# RATTLER
## TC35-384

### THERMAL IMAGING CLIP-ON

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.

**AGM Global Vision**

**173 West Main Street**
**PO Box 962**
**Springerville, AZ 85938**
**Tel. 928.333.4300**
**support@agmglobalvision.com**
**www.agmglobalvision.com**

**EXPORT INFORMATION**

Buyer acknowledges that all products supplied by AGM Global Vision are subject to U.S. export control laws, including, but not limited to, the Export Administration 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. This equipment should be installed and operated with minimum distance 20 cm between the radiator & your body.

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

**AGM Global Vision**

# 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.**

**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 handling rules should be followed at all times.

**WARNING:**

If a scope is mounted too far to the rear, the eyepiece can injure the shooter's brow. Shooting at an uphill angle also increases this hazard because it shortens the distance between the brow and the rear of the scope. For this reason, AGM scopes are engineered to provide generous eye relief. Therefore, when mounting your scope, we recommend positioning it as far forward in the mounts as possible to take full advantage of this generous eye relief. With hard-recoiling rifles, serious injury or even death can result from eyepiece impact with the shooter during the recoil process when discharging the firearm. Be certain that your installation provides sufficient eye relief for the recoil generated by your rifle before shooting the firearm.

NOTE: Give special attention to this warning when shooting uphill and/or from a prone position. These shooting conditions can dramatically reduce eye relief. PLEASE maintain maximum eye relief when shooting heavy recoiling and/or magnum firearms. THE USER ASSUMES ALL RESPONSIBILITY AND LIABILITY FOR HAVING THE AGM SCOPE PROPERLY MOUNTED TO A FIREARM AND USING THE AGM SCOPE PROPERLY. ALWAYS CHECK THE CONDITION OF YOUR MOUNTING SYSTEM PRIOR TO USING YOUR FIREARM.

**WARNING:**

The proper usage of the device is important for safe exploitation!
Therefore read carefully the present manual!

**WARNING:**

If the device was left in storage for a longer period of time, before exploitation check its functionality.

**WARNING:**

Disassembling of the device is prohibited, except in authorized repair centers.

**WARNING:**

The external optical surfaces should be clean at all times. Touching the optical surfaces with bare hands is not recommended.

**WARNING:**

Sand and sea water can damage the optical coatings!

**WARNING:**

Do not point the device directly at the sun!

**WARNING:**

Image performance is dependent on scenery and atmosphere conditions. Contrast in the same image may vary as a function of the time of day due to the effect of the sun. For example, at sunset objects will have absorbed different levels of heat resulting in greater temperature differences and better contrast.

**WARNING:**

When left in storage for a longer period of time, batteries have to be removed and stored in polyethylene bags to prevent contact with metal. (It is recommended to recharge the batteries every two to three months.)

**WARNING:**

When carrying or transporting the device, put the protective lens cap!

**WARNING:**

Condensation can cause fogging of the optical surfaces! Condensation occurs when the temperature or humidity changes as follows:

– When moving the device from cold to warm place or vice versa;

– In places with high humidity.

When equalizing the temperature of the device with the environmental, the condensation disappears. Use the towel to remove moisture.

**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 clip-on does not detect objects if they are behind glass windows or other barriers.

**WARNING:**

Clean the lens surfaces with the lens cloth or with the napkin!

**LEGAL NOTICE**

Before attaching to weapons, check the regional legal regulations in the area of application. The attachment to a weapon is always the sole responsibility of the user.

# 1 GENERAL INFORMATION

## 1.1 SYSTEM DESCRIPTION

The AGM Rattler TC35-384 is a compact thermal imaging clip-on system that allows quick transformation of the day optics into thermal imaging device without any special skills. Rattler TC35-384 can be easily attaching on up to 8x magnification scopes for medium range use and 24 hours operation under any weather and environmental conditions.

Powered with two CR123A or rechargeable RCR123A batteries the AGM Rattler TC35-384 gives up to 4.5 hours of continues work. An external 5 V power bank (battery pack) can be easily connected via an USB-C connector for a significant increase of operating time. Onboard Wi-Fi module for live video streaming and video/images recording via application are also available.
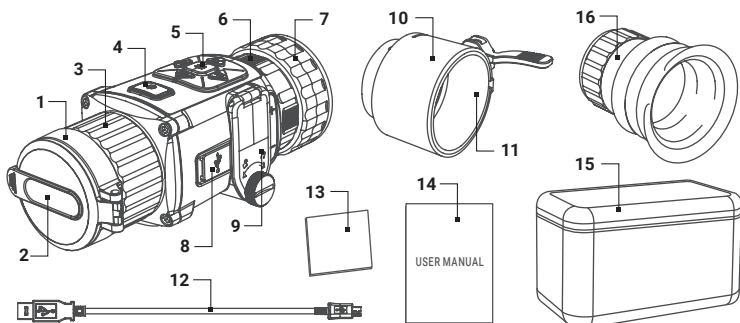


**FIGURE 1-1. MAIN PARTS AND COMPONENTS**

**TABLE 1-1. MAIN PARTS**

| ITEM | DESCRIPTION | ITEM | DESCRIPTION |
|------|-------------|------|-------------|
| 1 | Objective Lens | 9 | Battery Compartment |
| 2 | Objective Lens Cover | 10 | Day Scope Adapter |
| 3 | Objective Focus Ring | 11 | Insert |
| 4 | Power Button | 12 | USB Cable |
| 5 | Operation Buttons | 13 | Lens Tissue |
| 6 | Fixing Ring | 14 | User Manual |
| 7 | Output Lens | 15 | Carrying Bag |
| 8 | USB Type-C Interface (closed with a cover) | 16 | Monocular Eyepiece (optional) |

## 1.2  KEY FEATURES

- Quick conversion of daytime optics into thermal imaging scope
- Mounts in front of any daytime scope, no re-zeroing is required
- 384×288 thermal resolution, high sensitivity detector
- Image processing technology: Adaptive AGC, DDE, 3D DNR
- 1024×768 resolution 0.39-inch OLED display
- 8x digital zoom
- Lightweight and compact design
- Easy to operate control panel
- Automatic or manual (silent) calibration
- Video recording and snapshot
- Built-in EMMC memory (16 GB)
- Supports distance measurement
- Adjustable color palettes
- Wi-Fi data transmission
- Waterproof, shockproof
- Powered by two standard CR123A or RCR123A rechargeable batteries
- Up to 4.5 hours continuous working
- External power supply capability
- Limited 3-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, 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   BATTERIES INSTALLATION

**CAUTION:**

**Verify that the equipment is OFF before remove the batteries.**

To install the batteries (refer to Figure 2-1):

1. Turn the battery cover knob (A) counterclockwise and then open the battery cover (B).
2. Install two CR123A or RCR123A batteries (C) into the battery compartment. Align the polarity symbols on the batteries with the polarity symbols on the device body (D).
3. Close the battery cover. Turn the battery cover knob clockwise until stop.

When the device is on a battery charge level is displayed on the status bar.
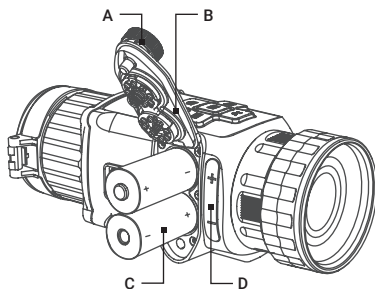


**FIGURE 2-1. BATTERY INSTALLATION**

### 2.1.3 SELECT BATTERY TYPE

You can change the battery type according to your need. Select the correct battery voltage in the device menu.

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

2. Select 🔋 Battery Voltage menu item, and press 🔳 button to switch the voltage.

### 2.1.4 CONNECTING THE DEVICE

1. Open the cable 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 files.
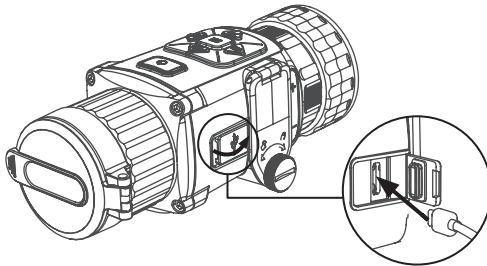


FIGURE 2-2. CABLE INTERFACE

### 2.1.5 CONTROL BUTTONS

The Rattler controls are shown in Figure 2-2 and are defined in Table 2-2.

Each button is responsible for some functions selected by short press or long press the button. Pushing a button for 3+ second is considered "long press/hold."
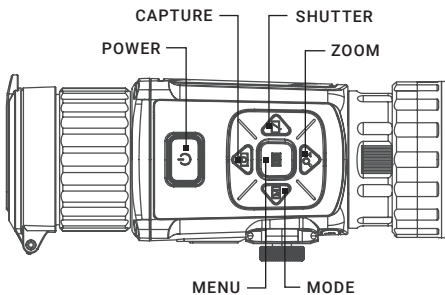


FIGURE 2-2. CONTROL BUTTONS

### TABLE 2-2. BUTTON FUNCTIONS

| BUTTON | | FUNCTIONS |
|--------|---------|-----------|
| (power icon) | POWER | **Press:** Sleep Mode/Wake Up Device<br>**Hold:** Power On/Off |
| M | MODE | **Press:** Switch Palettes |
| (camera icon) | CAPTURE | **Press:** Capture<br>**Hold:** Start/Stop Record Video |
| (menu icon) | MENU | **Press:** Enable/Disable OSD<br>**Hold:** Menu Operation |
| (zoom icon) | ZOOM | **Press:** Switch Digital Zoom<br>**Hold:** Enable/Disable Reticle |
| (shutter icon) | SHUTTER | **Press:** Correct Non-uniformity of Display |

### 2.1.6    POWER ON AND OFF

**Power On**

Hold the POWER button (power icon) for 4 seconds to power on the device. An image will appear on the display.

Refer to the figure below for the main view of the clip-on display.



DIGITAL ZOOM — — STORAGE
HOT SPOT — — BATTERY

**FIGURE 2-3. THE DISPLAY MAIN VIEW**

**Power Off**

When the device is turned on, hold (power icon) button for 4 seconds to power off the device.

### 2.1.7    SLEEP MODE

In the view mode, press the (power icon) button. After a few seconds, the display will turn off. Press the (power icon) button again to exit the Sleep Mode.

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### 2.1.8   PALETTE SETTINGS

You can select different palettes to display the same scene in different effects.
Press  M  button in the view mode to switch palettes.

TABLE 2-3. 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. |
| FUSION | The hot part is white-colored. From high temperature to low temperature, the image is colored in from white, yellow, red, pink to purple. |
| RED HOT | The hot part is red-colored in view. The higher the temperature is, the redder the color is. |

### 2.1.9   DIGITAL ZOOM

Press  $\mathcal{Q}\pm$  button in the view mode, the live view will switch between 1×, 2×, 4× and 8× digital zoom.

### 2.1.10   ON-SCREEN DISPLAY

Press  $\vcenter{\hbox{≡}}$  button in the view mode to display or hide the OSD information.

When OSD (On-Screen Display) is on the information of Wi-Fi hotspot activation, digital zoom, storage memory status, and battery status displays in top right corner of viewfinder.

### 2.1.11   DISPLAY OF THE RETICLE

Hold  $\mathcal{Q}\pm$  button in the view mode for 4 seconds, to display or hide the reticle. The crosshair helps you to aim at the target fast and accurately.

### 2.1.12   SHUTTER RELEASE

Press  $\boxed{\varnothing}$  button in the view mode to release the shutter once for correction of the non-uniformity of display.

### 2.1.13   RECORD/CAPTURE

**Video Recording**
Hold  $\boxed{\textcircled{\scriptsize{\textbf{O}}}}$  button in the view mode and start recording. In the upper left corner, the recording time displays.

Hold  $\boxed{\textcircled{\scriptsize{\textbf{O}}}}$  button again to stop recording.

**Snapshot Capturing**
Press  $\boxed{\textcircled{\scriptsize{\textbf{O}}}}$  button in the view mode, to capture picture

FIGURE 2-4. VIDEO RECORDING

**NOTE:**

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

• For exporting captured pictures, refer to Export Files.

### 2.1.14  FILE EXPORT

1. Before connecting the thermal clip-on to a computer, please make sure that the Wi-Fi function of the clip-on is disabled.

2. Connect the thermal clip-on to your PC with USB cable and open the detected disk.

3. Enter DCIM>100EZVIZ to view the videos and snapshots.

   - 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.

4. 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 CLIP-ON ONTO THE LENS OF A DAY SCOPE

Use the day scope adapter (DSA) to install the Rattler TC onto day scope lenses.

**ATTENTION:**

The day scope adapter are not recommended for installing the Rattler TC on firearms with heavy dynamic recoil (0.308 Win or stronger).

**NOTE:**

The Rattler TC cannot be attached to scopes that include focus rings on the housing of the objective lens.

**NOTE:**

The adapter must fit with the day scope front lens diameter. The adapter fits objective lenses between 50-59 mm in diameter.

Install the Rattler TC on the lens of a day scope as follows (refer to Figure 2-5):

1. Screw the day scope adapter (A) onto the Rattler's attachment place thread (B).

2. Turn the lever (C) backwards to loosen the adapter clamping device.

3. Place the insert into the DSA's clamp.

4. Slide the Rattler TC with the DSA onto the lens of the day scope as far as it goes.

5. Turn the nut (D) CW/CCW respectively for adapter's size adjustment.

6. Affix the DSA to the day scope by locking the lever (C). Verify that the clip-on is firmly secured to the day scope. If necessary, readjust the clamping device by turning the nut (D).
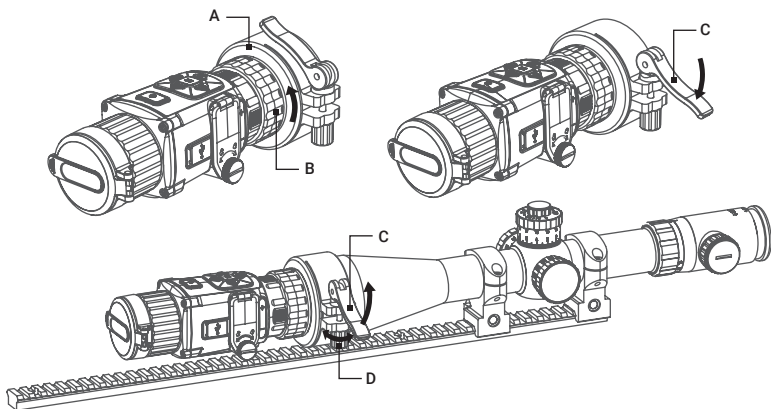


FIGURE 2-5. CLIP-ON INSTALLATION

## 2.1.16  THERMAL VIEW OBSERVATION

1. Install the Rattler TC on the weapon with a day scope (refer to part 2.1.15). Verify that the Rattler TC is securely mounted.

2. Remove the protective caps.

3. Point the equipment at an object.

4. Activate the Rattler TC. After approximately 4 sec, video of the thermal scene should appear.

5. If the day scope includes a focusing ring (i.e., parallax adjustment knob), adjust the focus for a parallax-free image.

6. Turn on the day scope's reticle illumination and adjust the reticle brightness.

7. Adjust the focus of Rattler TC by turning the focus ring.

8. Using the buttons on the control panel, configure the Rattler TC for your specific situation. Set palette, brightness, contrast, scene mode and FFC (Flat Field Correction), to display the best image effect.

For more information on operational setting procedures, see Part 2.2 (Main Functions).

### 2.1.17 EYEPIECE REPLACEMENT

The device can be used as a clip-on scope or a handheld observational camera. You can replace the eyepiece to realize different use of the device.

1. Rotate the fixing ring (Figure 2-6, A) of clip-on output lens (B) anticlockwise to remove it.
2. Align the optional monocular eyepiece (C) with the grooves (D) of device, and rotate the fixing ring of eyepiece (E) clockwise to tighten it.
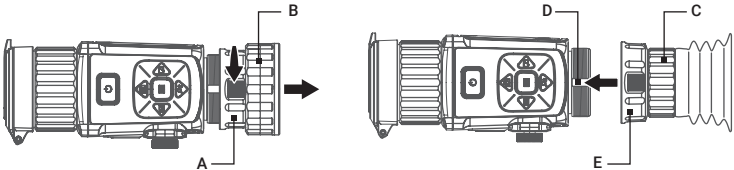


FIGURE 2-6. EYEPIECE REPLACEMENT

## 2.2 MAIN FUNCTIONS

### 2.2.1 MENU OPERATION

When the device powers on, hold :≡ button in the view mode for 4 seconds to display the menu.
Press 🔲 and ⊙± buttons to move between menu items. The active element is highlighted in orange. Press :≡ button to select menu item or change an option.

Hold :≡ button to exit the menu.



FIGURE 2-7. MAIN MENU

TABLE 2-4. MENU FUNCTION

| MENU ITEM | SYMBOL | OPTION | FUNCTION |
|-----------|--------|--------|----------|
| BATTERY VOLTAGE | 🔋 | 3.0 V / 3.7 V | Select the battery voltage. |
| BRIGHTNESS | ☀ | 5 Levels of brightness | Adjust the image brightness. |

| MENU ITEM | SYMBOL | OPTION | FUNCTION |
|---|---|---|---|
| CONTRAST | ◐ | 5 Levels of contrast | Adjust the image contrast. |
| SCENE MODE | 👁 | Recognition | Switch between the Recognition mode and Jungle mode. |
| | 🌲 | Jungle | |
| NETWORK | 📶̸ | OFF | Enable or disable the Wi-Fi hotspot. |
| | 📶 | Hotspot | |
| PIP | ▣ | Upper Left/ Upper Middle/ Upper Right/ Close | Enable or disable the PIP function. Set the position of the PIP window. |
| BORESIGHTING | ⌞+⌝ | 5 Types of reticle | Select the reticle type. Set the center of the reticle. |
| COLOR | ⌞□⌝ | White/ Green/ Red | Select the reticle color. |
| TRAJECTORY | 🚩 | 5 Profiles | One shot zero correction. |
| FFC | ⊕ | Auto / Manual / External | Select the FFC mode. |
| MEASURE | 📏 | 0.8m/1.2m/ 1.8m/3.0m Target Height | Enter distance measurement mode. |
| HOT TRACKING | ⊘ | OFF | Enable/disable hot spot mark (marking the spot of highest temperature). |
| | ⊙ | ON | |
| DPC | ⌷D⌷ | --- | Correct dead pixel manually. |
| CVBS | ⠿ | OFF | Turn on and off the CVBS Output function. |
| | CVBS | ON | |
| LANGUAGE | Aa | 17 Languages | Select the language of interface. |
| VERSION | ⓘ | --- | View the firmware version number and serial number. |
| RESTORE | ↻ | --- | Restore the device to defaults. |

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## 2.2.2 BATTERY TYPE

You can change the battery type according to your need. Select the correct battery voltage in the device menu.

1. Hold 🖩 button in the view mode to show the menu.

2. Select ⊞ Battery Voltage menu item, and press 🖩 button to switch the battery voltage.

## 2.2.3 BRIGHTNESS ADJUSTMENT

1. Hold 🖩 button to show the menu.

2. Select ☼ Brightness menu item and press 🖩 button to adjust the brightness.

In White Hot mode, you can select one of five levels of the brightness to adjust the image lighter or darker.

In Black Hot mode, the brightness of the image turns in the opposite way.

## 2.2.4 CONTRAST ADJUSTMENT

1. Hold 🖩 button to go to the menu.

2. Select ◑ Contrast menu item and press 🖩 button to adjust the image contrast. You can select one of five levels of the contrast.

## 2.2.5 SCENE MODE

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

1. Hold 🖩 button to show the menu.

2. Select ◉ / ▲ Scene Mode menu item ( ◉ is default option) and press 🖩 button 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. Hold 🖩 for 4 seconds to save settings and exit.

## 2.2.6 NETWORK CONFIGURATION

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

1. Hold 🖩 button to show the menu.

2. Select ⌖ menu item to enable Wi-Fi hotspot function.

3. Turn on the WLAN and connect to the Wi-Fi hotspot.

   - Hotspot Name: Wlan-IPTS Serial No.

   - Hotspot Password: Last 9 digits of Serial No.

4. Search the client software on App Store (iOS System) or Google Play™ (Android System) to download and install the app. T-Vision APP is recommend.

5. Open the APP and connect your phone with the device. You can view the interface of clip-on on your phone.

**NOTE:**

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

### 2.2.7  PICTURE IN PICTURE MODE

1. Hold 📋 button to show the menu.

2. Select ▣ PIP menu item and enter PIP mode. The details show in the upper left corner.

**NOTE:**

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

3. Press 📋 button to switch the PIP type. Upper Left, Upper Middle, Upper Right, and OFF are selectable.

**NOTE:**

When you select Upper Right as PIP type, the OSD will be blocked.

4. Hold 📋 button to exit.

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

### 2.2.8  BORESIGHTING

All Rattler TC are adjusted on the laboratory test equipment with accuracy aligned to 1 MOA or better. The final accuracy depends on customer riflescope, parallax of used rifle scope and shooting distance.

To achieve better result accuracy, use electronic accuracy correction. Adjust the position of the clip-on reticle so that it coincides with the center of the day riflescope reticle.

1. Turn on the reticle display by pressing and holding 🔍± button.
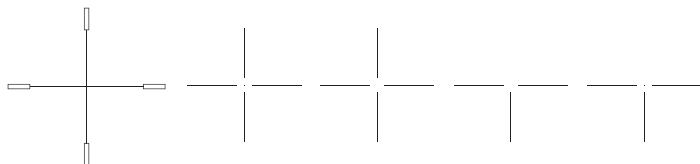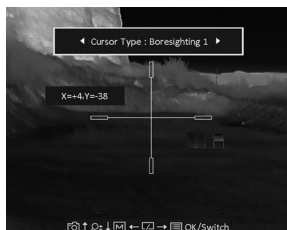
2. Hold 📋 button to show the menu.



FIGURE 2-8. BORESIGHTING

3. Select ⌞+⌝ Boresighting menu item. A crosshair shows in the center of the view.

4. Press M or ⌦ buttons to select one of 5 reticle type. Then press ☰ button to confirm.

5. Press M , ⌦ , ⌜⊙⌝ and ⌀± buttons to move the crosshair position. The coordinate shows the current position of the crosshair.

6. Hold ☰ button to save and exit.

## 2.2.9 RETICLE COLOR

You can change the color of the crosshairs.

Enable reticle first.

1. Hold ☰ button to show the menu.

2. Select ⌞C⌝ Color menu item and press ☰ button to switch the color of crosshair. White, Green, and Red colors are selectable.

3. Hold ☰ button to save and exit.

## 2.2.10 TRAJECTORY CORRECTING

Enable the trajectory correction to shot the target with high accuracy by marking the offset between the big crosshair and small crosshair.

Select the desired reticle type in the Boresighting menu.

1. Hold ☰ button to show the menu.

2. Select ⚑ Trajectory menu item. Two crosshairs show in the view. The big one is reticle crosshair, and the small one is trajectory correction crosshair.

3. Set the distance.

    1). Press ☰ button, and then press ⌜⊙⌝ or ⌀± buttons to adjust the distance between the target and the device.

    2). Press ☰ button to save the distance settings.

4. Set the crosshair position of trajectory correction.

    1) Aim the big crosshair at the target.

    2) Shot and mark the actual drop point of the bullet.

    3) Press M , ⌦ , ⌜⊙⌝ and ⌀± buttons to move the small cursor to the position of the actual drop point. You can view the coordinate of the cursor in the view.

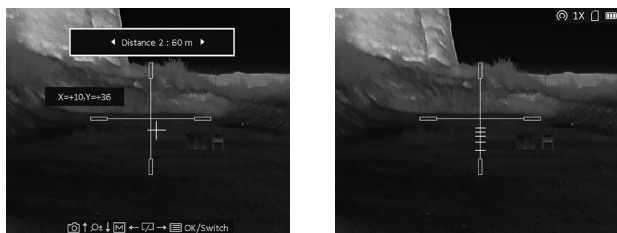5. Press ☰ button to switch to the next distance.



FIGURE 2-9. TRAJECTORY CORRECTING

6. Repeat step 3 to 4 to set another trajectory correction position.

You can save up to five corrections for different distances. Corrective aiming points will be displayed with short lines on the reticle.

7. Hold ▤ button to exit.

## 2.2.11 FLAT FIELD CORRECTION

Flat Field Correction (FFC) function can correct non-uniformity of display.

1. Hold ▤ button to show the menu.

2. Select ⊕ FFC menu item and press ▤ button to switch the FFC mode.

**Auto:** The clip-on performs FFC automatically when switching on or rebooting the camera.

**Manual:** Hold ▨ button in live view to correct the non-uniformity of display.

**External:** Cover the lens cap, then hold ▨ button in live view to correct the non-uniformity of display.

3. Hold ▤ button to confirm the setting and exit.

## 2.2.12 DISTANCE MEASUREMENT

The device can detect the distance between the target and the observation position.

**NOTE:**

**When measuring the distance, keep the hand and the position steady. Otherwise, the accuracy may be affected.**

1. Hold ▤ button to show the menu.

2. Select ▇ menu item and press ▤ button to enter the Distance Measurement mode.

3. Press ⌕± button to go to the target setting interface.

   1) Press ▢ or ⌕± to select the target from Wolf (0.8m), Bear (3.0m), Deer (1.2m), and Custom (1.8m). Each target preset can be modified from 0.1 to 9.9m.

   2) Set the target and press ▤ button to confirm.

4. Align the center of top mark with the edge of target top. Press ▤ button.

The cursor blinks on the top edge of the target.

5. Align the center of bottom mark with the edge of target bottom. Press ▤.

The left top of the image displays the distance measurement result and the height of the target.



FIGURE 2-10. DISTANCE MEASUREMENT

**NOTE:**

Go to distance measurement interface, and press ▤ button to view the result of the previous measuring target.

### 2.2.13 HOT TRACKING

The device can detect the highest temperature spot in the scene and mark it on display.

1. Hold ▤ button to show the menu.

2. Select ◌ / ◌ and press ▤ button to enable/disable hot spot mark (marking the spot of highest temperature).

When the hot spot mark is enabled, the -¦- mark displays in the spot of the highest temperature. When the scene changes, the -¦- mark moves.

### 2.2.14 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 palette to White Hot mode.

1. Hold ▤ button to show the menu.

2. Select ⬚D⬚ DPC menu item and press ▤ button.

3. Press ⎡M⎤ , ⎡⬚⎤ , ⎡⬚⎤ and ⎡⬚±⎤ buttons to move the cursor to the position of dead pixel.

6. Hold ▤ button to correct the dead pixel.

### 2.2.15 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 clip-on 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 ▤ button to show the menu.

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

### 2.2.16 LANGUAGE SETTING

You can select different languages of user interface.

1. Hold ▤ button to show the menu.

2. Select ⎡Aa⎤ Language menu item and press ▤ button to select the language.

The following languages are supported: English, Russian, German, Czech, French, Spanish, Danish, Norwegian, Swedish, Finnish, Hungarian, Italian, Polish, Portuguese, Romanian, Slovak, Spanish.

3. Hold :≡ button to save settings and exit.

# 2.3 CLIENT SOFTWARE INTRODUCTION

We recommend using T-Vision (V5.4.12 and below) software. Install the client software on your mobile phone first, and then connect your phone to the hotspot of the clip-on. Refer to chapter 2.2.6 for details of hotspot connection.

**NOTE:**

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

1. **When the clip-on is turned on, hold :≡ button to activate the OSD menu.**

2. **Select ⟲ menu item and press :≡ button to restore all parameters to default settings.**

1. Open the APP and connect the phone or pad 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 app.

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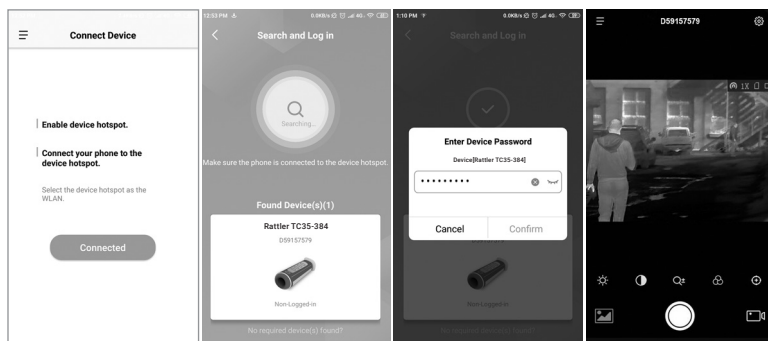


FIGURE 2-11. CLIENT SOFTWARE

# 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    PREPARING FOR EXTENDED STORAGE

**CAUTION:**

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

To prepare the clip-on for extended storage:
1. Clean the clip-on and accessories.
2. Place all items into the storage case.

### 3.1.3 VIEW DEVICE INFORMATION

1. Hold 📰 button to show the menu of device.
2. Select 🛈 Version menu item and press 📰 button. You can view the device information such as version, and serial No.

### 3.1.4 UPGRADE DEVICE

Please get the upgrade package first.
1. Connect the device to your PC with USB cable.
2. Open the detected disk, copy the upgrade file and paste it to the root directory of the device.
3. Disconnect the device from your PC.
4. Reboot the device.

The device upgrades automatically. The upgrading process will be displayed in the main interface.

### 3.1.5 RESTORE DEVICE

1. Hold ☰ button to show the menu of device.
2. Select ↻ Restore menu item and press ☰ button to restore the device to defaults according to the prompt.

## 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 charge indicator flashes improperly. | Examine whether the device is charged with standard power adapter and the charging temperature is 0°C to 45°C (32°F to 113°F). |
| Device power indicator is off. | Examine whether the device is off-battery. |
| The image is not clear. | Perform the sight adjustment referring to paragraph 2.1.16. |
| 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:<br>1. Whether the device is connected to your PC and disabled the capturing and recording.<br>2. Whether the storage space is full.<br>3. Whether the device is low-battery. |
| The PC cannot identify the clip-on. | Examine the items below:<br>1. Whether the device is connected to your PC with standard USB cable.<br>2. If you use other USB cables, make sure the cable length is no longer than 1 m.<br>3. Whether the Wi-Fi function is turned on. If so, go to OSD menu and turn off Wi-Fi. |

# 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 three (3) 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:

**AGM Global Vision**

**173 West Main Street**
**PO Box 962**
**Springerville, AZ 85938**
**Tel. 928.333.4300**
**support@agmglobalvision.com**
**www.agmglobalvision.com**

# 5  SPECIFICATIONS

## 5.1 SPECIFICATIONS

| ITEM | DATA |
|---|---|
| Detector Type | 17 µm VOx Uncooled Focal Plane Arrays |
| Resolution | 384×288 |
| Refresh Rate | 50 Hz |
| Response Waveband | 8 µm to 14 µm |
| Lens (Focal Length) | 35 mm |
| Aperture | F1.0 |
| Field of View (H×V) | 10.0° × 8.0° |
| Magnification | 2.14× |
| Digital Zoom | 1×, 2×, 4×, 8× |
| Observation Distance | Up to 1235 m |
| Exit Pupil | 22 mm |
| Monitor | 1024×768, 0.39 inch, OLED |
| FFC (Flat Field Correction) | Auto, Manual, External Correction |
| Palettes | Black Hot, White Hot, Red Hot, Fusion |
| Highest Temperature Spot Tracking | Yes |
| Scene Mode | Jungle, Recognition |
| Reticle | 5 types, 3 colors, on/off |
| Distance Measurement | Yes (Stadiometric Rangefinder) |
| Wi-Fi Hotspot | Yes |
| Sleep Mode | Yes |
| Picture In Picture Mode | Yes |
| Built-in Storage | 16 GB EMMC |
| Record Video | On-board video recording |
| Capture Snapshot | Yes |
| CVBS Output | Yes (via USB) |
| Battery Type | Two CR123A or RCR123A Lithium |
| Battery Operating Time (Wi-Fi off) | Up to 4.5 hours continuous running (@25°C) |
| Battery Capacity Display | Yes |
| Power | 5 VDC/2 A, USB Type-C interface |
| Working Temperature | -20°C to 55°C (-4°F to 131°F) |
| Protection Level | IP67 |
| Drop Test Height | 1.5 m (4.9 feet) |
| Day Scope Adapter | For 50-59 mm objective lens diameter |
| Dimension (w/o adapter) | 153 × 62 × 59 mm (6.0 × 2.4 × 2.3 in) |
| Weight (w/o batteries) | 420 g (0.93 lb) |

*All data subject to change without notice.*

**AGM Global Vision**

MAIN OFFICE
173 West Main Street
PO Box 962
Springerville, AZ 85938
USA
Tel. +1.928.333.4300
info@agmglobalvision.com
www.agmglobalvision.com

EUROPEAN OFFICE
Andrey Lyapchev #7
Sofia, P.C. 1756
Bulgaria
Tel. +44.292.255.0509
info@agmglobalvision.eu
www.agmglobalvision.eu