PARD

Pantera eX 640

Thermal Imaging Device

User Manual

Important Reminder

1. All PARD products are exclusively designed for civilian use and strictly prohibited for any military purposes.

2. All PARD products are not authorized for export to, including but not limited to Russia, Belarus, Palestine, Israel, Sudan, South Sudan, and other conflictzones.

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To Users

Thank you for your support for choosing PARD device. Please read this manual carefully before using the device for the first time. Please follow the instructions in this manual to avoid any damage caused by improper use.

This manual provides step-by-step instructions on how to use the digital device and is intended for your reference only.

Please note that PARD reserves the right to update this manual without prior individual notifications. For the latest information and updates, we recommend you to visit our official website.

Precautions

- **Device Storage:** Store the device and battery in a dry and safe place.
- **Handling and Transportation:** Exercise caution and handle the device with care during use and transportation. It is recommended to use the original packaging for transportation.
- **Light Exposure:** Do not use the device to focus directly on strong light sources such as the sun. Doing so may damage the sensor and void the warranty.
- **Lens Protection:** Avoid scratches and damage to the lens caused by oil or chemical contamination. Keep the lens cap on when the device is not in use.
- **Environmental Considerations:** Store the device in a cool, dry, and well-ventilated environment, free from strong electromagnetic fields. The storage temperature should not be lower than -30°C (-22°F) or higher than 55°C (131°F). Charge the device only within the temperature range of 0°C to 45°C (32°F to 113°F).
- **Device Disassembly and Support:** Do not disassemble the device without authorization. If you encounter any problems, please contact our after-sales support team. Unauthorized disassembly will void the warranty.
- **Attention:** All PARD devices require an export license when shipped outside of your country.

Package Contents

No.	Contents	Qty.
1	Thermal Imaging Device	1
2	3.7V 18650 Rechargeable Lithium-Ion Battery	1
3	Protective Case	1
4	Type-C Cable	1
5	30mm Mount Rings	2
6	Allen Wrench	2
7	Lens Cleaner	2
8	Rubber Eye Cup	1
9	Cloth Bag	1
10	CR3	1
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Description

Experience the ultimate clarity with the Pantera eX 640 — equipped with an ultra-sensitive NETD≤14mK sensor and an upgraded 2560×2560 high-resolution circular display, delivering exceptionally sharp, richly detailed thermal images with enhanced contrast and depth.

The side focus knob ensures fast, ergonomic adjustment with minimal movement, mirroring the operation of a daytime scope. The magnetic lens cap and enlarged button design enhance handling comfort, even when wearing gloves. The dual battery system — with a built-in 21700 and a removable 18650 — guarantees long-lasting, reliable power for extended field use.

Pantera eX 640 — engineered for effortless operation and exceptional hunting experience.

Key Features

- NETD≤14mK
- 2560*2560 Circular Screen
- Side Focus Adjustment
- Dual Batteries
- Magnetic Lens Cap
- Larger Button Design
- LRF in the Lens
- 6 Image Modes
- 3 Scene Modes
- WiFi
- IP67 Rating
- 6000J Recoil Resistance

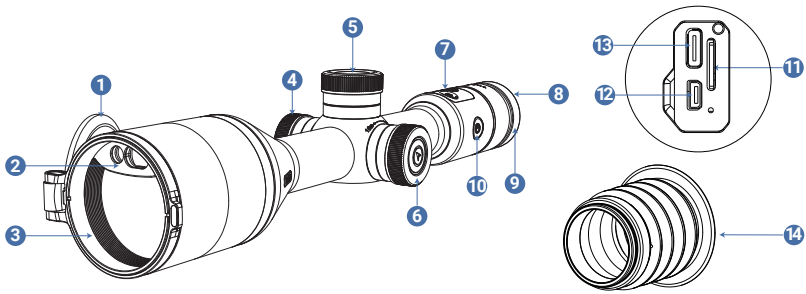
Specifications

Model		Pantera eX 640
Classification		Thermal Imaging Scope
Sensor		
Type		Uncooled Vox(vanadium oxide)
Resolution(pixel)		640*512
Pixel Size(μm)		12*12
NETD		≤14mK(0.014℃)
Frame Rate(Hz)		50
Detection Distance(m)		2600
Image Engine		PARD IREA
Objective lens(mm)		50
Optical Magnification(x)		3.7
Digital Zoom(x)		2/4/6/8
Field of view(°)	Horizontal	7
	Vertical	7
	Diagonal	11.2
Field of view (m @100m)	Horizontal	12.3
	Vertical	12.3
E ye Relief(mm)		60
Diopter Adjustment(D)		-5~3

Display	
Type	OLED
Resolution(pixel)	2560*2560
Scene Mode	City/Rain/Forest
Image Mode	WT-HOT/BK-HOT/H-Light/RD-HOT/IN-HOT/SKY
Main function	
LRF Detection Range(m)	1000
PIP	Yes
Gyroscope	Yes
Hot track	Yes
Recoil-activated recording	Yes
E-compass	Yes
Shutter	Mechanical shutter
Microphone	Yes
Firmware Upgrade	Yes
Storage(GB)	Micro SD card(128 GB,Max)
Connections	
USB Type-C	Yes
HDMI Output	Yes
WiFi	Yes
Supported Apps	PardVision2
Power Supply	
Battery type	Lithium Ion removable 18650*1+built-in 21700*1
Output Voltage(V)	3.7
Operating Time(h)	≤8
External Power Supply Type	Type-C
Environmental characteristic	
Degree of Protection	IP67
Operating Temp(°C/°F)	-30 ~ +55 / -22 ~ +131
Recoil Resistance(J)	6000

Material	
Housing	Aluminum Alloy
Objective lens	All-glass multi-coated lens
Measurement	
Product dimension(L x W x H, mm)	370*88*72
N.W/pcs(with battery, g)	1040

Components



No.	Name	No.	Name
1	Lens Cap	8	Eyepiece Lens
2	LRF	9	Diopter Adjustment Ring
3	Objective Lens	10	Power/Sleep Button
4	Battery Cap	11	Micro SD Card Slot
5	Control Knob	12	HDMI Port
6	Objective Lens Focus Wheel	13	Type-C Charging Port
7	Keypad	14	Rubber Eye Cup

Installation

1. Unboxing

Before using this device, please do the following:

1. Open the box and remove the device.
2. Check to ensure that the package contents listed above are all included in the box.
3. Check the device for any damage to the display, body, lens, buttons, etc.
4. Make sure that the objective lens is clean & functioning properly.

Note: If any accessories are missing or damaged, please contact our after sales service.

2. Battery

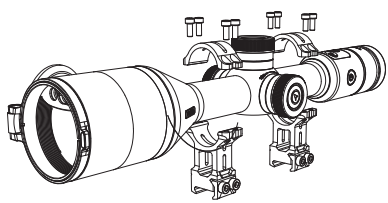
The battery installation steps are as follows:

1. Rotate the battery cap and remove the battery.
2. Remove the insulating tape.
3. Insert the battery, ensuring the correct positioning of the its positive and negative terminals and tighten the battery cap.
4. To turn on the device, press and hold the power button for about 3 seconds. (When the PARD Logo appears on the screen, the device is ready for use.)

3. Mount

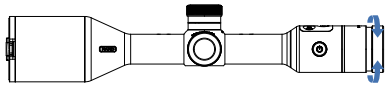
To ensure the best user experience, we highly recommend using our original mount included in the product packaging.

1. Take out the device, two scope rings and an Allen wrench out of the box.
2. Use the Allen wrench to unscrew the ring tops, and loosen the screws on the bottom half of the mount.
3. Attach the bottom half of your rings to the rail.
4. Tighten the screw on the rear mount to your rail to the desired position.
5. Place the scope in the scope rings.The scope should slide with minimum resistance.
6. Install the ring tops and tighten down the screws and make sure the scope stays level.



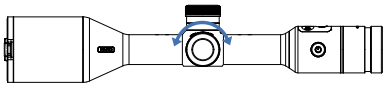
4. Diopter Focusing

Rotate the diopter focusing ring until you can see the screen clearly.



5. Objective Len Focusing

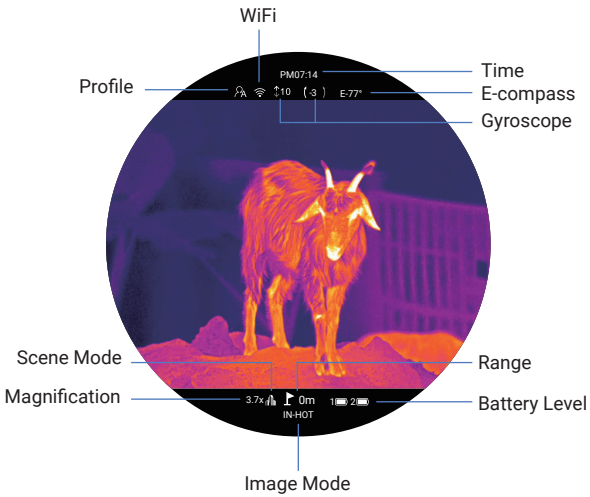
Aim at the target you want to see, and rotate the focus wheel of the objective lens until you can see the target image clearly.



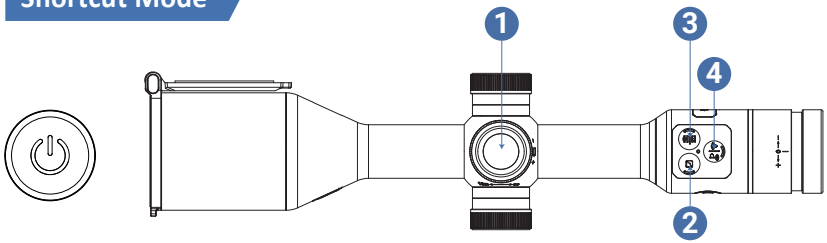
6. Compass Calibration

Users need to tilt and move the device in a figure 8 motion until the compass is calibrated.

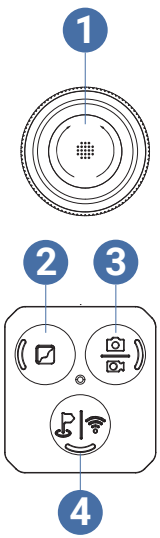
Operation Instruction



Shortcut Mode



Keypad	Rotate counterclockwise	Rotate clockwise	-
Knob (Key1)	Down/-/Zoom out	Up/+/Zoom	-
	Single press	**Press and hold**	**Double press**
	Quick Menu/Ok key	Full Menu	Turn on/off PIP
	Single press	**Press and hold**	**Double press**
Key 2	Switch Image Modes	Switch Scene Modes	-
Key 3	Take Photos	Record/Save Video	Files
Key 4	Back/LRF (optional)	WiFi	Shutter Correction
Power Key	Sleep Mode	Power on/off	-



Explanation:

Key 1

1. Single press:

① **Home screen mode:** press [Key 1] to enter the short menu.

② **Menu mode:** press [Key 1] to confirm the relevant operation.

2. Press and Hold:

Home screen mode: press and hold [Key 1] to enter the full menu.

3. Double press:

Home screen mode: double press [Key 1] to turn on/off the picture-in-picture function.

4. Rotate counterclockwise:

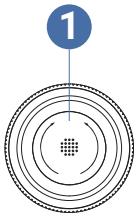
① **Home screen mode:** rotate the [Key 1] counterclockwise to zoom out;

② **Menu mode:** rotate the [Key 1] counterclockwise to scroll down between menu options. In the parameter setting interface under the sub menu, rotate the [Key 1] counterclockwise to decrease the values.

5. Rotate clockwise:

① **Home screen mode:** rotate the [Key 1] clockwise to zoom in;

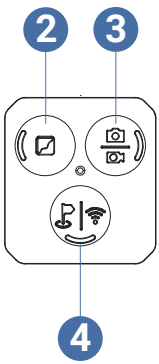
② **Menu mode:** Rotate the [Key 1] clockwise in the menu option interface to switch menu options upward. In the parameter setting interface under the sub menu, rotate the [Key 1] clockwise to increase the values.



Key 2

1. Single press:

Menu mode: press [Key 2] to switch between image mode: WT-HOT/BK-HOT/H-Light/RD-HOT/IN-HOT/SKY.



2. Press and hold:

Home screen mode: press and hold the [Key 2] to switch between city/forest/rain scene modes.

Key 3

1. Single press:

Home screen mode: press [Key 3] to take a photo.

2. Press and hold:

Home screen mode: press and hold the [Key 3] to record a video. Press and hold [Key 3] again to save the video and exit.

3. Double press:

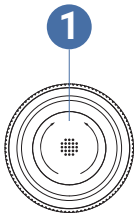
Home screen mode: double press [Key 3] to enable the playback function. After entering this interface, the video and picture files in the memory card will be displayed.

a) rotate the [Key 1] to switch between files.
b) press [Key 1] to play/pause the saved videos.
c) when playing videos, rotate the [Key 1] to fast forward or rewind 2x/4x/8x times.
d) press [Key 4] to access the following settings:

1) Delete:
- Delete Current
- Delete All

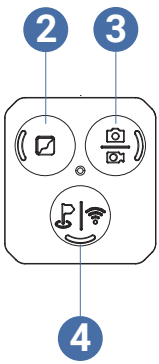
2) File Protection:
- Lock Current
- Unlock Current
- Lock All
- Unlock All

3) Slide Show:
- 2 seconds
- 5 seconds
- 8 seconds



e) press [Key 4] again to return to the files interface, then press and hold [Key 4] to return to the home screen.

Key 4



1.Single press:

① **Home screen mode:**
a) Press [Key4] to activate range detection（For LRF version, the distance is measured and displayed automatically. For non-LRF version: “0m/0yds” is shown; rotate [Key 1] to manually input distance).
b) Press [Key 4] again to enable ballistic indicator (if ballistic calculation is off, the indicator stays off).
c) Press [Key 4] a third time to turn off the ballistic indicator; (when ballistic calculation is on).
② **Menu mode:** press [Key 4] to return to the previous menu.

2. Press and hold:

Home screen mode: press and hold the [Key 4] to turn on/off WiFi.

3. Double press:

Home screen mode: double press [Key 4] to start the shutter correction function.

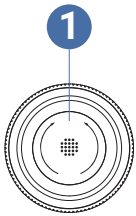
Power Key:

1. Single press:

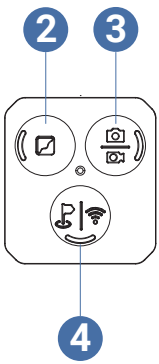
Single press [Power Key] to put device into sleep mode when the device is on. Single press [Power Key] again to wake up the device from sleep mode.

2. Long press:

Press and hold [Power Key] to turn on / off the device.



Menu Mode



Home screen mode:

1. Single press [Key 1] to enter the short menu. (The short menu has only 7 options.)
2. Long press [Key 1] to enter the full menu. There are 25 options available.

1. Image Setting

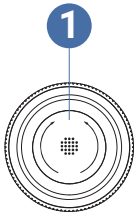
Users can adjust the image contrast, brightness and mode under this setting. Up to five profiles can be saved for different usage scenarios.

- Rotate [Key 1] to move the cursor to the image setting option, press [Key 1] to enter the sub-menu.
- Press [Key 1] to switch between contrast/brightness/mode options, and rotate [Key 1] to adjust the option value.

- Press and hold [Key 1] to save and return to the previous page. Upon the next startup, the device will maintain the saved image settings.

2. Mode Selection Collection

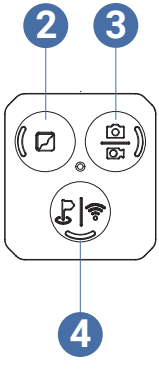
Users can freely select the desired image mode. Once the modes is selected, only the chosen mode will cycle through on the home screen mode by shortcut keys.



- Rotate [Key 1] to move the cursor to the mode selection collection option, press [Key 1] to enter the sub-menu.
- Rotate [Key 1] to switch among WT-HOT, SKY, H-Light, BK-HOT, RD-HOT, IN-HOT. (Blue indicates the mode is available for cycling on home screen.)
- Press [Key 1] to select or deselect the image mode.
- Press [Key 4] to save and return to the previous page.

3. Display Brightness

Users can adjust the display brightness of the screen to adapt to different surroundings.



- Rotate [Key 1] to move the cursor to the display brightness option, press [Key 1] to enter the sub-menu.
- Rotate [Key 1] to move the cursor to select “level 0”/“level 1”/“level 2”/ “level 3”/“level 4”/“level 5”/“level 6”/“level 7” options.
- Press [Key 1] to save and return to the previous page.

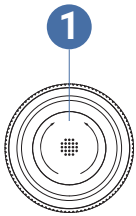
4. Range Unit Selection

Users can switch between "meter" or "yard" and the range unit can be updated instantly to meet the user's preference.

- Rotate [Key 1] to move the cursor to the range unit selection option, and press [Key 1] to enter the sub-menu.
- Rotate [Key 1] to choose between "meter" or "yard".
- Press [Key 1] to save and return to the previous page.

5. Status Bar Display Settings

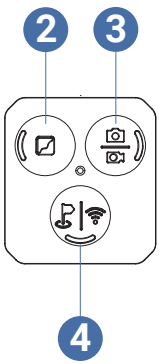
Users can customize what icon to display on the home screen. Up to five profiles can be saved.



- Rotate [Key 1] to move the cursor to the status bar display and press [Key 1] to enter the sub-menu.
- Single press [Key 1] to move the cursor among options (Data/Show all/Hide all/Time/WiFi/Gyroscope/Compass/ Range/Scene/Mode).
- Rotate [Key 1] to set whether to display the icon on the home screen. (The blue box indicates that the icon is displayed on the home screen.)
- Long press [Key 1] to save and return to the previous page.

6. Gyroscope

This function measures the orientation of the device so that the yaw and pitch angles of the device can be displayed and calibrated.



- Rotate [Key 1] to move the cursor to the gyroscope. Single press [Key 1] to enter it.
- Single pres [Key 1] to select "Show" or "Hide" the yaw and pitch angle of the device on the home screen.
- If selecting "Show", then rotate [Key 1] to move the cursor between "gyroscope calibration" or "compass calibration", and single press [Key 1] to choose the desired option, then operate as prompts.

Note:

1. If user choose "gyroscope calibration", the device will calibrate automatically and then exit.
2. If user choose "compass calibration", operate as prompts, then long press [Key 1] to exit.

7. Scene Mode

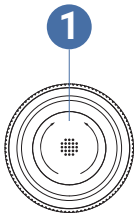
There are three built-in scene modes, "City", "Forest" and "Rain". Users can choose any of the available scenes to achieve the best image display effect.

- Rotate [Key 1] to move the cursor to the scene mode option, press [Key 1] to enter the sub-menu.
- Rotate [Key 1] to move the cursor to select "City", "Forest" or "Rain" mode.
- Press [Key 1] to save and return to the previous page.

8. Picture in Picture

The PIP mode displays a 2x magnified center area in the top of the screen, allowing you to see magnified target details without losing the field of view.

- Rotate [Key 1] to move the cursor to the PIP setting option, and press [Key 1] to enter the sub-menu.
- Rotate [Key 1] to move the cursor to select “PIP OFF” or “PIP ON”.
- Press [Key 1] to save and return to the previous page.



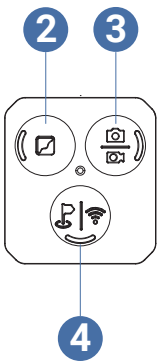
9. Shutter Mode

Shutter mode means users can customize auto shutter, manual shutter or smart shutter. Whatever which one, it all aims to keep the best imaging effect.

Auto: The system continuously monitors the temperature of the detector chip. When the temperature change exceeds the system’s set limit, the shutter will close and freeze the image for about 1 second for self-calibration operation.

Manual: The device won’t perform auto shutter correction. User need to double press [Key 4] to perform shutter correction.

Smart shutter: The device will perform shutter correction when the device is stationary or not operated for a long time.



- Rotate [Key 1] to move the cursor to the shutter mode option, and press [Key 1] to enter the sub-menu.
- Rotate [Key 1] to move the cursor to select “Auto”, “Manual” or ”Smart”.
- Press [Key 1] to save the option and return to the previous page.

10. Hot Track

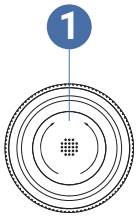
The device can detect and display the highest temperature point on the screen, and automatically track this target heat source.

- Rotate [Key 1] to move the cursor to the hot track option, and press [Key 1] to enter the sub-menu.
- Rotate [Key 1] to move the cursor to select “Off” or “On”.
- Press [Key 1] to save and return to the previous page.

11. Self-activated Recording

Recoil-activated recording provides an ongoing 20-second loop, when recoil is detected, the video is automatically moved to the Micro SD card.

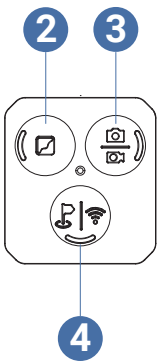
- Rotate [Key 1] to move the cursor to the self-activated recording option, and press [Key 1] to enter the sub-menu.
- Single press [Key 1] to select “On” or ”Off”. After selecting “On”, rotate [Key 1] to move the cursor among impact sensitivity: "Low", "Medium" or "High", then single press [Key 1] to confirm the option.
- Long press [Key 1] to save and return to the previous page.



12. Auto Power Off

After selecting your preferred time duration, the device will sense the last point of operation before beginning the shutdown. Auto power off will start after the device has been idle then it automatically triggers the auto power off command.

- Rotate [Key 1] to move the cursor to the auto power off option, and press [Key 1] to enter the sub-menu.
- Single press [Key 1] to select “On” or ”Off”. After selecting “On”, rotate [Key 1] to move the cursor among “1 Min”, “10 Min” or “30 Min”, then single press [Key 1] to confirm the option.
- Long press [Key 1] to save, and return to the previous page.



13. Video Recording Settings

The Video Recording Settings feature allows users to customize their recording preferences.

- Rotate [Key 1] to move the cursor to the video recording settings option, and press [Key 1] to enter the sub-menu.
- Single press [Key 1] to select “On” or ”Off”. After selecting “On”, rotate [Key 1] to move the cursor among "All time", "1 Min", "10 Min", "30 Min", “Audio”, then single press [Key 1] to confirm the option.
- Long press [Key 1] to save and return to the previous page.

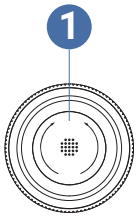
Note:

(1) “On”and "Off"means whether to record video after the next startup or not.

(2) "All time"means the device will record video all the time after the next startup if you don't stop recording (Press and hold [Key 3] to save the video and stop recording).

(3) Loop time means users can customize the device's video recording time to 1 minute or 10 minutes or 30 minutes.

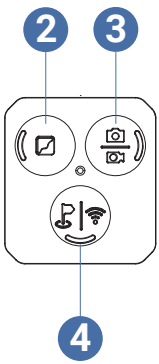
(4) “Audio” means users can customize whether to record audio when recording video.



14. Date Stamp

Users can set whether to display the time stamp in the lower right corner of photos and videos taken.

- Rotate [Key 1] to move the cursor to the date stamp option, and press [Key 1] to enter the sub-menu.
- Rotate [Key 1] to move the cursor to select “Off” or “On” options. After selection, press [Key 1] to save and return to the previous page.



15. WiFi

Through the WiFi connection, you can use your phone, PC or tablet as an external viewfinder enabling users to synchronously see the photos and videos on a larger screen.

- Rotate [Key 1] to move the cursor to the WiFi option, and press [Key 1] to enter the sub-menu.
- Rotate [Key 1] to move the cursor to select “On” or “Off” option.
- Press [Key 1] to save the option and return to the previous page.

Steps to connect to your mobile device:

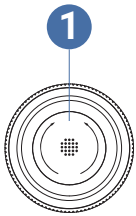
- Download “PardVision2” from the Apple App Store or the Google Play Store.
- Turn on the WiFi on your device and on your mobile device.
- Search the WiFi on your mobile device (the device WiFi network is a string of characters starting with PARD, which is a unique string of numbers). Please enter the password: 12345678 to connect.
- Enter the application to operate and use.

16. Language

Users can choose their preferred language.

- Rotate [Key 1] to move the cursor to the language option, press [Key 1] to enter the sub-menu.
- Rotate [Key 1] to move the cursor to the desired language.
- Press [Key 1] to save the option and return to the previous page.

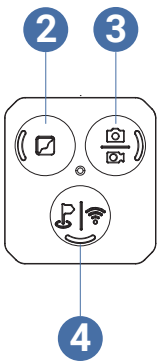
17. Date/Time



Users can set the system date and time of the device.

- Rotate [Key 1] to move the cursor to the date/time setting option, and press [Key 1] to enter the sub-menu.
- Rotate [Key 1] to adjust the setting date and time value, press [Key 1] to switch options.
- Long press [Key 1] to save and return to the previous page.

18. Format TF card



If users format the Micro SD Card, all data on the card will be permanently deleted and cannot be recovered. **Please operate with caution!**

- Rotate [Key 1] to move the cursor to the format TF card option, and press [Key 1] to enter the sub-menu.
- Rotate [Key 1] to move the cursor to select "Cancel" or "OK" option.
- Press [Key 1] to save and return to the previous page.

19. Blind Pixel Compensation

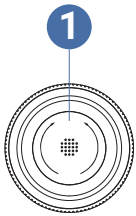
The blind pixel compensation algorithm enables effective compensation for blind spots that no longer respond to light and also reduces image distortion.

- Rotate [Key 1] to move the cursor to the blind pixel compensation option, press [Key 1] to enter. You will see an important reminder:
  Please put on lens cap;
  Long press the menu key to execute;
  Short press the ok key to exit;
- Press [Key 1] to exit. Press and hold [Key 4] to start the blind pixel compensation. After the process is completed, you can rotate [Key 1] to move the cursor to backup: “Yes” or “NO” .

20. ICON Display time

Users can set up menu's icon display time.

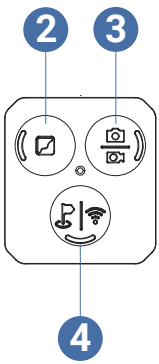
- Rotate [Key 1] to move the cursor to the icon display option, press [Key 1] to enter the sub-menu.
- Rotate [Key 1] to move the cursor to select the icon display duration "Off", "30 SEC", "1 Min", "3 Min", "5 Min" or "10 Min".
- Press [Key 1] to save and return to the previous page.



21. Default Setting

If users decide to reset the device, it will restore the device to the factory default settings and all of the user data and personalized settings will be deleted. **Please operate with caution!**

- Rotate [Key 1] to move the cursor to the default setting option, press [Key 1] to enter the sub-menu.
- Rotate [Key 1] to move the cursor to select "Cancel" or "OK" option.
- Press [Key 1] to confirm and return to the previous page.

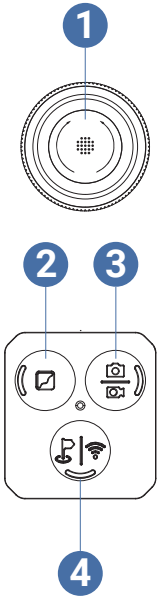


22. Firmware Upgrade

System firmware can be updated to maintain an optimized current version.

- Rotate the [Key 1] to move the cursor to the firmware upgrade option, and press [Key 1] to enter the sub-menu. You will see an important reminder:
  Upgrading firmware may cause damage to the equipment, please operate with caution!
- Press and hold [Key 1] to confirm and short press [Key 4] to exit and return to the previous page.

Note: When performing this operation, please load the device with a fully charged battery and type-C power supply. Powering off the device during the firmware update process may cause damage to the device components. **Please operate with caution.**



23. Version

This function displays the device's version.

- Rotate the [Key 1] to move the cursor to the version option, press [Key 1] to enter the sub-menu to view the version.
- Press [Key 1] again to return to the previous page.

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.

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