THERMFOX

INFIRA   YOUTDOOR
RICO 2 RH50R LRF

Compact thermal imaging sight with rangefinder

InfiRay OUTDOO R

⚠️ ATTENTION

Using controls or settings other than those specified in this document or performing procedures other than t h o s e   s p e c i f i e d   i n   this document may result in hazardous exposure.
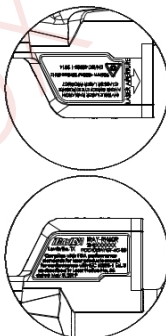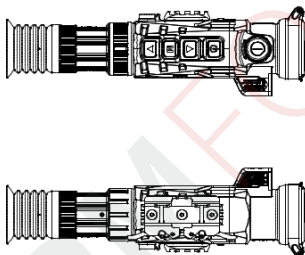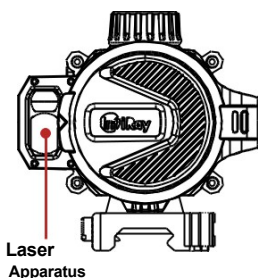
2601 State Hwy 121, Building 3, Suite 306, Lewisville, TX 75056
800.769.7125 **info@irayusa.com**

WARNING: This product is a Class 3R laser product.

Explanatory label

Mfr ID and certification label

INVISIBLE LASER RADIATION
AVOID DIRECT EYE EXPOSURE
CLASS 3R LASER PRODUCT
900NM <700NJ
42NSEC 10KHZ

IRAY-RH50R
FCC ID: 3HVGT4C40
Lewisville, TX   SN:XXXXXX
Complies with FDA performance standards for laser products except for conformance with IEC 60825-1 Ed. 3., as described in Laser Notice No. 56, dated May 8, 2019.

Laser Apparatus

NOTE: No scheduled maintenance or service is required to keep this product in compliance and no user service or maintenance is required.

This laser product is designated as Class 3R during all operating procedures.

Wavelength: 900 nm
Laser power for classification:
<700nJ Emission type: pulsed,
invisible Emission frequency 10
kHz
Beam diameter: 12 mm*2 mm
Divergence: 6 mRad*1 mRad

INVISIBLE LASER RADIATION AVOID DIRECT EYE EXPOSURE CLASS 3R LASER PRODUCT

NOTES:

- No service is required or permitted by the end u s e r   for this product.
- Only technicians authorized by the manufacturer may service or repair this product.
- This product must not be opened or modified by the user.
- The user must not modify the device or remove any protective covers or housings. Service may only be performed by authorized technicians trained by the manufacturer. This product has no parts that can be repaired by the user.
- Do not point the laser or allow the laser light to be directed at or reflected from other people or reflective objects.
- Operators should be trained not to aim at the eyes of people, animals and pets or at reflective objects, etc.
- If the enclosed instructions are not followed, there is a potential risk of laser radiation to the eyes or skin.
- Never use this laser if the unit is defective or the cover or seal is damaged.
- Always use the product with the aperture pointed downwards.

CONTENTS

WARNING: CHOKING HAZARD

Children under 3 years of age may choke or be poisoned by small parts of this product. This product is not a toy; keep out of the reach of children

1 . OVERVIEW

The RICO Mk1 LRF was built on the RICO Mk1 series and was designed with an integrated rangefinder capable of measuring 1,200 yards, a 60 Hz refresh rate and increased sensitivity to an impressive ≤20 mK. The RICO Mk2 features a high-performance 12m Micro II core, a detection range of 1,750 yards and an ultra-high contrast 2560×2560 AMOLED HD display for an unparalleled viewing experience. With the MATRIX III processor, the RICO Mk2 takes image processing one step further with advanced image correction and automatic image optimization. An intuitive and easy-to-use interface combines with picture-in-picture functionality, over 5 hours of battery life, a magnesium body, 1000 G/s2 shock resistance and 32 GB of internal memory. The RICO Mk2 also unlocks advanced features such as a rotating zoom lever, magnetic charging port and recoil-activated video.

2 . FEATURES

- 12 m high performance thermal detector
- ≤20 mK sensitivity
- 1200-yard integrated, high-precision laser rangefinder
- Graduated digital zoom from 1.0×-4.0×
- High image quality
- Body covered with magnesium
- Quickly replaceable rechargeable battery
- Maximum detection distance - 2400 yards
- HD 2560×2560 AMOLED display
- High refresh rate: 60Hz
- Many types and colour combinations of the cross
- Supports many charging options, package includes a durable magnetic cable
- Video recoil activated
- Many shot profiles and different types of distances
- Built-in 32 GB storage for taking pictures and recording videos
- Built-in Wi-Fi module
- Mobile app support
- Built-in gravity sensor
- Picture in picture (PIP) mode
- User-friendly interface
- Pixel calibration function

3 . TECHNICAL SPECIFICATIONS

| RICO MK2 LRF	RH50R
SENSOR SPECIFICATIONS	
Resolution	640×512
Pixel size	12 m
Refresh rate	60hz
Sensor sensitivity	≤20 mK
Image processing	MATRIX III
Core	InfiRay Micro II 640
OPTICAL	
	50 mm f/1.0
Lens Lenses	3×
Zoom Digital	4×, graded
Zoom Field of	8.8° × 6.6°
view	2400 yards
Detection distance	1.03-inch large-format AMOLED 2560×2560
Display type	
Display resolution	
Colour	White hot, Black h, Red h, Rainbow, Purple, Crimson, Viridian
palette	8 (7 Static, 1 DIY)
Types of	Black-Red, B-Green, Red-White, B-Green,
crosses	Black-White, White-Black, Crimson, Viridian
	Picatinny MIL-STD 1913
Colours of the	Supported
Cross	Built-in 1200 yard LRF 60 mm
P.I.P. mounting	-3 to +3
system	
Rangefind	
er Eye	
relief	
Diopter	
Recording records	Video, Shock Activated Video, Photos 32 GB
Storage	Photos and videos via the App.
Wireless connection Data	USB-C
and power cable Power	USB-C External, IBP-5 Li-ion battery (5+ hours each)
supply	<10 Seconds, Instantly from standby
Start-up time	
Size	9.50" × 3.00" 3.75 ?"
mass	36.63 Oz
Warranty	5 years
Device body material	Magnesium
Protection against intrusion	IP67
Operating temperature	-4°F~122°F
Max. Recoil	1000 g/s (300 Win./7mm Mag)

4 . ACCESSORIES

The RICO Mk2 riflescope comes with everything you need for hunting.

- 50mm lens hood
- Standard rubber eye protector
- Double RICO Mk2 attachment
- M5 screws
- 3mm Hexagon wrench and tool
- Magnetic power cable
- USB-C Cable
- IBP-5 Battery 4400 mAh
- IBC-5 Charger
- USB power adapter
- Case
- Lens cloth
- User manual

Various spare accessories can be purchased. Contact us at 800-769-7125 or at irayusa.com/support.

5 . COMPONENTS AND CONTROLS ELEMENTS
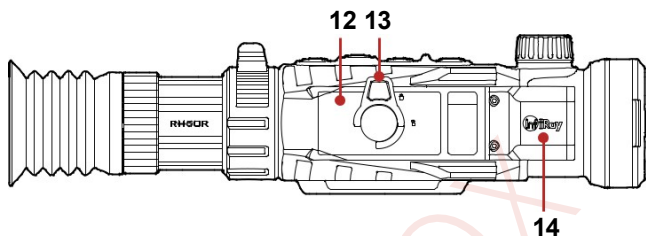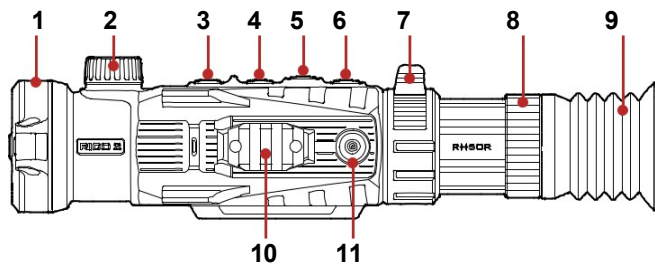
1 Lens cap

2 Focusing the lens

3 Power button

4 Up button

5 Menu button

6 Down button

7 Zoom lever

8 Eyepiece/diopter adjustment ring

9 Eye protection

10 Additional rail

11 Magnetic charging port / USB-C port

12 IBP-5 battery set

13 Pull-out ring for battery

14 Laser rangefinder

6 . DESCRIPTION OF CONTROL BUTTONS AND SHORTCUTS

Power button ⏻		
Condition of the device	**Short squeeze**	**Long hold**
Switched off device	–	Turns on the device
Home screen	Perform unevenness correction (NUC)	Shuts down the device
Main menu	Return to the previous menu without saving changes	–
Single or continuous distance measurement	Exit the rangefinder menu	Shuts down the device
Defective pixel correction & shooting interface	Leave the offer without saving	–

Up button ▲		
Current screen	**Short squeeze**	**Long hold**
Home screen	Enable one-time distance measurement using the rangefinder	Enter continuous ranging mode
One-time measurement of	Measure the distance	Change from one-time to continuous mode
resistance. Continuous	–	Leave menu
measurements of hight.		
Main menu	Move the cursor up	–
Defective pixel correction	Move the cursor one pixel in the selected direction	Move the cursor ten pixels in the selected direction

Power button ⏻ + TI. Up ▲		
Current menu	**Short squeeze**	**Long hold**
Home screen	Enter standby mode.	–

Up button ▲ + Down button ▼		
Current menu	**Short squeeze**	**Long hold**
Home screen	Make a correction Unevenness (NUC)	–

Menu button $\boxed{M}$		
Current menu	**Short squeeze**	**Long hold**
Home screen	Enter the quick menu	Enter the main menu
Main menu	Change option; enter submenu; confirm s u b m e n u selection and go back	Save and return to the home screen
Quick offer	Switching options	Leave a quick quote
Defective pixel correction interface	Select / deselect axis of movement (X or Y)	Fix pixel(s) and return to previous menu
Shooting interface	Select / deselect axis of movement (X or Y)	Saving the new position of the cross

Down button $\boxed{\blacktriangledown}$		
Current menu	**Short squeeze**	**Long hold**
Home screen	Take a photo	Enable/disable video recording
Main menu	Move cursor down	–
Corners for correcting	Move the cursor one pixel in the selected direction	Move the cursor ten pixels in the selected direction

Zoom lever	
Current menu	**Turning**
Home screen	Digital zoom settings
In the screen brightness settings	Increase screen brightness

Menu button $\boxed{M}$ + Down button $\boxed{\blacktriangledown}$		
Current menu	**Short squeeze**	**Long hold**
Home screen	–	Cross activation/deactivation (Long press for 15 seconds)

7. QUICK INSTRUCTIONS FOR USE

Step 1: Preparing to use RICO Mk2

1. Compare the contents of the package with the list of accessories and check for damage. See Accessories, page 4

2. Check the lens for smudges or dirt. If necessary, clean it with the supplied lens cloth.

3. Charge the battery **(12)**. See charging on page 10.

4. Install the eye shield **(9)**.

5. Mount the RICO Mk2 on the weapon. See **Mounting the RICO Mk2** on page 13.

Step 2: Switch on RICO Mk2

1. Open the lens cap **(1)**.

2. Long press the power button ⏻ for 3 seconds to switch on the RICO Mk2.

3. Rotate the eyepiece diopter adjustment ring (8) until the interface icons are clear.

   Warning: do not point the lens at intense energy sources such as the sun. This could cause malfunction of electronic components. The warranty does not cover damage caused by improper operation.

Step 3: Edit settings in the quick menu

Press the **menu button** briefly to enter the quick menu to adjust the following settings (see Using the quick menu on page 18):

1. Set the color palette to white hot, black hot, red hot, colored, purple, crimson or viridian.

2. Select the brightness level of the image from 0-10.
3. Select the image contrast level in the range of 0-10.
4. Select an image sharpness level in the range of 0-10.
5. Select the distance.

Step 4: Modify device settings

1. Long press and hold the **M menu button** to enter the main menu (for detailed instructions, see Main menu options and descriptions on page 28):

   a. Enable Ultra-Clear mode

   b. Turn on PIP

c. Set the unevenness correction mode (NUC) to automatic (A) or manual (M).

   d. Turn on the motion sensor

   e. Enable the option to turn on recoil recording

   f. Turn on the microphone.

   g. Select a screen brightness level from 0-100%.

   h. Setting the date and time

   i. Setting units of measurement metres/yards

2. From the home screen, rotate the zoom lever (7) to zoom in and out on the subject.

Step 5: Setting up the crosshairs and firing the RICO Mk2

1. The cross may be inactive when the RICO Mk2 is first switched on. To activate it, simultaneously hold **Menu** M **and down** ▼ for 15 seconds.

2. Adjust the crosshair settings (see Main menu > Meter on page 29):

   a. Set the shooting profile: A, B, C, D, E, F.

   b. Set cross type 1-7. Custom crosses can be purchased on the InfiRayOutdoor App.

   c. Set the color of the cross to black red, black green, white red, white green, black white, white black, white black, crimson or viridian..

3. Shoot the rifle scope. See shooting on page 20.

   a. Select or adjust the shooting distance to match the target distance.

   b. Shoot the cross.

8 . CHARGING BATTERY

The RICO Mk2 riflescope comes with two long-life rechargeable IBP-5 lithium-ion batteries, each of which allows for more than 5 hours of operation. The IBP-5 batteries use a cam mechanism to ensure quick and safe battery changes in the field. Fully charge the batteries before using the RICO Mk2 sight for the first time.

Charging with a battery charger

1. Insert the battery (12) into the charger (15). Align the grooves (A) on the edge of the battery block with the pins (B) on the inside of the charger.

2. Connect the USB-C (16) cable to the USB-C (C) port on the charger.

3. Connect the end of the USB data cable to:

   a. Included USB 5V-2A power adapter; **OR**

   b. Any standard USB 3.0 port on a laptop or computer.

4. During charging, the LED status indicator (D) on the charger will be red.

USB-C Cable (16)

USB-C Port (C)

LED Status Indicator (D)

Pins (B)

Charger (15)

Accumulator (12)

Pull ring (13)

Slots (A)
(Located at the top in the corner accumulators ; they are not visible)
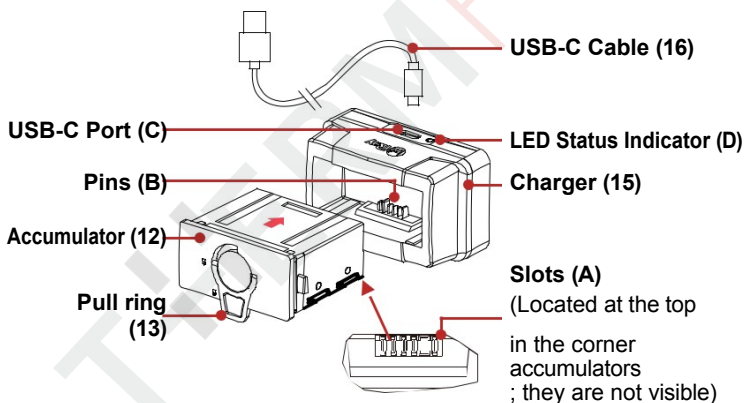
5. Remove the battery from the charger when it is fully charged.

   a. When the battery is fully charged, the LED status indicator will turn green. Do not overcharge.

NOTE: If the status LED is flashing red, the charger is connected to a power source but no battery is installed.

WARNING: Never use the battery charger with a USB power adapter with a voltage higher than 5V-2A.

Charging via magnetic charging connector

1. Place the magnetic charging cable into the magnetic port (11) on the side of the riflescope.

2. Connect the USB end of the magnetic charging cable (17) to:

   a. Included USB 5V-2A power adapter; **OR**

   b. Any standard USB 3.0 port on a laptop or computer; **OR**

   c. To an external power source, such as a USB powerbank.

Charging via USB-C port

1. Remove the magnetic charging port and connect the USB-C cable (16) to the USB-C port (11) behind it.

2. Connect the standard end of the USB data cable to:

   a. Included USB 5V-2A power adapter; **OR**

   d. Any standard USB 3.0 port on a laptop or computer; **OR**

   e. To an external power source, such as a USB powerbank.

3. iconin thestatus bar [icon] will change while power is applied. This is what the icon looks like during charging .

4. When the device is fully charged, disconnect the cable.

NOTES:

- You can charge and use the RICO Mk2 at the same time.

- The battery status icon turns red [icon] when the battery drops below 20%; charge immediately to avoid over-discharge and reduced battery capacity or life.

9.   BATTERY INSTALLATION

1. Pull the battery pull ring **(13)** and turn it 90 degrees clockwise until it is horizontal to the battery.

2. Position the battery with the slots (A) facing upwards. Align the slots (A) on the edge of the battery block with the pins (B) on the inside of the battery compartment.

3. Push the battery in firmly and install it.

Pins   (B)
(located   on   the corner of the battery compartment)

Slots (A)

Accumulator (12)
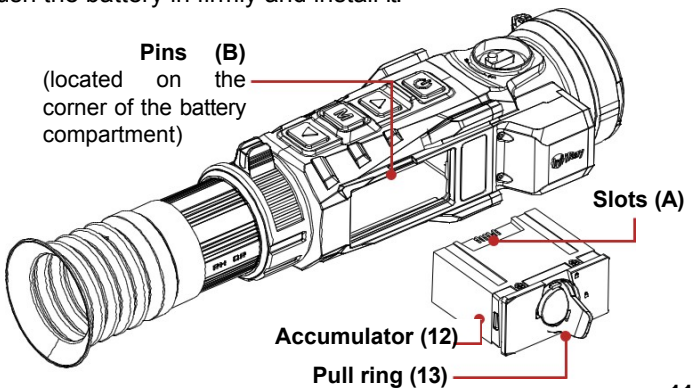
Pull ring (13)

4. Turn the pull ring counterclockwise 90 degrees to the vertical position to secure the battery in place.

   WARNING: The RICO Mk2 can only be powered by the factory supplied IBP-5 battery. Use of any other battery may cause irreparable damage to the riflescope or fire. Any damage caused by the use of an improper battery pack is not covered under warranty.

10. BATTERY REMOVAL

To remove the RICO Mk2 battery, proceed as follows:

1. Pull out the pull ring (13) on the battery (12) and turn it 90 degrees clockwise until it is horizontal with the battery.
2. Pull out the battery.

11 . BATTERY SAFETY NOTICES

WARNING: Use only the charger supplied with the battery. Use of any other charger may irreparably damage the battery or charger and may cause a fire. Any damage caused by the use of an incorrect battery charger is not covered under warranty.

   WARNING:

- Do not use a modified or damaged battery charger, power adapter or USB cable.
- Do not expose the battery to high temperatures or open flames and do not immerse it in water.
- Do not leave the battery unattended while charging.
- Do not let the battery charge for a long time after it has reached full charge. Charging time should not exceed 24 hours.
- Keep the battery out of reach of children and pets.
- The battery is equipped with short-circuit protection. However, any situation that could cause a short circuit should be avoided.
- Do not disassemble, modify, bang or throw the battery.
- Do not connect the battery to any external device with an electric current that exceeds the permitted values.
- Do not connect external devices with a current higher than the USB 3.0 port current.

To maintain optimum battery capacity and life:

- Do not store a fully charged or discharged battery for long periods of time. If the battery will be stored for a long period of time, it must be partially charged.
- Do not charge an extremely cold battery. Allow the battery to warm up for about 45 minutes before charging.

- Charge the battery at a temperature between 32°F and 113°F, otherwise battery life may be shortened.

- The recommended operating temperature range is -4°F to 122°F. Do not operate the battery at temperatures above the maximum or below the minimum recommended range as this may reduce the capacity or life of the battery.

12 . EXTERNAL POWER SUPPLY POWER SUPPLY

RICO Mk2 supports the use of a 5V external power supply, such as a mobile power bank. Connection to an external power supply:

1. Connect the USB-C cable (16) to the USB-C port (11).

2. Connect the other end of the USB-C cable to an external power source.

3. The RICO Mk2 switches to operation from the external power supply and the internal battery starts to charge slowly.

4. In the status bar, the battery icon turns into the power icon .

5. If the external power supply is disconnected, the RICO Mk2 will automatically switch to battery power if installed.

   NOTE: Do not connect the RICO Mk2 to an external device with power beyond the USB 3.0 cable.

13. RICO ASSEMBLY MK2

Installation with double fixing

Before using the RICO Mk2 riflescope, install the IRAY-AC109 double seating mount (18) into the three mounting holes in the base of the riflescope.

IRAY-AC109 (18)

M5 Mounting holes (19)
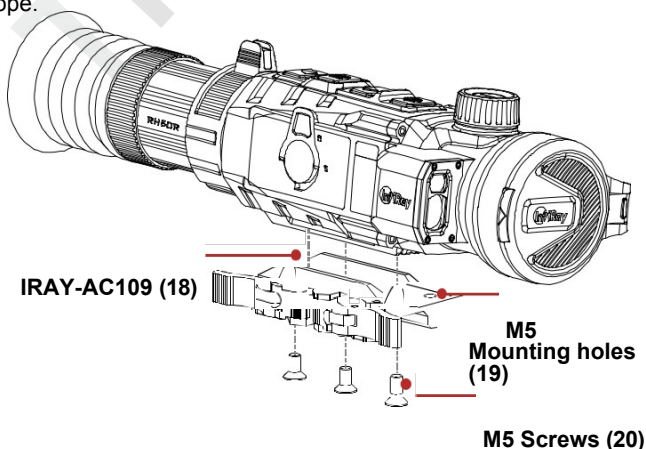
M5 Screws (20)

1. Using the 3 mm hexagonal wrench and the M5 screws (20) included in the package, mount the double bracket (18) on the base RICO Mk2.

2. Install the RICO Mk2 sight on the rifle and adjust its position to provide a clear image and be comfortable for the shooter.

3. When the location is suitable, remove the M5 screws one at a time and apply a small amount of blue Locktite 242 to the threads.

4. Reinstall the individual bolts and tighten them with a torque wrench to 20 in/lbs. Allow the threadlocker to dry.

   NOTE: Please note that torque is in inches, not feet. If you do not have a torque wrench, apply it until tight. Do not overtighten.

After the threadlocker dries, install the mount and rifle scope on the Picatinny rail on the gun.

1. Press the locking button (21) and pull the locking lever (22) to open the insertion lever.

2. Install the bracket on the Picatinny rail.

3. Press the levers to secure the holder in place. You will hear a click of the lever and the locking button.

Safety button (21)
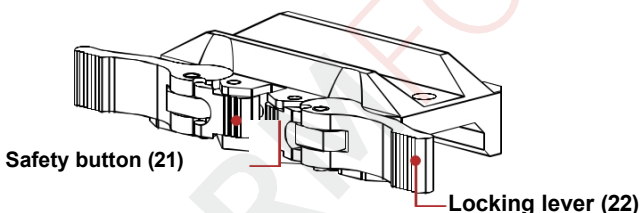
Locking lever (22)

RICO Mk2 is now ready to be reset. For instructions, see Resetting RICO Mk2 on page 20.

Tension adjustment of throwing levers

If the bracket cannot be mounted on the Picatinny rail because the throw levers are in the open position but the locking plate is not, or if the bracket does not contact the rail after the throw levers are closed, you can loosen or tighten the tension on the throw levers by adjusting the nuts (23).

1. Open both throw-in levers. This will slide out the adjustment nuts (23) on the opposite side of the bracket.

2. 1.   To achieve the correct tension, turn the adjusting nut clockwise to tighten it or counterclockwise to loosen it. When closing, you should not feel any tension on the locking lever until it reaches a 45 degree angle. Do not overtighten.

Nuts (23)
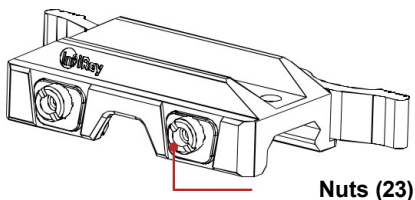
14 . INSTRUCTIONS FOR OPERATION

WARNING!

Do not point the lens at any intense energy sources such as laser light or the sun. Electronic components may be rendered inoperable. The warranty does not cover damage caused by improper operation.

Using the control buttons

The RICO Mk2 is operated by four control buttons. The control buttons can be used to perform shortcut operations on the home screen as well as in the menu and full-screen interface. For details on the shortcut buttons, see "Description of control buttons and shortcuts" on page 6.

Fasteners

1. Open the lens cap **(1)**.

2. Long press and hold the power button ⏻ for 3 seconds to turn on the riflescope. The InfiRay Outdoor logo will appear.

3. To check the current battery status, check the 🔋 icon and the percentage of charge in the top status bar.

Switching off and entering standby mode

To turn off the device:

1. Long press and hold the power button ⏻ . A message will appear with a 3 second countdown.

2. After the countdown, the device automatically switches off.

   NOTE: Press any button before the countdown is complete to cancel the shutdown and return to the home screen.
   WARNING: If you are using an external power supply, do not disconnect it when saving data as the data may not be saved.

STANDBY MODE

Manual input

1. To enter standby mode, hold down the power button while ⏻ the up button.

2. Press any button to wake the device from standby mode.

Setting the RICO Mk2 to automatically enter standby mode

The riflescope can be set to automatically go into standby mode.

1. In the main menu, turn on automatic standby. When switched on, the RICO Mk2 will automatically enter standby mode after 5 seconds of inactivity. See Main menu > Standby on page 39.

2. Press any button or move the rifle scope to exit standby mode.

STANDBY NOTES:

- When it's turned on automatically:

    - The RICO Mk2 will automatically switch to standby mode when tilted up or down at an angle greater than 70° or to the left or right at an angle greater than 30°.

    - The RICO Mk2 will not enter standby mode when in the horizontal firing position.

- If Off is selected, the standby mode will be turned off and the riflescope will operate until the battery runs out.

Focus setting

DIOPTER/OCULAR SETTINGS

1. Turn the eyepiece diopter adjustment ring (8) on the back of the riflescope to the right or left until the user interface is clear.

2. Check carefully that all icons, status bar and viewfinder are sharp and in focus. If the user does not wish to make changes, no further adjustments to the diopters are necessary.

NOTES:

- After initial adjustment, there is no need to turn the eyepiece adjustment ring (8) for long distances or other conditions.

- If necessary, the lens can be brought into focus in standard use. can be rotated by turning the knob (2) to adjust the fine focus on the object being viewed. See Focusing the lens below.

LENS FOCUSING

For focus:

1. Rotate the lens focus knob (2) to the left or right to adjust the fine focus.

   NOTE: If the distance to the target changes, you will need to readjust the focus.

Activate/deactivate the cross display

1. The cross may be inactive when the RICO Mk2 is first switched on. To activate, long hold the **Menu** button $\boxed{M}$ **and the Down button** $\boxed{\blacktriangledown}$ at the same time for up to 15 seconds on the home screen.

Status bar overview

1 **Photo:** The camera 📷 icon appears briefly when a photo is taken. A warning icon ⚠ appears when insu cient memory storage is available.

2 **Video recoil activated:** icon appears when the function is enabled.

3 **Timer: the** video timer appears when a video is being recorded.

4 **Time:** Shows the current time in 24h format.

5 **Battery status:** shows the battery status.

6 **Battery power:** Shows the current charging status.

7 **Shooting profiles and distances:** shows the selected profile, A, B, C, D, E, F, and the shooting distance.

8 **Zoom:** Shows the overall magnification

9 **Ultra-Clear:** Shows the status of the ultra-clear mode, on. ⊙ Off/on. ∅

10 **Non-uniformity correction (NUC) mode:** shows the icon for the selected non-uniformity correction (NUC) mode, automatic 🄰 or manual 🄼. When automatic mode is selected, a countdowntimer ⑤ iconwill appear when 5 seconds remain until a NUC.

11 **Wi-Fi:** Shows Wi-Fi status, on. 📶 Shows the Wi-Fi status, on. Wi-Fi is on, off, on but not connected. 📶.

12 **Standby mode:** Shows ⊿ and status, on/off.

13 **Microphone:** when it is switched on, an icon is shown 🎤

17

Using the quick menu

The quick menu allows you to quickly adjust the colour palette, image brightness, image contrast, image sharpness and shooting distance.
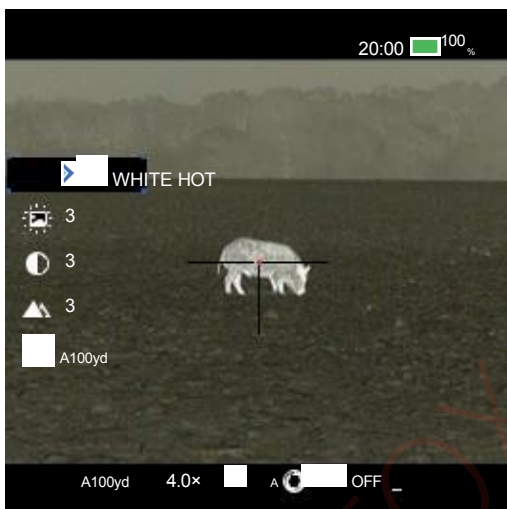
- From the home screen, a short press on the menu button [M] will take you to the quick menu interface.

- Short press up [▲] or down [▼] to toggle the options, the current option is always highlighted.

  - **⊕ (Color palette):** short press the menu button [M] to select between white hot ■, black hot ■, red hot , color ■, purple ■, crimson ■, or viridian .

  - **(Picture Brightness): Press** the menu button [M] briefly to adjust the brightness level from 1-10.

  - **◐ (Image Contrast): Press** the menu button [M] briefly to adjust the contrast level from 1-10.

  - **▲ (Image sharpness): Press** the menu button [M] briefly to adjust the image sharpness from 1-10.

  - **⊕ (Shooting distance):** short press the menu button [M] to select the shooting profile. Only the shooting distances in the selected profile will be available for selection. The selected spray profile and distance will be displayed in the bottom status bar.

- Long press and hold the menu button [M] to save any changes and return to the home page.

NOTE: In Quick Menu, the system will automatically save all changes and return to the home screen after 5 seconds of inactivity.

Movement in the main menu

- From the home page, long press the menu button $\boxed{\text{M}}$ to enter the main menu.
- Short press up $\boxed{\blacktriangle}$ or down $\boxed{\blacktriangledown}$ to move between the options.
- The blue arrow icon $\blacktriangleright$ indicates the cursor position in the menu.
- Short press the menu button $\boxed{\text{M}}$:
    - Make a parameter change; **OR**
    - You enter the submenu; **OR**
    - Confirm changes in the submenu and return to the previous menu.
- Long press the menu button $\boxed{\text{M}}$ to save the change and return to the home page
- A short press of the power button $\boxed{\circlearrowleft}$ will return to the previous menu without saving changes.
- After 15 seconds of inactivity, the menu closes automatically and the interface returns to the home screen. Changes (except for changes to enable/disable menu items such as Ultra-Clear and Wi-Fi) are not automatically saved.
- After leaving the main menu, the cursor position is saved for one working session (until RICO Mk2 is switched off). After restarting the RICO Mk2 and entering the menu, the cursor position is at the first menu item.

14   . TUNING

The RICO Mk2 is equipped with the "freeze" method of firing. To fire the RICO Mk2, proceed as follows:

1. Set up a suitable target at the desired shooting distance.

2. Make sure the weapon is unloaded, pointed in a safe direction and that there is no ammunition near the weapon.

3. If you have not already done so, adjust the image and device settings according to the instructions in the Quick Start Guide on page 8.

4. Set the shot profile to A, B, C, D, E or F. See Cross Menu > Shot Profile on page 29.

5. Based on the distance to the target you want to shoot, select or adjust the shooting distance to match. See Spray Menu > Customize Spray Distance on page 35.

6. Make sure there is a stable pad under the gun and ensure a good shooting position.

7. Load and fire

8. Secure the weapon and watch the target area.

9. If the hit point does not coincide with the aim point (center of the cross), adjust the X/Y position of the cross. See section Shooting Menu > Shooting Cross on page 32.

10. In the submenu for the selected shooting distance, center the sight on the aiming point and freeze the image display.

    a. Short press the down button ▼ to select the snowflake icon. The cursor position is shown by the blue arrow.

    b. Short press the menu button M to freeze the image, the icon will change from white to blue.

11. Select the axis (X or Y) along which you want the cross to move.

    a. Short press up ▲ or down ▼ to move between X and Y. The cursor position is shown by the blue arrow ›.

    b. Short press the menu button M to choose between X and Y. The marked axis will change from white to blue.

12. Adjust the X/Y cross position so that the cross coincides with the hit point.

    a. Use the up button ▲ to scroll in the selected direction: X= Right and Y= Up.

    b. Use the down button ▼ to scroll in the selected direction: X= Left and Y= Down.

    c. After moving the crosshairs, a red cursor will appear on the screen to represent the original position of the sight.

13. Long press the menu button M to save the position of the cross.

14. Take a "confirmation" shot - the hit point should now correspond to the cross. If not, re-adjust the X/Y position of the cross.

For detailed shooting instructions, see Shooting menu > Shooting the cross on page 32.

16 . CORRECTION OF UNEVENNESS

Non-Uniformity Correction (NUC) allows thermal imaging sensors to correct pixels and eliminate image defects caused by pixel drift. NUC is performed automatically each time the RICO Mk2 thermal imaging system is turned on.

The RICO Mk2 has two modes of unevenness correction (NUC), automatic (A) and manual (M). In both modes, the user can select manual NUC (with or without shutter) at any time. For instructions on setting the NUC mode, see Main Menu > Calibration Mode on page 37.

Automatically

In automatic mode (A), the RICO Mk2 performs an automatic NUC lock according to an internal software algorithm. There is no need to close the lens cap (1) because the RICO Mk2's internal shutter covers the sensor.

If automatic mode is selected, a countdown icon will appear when the NUC is 5 seconds away from starting. The timer will be displayed after the microbolometer temperature has stabilized - after approximately 10 minutes of continuous operation of the RICO Mk2.

NOTE: In automatic mode (A), manual NUC can be performed at any time (see below).

By hand

In manual mode (M), the user independently determines whether to perform NUC with or without shutter based on the quality of the observed image.

Design of the shutter NUC

The NUC can be closed at any time in manual or automatic mode. It is not necessary to close the lens cap (1) during NUC shutter release because the internal shutter covers the sensor.

1. From the home screen, short press the power button ⏻

2. The internal shutter covers the sensor and the unevenness correction (NUC) is performed immediately.

Closure-free NUC design

The user can perform a closure-free NUC based on the quality of the observed image. Shutterless NUC consumes less power than shutterless NUC because it does not use the image sensor shutter to cover the sensor; instead, the user must close the lens cap (1).

Capless NUC can be performed in manual or automatic mode:

1. Close the lens cover **(1)**.

2. From the home screen, briefly press the up button $\boxed{\blacktriangle}$ with the down button $\boxed{\blacktriangledown}$ at the same time.

3. The screen prompts you to close the lens hood (1). The latchless NUC will start after approximately 2 seconds.

NOTE: If the lens is not properly covered, a temporary "image burn" will remain on the image until the next unevenness correction. This "image burn" is temporary and is not a defect or a sign of permanent damage.

17. TAKING PHOTOS AND VIDEOS

The RICO Mk2 camera is equipped with video recording and image capture functions. All videos and photos are automatically stored in the built-in 32 GB memory.

> **NOTE:** Photo and video files are named with the time and date, so we recommend setting the date and time before using the photo and video features. See Settings menu > Date and time on page 43. Alternatively, the date and time can be synchronized in the InfiRay Outdoor App.

Photography 📷

To take a picture:

1. From the home screen, press long button down $\boxed{\blacktriangledown}$

2. The camera icon 📷 appears, indicating that a photo has been taken

NOTE: If there is insufficient storage capacity, a red exclamation mark icon appears next to the camera icon. $\color{red}{\text{(!)}}$

Recording videos 📹

To upload the video:

1. If necessary, switch on the microphone in the main menu. See Main menu > Microphone on page 38.

2. From the home screen, long-press the down button ▼

3. When you start recording,

   The recording timer in HH:MM:SS (hour, minute, second) format is displayed in the top status bar.

4. While recording, you can take a photo by briefly pressing the down button . ▼

5. Long press and hold the down button ▼ to stop recording and save the recording.

Video activated recoil 🔁

If this function is enabled in the main menu, the video is automatically recorded when the shot is fired. RICO Mk2 will record 3 seconds before the shot and 2 minutes and 57 seconds after the shot. Icon 🔁 is displayed in the top status bar.

A recording timer in HH:MM:SS (hour, minute, second) format appears next to the RAV icon when the video is being recorded. For instructions, see Main menu > Reverse-impact activated video on page 38.

NOTES:

- If you fire multiple shots within one 30-second period, only one video will be recorded.

- When recoil-activated video recording is turned on, standard video recording is not available.

23

Notes on taking photos and videos

- You can enter and navigate through the menu while recording a video. The user interface (status bar, icons and menu) is captured in the recorded video or in the file of the captured photo.

- Recorded photos and videos are saved on the memory card.

  - Photos are saved as PIC_HHMMSS.jpg.

  - Videos are saved as VID_HHMMSS.mp4 or RAV_HHMMSS.mp4.

  HHMMSS is hour, minute, second.

- The maximum length of a video file to be recorded is 5 minutes. After this time has elapsed, a new file will automatically start recording.

- The number of uploaded files is limited only by the capacity of the internal memory.

- Regularly check the available memory space and move videos and images to other storage media to free up space on the memory card.

18 . ACCESS TO INTERNAL MEMORY

When the RICO Mk2 is switched on and connected to the computer using the included data cable, the computer will recognise it as a flash drive (USB). This allows the user to access stored multimedia files and copy or delete desired files.

To access the internal memory, do the following:

1. Switch on RICO Mk2.

2. Connect the RICO Mk2 to your computer using the magnetic charging cable (17) or the USB-C cable (16) included in the original packaging.

3. Double-click to open "My Computer" on your computer.

4. Double-click to open a device called Inifiray.

5. Double-click to open the RH50R to access the built-in memory.

   a. Recorded videos and captured photos are named as, YYYYYMM. (year, day, month)

6. Select the files or folders you want to copy or delete.

19. USE INFIRAY OUTDOOR APP

RICO Mk2 can be controlled via an app on your mobile phone, tablet or laptop.

1. Download and install the app on your device:

   a. Scan to download
   A QR code that redirects you to the App Store/Google Play.

   b. Download apps from the store of your choice.

2. Connect RICO Mk2 to Wi-Fi:

   a. Turn on Wi-Fi. See **Main menu > Wi-Fi** on page 36.

   b. Open the app and click on the viewfinder icon 📷 on the home screen. Then click the Connect device to WiFi button.

   c. On your mobile phone, go to **settings > Wi-Fi**.

   d. Select RICO Mk2 from the list of Wi-Fi networks. It will appear in the list as "RH502_YYYYY_XXXXXXXX", where XXXXXXXX is the eight-digit serial number of the device.

   e. Enter your Wi-Fi password and tap Connect. The default password is 12345678.

3. Control RICO Mk2 via the app:

   a. You can take photos and videos in real time, with or without sound.

   b. You can view, share, download and delete photos and videos taken through the app that are stored on your mobile device.

   c. You can change your Wi-Fi password and SSID

   d. You can synchronise the date and time with your mobile device.

   e. You can update the RICO Mk2 firmware.

NOTE: When resetting to factory defaults, the Wi-Fi SSID and password are reset to the default values of RH502_YYYYYY_XXXXXXXX and 12345678. See Settings menu > Factory reset on page 45.

20. PUBLISHED LASER RANGEFINDER

The RICO Mk2 features an integrated precision laser rangefinder that allows the user to measure the distance to objects up to 1200 yards away with an accuracy of ±1 yard. The laser rangefinder has two rangefinder modes: continuous and single measurement. Continuous rangefinders allow the user to quickly adjust to changing distances for better shot placement.

WARNING: Do not look directly into the laser.

The rangefinder interface has the following

functions:

1 **Cursor: The** blue cursor ⊸◦⌐ appears in the middle of the screen.
2 **Mode:** shows the selected mode, CONT (continuous) or SGL (single-use).
3 Distance measurement: shows the distance to the target.

Use continuous distance measurement mode:

1. A short press of the up button ▲ turns on the laser rangefinder and puts it into single-use mode.
2. Aim for the target.
3. The distance to the target indicated by the cursor is automatically refreshed every second by the rangefinder.
4. Press the power button ⏻ briefly to turn off the laser rangefinder.

Use of one-time distance measurement:

1. Long press and hold the up button ▲ to turn on the laser rangefinder and put it into single-use mode
2. Aim for the target.
3. Press the up button ▲ briefly to measure the distance.
4. Long press and hold the up button ▲ to change the distance measurement mode.
5. Press the power button ⏻ briefly to turn off the laser

rangefinder.

NOTE: The rangefinder interface will terminate after 15 seconds in single measurement mode.

NOTES FOR CLARIFICATION:

- The measurement accuracy and maximum range depend on the reflection ratio on the target surface, the angle at which the laser beam strikes the target surface and the environmental conditions.
  The reflectivity depends on the surface texture, colour, size and shape of the object. A glossy, light surface usually has a higher reflectivity than a darker surface.

- Aiming performance may deteriorate in bright conditions or when aiming towards the sun.

- The accuracy of the measurements can be affected by fog, smog, heavy rain, snow and other weather conditions. It can also be affected by a dead battery or a dirty or blurry lens.

- -Measuring the distance to a small target is more difficult than measuring the distance to a large target.

21 . DIGITAL ZOOM

RICO Mk2 rapidly increases base magnification digital image magnification from 1 to 4 times.

Using digital zoom:

1. From the home screen rotate the zoom
   lever **(7)** to zoom in, in the direction of
   clockwise, to delay
   the counter.

2. Real-time magnification, 3×-12× in steps
   after 0.1×, it is displayed in the bottom status bar.

22 . ULTRA-CLEAR MODE

Ultra-Clear mode improves image quality in adverse weather conditions such as rain, fog, high humidity or high temperatures as all these conditions result in lower thermal contrast. Ultra-Clear mode increases the NETD value of the thermal sensor and improves the sensor's response speed to these challenging environmental conditions. See Main Menu > Ultra-Clear on the next page.

Ultra-Clear mode offers:

- Improved image quality and clarity; images are sharper and clearer.

- Image detail.

- Improved recognition of observed targets.

23 . OPTIONS AND DESCRIPTIONS OF THE MAIN OFFER

Offer and sub-offer options from left to right:

- **Main menu:** Ultra-Clear, Cross, Focus, Wi-Fi, PIP, Calibration, Shock Activated Video, Microphone, Motion Sensor, Standby, Brightness, Defective Pixel Correction, Settings.

  - **Cross menu:** firing profiles, cross types, cross colours

  - **Setup menu:** Shooting Cross, Adjusting Shooting Distance, Clearing Distance.

  - **Settings:** date, time, units of measure, language, factory reset, device information.

Details of the menu options, their descriptions and navigation instructions are listed in order on the following pages.

Ultra-Clear ◉

Turning Ultra-Clear mode on and off

When Ultra-Clear mode is enabled, the image contrast is increased, which is suitable for rainy, foggy or low-contrast conditions.

1. Long press and hold the menu button
   M you will enter the main menu.

2. Press the up button
   the down button briefly to select Ultra-Clear ◉

3. Press the menu button M briefly to switch Ultra-Clear mode on or off.

4. Ultra-Clear mode, on. ◉ On/Off. ∅, the icon appears in the lower status bar.

5. Long press the menu button M to return to the home page.

NOTE: When the Ultra-Clear mode is turned on and off, the RICO Mk2 will automatically correct for aperture unevenness.

Cross ┼

Setting the profile, type and colour of the cross

1. Long press and hold the menu button
   [M] you will enter the main menu.

2. Short press the up button[▲] or **down** button[▼] to select the item indicating the cross. ┼

3. Press the menu button briefly
   [M] you will enter the cross submenu.

4. There are three sub-items in the menu: shot profile, cross type and cross colour.
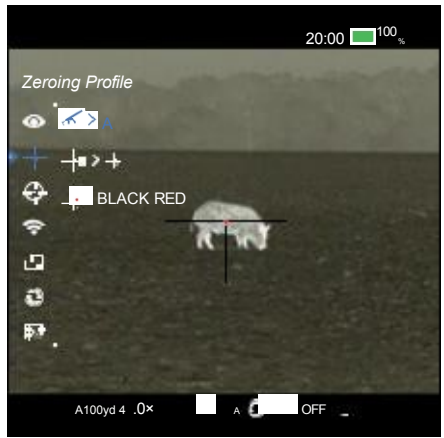
MENU CROSSES > SHOOTING P R O F I L E

Choosing a shot profile

1. In the submenu of the crosses there is a profile item by default.

2. Press the menu button briefly
   [M] this will enter the submenu mentioned above.

3. Short Press up[▲] or down [▼] you move through the options, A, B, C, D, E, or F.

4. The selected shot profile is displayed in the bottom status bar.

5. Long press and hold the menu button [M] to confirm your selection and return to the home screen.

CROSS MENU > CROSS TYPE $-\!|\!\equiv$

Selecting the type of cross

1. In the crosses submenu, press up ▲ or down ▼ , select the cross type setting. ↲≡

2. Kⁱ by pressing the menu button M to enter the submenu.

3. Short press up ▲ or down ▼ to select between the options, 1-7 (see below). The cross changes by moving the cursor between

   individual types. You can make your own cross for a fee in the InfiRay Outdoor app.

4. Long press and hold the menu button M to confirm your selection and return to the home page.

Types of crosses

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
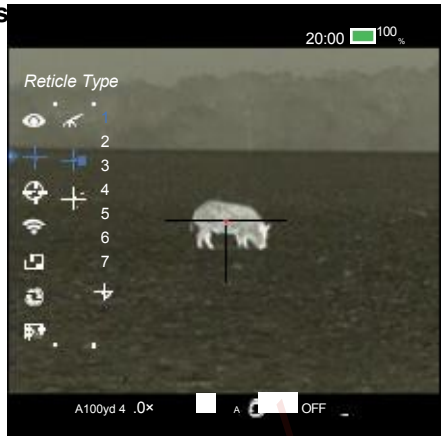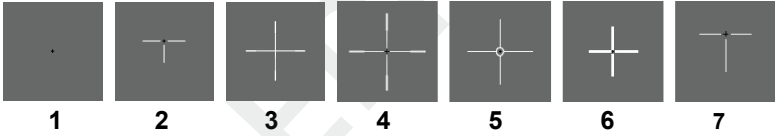
CROSS MENU > COLOUR $-\!|\!\cdot$

Change the colour of the c

1. In the cross submenu, press button up ▲ or down ▼ and select the color change menu —¦⁝

2. Press the menu button briefly M enter the submenu.

3. Short press up ▲ or down ▼ to switch between colour options.

   Move the cursor to change colours.

4. Long press and hold the menu button M to confirm your selection and return to the home screen.
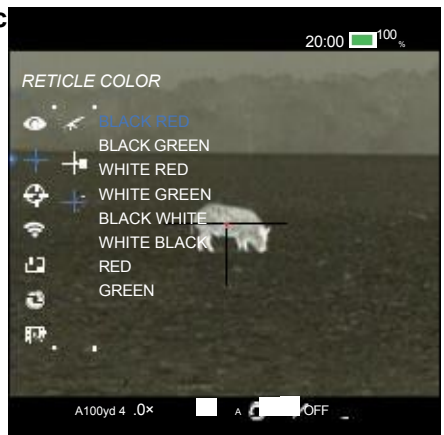
Shot

Selection distances ⊕

In the menu of shooting
You can add a new distance or select a
distance from the menu, edit it, delete it,
or change the position of the cross.
The device can store up to 10
distances.

Note: Before selecting or creating a new distance, you must select a shot profile, A,
B, C, D, E, and F.

1. Long press the menu button [M] to enter the main menu.

2. Short press the up button [▲] or down button [▼] to select the shooting menu. ⊕

3. Press the menu button briefly
   to enter the submenu
   [M]

MENU SHOOTING >
SUBMENU
BY DISTANCE

Add or select distance

Adding a new one:

1. In the selected

   menu Press   [▲]
   down or up
   button   [▼]

   and select Add new distance. ⊕

2. Short press the menu
   [M] button to add a new
   Distance, a blue arrow
   appears Below and
   Above indicating the
   location of the cursor

   [▲]

3. Short press [▼]
   buttons   Up or
   Down to increase or
   decrease the digit
   from 0 to 9.

31
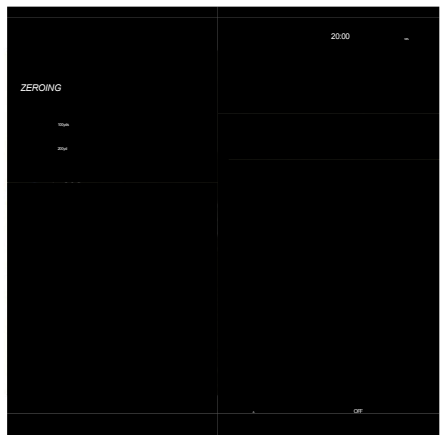
4. Short press the menu button M to switch between 3 digits. The blue arrows indicate the digit currently being edited.

5. Short press the power button ⏻ to return to the previous menu without saving changes; **OR**

6. Long press and hold the menu button M to save the new distance and return to the home screen.

To select the distance:

1. In the menu of shooting, press tl. top ▲ or ▼ mine and select the distance.

2. Press the menu M briefly to open the submenu to select the distance.

3. In the selected distance submenu you can:

   a. Select the shooting cross ⊕ menu to set the X/Y cross position. See the section Setting up the cross below.

   b. You can adjust the distance by selecting the distance. See Shooting menu > Customize distance on page 35.

   c. Select the delete icon 🗑 to remove it. See section Shooting Menu > Delete Distance on page 36.

SHOOTING MENU > DISTANCE SUBMENU > SHOOTING CROSS ⊕

Setting the crosshair position for the selected distance In the crosshair interface, the X/Y position of the crosshair can be set to match the hit point.

1. In the submenu of the selected Distances there is a cross icon. ⊕ Press the menu button M briefly to select and enter the interface for shooting the cross.

2. The interface for shooting the cross has the following functions:

   1 **Y-Axis↕ Icon:** Vertical point change (in cm or inches).

   2 **X-Axis←→ Icon:** Horizontal change point (in cm or inches).

   3 **Zoom⊕ Icon:** Select to change the zoom level.

   4 **Freeze❄ Icon:** Select to freeze the image. After freezing, the icon will change from white to blue. Select the second option to thaw the image.

   5 **Cross:** shows the new position of the cross.

   6 **Red Cursor:** indicates the centre of the original cross position.
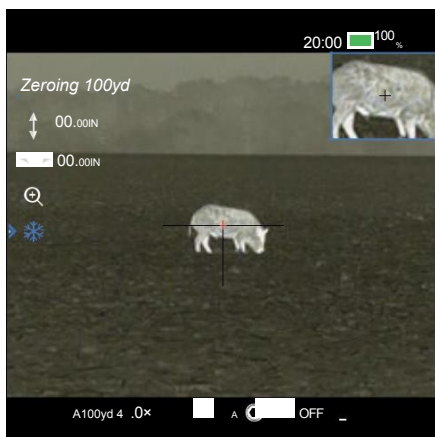
3. In the submenu for the selected distance, center the cross on the aiming point and freeze the image display.

   a. Short press the down button 🔽 select the icon freeze ❄. The cursor position is marked blue arrow ➤

   b. Press the menu button briefly M freeze the image. The freeze icon will change from white to blue.

4. Adjust the zoom level as needed:

   a. Short press up ▲ or down ▼ to select the zoom icon⊕ .

   b. Press the menu button M briefly to confirm your selection.

   c. Short press up ▲ or down ▼ to zoom in/out. The selected real-time magnification is displayed in the bottom status bar: 3.0×, 6.0×, 9.0× or 12.0×.
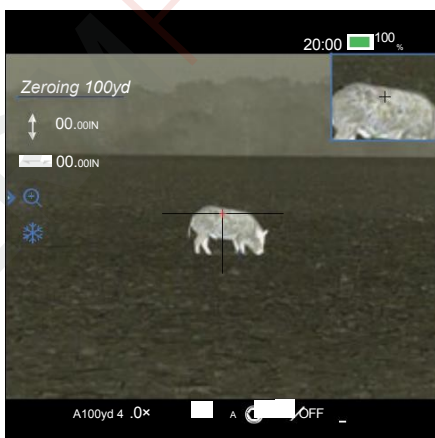
5. Select the axis (X/Y) along which the cross will move.

   a. Short press up ▲ or down ▼ to change **X** and **Y**.

   b. Short press the menu button **M** to select required osu. The selected axis will change from white to blue.
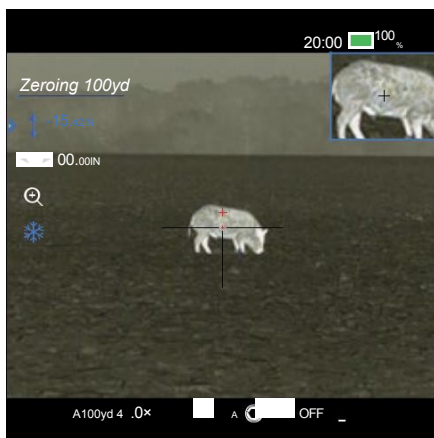
6. Adjust the X/Y cross position so that the cross coincides with the hit point.

   a. X (horizontal) and Y (vertical) is the height.

   b. After moving the cross, a red cross will appear on the screen to represent the original position of the cross.
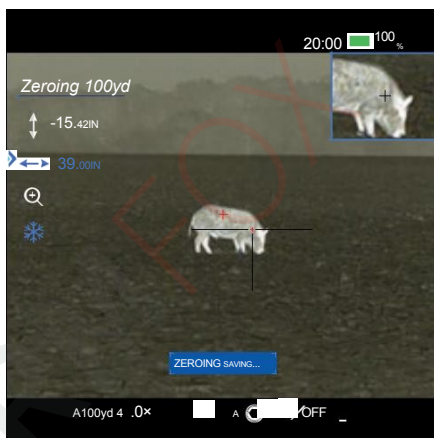
   c. Up button ▲ you move in the positive direction: X= right and Y= up.

   d. Press the down button move in the negative direction: X= left and Y= down.

   e. Short press up ▲ or down ▼ to move the cross in the appropriate direction by 1 pixel; long press to move by 10 pixels.

   f. When shooting at 50 yards, a short press will change the point of impact by 0.22" and a long press will move it by 2.16" as shown on the X and Y coordinate display.
   At 100 yards, the same short grip moves 0.43" and the long grip moves 4.32". At 200 yards, the short grip moves 0.86" and the long grip moves 8.64".

   g. The X/Y setting distance is automatically updated if you change the zero distance, for example from 100 to 200 yards.

7. Press the menu button **M** briefly to save the position of the selected axis and deselect it. After deselection, the axis color changes from blue to white.

8. If necessary, repeat steps 5-7 and adjust the position of the cross along the other axis.

9. Short press the power button ⏻ to exit the interface without saving the cross position; **OR**

10. Long press and hold the menu button M to save the position of the cross for both axes and return to the home screen.

11. "Data saving" will appear at the bottom of the screen and the system will navigate to the home page.

12. Take a repeat shot - the point of impact should now coincide with the point of aim. If not, readjust the X/Y position of the sight.

SHOOTING MENU > DISTANCE SUBMENU > ADJUST DISTANCE

00 0y c

Adjusting the firing distance

1. In the submenu selected

   press the up or down button briefly to select the distance

2. Press the menu button briefly to adjust the selected distance. A blue arrow appears below and above the digit to indicate the selected digit.
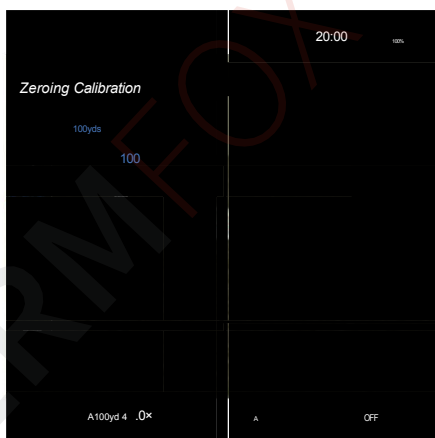
3. Short press tl. Up or down increase or decrease the value of the selected digit from 0 to 9.

4. Press the M button briefly between three digits two blue arrows indicate the selected digit.

5. Press the power button briefly ⏻ return to the previous menu without saving changes; **OR**

6. Long press and hold the menu button M to save the adjusted distance and return to the previous menu.

SHOOTING > DISTANCE SUBMENU > CLEAR DISTANCE

Removing distance

1. In the submenu, the selected shot distance, press tl. up ▲ or down ▼ and scroll to the delete icon 🗑 .

2. Press the menu button briefly M clear the selected distance.

3. A message will appear in the pop-up window "Erase this distance?" and two options: no and yes. By default, No is selected.

4. Press the menu button briefly M To return to the previous menu without clearing the distance, select No; **OR**

5. Short press up ▲ or down ▼ to select yes and press M menu to return to the home page.

Wi-Fi 📶

Turning Wi-Fi on/off

Enable Wi-Fi to control the RICO Mk2 via the InfiRay Outdoor App.

1. Long press M menu to get to the main menu
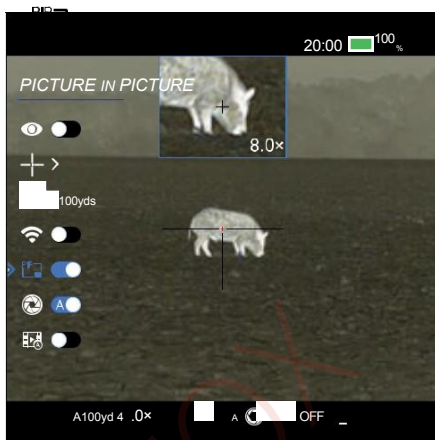
2. Short press tl. **up** ▲ / ▼ to select the Wi-Fi icon 📶

3. Short press the M menu to turn Wi-Fi off/on. Wi- Fi status, on 🛜 off 🛜, icon appears in the status bar.

4. Hold down the M menu button to return to the home screen.

Picture in picture

Turning PIP on/off

1. Long press and hold the M menu button to enter the main menu.

2. Short press tl. up ▲ or down ▼ to select the icon ⌐PP¬

3. Short press tl. M menu to turn PIP mode on or off. When the mode is on,

   The PIP window appears at the top corner of the screen, the window magnifies the observed object 2x.

4. Long press the menu button M to return to the home page.

Calibration mode ⓐ

Set the unevenness correction mode to automatic or manual

1. Long press the menu button to get to the main menu.

2. Short press tl ▲ Up/Down ▼ to select the mode icon ⓐ calibration

3. Press the button briefly

   M menu you choose between two options
   A (automatic) and M (manual).

4. The selected mode, Ⓐ or Ⓜ, appears in the status bar.

5. Long press and hold the menu button M to return to the home screen

Video recoil activated

Switching the function on/off

After firing, the recording starts automatically, the rifle scope records 3 seconds before firing and 2 minutes, 57 seconds after the shot was fired.

01:00:26   20:00 %¹⁰⁰

RECOIL ACTIVATED VIDEO

100yds

A100yd   4.0×   A   OFF

1. Long press tl. [M] open the menu. The main offer. [▲] [▼]

2. Press up or down briefly select the following icon

3. [M] Press the menu button briefly to turn this function off/on. The icon appears in the status bar only when the function is enabled. A timer will also appear in the format HH:MM:SS (hours, minutes, seconds). This is an indication that the video is being recorded.

4. Hold down the menu button [M] to confirm your selection and return to the home screen.

NOTES:

- If multiple shots are fired within one 30-second period, only one video recording will be made.

- When recoil-activated video recording is turned on, standard video recording is not available.

Microphone 🎤

Switching the microphone on/off

1. Long hold [M] menu button to open the main menu.

2. Short press up [▲] or mine [▼] select the microphone icon. 🎤

3. Press the menu button briefly [M] turn the microphone off/on.

20:00 ■ ¹⁰⁰ %

Microphone

A100yd   4.0×   A   OFF

4. When the microphone is on 🎤 icon appears in the bottom right corner of the screen.

5. Long press and hold the menu button $\boxed{\mathbf{M}}$ to return to the home screen.

Motion sensor ⟨⊕⟩

Switching the motion sensor on/off

1. Long press and hold the M menu button to open the main menu.

2. Short press up ▲ or down ▼ to select the motion sensor icon ⟨⊕⟩

3. Press the menu button briefly M turn the motion sensor off/on.

   A drawing of the steps will appear on the screen.

4. Long press and hold the menu button M to return to the home page.

   NOTE: The tilt angle is not shown in the picture above because it is hidden in the menu.

Standby ⊿ mode

Switching on automatic standby The RICO Mk2 can be set to automatic transition to standby mode.

1. Long hold M menu button to enter the main menu.

2. Short press up ▲ or down ▼ to select the ⊿ icon.

3. A short press of the menu button M toggles between automatic standby mode and always on.

4. Long press and hold the menu button M to confirm your selection and return to the home screen.

NOTES:

- When auto standby is on:

  - The RICO Mk2 will automatically switch to standby mode when tilted up or down at an angle greater than 70° or to the left or right at an angle greater than 30°.

- The RICO Mk2 will not enter standby mode when in the horizontal firing position.

    - Press any button to exit the automatic standby mode.

- When the automatic standby mode is off , the riflescope will operate until the batteries run out.

Brightness ☀

Setting the screen brightness

1. Long hold [M] menu button to enter the main menu.

2. Short press up [▲] or down to select the [▼] brightness icon ☀.

3. Turning the lever zoom (7) to the right or left to adjust the screen brightness level from 0-100%.

4. Long press and hold the menu button [M] save, you go back.
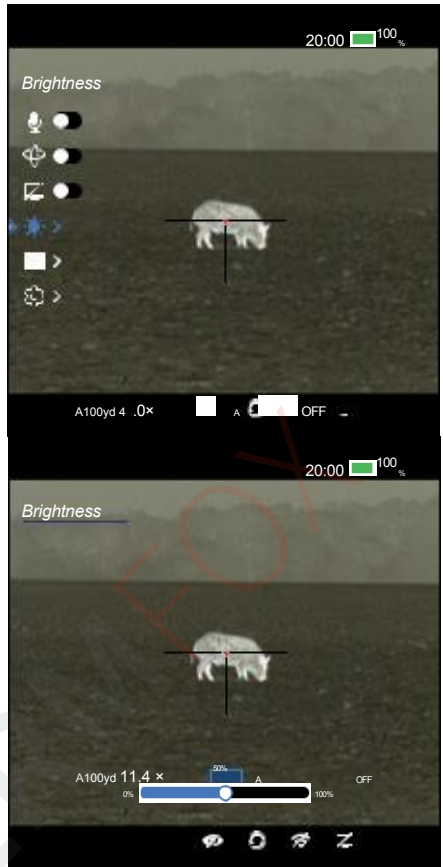
Pixel defect correction

Fixing defective pixels
Defective pixels are pixels that do not change correctly compared to other pixels in the image - they are either lighter or darker than the surrounding pixels. The RICO Mk2 is equipped with a tool that uses internal software to correct defective pixels on the detector.

1. Long press and hold the menu button [M] you will enter the main menu.

2. Short press up [▲] or down [▼] to select the pixel defect correction icon ■.
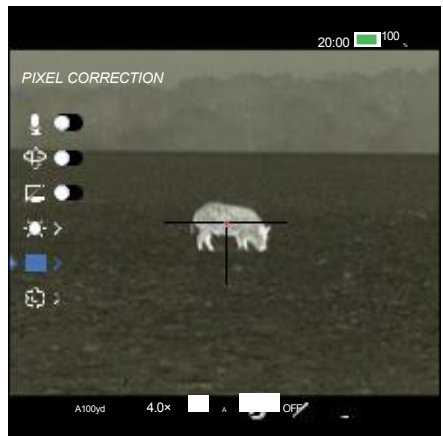
3. Press the menu button briefly **M** open the correction interface.

4. The interface has the following functions:

   1 Pixel cursor

   $+$ **:** Appears in the middle of the screen instead of the viewfinder. Move the cursor to the position of the faulty pixel.

   2 **PIP Window:**
   It will appear in the top left corner.

   3 **Navigation cursor** ❯ **:** Displays the position of the cursor in the interface.

   4 **X-osa** ←→ **Icon:** Select to move the pixel cursor horizontally..

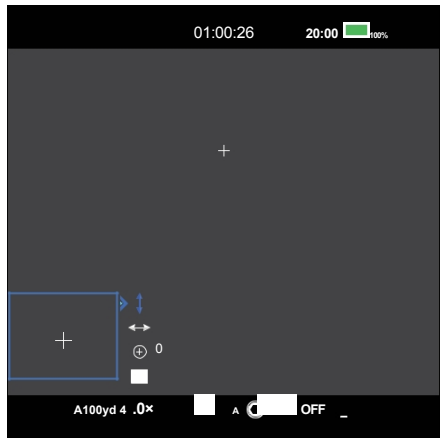   **5 Y-axis** ↕ **Icon:** Select to move the pixel cursor vertically.

   6 **Add** ⊕ **Icon:** Select to add the defective pixel to the "to fix" list.
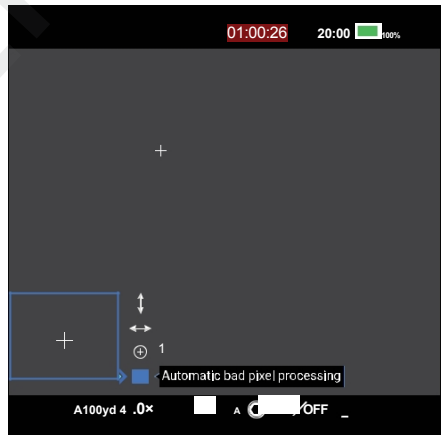
   7 **Auto Pixel Correction** ▢ **Icon:** Select to automatically correct all defective pixels.

Automatic repair of defective pixels:

1. Short press the up or ▲ down button ▼ to select the icon

2. Press the menu button briefly **M** you will automatically fix all the defective pixels.

NOTE: If the algorithm does not find all the faulty pixels, it may be necessary to manually correct additional pixels.

Manual selection and repair of defective pixels:

1. Select the axis (X or Y) along which you want the cursor to move:

   a. Short press up ▲ or down ▼ to select between **X** and **Y.** **The** cursor position is indicated by the blue arrow icon ❯ .

b. Short press the menu button $\boxed{\text{M}}$ to select X or Y. The
   selected axis will change from white to blue.

2. Move the cursor along the selected axis to the location of the defective pixel:

   a. Up button ▲ for movement in the positive direction: X= right and Y= up.

   b. Down button ▼ to move in the negative direction: X= left and Y= down.

   c. Press the up or down button briefly ▲ ▼ move the cursor in the corresponding direction by 1 pixel, long press by 10 pixels.

3. Short press the menu button M to save the position for the selected axis. After deselection, the axis color changes from blue to white.

4. Go to the other axis, select it and adjust the cursor position as needed.

5. Add a pixel to the list „k repair":

   a. When the cursor is in position press the menu button And deselect the axis

   b. Press up ▲ or ▼ mine and find the icon ⊕

   c. Press the button briefly

   Menu M to add a pixel.

   The number of pixels to the right of the "add" icon will increase, indicating that one pixel has been added to the list.

   d. If the faulty pixel was added by mistake, briefly press the Menu button M a second time from the same X/Y coordinates (do not move the cursor) to remove the pixel from the list "to be repaired". The number of pixels displayed to the right of the add icon will decrease, indicating that the pixel
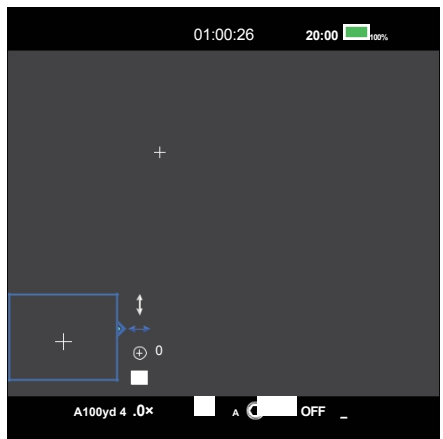
has been removed.

6. Repeat steps 1-5 to add additional defective pixels as needed.

7. Press the power button briefly
   ⏻ exit the interface without saving; **OR**

8. After adding all defective pixels to the list, long hold the Menu button **M** and save the changes.

9. At the bottom of the screen, "Saving data.." and the system will go to the home screen.

01:00:26 **20:00** 100%

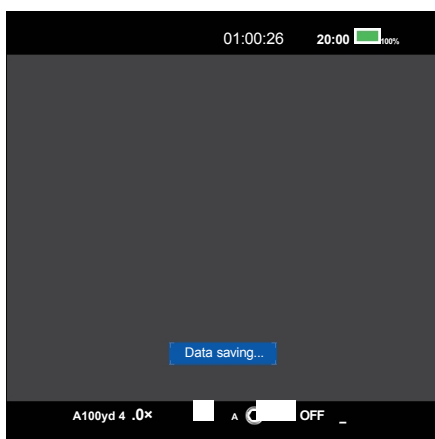Data saving...

A100yd 4 .0×   A ◖ OFF

NOTES: The PIP window and interface controls move to the top left corner when the cursor moves to the bottom left corner.

Settings menu ⚙

Modifying general settings

1. Long press and hold the menu button **M** to enter the main menu

2. Short press up ▲ or down ▼ to select the setting ⚙.

3. Short press the menu button **M** to enter the submenu.

Settings > DATE 📅

Setting the date

1. In the submenu, short press up or
   ▲ down ▼
   to select the date 📅.

2. Short press the **M** menu button to change the date and a blue arrow will appear.

   The date is displayed as YYYY.MM.DD.

20:00 100%

A100yd4.0×

3. Short press up ▲ or down
   ▼
   select the corresponding value (year, month, and day).

4. Short press the menu button **M** to select values.

5. Long press and hold the menu button **M** to save your changes and return to the home page.

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Settings > TIME

Time settings

1. In the settings submenu, short press up ▲ or down ▼ select the time item ⟲.

2. Short press the M menu button to adjust the time.
   A blue arrow appears below and above the value

   The time is displayed as HH.MM, in a 24-hour mod.

3. Press the up button briefly ▲
   Or down ▼ select the value (hours and minutes) of your choice.

4. Short press the menu button M to change the values. The blue arrows point to the selected value.

5. Long press and hold the menu button M to save the values and return to the home page.

6. The changed time is shown in the status bar.

Settings > UNIT

Setting the measurement units

1. In the submenu

   Press the button briefly Up ▲
   ▼ or down select
   u n i t item

2. Short press
   M menu button to enter the submenu.

3. Short press up ▲ or **down** ▼
   You're changing unit options from European to American.
   m (metres) or y (yards), the changed unit will appear on the status bar.

4. Long press and hold the menu button M to confirm your selection and return to the home screen.

Settings > LANGUAGE

🌐

Language selection

1. In the submenu, short press the up ▲ or down ▼ button to select the language🌐.

2. Press the menu button briefly to enter the submenu.
   Ⓜ

3. Short press up ▲ or down ▼ to scroll through the options.

4. Hold down the menu button Ⓜ to confirm your selection and return to the home screen.
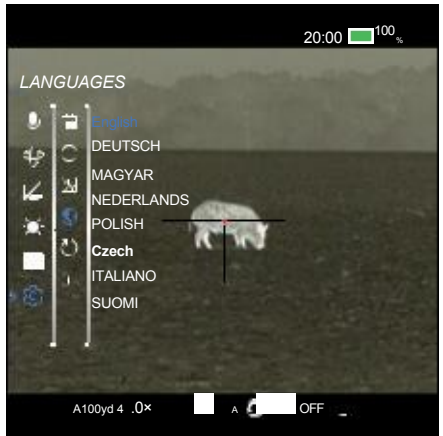
Settings > Stock N. ↻

Restore to factory settings

1. In the settings submenu, short press the up button, ▲ or ▼ down, to select factory reset ↻.

2. Press the menu button briefly to enter to the aforementioned sub
   Ⓜ

3. Two Yes/No options will appear
   Yes - performs a reset No - cancels the operation.

4. Short press the menu button Ⓜ to select yes. The factory data will be restored and the RICO Mk2 will automatically restart; **OR**

5. Short press the up button ▲ or down button ▼ to select NO and the menu button Ⓜ to confirm the cancellation and return to the home page without changes.

Notes on factory settings:

- The screen goes dark and after a pause of about 20 seconds, a factory restart is triggered.

- Factory reset cannot be undone.

- The settings below will be reset to the factory default settings:

  - Color palette: white hot
  - Image sharpness: 5

  - Brightness: 5
  - Contrast: 5
  - Zoom: 3×
  - Ultra-Clear mod: O
  - Wi-Fi: O
  - Calibration: automatic
  - Motion sensor: O
  - Loading profile: A

  - Type of cross: 1
  - Colour of the cross: black and red
  - Microphone: O
  - Sleep: O
  - Screen brightness: 50%
  - Language: English
  - Unit: metric
  - Wi-Fi Password: 12345678
  - Wi-Fi SSID: RH502_YYYYY_XXXXXXXX

Settings > INFORMATION   ⓘ

Information about the device

1. In the after-draft briefly press the up button

   ▲ or the button ▼ **down** and select the icon ⓘ Information.

2. Press the button briefly [M] menu to enter the Submenus.

3. The following information will appear in the submenu
   RICO Mk2: the model

number, GUI, FPGA, boot, kernel, root, hardware version, part and serial numbers, FCC ID.

4. Long press and hold the menu button [M] to save your changes and return to the home screen.

24 . BASIC CONTROL

It is recommended to carry out a technical check before each use. Please check the following:

- Appearance of the rifle scope: no cracks or visible damage should be visible.
- Condition of the lens and eyepiece: there should be no cracks, grease spots, dirt or other deposits on the lens.
- The internal rechargeable battery should be fully charged.
- The control buttons should be fine.

25 . BASIC MAINTENANCE

Always replace the lens cap (1) after use to avoid damaging or scratching the lens. Never touch the lens directly; grease from your skin can damage the coating and surface of the lens.

Basic maintenance should be carried out at least twice a year and includes the following steps:

- Wipe the surface of the outer metal and plastic parts with a clean, dry cotton cloth. Do not use chemical, caustic or abrasive cleaners. Compressed air can also be used to clean the external components.
- Clean the electrical contacts and battery holes on the rifle scope with a non-greasy organic solvent.
- Check the lens and eyepiece. If necessary, remove any dirt or sand from the optics; a non-contact cleaning method is preferred.
- Clean the outside of the lens only with the supplied microfibre cloth or similar. Clean the lens only if it is visibly dirty. Frequent wiping or cleaning may lead to degradation of the anti-reflective coating of the lens.

26 . WARRANTY

At iRayUSA, we are first and foremost hunters and users of our products, and we understand that failure is not an option. We also understand that waiting an extended period of time for a repair is not something a customer should have to put up with when something goes wrong. During the published warranty period, iRayUSA will, at its discretion, repair or replace any optics that break down during normal use.

In addition, if we are unable to repair your optics in less than one week, we will replace it with a replacement product in the same or better condition. If you would rather wait for your particular optic to be repaired, we can handle that too. We know you haven't encountered this before with a thermal imaging manufacturer, and neither have we; that's why we started iRayUSA. Our warranty covers the product and is not tied to the original owner. The warranty period is tied to the date of sale to the dealer. This warranty covers normal use only and does not cover cosmetic damage, normal wear and tear, intentional damage, theft, loss, any act of God, or condition caused by other than intended use. Any product that is altered, opened or tampered with voids the warranty. Any damage or change to the serial number on the product will be considered an alteration. Be sure to register your RICO Mk2 riflescope at irayusa.com/register.

To return a product for repair, please follow these steps:

1. Go to irayusa.com/warranty and click Request an RMA to request an RMA number. Without an RMA, returns will not be accepted.

2. The customer is responsible for shipping the product to iRayUSA according to the instructions included with the RMA. iRayUSA will return the product free of charge.

Warranty Notes:

- The one-week period begins when the product is received in iRayUSA.

- iRayUSA will not be liable for any damages or losses incurred in transit to iRayUSA.

- This guarantee gives you specific legal rights, and you may have other rights that vary from country to country.

If you have any questions, call us at 800-769-7125, visit irayusa.com/warranty or email us at info@irayusa.com.

27. DECLARATION FCC

FCC ID: 2AYGT-4C-00

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

WARNING: Changes or modifications not expressly approved by IRayUSA may result in the loss of the user's authority to operate the device.

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 causes harmful interference to radio or television reception, which can be detected by turning the equipment on and off, the user is advised to attempt to correct the interference by one or more of the following measures:

- Redirect or relocate the receiving antenna.
- Increase the distance between the device and the receiver.
- Connect the device to an outlet on a different circuit than the one to which the receiver is connected.
- Consult your dealer or an experienced radio technician.

This device has been tested for typical operations and use with body support. A minimum distance of 0.5 cm must be maintained between the user's body and the handset, including the antenna, to meet radio wave exposure requirements. Belt clips, holsters and similar third-party accessories used with this device should be free of metal components. Body accessories that do not meet these requirements may not meet radio wave exposure requirements and should be avoided. Use only the supplied or approved antenna.

28 . GENERAL TROUBLESHOOTING

The troubleshooting table on the following page lists problems that may occur when operating the RICO Mk2. Follow the recommended troubleshooting steps in the order listed in the table. Contact iRayUSA at 800- 769-7125 or irayusa.com/support or an authorized dealer before attempting any adjustments or repairs beyond the troubleshooting procedures in this guide. Unauthorized repairs or modifications will void the warranty.

PROBLEM	POSSIBLE CAUSES
RICO Mk2 is not turning on.	IBP-5 battery is dead.
RICO Mk2 cannot connect to computer or to an external power supply.	~~The external power supply is discharged.~~ ~~The computer is off.~~ ~~The USB-C power cable is damaged.~~ Wi-Fi is not turned on.
RICO Mk2 cannot connect to to your mobile device (mobile/tablet).	Wrong Wi-Fi password. Too many Wi-Fi signals in the vicinity that can cause interference.
Wi-Fi signal is lost/interrupted.	The device is out of Wi-Fi range or there are obstacles (walls) between the device and Wi-Fi that interfere with transmission
The image is blurry and the background is uneven or has vertical lines.	Correction of unevenness is necessary.
The picture is too dark.	The screen brightness level is too low.
The GUI is clean, but the image is blurry.	The lenses are out of focus.
	There is dust or other debris on the inside or outside of the optics.
	Moisture forms on the inside or outside of the optics
The device does not show an accurate shot consistently to one location.	The RICO Mk2 is not properly secured.
Observed target disappears	Observing the target through the glass.
The RICO Mk2 does not focus.	The image settings are not optimal for the current environmental conditions or the object being observed.
The image quality is low or is reduced detection range.	**by** poor environmental conditions, snow, rain, humidity, Fog.
When using the RICO Mk2 at low temperatures, the image quality is worse than at higher temperatures.	The influence of the surrounding environment.

STEPS TO FIX PROBLEMS

Charge the battery.

Check the external power supply and charge it if necessary. Switch on

the computer.

Replace the cable.

In the main menu, turn on Wi-Fi. See Main menu > Wi-Fi on page 36.

On your mobile device, go to Settings > Wi-Fi and enter the correct password. The default password is 12345678. See Main menu > Wi-Fi on page 36.

Move your RICO Mk2 and mobile devices to an area with no Wi-Fi signal or a weaker Wi-Fi signal.

- Try again when the Wi-Fi signal is stable.
- Bring the RICO Mk2 closer to the Wi-Fi signal.

Perform unevenness correction. See Correcting unevenness on page 21 and Using the Quick menu on page 18.

Use the menu to adjust the screen brightness. See Main menu > Brightness on page 40.

- Turn the lens focus knob (2) to adjust the focus on the target.
- Adjust the sharpness of the image in the quick menu. See Using the Quick Menu on page 18.

- Wipe the outer surface of the optics with the supplied microfiber cloth.

- Wipe the outer surface of the optics with the supplied microfiber cloth.
- Allow the RICO Mk2 to dry by leaving it in a warm, dry environment for at least 4 hours.

- Check that the RICO Mk2 is properly installed.
- Make sure you use the same brand, type and weight of bullets that the RICO Mk2 and gun were originally chambered for.
- If the RICO Mk2 has been shot under different environmental conditions, a slight shift may occur.

Remove all glass from the field of view.

- Check the outer surface of the lens and eyepiece and wipe off dust, condensation, frost, etc. if necessary.
- In cold weather, you can use special anti-fog coatings, such as those m a d e   for corrective glasses.
- Turn the lens focus knob (2) to adjust the focus on the target.
- Adjust the sharpness of the image in the quick menu. See Using the Quick Menu on page 18.
- Adjust image and device settings. See Quick guide on page 8.
- Switch on Ultra-Clear mode. See Main menu > Ultra-Clear on page 28.

Switch on Ultra-Clear mode. See Main menu > Ultra-Clear on page 28.

Under high temperature conditions, the observed objects (surroundings and background) heat up differently due to thermal conductivity, creating high temperature contrast. Accordingly, the quality of the image produced by the riflescope will be higher. Under low-temperature conditions, the background will cool to approximately the same temperature, and therefore the thermal contrast will be significantly reduced and image detail may decrease because there is less contrast in the scene. This is a normal function of thermal imaging and is n o   indication of the actual performance of the detector.

29. NOTES

IRAY USA

2601 State Hwy 121,
Building 3, Suite 306
Lewisville, TX 75056
800-769-7125
682-499-0047
info@irayusa.com

IRAY-PR191 A23A11CT