InfiRay

InfiRay

Operating Instructions

V1.0

Mate series

Thermal imaging attachment

MAH50/MAL38/MAL25

IMPORTANT SAFETY INFORMATION

Environmental influences

WARNING! Never point the lens of the device directly at intense heat sources (e.g. sun or laser devices). The lens lens and eyepiece can act as a magnifying glass which concentrates heat energy and can damage internal components.

Danger of ingestion

Please note: The device is not suitable for small children. Improper handling may cause small parts to come loose and be swallowed.

Safety instructions for use

- Do not expose the device to fire or high temperatures.
- Battery capacity is reduced when operating in cold environments. This is not a fault and is due to technical reasons.
- Always store the equipment in a transport bag in a dry, well-ventilated place. Remove the batteries for longer storage.
- Do not expose the device to extreme temperatures below -20 °C and above +50 °C.
- The product can only be connected to a USB Type-C interface.
- If the device is damaged or the battery is defective, please send the device to our after-sales service for repair.

User information on the disposal of electrical and electronic equipment (households)

The WEEE symbol on products and/or accompanying documents means that used electrical and electronic products must not be mixed with normal municipal waste. For proper treatment, recovery and recycling, take these products to the relevant collection points where they will be accepted free of charge. In some countries, it may also be possible to return these products to your local retailer when purchasing a matching new product.

Proper disposal of this product serves to protect the environment and prevent potential harmful effects on humans and their environment that may occur as a result of improper waste management.

For more detailed information about your nearest collection point, contact your local authority. In accordance with national legislation, fines may be imposed for improper disposal of this type of waste.

For business customers within the European Union

Contact your dealer or supplier for disposal of electrical and electronic equipment. They will provide you with further information.

Information on disposal in other countries outside the European Union

This symbol is valid only in the European Union. If you wish to dispose of this product, please contact your local authority or retailer to request disposal.

Intended use

The device is intended for displaying heat signatures in nature observation, remote hunting observations and for civilian use. The device is not a toy for children. Use the device only as described in this manual. Neither the manufacturer nor the seller shall be liable for any damages resulting from improper or unintended use.

Functionality test

- Before use, please make sure that your device has no visible damage.
- Test that the device displays a clear, unobstructed image.
- Check that the thermal imaging camera settings are correct. See notes in the Operation section.

1 Specifications

Model	MAH50	MAL38	MAL25
Detector parameters			
Resolution, pixels	640×512	384×288	
Pixel size, um	12		
NETD, mk	≤ 25	≤ 30	≤ 30
Frame rate, Hz	50		
Optics parameters			
Lens, mm	50	38	25
Field of view (H x V), degrees/m at 100 m	8,8×7,0 / 15,4×12,3	7,0×5,3 / 12,3×9,2	10,6×7,9 / 18,4×13,8
Recommended magnification of a day telescope, x	G1/G2: 1-5 G3/G4: 6-10	G1/G2: 1-5 G3/G4: 6-8	G1/G2/G3/G 4:1-5
E-zoom	Extender mode: ×1 Monocular mode: ×1/×2/×4		
Detection range, m (Target size: 1.7 m×0.5 m, P(n) = 99%)	2597	1948	1298

Display parameters		
Type	OLED	
Resolution, pixels	1024×768	
Electrical parameters		
Batteries	Built-in battery + Infiray battery	
Maximum battery life, h	4 + 7	4,5 + 7,5
USB interface	Type-C	
Physical parameters		
Body material	Magnesium alloy	
Degree of protection IP	IP67	
Remote control	Support	
Built-in memory, GB	32	
Aiming point, MOA	1	1,5
Weight, g	530	520	460
Dimensions, mm	146×62×73	138×62×71	132×62×68
Adapter ring	M52×0,75	

∗ Actual operating time depends on the intensity of Wi-Fi usage, video recording and laser rangefinder usage.

➢ Improvements can be made to the design and software of this product to improve its useful functions. The technical parameters of the device may be improved without prior notice to the customer.

2   Description

The MATE series is a completely new generation of front attachments designed as infrared daylight optics extension devices.

Unlike night vision devices based on image enhancement, the MATE series does not need an external light source and is not affected by strong light. It can be used at night or in poor weather conditions such as fog, rain, smog, and can detect objects through obstacles such as branches, tall grass, dense bushes, etc.

The MATE series has a wide range of applications including night hunting, observation and orientation in the field, search and rescue operations.

Using a MATE series front attachment has several advantages over night hunting with traditional optics or even night vision devices. Attaching the MATE Series to a traditional riflescope provides the same comfort of shooting with a day scope that you are accustomed to, including the existing thread crosshairs and eye relief. The MATE Series front attachment even allows you to continue to use the variable magnification of the riflescope

3   Features

- Quick transition from monocular to extension tube
- Quick assembly and disassembly of the attachment
- 12μm thermal imaging detector
- 1024×768 high-resolution AMOLED display
- No re-zeroing required and fast connection
- Magnesium alloy case
- Known accuracy
- Photo/video recording
- APP support over Wi-Fi
- Wireless remote control
- Four image modes - white hot, black hot, red hot, colour
- Three scene modes - forest, plain, city
- Digital monocular zoom: ×1, ×2, ×4
- Degree of protection IP67

4 Components and controls

1. Eyepiece
2. Eyepiece bayonet ring
3. Down button
4. Menu button (M)
5. Camera button
6. Up button
7. Lens focusing knob
8. Lens cover
9. Lens
10. Power button
11. Microphone
12. Type C port
13. Picatinny bottom rail
14. Universal snap-on adapter

5 Menu / status bar icons

Icon	Description
W	Picture mode **White hot**
B	Image mode **Black hot**
R	Image mode **Red hot**
C	Picture mode **Colour**
🌲	Scene mode **Forest**
🏞	Scene mode **Plane**
🏢	Scene mode **City**
🔍	E-zoom (monocular only: x1, x2, x3, x4)
📷	Taking a photo
☀	Display brightness
🎮	Remote control
🖼	Scene mode
🏔	Image sharpness

👁	Ultra bright
📶	Wi-Fi
	Video output
	Automatic shutter calibration
	Type of threaded cross: G1/G2/G3/G4
⊕	Image calibration
	Setting range notifications
⊞	Pixel defect correction
📅	Setting the date
🕐	Time settings
🌐	Language settings
↻	Restore factory settings
ⓘ	System information

🔋	Battery power supply
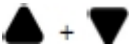
6 Operating Instructions

The Mate range has been designed for long-term use. To ensure sustainable performance, please follow these guidelines:

- Before use, make sure that you have installed and set up the device according to the instructions in the " **Operation"** section.
- Store with the lens hood on in the housing.
- Switch off the device after use.
- **Attempts to disassemble or repair the device will void the warranty!**
- The device is designed for use at various operating temperatures. However, if it has been transferred from low temperatures to indoors, do not switch it on for 2 to 3 hours. This will prevent moisture condensation on the external optical surfaces.
- To ensure reliable operation, it is recommended to carry out regular technical inspections of the equipment.

7 Description of drivers

Button	Current status	Short press	Long press
Power button ⏻	Off	—	Switching on the device
	Home screen	Device standby mode	Shutting down the device
	Standby mode	Waking up the device	
	Menu interface	Save and return to a higher interface	
Up button ▲	Home screen	Switching the picture mode	Turning the alert function on/off
	Main Menu / Shortcut Interface	Options to move up	—
	Interface for zeroing/correcting pixel defects	Move up one pixel at a time	Move up 10 pixels at a time
Down button ▼	Home screen	Shutter Correction	Background correction
	Main Menu / Shortcut Interface	Downshift options	—
	Interface for zeroing/correcting pixel defects	Move down one pixel at a time	Move down 10 pixels at a time
	Range Notification Interface	Loop switches animal types	Background correction
Camera button 🄾	Home screen	Take a picture	Video recording
	Interface for zeroing/correcting pixel defects	Shift one pixel to the left each time	Shift 10 pixels to the left each time
Menu button (4) M	Home screen	Enter the local menu interface	Enter the main menu interface

	Main Menu / Shortcut Interface	Parameter settings	To save and exit the home screen
	Zeroing/correcting pixel defects	Shift one pixel to the right each time	Shift 10 pixels to the right each time
Up button and down button ▲ + ▼	Interface for zeroing	—	Saving the zero position and setting the coordinate as (0,0)
	Pixel defect correction interface	—	Add/remove defective pixels
Camera + menu buttons (4) ⃝+ M	Interface for zeroing	—	To save and exit the home screen
	Pixel defect correction interface	—	
Up + menu buttons (4) ▲+ M	Home screen	—	Switching between extender and monocular mode

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8 Installation

The MATE series can be used as a monocular or as a front attachment for daylight binoculars. The original design allows a quick changeover from monocular to extension tube and vice versa.

As a monocular

➢ Remove the universal snap-on adapter (**14)** from the MATE, then you can use it as a monocular.

➢ When used as a monocular, switch to monocular mode by long pressing the **down (3) + menu (4)** buttons for 3 seconds, during which x1/ x2/ x4 will be displayed on the status bar at the top of the screen.

</div>

W   ▲   1×   20:35   ▭

- ➢ For better observation, we recommend using an Infiray monocular (**15**) (available separately on the InfiRay website).
- ➢ Mount the Infiray monocular **(15**) on the eyepiece of the Mate using the thread lock.
- ➢ In monocular mode, the Mate supports up to 4x electronic zoom and with the Infiray 4x24 **(15)** monocular you can achieve up to 16x

  magnification.

As a front attachment

The MATE as an attachment is designed for use with daylight binoculars at night and

during the day in adverse weather conditions (fog, smog, rain, etc.).

When using as a front attachment, make sure the MATE is in the attachment mode in which

G1/G2/G3/G4 is displayed in the status bar at the top of the screen.

Press and hold the **down (3) + menu (4)** button for 3 seconds to switch between

extender mode and monocular mode.

W   ▲   G1 20:35   ▭

To mount it on a day device, follow these instructions:

- ➢ Before installation, make sure that the daily device is reset.
- ➢ Measure the outer diameter of the day telescope lens **(17)** .
- ➢ Select a suitable adapter with M52*0.75 female thread and insert of the required diameter depending on the outer diameter of the day binocular lens.
- ➢ In the package there is a free universal adapter **(14)** with four inserts, which is suitable for outer diameters from 56 mm to 65 mm. If your daily

  binoculars outside this range must be purchased separately.
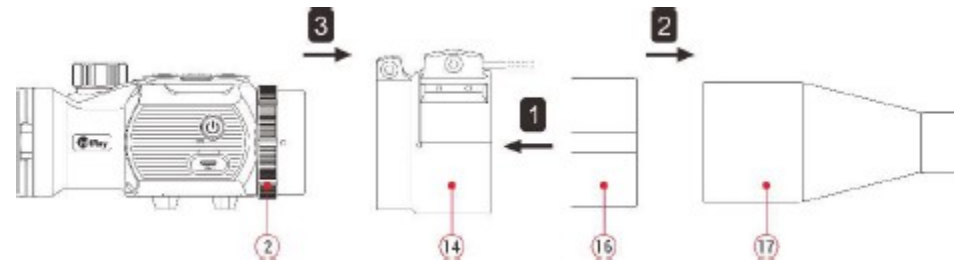
- ➢ Insert the insert **(16)** into the adapter **(14)** all the way to the stop.
- ➢ Firmly attach the adapter with the insert to the day telescope lens (**17)**.

➢ Flip the lever **(20)** from the original OPEN position to the CLOSE position (Closed). Check that the adapter fits snugly against the lens.

➢ If you see that he's available:
- Loosen the locking screw **(19)** with a hexagon wrench (S=2mm).

- Tighten the screw **(18)** with a hexagonal wrench (S=4mm) with enough force so that the adapter fits snugly against the lens.

- Tighten the locking screw **(19)**.

➢ Fit the Mate to the adapter **(14**) and tighten the eyepiece bayonet ring **(2)** counterclockwise to

Mate's equipment has been secured.

➢ If after installation, the center of the Mate display is not aligned with the center of the Day Binoculars:
- Loosen the locking screw **(21)** with a hexagon wrench (S=4mm).
- Adjust the angle of the Mate to a suitable position so that it is aligned with the centre of your day binoculars.
- Tighten the locking screw **(21)**.
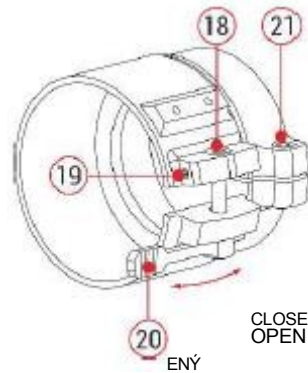
9 Operation

➢ Open the lens cover (8).
➢ Press and hold the **power** button **(10)** for 3 seconds to switch on the device. Wait 5 s until a thermal image appears on the display.
➢ **Lens focus adjustment:** rotate the lens focus ring **(7)** focus on the object you are looking at.
➢ **Calibration:**
- **Shutter correction:** calibrate the image by briefly pressing the **down** button **(3)**

for shutter correction

- **Background correction:** long press the **down** button **(3)**, the display will prompt "Cover lens during calibration", then close the lens cover **(8)** to complete the background correction.

➢ **Setting the picture mode:** press the **up** button **(6**) briefly in succession change the picture mode from White Hot / Black Hot / Red Hot / Color.
➢ **Other image settings:** briefly press the **menu** button **(4)** to enter the local menu interface, where you can adjust the electronic zoom (only for monocular mode) / brightness / scene mode / sharpness level.

➢ **Switching off:** long press the **power** button **(10)** for 3 seconds to switch off the Mate.

➢ **Standby: Press** the **power** button **(10)** briefly to switch the device to standby mode to save power. Press the **power** button **(10**) again to wake it up.

10   Zeroing (for extender mode only)

When the Mate device is installed on the day scope as an infrared extension element, if the thread cross of the day scope is not located in the center of the infrared image, the image zeroing function can be used to shift the infrared image to ensure the position match between the day scope image and the infrared image.

➢ Before mounting the MATE, complete the calibration of the day telescope.

➢ Install the Mate on the day scope and repeat the above steps calibration. Then aim at the target at 100 meters and fire. Then measure the horizontal and vertical distance between the bullet impact point and the point of aim.

➢ From the home screen, press and hold the **menu** button **(4)** to enter the main menu interface.

➢ Press the **up (6) / down (3**) button to select Profile

   Zeroing (and briefly press the **menu** button **(4)** to select the zeroing profile.

➢ Then select Reset ( ) and press the button briefly **menu (4)** to enter the Reset interface

➢ In the interface zeroing by short by pressing the button **up/down/photo/menu** to shift the position of the IR image, and long press to achieve a rapid shift until the target on the IR image is aligned with the center of the filament crosshairs of the day scope.

➢ When zeroing is complete, long press the **menu (4) + camera(5)** buttons to save and exit the zeroing interface, or hold the **up (6) + down (3)** buttons for 3 seconds to save the zeroing position and set the coordinate as (0,0) and go to the home screen.

11 | Offer of representatives

➢ From the home screen, briefly press the **menu** button **(4)** to enter the local menu interface. Features:

- **Electronic zoom** (monocular mode only): short press of the button **menu (4),** the image is enlarged from x1 to x4 by e-zoom.

- **Screen brightness:** short press the button **menu (4)** to switch the screen brightness from level 1 to level 4.

- **Scene mode:** briefly press the Menu **(4)** button to switch the scene mode between Forest, Plain and City.

- **Image sharpness:** briefly press the **menu** button **(4)** to switch the image sharpness from level 1 to level 4.

➢ Press the **up (6) / down (3)** button briefly to toggle through the function options.

➢ Press and hold the **menu** button **(4)** to exit the home screen or cancel it automatically if you do not perform any operation within 5 seconds.

12 | Main offer

➢ From the home screen, press and hold the **menu** button **(4)** for 3 seconds to enter the main menu interface.

➢ In the main menu, press the **up (6) / down (3)** button briefly to toggle through the menu options.

➢ Press the **menu** button **(4)** briefly to adjust the parameters of the current option or to enter a submenu.

➢ Press and hold the **menu** button **(4)** for 3 seconds to return to the home screen.

➢ Briefly press the **power** button **(10)** to save and exit the higher interface.

Description of the main menu function

Ultra bright	**Turning Ultra Bright mode on/off**
	➢ Press and hold the **menu** button **(4)** to enter the main menu.
	➢ Press the **up (6) / down (3)** button to select **Ultra Bright** .
	➢ To turn Ultra Bright mode on/off, briefly press the **menu** button **(4)** along with the shutter calibration sound.
	➢ The icon appears on the bottom status bar when Ultra Bright mode is enabled.
	➢ Ultra Clear mode displays more image detail in cloudy skies, rain, fog and other adverse weather conditions.
Wi-Fi	**To turn Wi-Fi on/off**
	➢ Press and hold the **menu** button **(4)** to enter the main menu.
	➢ Press the **up (6) / down (3)** button to select **Wi-Fi** .
	➢ To switch the Wi-Fi function on/off, briefly press the **menu** button **(4)**.
	➢ The icon appears on the bottom status bar when the Wi-Fi network is turned on.
	➢ When Wi-Fi is on, you can connect to the mobile phone app.
Video output	**Turning the video output on/off**
	➢ Press and hold the **menu** button **(4)** to enter the main menu.
	➢ Press the **up (6) / down (3**) button to select **Video Output**.
	➢ Press the **menu** button **(4)** briefly to switch the video output on/off.
	➢ The icon appears on the bottom status bar when the video output function is enabled.
	➢ The video output function allows connection to a perpetual display or recording device.

Automatic shutter calibration ⊗	**Turning automatic shutter calibration on/off** ➢ Press and hold the **menu** button **(4)** to enter the main menu. ➢ Select **Auto Shutter Calibration** using the **up (6) / down (3)** button. ➢ Press the **menu** button **(4)** briefly to set the **Auto Shutter Calibration** mode on/off. ➢ The icon appears on the bottom status bar when the automatic shutter calibration function is enabled. ➢ When **Auto Shutter Calibration** is enabled, the shutter will automatically fire when the image quality deteriorates.

Zeroing profile
 	
 ✿
	Zeroing profile selection (for extender mode only)
	
	 ➢ Press and hold the **menu** button **(4)** to enter the main menu.
	 ➢ Press the **up (6) / down (3)** button to select **Zeroing Profile** .
	
	 ➢ There are four types to choose from: G1/G2/G3/G4.
	    For MAH50:
	 - G1/G2: Recommended magnification of the daylight optics 1x-5x;
	 - G3/G4: Recommended magnification of daylight optics 6x-10x;
	    For MAL38:
	 - G1/G2: Recommended magnification of the daylight optics 1x-5x;
	 - G3/G4: Recommended magnification of daylight optics 6x-8x;
	    For MAL25:
	 - G1/G2/G3/G4: Recommended magnification of daylight optics 1x-5x;
	 ➢ Short press the **menu** button **(4)** to toggle and select one of the zeroing types.

Resetting ⨁	**Zeroing (for extender mode only)** ➢ Press and hold the **menu** button **(4)** to enter the main menu. ➢ Press the **up (6) / down (3)** button to select the **Reset** option. ➢ Press the **menu** button **(4)** briefly to enter the reset interface. ➢ In the zeroing interface, briefly press the **up/down/camera/offer** button to move the position of the IR image. ➢ See Section 10 **Resetting** for details.
Range notification ▤▏	**Range notification settings** ➢ Press and hold the **menu** button **(4)** to enter the main menu. ➢ Press the **up (6) / down (3)** button to select **Range Notification** . ➢ Press the **menu** button **(4)** briefly to enter the setup interface **range notification** . ➢ There are five prey types to choose from: rabbit (🐰), coyote (🐺), wild pig (🐗), deer (🦌), and your own (🐾). Each prey type corresponds to a starting height with a default effective distance 100 m. ➢ Press the **up (6) / down (3)** button to toggle the type selection and briefly press the **menu** button **(4)** to activate the selection. ➢ For the first four animal types, the distance parameter can only be set using the **up (6) / down (3**) button. Once the settings are complete, a short press of the **menu** button **(4)** returns you to the range notification interface.
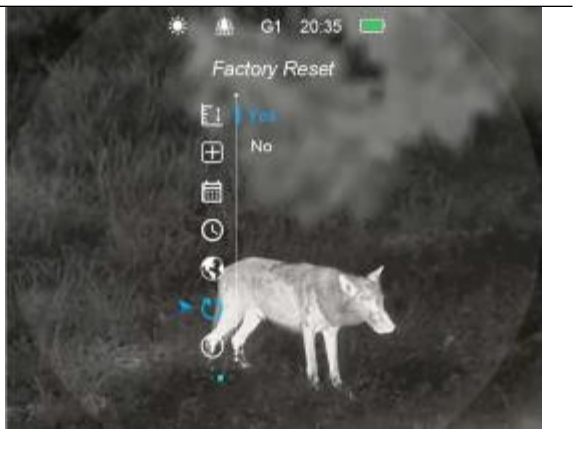
	➢ The last one is custom, where you can set the height and distance parameters. A short press of the **menu** button **(4)** toggles between selecting height, distance and returning to the range notification interface. ➢ Press and hold the **menu** button **(4)** to go to the home screen.	

| Defective pixel correction

 ⊞ | **Defective pixel correction**

 ➢ Press and hold the **menu** button **(4)** to enter the main menu.
 ➢ Select **Pixel Defect Correction** using the **up (6) / down (3)** button.
 ➢ Press the **menu** button **(4**) briefly to enter the Pixel Defect Correction interface,
 ➢ A scale bar appears in the center of the screen and the number of corrected defective pixels is displayed at the bottom of the screen.

 ➢ And then press the **up/down/camera/menu** button to select the defective pixels by moving the crosshairs.

 ➢ After selecting the faulty pixels, press and hold the **up (6) + down (3)** buttons simultaneously to fix the blank pixels. When the message **Add** appears briefly at the bottom of the screen, the repair is successful.

 ➢ In the same position, press and hold the **up (6) + down (3)** buttons again to cancel the correction and the message Del (Delete) will appear briefly. | |

	➢ The number of defective pixels changes each time a pixel correction is added or removed.
	➢ Repeat the above operations to continue selecting defective pixels.
	➢ Once the correction is complete, press and hold the **camera (5) + menu (4) buttons** until the display shows "Do you want to save these settings?" (Do you want to save these settings?) and the "Yes" and "No" options. Select "Yes" to save and exit operation, or select "No" to cancel the save and exit.
	➢ Toggle the selection with the **up (6) / down (3)** button and confirm with the **menu** button **(4)**.
Setting the date ![calendar icon]	**Setting the date** ➢ Press and hold the **menu** button **(4)** to enter the main menu. ➢ Press the **up (6) / down (3**) button to select **Date** . The date is displayed in yyyy/mm/dd format. ➢ Short press the **menu** button **(4)** to toggle between year, month and day, then press the **up (6) / down (3)** button to set the date. ➢ When you have finished setting the data, press and hold the **menu** button **(4)** to exit the data setting interface.
Time settings ![clock icon]	**Time settings** ➢ Press and hold the **menu** button **(4)** to enter the main menu. ➢ Press the **up (6) / down (3**) button to select **Time**. The time is displayed in 24-hour format.

	➢ Briefly press the **menu** button **(4)** to switch between the hour and minute selections, then press the **up (6) / down (3**) button to set the time. ➢ When you have finished setting the time, press and hold the **menu** button **(4**) to exit the time setting interface.
Language 🌐	**Language settings** ➢ Press and hold the **menu button (4**) to enter the main menu. ➢ Press the **up (6) / down (3**) button to select **Language** . ➢ To enter the **Language submenu,** briefly press the **menu** button **(4)**. ➢ Press the **up (6) / down (3**) button to switch between English and German. ➢ Confirm your selection by briefly pressing the **menu** button **(4**). ➢ You will return to the main menu interface automatically after selecting a language.
Restore factory settings ↻	**Restore factory settings** ➢ Press and hold the **menu** button **(4)** to enter the main menu.

	➢ Press the **up (6) / down (3**) button to select **Factory Reset** . ➢ Press the **menu** button **(4**) to enter the Factory Reset interface. ➢ Press the **up (6) / down (3**) button to select "Yes" or "No". ➢ If **"Yes"** is selected, the MATE device resets to factory defaults and reboots. After selecting the option **and "No",** you will return to the main menu interface.	
Information ⓘ	**Information about the system** ➢ Press and hold the **menu button (4**) to enter the main menu. ➢ Press the **up (6) / down (3**) button to select **Info** . ➢ Press the **menu** button **(4)** to display the relevant information. ➢ This item allows the user to view the following information: device model, GUI version, PN and SN number, Wi-Fi version, and FPGA version. ➢ Press and hold the **menu button (4**) to exit the information interface	

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13 Taking photos and recording videos

The MATE device has 32GB of integrated storage for photo and video recording. Image and video files will be named according to the time, so we recommend setting the time in the main menu or synchronising the time in the Infiray Outdoor settings before using the photo and video recording function.

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Photography

➢ Press the **camera** button **(5)** on the home screen to take a photo. The screen freezes for 0.5 seconds and the photo icon appears on the screen.

➢ The photos are stored in integrated memory space.

Video recording

➢ From the home screen, press and hold the **camera** button **(5)** to start recording video.

➢ The recording timer is displayed at the top of the screen; the time format is MM:SS
(minute : second).

➢ During recording, you can still take a photo by briefly pressing the button **camera (5)**.

➢ You can also enter and scroll through the menu while recording a video.

➢ Press and hold the button **camera (5)** to stop and save the recording.

➢ Video and photos are stored in integrated memory space.

Tips:

- Recorded photos and videos are saved to the device's integrated memory card in IMG_HHMMSS_XXX.jpg (for photos) and VID_HHMMSS_XXX.mp4 (for videos). HHMMSS - hour/minute/second; XXX - three-digit counter (for videos and photos).

- The counter used for media file names cannot be reset.

- If a file is removed from the list, its number is not taken over by another file.

Warning:

- The maximum length of a video file to be recorded is 5 minutes. After this time, the video is automatically uploaded to a new file.

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

- Regularly check the free space on the integrated memory card and move the recording to another storage medium to free up space on the memory card.

Graphical data (status bar, icons and menu) in uploaded video and photo files are not displayed.

Memory access

When the device is turned on and connected to the computer, it is recognized by the computer as a memory card that is used to access the device's memory and make copies of images and videos.

➢ Turn on the riflescope and connect it to the computer using a Type C cable.

➢ Double-click on "my computer" on the desktop - double-click to open the device named "InfiRay" - double-click to open the device with called "Internal Storage" to access the integrated memory.

➢ There are different folders in the repository named according to time.

➢ The photos and videos recorded on a given day are stored in folders Select the desired files or folders to copy or delete.

14 Range notification function

The range notification function is used to determine whether an animal is within range

➢ From the home screen, press and hold the **up** button **(6**) for 3 seconds to enter the range notification interface.

➢ The display shows the following data: two measuring bars, distance, type of animal, height of animal.

➢ Five preset reference objects are available
  - **Hare -** distance 100 m, height 0,2 m
  - **Wolf** - distance 100 m, height 0,4 m
  - **Wild boar** - distance 100 m, height 0,9 m
  - **Roe deer** - distance 100 m, height 1,7 m
  - Own - distance 100 m, height 1.0 m

➢ If you lock on to the target, it means the animal is in the measuring

     lanes and is within the set range.

➢ To change the target type in the interface Press the **down** button **(3)** to announce

     the firing range.

➢ You can change the default settings (including animal distance or height) in the main menu.

➢ Long press the **up** button **(6**) to exit the range notification interface.

15   WIFI function

The Mate series has a built-in Wi-Fi module that allows the device to connect wirelessly to external devices such as smartphones.

➢ Press and hold the **menu** button **(4)** to enter the main menu.

➢ To switch the Wi-Fi function on/off, briefly press the **menu** button **(4)**.

➢ Obtain a Wi-Fi signal with the name **"XXXXX_xxxxxxxxx"** using an external device, such as a smartphone, where **XXXXX** represents the model and **xxxxxxx**

     represents the SN code of the device.

➢ Select Wi-Fi and enter the mobile device password to set up the connection. The default password is 12345678.

➢ Once Wi-Fi is successfully connected, you can control the device via the InfiRay Outdoor app.

To set a Wi-Fi name and password

Mate Series allows users to change the Wi-Fi device name and password in the app

InfiRay Outdoor.

➢ Once connected to your mobile device, find and click on the "Setting" icon

     (Settings) in the **InfiRay Outdoor** app to enter the

     settings interface.

➢ In the text box, type and Send the new Wi-Fi name (SSID) and password.

➢ The device must be restarted for the new name and password to take effect.

➢ Otherwise, you can click Sync Time in the settings interface to synchronise the time on the Mate with the mobile device.

Remark:

- Factory reset will restore the Wi-Fi name, password and system time to their default settings.

16   Installing the battery

The Mate series comes with a professional power bank in the box - the IBP-4 InfiRay **(22)** battery, which is shockproof, waterproof and lightweight, making it ideal for outdoor use.

➢ Attach the IBP-4 InfiRay battery **(22**) to the smaller ring of the adapter holder **(24)** in
packing and tighten the screws **(26)** with a hexagon wrench (S = 2 mm).

➢ Install the adapter bracket **(24)** with the IBP-4 InfiRay battery (**22)** on the day scope (**17**). Close the lever **(25)** on the adapter holder to secure it.

➢ The mount is suitable for most day binoculars with a tube diameter of 30 mm.

➢ After installation, insert the data cable **(24) into** the Type-C port **(12**) of the Mate and into the battery.

➢ When connected, the battery will automatically charge.

➢ Press the battery power button **(23) to** check the remaining battery power. Refer to the IBP-4 InfiRay battery manual for details.
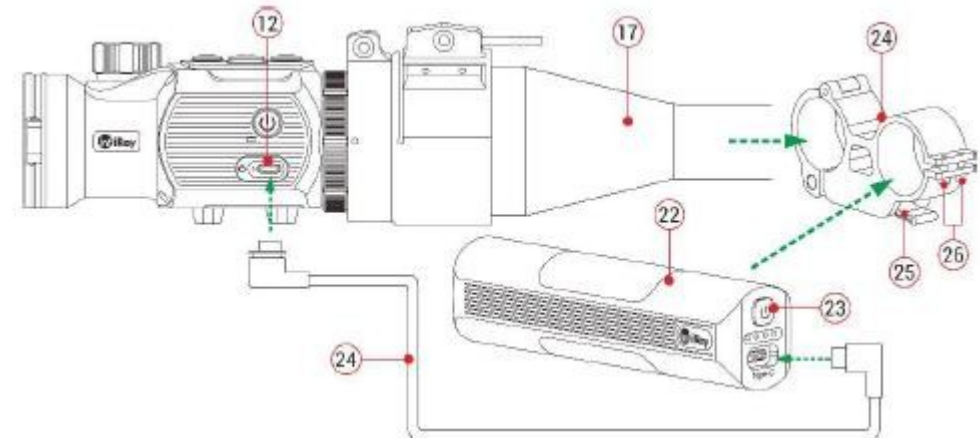
Safety regulations

➢ To avoid damaging the battery, use a standard charger.

➢ It is forbidden to expose the battery to high ambient temperatures above 60 °C.

➢ It is forbidden to put the battery in the fire and burn it.

➢ Battery capacity is reduced when operating in cold environments. This is not a fault and is due to technical reasons.

17 Remote control
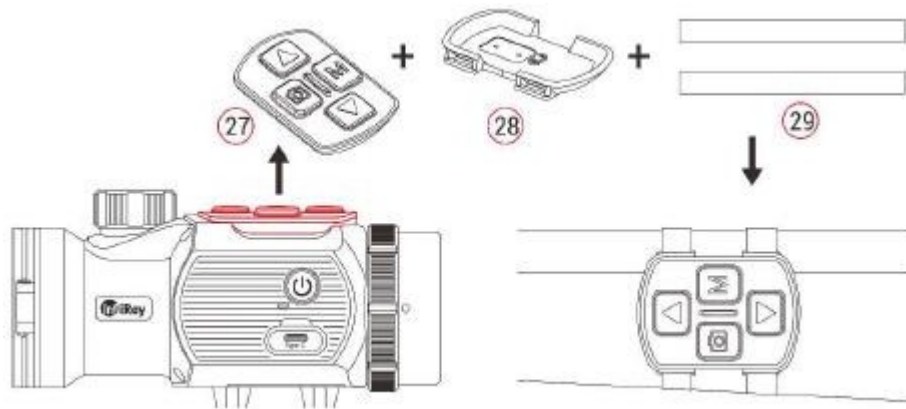
The MATE button module can be removed from the Mate and installed anywhere on

the weapon with its own accessories as a remote control.

➢ Remove the button module **(27)**) from the Mate.

➢ Install the button module **(27)** on the base **(28)** included in the package.

➢ Thread the two magic strips **(29) into** the base **(28)** and attach the module to the

the appropriate place for a weapon.

➢ You can then control the Mate remotely.

➢ The remote control has a built-in battery that can be used continuously for more than 30 days.

➢ If the battery runs out, reconnect the button module **(27)** to the Mate and charge it automatically using the pogo connector.

18 Technical inspection

A technical inspection of the equipment is recommended before use.

➢ Check the external appearance of the device (there should be no cracks in the casing).

➢ Check the condition of the lens and eyepiece (no cracks, grease spots, dirt or other deposits).

➢ Check the condition of the rechargeable battery (it should be charged) and the electrical contacts (there should be no salts or oxidation).

19 Maintenance

Maintenance should be carried out at least twice a year and consist of the following

tasks.

➢ Wipe the outer surfaces of metal and plastic parts clean of dust and dirt
  with a cotton cloth. Silicone lubricant can be used for this.

➢ Clean the battery electrical contacts and battery compartments on the device
  with a non-greasy organic solvent.

➢ Check the glass surfaces of the eyepiece and lens. If necessary, remove dust
  and sand from the lenses (preferably using a non-contact method). The outer
  surfaces of the optics should

  should be cleaned with products specifically designed for this purpose.

20 General troubleshooting

The table lists all the problems that can occur during operation of the device.
Perform the recommended checks and troubleshooting steps in the order listed in
the table. If faults occur that are not listed in the table or cannot be repaired by
yourself, contact us as soon as possible. Private disassembly is strictly prohibited.

Description of the problem	Probable reason	Troubleshooting
Unable to start	The battery is weak	Charge the MATE or use the Infiray battery
Remote control not working	The remote control battery is weak	Attach the remote control to the body of the MATE and charge it using the pogo connector
The image is blurry, indistinct, with vertical bars and an uneven background	Long term without calibration	Perform shutter calibration or background calibration
The picture is too dark	Low screen brightness	Adjust the screen brightness

Blurred image with clear graphical user interface	Lens not in focus	Adjust the focus ring of the lens so that the image is clear
	Dust or condensation on the inner or outer optical surface of the lens	Wipe the outer optical surfaces with a soft cotton cloth. Let them dry in a warm environment for 4 hours
No analogue video output	Video output function is not enabled	Enable the video output function in the main menu
	The data cable does not support data transfer	Replace the data cable with a new one
Point of impact does not correspond to the point of aim	Zeroing must be performed	Perform zeroing according to section 12
	Zeroing profile is incorrect	Check zeroing profile settings

21 Updates and InfiRay Outdoor

Mate **InfiRay Outdoor** Thermal Imaging Attachment Support Technology, which allows you to transmit the image from your thermal imager to your smartphone or tablet via Wi-Fi in real time.

Detailed instructions can be found on **InfiRay Outdoor** in a separate brochure on the website

www.infirayoutdoorcom.

The design of the riflescope allows for software updates. The update is possible via the **InfiRay Outdoor** app. The software can also be downloaded and updated from the official website.

About InfiRay Outdoor

➢ You can get the **InfiRay Outdoor** app on the official website or search for **it** in the App Store, or scan the QR code to download **the app InfiRay Outdoor**.

➢ Once installation is complete, open the InfiRay Outdoor app.

➢ If your device is already connected to a mobile device, turn on

mobile data on your mobile device. Once

connected, the update is detected

automatically with an in-app prompt.

Click the "Now" button to download the updates or click the "Later" button to update later.

➢ **InfiRay Outdoor** automatically saves the last connected device. So if

your device is not connected to a mobile device but was previously connected

to the **InfiRay Outdoor** app, when you turn on the **InfiRay Outdoor** app, you

will be prompted to update if an update is available. You can first download the

update over mobile Wi-Fi and then complete the update by connecting the

Mate to the mobile device.

➢ After the update is complete, the device will restart.

➢ You can also download the InfiRay Outdoor user manual from the official website.

22 Legal and regulatory information

Frequency range of the wireless transmitter module:

Bluetooth: 2.402-2.480 GHz (for EU)

Wireless transmitter module power < 20 dBm (EU only)

Therefore, Iray Technology Co., Ltd. declares that the Mate series complies with Directives 2014/53/EU and 2011/65/EU.

Information is available at: www.infirayoutdoor.com.

This equipment can be operated in all EU Member States.

FCC STATEMENT

FCC ID: 2AYGT-2N-00

Marking requirements

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

Information for users

Any changes or modifications not expressly approved by the Compliance Officer may result in the termination of the user's right to use the equipment.

Note: The manufacturer is not responsible for any interference to the radio or television caused by unauthorized modifications to this equipment. Such modifications could result in revocation of 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 under Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a home 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 can be 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 determined by turning the equipment off and on again, the user is advised to attempt to correct the interference by using one or more of the following measures:

- Redirect or relocate the receiving antenna.
- Place the device at a greater distance from the receiver.
- Connect the device to an outlet on a different circuit than the circuit to which the receiver is connected.
- Get advice from an experienced radio/TV technician.

The equipment has been assessed as complying with the general requirements for exposure to radio waves. The equipment may be used in portable exposure conditions without restriction.

Operation on the body of a person

This device has been tested for typical body support operations. To meet RF exposure requirements, a minimum distance of 0.5 cm must be maintained between the user's body and the handset, including the antenna. Belt buckles, holsters and similar third-party accessories used by this device should not contain any metal components. Accessories on a person's body/clothing that do not meet these requirements may not meet RF exposure requirements and should be avoided. Use only the supplied
or an approved antenna.