

**PARD**



**User Manual**

**Thermal Imaging  
Predator Series**



# 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 conflict zones.

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## INTRODUCTION

Thank you for your continued support and for choosing PARD Predator Series thermal imaging camera. 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 and to ensure that your device operates properly.

After reading, please keep this manual in a safe place. For future reference, this manual provides step-by-step instructions on how to use your 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. Additionally, PARD reserves the final right of interpretation of this manual.

## PRECAUTIONS

- Please remove the insulating tape on the battery before first use. It is recommended to use a fully charged lithium-ion battery with a rated voltage of 3.7V.
- Please turn off the device and remove the battery when it's not in use for more than 10 days, and store the device & battery in a dry and safe place.
- Be extra cautious and handle the device with care during use or transportation. It is recommended to use the original packaging during transportation.
- Do not use the device to focus directly on strong sources of light such as the sun or electric welding. The detector may be damaged and it will void the warranty.
- Avoid lens scratches and damage caused by oil or chemical contamination of the lens. Keep the lens cap on when not in use.
- The device should be placed in a cool, dry, and ventilated environment without strong electromagnetic fields, and the storage environment temperature should not be lower than ( $-30^{\circ}\text{C}$  /  $-22^{\circ}\text{F}$ ) or higher than ( $55^{\circ}\text{C}$  /  $131^{\circ}\text{F}$ ).
- Do not disassemble the device without authorization. If you encounter any problems, please contact our after-sales team and report them on our official website. Failure to do so will render the warranty service null and void.
- **Attention!** All PARD night-vision and thermal imaging devices require a license when exported to outside your country.

## PACKAGE CONTENTS

Items	Contents	Quantity
1	Thermal Imaging Device	1
2	3.7V 18650 Rechargeable Lithium-Ion Battery	1
3	Type-C Cable	1
4	Allen Wrench	2
5	Cloth Bag	1
6	User's Manual	1
7	After Sales Card	1



## DESCRIPTION & KEY FEATURES

Dive into unparalleled shooting experiences with our Predator SERIES, a lightweight compact clip-on thermal imaging camera that effortlessly integrates with day scopes for seamless day and night shooting while retaining familiar ergonomics. Equipped with a NETD $\leq$ 20mK sensor, 1000m laser range finder, and up to 640x512 high resolution, which can detect smaller temperature differences, making it more effective for detecting subtle heat signatures, distinguishing between objects, and providing clearer and more detailed thermal images.

Predator features a multi-directional toggle button for easy touch and operation, even with gloves on and in the nighttime, enhancing usability and convenience in chilly environments. Additionally, the upgraded 18650 rechargeable battery can be easily replaced without removing the device, ensuring a convenient and uninterrupted hunting without going back to zero again. Compact design for and balanced mounting on rifles. Quick-detach adapter with M52x0.75 thread for seamless attachment and removal from daytime optical scopes.

Take your hunting experience to unparalleled heights with the compact Predator Series, designed for perfect integration and expansion with day scopes.

## Key features

- Compact body, compact design
- Multi-directional toggle button
- Ultra-sensitive sensor LWIR
- Quick conversion of optical scope to thermal imaging scope
- Recoil-activated recording
- Photo & Video recording
- Infrared Image Enhancement Algorithm (IREA)
- 1000m/1200yds LRF
- Firmware update
- WiFi
- IP67 rating
- 18650 Lithium-Ion rechargeable battery

## SPECIFICATIONS

Model	Predator 480	Predator 640
<b>Classification</b>	Thermal Imaging Front Clip-on	
<b>Sensor</b>		
<b>Type</b>	Uncooled Vox(vanadium oxide)	
<b>Resolution(pixel)</b>	480*360	640*512
<b>Pixel Size(μm)</b>	12*12	12*12
<b>NETD</b>	≤20mK(0.020℃)	≤20mK(0.020℃)
<b>Frame Rate(Hz)</b>	50	50
<b>Detection Distance(m)</b>	1400	2100
<b>Image Engine</b>	PARD IREA	PARD IREA
<b>Objective lens(mm)</b>	35	45

<b>Optical Magnification(x)</b>		1	1
<b>Digital Zoom(x)</b>		N/A	N/A
<b>Field of View (HxV)</b>	Horizontal	9.4°	11°
	Vertical	7.1°	8.8°
	Diagonal	11.8°	14°
<b>Display</b>			
<b>Type</b>	OLED		
<b>Resolution(pixel)</b>	1920*1080		
<b>Scene Mode</b>	City/Rain/Forest		
<b>Image Mode</b>	WT-HOT/BK-HOT/EDGE/RD-HOT/IN-HOT/SKY		
<b>Photo / Video</b>			
<b>Photo Resolution(pixel)</b>	1440*1080		
<b>Photo Format</b>	.JPG		
<b>Video Resolution(pixel)</b>	1440*1080		
<b>Video Format</b>	.mp4		
<b>Storage(GB)</b>	Micro SD card(128 GB,Max)		
<b>Main Function</b>			
<b>LRF Detection Range(yd/m)</b>	1200/1000		
<b>Gyroscope</b>	Yes		

<b>Loop Recording</b>	Yes
<b>Hot track</b>	Yes
<b>E-compass</b>	Yes
<b>Shutter</b>	Mechanical shutter
<b>Microphone</b>	Yes
<b>Firmware Upgrade</b>	Yes
<b>Connections</b>	
<b>USB Type-C</b>	Yes
<b>WiFi</b>	Yes
<b>Supported Apps</b>	PardVision2
<b>Power Supply</b>	
<b>Battery type</b>	Lithium Ion 18650*1
<b>Output Voltage(V)</b>	3.7
<b>Operating Time(h)</b>	≤5
<b>External Power Supply Type</b>	Type-C
<b>Power Supply</b>	
<b>Degree of Protection</b>	IP67
<b>Operating Temp(°C/°F)</b>	-30 ~ +55 / -22 ~ +131
<b>Material</b>	
<b>Housing</b>	Aluminum Alloy
<b>Objective lens</b>	All-glass multi-coated lens

# COMPONENTS

## Predator Series

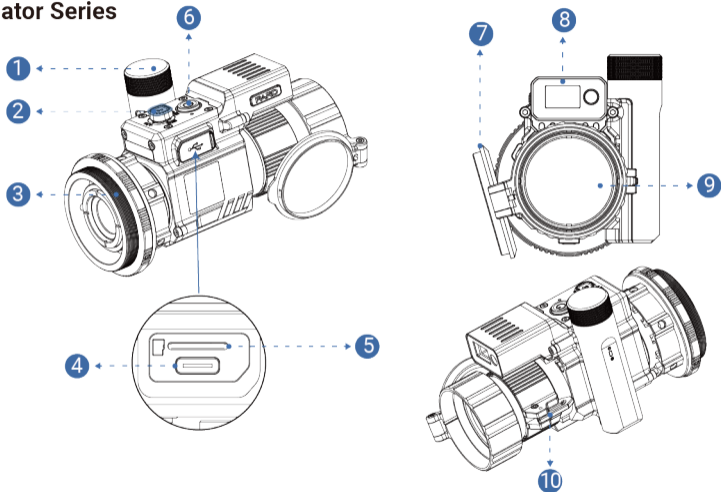


Fig.1

No.	Name	No.	Name
1	Battery Cap	6	Power button
2	Keypad	7	Lens Cap
3	Clip-on eyepiece	8	LRF Module
4	Type-C Charging Port	9	Objective Lens
5	Micro SD Card Slot	10	Focus Lever

## 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 and eyepiece are clean & functioning properly.

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

## 2. Battery Installation and Startup

The battery installation steps are as follows:

- (1) Unscrew the battery cap counterclockwise and remove the battery
- (2) Remove the insulating tape.
- (3) Insert the battery, ensuring that the positive (+) side goes in first and tighten the battery cap clockwise.
- (4) To turn on the device, press and hold the power button for about 3 seconds. (When the power light illuminates and the PARD Logo appears on the screen, the device is ready for use.

### Note:

- 1 Please use a single 18650 rechargeable lithium-ion battery rated 3.7V voltage.
- 2 Do not expose the battery pack to high temperature or to a naked flame.
- 3 Do not put the device into water when the battery cover is open;
- 4 Do not expose disassemble the device without authorization;
- 5 Do not pierce the device with sharp objects;
- 6 Battery should be kept out of reach of children, and the positive and negative terminals of the battery should be installed correctly;
- 7 Whilst charging the battery do not leave the battery unattended.
- 8 When using the battery at cold(low) temperatures, the battery capacity decreases, this is normal and not a defect.
- 9 Do not use the battery if it has been damaged in any way.
- 10 After charging is complete do not leave the battery on charge connected to the network.

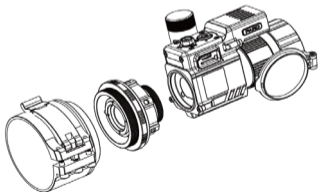


Please act responsibly and recycle or dispose of all used batteries according to the law.

### 3. Adapter Installation

The adapter is not included in the package and needs to be purchased separately.

- 1 Prepare the thermal imaging device, one adapter, inserts and an Allen wrench.
- 2 Before installing the adapter, turn on the device to see the clear icons on screen.
- 3 Wrap 1-2 layers of insulating tape on the daytime scope's objective lens for protection.
- 4 Rotate the adapter to the thermal imaging eyepiece and release the adapter locking lever.
- 5 According to the diameter of the daytime scope's objective lens, select the right gasket(s) and attach the adapter to the daytime scope, observe whether the display is in the center position from the daytime scope's eyepiece, and adjust the level, press the adapter locking lever.



Picture 1



#### 4. Objective Lens Focusing

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

#### 5. Compass Calibration

After the eyepiece is focused, please use the "figure 8 pattern method" to calibrate the electronic compass. Users are required to tilt and move the device in a figure 8 motion until the compass is calibrated.



# OPERATION INSTRUCTION

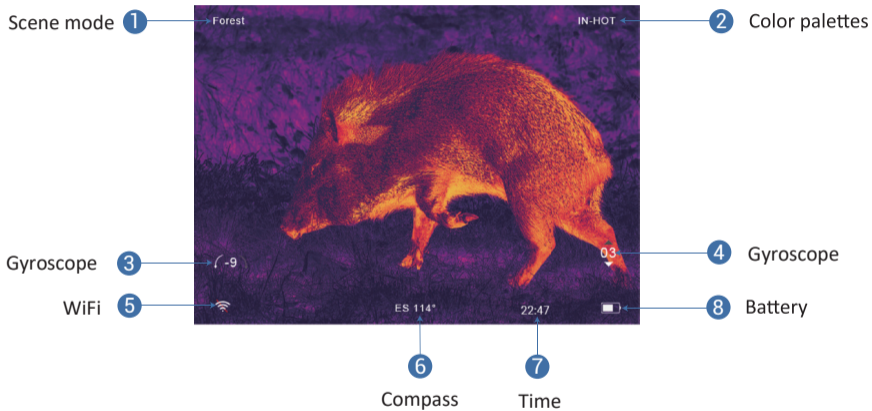
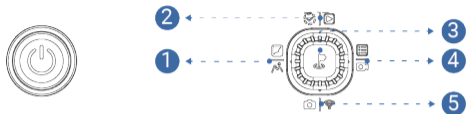


Fig.6

## 1. Shortcut Mode



Keypad	Single toggle	Toggle and hold
	Sleep/Wakeup	Power on/off
1	Switch image modes	Switch scene modes
2	Up/Shutter correction	Playback
3	Range detection/OK key	-
4	Menu/Back	Record video
5	Take a photo/Down	Turn on/off WiFi

## Explanation:

### Power key :

#### 1.Single press:

Press power key to put device into sleep mode when the device is on. Press power key again to wake up device from sleep mode.

#### 2.Press and hold:

Press and hold power key to turn on / turn off the device.

### Key 1:

#### 1.Single toggle:

**Home screen mode:** toggle [Key 1] to switch between image mode: WT-HOT/BK-HOT/EDGE/RD-HOT/IN-HOT/SKY.

#### 2.Toggle and hold:

**Home screen mode:** toggle and hold the [Key 1] to switch between city/forest/rain scene .

### Key 2:

#### 1.Single toggle:

- ① **Home screen mode:** toggle [Key 2] to start the shutter correction function (To use this short cut key function, you must first enable the auto shutter in the menu).
- ② **Menu mode:** toggle [Key 2] to switch menu options upward.

#### 2.Toggle and hold:

**Home screen mode:** toggle and hold the [Key 2] to enable the playback function. After entering this interface, the video and picture files in the memory card will be displayed.

- Toggle [Key 5] to switch between files.
- Press [Key 3] to play/pause the saved videos.
- When playing videos, toggle [Key 2]/[Key 5] to fast forward or rewind 2x/4x/8x times.
- Toggle [Key 4] to access the following settings:

1)Delete: <input type="radio"/> Delete Current <input type="radio"/> Delete All	2)Protect: <input type="radio"/> Lock Current <input type="radio"/> Unlock Current <input type="radio"/> Lock All <input type="radio"/> Unlock All	3)Slide Show: <input type="radio"/> 2 seconds <input type="radio"/> 5 seconds <input type="radio"/> 8 seconds
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### Key 3:

#### Single press:

- Home screen mode:** press [Key 3] to start the range detection function(For LRF version, the distance will be measured and displayed automatically).
- Menu mode:** press [Key 3] to confirm the relevant operation and return to the previous page.

### Key 4:

#### 1.Single toggle:

- Home screen mode:** toggle [Key 4] to enter the full menu.
- Menu mode:** toggle [Key 4] means back.

#### 2.Toggle and hold:

**Home screen mode:** toggle and hold [Key 4] to to record a video. Toggle and hold [Key 4] again to save the video and exit.

## Key 5:

### 1. Single toggle:

- ① **Home screen mode:** toggle [Key 5] to take a photo.
- ② **Menu mode:** toggle [Key 5] to scroll down between menu options.

### 2. Toggle and hold:

**Home screen mode:** toggle and hold [Key 5] to turn on/off the Wi-Fi function;

**Note:** When the WiFi is turned on, you cannot access the menu. Toggle and hold [Key 5] to turn off the Wi-Fi and then enter the menu interface;

## 2. Menu Mode

**Home screen mode:** toggle [Key 4] to enter the full menu setting mode to set various function options.

### 1. Image Setting

Users can adjust the image contrast, brightness, target and mode under this setting.

- toggle [Key 5] to move the cursor to the image setting option, press [Key 3] to enter the sub-menu.
- press [Key 3] to switch between contrast/brightness/target/mode options, and toggle [Key 2]/[Key 5] to adjust the option value.
- press and hold [Key 3] to exit. Upon the next startup, the device will maintain the saved image settings.

## 2. Zeroing Adjustment

Zeroing adjustment refers to aligning the thermal imaging reticle with the optical reticle, ensuring that the aiming point's position at a specific distance matches between the two.

- toggle [Key 5] to move the cursor to the zeroing adjustment setting option. Press [Key 3] to enter the sub-menu interface.
- toggle [Key 2]/[Key 5] to select a set from five data sets(A-E), press [Key 3] to enter it.
- press [Key 3] to enter the Pre-zeroing option.
- move the X/Y axis by toggling [Key 2]/[Key 5] to adjust the red reticle to coincide with optical reticle, press [Key 3] to switch the X/Y coordinates, then toggle [Key 4] to save and return.
- toggle [Key 5] to enter the Zeroing adjustment option.
- adjust the value of X/Y to move the yellow cross to the optical reticle, then toggle [Key 4] to return and save.

Note: After each installation of the Predator, you can double-toggle [Key 4] to confirm whether the red reticle aligns with the optical reticle. The red reticle will automatically vanish after three seconds.

### 3. Range Unit Selection

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

- toggle [Key 5] to move the cursor range unit selection option, and press [Key 3] to enter the sub-menu.
- toggle [Key 5] to choose between "meter" or "yard", then press [Key 3] to save and return to the previous page.

### 4. Display Brightness

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

- toggle [Key 5] to move the cursor to the display brightness option, press [Key 3] to enter the sub-menu.
- toggle [Key 5] 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 3] to save and return to the previous page.

### 5. Gyroscope

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

- toggle [Key 5] to move the cursor to the gyroscope setting option, and press [Key 3] to enter the sub-menu.
- toggle [Key 5] to select "Display" or "Calibration", and then press [Key 3] to enter.



- "Display" indicates whether (or not) to display the yaw and pitch angle of the device on the home screen. Toggle [Key 5] to select "Off" or "On", and press [Key 3] to save and return to the menu.
- "Calibrate" means to enter the calibration state. After selecting, please place the device on a horizontal plane surface, and press [Key 3] to perform automatic calibration. After calibration, the device will automatically return to the home screen.

## 6. Scene

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.

- toggle [Key 5] to move the cursor to the scene option, press [Key 3] to enter the sub-menu.
- toggle [Key 5] to move the cursor to select "City", "Forest" or "Rain" mode. Press [Key 3] to save and return to the previous page.

## 7. Hot Track

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

- toggle [Key 5] to move the cursor to the hot track setting option, and press [Key 3] to enter the sub-menu.
- toggle [Key 5] to move the cursor to select "Off" or "On". Press [Key 3] to save and return to the previous page.

## 8. Self-activated Recording

When the device detects recoil, the whole shooting process will be recorded in 20 second intervals. The incremental 20-second video footage will be saved on the SD card.

- toggle [Key 5] to move the cursor to the self-activated recording setting, and press [Key 3] to enter the sub-menu.
- toggle [Key 5] to select "OFF", "ON" and "Impact Sensitivity" options
- After selecting "Off" or "On", press [Key 3] to save and return to the previous page.
- After selecting "Impact Sensitivity", press [Key 3] to enter the sub-option menu of sensitivity level. Toggle [Key 5] to select "Low", "Medium" or "High" mode. Press [Key 3] to save and return to the previous page.

## **9. 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.

- toggle [Key 5] to move the cursor to select the auto power off setting, and press [Key 3] to enter the sub-menu.
- toggle [Key 5] to select "Off", "One minute", "Ten minutes" or "Thirty minutes" duration options. After selection, press [Key 3] to confirm and save, and return to the previous page.

## **10. Auto Recording**

After auto recording is on, device will start recording and continue to record after the next startup.

- toggle [Key 5] to move the cursor to the auto recording setting option and press [Key 3] to enter the sub-menu.
- toggle [Key 5] to select "Off" or "On" options, press [Key 3] to save and return to the previous page.

## 11. Loop Recording

Users can customize the segment recording duration. This can be set up under loop recording. When the capacity of the memory card is full, the new recording will automatically overwrite the previous saved files. When you select "Off", the recording will stop when the memory card is full, and the oldest video file will not be overwritten.

- toggle [Key 5] to move the cursor to the loop recording setting option, and press [Key 3] to enter the sub-menu.
- toggle [Key 5] to move the cursor to select preferred loop time duration "Off", "One minute", "Three minutes", "Five minutes" or "Ten minutes". Press [Key 3] to save and return to the previous page.

## 12. Date Stamp

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

- toggle [Key 5] to move the cursor to the date stamp setting option, and press [Key 3] to enter the sub-menu.
- toggle [Key 5] to move the cursor to select "Off" or "On" options. After selection, press [Key 3] to save and return to the previous page.

## 13. Record Audio

User can set whether to record audio synchronously in the video.

- toggle [Key 5] to move the cursor to the recording audio setting option, press [Key 3] to enter the sub-menu.
- toggle [Key 5] to move the cursor to select "Off" or "On" option, after selection, press [Key 3] to save and return to the previous page.

## 14. 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.

- toggle [Key 5] to move the cursor to the WiFi setting option, and press [Key 3] to enter the sub-menu.
- toggle [Key 5] to move the cursor to select "On" or "Off" option. Select "Off", and return to the previous page. Select "On" to enable WiFi and return to the home screen.

### **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.

**Note:** After the WiFi is turned on, you cannot access the menu. Toggle and hold [Key 5] to disable the WiFi and then enter the menu interface.

## 15. Language

Users can choose their preferred language.

- toggle [Key 5] to move the cursor to the language setting option, and press [Key 3] to enter the sub-menu.
- toggle [Key 5] to move the cursor to select the desired language, and press [Key 3] to switch the system language and return to the previous page.

## 16. Date/Time

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

- toggle [Key 5] to move the cursor to the date/time setting option, press [Key 3] to enter the sub-menu.
- toggle [Key 2]/[Key 5] to adjust the setting date and time value, press [Key 3] to switch options, toggle [Key 4] to save and return to the previous page.

## 17. Format

If users want to reformat the Micro SD Card, it will delete all the data on the Micro SD card permanently. Data cannot be recovered after reformatting. **Please operate with caution!**

- toggle [Key 5] to move the cursor to the format setting option, and press [Key 3] to enter the sub-menu.
- toggle [Key 5] to move the cursor to select "Cancel" or "OK" option. After selection, press [Key 3] to confirm the relevant operation and return to the previous page.

## 18. 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.

- toggle [Key 5] to move the cursor to the blind pixel compensation option, press [Key 3] 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;

- short press [Key 3] to exit. Press and hold [Key 3] to start the blind pixel compensation. After the process is completed, you can toggle [Key 5] to move the cursor to backup: "Yes" or "NO". Press [Key 3] to confirm your selection.

## 19. Default Settings

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!

- toggle [Key 5] to move the cursor to restore default setting option, press [Key 3] to enter the sub-menu.
- toggle [Key 5] to move the cursor to select "Cancel" or "OK" option. After selection, press [Key 3] to confirm the relevant operation and return to the previous page.

## 20. Firmware Upgrade

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

- toggle [Key 5] to move the cursor to the firmware upgrade option, and press [Key 3] to enter the sub-menu. You will see an important reminder: Upgrading firmware may cause damage to the equipment, please operate with caution!
- short press [Key 3] to exit. Press and hold [Key 3] to confirm 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.

## 21. Version

This function displays the device's version.

- toggle [Key 5] to move the cursor to the version option, press [Key 3] to enter the sub-menu to view.
- press [Key 3] again to exit and 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.

# Follow Us



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