

6. Short press the **Rotary Encoder** to select the **X Button** and begin moving the pixel cursor along the X-Axis. The entire button becomes highlighted in blue.
7. Move the pixel cursor along the selected axis to the location of the defective pixel:
 - a. Rotate the **Rotary Encoder** clockwise to move in the positive direction: X= Right and Y= Up.
 - b. Rotate the **Rotary Encoder** counterclockwise to move in the negative direction: X= Left and Y= Down.
 - c. Rotate one click to move the reticle in the corresponding direction by 1 pixel. One full rotation (20 clicks) is equivalent to 20 pixels.
8. Short press the **Rotary Encoder** to deselect the X-axis and the **X Button**.
9. Rotate the **Rotary Encoder** to move to the **Y Button**. Short press the **Rotary Encoder** to select it and begin moving the pixel cursor along the Y-Axis. The entire button becomes highlighted in blue.
10. Rotate the **Rotary Encoder** to move the pixel cursor along the Y-Axis.
11. When the pixel cursor is in position over a defective pixel, short press the **Rotary Encoder** to deselect the Y-Axis and the **Y Button**.
12. Rotate the **Rotary Encoder** to move to the **Add Button**. Short press the **Rotary Encoder** to select it and add the defective pixel to the “to be corrected” list. The button will briefly be highlighted in blue to indicate that the pixel has been successfully added.
13. Repeat the above steps to add any additional defective pixels to the “to be corrected” list.
14. To clear the “to be corrected” list and exit the interface, rotate the **Rotary Encoder** to move to the **CXL Button**. Short press the **Rotary Encoder** to select it and clear the “to be corrected” list. The button will briefly be highlighted in blue to indicate that the correction list has been successfully cleared.
15. To correct the saved list of defective pixels, rotate the **Rotary Encoder** to move to the **✓ Button**. Short press the **Rotary Encoder** to select it, correct the saved list, and exit the interface; **OR**
16. Rotate the **Rotary Encoder** to move to the **x Button**. Short press the **Rotary Encoder** to select it and exit the pixel defect correction interface without correcting the saved list of defective pixels.

NOTE: The PIP window and interface controls will move to the upper-left corner of the screen when the cursor moves into the lower-left corner.

SETTINGS MENU > IMAGE TEMPERATURE

Set the image temperature

1. In the settings submenu, rotate the **Rotary Encoder** to select the image temperature  menu item.
2. Short press the **Rotary Encoder** to enter the submenu.
3. Rotate the **Rotary Encoder** to move through options, w (warm) and c (cold).
4. Long press the **Rotary Encoder** to confirm the selection and return to the home screen.



SETTINGS MENU > UNIT

Set the unit of measurement

1. In the settings submenu, rotate the **Rotary Encoder** to select the unit  menu item.
2. Short press the **Rotary Encoder** to enter the submenu.
3. Rotate the **Rotary Encoder** to move through unit options, meters and yards. The selected units, m (meters) or yd (yards), display along with the selected zero distance in the lower-left corner of the screen.
4. Long press the **Rotary Encoder** to confirm the selection and return to the home screen.



SETTINGS MENU > MEMORY CARD REFORMATTING

Reformat the internal memory card

This function quickly erases all files saved to the internal memory card.

WARNING: This action cannot be undone.

All files saved on the internal memory card will be permanently deleted. Make sure to back up any photos and videos you want to keep to other media storage before reformatting.



1. In the settings submenu, rotate the **Rotary Encoder** to select the memory card reformatting  menu item.
2. Short press the **Rotary Encoder** to enter the submenu.
3. Two options, Yes and No, appear; Yes will reformat the memory card and No will cancel the operation. No is selected by default.
4. Short press the **Rotary Encoder** to confirm cancellation of the memory card reformatting and return to the settings menu; **OR**
5. Rotate the **Rotary Encoder** to move to **Yes** and short press the **Rotary Encoder** to select it and confirm the memory card reformatting.
6. A loading icon will appear onscreen for about 30 seconds as the memory is reformatted. Do not press any buttons during this time.
7. The system will return to the home screen automatically.

SETTINGS MENU > FACTORY RESET

Restore factory default settings

1. In the settings submenu, rotate the **Rotary Encoder** to select the factory reset  menu item.
2. Short press the **Rotary Encoder** to enter the factory reset submenu.
3. Two options, Yes and No, appear; Yes will restore factory settings and No will cancel the operation. No is selected by default.



4. Short press the **Rotary Encoder** to confirm cancellation of the factory reset and return to the settings menu; **OR**
5. Rotate the **Rotary Encoder** to move to **Yes** and short press the **Rotary Encoder** to select **Yes** to confirm the factory reset. Factory settings will be restored and the RICO HYBRID will reboot automatically.

NOTES:

- There is a short pause before the factory restart begins. Do not press any buttons during this time.
- A factory reset cannot be undone.
- The settings listed below will be reset to the factory defaults:
 - Imaging Mode: White Hot
 - Standby: Off
 - Imaging Mode: Clear
 - Photo Mode: Single-shot
 - Image Brightness: 5
 - Recoil Activated Video: Off
 - Image Contrast: 5
 - Video Output: Off
 - Calibration Mode: Automatic
 - Bluetooth: Off
 - Target Distance: 0000m
 - Status Bar Auto-Hide: Off
 - Reticle Type: 1
 - Image Temperature: Warm
 - Reticle Color: Black
 - Units: Meters
 - Digital Zoom: 1.0×
 - ROI: Off
 - Wi-Fi: Off
 - PIP: Off
 - Digital Compass: Off
 - Wi-Fi SSID: HYBRID_HYL50W-XXXX
 - Microphone: Off
 - Wi-Fi Password: 12345678
 - Frame Rate: 50Hz

SETTINGS MENU > INFO

Show device information

1. In the settings submenu, rotate the **Rotary Encoder** to select the info  menu item.
2. Short press the **Rotary Encoder** to enter the info submenu.
3. The info submenu will display the following information about the RICO HYBRID: the product model, PN and SN numbers, FGPA, and HW and SOC versions.
4. Long press the **Power**  **Button** to return to the home screen.



27. BASIC INSPECTION

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

- The rifle scope appearance: there should be no cracks in the body or visible damage.
- The condition of the objective lens and eyepiece: there should be no cracks, greasy spots, dirt, or other deposits on the lens.
- The internal rechargeable battery pack should be fully charged.
- The control buttons should be in working order.

28. BASIC MAINTENANCE

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

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

- Wipe the surface of the external metal and plastic components with a clean, dry cotton cloth. Do not use chemical, corrosive, or abrasive cleaners. Canned air may also be used to clean the external components.
- Clean the electric contacts and battery slots on the rifle scope using 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.
- Cleaning the exterior of the lens should only be done with the included microfiber lens cloth or a similar product. Only clean the lens when it is visibly soiled. Frequent wiping or cleaning can degrade the anti-reflective lens coating.

29. WARRANTY

At iRayUSA we're first and foremost hunters and users of our products and we understand that failure isn't an option. We also understand that having to wait extended periods for repair isn't something that a customer should have to put up with when something does go wrong. During your published warranty period, iRayUSA will repair or replace, at its discretion, any optic that becomes defective during normal use. Additionally, if we cannot fix your optic in less than one week, we will offer to replace it with a replacement product in like or better condition. If you would rather wait for your specific optic to be repaired, we can handle that too. We know you've never seen this from a thermal manufacturer and neither have we; that's why we started iRayUSA

Our warranty follows 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 only covers normal use and does not cover cosmetic damage, normal wear, intentional damage, theft, loss, any act of God, or a condition caused by use other than intended. Any product that is modified, opened, or tampered with will void any warranty coverage. Any serial number damage or alteration on the product will be considered a modification. Be sure to register your RICO HYBRID rifle scope at irayusa.com/register.

To return a product for repair:

1. Go to irayusa.com/warranty and click the **Request an RMA button** to request an RMA number. Returns will not be accepted without an RMA.
2. The customer is responsible for shipping the product to iRayUSA, per the instructions included with the RMA. iRayUSA will return the product at no cost.

NOTES:

- The one-week timeline starts from the time of receipt of the product at iRayUSA.
- iRayUSA is not liable for any damages or loss incurred when shipping to iRayUSA.
- This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Please give us a call at **800-769-7125**, visit irayusa.com/warranty, or email info@irayusa.com with any questions.

30. GENERAL TROUBLESHOOTING

The troubleshooting table on the next page lists issues that may occur when operating the RICO HYBRID. Carry out the recommended troubleshooting steps in the order shown in the table. Please contact iRayUSA at 800-769-7125 or irayusa.com/support or an authorized vendor for assistance before attempting to perform any modifications or repairs beyond the scope of the troubleshooting procedures in this manual. Unauthorized repairs or modifications will void your warranty.

ISSUE	POSSIBLE CAUSES
The RICO HYBRID will not turn on.	The IBP-1H battery pack is very low or has completely discharged.
The RICO HYBRID can not connect to a computer or external power supply.	External power supply has completely discharged.
	Computer is turned off.
	Data cable is damaged.
The RICO HYBRID can not connect to the mobile device (smartphone or tablet).	Wi-Fi is not turned on.
	Wrong Wi-Fi password entered.
	Too many Wi-Fi signals near the RICO HYBRID.
Wi-Fi signal is lost or interrupted.	Smartphone or tablet is out of range of a strong Wi-Fi signal, or there are obstacles between the RICO HYBRID and the mobile device.
The image is fuzzy, not clear, not balanced, or has artifacts.	Non-uniformity correction is required.
The image is too dark.	Display brightness level is too low.
The GUI is clear, but the image is fuzzy.	The lens is not focused.
	There is dust on the interior or exterior optical surfaces of the lens.
	There is condensation on the interior or exterior optical surfaces of the lens.
The aiming reticle shifts after firing rounds.	The RICO HYBRID is not mounted securely or the mount is not secured on the RICO HYBRID.
The image of the object being observed is missing.	Looking through glass.
The RICO HYBRID will not focus.	Image settings are not optimal for the current environmental conditions or the object being observed.
Image quality is too low or the detection range is reduced.	These issues may occur due to the weather conditions, such as snow, rain, humidity, and fog.
When the RICO HYBRID is used in low-temperature conditions, the image quality of the surroundings is worse than in warm-temperature conditions.	Environmental conditions.

TROUBLESHOOTING STEPS
Charge the battery pack.
Check the external power supply and charge it if necessary.
Power on the computer.
Replace the data cable.
Turn on the Wi-Fi in the main menu. See Main Menu > Wi-Fi on page 33.
On the mobile device, go to Settings > Wi-Fi and enter the correct password. The default password is 12345678. See Main Menu > Wi-Fi on page 33.
Move the RICO HYBRID and mobile device to an area with no or fewer Wi-Fi signals.
<ul style="list-style-type: none"> Try again when the Wi-Fi signal is stable. Relocate the RICO HYBRID closer to the Wi-Fi signal.
Perform a non-uniformity correction. See Non-uniformity Correction on page 23 and See Using the Quick Menu on page 19.
Adjust the display brightness in the quick menu. See Using the on page 19.
<ul style="list-style-type: none"> Adjust the focus on the target by rotating the objective focus knob (2) Adjust the image sharpness in the quick menu. See Using the Quick Menu on page 19.
<ul style="list-style-type: none"> Wipe the external optical surface with the included microfiber lens cloth.
<ul style="list-style-type: none"> Wipe the external optical surface with the included microfiber lens cloth. Allow the RICO HYBRID to dry by leaving it in a warm, dry environment for at least 4 hours.
<ul style="list-style-type: none"> Check that the RICO HYBRID has been securely mounted. Make sure you are using the same brand, type, and weight of the bullets as when the RICO HYBRID and weapon were initially zeroed. If the RICO HYBRID was zeroed in different environmental conditions, a slight shift of the zero is possible.
Remove any glass windows from the field of view.
<ul style="list-style-type: none"> Check the external surface of the objective lens and eyepiece and, where necessary, wipe away any dust, condensation, frost, etc. In cold weather, you can use special anti-fogging coatings, such as those made for corrective glasses. Adjust the focus on the target by rotating the objective focus knob (2). Adjust the image sharpness in the quick menu. See Using the Quick Menu on page 19. Adjust the image and device settings. See Quick Start Guide on page 8.
Short press the Palette Button to set the imaging mode to fog mode.
In warm-temperature conditions, objects being observed (surroundings and background) heat up differently because of thermal conductivity, thereby generating a high-temperature contrast. Accordingly, image quality produced by the rifle scope will be higher. In low-temperature conditions, the background will cool down to roughly the same temperature, and thus the temperature contrast is substantially reduced and image detail can go down as there is less contrast in the scene. This is a normal function of a thermal imager and is no indicator of actual detector performance.

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PN:

INFIRAY OUTDOOR
RICO HYBRID

Rugged Infrared Compact Optic

