

User's Manual

INFIRAY OUTDOOR
MATE SERIES

Clip-On Thermal Weapon Sight



WARNING! ITAR REQUIREMENTS

These products may be subject to export and foreign trade control laws of the United States and may not be exported without prior approval of the U.S. Department of State. Learn more at irayusa.com/ITAR.

FCC ID: 2AYGT-2N-00

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

CAUTION: Changes or modifications not expressly approved by IRayUSA could void the user's authority to operate the equipment.

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

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device was tested for typical body-supported operations and use. To comply with RF exposure requirements, a minimum separation distance of 0.5cm must be maintained between the user's body and the handset, including the antenna. Third-party belt-clips, holsters, and similar accessories used by this device should not contain any metallic components. Body accessories that do not meet these requirements may not comply with RF exposure requirements and should be avoided. Use only the supplied or an approved antenna.

WARNING: CHOKING HAZARD

Children under 3 years old can choke or suffocate on small parts in this product. This product is not a toy; keep out of reach of children.

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1. OVERVIEW

The InfiRay Outdoor MATE Series thermal clip-on brings an all-new level of versatility to your existing day scope. With a high-performance 12 μm detector, magnesium alloy housing, distortion-free display, and removable control pad, the MATE series ensures a precise and repeatable transition when day turns to night. The MATE can be mounted directly to the objective of your day scope or be attached via MIL-STD-1913 Picatinny rail. Additional accessories, including an external LRF module and monocular extension, provide improved flexibility on your next hunt or trip to the range.

2. FEATURES

- 12 μm high-performance thermal detector
- High-sensitivity image processing
- High image quality
- Magnesium alloy housing
- Maximum detection range of 2400 yards
- Compatible with ILR-1200-2 Bluetooth Laser Rangefinder Module
- Includes rechargeable IBP-4 battery pack and mount
- HD 1024 \times 768 AMOLED display
- High frame frequency: 50hz
- Multiple zero profiles
- Digital zoom in handheld mode: $\times 1/\times 2/\times 3/\times 4$
- Built-in 32 GB storage to support image capture and video recording
- Built-in Wi-Fi module
- Mobile device App compatible
- Ultra-Clear mode for advanced image detail
- User-friendly interface
- Pixel calibration functions

3. TECH SPECS

MATE SERIES	MAL25	MAL38	MAH50
SENSOR			
Resolution	384 \times 288	384 \times 288	640 \times 512
Pixel Size	12 μm		
Frame Rate	50hz		
Sensor Sensitivity	≤ 30 mK	≤ 30 mK	≤ 25 mK
Image Processing	MATRIX III		
Core	InfiRay Micro II 384	InfiRay Micro II 384	InfiRay Micro II 640
OPTICS			
Objective Lens	25 mm f/1.0	38 mm f/1.0	50 mm f/1.1
Magnification	1 \times		
Digital Zoom	1 \times (Clip-on Mode), 1 \times / 2 \times / 4 \times (Handheld Mode)		
Field of View	10.5 $^{\circ}$ \times 7.9 $^{\circ}$	7.0 $^{\circ}$ \times 5.3 $^{\circ}$	8.8 $^{\circ}$ \times 6.6 $^{\circ}$
Day Scope Magnification	5 \times	8 \times	10 \times
Detection Range	1375 Yards	2150 Yards	2400 Yards
Display Type	AMOLED		
Display Resolution	1024 \times 768		
Color Palettes	White Hot, Black Hot, Red Hot, Color		
Mounting System	M52 \times 0.75 Clip-On Universal Adapter Ring with $\times 4$ Inserts (56–65 mm OD), ADM RQD MIL-STD-1913 Mount (Optional)		
P.I.P.	No		
Rangefinder	ILR-1200-2 LRF (Optional/Not Included)		
ELECTRONICS			
Onboard Recording	Video and Image		
Onboard Storage	32 GB		
Wireless Connectivity	Video and Image via App.		
Data/Power Connector	USB-C		
Power Supply	USB-C External, Built-In Battery Pack (4+ Hours), IBP-4 Power Bank (6+ Hours)		
Start Up Time	<10 Seconds, Instant from Standby		
PHYSICAL			
Size	5.20" \times 2.44" \times 2.68"	5.43" \times 2.44" \times 2.80"	5.75" \times 2.44" \times 2.83"
Weight	16.22 Oz	17.64 Oz	18.70 Oz
ENVIRONMENTAL/WARRANTY			
Warranty	5 Years		
Housing Material	Magnesium Alloy		
Ingress Protection	IP67		
Operation Temperature	-4 $^{\circ}$ F \sim 122 $^{\circ}$ F		
Max. Recoil	1000 g/s 2 (300 Win./7mm Mag)		

4. ACCESSORIES

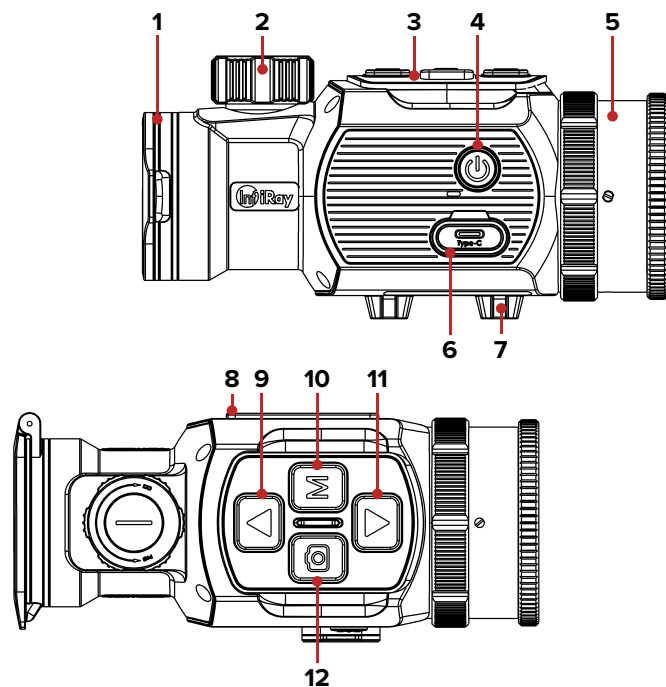
The MATE Series thermal weapon sight ships with everything you need to get out and hunt.

- 50mm Objective Lens Cap
- Clip-on Universal Adapter
- USB-C to Analog RCA/USB Cable 36"
- 4700 mAh IBP-4 Battery Pack and Mount
- USB Power Adapter
- Magnetic Control Pad Base and Velcro Straps
- Accessory Mount and M5 Screws
- Hex Keys
- Storage Bag
- Lens Cloth
- User Manual




Optional accessories, such as the IRAY-AC81 ILR-1200-2 Bluetooth Laser Rangefinder Module, as well as various replacement accessories are available for purchase. Contact 800-769-7125 or irayusa.com/support.


5. COMPONENTS AND CONTROLS





- 1 Objective Lens Cap
- 2 Objective Lens Focus Knob
- 3 Magnetic Control Pad
- 4 Power Button
- 5 Threaded Eyepiece Ring
- 6 USB-C Port
- 7 Picatinny Mount
- 8 Interface for Accessory Mount
- 9 Up Button
- 10 Menu Button
- 11 Down Button
- 12 Photo Button

6. DESCRIPTION OF CONTROL BUTTONS AND SHORTCUTS

Power Button 		
Current Screen, Menu, or Device Status	Short Press	Long Press
Device off	---	Power on the device
Home screen	Enter / exit standby mode	Power off the device
Main menu	Save and return to the previous menu	---
Defect pixel correction interface	---	Exit the interface without saving

Up Button 		
Current Screen / Menu	Short Press	Long Press
Home screen	Adjust the color palette	Enter / exit the fixed-stadia rangefinder interface
Main menu / quick menu	Move the cursor up	---
Defect pixel correction & zeroing (clip-on mode only) interfaces	Move the cursor 1 pixel up	Move cursor 10 pixels up

Up + Down Button  + 		
Current Screen / Menu	Short Press	Long Press
Defect pixel correction	---	Add or remove defective pixel from the "to be corrected" list
Zeroing (clip-on mode only) interface	---	Exit and reset XY coordinates to (0,0)


Down Button 		
Current Screen / Menu	Short Press	Long Press
Home screen	Perform a shuttered NUC (non-uniformity correction)	Perform a shutterless NUC (non-uniformity correction)
Main menu / quick menu	Move the cursor down	---
Defect pixel correction & zeroing (clip-on mode only) interfaces	Move the cursor 1 pixel down	Move the cursor 10 pixels down
Fixed-stadia rangefinder interface	Toggle through the five prey types	---



Photo Button 		
Current Screen / Menu	Short Press	Long Press
Home screen	Take a photo	Start / stop recording video
Main menu	Change menu options; enter submenu; or confirm submenu changes and return to previous	Save and return to home screen
Defect pixel correction & zeroing (clip-on mode only) interfaces	Move the cursor 1 pixel to the left	Move the cursor 10 pixels to the left

Photo + Menu Button  + 		
Current Screen / Menu	Short Press	Long Press
Defect pixel correction & zeroing (clip-on mode only) interfaces	---	Save and exit to the home screen

Menu Button 		
Current Screen / Menu	Short Press	Long Press
Home screen	Enter the quick menu	Enter the main menu
Main menu	Change menu and submenu options; enter submenu; confirm submenu changes and return to previous	Save and return to home screen
Quick menu	Toggle through the quick menu options	Exit the quick menu
Defect pixel correction & zeroing (clip-on mode only) interfaces	Move the cursor 1 pixel to the right	Move the cursor 10 pixels to the right

Down + Menu Button  + 		
Current Screen / Menu	Short Press	Long Press
Home screen	---	Switch between clip-on and handheld modes

NOTE: Consult the manual that comes with your ILR-1200-2 Bluetooth Laser Rangefinder Module (optional/not included) for rangefinder shortcuts.

7. QUICK START GUIDE

Step 1: Preparing to Use the MATE Series

1. Compare the box contents to the accessories list and examine each for any shipping damage. See **Accessories** on page 4.
2. Check the lens to ensure there are no smudges or dirt present. Clean with the included lens cloth, if necessary.
3. Charge the built-in battery before using the MATE for the first time. See **Charging the Built-in Battery** on the next page.
4. Mount the MATE to a day scope (optional). See **Mounting the MATE Series** on page 12.
5. Mount the IBP-4 power bank (13) to the MATE and a day scope (optional). See **Mounting the IBP-4 Portable Power Bank** on page 10.

Step 2: Turn On the MATE

1. Open the objective lens cap (1).
2. Long press the **Power** (⏻) button for 3 seconds to power on the MATE. The InfiRay Outdoor logo will appear.

WARNING: Do not point the objective lens toward intense energy sources, such as the sun. This may render the electronic components inoperative. The warranty does not cover damage caused by improper operation.

Step 3: Adjust Image Settings in the Quick Menu

Short press the **Menu** (☰) Button to enter the quick menu to adjust the following settings (see **Using the Quick Menu** on page 15):

1. Set the digital zoom level to 1×, 2×, 3×, or 4× (handheld mode only). The selected zoom level appears in the top status bar.
2. Set the display brightness level, from 1–6.
3. Set the image contrast level, from 1–6.
4. Set the scene mode to forest, flatland, or city.

Step 4: Adjust Device Settings

1. Long press the **Menu** (☰) Button to enter the main menu (see **Main Menu Options and Descriptions** on page 24) to adjust the following settings:
 - a. Turn on automatic NUC mode if desired.
 - b. In the Settings menu, set the date and time.
 - c. Set the zeroing profile (clip-on mode only) to G1, G2, G3, or G4. See **Main Menu > Zeroing Profile** on page 26 for more information.

2. From the home screen:
 - a. Short press the **Up** (⬆️) Button to set the color palette to white hot, black hot, red hot, color, or highlight.
 - b. Short press the **Down** (⬇️) Button to perform a shuttered non-uniformity correction (NUC).

8. CHARGING THE BUILT-IN BATTERY

The MATE Series thermal weapon sight has a dual power supply: a built-in rechargeable li-ion battery pack and an included IBP-4 portable power bank. The dual battery system supports a run-time of 4+ hours out of the box and up to 10 hours when using the power bank.

The built-in battery pack is not removable or replaceable. Please ensure the battery pack is fully charged before using the MATE Series for the first time.

To charge the battery pack:

1. Connect the small USB-C end of the data cable to the USB-C port (6) on the side of the MATE.
2. Connect the standard USB end of the data cable to:
 - a. The included 5V–2A USB power adapter; **OR**
 - b. Any standard USB 3.0 port on a laptop or computer; **OR**
 - c. An external power supply, such as the IBP-4 power bank.
3. While charging, the LED status indicator next to the USB-C port will turn red. When the indicator LED turns green, the battery is fully charged.
4. When fully charged, disconnect the data cable. Do not overcharge the battery.

WARNING: Never charge the battery pack with a USB adapter that is greater than 5V–2A.

NOTES:

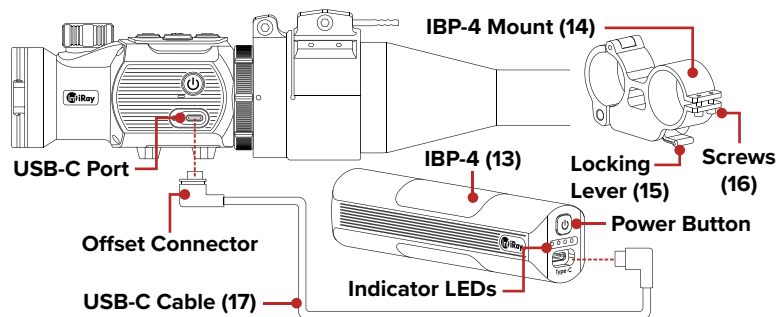
- You may charge and operate the MATE at the same time.
- When the battery status icon in the status bar becomes the low battery (🔋) icon, charge the battery right away to avoid over-discharge and a reduction in battery capacity or service life.
- While charging, the battery status icon will change to the charging (🔌) icon.

9. MOUNTING THE IBP-4 PORTABLE POWER BANK

The MATE Series comes with an IBP-4 portable power bank (13), which is impact-resistant, waterproof, and lightweight. The IBP-4 comes with a mount (14) which is suitable for most 30 mm diameter day scopes.

To secure the IBP-4 to your day scope:

1. Open the locking lever (15) on the IBP-4 mount (14).
2. Install the IBP-4 mount to your day scope and close the locking lever to secure it. Use a 2.5mm hex key to tighten the button-head screw in the locking lever if needed.
3. Slide the IBP-4 battery bank into the outer mount ring.
4. Tighten the two socket-head screws (16) with a 2mm hex key to secure the IBP-4 in the mounting ring.
5. Plug the USB-C cable (17) into the USB-C ports on the IBP-4 and the MATE.
 - a. The offset USB-C connector plugs into the USB-C port on the side of the MATE.
 - b. When connected, the IBP-4 battery pack will automatically begin charging the MATE's internal battery.
 - c. Press the Power button on the IBP-4 to check the current battery level. The battery indicators stay lit for 5 seconds.
 - d. When all 4 battery indicator LEDs are lit, the battery is full.
 - e. When only one LED remains lit, please charge the IBP-4.



10. BATTERY SAFETY WARNINGS

WARNING: Only use the USB cable supplied with the MATE Series. The use of any other charging cables may irreparably damage the internal battery or IBP-4 battery pack and may cause a fire. Any damage from using an improper charging cable will not be covered by warranty.

WARNINGS:


- Do not use a power adapter or USB cable that has been modified or damaged.
- Do not expose the battery to high temperatures or flames, and do not immerse in water.
- Do not leave the battery unattended while charging.
- Do not leave the battery in the charger for long periods after full charge is reached. Charging time should not exceed 24 hours.
- Keep the battery pack out of the reach of children and pets.
- The battery is equipped with short-circuit protection. However, any situation that may cause short-circuiting should be avoided.
- Do not disassemble, modify, hit, or drop the battery pack.
- Do not connect the battery to any external device with an electrical current that exceeds permitted levels.
- Do not connect an external device with a current supply that exceeds 3.0 USB port.

To maintain optimal battery capacity and service life:

- Avoid storing a fully charged or discharged battery for long periods. Partial charging of the battery is necessary if the battery will be stored for an extended period.
- Do not charge an extremely cold battery without bringing it into a warm environment. Let the battery warm up for 45 minutes before charging.
- Charge the battery at a temperature range from 32°F to 113°F; otherwise, the service life of the battery may be reduced.
- The recommended operating temperature range is -4°F to 122°F. Avoid using the battery above the maximum or below the minimum recommended temperature range as this may decrease the battery capacity or service life.

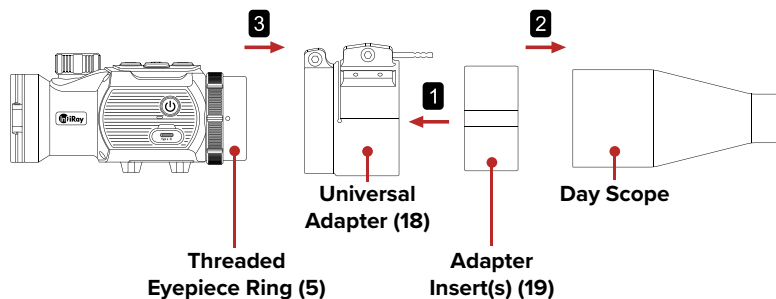
11. EXTERNAL POWER SUPPLY

The MATE Series supports the use of a 5V external power supply, such as the included IBP-4 power bank.

1. Connect the external power supply to the USB-C port.
2. The MATE will switch to operation from the external power supply, and the internal battery pack will begin slowly charging.
3. The battery status icon in the status bar will change to a charging battery  icon, with the battery color and fill level indicating the current charge level.
4. If the external power supply is disconnected, the MATE will automatically switch to the internal battery pack without powering off.

NOTE: Do not connect the MATE to an external device with a power supply that exceeds the 3.0 USB cable.

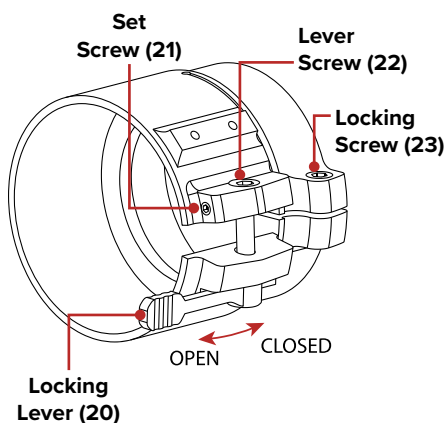
12. MOUNTING THE MATE SERIES



The MATE Series can be mounted to a day scope using the included universal adapter (18). The included adapter inserts are suitable for day scopes with an objective outer-diameter measuring 56 mm to 65 mm.

To mount the MATE Series:

1. Make sure your day scope is zeroed.
2. Measure the outer diameter of your day scope's objective lens.
3. Select the appropriate adapter insert(s) (19) for the diameter of your day scope.
4. Open the adapter's locking lever (20) and slide the insert(s) fully into the adapter ring.
5. Slide the adapter onto the objective lens of your day scope. Press firmly to fully seat it.
6. Close the locking lever.
7. Check to make sure the adapter is securely fitted to the objective lens of your day scope. If there is a gap between the adapter and the lens, you will need to tighten the adapter. To tighten the adapter:
 - a. Use a 2mm hex key to loosen the small set screw (21).
 - b. Use a 4mm hex key to tighten the lever screw (22). Tighten until the adapter fits tightly to the objective lens of the day scope.
 - c. Tighten the set screw (21).
8. Screw the MATE Series onto the end of the adapter, via the threaded eyepiece ring (5).



9. Check to see if the center of the MATE's display screen is aligned with the center of the day scope. If the display screen is not in alignment:
 - a. Use a 4mm hex key to loosen the locking socket-head screw (23).
 - b. Adjust the angle of the MATE to the appropriate position to align with the center of your day scope.
 - c. Tighten the locking socket-head screw (23) to secure the MATE.
 - d. Adjust the X/Y position of the screen before shooting. See **Main Menu > Zeroing** on page 27 for more information.

13. OPERATING INSTRUCTIONS

WARNING!

Don't point the objective lens towards any intense energy sources, such as laser radiation or the sun. This may render the electronic components inoperative. The warranty does not cover damage caused by improper operation.

Using the Control Buttons

The MATE Series is operated via five control buttons. The control buttons can be used to perform shortcut operations from the home screen, as well as in the menu and full-screen interfaces. See **Description of Control Buttons and Shortcuts** on page 6 for control button details.

Powering On

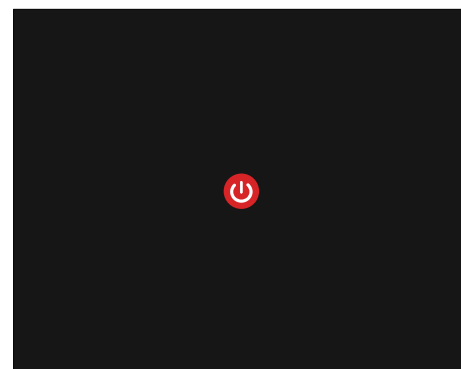
1. Open the objective lens cap (1).
2. Long press the **Power** (⏻) button for 3 seconds to turn on the MATE.

To determine the current battery charge, check the battery icon in the status bar at the top of the viewscreen. See **Battery Status** on page 15.

Powering Off


1. Long press the **Power** (⏻) button.
2. Keep holding the power button until the shutdown screen closes.

WARNING: If using an external power supply, do not remove the power supply when powering off, otherwise data may not be saved.



STANDBY MODE

The user may enter standby mode at any time to conserve battery life.

1. From the home screen, short press the **Power**  button to enter / exit standby mode.

Focusing the Objective Lens

To adjust the focus on the target object:

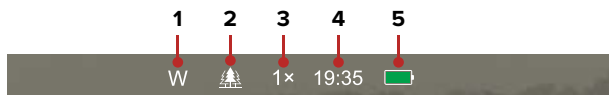
1. Rotate the objective lens focus knob **(2)** left or right to adjust fine focus on the target object being observed.

NOTE: Re-adjusting the focus will be necessary if the distance to your target changes.

Status Bar Overview

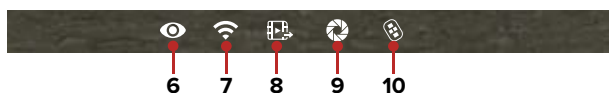
The status bars at the top and bottom of the screen show information on the operating status of the MATE Series.




TOP STATUS BAR






- 1 **Color Palette:** Shows the selected color palette, white hot (W), black hot (B), red hot (R), or color (C). White hot is the default.
- 2 **Scene Mode:** Shows the selected scene mode, forest, flatland, or city. City is the default.
- 3 **Digital Zoom (Handheld Mode Only):** Shows the selected digital zoom level, 1×, 2×, 3×, or 4×. 1× is the default.
Zeroing Profile (Clip-on Mode Only): Shows the selected zero profile, G1, G2, G3, or G4. G1 is the default.
- 4 **Time:** Shows the current time in 24-hour format.
- 5 **Built-in Battery:** Shows the battery status for the built-in battery.

BOTTOM STATUS BAR







- 6 **Ultra-Clear Mode:** Shows the Ultra-Clear icon  when on. Ultra-Clear mode is off by default.
- 7 **Wi-Fi:** Shows the Wi-Fi icon  when on. Wi-Fi is off by default.
- 8 **Video Output:** Shows the video output  icon when on. Video output is off by default.

9 **Non-Uniformity Correction (NUC) Mode:** Shows the non-uniformity correction (NUC)  icon when automatic NUC mode is turned on.

10 **Remote:** Shows the remote  icon when the remote is connected, the error  icon when disconnected, and the two icons alternate when the remote is connecting.

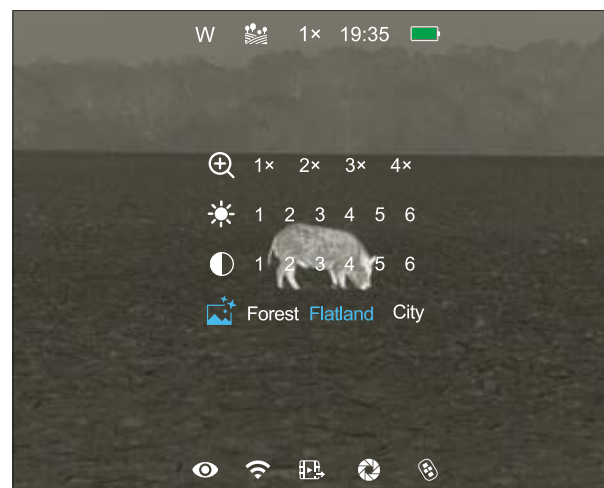
BATTERY STATUS




The battery icon color and fill level indicate the current battery status. The battery icon is replaced by the charging battery icon when an external power supply is connected.










COLOR / ICON	BATTERY STATUS
Green Battery 	41% – 100%
Yellow Battery 	20% – 40%
Red Battery 	<20%; charge the battery pack right away.
Charging Battery 	The internal battery is charging; an external power supply or computer is connected via the data cable.

Using the Quick Menu

In the quick menu, the digital zoom (in handheld mode only), display brightness, image contrast, and scene mode may quickly be adjusted.




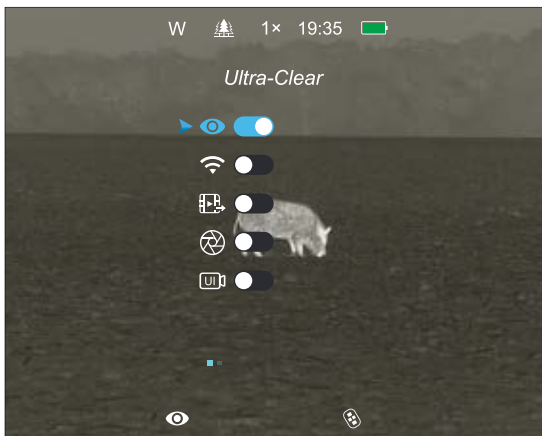
1. On the home screen, short press the **Menu**  Button to enter the quick menu.
2. Press the **Up**  or **Down**  Button to move between the menu options on the next page. The menu icon turns blue to mark the cursor location.

- a. **🔍 (Digital Zoom) Handheld Mode only:** Short press the **Photo**  or **Menu**  **Button** to move through the digital zoom options, 1x, 2x, 3x, or 4x. The selected zoom level is displayed in the top status bar.
 - b. **☀️ (Display Brightness):** Short press the **Photo**  or **Menu**  **Button** to change the display brightness level, from 1–6.
 - c. **🗨️ (Image Contrast):** Short press the **Photo**  or **Menu**  **Button** to change the image contrast level, from 1–6.
 - d. **🌳 (Scene Mode):** Short press the **Photo**  or **Menu**  **Button** to move through the scene modes, forest, flatland, or city. City is the default.
3. Long press the **Menu**  **Button** to save any changes and return to the home screen.





NOTE: In the quick menu, if there is no user input for 10 seconds, the MATE will automatically save any changes and return to the home screen.


Navigating the Main Menu

From the home screen, long press the **Menu**  **Button** to enter the main menu.



In all menu interfaces:

- Short press the **Up**  or **Down**  **Button** to move up and down through the menu.
- A blue arrow and icon indicate the current position in the menu.
- Short press the **Menu**  **Button** to:
 - Change the parameters for the selected menu option; **OR**
 - Enter the submenu; **OR**
 - Confirm submenu changes and return to the previous menu.
- Long press the **Menu**  **Button** to confirm any changes and exit to the home screen.

- Short press the **Power**  **button** to return to the previous menu without saving.
- After 15 seconds of inactivity, the menu will automatically close and the interface will return to the home screen. Changes (except changes to toggle on / off menu items, such as Ultra-Clear and Wi-Fi) are not saved automatically.

14. NON-UNIFORMITY CORRECTION

A non-uniformity correction (NUC) allows a thermal imager's sensors to correct its pixels and eliminate any image defects caused by pixel drift. A NUC will be performed automatically each time the MATE Series is powered on.

The MATE can perform two types of non-uniformity corrections, shuttered and shutterless. The MATE may also be set to automatically perform shuttered NUCs as needed in the main menu. For instructions, see **Main Menu > Calibration** on page 25.

Automatic NUC Mode

When automatic NUC mode is turned on, the MATE will perform a NUC automatically according to the internal software algorithm. There is no need to close the objective lens cap (1) as the MATE's internal shutter covers the sensor.

NOTE: A manual NUC (see below) may be performed at any time while automatic NUC mode is turned on.


Performing a Manual NUC

The user may independently determine the need to perform a shuttered or shutterless NUC based on the quality of the observed image.

SHUTTERED NUC

It is not necessary to close the objective lens cap (1) during a shuttered NUC, as the internal shutter covers the sensor.

To perform a shuttered NUC:

1. From the home screen, short press the **Down**  **Button**.
2. A shuttered NUC is performed instantly.

SHUTTERLESS NUC

A shutterless NUC uses less power than a shuttered NUC because it does not use the imager shutter to cover the sensor; instead, the user must close the lens cap.

To perform a shutterless NUC:

1. Close the objective lens cap (1).
2. From the home screen, long press the **Down ▼ Button**.
3. A prompt to close the lens cap appears onscreen. The background NUC starts after about 4 seconds.

NOTE: If the lens is not properly covered, a temporary “image burn” will remain in the image until the next non-uniformity correction. This “image burn” is temporary and is not a defect or sign of permanent damage.

15. PHOTOGRAPHY AND VIDEO RECORDING

The MATE Series is equipped with video recording and image capture. All videos and photos are automatically saved to the MATE's built-in 32 GB memory storage.

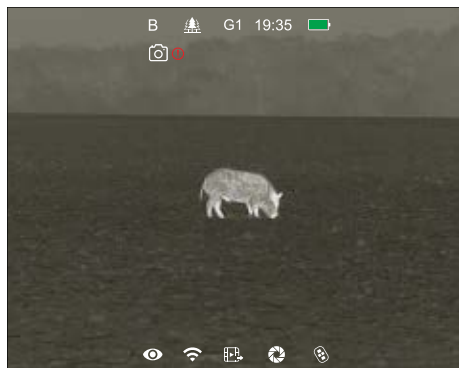
NOTE: Photo and video files are named with the time and date; therefore, it is recommended to set the date and time before using the photo and video functions. See **Settings Menu > Date** and **Settings Menu > Time** on page 31. Alternatively, the date and time may be synchronized in the InfiRay Outdoor App.

Photography

To take a photo:

1. From the home screen, short press the **Photo [📷] Button**.
2. The camera [📷] icon will appear at the top of the screen.

NOTE: A red warning icon (⚠️) appears next to the camera icon in the upper-left corner of the screen when insufficient memory storage is available. Transfer video and image files to other storage media to free up space on the memory card.



Video Recording

To record video:

1. From the home screen, long press the **Photo [📷] Button** to start a video recording.
2. When the video recording starts, the video recording timer, in HH:MM:SS (hour: minute: second) format, appears at the top of the screen.
3. When recording, short press the **Photo [📷] Button** to take a photo.
4. Long press the **Photo [📷] Button** to stop and save the video recording.



Video and Photography Notes

- You may enter and navigate the menu during video recording. The user interface (status bar and menu) is not captured in recorded photos and video unless the Video UI feature is turned on. See **Main Menu > Video UI** on page 26.
- Recorded photos and videos are saved to the internal memory card:
 - Photos are saved in IMG_HHMMSS_XXX.jpg format.
 - Videos are saved in VID_HHMMSS_XXX.mp4 format.
 - HHMMSS is hour/minute/second.
 - XXX is a 3-digit counter number.
 - The counter used for multimedia file names cannot be reset.
 - If a file is deleted from the internal memory, its counter number is not taken by another file.
- The maximum duration of a recorded video file is 5 minutes. After this time, video recording will begin a new file automatically.
- The number of recorded files is limited only by the capacity of the internal memory.
- Check the available space on the internal storage card regularly and move video footage and images to other storage media to free up space on the memory card.

16. ACCESSING INTERNAL MEMORY

When the MATE Series is turned on and connected to a computer via the included data cable, it is recognized by the computer as a flash memory (USB) drive. This allows the user to access the saved multimedia files and copy or delete any desired files.


To access the internal memory:

1. Turn on the MATE.
2. In the main menu, turn on the Wi-Fi.
3. Connect the smaller USB-C end of the data cable to the USB-C port.
4. Connect the larger USB end of the data cable to your computer.
5. Double-click **My Computer** on your computer desktop.
6. Double-click to open the device named **USB Drive**.
7. Double-click to open the device named **DCIM** to access the built-in memory.
 - a. The device shows the available space (in GB) remaining of the 32 GB of total memory storage.
 - b. Recorded photos and videos are separated by date into folders.
 - c. Folders are named by date, YYYYMMDD (year/month/day).
8. Select the desired files or folders to copy or delete.

17. VIDEO OUTPUT

The video output function enables connectivity with an external display or recording device via analog video.


To output video:

1. Turn on the MATE.
2. Connect the smaller USB-C end of the data cable to the USB-C port (6).
3. In the main menu, turn on video output. See **Main Menu > Video Output** on page 25 for instructions.
4. When video output is on, the video output  icon appears in the bottom status bar.
5. Connect the RCA connector to the RCA port on the external display or recording/display device.

18. USING THE INFIRAY OUTDOOR APP

The MATE Series can be operated using the InfiRay Outdoor App when the thermal weapon sight is connected to a smartphone or tablet via Wi-Fi.



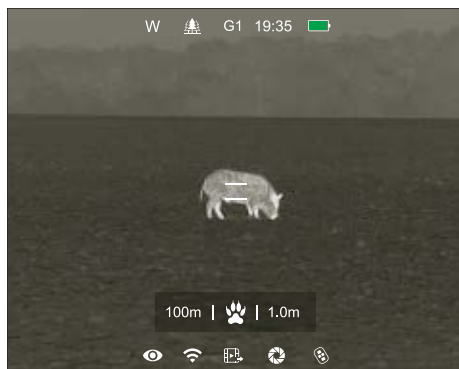
1. Download the App for free and install it on your smartphone or tablet:
 - a. Scan one of the QR codes above to download the InfiRay Outdoor App from the App Store or Google Play; **OR**
 - b. Download the App from any app store.
2. Connect the MATE to Wi-Fi:
 - a. In the main menu, turn on Wi-Fi. See **Main Menu > Wi-Fi** on page 24 for detailed instructions.
 - b. Open the App and press the **ViewFinder**  icon on the home screen.
 - c. Click the **Connect Device WiFi** button.
 - d. On the mobile device, go to **Settings > Wi-Fi**.
 - e. Select the MATE from the list of Wi-Fi networks. It will appear in the list as “XXXXX_YYYYYY”, where XXXXX is the model number (MAL25, MAL38, or MAH50) and YYYYYY is the six-digit device serial number.
 - f. Enter the Wi-Fi password and tap the **Join** button. The default password is 12345678.
3. Operate the MATE via the App:
 - a. Take real-time photos and videos, with or without audio.
 - b. View, share, download, and delete photos and videos taken via the App, which are saved to the mobile device.
 - c. Change the Wi-Fi password and SSID.
 - d. Synchronize the date and time from the mobile device.
 - e. Update the MATE’s firmware.









NOTE: When a factory reset is performed, the Wi-Fi SSID and password are reset to the defaults, XXXXX_YYYYYY and 12345678. See **Settings Menu > Factory Reset** on page 32.

19. FIXED-STADIA RANGEFINDER

The MATE Series has a built-in fixed-stadia rangefinder which allows the user to quickly determine when a target is within range, based on previously entered distance values and pre-configured prey heights.

To use the fixed-stadia rangefinding interface:



1. In the main menu, select the Shooting Range Notification menu item and customize the distance values for each prey type as needed. See **Main Menu > Shooting Range Notification** on page 28 for instructions.
2. Press and hold the **Up**  **Button** to enter the fixed-stadia rangefinder interface.
3. The interface has the following features:
 - 1 **Two Fixed-Stadia Lines:** The horizontal lines indicate the size mapped to the selected prey type in the Shooting Range Notification interface.
 - 2 **Distance:** The user-input distance to the target, from the Shooting Range Notification interface.
 - 3 **Prey Icon:** The selected prey type.
 - 4 **Height:** The pre-configured prey height.
4. Short press the **Down**  **Button** to toggle through the five prey types, rabbit , coyote , hog , deer , and custom . The stadia lines will automatically adjust to the height mapped to the selected prey type.
5. Determine whether or not the target is within range:
 - a. When the size of the target matches the stadia lines, the target is within range.
 - b. When the target is smaller or shorter than the stadia lines, it is further than the user-input distance.
 - c. When the target is larger than the stadia lines, it is closer than the user-input distance.
6. Press and hold the **Up**  **Button** to exit the fixed-stadia rangefinder.

NOTE: You may operate the menu normally while the fixed-stadia rangefinder interface is open.

20. ULTRA-CLEAR MODE

Ultra-Clear mode improves the image quality in inclement weather conditions, such as rain, fog, high humidity, or high temperatures as these conditions all result in lower thermal contrast. Ultra-Clear mode enhances the NETD value of the thermal sensor and improves the sensor's response rate to these challenging environmental conditions.

Ultra-Clear mode provides:

- Improved image quality and clarity; images are crisper and sharper.
- Increased image detail.
- Improved recognition of observed targets.

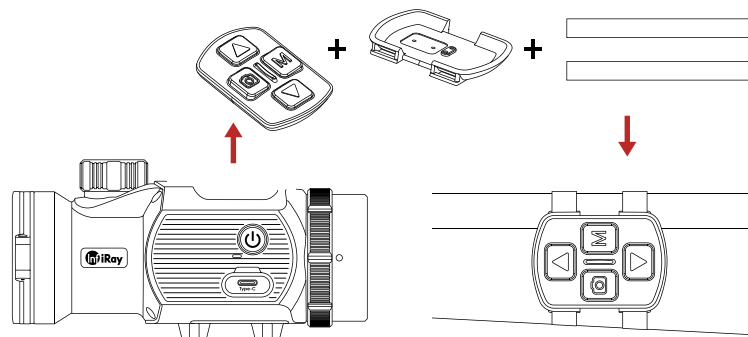
See **Main Menu > Ultra-Clear** on page 24.

21. ATTACHING THE MAGNETIC CONTROL PAD TO A RIFLE

The magnetic control pad may be removed from the MATE Series and attached to the stock/handguard of a rifle for quick and easy operation of the imager.

1. Remove the control pad and attach it to the magnetic base included in the package.
2. Thread the two included velcro straps through the slots in the magnetic base.
3. Use the velcro straps to attach the magnetic base to the stock/handguard.

NOTE: The magnetic control pad has a built-in battery which may be used continuously for up to 7 days.



22. MAIN MENU OPTIONS AND DESCRIPTIONS

Menu and submenu options, from top to bottom are:








- **Main Menu:** Ultra-Clear, Wi-Fi, Video Output, Calibration, Video UI, Zeroing Profile (clip-on mode only), Zeroing (clip-on mode only), Shooting Range Notification, Pixel Defect Correction, Settings.
 - **Settings Menu:** Date, Time, Language, Factory Reset, Info.

Menu option details, descriptions, and navigation instructions are listed in order on the following pages.

Ultra-Clear

Turn Ultra-Clear mode on / off

When Ultra-Clear mode is turned on, the image contrast is enhanced, which is suitable for rainy, foggy, or low-contrast conditions.


1. Long press the **Menu**  **Button** to enter the main menu.
2. Short press the **Up**  or **Down**  **Button** to select the Ultra-Clear  menu item.
3. Short press the **Menu**  **Button** to toggle Ultra-Clear on / off. When Ultra-Clear is turned on, its icon  appears in the bottom status bar.
4. Long press the **Menu**  **Button** to return to the home screen.

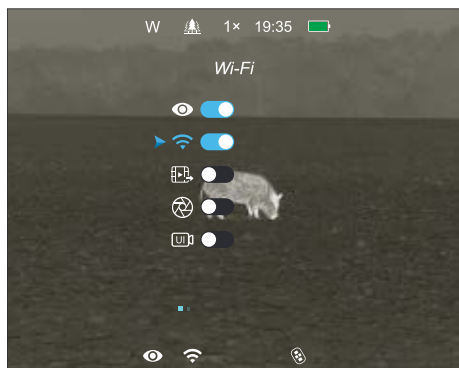
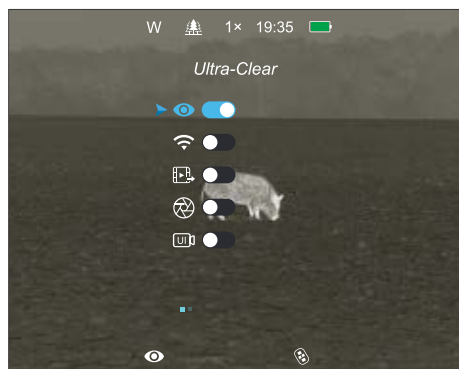
NOTE: When Ultra-Clear mode is turned on and off, the MATE will automatically perform a shuttered non-uniformity correction.







Wi-Fi

Turn Wi-Fi on / off

Turn on Wi-Fi to manipulate the MATE via the InfiRay Outdoor App.

1. Long press the **Menu**  **Button** to enter the main menu.










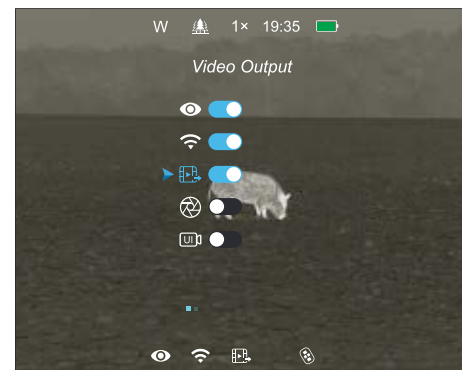
2. Short press the **Up**  or **Down**  **Button** to select the Wi-Fi  menu item.
3. Short press the **Menu**  **Button** to toggle Wi-Fi on / off. When Wi-Fi is turned on, its icon  appears in the bottom status bar.
4. Long press the **Menu**  **Button** to return to the home screen.

Video Output

Turn video output on / off








The video output function enables connectivity with an external display or recording device via analog video.

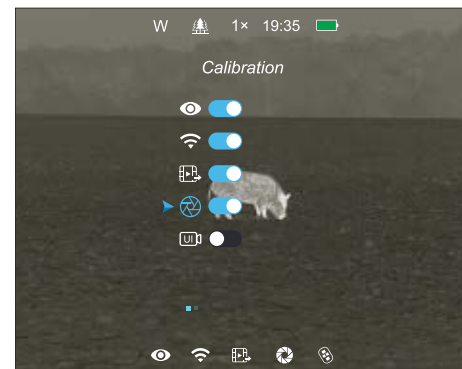
1. Long press the **Menu**  **Button** to enter the main menu.
2. Short press the **Up**  or **Down**  **Button** to select the video output  menu item.
3. Short press the **Menu**  **Button** to toggle video output on / off. When video output is turned on, its icon  appears in the bottom status bar.
4. Long press the **Menu**  **Button** to return to the home screen.



Calibration







Turn automatic non-uniformity correction (NUC) mode on / off

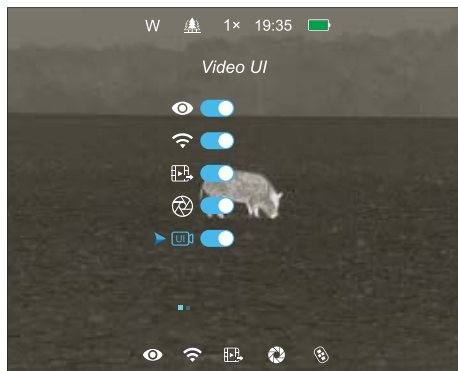
1. Long press the **Menu**  **Button** to enter the main menu.
2. Short press the **Up**  or **Down**  **Button** to select the calibration  menu item.
3. Short press the **Menu**  **Button** to toggle automatic non-uniformity correction (NUC) mode on / off. When automatic NUC mode is turned on, its icon  appears in the bottom status bar.
4. Long press the **Menu**  **Button** to return to the home screen.



Video UI

Turn the video UI function on / off







1. Long press the **Menu  Button** to enter the main menu.
2. Short press the **Up  or Down  Button** to select the video UI  menu item.
3. Short press the **Menu  Button** to toggle the video UI function on / off. When video UI is turned on, the user interface will be captured in video recordings.
4. Long press the **Menu  Button** to return to the home screen.

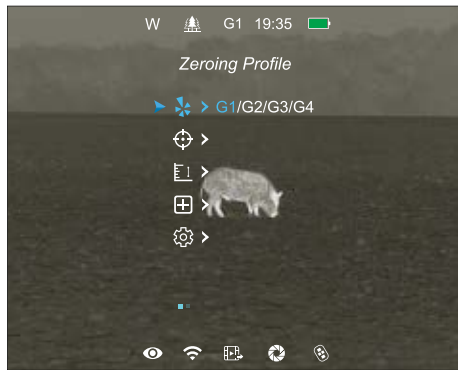


Zeroing Profile (Clip-on Mode Only)

Select the zeroing profile

The selected zeroing profile optimizes the scale of the UI symbology based on the field of view of the day optic.

1. Long press the **Menu  Button** to enter the main menu.
2. Short press the **Up  or Down  Button** to select the zeroing profile  menu item
3. Short press the **Menu  Button** to toggle through the zeroing profile options, G1, G2, G3, and G4. The selected zeroing profile appears in the top status bar.
 - a. For MAH50 and MAL38, select:
 - i. G1 or G2 for 1×–5× day optics.
 - ii. G3 or G4 for 6×–8× day optics.
 - b. For MAL25, select:
 - i. G1, G2, G3, or G4 for 1×–5× day optics.
4. Long press the **Menu  Button** to confirm the selection and return to the home screen.








Zeroing (Clip-on Mode Only)









Adjust the position of the screen in clip-on mode

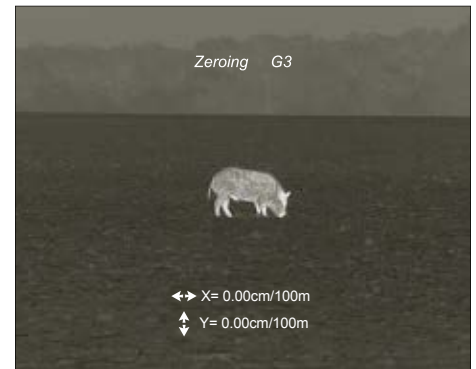
In clip-on mode, the display size is reduced to be in unity (1×). On your first use, it may be necessary to adjust the X/Y of the screen to collimate the MATE

Series to your day scope reticle. If your POI and POA differ in clip-on mode, adjust the screen position.

1. Long press the **Menu  Button** to enter the main menu.
2. Short press the **Up  or Down  Button** to select the zeroing  menu item.
3. Short press the **Menu  Button** to enter the screen position adjustment interface.
4. The interface has the following features:

- 1 **X:** Horizontal point of impact change (in cm or inches).
- 2 **Y:** Vertical point of impact change (in cm or inches).

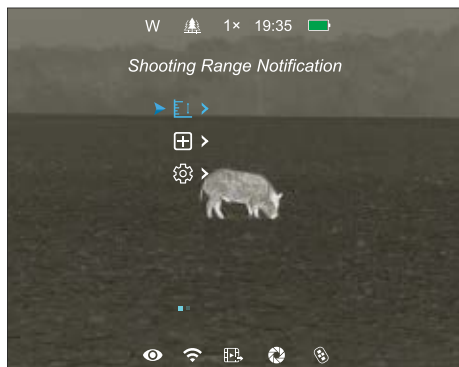
5. Adjust the X/Y position of the screen.
 - a. Use the **Up  Button** to move up and the **Down  Button** to move down.
 - b. Use the **Menu  Button** to move right and the **Photo  Button** to move left.
 - c. Short press the button to move in the corresponding direction by 1 pixel; long press to move 10 pixels.
6. Long press the **Menu  and Photo  Buttons** to save the screen position and exit the interface; **OR**
7. Long press the **Up  Button** and **Down  Button** to exit the interface ND reset the X/Y screen position to (0,0).








Shooting Range Notification

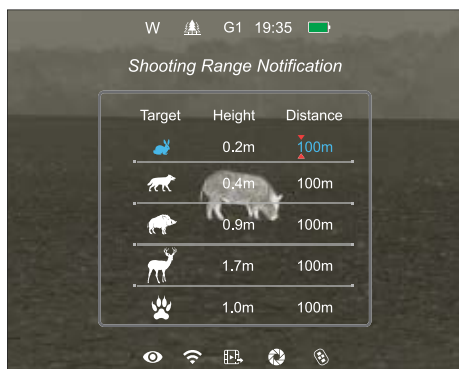
Customize the five prey types








The MATE Series has five prey types: rabbit, coyote, hog, deer, and custom. Each prey type has a pre-configured height at a range of 100m. The distance range may be adjusted for each prey type, as needed.



1. Long press the **Menu  Button** to enter the main menu.
2. Short press the **Up  or Down  Button** to select the shooting range notification  menu item.
3. Short press the **Menu  Button** to enter the shooting range notification interface.
4. The interface has the following features:

- 1 Target:** Shows the icon for the target type.
- 2 Height:** Shows the pre-configured target height.
- 3 Distance:** Shows the set distance range (100m is the default).









5. Short press the **Up  or Down  Button** to move through the five prey types. The cursor location is indicated by a blue prey icon and a blue distance value.
6. Short press the **Menu  Button** to select and begin editing the distance value for the selected prey type. Red arrows appear above and below the distance value.
7. Short press the **Up  or Down  Button** to adjust the distance value in increments of 10m, from 50m to 500m.
8. Short press the **Menu  Button** to deselect the prey type and repeat steps 5–7 to adjust additional distance ranges as needed.
9. Long press the **Menu  Button** to save any changes and return to the home screen.





Pixel Defect Correction

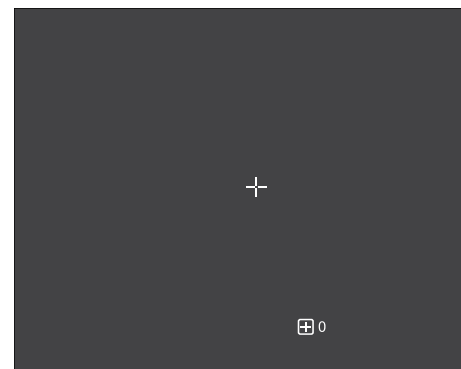
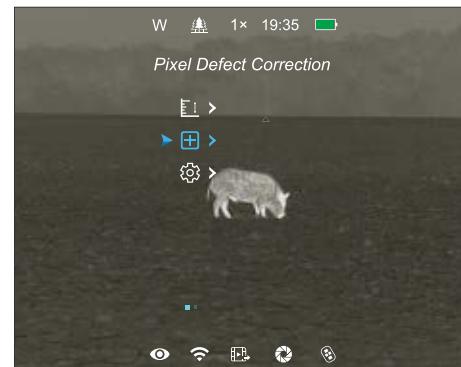
Select and correct defective pixels



Defective pixels are pixels that do not change correctly compared to the other image pixels—they are either brighter or darker than surrounding pixels. The MATE Series has a tool that corrects defective pixels on the sensor using its internal software.



1. Long press the **Menu  Button** to enter the main menu.
2. Short press the **Up  or Down  Button** to select the pixel defect correction  menu item.
3. Short press the **Menu  Button** to enter the defective pixel correction interface.
4. The pixel correction interface has the following features:

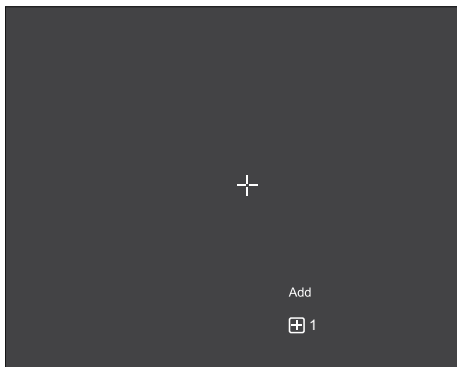
- 1 Cursor:** Cursor appears in the center of the screen. Move the cursor to the position of the defective pixel.
- 2  00:** Shows the number of defective pixels in the “to be corrected” list.









5. Move the cursor to the location of the defective pixel:
 - a. Use the **Up  Button** to move up and the **Down  Button** to move down.
 - b. Use the **Menu  Button** to move right and the **Photo  Button** to move left.
 - c. Short press the button to move the cursor in the corresponding direction by 1 pixel; long press to move 10 pixels.



- With the cursor in position, long press the **Up**  and **Down**  **Buttons** at the same time to add the defective pixel to the “to be corrected” list.

- Add** will briefly appear above the defective pixel tally.
-  00 will change to  01 to indicate that one pixel has been added to the correction list.








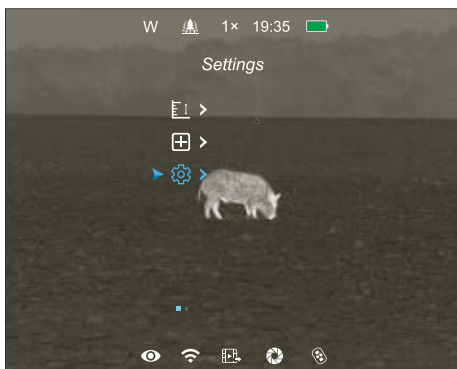
- If the defective pixel has been added in error, long press the **Up**  and **Down**  **Buttons** a second time from the same X/Y coordinates (do not move the cursor) to remove the pixel from the “to be corrected” list. **Del** will briefly appear above the defective pixel tally.
- Repeat steps 5–7 to add additional defective pixels, if needed.
- When all defective pixels have been added to the list, long press the **Photo**  and **Menu**  **Buttons** at the same time to confirm changes.
- A popup window shows the message “Do you want to keep these settings?” and two options, Yes and No. No is selected by default.
- Short press the **Menu**  **Button** to select **No** to exit to the main menu without correcting any defective pixels; **OR**
- Short press the **Up**  or **Down**  **Button** to move to **Yes** and short press the **Menu**  **Button** to correct the saved list of defective pixels and exit to the home screen.

NOTE: The pixel defect tally moves to the top-right of the screen when the cursor moves into the lower-right corner of the screen.

Settings










Adjust the general settings

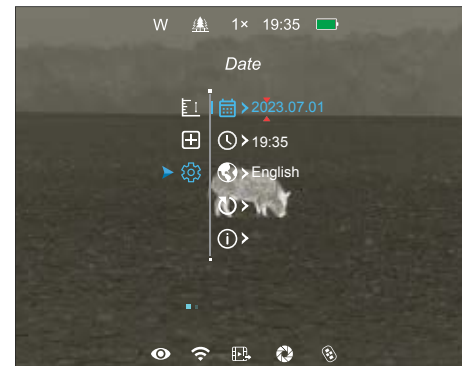
- Long press the **Menu**  **Button** to enter the main menu.
- Short press the **Up**  or **Down**  **Button** to select the settings  menu item.
- Short press the **Menu**  **Button** to enter the settings submenu.



SETTINGS MENU > DATE









Set the date

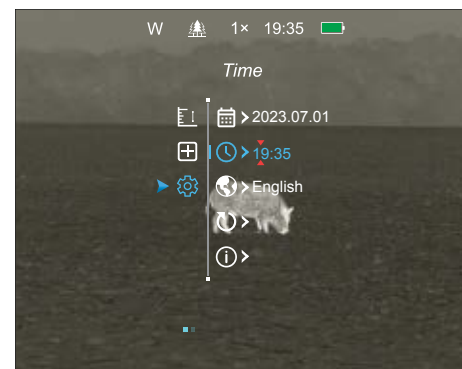
- In the settings submenu, short press the **Up**  or **Down**  **Button** to select the date  menu item.
- Short press the **Menu**  **Button** to edit the date. Red arrows will appear above and below the year digit to indicate it is selected for editing. The date is displayed in YYYY.MM.DD format.
- Short press the **Up**  or **Down**  **Button** to select the correct value for the selected digit (year, month, and day).
- Short press the **Menu**  **Button** to edit to the month digit.
- Short press the **Menu**  **Button** to edit to the day digit.
- Short press the **Menu**  **Button** again to save the date and return to the submenu.



SETTINGS MENU > TIME








Set the time

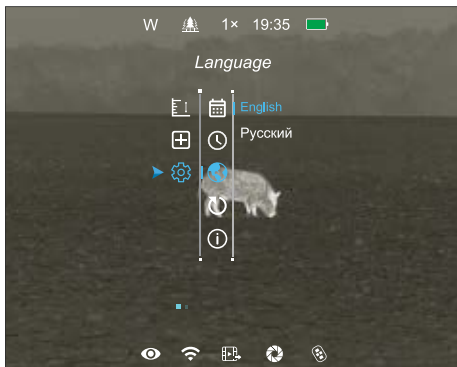
- In the settings submenu, short press the **Up**  or **Down**  **Button** to select the time  menu item.
- Short press the **Menu**  **Button** to edit the time. Red arrows will appear above and below the hour digit to indicate it is selected for editing. The time is displayed in HH.MM, in 24-hour format.
- Short press the **Up**  or **Down**  **Button** to select the correct value for the selected digit (hour and minute).
- Short press the **Menu**  **Button** to edit the minutes digit.
- Short press the **Menu**  **Button** again to save the time and return to the submenu. The time appears on the right side of the status bar.



SETTINGS MENU > LANGUAGE









Select the language

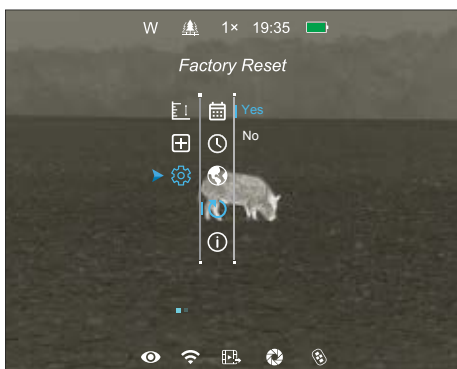
1. In the settings submenu, short press the **Up**  or **Down**  **Button** to select the language  menu item.
2. Short press the **Menu**  **Button** to enter the submenu.
3. Short press the **Up**  or **Down**  **Button** to move through the language options, English and Russian. English is selected by default.
4. Long press the **Menu**  **Button** to confirm the selection and return to the home screen.



SETTINGS MENU > FACTORY RESET

Restore factory defaults

1. In the settings submenu, short press the **Up**  or **Down**  **Button** to select the factory reset  menu item.
2. Short press the **Menu**  **Button** to enter the submenu.
3. Two options, Yes and No, appear; Yes will restore factory settings and No will cancel the operation.
4. Short press the **Menu**  **Button** to select **No** to confirm cancellation of the factory reset and return to the submenu; **OR**
5. Short press the **Up**  or **Down**  **Button** to move to **Yes** and short press the **Menu**  **Button** to confirm the factory reset. Factory settings will be restored and the MATE will reboot automatically.








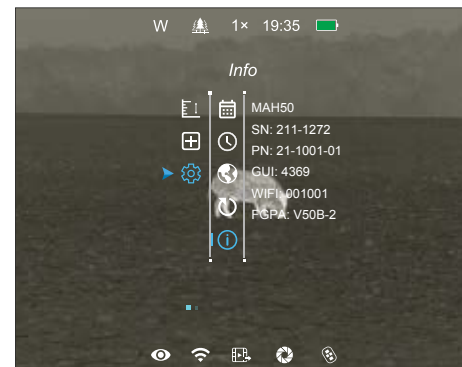
FACTORY RESET NOTES:

- There is a pause of about 20 seconds before the factory reset 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:
 - Color Palette: White Hot
 - Scene Mode: City
 - Display Brightness: 3
 - Image Sharpness: 3
 - Digital Zoom: 1x
 - Zeroing Profile: G1
 - Ultra-Clear mode: Off
 - Wi-Fi: Off
 - Video Output: Off
 - Calibration: On
 - Language: English
 - Wi-Fi SSID: XXXXX_YYYYYY
 - Wi-Fi Password: 12345678

SETTINGS MENU > INFO

Show device information

1. In the settings submenu, short press the **Up**  or **Down**  **Button** to select the info  menu item.
2. Short press the **Menu**  **Button** to enter the submenu.
3. The following information will be shown: the model number, the PN and SN numbers, and the GUI, Wi-Fi, and FPGA versions.
4. Long press the **Menu**  **Button** to return to the submenu.



23. BASIC INSPECTION

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

- The appearance of the thermal weapon sight: 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.

24. 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 thermal weapon sight 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.

25. 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; neither have we, and 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 MATE Series thermal weapon sight 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 in the RMA. iRayUSA will return the product at no cost.

WARRANTY 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.

26. GENERAL TROUBLESHOOTING

The troubleshooting table on the next page lists issues that may occur when operating the MATE Series. 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.

27. NOTES

ISSUE	POSSIBLE CAUSES
The MATE will not turn on.	The built-in battery is very low or has completely discharged.
The MATE can not connect to a computer or external power supply.	External power supply has completely discharged.
	Computer is turned off.
	Data cable is damaged.
Video output is not working.	Video output is not turned on
The MATE 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 MATE.
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 MATE and the mobile device.
The image is fuzzy, not clear, not balanced, with 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 image of the object being observed is missing.	Looking through glass.
The MATE 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 MATE 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 built-in battery.
Check the external power supply and charge it if necessary.
Power on the computer.
Replace the USB-C to analog RCA/USB data cable.
Turn on video output in the main menu. See Main Menu > Video Output on page 25.
Turn on the Wi-Fi in the main menu. See Main Menu > Wi-Fi on page 24.
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 24.
Move the MATE and mobile device to an area with no or fewer Wi-Fi signals.
<ul style="list-style-type: none"> Try again when Wi-Fi signal is stable. Relocate the MATE closer to the Wi-Fi signal.
Perform a non-uniformity correction. See Non-uniformity Correction on page 17 and Main Menu > Calibration on page 25.
Adjust the display brightness in the quick menu. See Using the Quick Menu on page 15.
<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 15.
<ul style="list-style-type: none"> Wipe the outside optical surfaces with the included microfiber lens cloth.
<ul style="list-style-type: none"> Wipe the outside optical surfaces with the included microfiber lens cloth. Allow the MATE to dry by leaving it in a warm, dry environment for at least 4 hours.
Remove any glass windows from the field of view.
<ul style="list-style-type: none"> Check the outer surfaces of the objective lenses 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 as 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 15. Adjust the image and device settings. See Quick Start Guide on page 8. Turn on Ultra-Clear mode. See Main Menu > Ultra-Clear on page 24.
Turn on Ultra-Clear mode. See Main Menu > Ultra-Clear on page 24.
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 thermal weapon sight 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.



800-769-7125

682-499-0047

info@irayusa.com

PN: IRAY-PR166