



SCAN FOR
FULL MANUAL

CONTROL DIAL

Adjust digital zoom (x8)
Change color palette
Adjust Sensor Settings

POWER BUTTON

Power on/off

1 DOT BUTTON

Manual sensor calibration
Sleep mode
Display ballistic drop
Take LRF reading/ hide LRF reading

2 DOT BUTTON

Start/stop recording or take photo
Switch photo/video modes

QUICK START GUIDE

Wraith 2 LRF 384
Thermal 3-23x35
SM17006
Wraith 2 LRF 640
Thermal 2-16x40
SM17013



MAKE YOUR MARK

FOR MORE INFORMATION VISIT SIGHTMARK.COM

BATTERIES

This unit uses an 18650 battery . Due to size , output , and capacity differences , we recommend only using our 18650 battery .

To change the batteries :

1. Locate the battery compartment (1) on the right side of the scope . Flip the battery cap lever upward .
2. Rotate the battery cap counter - clockwise to remove it .
3. Insert the battery into the compartment with the positive (+) end facing inward , as indicated on the bottom of the unit .
4. Reinstall the battery cap and rotate it clockwise until fully tightened . Press the battery cap lever back into the locked position .
5. Confirm the battery cap is fully seated , not cross - threaded , and that the rubber O - ring is properly aligned .



BATTERIES

A warning that batteries (battery pack or batteries installed) shall not be exposed to excessive heat such as direct sunlight or fire.

- (1) Replacement of a battery with an incorrect type that can defeat a safeguard.
- (2) Disposal of a battery into a fire or a hot oven. Mechanically crushing or cutting a battery can result in an explosion.
- (3) Leaving a battery in a high temperature surrounding environment can result in an explosion or the leakage of flammable liquid or gas.
- (4) A battery subjected to extremely low air pressure may result in an explosion or the leakage of flammable liquid or gas.

FCC STATEMENT

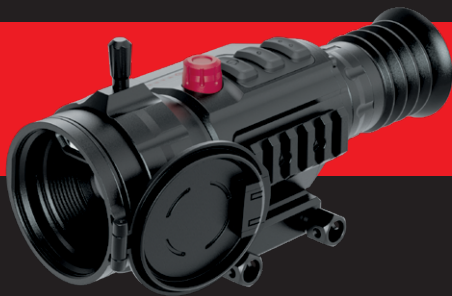
1. This device complies with Part 15 of the FCC Rules . Operation is subject to the following two conditions :

- (1) This device may not cause harmful interference , and
- (2) This device must accept any interference received , including interference that may cause undesired operation .

Wi-Fi:	Frequency Band:	2400-2483.5 MHz
	RF Power:	≤20 dBm



USER MANUAL



WRAITH 2 LRF
384 THERMAL 3-24x35
SM17006

WRAITH 2 LRF
640 THERMAL 2-16x40
SM17013

ABOUT SIGHTMARK®

Founded to meet the changing needs of the outdoor industry and its customers, Sightmark® was introduced at SHOT Show 2007 in response to the growing popularity of the modern shooting market. The goal was to provide state-of-the-art optics and accessories to make the modern sporting rifle, shotgun and pistol as accurate as possible. In addition, each product is designed for the core market, enabling shooters to purchase more high quality items to accessorize their firearm for hunting, home defense and competition shooting.

In 2011, the new 33,000 square-foot (3066m²) headquarters was completed in Mansfield, Texas, combining the company's corporate offices and a large warehouse to handle the increase in sensitive material and technology being produced. The new facility provides more space for research and development, production, and distribution of defense-related products.

Best-selling products include red dot sights, riflescopes and chamber laser boresights. More than one million Sightmark® boresights are in use since first released to the market. Sightmark® has earned several patents and awards from industry associations and publications including Field & Stream, Optics Planet, Outdoor Life and Predator Xtreme. Numerous optics and accessories have been field tested and approved by prominent outdoor organizations such as the North American Hunting Club and the National Tactical Officers Association.

Currently, Sightmark® represents leading markets growing in more than 55 countries and many quality retailers in every state. Products are sold by top retailers and national specialty chains such as: Academy Sports & Outdoors, Bass Pro Shops, Cabela's, Frankonia and many more.



WRAITH 2 LRF 384 THERMAL RIFLESCOPE

The Sightmark Wraith 2 LRF 384 Thermal 3-24x35 is one of two optics in the new Wraith 2 line, both equipped with an integrated laser rangefinder — a first for the Wraith series. Powered by a 384x288 Vanadium Oxide sensor with 12µm pixel pitch and a 60fps frame rate, it delivers a sharp, fluid thermal image on a 1024x768 OLED display. The built-in Class 1 LRF ranges targets from 5 to 1,000 yards with $\pm 0.5\%$ yard precision at 200 to 1000 yards, putting real-time distance data on-screen without a separate device. With a base 3x optical magnification, 1–8x digital zoom, a 2,350-yard (2,150 meters) detection range, and 14 reticle options spanning first and second focal plane, it is built for serious hunters and tactical shooters who demand precision at distance in total darkness.

FEATURES:

- Integrated Laser Rangefinder
- NETD 20mK
- 384x288 Vanadium Oxide Sensor
- 1024x768 OLED Display
- 2,350-yard (2,150 m) Detection Range
- 5 Color Palettes
- 3x Optical / 1–8x Digital Zoom
- 14 Reticle Options
- Onboard Wi-Fi, Video Recording & Photo Capture
- 35 mm Objective Lens
- IPX6 Water Resistance
- 18650 Battery
- USB-C compatible for external batteries

INCLUDED:

- 0.3 m long USB-C to USB-A cable
- Rubber Eyecup
- Flip Cap Back (for eye lens)
- Flip Cap Front (for objective lens)
- 2 x 18650 Battery
- USB-C Charger for 18650 Battery

WRAITH 2 LRF 640 THERMAL RIFLESCOPE

The Sightmark Wraith 2 LRF 640 Thermal 2-16x40 is a premium thermal riflescope featuring a high-resolution 640x512 Vanadium Oxide sensor with NETD < 20 mK and an integrated Class 1 laser rangefinder capable of ranging targets from 5 to 1,000 yards. With a 60fps frame rate, 1024x768 OLED display, 2,730-yard (2,500 meters) detection range, and five color palettes, it delivers exceptional target identification in complete darkness. A 40mm objective lens, 2x optical magnification, 1–8x digital zoom, and 14 reticle options provide versatility across any platform or shooting scenario. Built on an IPX6-rated aluminum alloy housing with onboard Wi-Fi, video recording, photo capture, and a USB-C port for an external battery, it represents the maximum capabilities of the Wraith 2 platform.

FEATURES:

- Integrated Laser Rangefinder
- NETD 20 mK
- 640x512 Vanadium Oxide Sensor
- 1024x768 OLED Display
- 2,730-yard (2,500 m) Detection Range
- 5 Color Palettes
- 2x Optical / 1–8x Digital Zoom
- 14 Reticle Options
- Onboard Wi-Fi, Video Recording & Photo Capture
- 40 mm Objective Lens
- IPX6 Water Resistance
- 18650 Battery
- USB-C compatible for external batteries

INCLUDED:

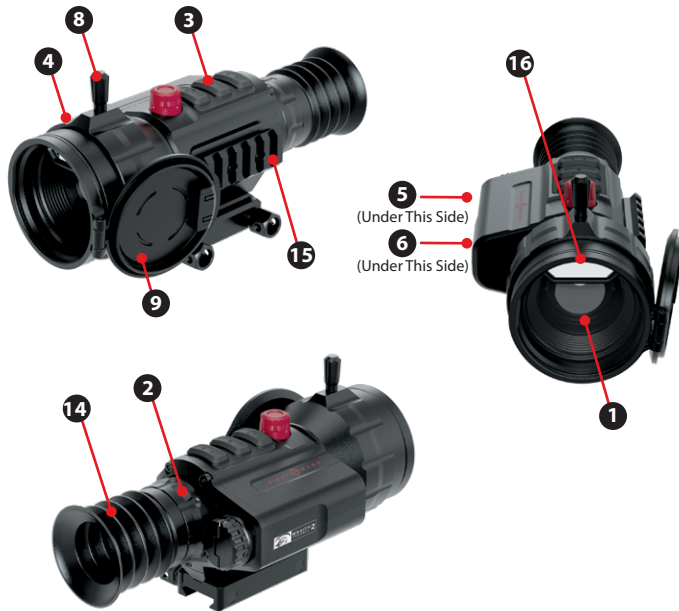
- 0.3 m long USB-C to USB-A cable
- Rubber Eyecup
- Flip Cap Back (for eye lens)
- Flip Cap Front (for objective lens)
- 2 x 18650 Battery
- USB-C Charger for 18650 Battery

TECHNICAL SPECIFICATIONS	SM17006	SM17013
	Wraith 2 LRF 384 Thermal 3-24x35	Wraith 2 LRF 640 Thermal 2-16x40
Sensor Resolution	384 x 288	640 x 512
Sensor Technology	Vanadium Oxide	Vanadium Oxide
Reticle		
Reticle Options	4 FFP and 10 SFP count	4 FFP and 10 SFP count
Connectivity		
Video Recording	Yes	Yes
USB / External Power	Yes	Yes
Wi-Fi / Streaming	Yes	Yes
Photo Capture	Yes	Yes
Display		
Display Resolution	1024 x 768	1024 x 768
Display Type	OLED	OLED
Electrical		
Battery Type	1x 18650	1x 18650
Battery Life	4.5 hours Preview Mode	4.5 hours Preview Mode
Environmental		
IP / Water Rating	IPX6	IPX6
Operating Temperature	-4 to 122 °F / -20 to 50 °C	-4 to 122 °F / -20 to 50 °C
Features		
Laser Range Finder	Yes	Yes
Laser Classification	Class 1	Class 1
Max Output Power	1.8 mW	1.8 mW
Wavelength of Laser	905 nm	905 nm

TECHNICAL SPECIFICATIONS	SM17006	SM17013
	Wraith 2 LRF 384 Thermal 3-24x35	Wraith 2 LRF 640 Thermal 2-16x40
LRF module		
Range	5 – 1000 yd / 4.6 – 914 m	5 – 1000 yd / 4.6 – 914 m
Ranging Precision	± 1 y @ 5 -200 range ± 0.5% y @ 200 - 1000 range	± 1 y @ 5 -200 range ± 0.5% y @ 200 - 1000 range
Laser Classification	Class 1	Class 1
Wavelength of Laser	905 nm	905 nm
Imaging		
Pixel Pitch	12 µm	12 µm
Spectral Range	8-14 µm	8-14 µm
Frame Rate	60 fps	60 fps
NETD	20 mK	20 mK
Detection Range	2,350 yard (for 4.9 feet height target) / 2,150 m (for 1.5 m height target)	2,730 yard (for 4.9 feet height target) / 2,500 m (for 1.5 m height target)
Color Palettes	White Hot / Black Hot / Rainbow / Green Hot / Iron Heat count	White Hot / Black Hot / Rainbow / Green Hot / Iron Heat count
Optical		
Magnification	3x optical	2x optical
Objective Lens Diameter	35 mm	40 mm
Digital Zoom	1-8 x	1-8 x
Eye Relief	2 in / 50 mm	2 in / 50 mm
Physical		
Body Material	Aluminum alloy	Aluminum Alloy
Tube Diameter	N/A	N/A
Dimensions (length, width, and height)	6.9 x 3.4 x 3.5 in / 174 x 87 x 88 mm	6.9 x 3.4 x 3.5 in / 174 x 87 x 88 mm
Weight	31.1 oz / 883 g (With objective & eyepiece caps)	30.8 oz / 874 g (With objective & eyepiece caps)

PARTS DIAGRAM

1. Objective lens
2. Eyepiece (diopter adjustment)
3. Controls
4. Focus adjustment
5. Card slot
6. USB port
7. Battery compartment
8. Removable throw lever
9. Objective flip-cap
10. Eyepiece flip-cap (Not Pictured)
11. Charger (Not Pictured)
12. USB cable (Not Pictured)
13. Battery (Not Pictured)
14. Rubber eyecup
15. Removable accessory rail
16. LRF



SETUP

BATTERIES

This unit uses an **18650 battery**. Due to size, output, and capacity differences, we recommend only using our 18650 battery.

To change the batteries:

1. Locate the battery compartment (7) on the right side of the scope. Flip the battery cap lever upward.
2. Rotate the battery cap counter-clockwise to remove it.
3. Insert the battery into the compartment with the positive (+) end facing inward, as indicated on the bottom of the unit.
4. Reinstall the battery cap and rotate it clockwise until fully tightened. Press the battery cap lever back into the locked position.
5. Confirm the battery cap is fully seated, not cross-threaded, and that the rubber O-ring is properly aligned.



EXTERNAL POWER

The Wraith 2 is equipped with a USB-C external power port located beneath the rubber cover on the bottom-right side of the unit.

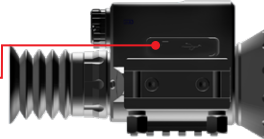
An external USB-C power source, such as a battery pack, can be used to power the scope during operation for extended runtime. The Picatinny rail on the left side of the unit can also be used to mount a compatible external battery pack directly to the scope.

Note: The USB-C connection powers the unit only and does not charge the installed 18650 battery. To recharge the 18650 battery, remove it from the unit and use a compatible external 18650 battery charger.



MICRO MEMORY CARD

To access the microSD card slot, open the rubber cover on the bottom-right side of the unit. This is the same cover used to access the USB-C external power port.

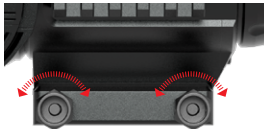


MOUNTING

The Wraith 2 attaches to a firearm using the integrated Picatinny rifle mount located on the bottom of the unit.

To attach the scope:

1. Loosen the mount thumbscrews.
2. Place the unit onto your firearm's Picatinny rail, aligning the cross bolts with the rail slots.
3. Adjust the scope forward or rearward to achieve proper eye relief.
4. Tighten the mount thumbscrews to 35–50 inch-pounds (4.0–5.6 N·m).



ADJUSTMENTS

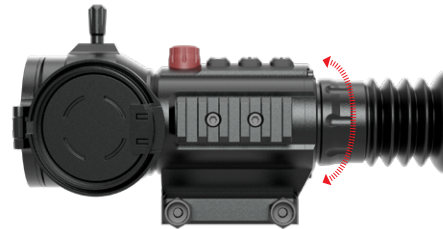
EYEPiece DIOPTRER ADJUSTMENT

The diopter adjustment focuses the display for your eye. Set the diopter before adjusting the objective focus. Once properly set, the diopter should not need to be adjusted again unless the scope is used by another shooter or your vision changes.

To adjust the diopter:

1. Locate the diopter adjustment (2).
2. Look through the eyepiece at the display icons or menu text.
3. Rotate the diopter adjustment left or right until the display appears sharp.

(Use icons or numbers on the display to check screen focus — the actual image through the objective lens may need to be focused separately.)



OBJECTIVE FOCUS ADJUSTMENT

The objective focus adjustment focuses the thermal image based on the distance to the target. Use this adjustment when viewing targets or objects at different distances.

To adjust focus:

1. Locate the objective focus adjustment (4).
2. Look through the eyepiece at the target or scene.
3. Rotate the focus adjustment until the thermal image appears sharp. Rotate the throw lever left/ counterclockwise to focus on closer objects. Rotate it right/clockwise to focus on farther objects.



VIEWFINDER DISPLAY

The viewfinder displays the following information:

1. Profile
2. Magnification 1X 2X 3X 4X 5X 6X 7X 8X
3. Date
4. Time
5. Memory card status
CARD FULL
6. Battery status
7. Reticle
8. LRF reading
9. Mode /Video
10. Wi-Fi
11. Compass /
Compass recalibration status
(CAL icon not displayed)



CONTROLS

VIEWFINDER

CONTROL

Rotating the control dial

FUNCTION

Adjust digital zoom magnification (up to 8x)

Control dial (press)

Change color palette

Control dial (hold)

Adjust Sensor Settings

Power button (press)

Open the menu

Power button (hold)

Power on / off the unit

1 dot button (press)

Manual calibration — manually calibrate the sensor

1 dot button (hold)

Sleep Mode

1 dot button (double tap)

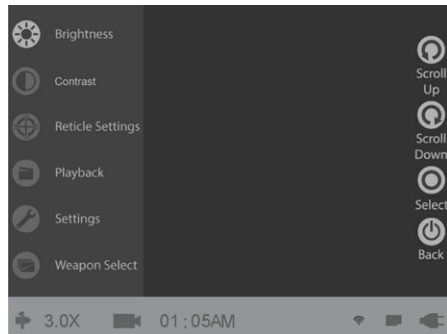
Take LRF reading / display ballistic drop / hide LRF reading

2 dot button (press)

Start/stop recording or take a photo

2 dot button (hold)

Switch between photo/video modes



ZEROING THE RIFLESCOPE

The Wraith 2 is a thermal riflescope and will not display the dot from a standard visible or infrared laser boresighter. To boresight or zero the riflescope, use a heat-visible target, such as a hand warmer, heated target marker, thermal zeroing target, or heat-conducting aluminum tape.

Before boresighting or zeroing, make sure the firearm is unloaded. Remove the magazine, open the action, and visually and physically confirm the chamber is clear.

Reticle Zero Controls

To open the menu, tap the power button once. Rotate the red controller dial to cycle through menu options, then press the red controller dial to select.

To access the zeroing menu, select **Reticle Settings**, then select **Reticle Zero**. 

When in the **Reticle Zero** menu, the red controller dial moves the red zeroing reticle. The reticle can be adjusted on either the X-axis or Y-axis.

1. Press the red controller dial to switch between X-axis adjustment and Y-axis adjustment.
2. In X-axis mode, rotate the red controller dial clockwise to move the red zeroing reticle right. Rotate it counterclockwise to move the red zeroing reticle left.
3. In Y-axis mode, rotate the red controller dial clockwise to move the red zeroing reticle up. Rotate it counterclockwise to move the red zeroing reticle down.
4. After adjusting the reticle, tap the red controller dial once to save changes and return to preview mode.
5. Hold the red controller dial to discard changes and return to preview mode.

To boresight the rifle:

1. Secure the rifle in a gun rest, vise, or other stable shooting platform. The rifle must remain as still as possible during boresighting.
2. Remove the bolt, or open the action as required by the firearm, so you can look through the bore from the rear of the rifle.
3. Place a heat-visible target at a safe distance downrange.
4. Look through the bore and adjust the rifle's position until the heat-visible target is centered in the bore.
5. Without moving the rifle, power on the Wraith 2 and look through the viewfinder.
6. Tap the power button once to open the menu. Select **Reticle Settings**, then select **Reticle Zero**. 
7. Using the Reticle Zero controls, move the red zeroing reticle until it is generally aligned with the same heat-visible target centered in the bore.
8. Press the power button to save and exit the menu.
9. Reinstall the bolt or close the action according to the firearm manufacturer's instructions.

To zero the rifle with live fire:

1. Aim at the center of the heat-visible target and fire 1–3 shots.
2. Keeping the rifle aimed at the original point of aim, tap the power button once to open the menu.
3. Select **Reticle Settings**, then select **Reticle Zero**. 
4. Keep the main crosshair on the original point of aim.
5. Press the red controller dial to switch between X-axis and Y-axis adjustment. Rotate the dial clockwise or counterclockwise to move the reticle in the selected direction. Tap the red controller dial once to save changes and return to preview mode.
6. Press the power button to save and exit the menu.
7. Fire 1–3 additional shots to confirm zero. If the shots are not centered, repeat the live-fire zeroing process from Step 2.

Note: Boresighting only provides an approximate starting point. Always confirm and fine-tune zero with live fire before using the rifle in the field.

Note: The numbers shown on screen represent the offset from the center of the sensor. They are not required for zeroing but may be useful for re-adjusting back to a known zero.

ZOOM STEP

The Zoom Step setting controls how much the digital zoom changes when the red controller dial is rotated during normal viewing.

A smaller zoom step allows finer zoom adjustment. A larger zoom step changes magnification more quickly.

To change the Zoom Step setting:

1. Tap the power button once to open the menu.
2. Go to **Settings** -> **Advanced Settings** -> **Zoom Step**.   
3. Select the desired zoom step: 0.1x, 0.5x, or 1.0x.
4. Press the red controller dial to save the selection.
5. Press the power button to back out of each menu level until the scope returns to regular viewing mode.

When the menu is closed, rotate the red controller dial to adjust digital zoom using the selected zoom step.

Note: Zoom Step only changes how quickly digital zoom adjusts when rotating the red controller dial. It does not change the scope's base magnification, reticle zero, or saved weapon profile.

RETICLE SETTINGS

The Wraith 2 includes 14 selectable reticles. Reticle type, focal plane behavior, and subtension units are shown in the reticle selection window.

Some reticles are marked **FFP**. These first focal plane reticles increase in size as digital zoom increases, allowing the reticle subtensions to remain consistent as magnification changes.

Reticles not marked FFP behave as second focal plane reticles. These reticles remain the same visible size as digital zoom changes.

Some reticles use **MIL** subtensions, while others use **MOA** subtensions. Select a reticle that matches your preferred measuring system and ballistic data.

To change reticle style or color:

1. Tap the power button once to open the menu.
2. Rotate the red controller dial to select **Reticle Settings**, then press the red controller dial to confirm. 
3. Select **Reticle Style** or **Reticle Color**. 
4. Rotate the red controller dial to choose the desired reticle style or color.
5. Press the red controller dial to confirm the selection.
6. Press the power button to save and exit the menu.

WEAPON PROFILES

The Wraith 2 includes five weapon profiles. Each profile can store separate reticle and zeroing settings for a different firearm, ammunition load, or shooting setup.

Each weapon profile includes a label formatted as:

xxx Cal. xxx Gr.

This label is only used to help identify the selected profile. It does not automatically adjust the reticle, zero, or ballistic performance.

The caliber field is limited to three characters and only supports numbers and a decimal point. It cannot display letters, "x," "mm," cartridge length, or full cartridge names. For example, cartridges such as 7.62x39mm or 7.62x51mm cannot be fully entered in their metric form. Similarly named calibers such as .300 Winchester Magnum and .300 Weatherby Magnum must be identified by profile number, bullet weight, or a separate written note.

To select a weapon profile:

1. Tap the power button once to open the menu.
2. Rotate the red controller dial to select **Weapon Select**, then press the red controller dial to confirm. 
3. Rotate the red controller dial to highlight the desired profile number.
4. Press the red controller dial to select the profile.

All reticle and zeroing changes will be saved to the currently selected weapon profile. Before zeroing or changing reticle settings, confirm that the correct weapon profile is selected.

To edit a weapon profile label:

1. Tap the power button once to open the menu.
2. Rotate the red controller dial to select **Weapon Select**, then press the red controller dial to confirm. 
3. Highlight the profile number you want to edit.
4. Press the Dot Button (•) to begin editing the profile label.
5. Use the Dot Button (•) to move right from one character to the next.
6. Use the Double-Dot Button (••) to move left to the previous character.
7. Rotate the red controller dial to change the selected character. Available characters include a decimal point and numbers 0–9.
8. Continue adjusting each character until the desired caliber and grain label is displayed.
9. Press the red controller dial to save the edited profile label.

Important: All reticle and zeroing changes will be applied to the last profile selected. Always verify the selected weapon profile before shooting. If the wrong profile is selected, the scope may display a zero setting for a different firearm or ammunition load.

Wi-Fi

The Wraith 2 can stream to a mobile phone or tablet using Wi-Fi and the Sightmark app. When Wi-Fi is enabled, the scope broadcasts its own Wi-Fi network for the mobile device to connect to.

The Wraith 2 Wi-Fi network name is the product SKU followed by an underscore and four numbers. For example:

SM17006_8904

The default Wi-Fi password is:

12345678

To connect the Wraith 2 to the Sightmark app:

1. Tap the power button once to open the menu.
2. Go to **Settings -> Advanced Settings -> Wi-Fi -> On/Off**.   
3. Select **On**.
4. Open **SSID_PW** to view the Wraith 2 Wi-Fi network name and password.
5. On the mobile phone or tablet, open Wi-Fi settings.
6. Select the Wraith 2 network shown in the **SSID_PW** menu.
7. Enter the default password **12345678**, unless a different password is set.
8. Open the **Sightmark app** and follow the app instructions to connect to the scope.

To turn Wi-Fi off:

1. Tap the power button once to open the menu.
2. Go to **Settings -> Advanced Settings -> Wi-Fi -> On/Off**.   
3. Select **Off**.

Note: Wi-Fi use may reduce battery runtime. Turn Wi-Fi off when it is not in use.

PHOTO AND VIDEO RECORDING

The Wraith 2 can capture photos or record video to a microSD card.

To change recording mode through the menu:

1. Tap the power button once to open the menu.
2. Rotate the red controller dial to select **Settings**, then press the red controller dial to confirm. 
3. Select **Record Mode**. 
4. Rotate the red controller dial to select Photo or Video.
5. Press the red controller dial to save the selected recording mode.
6. Press the power button to back out of each menu level until the scope returns to regular viewing mode.

To quickly switch between Photo and Video mode:

Hold the Double-Dot Button (⇐⇒) to switch between **Photo** and **Video** mode without opening the menu.  

To capture a photo or start recording video:

Tap the Double-Dot Button (⇐⇒). In Photo mode, this captures a photo. In Video mode, this starts video recording.

Tap the Double-Dot Button (⇐⇒) again to stop recording.

SETTINGS

QUICK ACCESS MENU

The Quick Access Menu provides direct access to Image Enhancement Mode, brightness, contrast, and sharpness without leaving the viewfinder.

To use the Quick Access Menu:

- Press and hold the red controller dial until the Quick Access Menu appears in red at the top of the display.
- Rotate the red controller dial to adjust the setting identified by the on-screen icon and value.
- Press the red controller dial to cycle to the next setting.
- Press the power button to close the Quick Access Menu and return to the viewfinder.

Enhancement Mode



Brightness



Contrast



Sharpness



ADJUST BRIGHTNESS

1. Open the menu and go to **Brightness**. 
2. Adjust the brightness slider up or down.
3. Press the control dial button to save and exit.

SET TIME / DATE

1. Tap the power button once to open the menu.
2. Rotate the red controller dial to select **Settings**, then press on it to confirm. 
3. Select **Time/Date**. 
4. Select **Time Format** to choose either 12-hour or 24-hour time. 
5. Select **Time Set** or **Date**.  
6. Rotate the red controller dial to change the highlighted number or value.
7. Press the Dot Button (•) to move right to the next number.
8. Press the Double-Dot Button (⇐⇒) to move left to the previous number.
9. Press the red controller dial to save the setting.
10. Press the power button to back out of each menu level until the scope returns to regular viewing mode.

Note: In 12-hour time format, the hour field is limited to valid 12-hour time values. The first hour digit cannot be changed in a way that creates an invalid time, such as 13:00 or higher. To set the time to **12:00 PM**, for example, set the hour to **02:00 PM** first, then move back to the first hour digit and change it to 1.

WATCH PLAYBACK

1. Open the menu and go to **Playback**. 
2. Use control dial to scroll through existing photos and videos.
3. Press the control dial button to watch a video.

FIRMWARE UPDATE

1. Confirm the batteries are full and/or connect external power.
2. Download the latest firmware from the Sightmark website.
3. Copy the firmware file onto your Micro memory card.
4. Confirm the filename matches the required firmware filename.
5. Insert the Micro memory card into the riflescope card slot.
6. Open the menu and go to **Settings -> Firmware -> Firmware Update**.  
7. When the update is complete, the unit will restart. (This may take a few minutes.)

TRAJECTORY CALCULATION

The Wraith 2 can use LRF distance readings and ballistic data to calculate an estimated aiming solution. This feature requires the user to enter ballistic and environmental information manually. The accuracy of the trajectory calculation depends on the accuracy of the data entered.

To enable Trajectory Calculation:

1. Tap the power button once to open the menu.
2. Go to **Settings -> Advanced Settings -> LRF -> Trajectory Calculation**.   
3. Set **Trajectory Calculation** to **On**.
4. Open **Parameters**.
5. Enter the required ballistic and environmental information for the rifle and ammunition being used.
6. Press the red controller dial to save each setting as needed.
7. Press the power button to back out of each menu level until the scope returns to regular viewing mode.

Trajectory Calculation Parameters

The following values must be entered in the **Parameters** menu:

1. Drag function
2. Bullet weight, in grains
3. Bore diameter, in inches
4. Muzzle velocity, in feet per second
5. Ballistic coefficient
6. Zero range, in yards
7. Sight height, in inches
8. Altitude, in feet
9. Barometric pressure, in inches of mercury
10. Temperature, in degrees Fahrenheit
11. Humidity percentage
12. Wind speed, in miles per hour
13. Wind angle, in degrees

Use ballistic data from the bullet or ammunition manufacturer when available. Environmental values should match the shooting location as closely as possible.

TAKING A LRF READING

Double-tap the Single-Dot Button (•) to take a laser rangefinder reading.

When Trajectory Calculation is enabled and the required parameters have been entered, the Wraith 2 uses the LRF reading with the saved ballistic data to calculate the estimated trajectory for the selected rifle and ammunition setup.

Important: Trajectory Calculation provides an estimated aiming solution. Always confirm ballistic data and point of impact with live fire before relying on the calculation in the field.

DISPLAYING BALLISTIC TRAJECTORY

Before using the ballistic trajectory display, Trajectory Calculation must be enabled and the required ballistic parameters must be entered.

To enable Trajectory Calculation:

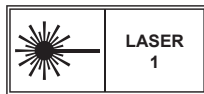
1. Tap the power button once to open the menu.
2. Go to Settings -> **Advanced Settings** -> **LRF** -> **Trajectory Calculation** -> **On/Off**.  
3. Select **On**.
4. Press the red controller dial to confirm the setting.
5. Press the power button to back out of each menu level until the scope returns to regular viewing mode.

When Trajectory Calculation is enabled, the LRF will show a live distance and angle reading:

D: ## yd A: ##

D indicates distance to the target in yards.

A indicates the angle to the target.



CLASS 1 LASER PRODUCT

To display the ballistic trajectory calculation:

1. Aim the center of the reticle at the target.
2. Double-tap the Single-Dot Button (•) to take an LRF reading.
3. Double-tap the Single-Dot Button (•) again to lock the reading.
4. Once the distance reading is locked, the scope will display the calculated holdover point based on the active weapon profile, LRF distance, angle, and saved ballistic parameters.
5. Use the displayed holdover point as the corrected aiming reference.
6. Double-tap the Single-Dot Button (•) again to clear the measurement and return to normal viewing.

Important: The ballistic trajectory display is only as accurate as the ballistic and environmental data entered in the Parameters menu. Confirm all trajectory calculations with live fire before relying on them in the field.

COMPASS RECALIBRATION

The CAL icon appears when the compass requires recalibration. **CAL**

When the CAL icon appears, open the menu and go to Settings -> Advanced Settings -> Compass. Select Calibration, then follow the on-screen instructions.

Warning: Never recalibrate the compass while the Wraith 2 is mounted on a loaded firearm. Before beginning, remove the magazine, open the action, and visually and physically confirm that the chamber is empty. Follow all firearm-safety rules throughout the procedure.



PIXEL REPAIR

Pixel Repair is used to correct defective pixels that may appear in the thermal image. A defective pixel may appear as a small bright, dark, or fixed point that does not change with the rest of the image.

To repair a defective pixel:

1. Tap the power button once to open the menu.
2. Go to **Settings** -> **Pixel Repair**.  
3. Select **Yes** to enter Pixel Repair mode.
4. Use the on-screen cursor to locate the defective pixel.
5. Tap the red controller dial to switch between X-axis movement and Y-axis movement.
6. Rotate the red controller dial clockwise or counterclockwise to move the cursor along the selected axis.
7. In X-axis mode, rotate clockwise to move the cursor right and counterclockwise to move it left.
8. In Y-axis mode, rotate clockwise to move the cursor up and counterclockwise to move it down.
9. Position the cursor directly over the defective pixel.
10. Tap the power button once to repair the selected pixel.
11. Repeat the process for any additional defective pixels.
12. Hold the power button to exit Pixel Repair Mode and return to preview mode.

Note: Pixel Repair is intended for isolated defective pixels in the thermal image. It does not improve image focus, image quality, contrast, or sensor performance. Adjust focus, contrast, brightness, or calibration settings separately if the overall image appears unclear.

MENU STRUCTURE

Use the **controller knob**  to scroll, press it to select, and the **power**  button to exit menus.

- Brightness 
- Contrast 
- Reticle Settings 
 - o Reticle Color
 - Black 
 - White 
 - Red 
 - Orange 
 - Yellow 
 - Green 
 - Cyan 
 - Blue 
 - Pink 
 - o Reticle Style
 - o Reticle Zero
- Playback 
- Settings 
 - o Resolution 
 - HD1024x768
 - o Record Mode 
 - Video 
 - Photo 
 - o Format Card 
 - Are you sure? (Format card) 
 - Cancel 
 - o Auto Calibrate 
 - Off
 - On
 - o Factory data reset 
 - Yes 
 - No 
 - o Firmware 
 - Firmware Version
 - Firmware Update



MENU

- o Time/Date 
 - Time Format 
 - Time Set 
 - Date 
- o Pixel repair 
 - Yes 
 - No 
- o Advanced Settings 
 - Languages 
 - English 
 - German 
 - French 
 - Spanish 
 - Zoom Step 
 - 0.1x
 - 0.5x
 - 1.0x
 - WIFI 
 - On/Off
 - SSID_PW

- LRF 
 - Color
 - o Yellow 
 - o Green 
 - o Cyan 
 - o Blue 
 - o Pink 
 - o Black 
 - o White 
 - o Red 
 - o Orange 
 - Mode
 - o Off
 - o Single
 - o Auto
 - Unit
 - o Yard
 - o Meter

MENU

- Trajectory Calculation
 - o On/Off
 - Off
 - On
 - o Parameter
- Compass 
 - On/Off
 - o Off
 - o On
- Calibration 
 - Weapon Select 
 - o 1. xxxCal. xxxGr. 
 - o 2. xxxCal. xxxGr. 
 - o 3. xxxCal. xxxGr. 
 - o 4. xxxCal. xxxGr. 
 - o 5. xxxCal. xxxGr. 

MAINTENANCE

Proper maintenance of the Sightmark Wraith is recommended to ensure longevity. ***Attempts to disassemble or repair the unit will void the warranty.*** It is recommended that when the unit becomes dirty that it is wiped down with a dry or slightly damp cloth. Blow dirt and debris off all optics and then clean lenses with a lens cleaning cloth. To remove oils or dried water spots, apply a small amount of denatured alcohol to a lens cloth or cotton swab. Clean the surface of the lens and let dry. Finally use your breath to clean the lens once more. No further maintenance is required.

TROUBLESHOOTING

Never ship back a product without getting proper authorization beforehand. Doing so could result in losing the product due to a multitude of reasons, i.e. sending it to the wrong address and other problems associated with unexpected packages.

The unit will not turn on:

1. Check the polarity of the batteries. Reinstall the batteries if necessary.
2. Clean the battery compartment contacts with denatured alcohol and a cotton swab.
3. Install fresh batteries.

The image is dark:

1. Make sure the lens caps on the objective lens is opened. Adjust the display brightness accordingly to obtain a bright, clear image.

There are light or black dots on the display:

1. The presence of dots on the display is caused by sensor production technology and is not a defect. No action is required.

The image is not in focus:

1. Make sure there is no dust or condensation covering the objective lens or eyepiece.
2. Adjust the focus ring near the objective lens to adjust focus for different viewing distances.
3. Make sure to adjust the diopter setting on the eyepiece for your specific vision.

The image is flickering:

1. This is common if the unit is viewing or pointing in the direction of a bright light source. Cease viewing the bright light source immediately. If flickering in normal dark conditions the unit may need to be returned for service.

BATTERIES

A warning that batteries (battery pack or batteries installed) shall not be exposed to excessive heat such as direct sunlight or fire.

1. Replacement of a battery with an incorrect type that can defeat a safeguard.
2. Disposal of a battery into a fire or a hot oven. Mechanically crushing or cutting a battery can result in an explosion.
3. Leaving a battery in a high temperature surrounding environment can result in an explosion or the leakage of flammable liquid or gas.
4. A battery subjected to extremely low air pressure may result in an explosion or the leakage of flammable liquid or gas.

EU COMPLIANCE INFORMATION

- Eligible to bear the CE mark; Conforms to European Union Low Voltage Directive 2014/35/EU;
- European Union EMC Directive 2014/30/EU;
- European Union Restriction of Hazardous Substances Recast (RoHS) Directive 2011/65/EU;
- Evaluation, Authorization and Restriction of Chemicals (REACH) Directive 2006/121/EC;
- European Union Radio Equipment Directive (RED), 2014/53/EU.



This device complies with Part 15 of the FCC Rules. Operation is subject to the following two criteria: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

Warning: Changes or modifications to this unit is not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.
- The FCC's SAR limit is 1.6 W/kg, with a maximum SAR value of 1W/kg when testing the device for use on the body. The device was tested at 0 mm and meets RF exposure requirements.

Wi-Fi: Frequency Band: 2400-2483.5 MHz
RF Power: ≤20 dBm

FIRMWARE UPDATING

Scan the QR code for updates and instructions.

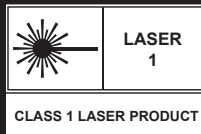


SIGHTMARK WARRANTY

Please visit **www.sightmark.com** for warranty details and information.

Sightmark
2201 Heritage Parkway, Mansfield, TX 76063, U.S.A.

Manufactured for Sellmark Corporation
In EU, distributed by Sellmark EOOD
104 A Akademik Ivan E. Geshov Blvd,
Floor 4, Office 6, 1612 Sofia, Bulgaria



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www.sightmark.com