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Q InfiRay Outdoor



User Manual

V1.0

TUBE

Thermal Imaging
Riflescope

TH35 V2/TH50 V2

Important safety information

Environmental influences

- Never point the lens of the device directly at intense heat sources such as the sun or laser equipment. The objective lens and eyepiece may then become so hot that the internal components may be damaged.
- Do not touch the metal surface (cooling fins) after exposure to sunlight or cold.

Ergonomic notes

Take breaks after extended periods of use to avoid wrist pain.

Risk of ingestion

Do not place this device in the hands of small children. Improper handling may cause small parts to come loose and be swallowed.

Safety instructions

- Handle the device with care: rough handling can damage the internal battery.
- Do not expose the device to fire or high temperatures.
- Install the batteries correctly according to the instructions on the device. The use of other installation methods is prohibited.
- If the device has been damaged, send it to our after-sales service for repair.

Information for users on the disposal of electrical and electronic equipment

(households)



2012/19/EU (WEEE Directive): products bearing this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier when purchasing the equivalent of a new device or dispose of it at a

at a designated collection point. For more information, please visit:

www.recyclethis.info.

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

Purpose of use

The device is designed for imaging heat signatures in nature observation, remote hunting observations and for civilian use. This device is not a toy for children.

Use the device only as described in this User Guide. The manufacturer and the seller assume no responsibility for

damages resulting from unintentional or improper use.

Function check

- Make sure your device is not visibly damaged before use.
- Test that the device displays a clear, unobstructed image.
- Check that the thermal imaging settings are correct. See the notes in the section **Turning on and adjusting the image settings**.

Installing/removing the battery

The TH35 V2 / TH50 V2 is equipped with two power systems - one built-in battery and one replaceable 18500 battery. The built-in battery module cannot be removed.

1 Specifications

Model	TH35 V2	TH50V2
Parameters		
Type	Uncooled Vox	
Resolution, pixels	× 512	
Pixel size, μm	12	
NETD, mk	≤ 25	
Frequency, Hz	50	
Optical properties		
Lens, mm	35	50
Field of view (H×E), °	12.5 × 10.0	8.8 × 7.0
Linear field of view (H×V), m at 100 m	21.9×17.5	15.4×12.3
Optical magnification, ×	2.5 ~ 10.0	3.5 ~ 14.0
Digital zoom, ×	~ 4	
Eye relief, mm	50	
Output pupil diameter, mm	6	
Diopters, D	-5 ~ +3.5	
Detection range, m (Target size: 1.7 m×0.5 m, P(n)=99 %)	1800	2600
Display parameters		
Type	OLED	

Resolution	× 2560 (1.03")	
Battery power supply		
Batteries	Built-in battery / 6600mAh + replaceable 18500 battery / 3.7 V	
Maximum operating time (22°C), h*	8.5	
External power supply	5 V (Type C)	
Functions		
Wi-Fi / APP	Supported (InfiRay outdoor)	
Photography / Video recording	Supported by	
MIC	Supported by	
Bluetooth	Supported by	
Operational features		
Memory capacity, GB	32	
IP class	IP67	
Operating temperature, °C	-20 ~ +50	
Max. recoil force of firearm (Eo), Joules	6000	
Compatible holders	Standard 30 mm rings	
Weight (without battery 18500), g	<915	<950
Dimensions, mm	× 85 × 75	× 85 × 75

* Actual service time depends on the frequency of use of features such as Wi-Fi, video recording, etc.

- The design and software of this device may be improved without notice to improve its functions.
- You can download the latest user manual on our official website:
www.infirayoutdoor.com.

2 Contents of the package

1. Thermal imaging TH35 V2 / TH50 V2
2. Lampshades
3. Picatinny rail
4. Carrying bag
5. Type C cable
6. Power adapter
7. Lens cloth
8. Heated target for zeroing

3 Product introduction

The TH35 V2 / TH50 V2 is an infrared riflescope (thermal imaging) for hunting in the wild. It is designed based on the principles of infrared thermal imaging and requires no external light sources during the day or night, in all challenging weather conditions (such as rain, snow, fog and haze). Even targets behind obstacles (such as branches, grass and bushes) can be observed without being affected by strong light. The TH35 V2 / TH50 V2 thermal imaging scopes feature several battery-powered solutions with long operating times and can be widely used for hunting, observation and positioning in low visibility conditions.

The TH35 V2 / TH50 V2 thermowell features a standard diameter of 30 mm to meet the requirements of a general clamp interface.

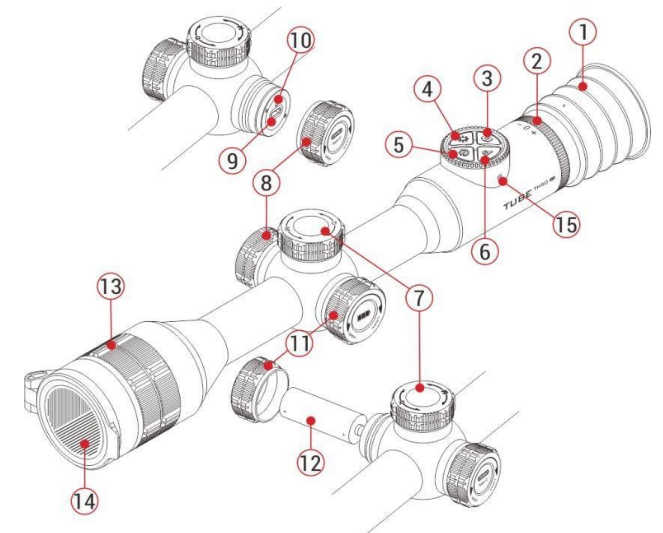
4 Functions

- 12μm self-contained detector
- High image quality




- Infinite zoom
- Dual battery power system
- Standard pipe diameter 30 mm
- Attachable laser rangefinder
- Long detection range
- Frame rate 50 Hz
- Built-in memory space, support for photo and video recording
- Built-in Wi-Fi module, supporting app connectivity
- Built-in compass and motion sensor
- PIP (Picture in Picture) function
- Defective pixel correction
- Convenient operating interface





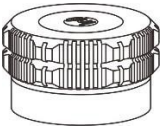
5 Components and controls

1. Lampshades
2. Eyepiece diopter ring
3. Camera button
4. Display brightness button
5. Power button
6. Picture mode button
7. Driver
8. USB port cover
9. USB Type-C port
10. LED indicator
11. Battery slot cover
12. Battery 18500
13. Lens focus ring
14. Lens cap
15. Microphone and simultaneous audio and video recording



6 Button control

Button	Current status	Short press	Long press	Turning
	Off	--	Switch on the device	--
	Home screen	Image calibration	Turn off the device / Device standby	--
	Standby mode	Waking up the device	--	--
	Simple distance measurement is on	Performing a simple distance measurement	--	--
	Main menu interface	Return to the top interface without saving	--	--
	Defective pixel calibration interface	Add/remove defective pixels	--	--
	Home screen	Switching the picture mode	Turning PIP on/off	--
	Home screen	Setting the display brightness	<p>Default: enable/disable the stadiametric rangefinder function.</p> <p>When connected to the laser rangefinder module: switch the laser indicator on the rangefinder module on/off.</p>	--

	Home screen	Take a photo	Start/stop video recording	--
	Laser rangefinder	Switch distance measurement mode between single measurement and continuous measurement	--	--
	Zeroing interface	--	Image freezing	--
	Home screen	--	Turning the sight and its functions on/off	--
	Zeroing interface	--	Return of the sight to the centre	--
	Home screen	Enter the local menu interface	Enter the main menu interface	Adjusting the image magnification
	Local menu interface	Edit function parameters	To save and return to the home screen	Switch menu options
	Main menu interface	Confirm selection / Enter sub-offer		Move the position of the intentional cross: clockwise - left / down
	Defective pixel calibration / Zeroing interface	Switch the direction of movement		Counterclockwise - right / up

7 Power source

The Tube TH35 V2 / TH50 V2 utilizes a dual power system of a built-in rechargeable lithium-ion battery and an 18500 replaceable battery, with dual battery power for up to 8.5 hours of normal operating time.

The battery should be fully charged before first use.

Charging the built-in battery

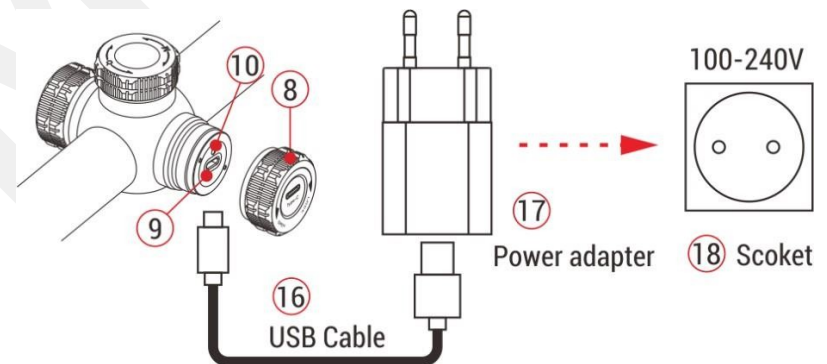
If the battery icon turns red during use,



means the battery is not sufficiently charged. Charge the battery in time to avoid shortening the battery life.

- Turn counterclockwise to open the USB cover **(8)**.
- Plug the end of the supplied USB Type-C cable into the supplied **(16)** to the Type C port **(9)** on the device.

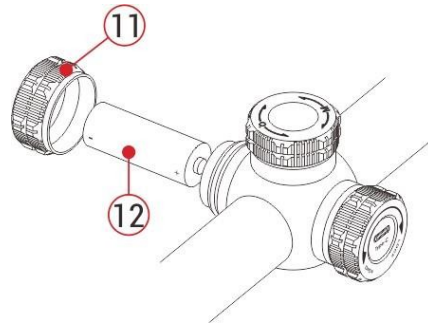
- Plug the other end of the USB cable **(16)** into the power adapter **(17)**, then plug the adapter into a 100-240 V outlet **(18)** for charging.
- When charging, the flash icon appears on the battery icon and the LED indicator **(10)** on the device lights up red. When the indicator **(10)** turns green, this means that charging has been completed.



Note: The USB port can only be used to charge the built-in battery.

Installation of replaceable battery 18500

- Turn counterclockwise to open the battery slot cover **(11)**.
- Install 18500 battery **(12)** according to the indicator plate in the battery holder, i.e. the positive electrode points inwards and the negative electrode points outward.
- Close the battery slot cover **(11)** by turning it clockwise to tighten it.



Security measures

- When charging, use a 5V2A power adapter compatible with the device. Using any other type of adapter may cause irreversible damage to the battery or the adapter itself.
- If the device is not used for a long time, the battery should be partially charged, not fully charged or discharged.
- Do not charge the device immediately after moving it from a cold environment to a warm environment. Allow 30 to 40 minutes for the device to warm up.
- Do not use the charger if it is modified or damaged.
- The device should be charged at a temperature of 0 °C to + 40 °C.
- Otherwise, the battery life will be significantly reduced.
- Do not leave the battery unattended while charging.
- If the battery is already charged, do not continue to charge it for more than 24 hours.
- It is not recommended to connect third-party devices that consume more power than the allowed value.
- The device is equipped with a short-circuit protection system, but conditions that can cause a short-circuit must be avoided.
- Use the device at the recommended operating temperature of - 20 °C to + 50 °C. Do not use the device outside this temperature range, otherwise use may shorten battery life.

- When using the device at temperatures below freezing, the battery capacity will decrease. This is normal and does not indicate a defect.

Switching between two battery types

The Tube TH35 V2 / TH50 V2 supports dual power system: built-in lithium-ion battery and replaceable 18500 battery, also supports USB power supply.

- When both batteries are installed in the body of the TUBE TH35 V2 / TH50 V2, two battery icons appear on either side of the image, with the removable battery on the left side and the built-in battery on the right side. Green indicates that the device is powered on, and grey indicates that the device is not powered on.

- If the removable battery is not installed, only the green built-in battery icon appears on the right side.
- If the replaceable battery is installed and fully charged will be preferred. When the removable battery is almost empty, the device will automatically switch to the built-in battery.
- When the device is connected to USB, it automatically switches to external power. At this time, a flash-like charging icon appears on the built-in battery icon to indicate, that the built-in battery is charging.
- The replaceable batteries can be removed even when the device is in use. At this point, it will automatically switch to the internal battery, and after replacement, it will automatically switch back to the replaceable battery.



8 External power supply

The Tube TH35 V2 / TH50 V2 supports external power supplies such as a portable power supply for a mobile phone (5 V).

- Connect an external power supply to the **USB port (9)** Tube device.
- The device then automatically switches to an external power source, simultaneously charging the internal battery.
- When the external power supply is turned off, the device switches to the 18500 replaceable battery. If the 18500 replaceable battery is not installed or the battery charge level is low, it will switch to the built-in battery module instead of shutting down.

9 Installation and use

Mounting the device on the weapon

Mount the device in the correct position on the weapon to ensure accuracy.

- The TUBE TH35 V2 / TH50 V2 thermal imaging camera must be mounted using the adapter clamp - Picatinny rail clamp supplied in the package. The TUBE TH35 V2 / TH50 V2 adopts a 30mm diameter tubular body design that is compatible with standard 30mm diameter clamps. Only the correct tools may be used to install the device on the weapon, according to the designs and steps described by the supplier.
- During installation, the mounting position of the Tube should be adjusted according to the distance between the eye and the eyepiece (eye relief) as specified in the specifications and ergonomics. If you do not follow this suggestion, the eyepiece may injure you when shooting.

- It is recommended to mount the thermal imager as low as possible, but keep it away from the barrel of the gun or other devices.
- It is recommended to use a torque wrench to tighten the mounting clamp screws to avoid damage to the thermowell body due to over tightening, the recommended torque must not exceed 2.5 Nm.
- If thermal imaging is used for hunting, first perform a zeroing operation by referring to the **Zeroing section** of this manual.
- When using the thermal imaging camera at night or in a dark environment, it is recommended to use a shade **(1)** to avoid detection.

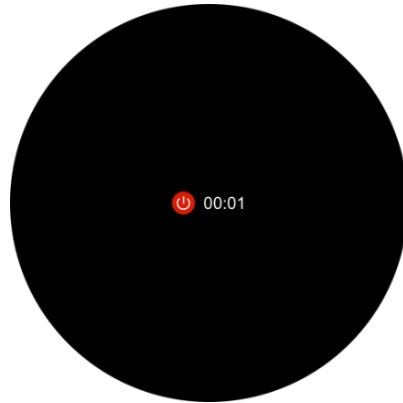
Switching on and setting the picture

- Remove the lens cap **(14)**.
- Press and hold the **power** button **(5)** for 2 seconds to start the device.
- Wait 3 s to complete the launch.

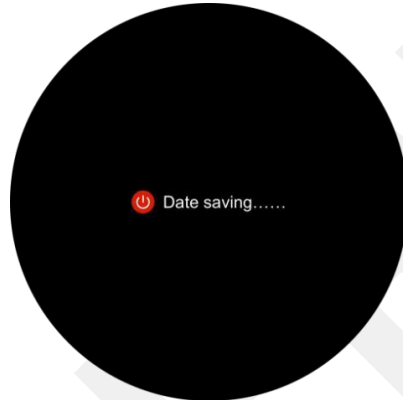
Adjust the clarity of the icons on the display by turning the diopter ring **eyepiece (2)**.

- Rotate the focus ring of **the lens (13)** to focus on the subject.
- **Image mode settings:** From the home screen, press the **Image Mode button (6)** to set the image mode, whose options include: warm-white, warm-black, pseudo-color, warm-red, target highlight.
- **To adjust the brightness of the display, press the Display Brightness button (4)** on the home screen to adjust the brightness of the display from level 1 to 5.
- **Laser rangefinder settings:** see **Laser rangefinder for details**.
- From the home screen, short or long press the **rotary pushbutton (7)** to enter the local menu or the main menu for multiple function operations.

- From the home screen, press the **power button (5)** to calibrate the image. Cover the lens cap **(14)** when calibrating the background. Set the calibration mode in the main menu.



- After use, press the **power button (5)** for 3 s to enter the shutdown interface. When the countdown icon changes from 3 s to 0 s, the device turns off and releases the button.



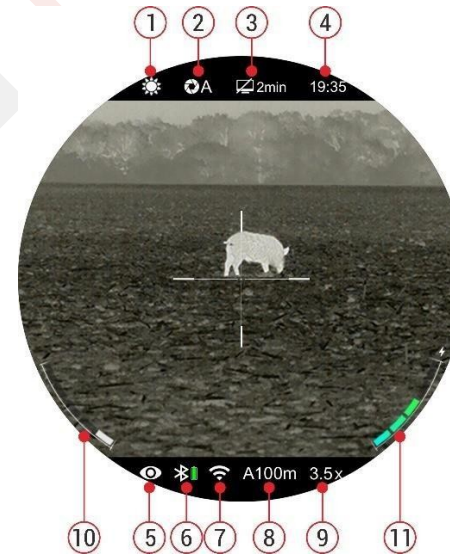
You will then be prompted

Data Storage interface. After saving the data, the display turns black and the device turns off. **Do not disconnect the device from the power source when the device turns off and saves the data.**

- Otherwise, the data cannot be saved.**

- Releasing the button during the countdown puts the device into standby mode. Press the **power button (5)** again to wake up the device.

10 Status bar

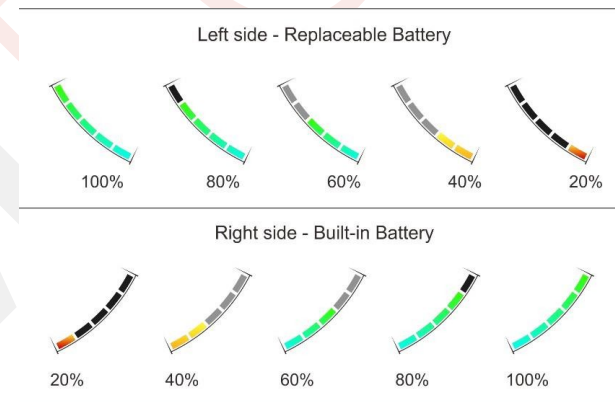


- The status bar is located at the top of the visual interface and displays information regarding the current operating status of the device. 1. Current picture mode (☀️ : warm white; 🌙 : Warm

Black; 🔥 :warm red; 🎯 : target highlight; 🌈 : pseudo-color)

- Current image calibration mode (A is auto calibration mode; M is manual calibration mode; B is background calibration mode. The lens must be covered during background calibration)
- Standby status and time (off by default)
- Clock (set it in the main menu or synchronise the time in the InfiRay app)
- Ultra-bright mode status: (🚫 : Ultra-bright mode is off; 👁 : Ultra-bright mode is on)
- Bluetooth status (🚫 : Bluetooth is off. 📶 : Bluetooth is on but has not been successfully connected to the module
laser rangefinder. 📶🔋 : Bluetooth is turned on and successfully connected to the laser rangefinder module; 🔋 : Power status of the laser rangefinder module)
- Wi-Fi status (🚫 : Wi-Fi off; 📶 : Wi-Fi on)
- Currently selected rifle and zeroing distance (Rifles to be selected: A, B, C; zeroing distance: 1~999m, customized; e.g. A100m)

- Actual visual magnification (TH35 V2: 2.5× to 10.0× adjustable, TH50 V2: 3.5× to 14.0× adjustable)
- Replaceable battery power status (18500 battery)
- Built-in battery power status.



11 Resetting

The TUBE TH35 V2 / TH50 V2 uses the "freeze" zeroing method. It is better to perform zeroing in environments within the operating temperature range of the device.

- Mount the thermal imaging camera on the weapon as instructed in **Section 9 Mounting on the weapon.**

- When using the thermal imager for the first time, press and hold the **camera button (3) + display brightness button (4)** for more than 15 seconds to activate the hidden crosshair and related functions.
- Select a target at a certain distance, for example 100 m, 200 m.
Adjust the distance according to **Section 9 - Switching on and adjusting the image.**
- Select the zeroing profile (see "**Main menu - Rifle selection**").
- Press and hold the **rotary pushbutton (7)** to enter the main menu function.
- **Turn the rotary pushbutton (7) to select Reset Zeroing Distance** (🎯). Press the **rotary pushbutton (7)** briefly to enter the submenu.
- Select or add a new reset distance according to the preset target distance (see "**Main menu - Reset reset distance**").
- After selecting the reset distance, turn the rotary pushbutton (7) to select the reset function (↺), press the **rotary pushbutton (7)** to enter the reset interface.

The coordinate positions of the intentional cross (X-axis and Y-axis) are displayed at the bottom of the screen.

- Aim and shoot at the target.
- Keep track of the location of the actual hit point.



Assume that the red **x** mark in the figure on the right is the position of the hit point (**This mark is for illustration purposes only. In reality, it should be a bullet hole.**)

- If the point of impact does not correspond to the aiming point (centre of the sight), keep the aiming position stationary and then simultaneously press and hold the **image mode button (6) + the Photos (3)** until a snow-like freeze icon appears at the bottom of the screen and the image freezes❄️.



- **Turn the rotary pushbutton (7)** to move the sight until the sight coincides with the point of impact. Turn clockwise to move the sight left or down and turn counterclockwise to move the sight right or up.
- Press the **rotary pushbutton (7)** briefly to switch the direction of movement between the X and Y coordinates. The background of the selected item will be highlighted in green.
- After moving the sight, a small white dot appears on the screen to indicate the position of the crosshairs before moving.
- When moving the sight to the actual hit point, press and hold **the rotary pushbutton (7)** to save the current sight position and return to the home screen.
- Repeat aiming and firing until the position of the point of impact is the same as the position of the aiming point.

Note: After setting the zeroing position, you can toggle this option via the **zeroing distance** in the local menu.

12 Calibration

When the image is degraded or uneven, it can be improved by calibration. Calibration can equalize the background temperature of the detector and eliminate image defects (such as vertical bars, phantom images, etc.).

There are three calibration modes: automatic calibration (A), manual calibration (M) and background calibration (B).

- Select the desired calibration mode in the main menu.
- **Automatic calibration (A):** the device is automatically calibrated according to a software algorithm. There is no need to close the lens hood (the internal shutter covers the sensor). Before automatic calibration, a 5 second countdown prompt appears behind the shutter icon on the status bar, which can be cancelled during the countdown by briefly pressing the **power button (5)**. In this mode, the user can also complete the calibration manually by briefly pressing the **power button (5)**.

- **Manual Calibration (M):** Press the **power button (5)** briefly on the home screen to manually calibrate the shutter without closing the lens cover (the internal shutter covers the sensor).
- **Background Calibration (B):** Press the **power button (5)** on the home screen and the display will prompt "Cover lens during calibration". Cover the lens cover, background calibration will be performed after 2 s. After calibration, remove the lens cover.

13 Digital zoom

The TUBE TH35 V2 / TH50 V2 thermal imaging camera supports image magnification of 1 to 4 times for fast increase of base magnification.

1. On the home screen, turn the **rotary pushbutton (7)** to zoom in smoothly to the base zoom.
2. Turn clockwise to zoom in, counterclockwise to zoom out.
3. The magnification is shown in the status bar of the display in real time.

- TH35 V2 supports magnification from 2.5x to 10.0x, TH50 V2 supports magnification from 3.5x to 14.0x.


14 Photography/video recording

The TH35 V2 / TH50 V2 thermal imaging camera is equipped with 32 GB of built-in storage space that can be used for photography and video recording. The photo and video files will be named according to the time, so it is recommended to reset the system date and time in the main menu (see **Main Menu - Settings: Date/Time**) or synchronize the system date and time in the InfiRay Outdoor app before use.

Photography


- From the home screen, press the **camera button (3)** to take a photo.

freezes for 0.5 s,

The camera icon  will then appear in the top left corner.

- The photos are stored in the internal memory space.



- When the icon on the right side of the  The camera displays an exclamation mark icon, you will be prompted that there is insufficient memory space. Check and transfer your videos and pictures to other media to free up space.

Video recording

- From the home screen, press and hold the **Camera button (3)** to start recording video.

- A recording icon appears in the upper right corner of the display and a prompt window displays the recording time with the time format 00:00:00 (hour: minute: second).
- You can also take photos during recording by pressing **Camera buttons (3)**.
- Press and hold the **camera button (3)** again to stop recording the video and save it.
- All videos and photos will be stored in the device's memory.



Note

- You can also open and control the menu during video recording.
- Captured images and recorded videos are stored in the built-in memory space in the IMG_HHMMSS_XXX.jpg (image) and VID_HHMMSS_XXX.mp4 (video) format, where HHMMSS indicates hour/minute/second and XXX indicates the 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 the other file.
- The maximum file duration for video recording is 5 minutes. If the duration is longer than 5 minutes, the video is automatically recorded to a new file.
- The number of files is limited by the internal memory space of the device. Check the remaining space regularly and transfer

videos and pictures to other media to free up space on the memory card.

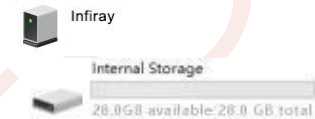
- In recorded videos and photos, only the intentional cross is displayed; graphical data (status bar, icons and menus) are not displayed.
- We are currently working on something that can display GUI information on recorded videos and photos, which can be implemented in the future by updating the program.

Memory access

When the device is turned on and connected to the computer, the computer recognizes it as a Flash memory card. You can then access the device's memory and copy pictures and videos.

- Connect the device to your computer using a USB cable;
- Switch on the device.

- Double-click the This Computer icon, double-click to open the device named "Infiray", double-click to open the repository.



- There are different folders in the memory named according to time in the format xxxx (year), xx (month), xx (day).
- The photos and videos recorded on a given day are saved in folders. Select the desired files or folders to copy or delete.

15 PIP function

PIP (picture-in-picture) provides another floating window independent of the full screen. This window displays a portion of the image that is enlarged to 2x in a specific area centered on the intentional cross of the main image.



- From the home screen, press and hold **Picture mode (6)** and turn on the PIP function.
- A separate "window" appears at the top of the display at the same time as the main image.
- When you turn **the rotary pushbutton (7)** to enlarge the main image, the image displayed in the PIP window will also be enlarged 2 times, synchronously.

- Press and hold the **Picture Mode button (6)** to turn off the PIP function.

16 Rangefinder functions

The TH35 V2 / TH50 V2 thermal imaging camera is equipped with a stadiametric rangefinder function and also supports an external laser rangefinder module. The stadiametric rangefinder function will be temporarily deactivated if the thermal imaging camera is connected to the laser rangefinder module via Bluetooth.

Stadiametric rangefinder

The stadiametric rangefinder function is used to calculate the approximate distance of a target of known size.

- From the home screen, press and hold the **Display Brightness button (4)** to turn on the stadiametric rangefinder function.

- Then two horizontal measurement lines appear above and below the sight, and three icons of pre-configured objects and the measured distance values appear on the left side of the image.
- The three pre-defined target values are as follows:
 - **Deer:** height 1,7 m
 - **Wild boar:** height 0,9 m
 - **Hare:** height 0,2 m
- Place the target in the middle of the measuring lines.
- **Turn the dial (7) clockwise** to increase or counterclockwise to decrease (to decrease the width of the measuring lines so that the target is completely between the measuring lines).
- When adjusting the width of the measuring lines, the rangefinder values are automatically recalculated.
- The color and center position of the measuring line are synchronized with the color and position of the sight.

- To change the unit of measurement (metres or yards), please refer to **Main menu - Settings - Units of measurement** for modification.
- Press and hold the **display brightness button (4)** to exit this function.





Laser rangefinder (ILR-1200-1, sold separately)

The TH35 V2 / TH50 V2 supports an external laser rangefinder (ILR-1200-1) supplied separately.

For a detailed description of how to install and use the laser rangefinder module, refer to the laser rangefinder manual in the laser rangefinder package.

Compared to a stadiametric rangefinder, a laser rangefinder is more accurate without having to look for specific target objects.

- Press and hold the power button on the laser rangefinder module to turn on the laser rangefinder. The LED on the laser rangefinder module will flash.
- **Long press the rotary pushbutton (7)** to enter the main menu.
- Select **Bluetooth** and turn Bluetooth on.
- You need to select a laser rangefinder.
- After a successful connection, the Bluetooth icon   will also appear in the status bar next to the battery icon, indicating that the thermal imager is successfully connected to the laser rangefinder module.
- After successfully connecting the laser rangefinder module, press and hold the **display brightness button (4)** for 3 seconds to turn the laser indicator on the laser rangefinder module on/off.
- There are two distance measurement modes to choose from: continuous (CON) and simple (SGL).
- The default distance measurement mode is continuous mode. Briefly press the **Image Mode button (6) + the Display Brightness button (4)** at the same time to switch the distance measurement mode.
- In continuous measurement mode, the measurement is real-time and automatic without any operation.
- In single measurement mode, press the **power button (5)** briefly to perform the measurement operation.
- The measurement mode and distance value are displayed in the top right corner of the screen.

- If the distance value is MAX, it means that the target distance has exceeded the maximum distance (999 m) of the laser rangefinder.
- Switch the unit of measurement according to the **main menu - Settings - Units of measurement**.
- During continuous measurement, other functions such as taking photos and recording videos are not affected.
- When the laser rangefinder module is mounted on the thermal imager and successfully connected via



Bluetooth, the laser rangefinder replaces the stadiametric rangefinder.

17 Local offer

Basic settings, including sight style, sight colour, image sharpness and zero distance, can be quickly reset in the local menu.

- From the home screen, press the **rotary pushbutton (7)** to go to the local menu interface.
- Turn the **rotary pushbutton (7)** to switch between the following function options and the selected option will be highlighted in the background.



- **Sight style** (☯):
 - Turn the **rotary pushbutton (7)** to select the sight style and press the **rotary pushbutton (7)** to switch between 6 different styles.
- **Sight colour** (☯): Turn the **dial (7)** to select your preferred option, press the

of the rotary pushbutton (7), adjust the colours in the following order: white, black, red and green.



- **Image sharpness** (▲): Turn the **rotary pushbutton (7)** to select the desired option and press the **rotary pushbutton (7)** to adjust the sharpness of the image from level 1 to level 5.
- **Zero distance** (☯): Turn the **dial (7)** to select the preferred option, press the **rotary pushbutton (7)** to toggle the zeroing distance stored for the currently selected rifle (e.g. when selecting the option for type A rifle, only the distance values stored for type A will be available).
- Press and hold the **controller button (7)** or press the **power button (5)** to save your changes and return to the home screen.
- If there is no operation in the local menu within 5 seconds, the device automatically saves the changes and returns to the home screen.

18 Main offer

- From the home screen, press and hold the **rotary pushbutton (7)** to enter the main menu interface.
- **Turn the rotary pushbutton (7)** to toggle the function options - clockwise for downward movement and counterclockwise for upward movement.
- **Press the rotary pushbutton (7)** to adjust the parameters of the current option or enter the submenu.
- The icon for the selected option will change from white to green.
- The operations for the sub-bids are the same as above.
- In any menu interface, press and hold the **rotary pushbutton (7)** to save changes and return to the home screen, **otherwise** press the **power button (5)** to return to the top menu without saving the change.
- If no operation is performed on any menu interface within 15 seconds, you will automatically return to the home screen without saving.
- In continuous operation, when leaving the main menu, the selected option remains in the position before termination (i.e. until the thermovision is switched off). When restarting the thermal imager and entering the main menu for the first time, the cursor will remain at the first menu item (Ultra-bright mode).



Functions and description of the main menu

<p>Ultra-bright mode</p> 	<p>Turning Ultra-Clear mode on/off</p> <ul style="list-style-type: none"> • Press and hold the rotary pushbutton (7) to enter the main menu interface. • Select the "Ultra-Clear Mode" option (selected by default in the start-up menu). • Press the rotary pushbutton (7) to turn Ultra-bright mode on/off, during which you will hear the shutter calibration click. • When the function is switched on/off, the icon in the status bar will change accordingly.
<p>Wi-Fi</p> 	<p>To turn Wi-Fi on/off</p> <ul style="list-style-type: none"> • Press and hold the rotary pushbutton (7) to enter the main menu interface. • Turn the rotary pushbutton (7) to select the Wi-Fi function. • Press the rotary pushbutton (7) to switch the Wi-Fi function on/off. • When Wi-Fi is turned on, you will be prompted to enter your default password for 3 seconds after the Wi-Fi icon. • The password will only be displayed for the first three attempts. After changing the password, it will no longer be displayed. • When the function is switched on/off, the icon in the status bar will change accordingly.




Input to LRF interface

- Press and hold the **rotary pushbutton (7)** to enter the main menu interface.
- Turn the **rotary pushbutton (7)** to select Bluetooth.
- **Press the rotary pushbutton (7)** to open the Bluetooth secondary menu.
- **Turn the rotary pushbutton (7)** to select on/off, press the **rotary pushbutton (7)** turn Bluetooth on/off.
- When the function is switched on/off, the icon in the status bar will change accordingly.

LRF activation

- If only one LRF is available, the LRF and the unit can automatically connect without binding.
- If there are multiple LRFs in the vicinity, you must tie one LRF to the device.





Binding LRF

- A short press on the search icon  will give you the SN LRF number. Turn the **rotary pushbutton (7)** to select and press the **of the rotary pushbutton (7)** to confirm that the selection needs to be bound.



Bluetooth



	<ul style="list-style-type: none"> • The SN binding number will be displayed to the right of on/off. • The LRF automatically connects to the unit each time it is started. <p>LRF removal</p> <ul style="list-style-type: none"> • Rotate the rotary pushbutton (7) to select remove, press the rotary pushbutton (7) to remove the current binding, then you can bind the others.
<p>Motion sensor</p> 	<p>Turn the motion sensor function on/off</p> <ul style="list-style-type: none"> • Press and hold the rotary pushbutton (7) to enter the main menu interface. • Turn the rotary pushbutton (7) to select Motion sensor. • Press the rotary pushbutton (7) to switch the motion sensor function on/off. • When the motion sensor is on, two scales appear on the right side of the display. • The horizontal scale represents the tilt angle and the vertical scale represents the pitch angle. 
<p>Compass</p> 	<p>Switching the digital compass function on/off</p> <ul style="list-style-type: none"> • Press and hold the rotary pushbutton (7) to enter the main menu interface. • Turn the rotary pushbutton (7) to select Compass. • Press the rotary pushbutton (7) to switch the compass function on/off. • If the compass is on, it will be displayed in the top centre of the screen. 

If the target position pointed by the laser pointer is not aligned with the center of the rangefinder cursor on the screen, the laser rangefinder cursor position needs to be calibrated with this function (laser rangefinder module required).

Install the laser rangefinder module to the thermal imaging camera

- Enable the Bluetooth function in the main menu to connect the laser rangefinder module to the riflescope via Bluetooth.
- Press and hold the **brightness button (4)** to turn on the laser indicator on the laser rangefinder module.
- Press and hold the **rotary pushbutton (7)** to enter the main menu interface.
- Turn the **rotary pushbutton (7)** to select "**Laser Calibration**".
- Press the **rotary pushbutton (7)** to enter the laser calibration interface.
- The screen will display the sight, and the top left corner will display information as shown below:
 1. X is the X axis (horizontal)
 2. Y is the Y axis (vertical)
 3. "Center" means - return the cursor to the center of the screen.
- Assume that the red "x" in the figure represents the target position targeted by the laser pointer (actually shown as a red dot).
- **Press the rotary pushbutton (7) briefly to select X, Y or Center.**
- If X or Y is selected, turn the **rotary pushbutton (7)** and move the laser cursor until the center of the laser pointer is aligned with the red "x" (the position at which the laser pointer is pointing). Rotate in the direction of



Laser calibration ●



Clockwise to move left/down, counterclockwise to move right/up.

- If "Center" is selected, briefly press the **power button (5)** to center the laser cursor on the screen.
- If X or Y is selected, a short press of the **power button (5)** will end the laser calibration without saving.
- After calibration, press and hold the **controls (7)**, then save and return to the home screen.

Zeroing selection

- Press and hold the **rotary pushbutton (7)** to enter the main menu interface.
- Turn the **rotary pushbutton (7)** to select "Zeroing profile".
- Press the **rotary pushbutton (7)** to open the **Reset Profile** secondary menu.
- Turn the **rotary pushbutton (7)** to select one of the three rifles (A, B, C).
- Press the **rotary pushbutton (7)** to confirm the selection and return to the main menu.
- The name of the selected profile appears in the status bar at the top of the display.

Zeroing profile



Resetting



Before performing any zeroing operation, select the zeroing profile and set the zeroing distance. The TUBE TH35 V2 / TH50 V2 supports any zeroing distance from 1 to 999 meters.

- Press and hold the **rotary pushbutton (7)** to enter the main menu interface.
- Turn the **rotary pushbutton (7)** to select "Reset Zeroing Distance".
- **Press the rotary pushbutton (7)** to enter the **Reset Zero Distance** secondary menu where the zero distances are currently displayed.
- Turn the **rotary pushbutton (7)** to select one zero distance based on the preset target distance.
- Press the **rotary pushbutton (7)**, confirm the reset distance and enter the reset distance submenu, including the two options below, i.e. **Reset** and **Reset reset distance**.

If the preset zeroing distance is consistent with the distance displayed on the device, you can perform the zeroing directly as shown below:

- Turn the **rotary pushbutton (7)** to select "Zeroing".
- **Press the rotary pushbutton (7)** to enter the zeroing interface.
- The X and Y coordinates of the intentional cross are shown at the bottom screens.
- Aim the centre of the thermal imaging sight at a given point on the target distance, fire, and then track the location of the actual point of impact.



Resetting



**Resetting
the reset
distance**

If the reset distance is not consistent with the preset target distance, this option can be used to reset the distance.

- Select an invalid reset distance, press briefly **the rotary pushbutton (7)** to enter its submenu.
- Turn the **rotary pushbutton (7)** to **select Reset reset distance**.
- **Press the rotary pushbutton (7)** to activate the reset function of the reset distance, then two numbers will appear above and below the number 0, with small triangle symbols ▲ and ▼.
- **Turn the rotary pushbutton (7)** to set the numeric value of the current position, which can be switched between 0 and 9.
- **Press the rotary pushbutton (7)** to switch between the hundreds, tens and units positions.
- After setting, press and hold the **rotary pushbutton (7)** to save the settings and exit. In the meantime, the reset distance is changed accordingly.
- In addition, the status bar is synchronously updated to the new reset distance.



Select calibration mode

There are three calibration modes: automatic calibration (A), manual calibration (M) and background calibration.

- Press and hold the **rotary pushbutton (7)** to enter the main menu interface.
- Turn the **rotary pushbutton (7)** to select **Calibration**.
- Press the **rotary pushbutton (7)** to open the secondary menu **Calibration**.
- Turn the **rotary pushbutton (7)** to select one of the following options:
 1. **Auto Calibration:** defined by software algorithms, images are calibrated automatically in this mode.
 2. **Manual calibration:** images are calibrated by the user according to the image effect.
 3. **Background calibration:** the camera must be covered by the lens hood in this mode.
- Press the **rotary pushbutton (7)** to confirm the selection. The icon in the status bar will change accordingly.



Calibration



Setting the standby time and time

- Press and hold the **rotary pushbutton (7)** to enter the main menu interface.
- Turn the **rotary pushbutton (7)** to select "**Standby Settings**".
- **Press the rotary pushbutton (7)** to enter the **Standby Settings** submenu, including four choices: *2 min, 4 min, 6 min and OFF*.
- Turn the **rotary pushbutton (7)** to select an option, then press the **rotary pushbutton (7)** to confirm the selection.
- The selected option is displayed in the top status bar.
- If OFF is selected, the standby function is now disabled.



Remark:

- Standby mode is activated automatically when the device is tilted up or down at an angle greater than 70°, and to the left or right at an angle greater than 30°.
- When the device is in an active state, standby mode is deactivated.

Setting the standby mode



Defective pixel correction



When using thermal imaging, you can see pixel defects such as visible light spots or dark spots with stable brightness. To resolve this issue, use the Defective Pixel Correction feature to remove these defects.

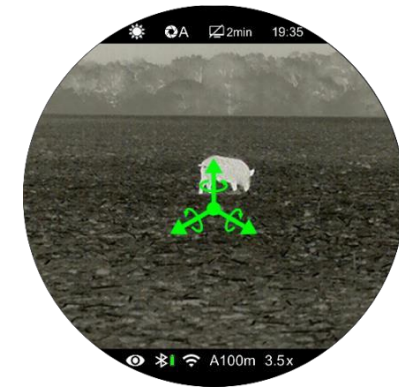
- Press and hold the **rotary pushbutton (7)** to enter the main menu interface.
- Turn the **rotary pushbutton (7)** to select "**Pixel Defect Correction**".
- Press the **rotary pushbutton (7)** to enter the **Defective Pixel Correction** interface.
- The PIP feature is automatically turned on and appears at the bottom of the screen by default. The movement directions (X-axis and Y-axis) and the number of corrected pixels are displayed at the top of the screen.
- In the defective pixel correction interface, there is a small cross cursor instead of a deliberate cross.
- Rotate the **rotary pushbutton (7)** in the selected direction, clockwise
Clockwise to move left or down, counterclockwise to move right or up.
- Press the **rotary pushbutton (7)** to save the motion data and switch the direction of motion between the X-axis and the Y-axis.
- When the cursor moves to the position of the faulty pixel, press the **power button (7)** to add and correct. At the same time, the word **Add** flashes in the PIP window - the faulty pixel will be corrected.
- At the same position, press the **power button (7)** again to undo the defective pixel correction and the word **Del** will flash in the PIP window.



- Repeat the above steps to complete the repair of additional defective pixels.
- Each time you add or remove a defective pixel, the number of defective pixels changes accordingly.
- When the cursor approaches the PIP window, the PIP window automatically moves up.
- After making the correction, press and hold the **controller button (7)** until the prompt "**Do you want to keep these settings?**" appears. (Do you want to keep these settings?).
- **Turn the rotary pushbutton (7)** and select "**Yes**" to save and exit, or select "**No**" to cancel saving and exit.
- **Press the rotary pushbutton (7) briefly** to confirm the selection.
- If "**Yes**" is selected, the screen will display a **5-second save countdown**. After the successful save information is displayed, the home page will open.


Digital compass calibration



- Press and hold the **rotary pushbutton (7)** to enter the main menu interface.
- Turn the **rotary pushbutton (7)** to select "**Compass Calibration**".
- **Press the rotary pushbutton (7)** to enter the **Compass Calibration** interface.
- An icon similar to the three-axis coordinate system will appear on the screen.
- Within 15 seconds, rotate the probe along the three axes marked with an icon, with each axis rotating at least 360°.
- After 15 s the calibration is automatically completed, exit the home screen.



Calibrating the compass



<p>Settings</p> 	<p>This function is used to set the date, time, language, unit of measure, automatic status hiding, factory reset, and display device information.</p> <ul style="list-style-type: none"> ● Press and hold the rotary pushbutton (7) to enter the main menu interface. ● Turn the rotary pushbutton (7) to select "Settings". ● Press the rotary pushbutton (7) briefly to enter the submenu. ● This menu item allows you to configure the following settings:
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<p>Date</p> 	<p>Set system date</p> <ul style="list-style-type: none"> ● Turn the rotary pushbutton (7) to select "Date". ● The date is displayed in yyyy/mm/dd format. ● Press the rotary pushbutton (7) to activate the date reset function. ● Two small triangle symbols are shown above and below the year number by default. ● Press the rotary pushbutton (7) to switch the year, month and date. ● Turn the rotary pushbutton (7) to set the desired number. ● After setting, press and hold the rotary pushbutton (7) to save and exit the date reset function. 	
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Time




Setting the system time

- Turn the **rotary pushbutton (7)** to select "Time".
- The time is displayed in 24-hour format as hour: minute.
- Press the **rotary pushbutton (7)** to activate the time reset function.
- Two small triangle symbols are shown above and below the "Hour" number by default.
- Turn the **rotary pushbutton (7)** to set the desired number.
- Press the **rotary pushbutton (7)** to switch between hour and minute.
- After setting, press and hold the **rotary pushbutton (7)** to save the changes and exit the time reset function.
- After resetting, the time displayed in the status bar will be updated accordingly.



<p style="text-align: center;">Language</p> 	<p>Setting the system language</p> <ul style="list-style-type: none"> ● Turn the rotary pushbutton (7) to select "Language". ● Press the rotary pushbutton (7) to go to the Language submenu. ● Turn the rotary pushbutton (7) to switch between English, Russian and German. ● Press the rotary pushbutton (7) to confirm the selection and the system language will change automatically. 	
<p style="text-align: center;">Units of measurement</p> 	<p>Unit of measure settings</p> <ul style="list-style-type: none"> ● Turn the rotary pushbutton (7) to select "Units of Measure". ● Press the rotary pushbutton (7) to enter the Units of Measurement submenu. ● Turn the rotary pushbutton (7) to switch between metres and yards ● Press the rotary pushbutton (7) to confirm the selection and enter the upper menu interface. 	

<p>Automatically hide the status bar</p> 	<ul style="list-style-type: none"> ● Turn the automatic status bar hiding feature on/off ● Turn the rotary pushbutton (7) to select "Status Bar Auto Hiding". ● Press the rotary pushbutton (7) to open the Auto Hide Status Bar submenu. ● Turn the rotary pushbutton (7) to select "Show" or "Hide". ● Press the rotary pushbutton (7) to confirm the selection and return to the top menu interface. 
<p>Image shade</p> 	<p>Setting the image tint</p> <ul style="list-style-type: none"> ● Turn the rotary pushbutton (7) to select "Image Hue". ● Press the rotary pushbutton (7) to enter the Image Shade submenu. ● Turn the rotary pushbutton (7) to switch between warm and a cool shade. ● Press the rotary pushbutton (7) to confirm your selection and exit the top menu interface. 

<p style="text-align: center;">Restore factory settings</p> 	<p>Restore factory settings</p> <ul style="list-style-type: none"> ● Turn the rotary pushbutton (7) to select "Factory Reset". ● Press the rotary pushbutton (7) to open the Factory Reset submenu. ● Turn the rotary pushbutton (7) and select "Yes" to restore the factory settings or "No" to cancel operations. ● Press the rotary pushbutton (7) to confirm the selection. ● If Yes is selected, the thermal imaging system will automatically restart. ● If No is selected, you will automatically return to the main menu. The following functions will be restored to factory settings as follows: 	
	<ul style="list-style-type: none"> - Picture mode: warm white - Zeroing distance: A100 - Ultra-bright mode: Off - Magnification: 2.5×/3.5× 	<ul style="list-style-type: none"> - Shutter calibration mode: A - Compass: off - Standby mode: Off - Wi-Fi: Off - Motion sensor: off - Language: English - Unit of measure: Metre - Automatic status hiding: Off

Information



View information about the device

- Turn the **rotary pushbutton (7)** to select "Info".
- **Press the rotary pushbutton (7)** to display system information about the thermal imager, including the product model, the graphic version user interface, SYS information, boot version, FPGA, PN and SN number of thermovision, hardware version.
- Press and hold the **rotary pushbutton (7)** to exit the submenu and return to the main menu.



19 Automatic state hiding

This feature is used to automatically hide the GUI and display the intentional cross only so that the image is not obscured.

- Press and hold the **rotary pushbutton (7)** to enter the main menu on the home screen.
- Turn the **rotary pushbutton (7)** to select "**Settings**".
- Press the **rotary pushbutton (7)** to enter the submenu **Settings**, turn the **rotary pushbutton (7)** to select "**Status Auto Hiding**".
- Press the **rotary pushbutton (7)** to scroll to the **Auto Status Hide** submenu, then select "**On**".
- Press the **rotary pushbutton (7)** to activate automatic status hiding.
- When automatic status hiding is turned on, all GUI icons, including the status bar, are automatically hidden if after

no operation occurs for 8 s, only the image and the sight are displayed.

- The GUI is redisplayed by pressing any button.
- Only after the graphical user interface is displayed can the buttons and menus be manipulated.

20 Wi-Fi


The Tube TH35 V2 / TH50 V2 has a built-in Wi-Fi module and can connect wirelessly to a mobile device (laptop or mobile phone) via Wi-Fi.

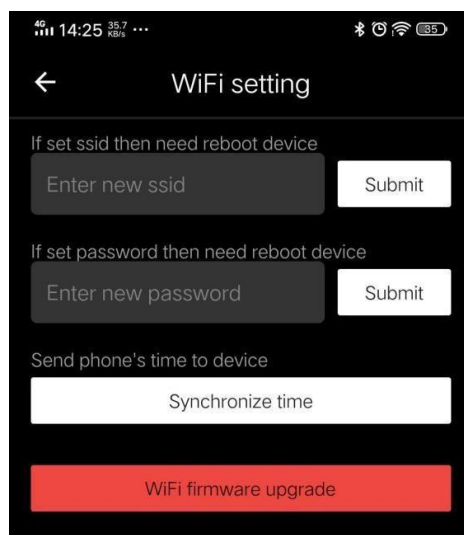
- Switch on the Wi-Fi function in the main menu (see **Main menu - Wi-Fi** for details).
- After turning on the Wi-Fi function, look for a Wi-Fi signal on the mobile device called "TUBE_XXXXXX", XXXXXX is a 6-bit serial number code consisting of numbers and letters.
- Select Wi-Fi and enter your password to connect. The initial password is 12345678.

- Once Wi-Fi is successfully connected, it supports control of the device content via the **InfiRay Outdoor** app downloaded on the mobile device.

To set a Wi-Fi name and password

The Wi-Fi device name and password can be reset in the **InfiRay Outdoor App**.

- Once your device is connected to your mobile device, search for and click **"Settings"** icon , then go to **InfiRay Outdoor**, then go to the settings interface.



- Enter and submit a new Wi-Fi name (SSID) and password in the text box.
- The device must be rebooted to take over the password and name.

Note: If the device is reset to factory settings, the Wi-Fi name and password will also be reset to the default settings.

21 Updating the InfiRay Outdoor app

The Tube TH35 V2 / TH50 V2 supports **InfiRay Outdoor** technology, which allows you to transmit images to your smartphone or tablet via Wi-Fi in real-time.

The InfiRay Outdoor User Guide is available for download on our official website (www.infirayoutdoor.com).

Continuous improvements will be made to improve the user experience. The latest programs can be automatically detected and updated using the InfiRay Outdoor app. It can also be downloaded and updated from the official website: www.infirayoutdoor.com.

About InfiRay Outdoor

- The InfiRay Outdoor app can be downloaded and installed via the official website (www.infirayoutdoor.com) or in the app store. Alternatively, you can scan the QR code below to download the app for free.



- After installation, open the InfiRay Outdoor app.
- If your device has been connected to a mobile device, turn on mobile data on the mobile device. Once connected, the app will automatically prompt you to update. Click on the "Now" to immediately download the latest version or "**Later**" to update later. InfiRay Outdoor automatically registers the last connected device. Therefore, as soon as you connect to InfiRay Outdoor earlier, it will automatically

detect the update even if the device is not connected to a mobile device.

- If an update is available and your mobile device has internet access, you can download the update. Once the device is connected to the mobile device, it will be updated automatically.
- After the update is installed, the device automatically restarts.

22 Technical inspection

Before using the equipment, perform a technical inspection and check the following items:

- Outside of the device (no crack on the cover);
- Lens and eyepiece (no cracks, oil, stains or other deposits);
- Rechargeable battery status (pre-charged) and electrical contact (no salting or oxidation).

23 Maintenance

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

- Using a cotton cloth, wipe the surface of metal and plastic parts to remove dust and dirt. Silicone lubricant can be used for the cleaning process.
- Clean the electrical contacts and battery slots on the device with a non-greasy organic solvent.

- Check the glass surface of the eyepiece and lens. In case of remove dust and sand on the lens (it is ideal to use the non-contact method). Use a special wiper tool and solvent to clean the optical surfaces.

24 Troubleshooting

The following table lists all the problems that may occur during operation of the device. Check and solve the problems by referring to the following table:

Failure	Possible causes	Solution
Thermal imaging cannot be started.	The battery's dead.	Charge the battery.
The device cannot be powered using an external power supply.	The USB cable is damaged.	Replace the USB cable.
	External power supply is insufficient.	If necessary, check the external power supply.
The image is unclear, vertical lines are present in the image or the background is not even.	Calibration is required.	Calibrate the image according to the instructions in Chapter XIV of the User's Guide.
The picture is too dark.	The screen is not bright enough.	Adjust the brightness of the display.
The icons are clear, but the image is blurry.	The lens is out of focus.	Rotate the focus ring of the lens to focus the image.
	The inner or outer optical surface of the lens is dusty or frozen.	Wipe the outer optical surface with a soft cotton cloth or allow the thermal imaging camera to dry in a warm, dry environment for more than 4 hours.
The position of the aiming cross shifts after firing.	The thermowell or clamp is not mounted tightly.	<p>Check that the probe is firmly mounted. Ensure that the type of bullet and calibre you are using is the same as the function used for zeroing.</p> <p>If you did the zeroing in the summer but use the thermal imaging in the winter (or vice versa), the zero point may have changed slightly.</p>

<p>The rifle scope cannot be focused.</p>	<p>Configuration error.</p>	<p>Set up the thermowell according to Section VII - Installation and Use. Check the outer surface of the lens and eyepiece, if wipe off any dust and frost. In cold weather, a special antifogging a coating (e.g. the film used on glasses or car rear-view mirrors).</p>
<p>Facilities cannot connect to a mobile phone or computer.</p>	<p>The Wi-Fi password is incorrect.</p>	<p>Enter the correct password.</p>
	<p>There are too many Wi-Fi networks within range of the device, which can cause interference with each other signal.</p>	<p>To enable stable network access, we recommend moving your device to an area with a limited number of Wi-Fi networks or an area without Wi-Fi coverage.</p>
<p>Wi-Fi signals are lost or interrupted.</p>	<p>The device is outside Wi-Fi coverage. There is a blockage between the device and the receiver (for example, concrete walls).</p>	<p>Move your device to a location where you can receive Wi-Fi signals.</p>
<p>The observed target will disappear.</p>	<p>You're looking at the target through the glass.</p>	<p>Observe the target directly without the presence of glass.</p>
<p>Quality image quality is poor or the detection range is shortened.</p>	<p>These problems are likely to occur when you use the device in harsh weather (e.g. snow, rain, fog).</p>	

<p>If the device is used at low temperature, the image quality is worse than at normal temperature.</p>	<p>At temperatures above 0 °C, the temperature rise varies depending on the observed objects (environment and background) due to different thermal conductivity coefficients. As a result, the contrast with high temperature is better and the image quality is better.</p> <p>At low temperatures, the observed targets (background) usually cool to a similar temperature due to reduced temperature contrast. Therefore, image quality (especially detail) is poor, but this is a characteristic of thermal imaging equipment.</p>
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THE THERMAL

23 Legal and regulatory information

Frequency range of the wireless transmitter module:

WLAN: 2.400-2.500GHz (for EU)

Wireless transmitter module power: <20 dBm (EU only).

CE InfiRay Technology Co., Ltd. hereby declares that
theTube SE series equipment complies with Directives
2014/53/EU and 2011/65/EU.
and other information is available at:
www.infirayoutdoor.com.

UK
CA This equipment can be operated in all EU Member
States.

FCC Statement

FCC ID: 2AYGT-2D00

Conditions for FCC designation

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

Information for users

Any changes or modifications not expressly approved by the party responsible for authorizing them may void the user's authority to operate the equipment.

Note: The manufacturer is not responsible for any interference to the radio or TV caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to use the equipment.

Note: This device has been tested and found to be compliant with limitations for Class B digital devices under Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a domestic installation. This equipment may radiate radio frequency energy when in use and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that such interference will not occur in a particular installation. If this equipment causes harmful interference to radio or television reception, which can be detected by turning the equipment off and on, the user is advised to attempt to correct the interference by one or more of the following measures:

- Change the orientation or location of the receiving antenna.
- Increase the distance between the device and the specific receiver.
- Connect the device to an outlet on a different circuit than the one to which the receiver is connected.
- Ask your dealer or an experienced radio/TV technician for help.

This equipment complies with the FCC radio frequency exposure limits for uncontrolled environments.

Wearing on the body

This device has been tested for typical human body functions. A minimum distance of 0.5 cm must be maintained between the user's body (and the handset), including the antenna, to meet RF exposure requirements. Belt buckles, holsters and similar accessories used with this device should be free of metallic components. Accessories that do not meet these requirements may not meet RF exposure requirements and should be avoided.

Use only the supplied or approved antenna.