

Helmet Mounted Night Vision

User Manual

Model: NVG50

WI-FI connection APP for smartphone



IOS



ANDROID

Catalog

Safety Guidelines	3
Usage environment and Precautions	3
Product Introduction	4
Operation Instructions	5
· Charging batteries	6
· Battery installed	6
· Power on	6
· Power Off	7
· Targeted Observations	7
· Screen information	7
· Automatic mode	8
· Motion Mode	8
· Menu Operation	8
· Power on and introduction of display icons	8
· Detailed introduction of product buttons	9
· UI180°	10
· Icon	10
· Color	11
· Loop recording	11
· Playback	12
· WiFi	12
· Crosshair	13
· IR auto	13
· Picture in Picture	14
· LCD Brightness	14
· Date / Time	15
· Auto Power Off	15
· Language	16
· FPS	16
· Gyroscope	17
· Format	17
· Default settings	18
· Version	18
Basic Parameters	19
Standard configuration	20
Firmware Update	21
Maintenance and cleaning	21
Trouble shooting	21
Maintenance	22
Disposal of waste	22
Precautions for returning goods	22
Dust and moisture protection	22

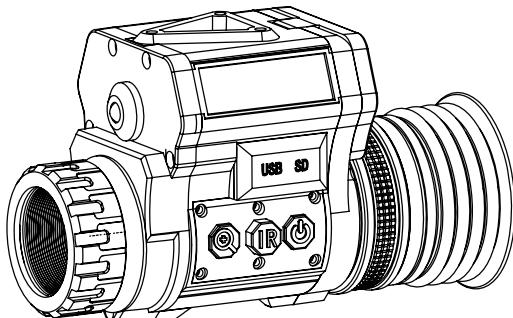
2

Safety Guidelines

- ⚠ Blinding risk!
Do not use this product to directly observe strong light sources such as the sun at any time, otherwise it will cause damage to you
- ⚠ Suffocation!
Children must use this product under parental supervision. Please put packing materials(such as plastic bags, rubber bands, etc.) keep away from children, otherwise there is a risk of suffocation!
- ⚠ Choking hazard!
Do not expose the product, especially the lens, to direct sunlight to avoid fire, fire hazard.
- ⚠ Risk of product damage!
Do not place in high temperature environment!
Do not put night vision goggles in a car in hot weather or under the sun, and keep away from heat generating equipment. These can cause damage to telescope performance.
- ⚠ Do not disassemble the product!
Without permission, if the product fails, please contact the dealer, if necessary, the dealer will contact the after-sales service center for maintenance.
- ⚠ Please respect the privacy of others.
For example, do not use this product to peep into the lives of others.

Usage environment and precautions

- The night vision goggles should be stored in a soft bag and used in an environment with a temperature of -25~+50°C and relative humidity not exceeding 80%.
- The night vision goggles should be stored in a clean and dry place to prevent the lenses from getting damp, moldy, heavy pressure, mechanical damage, moisture and solar radiation.
- Try to avoid rain or fog, and prevent falls, bumps, and collisions.
- When you find that the image on the display is jumping, the green grid lines or the screen does not light up, it means that the voltage is too low and you need to charge it in time.
- If you need to clean the optical surface of the objective lens, eyepiece, and laser illuminator, you should first blow off the small gravel and dust, and then wipe the surface with a soft cloth.



Product Introduction

【Name】 Head-mounted Digital Night Vision

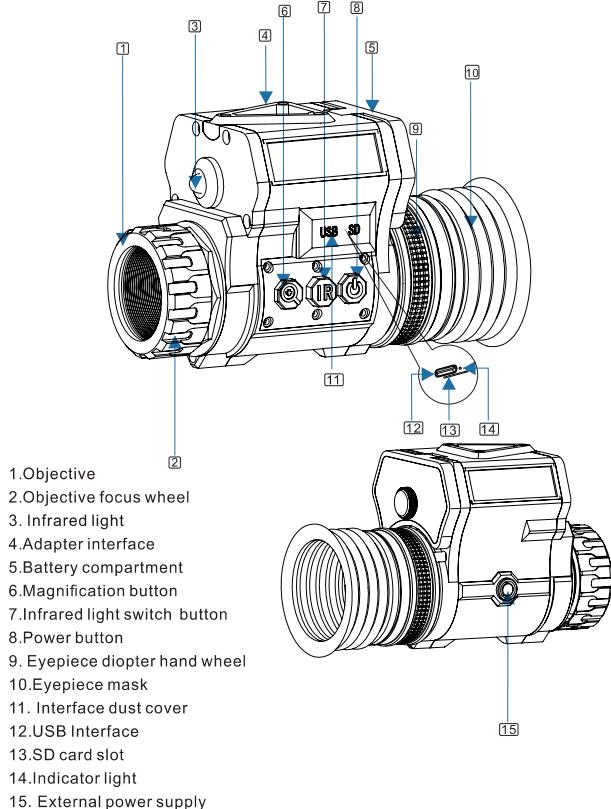
【Model】 NVG50

【Performance characteristics】

- This product can be used during the day and at night, with an optical magnification of 1X, a digital magnification of 4X, and a super-large 45° field of view.
- This product uses a 2K (2560*1440) ultra-low illumination detector, you can turn on the motion mode at night to obtain 2K 40HZ delay-free images.
- Under a very weak starlight environment, this product can still observe the target without any infrared light, you can also turn on the infrared light to assist in obtaining better observation effects. There are 4 color modes to choose from: fluorescent green, white phosphorus, black and white color.
- This device has intelligent function in certain degree, you can set to automatically adjust the brightness of the display screen and the intensity of the infrared light according to the environment.
- Power supply and battery life: This device uses two 18350 rechargeable lithium batteries, which have a default battery life of 6 hours, 4 hours with WiFi turned on and 3 hours with WiFi and infrared light turned on simultaneously.
- This machine has a built-in WiFi module, which can be connected to mobile devices, and the APP can realize real-time image transmission, video recording, photo shooting, playback and other functions.
- This product is the best auxiliary tool for human visual extension. The top interface can be installed with various types of adapter brackets to match different dump frames and form binocular use.

4

3



5 6

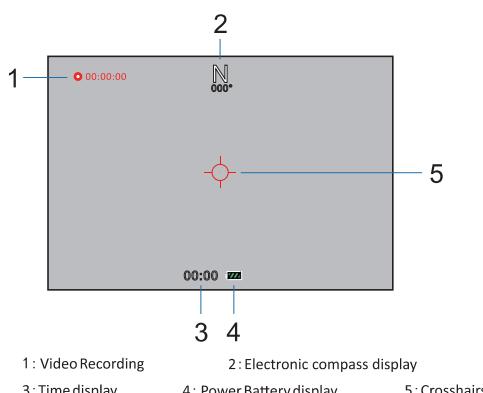
【Power off】

◆No matter what state the device is in, press and hold the power button (5 s) to shut down the device.

【Targeted Observation】

- In the power-on state, the eyepiece is close to the eye to view the display, and the objective lens is aimed at the target to be observed.
 - 1. Adjust the eyepiece vision hand wheel to maximize the clarity of the text icons on the screen;
 - 2. Adjust the focusing hand wheel of the objective lens to maximize the clarity of the observed target.
 - Magnification button (Q) can realize digital magnification, the magnification range is 1~4X.
 - In different use environments, you need to adjust the brightness of the display and the intensity of the infrared light to get a better use experience;
 - When using at night, press and hold down the button (IR) to enter night vision mode for better observation;
- Note: Do not have any objects in front of the IR lamp when focusing at night.

【Screen information】



7

【Charging battery】

The battery of this device is 3.7V, 18350 rechargeable lithium battery, which can provide about 3-6 hours of use. Please charge the battery before first use;

- Open the battery cover;
- put the battery inward, with the negative electrode outward in the battery compartment, and rotate the battery warehouse cover;
- The power adapter is connected to the Type-c USB charging cable, and the other end is inserted into the port on the device;
- After the connection is successful, the power indicator on the device is lit withred. At this time, the device will appear in the lower left corner of the open displayscreen;
- Press the switch button when normal charging, and turn off the device to shorten the charging time;

【Battery installed】

Open the battery cover, take out two 18350 battery (at least 3.7V), put the battery into the battery compartment with the negative pole facing inward, then tighten the battery cover, click the power button and observe from the eyepiece. If the display lights up, it means the battery is installed correctly; If not, please confirm:

If the display does not show anything, please make sure: 1: is the battery type 18350? 2: Is the battery orientation installed correctly? 3: Is the battery cover tightened? 4: Does the battery have sufficient charge?

After confirming that all the above four points are correct, turn on the machine again and test until the machine works properly.

【Power on】

◆Open the objective lens cover. Click the power button and observe through the eyepiece, the display screen inside the machine will light up.

5 6

【Automatic mode】

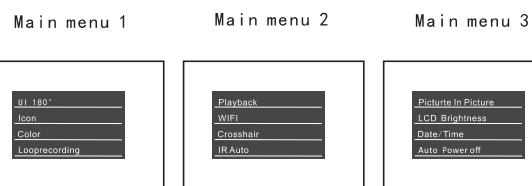
• This device has a certain degree of intelligence, can be set to automatically adjust the brightness of the display, automatically adjust the intensity of the infrared lamp (according to the use of environmental adjustment).

- Select the automatic brightness setting in the menu setting "LCD brightness adjustment" and confirm (see P14 LCD brightness adjustment for details);
- Select automatic on in the menu setting "IR automatic" and confirm (see P13 IR automatic for details);

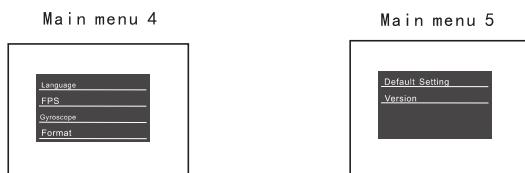
【Menu Operation】

- ◆Most function settings are made in the menu.
- ◆Press and hold the (Q) button and a menu appears.
- ◆ In the interface where the menu appears, press and hold the button (IR), release the button, and the menu will close.
- ◆ In the menu operation, the button (Q) and button (IR) are used to control the selection cursor to move between menu items. When the selection cursor is located at a menu item, press the power key to confirm the selection.

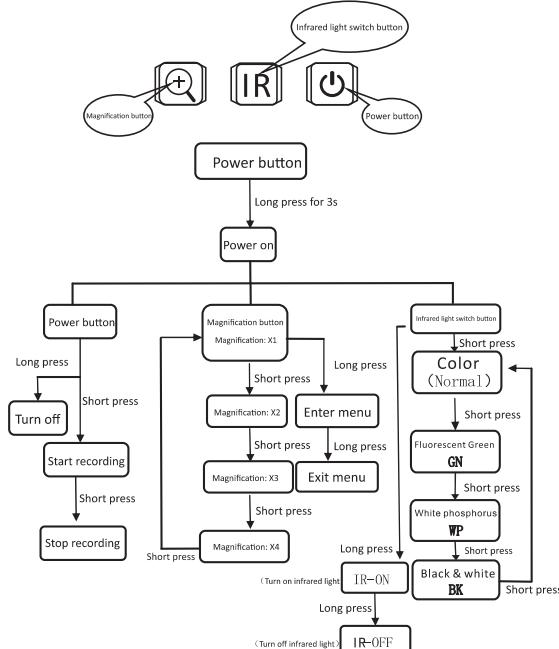
【Power on and introduction of display icons】



8



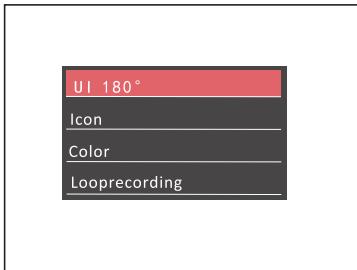
【Detailed introduction to product button operations】



9

【UI 180°】

◆Long press the button to open the menu. The "UI 180°" option is selected by default. Press the button to confirm the selection and flip the main interface 180°.

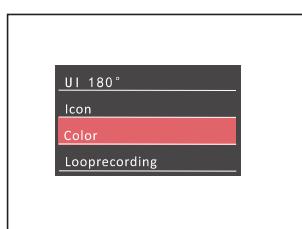


10

【Color】

◆Long press button on the main interface to enter the menu, then press button to select Color, and press button to select color mode from Black and White, Color, Fluorescent Green, White Phosphorus according to your usage environment and personal preferences.

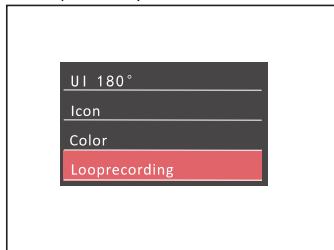
Note: This function can be quickly switched by clicking button on the main interface;



【Loop recording】

Long press button on the main interface to enter the menu, then press button to select loop recording, and press the button to select the duration of recording from the options of OFF, 1 minute, 3 minutes, 5 minutes and 10 minutes according to your usage environment and personal preferences.

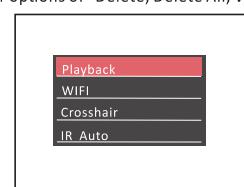
Note: When the option "Off" is selected, the device will continue to record, which may overwrite the previously stored files and fail to store new files.



11

【Playback】

◆In the main interface, long press the button to open the menu, press the button to select the "Playback" option, press the button to confirm and enter the submenu to view the stored picture/video files, press the button to select the video/picture to view, and click the confirmation button to enter the playback. In the video playback interface: click the button to play/pause, press the button to adjust the fast forward and rewind speed during playback, long press to exit playback, long press the button to exit and return to the main interface. When the video is not playing, long press the button to open the settings submenu, there are four options of "Delete, Delete All, Video, Return" to set the file;



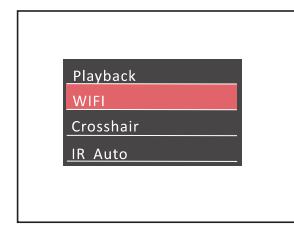
【WIFI】

Long press button on the main interface to enter the menu, then press button to select "WIFI" option, and press button to select 2 options of "Off, On".

Connecting steps:

1. Turn on WIFI (the WIFI icon at the bottom of the main interface shows "on");
2. use a mobile device to connect WIFI (default account: NVG50XXXX, default password: 12345678);
3. Open the APP to transmit real-time images, take photos, record videos, play back and other operations.

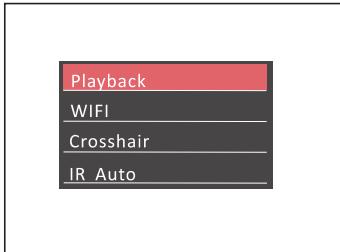
4. App: RoadCam



12

【Crosshair】

◆Long press  button on the main interface to enter the menu, then press   button to select the "Crosshair" option, press  button to select 2 options of "off, on". The Crosshair will appear in the center of the image to assist observation after selecting "on", users can choose according to your usage environment and personal preferences.



【IR Auto】

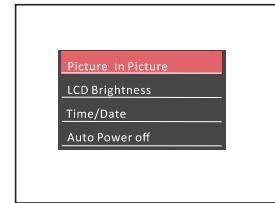
◆Long press  button on the main interface to enter the menu, then press   button to select the "IR Auto" option, press  button to select 2 options of "Auto off, Auto on". The device will automatically adjust the infrared light intensity (according to the usage environment), users can choose according to your usage environment and personal preferences.



13

【Picture in Picture】

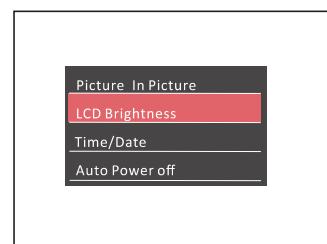
◆Long press  button on the main interface to enter the menu, then press   button to select the "Picture in Picture"(PIP) option, press  button to select 2 options of "off, on". Press  button in the main interface to partially amplify the center area, users can choose according to your usage environment and personal preferences.



【LCD Brightness Adjustment】

◆Long press  button on the main interface to enter the menu, then press   button to select the "LCD Brightness Adjustment" option, press  button to select "Automatic brightness, level 1, level 2, level 3, level 4, level 5" and other options. When you press  button to switch options, the screen brightness will also change accordingly. users can choose according to the usage environment and personal preferences.

Note: The screen brightness is among level1 and 5, with level 5 being the brightest one; when you select "Automatic brightness", the device will automatically adjust the display intensity according to the usage environment.

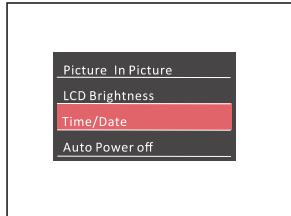


14

【Date/Time】

◆On the main interface, long press the  button to open the menu, press the  button to select the "Date/Time" option, press the   button to confirm and enter the submenu, press the   button to move and select different values, press the confirmation button to switch values, and after modifying, long press the  button to switch all values and save and exit.

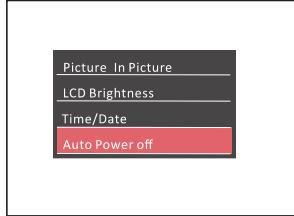
Note: After being connected with a mobile device via WIFI, the product will automatically synchronize the time; after removing the battery from the product, the time will be restored to the default initial time;



【Auto Power Off】

◆Long press  button on the main interface to enter the menu, then press   button to select the "Auto Shutdown" option, press  button to select 6 options of "Off, 1 minute, 2 minutes, 3 minutes, 5 minutes, 10 minutes", the device will automatically shutdown based on the selected duration after no operation. users can choose according to the usage environment and personal preferences.

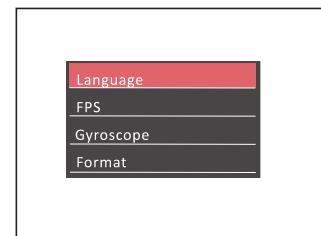
Note: When the option "Off" is selected, the device will continue to work until the battery is exhausted;



15

【Language】

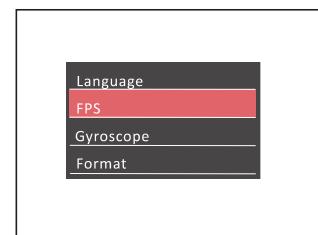
◆Long press  button on the main interface to enter the menu, then press   button to select the "Language" option, press  button to switch language, there are 10 menu languages for your easy choice: English, Français, Español, Português, Deutsch, Italiano, 简体中文, 繁體中文, Русский, 日本語. users can switch according to the usage environment and personal preferences.



【FPS】

◆Long press  button on the main interface to enter the menu, then press   button to select the "FPS" option, press  button to select two options "30,40". 30 is 30HZ image refresh rate, and 40 is 40HZ image refresh rate, which is more suitable for fast movement.

Note: The product will restart when selecting the resolution rate, and WIFI transmission function will be not available when "40" is selected;

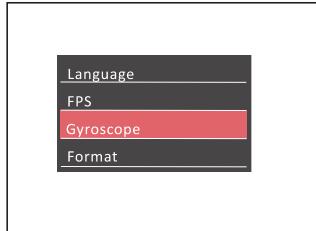


16

【Gyroscope】

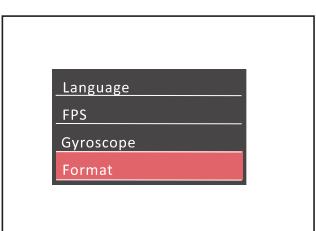
◆Long press  button on the main interface to enter the menu, then press  button to select the "Gyroscope" option, and press  button to start calibration. After the calibration values appear on the left and right ends of the main interface, place the product on a horizontal table for 5-10 seconds to complete automatic calibration;

Note: Recalibration is only required when the compass direction is inaccurate after being affected by natural factors.



【Format】

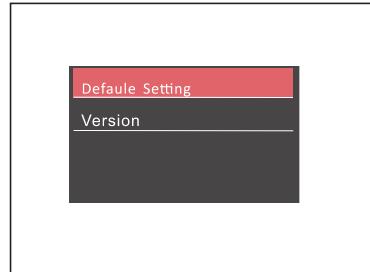
◆Long press  button on the main interface to enter the menu, then press  button to select the "Format" option, and press  button to enter the submenu and select the options of "OK, NO". The memory card will be formatted and all files in the card will be deleted after confirming. users can choose according to the usage environment and personal preferences;



17

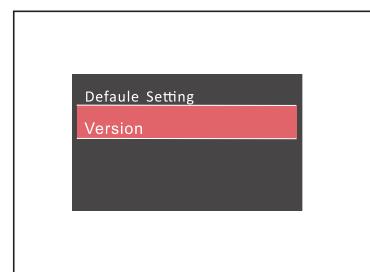
【Default Settings】

◆Long press  button on the main interface to enter the menu, then press  button to select the "Format" option, and press  button to enter the submenu and select the options of "OK, NO". The product settings will be restored to the factory settings after confirming. users can choose according to the usage environment and personal preferences;



【Version】

◆Long press  button on the main interface to enter the menu, then press  button to select the "Version" option to view the current software version.



17 18

【Basic parameters】

Category	Item	Parameter
Optical parameters	Magnification (x)	1 - 4X
	Objective lens	φ 20mm
	FOV	45°
	Detection distance (m)	0. 1-∞
Technical parameter	Resolution (pixels)	2560x1440
	Display type	AMOLED HD
	Display resolution(pixels)	2560x1440
	Frame rate (Hz)	30/40
	Operating Voltage	3. 7V DC
	Device power supply	Two 18350 lithium batteries (rechargeable)
	Charger	5.0v/2A adapter
Other	Size (length x width x height)	112x53x70(mm)
	Weight	208g (253g with battery)

19

【Standard configuration】

Name	Quantity
Soft bag	1
External power adapter	1
Separate battery charger	1
user manual	1
lens cloth	1
Color box	1

20

【Firmware Update】

Please contact the purchasing merchant for updates and instructions.

【Maintenance and cleaning】

Proper maintenance of the product is recommended to ensure longevity, attempts to disassemble or repair the device will void the warranty.

It is recommended that when there are stains on the display screen, objective filter cover, and objective lens that affect observation, you should first blow away the dust and debris on the optical components, and then clean the lens with a lens cleaning cloth. To remove oily or dried water spots, apply a small amount of denatured alcohol to a lens cloth or cotton swab.

【Troubleshooting】

Do not return the product without prior authorization. Doing so may result in multiple Loss of the product due to any reason, i.e. sending it to the wrong address and related Unexpected package for other issues;

◆This unit will not turn on:

1. This product uses a special battery, please be sure to use the factory-configured battery and charger;

2. Check if the battery power is sufficient. If necessary, reinstall the battery;

◆Infrared illuminator cannot play:

Press [IR] the button to enter the night vision mode, adjust the brightness of the infrared light, if not detected; If the infrared light changes, the device may need to be returned for repair;

◆Image is darker:

Make sure to open the filter cover on the objective and turn on the IR illuminator adjust accordingly; Display brightness and IR illuminator brightness for bright and clear images;

◆There are bright spots or black spots on the display

1. The dots appearing on the display are caused by the sensor production technology, not a defect.

◆The image is out of focus:

1. Make sure there is no dust or condensation on the objective or eyepiece;

2. Make sure to adjust the eyepiece diopter settings for your specific vision until you can see the product clearly; content on the internal display of the product;

3. After making sure to see the contents of the display clearly, adjust the focusing hand wheel on the side of the objective lens; Adjust focus for different viewing distances;

◆Image flickering:

This is common if the unit is looking at or pointed in the direction of a bright light source. Please stop looking at the bright light source immediately. If blinking under normal viewing conditions, then it may be caused by low battery power, please charge it in time.

【Maintenance】

Proper maintenance of the product is recommended to ensure longevity. Attempt to disassemble or repair the device; will void the warranty. It is recommended that when the unit becomes dirty, wipe it with a dry or slightly damp cloth; Wipe clean. Blow dust and debris off all optics, then use the lens; Clean the lens with a cleaning cloth. To remove oily or dry water spots, use a lens cloth or cotton

The sign is dipped in a small amount of denatured alcohol. Clean and dry the lens surface. Finally, again; Exhale to clean the lens. No further maintenance is required;

【Disposal of waste】

Properly dispose of packaging materials by category, such as paper or cardboard; dispose of equipment in accordance with current regulations.

 You can learn more about proper disposal of waste from your local waste disposal service or the Environmental Authority.

【Precautions for returning goods】

◆Ensure that the product is properly packaged and properly protected before transportation mailing; Try to use the original packaging as much as possible.

◆Please attach the purchase voucher and warranty card, along with a brief explanation of the product malfunction, return to the recipient, contact information, and detailed address.



Attention: Dust and moisture proof!

After using waterproof products in high humidity environments, store them after the moisture has dissipated and the products have dried;

Non waterproof products should not be used in high humidity environments, otherwise it may cause damage to product performance;

After using at the seaside, gently soak a clean soft cloth with water and wipe off any remaining salt on the surface of the mirror body;

If not used for a long time, please thoroughly clean the lens and body, place the product in the mirror bag, place it in a well ventilated and dry place, and add an appropriate amount of desiccant to prevent moisture;

21

22

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.

Any changes or modifications not expressly approved by the party responsible for compliance could 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.

NVG50

 RoHS
 2024.08



Helmet Mounted
 Night Vision
 NVG50