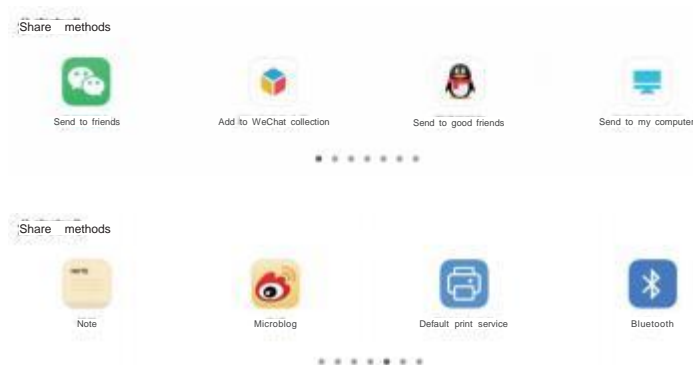White heat

Yellow saturation

Bird watching mode

WiFi App application

1．Search and install "thermal Video " through the application store on the mobile phone.

2.Open the WIFI function in the menu setting for RXY500 machine.

3.Find the WIFI name "PFV01_WIFI" on the mobile phone and connect WIFI.

4．Open the App and enter APP picture and click START key on the picture to enter APP mode. At the moment, the picture of the mobile phone should display with the machine picture synchronously.

5.In the mobile phone picture, click " " to return to APP picture; click " " to take photos and save it in the photo files. Click " " to start the video recording and click " "again to stop video recording. The video is saved in the video file.

6.Click " "to enter " " and " ". Click " " to enter the photo file list. Click the corresponding picture to preview the picture or delete it. At the picture preview state, you may share the picture to Wechat, QQ, Email, Tiktok, etc. The share method is supported by corresponding functions of your mobile phone.

7.Click " " to enter " " list. Click the corresponding video to play or delete it. At the state of video play, you may share the video to Wechat, QQ, Email, Tiktok, etc. The share method is supported by corresponding function of your mobile phone.

Share methods

Send to friends　Add to WeChat collection　Send to good friends　Send to my computer

Share methods

Note　Microblog　Default print service　Bluetooth

Product After-Sale Service

Dear our customer,

Thank you for having purchased our products. The warranty period of this product is from the date of sale.

During the warranty period, the product shall be installed and used in accordance with the operation instructions under normal environment and conditions. If the defective product is caused by raw materials and processing process, you will be entitled to free maintenance service with the warranty certificate. You are kindly requested to keep the warranty certificate properly, for there will be no reissue of it in the case of loss thereof.

To avoid problems in the process of application, we recommend that you be familiar with the product manual before using the product.

Under any of the following circumstances, the product will not be covered by the warranty:

1. The original of valid warranty certificate fails to be presented;

2. Damage caused by product installation not meeting product requirements and relevant specifications;

3. The user's improper use of the product, improper storage, unauthorized disassembly, unauthorized maintenance and other reasons.

4. Damaged caused by natural disasters (such as earthquake, flood or lightning strike), or external disasters (such as fire or house collapse).

5.The product is beyond the warranty period.

Cautions:

1. In case of any product failure, the product will be inspected and repaired or replaced with new or good products as the case may be;

2. For any products beyond the warranty period, it will be decided whether to repair or replace parts and components after product inspection, and charge related fees for various maintenance and replacement services.

This device complies with part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.Any changes or modifications not expressly approved by the party responsible for compliancecould void the user's authority to operate the equipment.

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.

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.

FCC ID: 2A87O-VOTPTI