VARMINT LRF

THERMAL IMAGING RIFLE SCOPE
WITH LASER RANGEFINDER

If you have questions that are not covered in this manual, or need service, contact AGM Global Vision customer support for additional information prior to returning a product.

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EXPORT INFORMATION

Buyer acknowledges that all products supplied by AGM Global Vision, LLC are subject to U.S. export control laws, including, but not limited to, the Export Administration Regulations, the International Traffic in Arms Regulations, the International Economic Emergency Powers Act, and various U.S. embargoes and sanctions. AGM Global Vision products may not be exported, re-exported, or transferred contrary to U.S. export control laws. In particular, AGM Global Vision products may not be exported, re-exported, or transferred to prohibited countries, individuals, organizations, or entities, including but not limited to those individuals and entities listed on the List of Specially Designated Nationals and Blocked Persons administered or maintained by the U.S. Office of Foreign Assets Control ("OFAC"), the various lists maintained by the Bureau of Industry and Security of the Department of Commerce, and the U.S. State Department and Buyer represents and warrants that neither Buyer nor any of its officers, directors, or employees are on such lists. Distribution or resale by Buyer to such countries, individuals, organizations, or entities is expressly prohibited. Buyer has and will maintain a positive process to ensure compliance with this Section.

FCC INFORMATION

Please take attention that changes or modification not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment complies with FCC/IC RSS-102 radiation exposure limits set forth for an uncontrolled environment.

FCC compliance: This product 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 product 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 product 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.

FCC Conditions

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.

2. This device must accept any interference received, including interference that may cause undesired operation.

EU CONFORMITY STATEMENT

This product and - if applicable - the supplied accessories too are marked with "CE" and comply therefore with the applicable harmonized European standards listed under the EMC Directive 2014/30/EU, the RoHS Directive 2011/65/EU

2012/19/EU (WEEE directive): Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points. For more information see: www.recyclethis.info

2006/66/EC (battery directive): This product contains a battery that cannot be disposed of as unsorted municipal waste in the European Union. See the product documentation for specific battery information. The battery is marked with this symbol, which may include lettering to indicate cadmium (Cd), lead (Pb), or mercury (Hg). For proper recycling, return the battery to your supplier or to a designated collection point. For more information see: www.recyclethis.info

INDUSTRY CANADA ICES-003 COMPLIANCE

This device meets the CAN ICES-3 (B)/NMB-3(B) standards requirements.

LIST OF CONTENTS

SAFETY SUMMARY

- Read and follow all instructions
- Read all warnings
- Only use the attachments/accessories specified by the manufacturer
- All service must be provided by the manufacturer

WARNING:

This product contains natural rubber latex, which may cause potentially fatal allergic reactions! If you are allergic to latex, it is important that you strictly avoid exposure to products that contain it.

WARNINGS AND CAUTIONS:

Transportation

- Keep the device in original or similar packaging while transporting it.
- Keep all wrappers after unpacking them for future use. In case of any failure occurred, you need to return the device to the factory with the original wrapper. Transportation without the original wrapper may result in damage on the device and the company shall not take any responsibilities.
- DO NOT drop the product or subject it to physical shock. Keep the device away from magnetic interference.

Power Supply

- The battery charger is included in the package. The input voltage for the supplied battery charger should meet the Limited Power Source (5 VDC, 2 A).
- The power source should meet limited power source or PS2 requirements according to IEC 60950-1 OR ICE 62368-1 standard.
- Make sure the plug is properly connected to the power socket.
- DO NOT connect multiple devices to one power adapter, to avoid over-heating or fire hazards caused by overload.

Battery

- Improper use or replacement of the battery may result in explosion hazard. Replace with the same or equivalent type only.
- The battery type is 18650 with the protection board, and the battery size should be 19 mm × 70 mm. The rated voltage and capacity are 3.6 VDC/3.35 Ah (12.06 Wh). Dispose of used batteries in conformance with the instructions provided by the battery manufacturer.
- Make sure the battery temperature is between 0°C to 45°C (32°F to 113°F) when charging.
- For long-term storage of the battery, make sure it is fully charged every half year to ensure the battery quality. Otherwise, damage may occur.
- Do not charge other battery types with the supplied charger. Confirm there is no flammable material within 2 m of the charger during charging.
- DO NOT place the battery near heating or fire source. Avoid direct sunlight.
- DO NOT swallow the battery to avoid chemical burns.
- DO NOT leave the battery in places accessible for children.

- The battery can not be charged with external power source directly.
- The device can not be charged, please use the supplied charger to charge the battery.
- Please purchase the adapter by yourself. The using environment of the adapter should be consistent with that of the device.

Maintenance

- If the product does not work properly, please contact your dealer or the nearest service center. We shall not assume any responsibility for problems caused by unauthorized repair or maintenance.
- Wipe the device gently with a clean cloth and a small quantity of ethanol, if necessary.
- If the equipment is used in a manner not specified by the manufacturer, the protection provided by the device may be impaired.
- Clean the lens with soft and dry cloth or wiping paper to avoid scratching it.

Using Environment

- Make sure the running environment meets the requirement of the device. The operating temperature shall be -20°C to 55°C (-4°F to 131°F), and the operating humidity shall be 95% or less.
- DO NOT expose the device to extremely hot, cold, dusty, corrosive, saline-alkali, or damp environments.
- Avoid equipment installation on vibratory surface or places subject to shock (neglect may cause equipment damage).
- DO NOT aim the lens at the sun or any other bright light.

NOTES:

- The detector spectral band provides better visibility through smoke, dust, rain, smog, etc.
- Infrared radiation does not travel through glass. As a result, the scope does not detect objects if they are behind glass windows or other barriers.

EMERGENCY:

If smoke, odor, or noise arises from the device, immediately turn off the power, unplug the power cable, and contact the service center.

LASER EMERGENCY:

When any laser equipment is in use, make sure that the device lens is not exposed to the laser beam, or it may burn out. The laser radiation emitted from the device can cause eye injuries, burning of skin or inflammable substances. Before enabling the light supplement function, make sure no human or inflammable substances are in front of the laser lens. Do not place the device where minors can fetch it.

AGM Global Vision

1 GENERAL INFORMATION

1.1 SYSTEM DESCRIPTION

The Varmint LRF is a compact thermal imaging scope with built-in precision laser rangefinder. Equipped with a highly sensitive, 12μm thermal detector and 1024×768 OLED monitor, the AGM Varmint LRF provides a clear image under harsh environmental conditions including darkness, fog, smoke, dust, rain, snow, brush, camouflage, etc. The Varmint LRF's user-friendly interface, comfortable and ergonomic operating controls makes its use incredibly easy.

The built-in laser range finder of the AGM Varmint LRF is designed to determine the exact distance between the observer and the target. Measurement results are displayed in the scopes monitor. One 18650 rechargeable battery gives the device up to 6 hours of continuous operation time. An external 5V power bank (battery pack) can be easily connected via a USB to USB-C connector for a significant increase of operating time. The device is equipped with fast EMMC storage for on-board video recording and image capture. Onboard Wi-Fi module allows live video streaming and video/image recording via mobile applications.
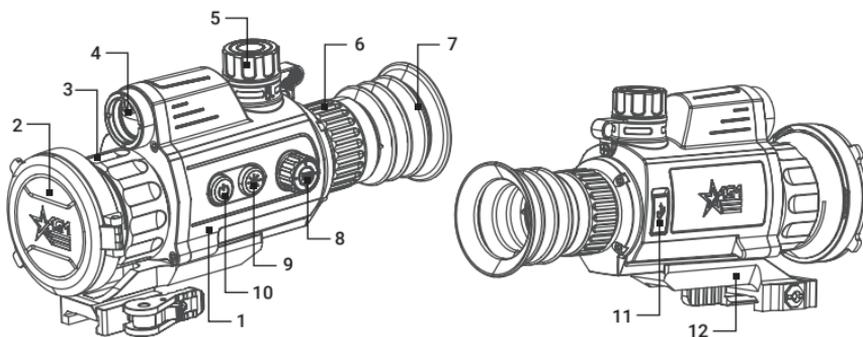
FIGURE 1-1. MAIN PARTS

TABLE 1-1. MAIN PARTS

ITEM	DESCRIPTION	ITEM	DESCRIPTION
1	Body	7	Eyecup
2	Lens Cap	8	Operation Wheel
3	Focus Ring	9	Measure Button
4	Laser Range Finder	10	Power Button
5	Battery Compartment	11	USB Type-C Interface
6	Eyepiece Focus Ring	12	Mount

1.2   STANDARD COMPONENTS

The standard components are shown in Figure 1-2 and listed in Table 1-2.
The ITEM column indicates the number used to identify items in Figure 1-2.
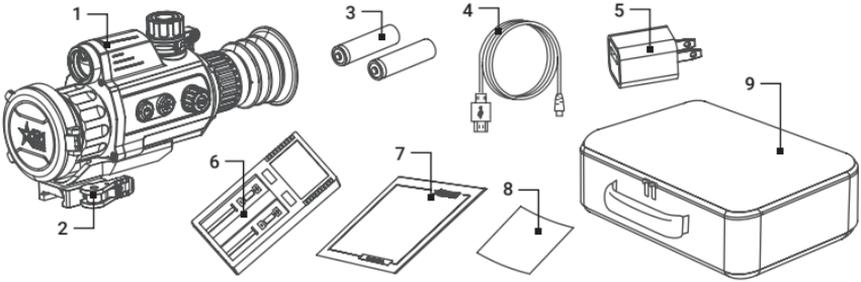
FIGURE 1-2. STANDARD COMPONENTS

TABLE 1-2. STANDARD COMPONENTS

ITEM	DESCRIPTION	QUANTITY
1	Rifle scope	1
2	Mount*	1
3	18650 Rechargeable Battery	2
4	USB Cable	1
5	Power Adapter	1
6	Battery Charger	1
7	User Manual	1
8	Lens Cloth	1
9	Carrying Case	1

* Mounting kit depends on the region of sale.

1.3   OPTIONAL EQUIPMENT

Optional items are shown in Figure 1-3 and listed in Table 1-3.
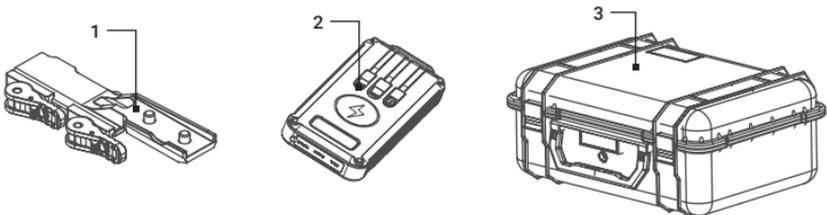
FIGURE 1-3. OPTIONAL EQUIPMENT

TABLE 1-3. OPTIONAL EQUIPMENT

ITEM	DESCRIPTION	PART NO.
1	AGM-2111 Double Lever QR Mount	6306LMR1
2	AGM Power Bank	6308EPB1
3	Hard Case for Storage/Transportation	6610HCS1

1.4   KEY FEATURES

- 12μm high sensitivity thermal detector
- Fast 50 Hz imaging
- Built-in laser rangefinder
- 1x, 2x, 4x, 8x digital zoom
- High resolution OLED display
- Adjustable color palettes
- Various reticle types and colors
- One shot zero correction
- Highest temperature tracking
- On-board video recording and image capture
- Built-in EMMC storage (16 GB)
- Wi-Fi data transmission
- Standby mode
- Up to 6 hours continuous runtime for TS35-384/TS50-384 models and up to 5 hours continuous runtime for TS35-640/TS50-640 models
- External power supply compatibility
- Waterproof & shockproof
- 5-year warranty

2 OPERATING INSTRUCTIONS

2.1. BASIC OPERATIONS

2.1.1   UNPACKING

The following steps must be completed prior to each mission.

1. Open the carrying case, remove the device, and verify that all components are included.

2. Inspect the device for any obvious evidence of damage to the optical surfaces, body, eyecup, operation buttons, etc. Ensure that all optical surfaces are clean and ready for use. Clean all optical surfaces with a lens tissue.

2.1.2   BATTERY INSTALLATION

1. Turn the battery cover (A) counterclockwise to open it.

2. Make sure the battery is fully charged. Insert the battery (B) into the battery compartment (C) with the positive mark inward.

3. Turn the battery cover clockwise to tighten it.
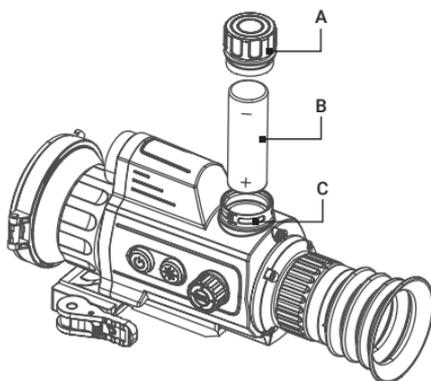

FIGURE 2-1. BATTERY INSTALLATION

NOTE:

Remove the battery from the battery compartment if the device is not used for a long time.

2.1.3   CONTROL BUTTONS

The Varmint LRF controls are shown in Figures 2-2 and are defined in Tables 2-1.

Each button is responsible for some functions selected by short press or long press (hold) the button. Pushing a button for 2+ second is considered "long press" (hold).
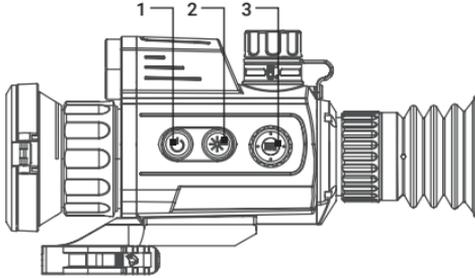
FIGURE 2-2. VARMINT LRF CONTROLS

TABLE 2-1. VARMINT LRF CONTROL FUNCTIONS

ITEM	CONTROLS	FUNCTIONS
1	POWER BUTTON	**Press:** Standby mode / Wake up device. **Hold:** Power ON/OFF.
2	MEASURE BUTTON	**Press:** Measuring distance with a laser RF. **Hold:** Start/Stop video recording.
3	OPERATION WHEEL	**Press:** Switch palettes. **Hold:** Menu operation. **Rotate:** Switch magnification (digital zoom).
2 + 3	MEASURE BUTTON + WHEEL BUTTON	**Press:** Image capture. **Hold:** Manual FFC.

NOTE:

Press the MEASURE button ✳ and operation wheel button ☰ at the same time to capture the image.

Hold the MEASURE button ✳ and operation wheel button ☰ at the same time to correct the non-uniformity of display manually (manual FFC).

2.1.4   POWER ON AND OFF

Power On

When the battery is enough, hold the POWER button ⏻ to power on the device.

Power Off

When the device is turned on, hold the POWER BUTTON ⏻ to power off the device.

NOTE

See the battery icon on the device display for the electricity quantity. Icon ▥▥ means the battery is fully charged, and icon ▭ means that the battery is low. When the low power note shows, charge the battery.

Auto Power Off

In the "Auto Power Off" menu you can set the time for the automatic shutdown of the device as required (OFF / 30 min / 45 min).

2.1.5 STANDBY MODE

Standby mode is used to save battery power. In the view mode, press the POWER button ⏻. After a few seconds, the display will turn off. Press the POWER button ⏻ button again to exit the Standby mode.

2.1.6 THERMAL VIEW OBSERVATION

1. Power on the device.

2. Hold the device and make sure the eyepiece covers your eye.

3. Adjust the diopter adjustment ring until the OSD text or image is clear.

4. Point the device towards the target of the view. Bring the object into focus by rotate the objective focus ring.

NOTE:

You must perform the focus adjustment before any further use of the rifle scope.

5. Set palette, brightness, contrast, scene mode and FFC (Flat Field Correction), to display the best image effect.

2.1.7 ON-SCREEN DISPLAY (OSD)

On-screen interface displays the main setup menu items and device status indicators.

Hold the wheel button 🔘 in the view mode to display or hide the menu.

Adjust the OSD in the menu. When OSD is on, the information of Wi-Fi hotspot activation, magnification, storage memory status, battery status, time and date displays on the screen.
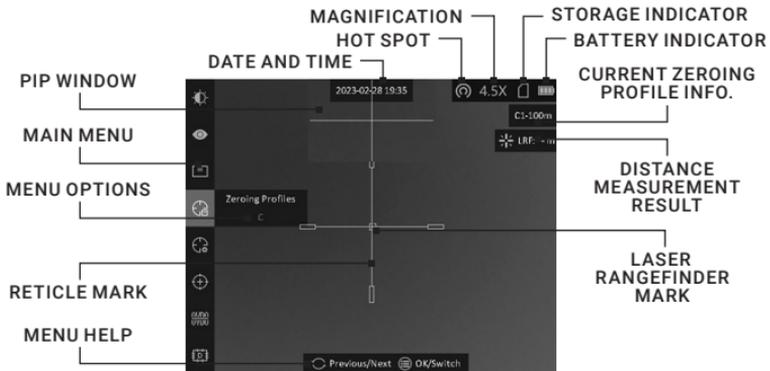

FIGURE 2-3. ON-SCREEN DISPLAY

2.1.8 DIGITAL ZOOM

In the live view interface, rotate the operation wheel to switch the digital zoom of the device between 1×, 2×, 4× and 8×. The image magnification value is displayed on the screen:

- Varmint LRF TS35-384: **3x, 6x, 12x, 24x**
- Varmint LRF TS50-384: **4.5x, 9x, 18x, 36x**
- Varmint LRF TS35-640: **2x, 4x, 8x, 16x**
- Varmint LRF TS50-640: **2.5x, 5x, 10x, 20x**

2.1.9 PALETTE SETTINGS

You can select different palettes to display the same scene in different effects. Press the wheel button 🌀 in live view interface to switch palettes.

TABLE 2-2. PALETTE SETTINGS

PALETTE	DESCRIPTION
WHITE HOT	The hot part is white-colored in view. The higher the temperature is, the lighter the color is.
BLACK HOT	The hot part is black-colored in view. The higher the temperature is, the more black the color is.
RED HOT	The hot part is red-colored in view. The higher the temperature is, the redder the color is.
FUSION	From high temperature to low temperature, the image is colored in from white, yellow, red, pink to purple.

2.1.10 DISTANCE MEASUREMENT

The device can detect the distance between the target and the observation position with built-in laser rangefinder.

Make the laser rangefinder settings in the menu (see details in part 2.2.20). Point the square mark of the rangefinder at the target and press the MEASURE button ⊛ to measure the distance to the target. The distance measurement result is displayed at the upper right of the image.

2.1.11 SHUTTER RELEASE

Hold the Measure button ⊛ and operation wheel button 🌀 at the same time to release the shutter once for correction of the non-uniformity of display.

2.1.12 VIDEO RECORDING / IMAGE CAPTURE

Video Recording

In the live view interface, hold the MEASURE button ⊛ to start/stop recording.

The left top of image displays the information of recording time.

Image Capture

In the live view interface press the MEASURE button ⊛ and operation wheel button 🌀 at the same time to capture the image.

NOTE:

• When capturing succeeds, the image freezes for 1 second and a prompt shows on the display.

• For exporting captured pictures, refer to File Export.

RED CIRCLE - VIDEO RECORDING SYMBOL

RECORDING TIME

FIGURE 2-4. VIDEO RECORDING

2.1.13 CONNECTING THE DEVICE

1. Open the USB interface cover.

2. Connect the device and power adapter with a Type-C cable to power on the device. Alternatively, connect the device and PC to copy/delete files.
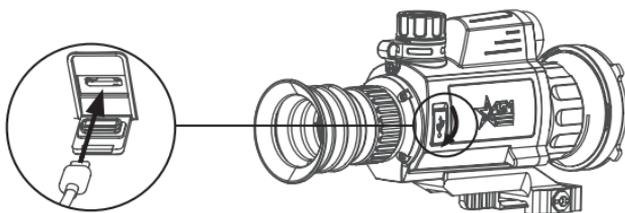
FIGURE 2-5. CABLE INTERFACE

2.1.14 FILE EXPORT

1. Connect the thermal rifle scope to your PC with USB cable and open the detected disk.

2. Open computer disk and select the disk of device. Go to the DCIM folder and find the folder named after the capture year and month. For example, if you capture a picture or record a video on January 2023, go to DCIM -> 202301 to find the picture or video.

   - Select and copy the videos to PC and play the file with the player.
   - Select and copy the snapshots to PC and view the files.

3. Disconnect the device from your PC.

NOTE:

• The device displays images when you connect it to PC. But functions such as recording, capturing and hot spot are disabled.

• When you connect the device to PC for the first time, it installs the drive program automatically.

2.1.15   INSTALLING THE VARMINT ON A PICATINNY/WEAVER RAIL

WARNING:

Always make sure your firearm is unloaded before you place the scope on the firearm. Reconfirm that the chamber is empty if you stop the procedure then resume later. Safe firearms handling rules should be followed at all times.

The Varmint LRF comes with a Picatinny/Weaver mount. The mount is secured to the scope with two screws. The recommended tightening torque for the fixing screws is 4-5.3 Nm (5.44-7.2 ft lb)

To install the Varmint LRF on a Picatinny/Weaver rail, perform the following (Figure 2-6):

1. Unlock the clamping device of the scope mount by pushing down on the lever holder (A) and unlocking the lever (B).
2. Install the scope on the Picatinny/ Weaver rail so that the stop (C) slides into the transverse slot on the rail.
3. Affix the scope to the rail by locking the lever (B).
4. Verify that the clamping device is firmly holding the Varmint LRF. If necessary, adjust the clamping device's lever-cam lock as detailed in part 2.1.16 (Clamping Device Adjustment).
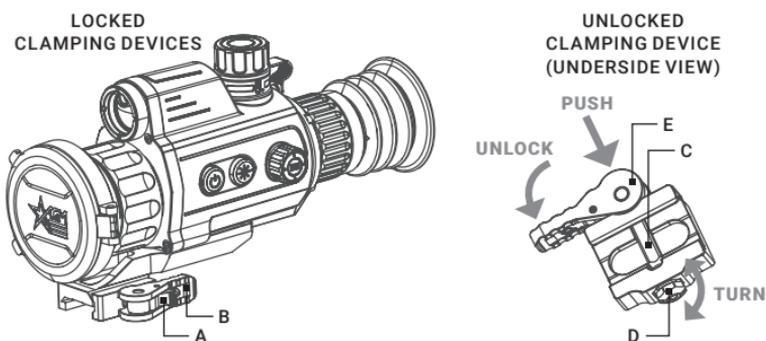
FIGURE 2-6. MOUNT

2.1.16   CLAMPING DEVICE ADJUSTMENT

To adjust the mount's clamping device, do the following:

1. Remove the Varmint LRF from the weapon.
2. With the clamping device unlocked (as shown in Figure 2-6), push the cam (E) towards the arrow, which will cause the nut (D) to slide out of its hole.
3. To tighten/ loosen the clamping device, push down on the cam (E) and turn the nut (D) CW/ CCW respectively, in one-two increments (see note below). Much like when the cam (E) is released, backward-moving spring will cause the nut (D) to slide back into its hole.

NOTE:

The eight-sided nut of the mount lever-cam lock will only fit into their hole if turned in one of the discrete positions, using increments equal to 360°/8.

4. Verify that the adjusted lever-cam lock securely holds the weapon mounting rail.

2.2 MAIN FUNCTIONS

2.2.1   MENU OPERATION

When the device is turned on, hold the wheel button ⊜ to display the menu.

Rotate the operation wheel to move between menu items. The active element is highlighted in orange. Press the wheel button ⊜ to select menu item or change an option. Hold the wheel button ⊜ to exit the menu.

FIGURE 2-7. THE MAIN MENU

TABLE 2-3. MENU FUNCTIONS

MENU ITEM	SYMBOL	OPTION	FUNCTION
CONTRAST	◑	10 Levels of contrast	Adjusts the image contrast.
BRIGHTNESS	☀	10 Levels of brightness	Adjusts the image brightness.
SCENE MODE	👁	Recognition	Switch between the Recognition mode and Jungle mode.
	🌲	Jungle	
PIP	▣	OFF	Enables or disables the PIP function.
	▣	Center	
ZEROING PROFILES	⊕	5 Profiles (A/B/C/D/E)	Zeroing profile selection with user saved reticle settings.
RETICLE	⊕	5 Types of Reticle, 4 Colors, Reticle OFF	Reticle type and reticle color selection. Boresight correction.
IMAGE CALIB.	⊕	Auto FFC/ Manual FFC/ External	Selecting the Flat Field Correction (FFC) mode.
CVBS	ᵒᵘᵘᵒ	OFF	Enables or disables the CVBS Output function to view the video on CVBS monitor.
	ᶜⱽᴮˢ	ON	

MENU ITEM	SYMBOL	OPTION	FUNCTION
DPC	⊞D⊞	Axis: N/X/Y	Correction of dead pixel manually.
AUTO POWER OFF	⏻	OFF/ 30 min/ 45 min	Setting the automatic shutdown time.
UNIT	ⓤ	yard / m	Sets the distance unit.
BURN PREVENTION	⌾	OFF	Enables or disables the Burn Prevention function.
	⌇	ON	
VERSION	ⓘ	---	Firmware version and serial number.
RESTORE	↺	---	Restoring the default device settings.
LANGUAGE	Aa	22 Languages	Choice of interface language.
TIME SYNC.	⏰	Time Format / Time / Date	Setting the time and date.
OSD	▭	OSD / Time / Date	Enables or disables OSD, time, date.
LASER RANGING	⌖	OFF / ON Once / Continuous (15s, 30s, 1min, 2min, 5min)	Enables or disables built-in laser rangefinder. Distance measurement mode settings.
TRIGGER CALIB.	◎	---	Manual Flat Field Correction.
HOT TRACKING	⊘	OFF	Enables or disables hot spot mark (marking the spot of highest temperature).
	⊙	ON	
NETWORK	📶	Close	Enables or disables the Wi-Fi hotspot.
	⌒	Hotspot	

2.2.2   CONTRAST ADJUSTMENT

1. Hold the wheel button 🔘 to go to the menu.

2. Rotate the wheel to select ◐ **Contrast** menu item and press the wheel button 🔘 to adjust the image contrast. You can select one of ten levels of the contrast.

3. Turn the wheel to move to another menu item or hold the wheel button 🔘 to exit a menu.

2.2.3 BRIGHTNESS ADJUSTMENT

1. Hold the wheel button 🔘 to go to the menu.

2. Rotate the wheel to select ☀️ **Brightness** menu item and press the wheel button 🔘 to adjust the brightness. You can select one of ten levels of the brightness to adjust the image lighter or darker.

3. Turn the wheel to move to another menu item or hold the wheel button 🔘 to exit a menu.

2.2.4 SCENE MODE

You can select proper Scene Mode according to environment temperature to improve the display effect.

1. Hold the wheel button 🔘 to go to the menu.

2. Rotate the wheel to select 👁️ / 🌲 **Scene Mode** menu item (👁️ is default option) and press 🔘 to switch scene.

   Recognition mode (👁️) improves an image so that the object edge is more distinct.

   Jungle mode (🌲) is more suitable for hunting environment because of the highlight function of small objects.

3. Turn the wheel to move to another menu item or hold the wheel button 🔘 to exit a menu.

2.2.5 PICTURE IN PICTURE MODE

The Picture-in-Picture (PIP) mode allows you to see simultaneously both a 2x magnified image of he central part in a PIP window and the main image. The PIP window is displayed at the up-center of the live view.

1. Hold the wheel button 🔘 to show the menu.

2. Select ◻️ **PIP** menu item and press the wheel button 🔘 to enable or disable Picture In Picture mode. The PIP window show in the upper part of screen.

3. Turn the wheel to move to another menu item or hold the wheel button 🔘 to exit a menu.

NOTE:

When Reticle is enabled, the PIP view is the detail of crosshair. When Reticle is not enabled, the PIP view is the detail of central part.

If digital zoom is enabled, the PIP view also zooms. If the digital zoom ratio exceeds 4, the PIP does not zoom.

2.2.6 ZEROING PROFILES

The user can customize and save five profiles with different reticle settings. In each profile, you can configure up to five types of reticle, firing distances and reticle corrections.

1. In the view mode, hold the wheel button 🔘 to show the menu.

2. Rotate the wheel to select 🔲 **Zeroing Profiles**.

3. Press the wheel button 🔘 to switch the zeroing profile.

4. Turn the wheel to move to another menu item or hold the wheel button 🔘 to exit a menu.

The right top of the image displays the reticle information. For example, **C1-100m** means you are using Zeroing setting #1 for a range of 100 meters in Zeroing Profile C.

ZEROING PROFILE SELECTION

CURRENT ZEROING PROFILE INFO.
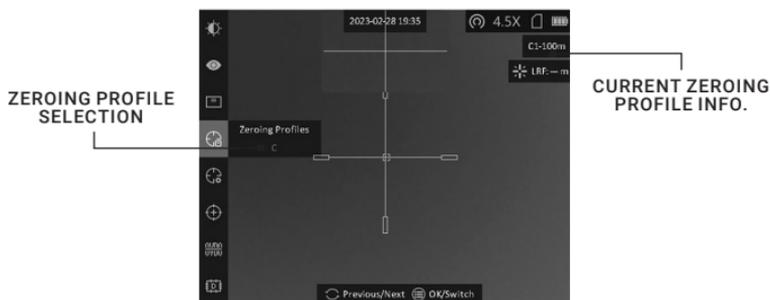
FIGURE 2-8. ZEROING PROFILES

NOTE:

There are 5 zeroing profiles in total, and you can configure 5 reticles and 5 zeroing distances in each profile.

2.2.7 RETICLE

You can select a reticle in the current zeroing profile, and set parameters such as type, color, and boresight correction (coordinates) for the reticle.

Select the zeroing profile first.

1. In the view mode, hold the wheel button 🗐 to show the menu.
2. Rotate the wheel to select 🔃 **Reticle** menu item and press the wheel button 🗐 to enter the reticle setting interface. Rotate the wheel to move between options.

FIGURE 2-9. RETICLE SETTINGS

3. Press the wheel button 🗐 to select a **Zeroing** No. You can select **OFF** to disable the reticle.

4. Set reticle type.

   1) In the reticle setting interface, rotate the wheel to select **Type**.

   2) Press the wheel button 🗐 to select a reticle type. 5 types of reticles can be selected.

| RETICLE 1 | RETICLE 2 | RETICLE 3 | RETICLE 4 | RETICLE 5 |

FIGURE 2-10. RETICLE PATTERNS

NOTE:

The scale intervals of the Reticle 4 changes synchronously under the current digital zoom. The value of one scale interval of the Reticle 4 is 4 mil (13 MOA).

5. Set reticle color.
    1) Rotate the wheel to select **Color**.
    2) Press the wheel button 🔘 to switch the color of the reticle. Black, white, red and green colors are available.

6. (Optional) Repeat 3 to 5 to set type and color for other reticles in this profile.

7. Hold the wheel button 🔘 to exit. After changing the zeroing parameters, the window "**Save the parameters?**" will appear.

– **OK:** Save the settings and exit.

– **CANCEL:** Exit without saving the settings.

NOTE:

There are 5 reticles that can be configured.

If the PIP function is enabled, the aimed target can be magnified on the interface.

2.2.8 BORESIGHTING

Correcting the reticle can help you aim at the target with high accuracy. The rifle scope has the ability to boresighting using the "One-Shot Zeroing" method.

Set the target to the selected zeroing distance. Select a zeroing profile in the menu of the scope. Align the reticle with the center of the target and shoot. If the point of impact does not coincide with the aiming point, correct the reticle.

1. In the view mode, hold the wheel button 🔘 to show the menu.

2. Rotate the wheel to select 🎯 **Reticle** menu item and press the wheel button 🔘 to enter the reticle setting interface.

3. Press the wheel button 🔘 to select a **Zeroing** No. you want to correct.

4. Set the distance to the target:
    1) Rotate the wheel to select **Distance**.
    2) Press the wheel button 🔘 to select the number you want to change.
    3) Rotate the wheel to change the number.

5. (Optional) Rotate the wheel to select **Freeze**, and press the wheel button 🔘 to enable the function.

NOTE:

When enabling the Freeze function in reticle, you can adjust the position of the cursor on a frozen image. This function can prevent image flutter.

6. Two crosshairs show in the view. The big one is reticle crosshair, and the small one is reference small crosshair. Reference crosshair will appear in the centre of the display. Zero the scope by moving the reticle on the screen. Set the reticle position:

1) Aim the big reticle at the center of target.
2) (Optional) Rotate the wheel to select **Zoom**, and press the wheel button (≡) to switch the zoom ratio.
3) Rotate the wheel to select the coordinates **X=0.00 Y=0.00**, and press the wheel button (≡) to switch the X and Y axis.
4) Holding the reference small crosshair at the aiming point (center of the target), rotate the wheel to move the reticle until it is aligned with the point of impact. The coordinate shows the current position of the reticle.
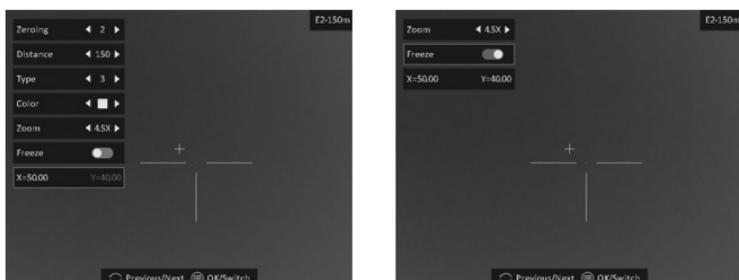
FIGURE 2-11. BORESIGHTING

TABLE 2-4. BORESIGHT CORRECTIONS

MODEL	ADJUSTMENT VALUE	RETICLE OFFSET	BORESIGHT INCREMENT
VARMINT LRF TS35-384	1 click	1 pixel	0.13 mil / 0.44 MOA / 1.3 cm at 100 m distance / 0.46 in at 100 yd distance
VARMINT LRF TS50-384	1 click	1 pixel	0.09 mil / 0.31 MOA / 0.9 cm at 100 m distance / 0.32 in at 100 yd distance
VARMINT LRF TS35-640	1 click	1 pixel	0.22 mil / 0.73 MOA / 2.2 cm at 100 m distance / 0.76 in at 100 yd distance
VARMINT LRF TS50-640	1 click	1 pixel	0.15 mil / 0.51 MOA / 1.5 cm at 100 m distance / 0.53 in at 100 yd distance

7. (Optional) Repeat 3 to 6 to set the position for other reticles in this profile. You can save up to five corrections in each profile.

8. Hold the wheel to exit. The window "**Save the parameters?**" will appear.

– **OK:** Save the settings and exit.
– **CANCEL:** Exit without saving the settings.

2.2.9   IMAGE CALIBRATION (FLAT FIELD CORRECTION)

The Image calibration function in the Rattler performs the so-called Flat Field Correction (FFC) can correct non-uniformity of display. During correction, a shutter will be lowered in front of the detector. A click is heard and the image is momentarily interrupted. In this case, the detector is calibrated and the image becomes more accurate.

1. Hold the wheel button 🔘 to show the menu.

2. Rotate the wheel to select ⊕ **Image Calib.** menu item and press the wheel button 🔘 to switch the FFC mode between **Manual FFC**, **Auto FFC** and **External**.

   Manual FFC: Enter Trigger Calibration in the menu and press the wheel button 🔘 to correct the non-uniformity of display (refer to part 2.2.21).

   Auto FFC: The rifle scope performs FFC automatically when switching on or rebooting the camera.

   External: Cover the lens cap, then enter Trigger Calibration in the menu and press the wheel button 🔘 to correct the non-uniformity of display (refer to part 2.2.21).

3. Turn the wheel to move to another menu item or hold the wheel button 🔘 to exit a menu.

2.2.10 CVBS OUTPUT

You can view the video on CVBS monitor, to get a better and clear image, more convenient to check the detail.

1. Connect the USB-CVBS cable to USB port of thermal rifle scope and to monitor's CVBS port.

NOTE:

USB-CVBS cable need to be purchase separately.

NOTE:

CVBS Output function doesn't support hot plug, so please connect the cable before power on.

2. Hold the wheel button 🔘 to show the menu.

3. Select **CVBS** menu item and press the wheel button 🔘 to turn on or turn off the CVBS video output.

4. Turn the wheel to move to another menu item or hold the wheel button 🔘 to exit a menu.

2.2.11 DEFECTIVE PIXELS CORRECTION

Defective Pixels Correction (DPC) function can correct the defective pixels on the screen which are not performed as expected.

Before you start switch the palettes mode to White Hot mode.

1. Hold the wheel button 🔘 to show the menu.
2. Rotate the wheel to select ⊞ **DPC** menu item, and press the wheel button 🔘 to enter the DPC setting interface.
3. Rotate the wheel to select **Axis**, and press the wheel to switch the moving direction of the cursor. If you select **X**, the cursor moves left and right; if you select **Y**, the cursor moves up and down.
4. Rotate the wheel to move the cursor until it reaches the defective pixel.
5. Press the wheel to set the axis as **N**, and rotate the wheel to select **DPC**.
6. Press the wheel button 🔘 to correct the defective pixel.

NOTE:

The selected defective pixel can be magnified and displayed at the bottom right of the interface.

2.2.12 AUTO POWER OFF

You can set the time for the automatic shutdown of the device as required.

1. Hold the wheel button 🔘 to show the menu of device.
2. Rotate the wheel to select ⏻ **Auto Power Off** menu item and press the wheel button 🔘 to select OFF, 30 min or 45 min.
3. Turn the wheel to move to another menu item or hold the wheel button 🔘 to exit a menu.

2.2.13 UNIT

You can switch the unit of measurement for distance.

1. Hold the wheel button 🔘 to show the menu of device.
2. Rotate the wheel to select ⊙ **Unit** menu item and press the wheel button 🔘 to select Yard and Meter units.
3. Turn the wheel to move to another menu item or hold the wheel button 🔘 to exit a menu.

2.2.14 BURN PREVENTION

This function can prevent damage to the thermal sensor from the sun or other high temperature bright light source. When enabling this function, the shield will close until the environment turns to normal.

1. Hold the wheel button 🔘 to go to the menu.
2. Rotate the wheel to select ⟡ **Burn Prevention** menu item and press the wheel button 🔘 to enable or disable the Burn Prevention function.
3. Turn the wheel to move to another menu item or hold the wheel button 🔘 to exit a menu.

NOTE:

When the burn-prevention function is disabled, the shield won't be forced to close in such conditions.

2.2.15 VERSION

1. Hold the wheel button 🔘 to show the menu of device.

2. Select ⓘ **Version** menu item and press the wheel button 🔘. You can view the device information such as firmware version, and serial number.

3. Turn the wheel to move to another menu item or hold the wheel button 🔘 to exit a menu.

2.2.16 RESTORE DEVICE

You can reset the settings of device.

1. Hold the wheel button 🔘 to show the menu of device.

2. Select 🔄 **Restore** menu item and press the wheel button 🔘. The window "**Initialize?**" will appear.

  – **OK:** Restore the device to defaults.

  – **CANCEL:** Exit without changing the settings.

2.2.17 LANGUAGE SETTING

You can select different languages of user interface.

1. Hold the wheel button 🔘 to show the menu.

2. Rotate the wheel to select Aa **Language** menu item and press the wheel button 🔘 to enter.

3. Rotate the wheel to select the language as required, and press the wheel button 🔘 to confirm.

2.2.18 TIME SYNCHRONIZATION

You can display the date and time on the screen. 24-hour and 12-hour time format are available.

1. Hold the wheel button 🔘 to show the menu.

2. Select 🕐 **Time Sync.** menu and press the wheel button 🔘.

3. Select the **24-Hour Time** and press the wheel button 🔘 to switch the time system (12 or 24 hour).

4. Rotate the wheel to select the time and date to be synchronized.

5. Press the wheel button 🔘 and rotate the wheel to set the time and date, and press the wheel button 🔘 again to finish the setting.

6. Hold the wheel button 🔘 to save settings and exit.

2.2.19 OSD

You can choose which OSD information to display in the live view interface. You can see Wi-Fi hotspot activation, current magnification, storage memory status, battery status, time and date in top of viewfinder.

1. Hold the wheel button 🔘 to show the menu.

2. Select 🔲 **OSD** menu item and press the wheel button 🔘 to enter.

3. Press the wheel button 🔘 to select the **OSD**, **Time** or **Date**. Press the wheel button 🔘 to switch on/off mode and confirm.

4. Hold the wheel button 🔘 to exit.

2.2.20 DISTANCE MEASUREMENT

The device can detect the distance between the target and the observation position with built-in laser rangefinder.

1. Hold the wheel button 🔘 to show the menu.

2. Rotate the wheel to select ⊣ᵢ⊢ **Laser Ranging** menu item and press the wheel button 🔘 to switch the laser ranging on/off,

3. Rotate the wheel to select the laser ranging mode between **Once** and **Continuous (15s)**, **Continuous (30s)**, **Continuous (1min)**, **Continuous (2min)**, **Continuous (5min)**. Press the wheel button 🔘 to set selected mode.

4. Hold the wheel button 🔘 to return to the live view interface.

5. When the Once mode is selected, point the square mark of the rangefinder at the target and press the MEASURE button ✳ to measure the distance to the target.

6. You can scan the surroundings under Continuous mode. Continuous distance scanning will occur for a set time of 15, 30 seconds, 1, 2 or 5 minutes after pressing the MEASURE button ✳.

The distance measurement result is displayed at the upper right of the image.

2.2.21 TRIGGER CALIBRATION

Trigger Calibration performs the correction of non-uniformity of display in the mode preset in the Image Calibration menu (part 2.2.9).

1. Hold the wheel button 🔘 to show the menu.

2. Rotate the wheel to select ⟳ **Trigger Calib.** menu item and press the wheel button 🔘 to trigger the calibration.

3. Hold the wheel button 🔘 to exit.

2.2.22 HOT TRACKING

The device can detect the highest temperature spot in the scene and mark it on display. When the hot spot mark is enabled, the ⊣⊢ mark displays in the spot of the highest temperature. When the scene changes, the ⊣⊢ mark moves.

1. Hold the wheel button 🔘 to show the menu.

2. Select 🔍 / ☺ **Hot Tracking** menu item and press the wheel button 🔘 to enable/disable hot spot mark (marking the spot of highest temperature).

3. Rotate the wheel to select the language as required, and press the wheel button 🔘 to confirm.

2.2.23 NETWORK CONFIGURATION

Connect your phone to the Wi-Fi hotspot of the rifle scope, you can configure the parameters and realize functions of the device.

1. Hold the wheel button 🔘 to show the menu.

2. Select ((•)) **Hotspot** menu item and press the wheel button 🔘 to enable or disable Wi-Fi hotspot.

3. Rotate the wheel to select the language as required, and press the wheel button 🔘 to confirm.

Open the AGM Connect APP and connect your phone with the device (refer to Section 2.3). You can view the interface of rifle scope on your phone.

NOTE:

When the power is less than 15%, the Wi-Fi hotspot function will be turned off automatically.

2.3 CLIENT SOFTWARE INTRODUCTION

Search the AGM Connect software in App Store (iOS System) or Google Play™ (Android System) and install the application on your mobile phone. Turn on the Wi-Fi hotspot on the thermal device and then connect your phone to the hotspot.

- Hotspot Name: Wlan-<Serial No.>
- Hotspot Password: Last 9 digits of Serial Number of your digital scope.

NOTE:

The device password is set by user at first activation. If the password was lost or forgotten, it can be reset. To reset a password perform the following steps:

1. When the rifle scope is turned on, hold the wheel button 🔘 to activate the OSD menu.

2. Select 🔲 menu item and press the wheel button 🔘 to restore all parameters to default settings.

1. Run the app and connect the phone or tablet with the device.

2. If the device is inactivated, set the password and activate it. If the device is activated, enter the password to add it to the app.

3. When the device is added, the live view can be seen. You can view the interface of the device on the software. User can change such image parameters as brightness, contrast, zoom, palettes directly via phone or tablet as well as record video on phone/tablet memory.
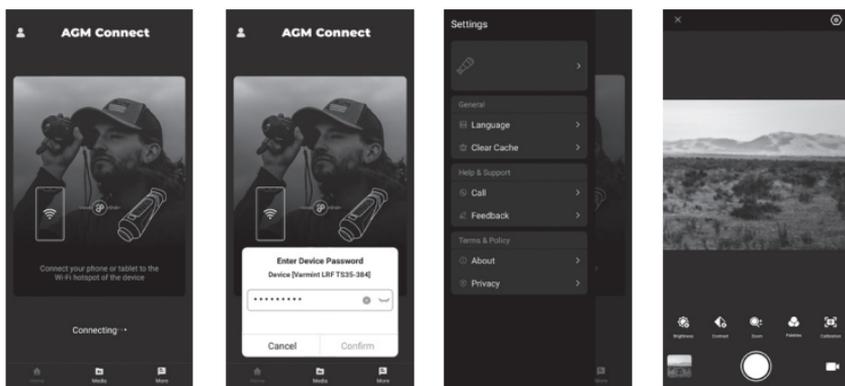

FIGURE 2-12. CLIENT SOFTWARE

3 MAINTENANCE

3.1 MAINTENANCE

3.1.1 CLEANING PROCEDURES

1. Gently brush off any dirt from the body of the device using a clean, soft cloth.
2. Moisten the cloth with fresh water and gently wipe down the external surfaces (except lenses).
3. Dry any wet surfaces (except lenses) using another dry, clean, soft cloth.
4. Using a lens brush, carefully remove all loose dirt from the lenses.
5. Dampen a cotton swab with ethanol and slowly, gently wipe down the lenses. Clean the glass surfaces using circular movements, starting from the center of the lens and moving out towards the edge, without touching the lens holder. Change the cotton swab after each circular stroke. Repeat this step until the glass surfaces are clean.
6. Clean the accessories with a soft brush (or cloth) dampened with soap and water.

3.1.2 LASER MAINTENANCE

It is not necessary to maintain the laser regularly. If the laser does not work, the laser assembly needs to be replaced in the factory under warranty.

CAUTION:

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

3.1.3 PREPARING FOR EXTENDED STORAGE

CAUTION:

Thoroughly dry each item before placing them into the storage case.

To prepare the rifle scope for extended storage:
1. Clean the rifle scope and accessories.
2. Place all items into the storage case.

3.1.4 UPDATING THE DEVICE FIRMWARE

1. Visit *www.agmglobalvision.com/firmware* website. Select your product, download the firmware update package to your PC and unzip it. Follow the detailed instructions on the website.

2. Connect the device to your PC with USB cable.

3. Turn on the device. Make sure the Wi-Fi hotspot function is disabled.

4. Open the detected disk (USB drive) in file manager program. Copy the unzipped digicap.dav file and paste it to the root directory of the device.

5. Turn off the device completely, then power it back on. After awhile, the firmware update process will start automatically. During the update, the screen will display the inscription "Upgrading...". The update process will be completed when the inscription "Upgrading..." goes out.

6. Turn off the device and disconnect it from your PC.

You can also enjoy automatic update function in AGM Connect App (see part 2.3 for details).

1. Start the AGM Connect App and tap the Settings icon in the left top corner.

2. Tap your device in the device list. The information about device will shown.

3. Tap **Checking for Upgrade** to detect and download the latest FW version.

3.2 TROUBLESHOOTING

Table 3-1 lists the most common malfunctions that may occur with your equipment. Perform the tests, inspections, and corrective actions in the order they appear in the table.

This table does not list all the malfunctions that may occur with your device, or all of the tests, inspections, and corrective actions that may be necessary to fix them. If the equipment malfunction is not corrected by the suggested actions, or a problem occurs that is not listed in this table, please contact AGM Global Vision's Customer Support center or your retailer.

TABLE 3-1. TROUBLESHOOTING

MALFUNCTION	CORRECTIVE ACTION
The rifle scope fails to activate.	1. Batteries are missing or improperly installed. Insert batteries or install correctly. 2. Batteries are dead. Replace the batteries. 3. Batteries, surfaces or contacts are dirty or corroded. Clean the contact.
Device power indicator is off.	Examine whether the device is off-battery.
The image of the rifle scope is not clear.	Perform the rifle scope adjustment referring to part 2.1.
Wi-Fi is not found.	Examine whether the Wi-Fi function is turned on. If not, go to OSD menu and turn on Wi-Fi.
Capturing or recording fails.	Examine the items below: 1. Whether the device is connected to your PC and disabled the capturing and recording. 2. Whether the storage space is full. 3. Whether the device is low-battery.
The PC cannot identify the rifle scope.	Examine the items below: 1. Whether the device is connected to your PC with standard USB cable. 2. If you use other USB cables, make sure the cable length is no longer than 1 m.

AGM Global Vision

4 WARRANTY INFORMATION

4.1 WARRANTY INFORMATION AND REGISTRATION

4.1.1 WARRANTY INFORMATION

This product is guaranteed to be free from manufacturing defects in material and workmanship under normal use for a period of five (5) years from the date of purchase. In the event that a defect covered by the warranty below occurs during the applicable period stated above, AGM Global Vision, at its discretion, will either repair or replace the product; such action on the part of AGM Global Vision shall be the full extent of AGM Global Vision's liability, and the Customer's sole and exclusive reparation. This warranty does not cover a product if it has been (a) used in ways other than its normal and customary manner; (b) subjected to misuse; (c) subjected to alterations, modifications or repairs by the Customer or by any party other than AGM Global Vision without prior written consent of AGM Global Vision; (d) is the result of a special order or categorized as "close-out" merchandise or merchandise sold "as-is" by either AGM Global Vision or the AGM Global Vision dealer; or (e) merchandise that has been discontinued by the manufacturer and either parts or replacement units are not available due to reasons beyond the control of AGM Global Vision. AGM Global Vision shall not be responsible for any defects or damage that in AGM Global Vision's view are a result from the mishandling, abuse, misuse, improper storage or improper operation of the device, including use in conjunction with equipment that is electrically or mechanically incompatible with, or of inferior quality to, the product, as well as failure to maintain the environmental conditions specified by the manufacturer. This warranty is extended only to the original purchaser. Any breach of this warranty shall be enforced unless the customer notifies AGM Global Vision at the address noted below within the applicable warranty period.

The customer understands and agrees that except for the foregoing warranty, no other warranties written or oral, statutory, expressed or implied, including any implied warranty of merchantability or fitness for a particular purpose, shall apply to the product. All such implied warranties are hereby and expressly disclaimed.

4.1.2 LIMITATION OF LIABILITY

AGM Global Vision will not be liable for any claims, actions, suits, proceedings, costs, expenses, damages, or liabilities arising out of the use of this product. Operation and use of the product are the sole responsibility of the Customer. AGM Global Vision's sole undertaking is limited to providing the products and services outlined herein in accordance with the terms and conditions of this Agreement. The provision of products sold and services performed by AGM Global Vision to the Customer shall not be interpreted, construed, or regarded, either expressly or implied, as being for the benefit of or creating any obligation toward any third party of legal entity outside AGM Global Vision and the Customer; AGM Global Vision's obligations under this Agreement extend

solely to the Customer. AGM Global Vision's liability hereunder for damages, regardless of the form or action, shall not exceed the fees or other charges paid to AGM Global Vision by the customer or customer's dealer. AGM Global Vision shall not, in any event, be liable for special, indirect, incidental, or consequential damages, including, but not limited to, lost income, lost revenue, or lost profit, whether such damages were foreseeable or not at the time of purchase, and whether or not such damages arise out of a breach of warranty, a breach of agreement, negligence, strict liability, or any other theory of liability.

4.1.3   PRODUCT REGISTRATION

In order to validate the warranty on your product, the customer must complete and submit AGM Global Vision PRODUCT REGISTRATION FORM on our website (www.agmglobalvision.com/customer-support).

4.1.4   OBTAINING WARRANTY SERVICE

To obtain warranty service on your unit, the End-user (Customer) must notify the AGM Global Vision service department via e-mail. Send any requests to **support@agmglobalvision.com** to receive a Return Merchandise Authorization number (RMA). When returning any device, please take the product to your retailer, or send the product, postage paid and with a copy of your sales receipt, to AGM Global Vision's service center at the address listed above. All merchandise must be fully insured with the correct postage; AGM Global Vision will not be responsible for improper postage or merchandise that becomes lost or damaged during shipment. When sending product back, please clearly write the RMA# on the outside of the shipping box. Please include a letter that indicates your RMA#, the Customer's Name, a Return Address, reason for the return, contact information (valid telephone numbers and/or an e-mail address), and proof of purchase that will help us to establish the valid start date of the warranty. Product merchandise returns that do not have an RMA# listed may be refused, or a significant delay in processing may occur. Estimated Warranty service time is 10-20 business days. The End-user/Customer is responsible for postage to AGM Global Vision for warranty service. AGM Global Vision will cover return postage/shipping after warranty repair to the End-user/Customer only if the product is covered by the aforementioned warranty. AGM Global Vision will return the product after warranty service by domestic UPS Ground service and/or domestic mail. Should any other requested, required, or international shipping methods be necessary, the postage/shipping fee will be the responsibility of the End-user/Customer.

For service, repair or replacement, please contact:

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5 SPECIFICATIONS

5.1 SPECIFICATIONS

	VARMINT LRF TS35-384	VARMINT LRF TS50-384	VARMINT LRF TS35-640	VARMINT LRF TS50-640
Detector Type	12 μm VOx Uncooled Focal Plane Array	12 μm VOx Uncooled Focal Plane Array	12 μm VOx Uncooled Focal Plane Array	12 μm VOx Uncooled Focal Plane Array
Resolution	384×288	384×288	640×512	640×512
Refresh Rate	50 Hz	50 Hz	50 Hz	50 Hz
Response Waveband	8 μm to 14 μm	8 μm to 14 μm	8 μm to 14 μm	8 μm to 14 μm
Lens System	35 mm; F1.0	50 mm; F1.0	35 mm; F1.0	50 mm; F1.0
Field of View (HxV)	7.53° × 5.65°	5.28° × 3.96°	12.52° × 10.03°	8.78° × 7.03°
Magnification	3x − 24x	4x − 32x	2x − 16x	2.5x − 20x
Digital Zoom	1x, 2x, 4x, 8x	1x, 2x, 4x, 8x	1x, 2x, 4x, 8x	1x, 2x, 4x, 8x
Observation Distance	1,750 m	2,500 m	1,750 m	2,500 m
Eye Relief	45 mm	45 mm	45 mm	45 mm
Monitor	1024×768, 0.39 inch, OLED, 50 Hz	1024×768, 0.39 inch, OLED, 50 Hz	1024×768, 0.39 inch, OLED, 50 Hz	1024×768, 0.39 inch, OLED, 50 Hz
FFC (Flat Field Correction)	Auto, Manual, External Correction	Auto, Manual, External Correction	Auto, Manual, External Correction	Auto, Manual, External Correction
Palettes	Black Hot, White Hot, Red Hot, Fusion	Black Hot, White Hot, Red Hot, Fusion	Black Hot, White Hot, Red Hot, Fusion	Black Hot, White Hot, Red Hot, Fusion
Highest Temperature Spot Tracking	Yes	Yes	Yes	Yes
Scene Mode	Jungle, Recognition	Jungle, Recognition	Jungle, Recognition	Jungle, Recognition

	VARMINT LRF TS35-384	VARMINT LRF TS50-384	VARMINT LRF TS35-640	VARMINT LRF TS50-640
Reticle	5 types, 4 colors, on/off	5 types, 4 colors, on/off	5 types, 4 colors, on/off	5 types, 4 colors, on/off
Laser Range Finder	Up to 600 m ±1 m accuracy	Up to 600 m ±1 m accuracy	Up to 600 m ±1 m accuracy	Up to 600 m ±1 m accuracy
Laser Wavelength	905 nm	905 nm	905 nm	905 nm
Laser Safety Class	Class 1	Class 1	Class 1	Class 1
Boresight Adjustment	Digital Controlled	Digital Controlled	Digital Controlled	Digital Controlled
Boresight Increment	0.13 mil / 0.44 MOA	0.09 mil / 0.31 MOA	0.22 mil / 0.73 MOA	0.15 mil / 0.51 MOA
Hotspot	Yes	Yes	Yes	Yes
Sleep Mode	Yes	Yes	Yes	Yes
Picture In Picture Mode	Yes	Yes	Yes	Yes
Burn Prevention	Yes	Yes	Yes	Yes
Built-in Storage	16 GB EMMC	16 GB EMMC	16 GB EMMC	16 GB EMMC
Record Video	Yes	Yes	Yes	Yes
Image Capture	Yes	Yes	Yes	Yes
CVBS Output	Yes (via USB)	Yes (via USB)	Yes (via USB)	Yes (via USB)
Battery Type	One 18650 (3.7V) Lithium Rechargeable Batteries	One 18650 (3.7V) Lithium Rechargeable Batteries	One 18650 (3.7V) Lithium Rechargeable Batteries	One 18650 (3.7V) Lithium Rechargeable Batteries
Battery Operating Time (WiFi and LRF off)	Up to 6 hours	Up to 6 hours	Up to 5 hours	Up to 5 hours
Battery Capacity Display	Yes	Yes	Yes	Yes
External Power	5 VDC/2 A, USB Type-C	5 VDC/2 A, USB Type-C	5 VDC/2 A, USB Type-C	5 VDC/2 A, USB Type-C

	VARMINT LRF TS35-384	VARMINT LRF TS50-384	VARMINT LRF TS35-640	VARMINT LRF TS50-640
Working Temperature	-20°C to 55°C (-4°F to 131°F)	-20°C to 55°C (-4°F to 131°F)	-20°C to 55°C (-4°F to 131°F)	-20°C to 55°C (-4°F to 131°F)
Protection Level	IP67	IP67	IP67	IP67
Drop Test Height	1.5 m (4.9 ft)	1.5 m (4.9 ft)	1.5 m (4.9 ft)	1.5 m (4.9 ft)
Dimensions (LxWxH)	200 × 66 × 109 mm (7.8 × 2.6 × 4.3 in)	210 × 74 × 109 mm (8.3 × 2.9 × 4.3 in)	200 × 66 × 109 mm (7.8 × 2.6 × 4.3 in)	210 × 74 × 109 mm (8.3 × 2.9 × 4.3 in)
Weight (w/o batteries)	652 g (1.44 lb)	722 g (1.59 lb)	652 g (1.44 lb)	722 g (1.59 lb)

All data subject to change without notice.

NOTES

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