Feyachi®

TH-35

Infrared Thermal Imager

User Manual

PREFACE

The purpose of this section is to ensure that the user can use the product correctly to avoid danger or property loss during operation. Before using this product, please read the product manual carefully and keep it properly for future reference.

This manual is applicable to infrared thermal imager, and introduces the specific use of equipment.

Notes for safe use ⚠

During the installation and use of the equipment, the national or regional electrical safety regulations must be strictly observed.

Use the power adapter provided by the original manufacturer, it is recommended to equip each equipment with an independent power adapter (exceeding the adapter load may produce excessive heat or cause fire).

If the equipment has smoke, odor or noise, please disconnect the power supply immediately and contact the dealer or service center promptly.

Do not place the battery near the heat source to avoid direct sunlight.

Built-in removable battery, please use the correct specifications battery, improper use may cause explosion risk. After the battery is installed or removed, the battery compartment should be securely closed.

Do not place the battery within the reach of the children.

CAUTION ⚠

Please avoid falling on the equipment or subjecting it to vigorous vibration to keep the equipment away from the site with magnetic field interference.

Avoid installing equipment where the surface vibrates or is vulnerable to impact (ignoring this may result in equipment damage).

Do not use the product in extremely hot or extremely cold, dusty, corrosive, high saline or high humidity environment. See the specific temperature and humidity requirements.

Do not focus the lens on high temperature targets such as strong light sources like the sun and incandescent lamp, which will cause damage to the lens or thermal imaging detector.

When not using the equipment, cover the lens protection cover to protect the image sensor.

The equipment should be stored in a dry environment without corrosive gas to avoid storing it near direct sunlight, poor ventilation or heat sources (such as heater, heating), etc. Ignoring this may lead to fire hazard.

Long-term storage equipment shall be checked once every six months, and the power-on time shall not be less than 3h.

When cleaning the lens, wipe the surface with dry soft cotton cloth or lens wipe paper to avoid hard scratches.

Please keep all the original packaging materials of the equipment properly, so that if problems occur, package the equipment well and send it to the service center. The Company shall not be liable for accidental damage during transportation caused by the original packaging materials.

Chapter 1 Product Presentation

1.1 Brief Description

The TH-35 infrared thermal imager is a lightweight, multifunctional infrared thermal imager. It employs a 12um 384 x 288 uncooled vanadium oxide detector and utilizes advanced blocking technology. It has the characteristics of high sensitivity, high refresh rate and high stability. At the same time, the low power consumption circuit design has been adopted to make the equipment standby time up to 12 hours. Is capable of all-weather full-scene imaging and investigation, used in nature observation, outdoor hunting, outdoor exploration, security and anti-theft, combat reconnaissance, night patrol and other occasions.

1.2 Major Function

- Ultra-long standby for 12h.
- Using the blocking technology.
- Anti-mistouch design.
- Multiple pseudo-color patterns
- Shooting table: rapid alignment of the target object in the scene.
- Picture-in-picture: capture the local image in the center of the scene, and enlarge and superimpose the local image on the main preview interface, so as to see the details of key images.
- Bad point correction: repair the image bad point and adjust the image display effect.

1.3 Product Appearance

The appearance and usage mode of the infrared thermal imager is described as follows:

1.4 Interface Specification

The device interface is shown in the following figure.

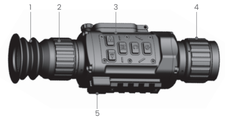


Figure 1-2 The infrared thermal imager interface

Order number	Interface	Interface Specification
1	Eyeshade	Prevent light leakage during observation.
2	Optometric regulation circle	Before using the equipment please adjust the vision, and turn the vision adjustment circle to adjust the focal length of the eyepiece to ensure the clear image of the equipment.
3	Keys area	Used for equipment switch machine control and function parameter setting.
4	Objective	The lens close to the side of the viewing target can adjust the hand wheel from the lens on the objective to make the image clear.
5	The Type-C interface	Connect the 5 V / 2 A external power supply to power the equipment. Through the USB cable, transfer to the CVBS terminal for display.

Chapter 2 Preparation Before Operation

Take out the equipment accessories and read the user manual carefully to understand the precautions and use methods of the equipment.

2.1 Equipment Startup

CAUTION ⚠

Do not open the lens cover during startup process, and then open the lens cover after the OSD message appears in the screen.

When the equipment has sufficient power, press the power button for 1 second and start the equipment.

The open interface LOGO is as follows:



【 Figure 2-1 The boot logo 】

NOTE

Before using the equipment at the first time,please perform visual adjustments prior to configuring the device's functions.

2.2 Device Shutdown

In the boot state, short press the button for 1 second, and the device is shut down.

2.3 Adjust the Horizon

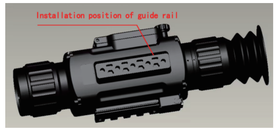
Open the lens cover, hold the device or secure the device, observe the image close to the eye patch, and adjust until the image is clear.



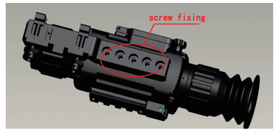
【 Figure 2-2, Vision regulation 】

2.4 Installation steps for guide rails

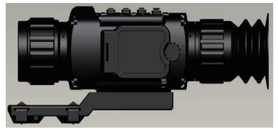
Use a random T25 wrench and install 3-5 M5 screws to secure the rails. According to the actual installation position, the front and rear position of the guide rail can be adjusted at any time. Installation and location of the guide rails are as follows:



【 TH-35 installation position of guide rail mount. 】



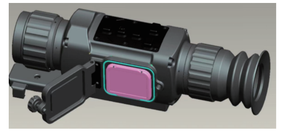
【 Locked with M5 screws after installation. 】



【 Finished after mounting to the rail. 】

2.5 Battery installation

When installing the battery pack, it should be necessary to pay attention to the installation direction. When installing, the direction of the LOGO in the battery shell is facing down, and the battery pack cannot be installed in place when the battery pack is not placed correctly. Install the battery pack in place on the rear cover and tighten the knob.



【 Figure 2-4, Battery installation 】

Chapter 3 Operation Declaration

The infrared thermal imager consists of five keys, namely: power key " ⏻ ", "C", "M", "+" and "-" keys, which achieve different functions in different menu interfaces.

3.1 Observation Interface

After the equipment is started, the real-time observation screen is displayed.

When the device is in the observation interface, the following keys:

- Short press the "+" button to adjust the electronic amplification function, using progressive amplification mode, cycle magnification X1, X2, X4, X8.
- Short press the "-" button to cycle through the pseudo-color modes: white hot, black heat, fusion, red heat, rainbow, and iron red.
- Short press "C" key to open / close the shooting table cursor, and adjust the specific shooting table type in the shooting table menu item of the main menu.

3.2 Main Menu Interface

After starting the device, press the "M" key to enter the main menu interface, as shown in the following figure. The menu prompt box shows the currently selected menu item name and parameter value, and the OSD shows the status of the current device.



【 Figure 3-1, Main menu interface 】

The main menu bar contains the following menu items: language, restore factory, hot spot tracking, brightness, contrast, pseudo color, drawing, infinite zoom, projection table, CVBS, FFC, bad point, mode.

- Press "+" and "-" to switch different menu items.
- Press the "M" key to select the current menu item. The selected menu item is fixed in the central position of the bottom menu bar, and the background is blue.
- When the menu item is selected, press "+" or "-" to adjust the parameters of the selected menu item.
- After the parameter adjustment is completed, short press the "M" key to exit the parameter adjustment state.
- Long press the "C" key to save all the adjustment parameters and exit the main menu to enter the observation interface.

NOTE

- After the parameter adjustment is completed, display the state on the main menu interface. Press the "C" key to save all the adjustment parameters and enter the observation interface. Keep the state when the parameter adjustment is completed. If the equipment is turned off directly on the main menu interface, the parameters will not be saved on the next time.
- Different menus use the keys in different ways. Please see the specific function configuration.

3.3 Functional Configuration

3.3.1 Brightness Control

- Press the "M" key to enter the main menu.
- Press "+" and "-" keys briefly to switch to the brightness adjustment menu item.
- Short press the M key to select the brightness adjustment menu.
- Short press the "+" or "-" key to adjust the parameters.
- Short press the "M" key to exit the adjustment state.

3.3.2 Contrast Control

- Press the "M" key to enter the main menu.
- Press "+" and "-" keys briefly to switch to the contrast adjustment menu item.
- Short press the M " key to select the contrast adjustment menu.
- Short press the "+" or "-" key to adjust the parameters.
- Short press the "M" key to exit the adjustment state.

3.3.3 Pseudo-Color Mode

The pseudo-color mode adjustment is used to improve the user's recognition of the image details. Different pseudo-color modes are selected, and different temperature colors will be displayed. The correct application of the appropriate pseudo-color mode can make accurate observation of the target.

- Press the "M" key to enter the main menu.
- Press "+" and "-" keys to switch to the pseudo color adjustment menu item.
- Press "M" to select the pseudo color menu.
- Short press "+" or "-" to switch the pseudo mode, and the current pseudo mode is displayed in the lower right corner of the screen.
- Short press the "M" key to exit the adjustment state.

3.3.4 Painting Mode in Painting

The picture-in-picture function is to capture the local image in the center of the scene, enlarge the local image and superposition it on the observation interface, so as to see the details of key images.

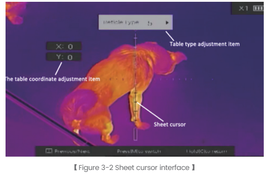
- Press the "M" key to enter the main menu.
- Press "+" and "-" keys to switch to the menu item in the drawing.
- Press "M" to select the picture drawing menu.
- Short press + or-to open / close drawing mode.
- Short press the "M" key to exit the adjustment state.

3.3.5 Infinite Amplification

- Press the "M" key to enter the main menu.
- Press "+" and "-" keys briefly to switch to the infinite amplification menu item.
- Short press the "M" key to select the infinite amplification menu.
- Short press + or-to adjust the magnification.
- Short press the "M" key to exit the adjustment state.

3.3.6 Sheet Adjustment

The interface is shown in the following below.



【 Figure 3-2 Sheet cursor interface 】

- Press the "M" key to enter the main menu.
- Press "+" and "-" keys to switch to the table menu item.
- Short press the "M" key to enter the shooting table menu.
  - Short press "M" key to switch the adjustment items, including the table type adjustment items, X axis coordinate adjustment, Y axis coordinate adjustment.
  - In the table type adjustment item, short pressing "+" or "-" key can adjust 5 table types.
  - In the coordinate adjustment item, X axis coordinate can be adjusted by short or long press "+" and "-".
  - In the projection coordinate adjustment item, the Y axis coordinate can be adjusted by short or long press "+" and "-".
- After the adjustment, long press "C" to exit the current surface cursor interface and return to the main menu.

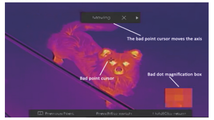
3.3.7 CVBS

- Press the "M" key to enter the main menu.
- Press "+" and "-" keys to switch to the CVBS menu item.
- Short press the "M" key to select the CVBS menu.
- Short press "+" or "-" key to open / close CVBS.
- Short press the "M" key to exit the adjustment state.

3.3.8 FFC

- Press the "M" key to enter the main menu.
- Press + and-to switch to FFC menu item.
- Short press the "M" key to select the FFC menu.
- Short press the "+" or "-" key to adjust the FFC mode.
- Short press the "M" key to exit the adjustment state.

3.3.9 Bad Point Correction



【 Figure 3-3 Bad point correction interface 】

- Press the "M" key to enter the main menu.
- Short press "+" and "-" keys to switch to the bad point correction menu item.
- Short press the "M" key to enter the bad point menu.
  - Short press "M" to switch the moving axis adjustment item X axis adjustment and Y axis adjustment respectively.
  - In the X axis adjustment item, short or long press "+" and "-" keys to adjust the X axis direction of the broken point cursor.
  - In the Y axis adjustment item, short or long press of "+" and "-" keys can adjust the Y axis direction of the broken point cursor.
  - When the center position of the cursor coincides with the bad point, short press "C" to remove the current bad point.
  - Press both "+" and "-" keys to cancel the current bad point correction.
- After the adjustment, long press "C" to exit the current bad point correction interface and return to the main menu.

3.3.10 Model

- Press the "M" key to enter the main menu.
- Press "+" and "-" keys to switch to the mode menu item.
- Short press the "M" key to select the mode menu.
- Short press the "+" or "-" key to adjust the mode.
- Short press the "M" key to exit the adjustment state.

3.3.11 language

- Press the "M" key to enter the main menu.
- Press "+" and "-" keys to switch to the language menu item.
- Short press the "M" key to select the language menu.
- Press the "+" or "-" button to switch Chinese / English.
- Short press the "M" key to exit the adjustment state.

3.3.12 Restore Factory

- Press the "M" key to enter the main menu.
- Short press "+" and "-" keys to switch to the restore factory menu item.
- After pressing "M" to select Restore factory Settings, if you confirm the continuation, press "M" again to restore. If you press other keys, the menu item will be withdrawn.

3.3.13 Hot Tracking

Hot spot tracking indicates that the highest temperature point in the scene is tracked in real time, and the highest temperature point in the scene is visually represented with an icon in the image.

- Press the "M" key to enter the main menu.
- Press "+" and "-" keys to switch to the hotspot tracking menu item.
- Short press the "M" key to select the hotspot tracking menu.
- Short press "+" or "-" keys to start / close hotspot tracking.
- Short press the "M" key to exit the adjustment state.

Chapter 4 Specifications of the Products

Model	TH-35	
Uncooled infrared detector	Resolution ratio	384x288
	Types of detectors	Uncooled vanadium oxide detector
	Work band	8-14um
	Like a meta size	12um
	NETD	＜35mk

Lens parameters	Focal distance	35mm
	F price	F 1.0
	Angle of field	7.5*5.7° (±5%)
Display	Frame frequency	50Hz
	Diopter regulation	±5D
	Distance of exit pupil	48mm
	Exit pupil diameter	6mm
	OLED	0.39in(multi-color)
	Resolution ratio	1024x768
Image	Electronic enlargement	x1 / x2 / x4 / x8
	Pseudo-colour	White hot, black hot, red hot, fusion, rainbow, iron red
	Bad point repair	Support
	Firing table	Support
	Picture in picture	Support
	Hot tracking	Support
	Image mode	Recognition, jungle
	Video out	Support PAL system
Electric source	Battery type	5V rechargeable lithium battery set: 1 section
	Working hours	>12h (room temperature)
	Available machine time	＜10S
Language	Language	Switching between Chinese / English
Range of action	Detection range	1750m
Joggle	Electrical interface	TYPE-C interface 5V / 2A

Environmental adaptation	Working temperature	Temperature range -20℃ ~ 60℃
	Storage temperature	Temperature range -20℃ ~ 65℃
	Levels of protection	IP67
Physical characteristics	Weight (Without the battery)	＜550g
Mechanical properties	Concussion	7500/1ms
	Bracket	Optional guide rail support

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