PARD

Harrier Series

Thermal Imaging Binocular

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 conflict zones.

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contents /////////////////////

INTRODUCTION //////////////////

Thank you for your continued support and for choosing PARD Harrier Series thermal imaging binoculars. 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 multi-spectral digital camera 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℃/-22 ℉) or higher than (55℃/131 ℉).
- 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 21700 Rechargeable Lithium-Ion Battery	1
3	Type-C Cable	1
4	Lens Cleaner	2
5	User's Manual	1
6	After Sales Card	1

DESCRIPTION & KEY FEATURES ////////////////////

Immerse yourself in the ultimate viewing experiences with our Harrier SERIES, a multi-purpose thermal imaging binoculars that utilizes ergonomic design and massive screen. Equipped with a NETD≤20mK sensor, up to 640x512 resolution, which can detect small-er temperature differences, making it more effective for detecting subtle heat signa-tures, distinguishing between objects, and providing clearer and more detailed thermal images.

Harrier offers adjustable interpupillary distance to cater to the needs of different individuals. The easily operated adjustable ring underneath ensures simple customization. Additionally, the independent and large buttons facilitate easy touch and operation in the nighttime.
The 21700 rechargeable battery and 1000m laser range finder completely guaranteeing a fulfilling hunting experience.

Elevate your hunting experience to unprecedented levels with the meticulously crafted Harrier Series, designed to maximize unrivaled immersion.

Key features

- Thermal binoculars viewing
- Adjustable interpupillary distance function
- 480*360/640*512 resolution
- 3 Scene Modes
- 6 Image Modes
- Hot Track
- Firmware Update
- Infrared Image Enhancement Algorithm (IREA)
- Independent buttons
- 1000m/1200yds LRF
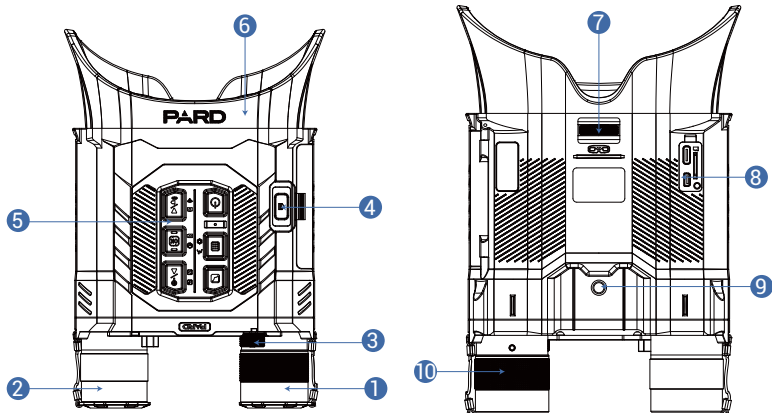- Photo & Video Recording
- WiFi
- IP67 rating

SPECIFICATIONS //////////////////

Model	Harrier 480	Harrier 640
Classification	Thermal Imaging Binocular	
Sensor		
Type	Uncooled Vox(vanadium oxide)	
Resolution(pixel)	480*360	640*512
Pixel Size(μm)	12*12	12*12
NETD	≤20mK(0.020℃)	≤20mK(0.020℃)
Frame Rate(Hz)	50	50
Detection Distance(m)	1800	1800
Optics		
Image Engine	PARD IREA	PARD IREA
Objective lens(mm)	35	35
Optical Magnification(x)	2.4	1.8
Digital Zoom(x)	2/4/6/8	2/4/6/8

Field of View (HxV)	Horizontal	9.4°	12.5°
	Vertical	7.1°	10°
	Diagonal	11.8°	16°
Eye Relief(mm)		25	25
Diopter Adjustment(D)		-5~+3	-5~+3
Display			
Type		LCD	
Resolution(pixel)		640*480	
Scene Mode		City/Rain/Forest	
Image Mode		WT-HOT/BK-HOT/EDGE/RD-HOT/IN-HOT/SKY	
Photo / Video			
Photo Resolution(pixel)		2048*1536	
Photo Format		.JPG	
Video Resolution(pixel)		1024*768	
Video Format		.mp4	
Storage(GB)		Micro SD card(128 GB,Max)	
Main Function			
LRF Detection Range(yd/m)		1000/1200	
PIP		Yes	
Gyroscope		Yes	
Loop Recording		Yes	
Hot track		Yes	
E-compass		Yes	
Shutter		Mechanical shutter	
Microphone		Yes	

Firmware Upgrade	Yes
Connections	
USB Type-C	Yes
HDMI Output	Yes
WiFi	Yes
Supported Apps	PardVision2
Power Supply	
Battery type	Lithium Ion 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
Material	
Objective lens	All-glass multi-coated lens

COMPONENTS ///////////////////

No.	Name	No.	Name
❶	Objective Lens	❻	Rubber Eyepiece
❷	LRF Module	❼	Interpupillary Adjustment Ring
❸	Diopter Adjustment Ring	❽	Connection Port
❹	Battery Cap Button	❾	Tripod Screw Hole
❺	Keypad	❿	Objective Lens Focusing Ring

INSTALLATION ///////////////////

1. Unboxing

Before using this device, please do the following:
❶ Open the box and remove the device.
❷ Check to ensure that the package contents listed above are all included in the box.
❸ Check the device for any damage to the display, body, lens, buttons, etc.
❹ 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) Press the battery cap button until it opens and remove the battery.

(2) Remove the insulating tape.

(3) Put the positive pole (+) of the battery near the objective lens , and then press the battery cap until the battery cap is locked.

(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:
❶ Please use a single 21700 rechargeable lithium-ion battery rated 3.7V voltage.
❷ Do not expose the battery pack to high temperature or to a naked flame.
❸ Do not put the device into water when the battery cover is open;
❹ Do not expose disassemble the device without authorization;
❺ Do not pierce the device with sharp objects;
❻ Battery should be kept out of reach of children, and the positive and negative terminals of the battery should be installed correctly;
❼ Whilst charging the battery do not leave the battery unattended.

❽ When using the battery at cold(low) temperatures, the battery capacity decreases, this is normal and not a defect.

❾ Do not use the battery if it has been damaged in any way.

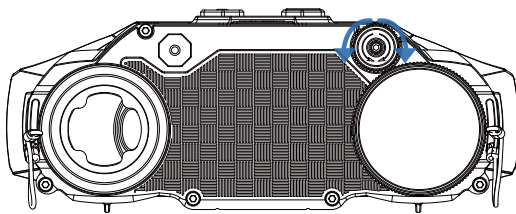❿ After charging is complete do not leave the battery on charge connected to the network.

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

3. Diopter Focusing

Diopter focusing is used to adjust users with different levels of corrected vision to clearly see the content displayed on the screen.
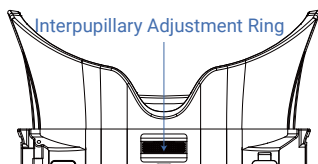
❶ After power on the device, press the diopter focusing wheel until you can see the screen clearly.

❷ Please note that the image may not be clearly visible before objective lens focus adjusted, only the wording and symbols on the display screen are clearly visible at this stage.
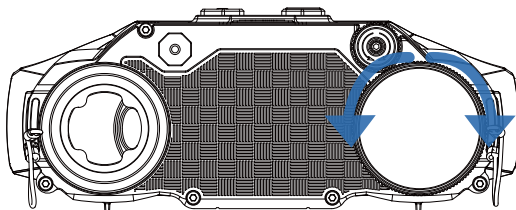
4. Interpupillary distance adjustment

Interpupillary distance adjustment is designed to accommodate the differences in the distance between the centers of the pupils of different users' eyes, ensuring they achieve the best visual experience.

Rotate the Interpupillary adjustment wheel until you can see the screen clearly and comfortably.

Interpupillary Adjustment Ring

5. Objective Lens Focusing

❶Before you focus the objective lens, ensure that the diopter focusing and interpupillary distance adjustment has been completed.

❷ 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.
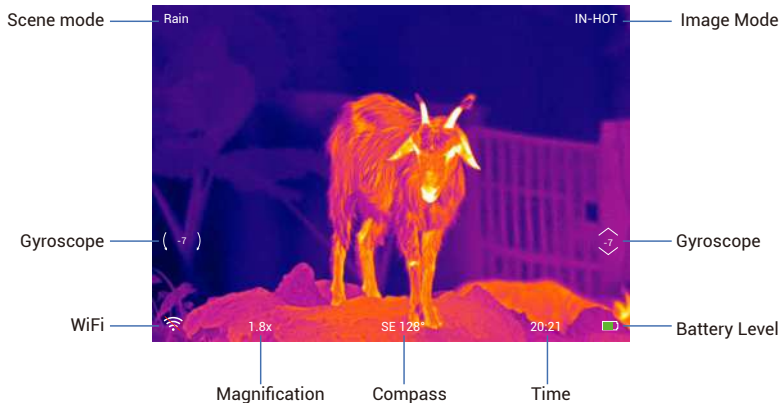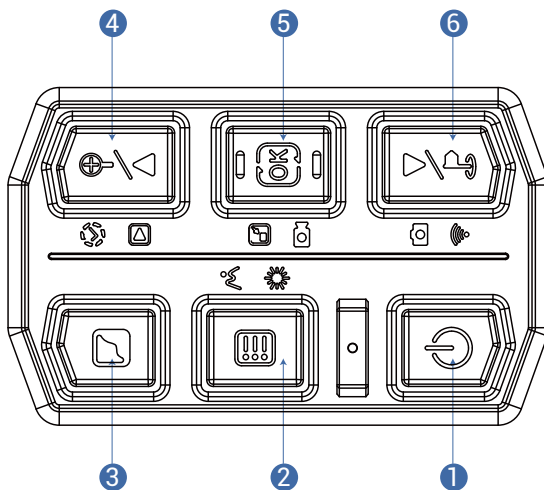
6. Compass Calibration

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 ///////////////

Scene mode —— Rain   IN-HOT —— Image Mode

Gyroscope —— (-7)   -7 —— Gyroscope

WiFi —— 1.8x   SE 128°   20:21 —— Battery Level

Magnification   Compass   Time

1. Shortcut Mode

Keypad	Single press	Press and hold	Double press
Key 1	Power/sleep	Power on/off	-
Key 2	Menu/back	Back	Switch scene modes
Key 3	Switch image modes	-	-
Key 4	Up/zoom	Playback	Shutter correction
Key 5	OK key	Record video / save video	Turn on/off PIP
Key 6	Down/range detection	Turn on/off WiFi	Take a photo

Explanation:

Key 1:

1.Single press:

Press [Key 1] to put device into sleep mode when the device is on. Press [Key 1] again to wake up device from sleep mode.

2.Press and hold:

Press and hold [Key 1] to turn on / turn off the device.

Key 2:

1.Single press:

Home screen mode: press [Key 2] to enter the full menu.
Menu mode: press [Key 2] means back.

2.Press and hold:

Menu mode: press [Key 2] means back.

3.Double press:

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

Key 3:

Single press:

Home screen mode: press [Key 3] to switch between image mode: WT-HOT/BK-HOT/ EDGE/RD-HOT/IN-HOT/SKY.

Key 4:

1.Single press:

Home screen mode: press [Key 4] to zoom in 2x/4x/6x/8x times.

Menu mode: press [Key 4] to scroll up or adjust the relevant option settings.

2. Press and hold:

Home screen mode: press and hold [Key 4] to enable the playback function. After entering this interface, the video and picture files in the memory card will be displayed.

a) press [Key 6] to switch between files.

b) Press [Key 5] to play/pause the saved videos.

c) When playing videos, press [Key 4]/[Key6] to fast forward or rewind 2x/4x/8x times.

d) Press [Key 2] to access the following settings:

1)Delete:	2)File Protection:	3)Slide Show:
● Delete Current	● Lock Current	● 2 seconds
● Delete All	● Unlock Current	● 5 seconds
	● Lock All	● 8 seconds
	● Unlock All	

e) press [Key 4]/[Key 6] to switch between files.

3.Double press:

Home screen mode: double press [Key 4] to start the shutter correction function (To use this short cut key function, you must first enable the auto shutter in the menu).

1.Single press:

Menu mode: press [Key 5] to confirm the relevant operation and return to the previous page.

2.Press and hold:

Home screen mode: press and hold [Key 5] to to record a video. Press and hold [Key 5] again to save the video and exit.

3.Double press:

Home screen mode: double press [Key 5] to turn on/off the picture-in-picture function.

Key 6:

1. Single press:

Home screen mode: Press [Key6] to start the range detection function（For LRF version, the distance will be measured and displayed automatically.

Menu mode: press [Key 6] to scroll down between menu options.

2. Press and hold:

Home screen mode: press and hold [Key 6] to turn on/off the Wi-Fi function;

Note: When the WiFi is turned on, you cannot access the menu. Press and hold [Key 6] to turn off the Wi-Fi and then enter the menu interface;

3. Double press:

Home screen mode: double press [Key 6] to take a photo.

2. Menu Mode

Home screen mode: press [Key 2] to enter the full menu setting mode to set various function options.

1. Image Setting

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

- press [Key 6] to move the cursor to the image setting option, press [Key 5] to enter the sub-menu.
- Press [Key 5] to switch between contrast/brightness/detail/target/mode options, and press [Key 6] to adjust the option value.
- Press and hold [Key 2] to exit. Upon the next startup, the device will maintain the saved image settings.

2. Display Brightness

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

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

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.

- press [Key 6] to move the cursor range unit selection option, and press [Key 5] to enter the sub-menu.
- press [Key 6] to choose between "meter" or "yard", then press [Key 5] to save and return to the previous page.

4. Gyroscope

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

- press [Key 6] to move the cursor to the gyroscope setting option, and press [Key 5] to enter the sub-menu.

- press [Key 6] to select "Display" or "Calibration", and then press [Key 5] to enter.
- "Display" indicates whether (or not) to display the yaw and pitch angle of the device on the home screen. press [Key 6] to select "Off" or "On", and press [Key 5] 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 5] to perform automatic calibration. After calibration, the device will automatically return to the home screen.

5. 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.
- press [Key 6] to move the cursor to the scene option, press [Key 5] to enter the sub-menu.
- Press [Key 6] to move the cursor to select "City", "Forest" or "Rain" mode. Press [Key 5] to save and return to the previous page.

6. Picture in Picture

The top center of the display can show a 2x magnified picture to improve aiming visibility, allowing you to see magnified target details without losing the field of view.
- press [Key 6] to move the cursor to the PIP setting option, and press [Key 5] to enter the sub-menu.
- press [Key 6] to move the cursor to select "Off" or "On".
- Press [Key 5] 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.
- press [Key 6] to move the cursor to the hot track setting option, and press [Key 5] to enter the sub-menu.
- press [Key 6] to move the cursor to select "Off" or "On". Press [Key 5] to save and return to the previous page.

8. 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.

- press [Key 6] to move the cursor to select the auto power off setting, and press [Key 5] to enter the sub-menu.
- press [Key 6] to select "Off", "One minute", "Ten minutes" or "Thirty minutes" duration options. After selection, press [Key 5] to confirm and save, and return to the previous page.

9. Auto Recording

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

- Press [Key 6] to move the cursor to the auto recording setting option and press [Key 5] to enter the sub-menu.
- press [Key 6] to select "Off" or "On" options, press [Key 5] to save and return to the previous page.

10. 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.

- press [Key 6] to move the cursor to the loop recording setting option, and press [Key 5] to enter the sub-menu.
- press [Key 6] to move the cursor to select preferred loop time duration "Off", "Three minutes", "Five minutes" or "Ten minutes". Press [Key 5] to save and return to the previous page.

11. Date Stamp

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

videos taken.
- press [Key 6] to move the cursor to the date stamp setting option, and press [Key 5] to enter the sub-menu.
- press [Key 6] to move the cursor to select "Off" or "On" options. After selection, press [Key 5] to save and return to the previous page.

12. Record Audio

User can set whether to record audio synchronously in the video.
- press [Key 6] to move the cursor to the recording audio setting option, press [Key 5] to enter the sub-menu.
- press [Key 6] to move the cursor to select "Off" or "On" option, after selection, press [Key 5] to save and return to the previous page.

13. WiFi

Through the WiFi connection, you can use your phone, PC or tablet as an external view-finder enabling users to synchronously see the photos and videos on a larger screen.
- press [Key 6] to move the cursor to the WiFi setting option, and press [Key 5] to enter the sub-menu.
- press [Key 6] 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 charac-ters starting with PARD, which is a unique string of numbers). Please enter the pass-word: 12345678 to connect.
- Enter the application to operate and use.

Note: After the WiFi is turned on, you cannot access the menu. Press and hold [Key 6] to disable the WiFi and then enter the menu interface.

14. Language

Users can choose their preferred language.
- press [Key 6] to move the cursor to the language setting option, press [Key 5] to enter the sub-menu.
- press [Key 6] to move the cursor to select the desired language. Press [Key 5] to switch the system language and return to the previous page.

15. Date/Time

Users can set the system date and time of the device.
- press [Key 6] to move the cursor to the date/time setting option, press [Key 5] to enter the sub-menu.
- press [Key 6] to adjust the setting date and time value, press [Key 6] to switch options, press [Key 5] to save and return to the previous page.

16. 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!**
- press [Key 6] to move the cursor to the format setting option, and press [Key 5] to enter the sub-menu.
- press [Key 6] to move the cursor to select "Cancel" or "OK" option. After selection, press [Key 5] to confirm the relevant operation and return to the previous page.

17. 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.
- press [Key 6] to move the cursor to the blind pixel compensation option, press [Key 5] to enter. You will see an important reminder:

    Please put on lens cap;
    Long press the menu key to execute;
    Short press the ranging key to exit;

● Press [Key 6] to exit. Press and hold [Key 2] to start the blind pixel compensation. After the process is completed, you can press [Key 6] to move the cursor to backup: "Yes" or "NO". Press [Key 5] to confirm your selection.

18. 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!
● press [Key 6] to move the cursor to restore default setting option, press [Key 5] to enter the sub-menu.
● press [Key 6] to move the cursor to select "Cancel" or "OK" option. After selection, press [Key 5] to confirm the relevant operation and return to the previous page.

19. Firmware Upgrade

System firmware can be updated to maintain an optimized current version.
● press [Key 6] to move the cursor to the firmware upgrade option, and press [Key 5] to enter the sub-menu. You will see an important reminder: Upgrading firmware may cause damage to the equipment, please operate with caution!
● Press [Key 5] 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.

20. Version

This function displays the device's version.
● press [Key 6] to move the cursor to the version option, press [Key 5] to enter the sub-menu to view.
● Press [Key 5] 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.

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