

PREFACE

Thank you for purchasing the new UTi384H thermal imager. In order to use this product safely and correctly, please read this manual thoroughly, especially the Safety Instructions part.

After reading this manual, it is recommended to keep the manual at an easily accessible place, preferably close to the device, for future reference.

LIMITED WARRANTY AND LIABILITY

Uni-Trend guarantees that the product is free from any defect in material and workmanship within one year from the purchase date. This warranty does not apply to damages caused by accident, negligence, misuse, modification, contamination and improper handling. The dealer shall not be entitled to give any other warranty on behalf of Uni-Trend. If you need warranty service within the warranty period, please contact your seller directly.

This warranty is the only compensation you can obtain. Uni-Trend will not be responsible for any special, indirect, incidental or subsequent damage or loss caused by any reason or speculation. As some areas or countries do not allow limitations on implied warranties and incidental or subsequent damage, the above limitation of liability and stipulation may not apply to you.

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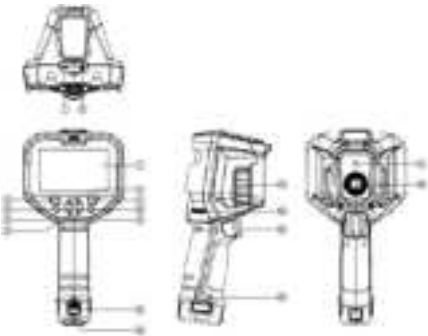
1. Technical Specifications

Sensor	Uncooled vanadium oxide
Mode	Auto gain
Range	-30°C~650°C (-22°F~1202°F)
Accuracy	Target temperature -20°C~650°C, ambient temperature 25°C: ±2°C/±2% (whichever is greater)
Emissivity	0.95 (default) 0.01~1.00
Pixel size	17μm
Thermal imaging pixels	384*288 (110592)
Visible light pixels	5 million
Palettes	Red Hot, Rainbow HC, Rainbow, Lava, Iron, Black Hot, White Hot
Infrared spectrum bandwidth	8~14μm
Field of view	28°*21°
IFOV	1.3mrad
Lens focal length	13mm
Focus mode	Manual
Sensitivity	< 60mK@25°C
Frame rate	25Hz
Digital zoom	1x, 2x, 4x
Temperature analysis	5 points, 5 areas, 1 line (up to 6 analysis objects can be added at the same time)
Isotherm	Manual/auto
Temperature display	Center point temperature, high/low temperature tracking
Unit	°C (default)/°F
High/low temperature alarm	√ (LCD alarm)
Image modes	Thermal, visible, fusion, PIP
Image capture mode	Photograph
Image save format	BMP

Image viewing	Temperature analysis, change the palette, Remark
USB communication	Type-C USB (real-time image and U disk storage)
WIFI	√
PC screen projection	√
PC analysis software	√ (real-time image, photo download and analysis)
Mobile APP	√ (photo download and analysis)
Language	Chinese/English
Certificates	CE FCC
Operating temperature	0°C~50°C (32°F~122°F)
Storage temperature	-10°C~60°C (14°F~140°F)
Operating humidity	10%~95%RH (non-condensing)
Battery life	about 5hrs
Charging time	< 5h
Charging voltage/current	5V/2A
IP rating	IP54
Drop proof	2m

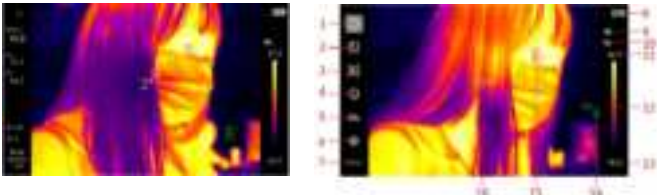
2. Product Structure

- 1. USB Type-C interface
- 2. SD card slot
- 3. Power
- 4. OK
- 5. Left
- 6. Down
- 7. LCD
- 8. Up
- 9. View images
- 10.Return
- 11.Right
- 12.Battery pack
- 13.Bracket screw hole
- 14.IR lens focus ring
- 15.Hand strap hole
- 16.Trigger
- 17.Visual light camera lens
- 18.Infrared camera lens



3. LCD Indicators/Icons

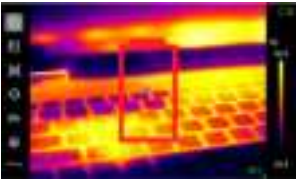
Display size: 800×480
Display resolution: 480 (vertical) × 800 (horizontal)



Item	Description	Item	Description
1	Markup	9	WiFi
2	Measure	10	USB
3	Image	11	Upper range of palette
4	Palette	12	Range bar
5	Isotherm	13	Lower range of palette
6	Settings	14	Lowest temperature spot
7	Menu bar text	15	Highest temperature spot
8	Battery status	16	Center point temperature

4. Power on/off

Long press the Power button for 3s to turn on the thermal imager (it needs 30 minutes warm-up time when the device is just turned on or not used for a long time, or the environment changes). Long press the Power button for 5s to turn off the product. When the battery is low, a low battery indicator will show on the LCD, which means the thermal imager should be turned off and the battery should be charged. When the thermal imager is in low battery status for a long time, the device will automatically shut down.



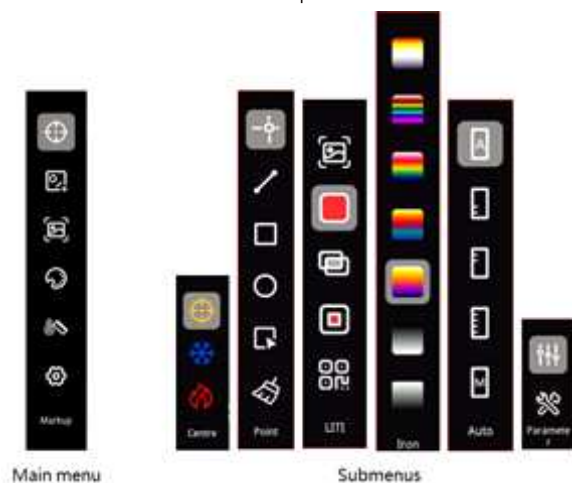
5. Menus

Main menu options



In the main interface:

1. Press the OK button to open the main menu.
2. Press the Up/Down button to step through submenus.
3. Press the OK button to open the selected submenu.
4. Press the Up/Down button to step through setting items in the submenu.
5. Press the OK button to confirm the selected setting item.
6. Press the Return button to return to the previous interface.



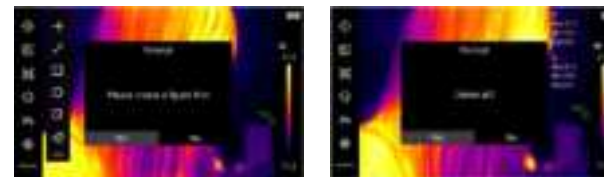
6. Markup

In the main interface, press the OK button to open the main menu. Press the Up/Down button to select "Markup". Press the OK button again to open the submenu of "Markup". In the submenu, press the Up/Down button to select a submenu option. (For example: press the OK button to perform the selected function "Center", and a center point marker will show on the screen. Press the button again to exit.)



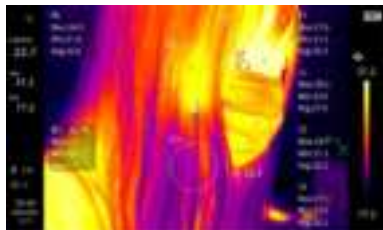
7. Measure

In the main interface, press the OK button to open the main menu. Press the Up/Down button to select "Measure". Press the OK button again to open the submenu of "Measure". In the submenu, press the Up/Down button to select an analysis object (point, line, rectangle, circle). Press the OK button to add the selected object. The submenu also includes two other functions: choose (this function can only be used if an analysis object is added, otherwise a dialogue box "Please create a figure first" will pop up) and clear (when there are analysis objects, a dialogue box "Delete all?" will pop up).

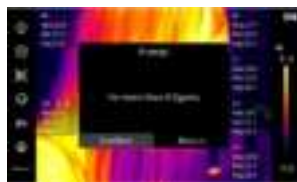


After adding an analysis object, a submenu will appear. The optional functions in the submenu are choose, move, stretch (this function cannot be applied to point objects), diff (point objects are not comparable; the comparison information will be displayed on the left side), delete (delete the selected object). The temperature information of the added object will be displayed on the right (except point objects).

When performing the comparison function, press the Up/Down/Left/Right button to select an analysis object (the selected object will turn red), and press the OK button to confirm. Repeat the above steps to select another analysis object. The comparison information of the two will be displayed on the left side of the screen.



Note: The maximum number of point/rectangle/circle objects that can be added is 5 (when exceeding 5, a dialogue box "No more than 5 figures of the same type" will pop up). The maximum number of line object is 1 (when exceeding 1, a dialogue box "Only a straight line can be drawn" will pop up). The total number of added objects should not exceed 6, otherwise a dialogue box "No more than 6 figures" will pop up.



8. Image

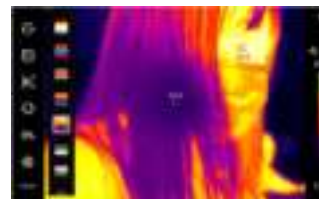
In the main interface, press the OK button to open the main menu. Press the Up/Down button to select "Image". Press the OK button again to open the submenu of "Image". In the submenu, press the Up/Down button to select a submenu option. (For example: press the OK button to perform the selected function "Fusion" and the image will switch to the fusion mode.) In the fusion mode, press the Left/Right button to adjust the fusion proportion, and Up/Down button to adjust the fusion distance. In the PIP mode, press the Left/Right button to move the position or stretch the size of PIP. For the QR function, users can manually input the QR code or scan the QR code. Select Cancel to return to the main interface. (Note: The QR code should not be more than 100 characters).



When users choose to manually input the QR code, it will jump to the "Select QR code file" interface. There are two or more options: the existing folders in the device (including QR1, QR2, QR3, QR4, QR5), other QR codes (including QR codes created and used by users) or input new QR code. After selecting "Input new QR code", the keyboard will pop up. After customizing the QR code name, the "Matching position" interface will pop up. Select the position to be matched in this interface: QR1, QR2, QR3, QR4, QR5 and other (temporary QR code storage position).

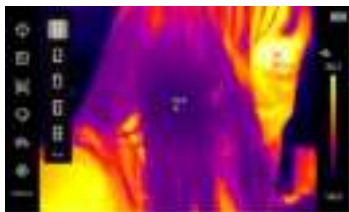
9. Palette

In the main interface, press the OK button to open the main menu. Press the Up/Down button to select "Palette". Press the OK button again to open the submenu of "Palette". Press the Up/Down button to step through seven optional palettes: Red Hot, Rainbow HC, Rainbow, Lava, Iron, Black Hot, White Hot.



10. Isotherm

In the main interface, press the OK button to open the main menu. Press the Up/Down button to select "Isotherm". Press the OK button again to open the submenu of "Isotherm". The options in the submenu are: Auto, Below, Above, Section, Manual.



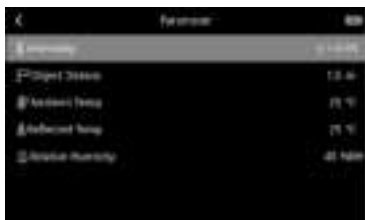
11. Settings

In the main interface, press the OK button to open the main menu. Press the Up/Down button to select "Settings". Press the OK button again to open the submenu of "Settings". Press the Up/Down button to select Parameter setting/ System setting, and press the OK button to enter the selected setting interface.

In the parameter setting interface, press the Up/Down button to select Emissivity/ Object distance/Ambient temp/Reflected temp/Relative humidity, and press the OK button to enter the corresponding setting interface. Press the Up/Down button to adjust the parameter values.

1. Please refer to the emissivity table;
2. If users are not sure which values to choose, the following default values are recommended:
 Emissivity 0.95
 Object distance 1.0m
 Ambient temp 25°C
 Reflected temp 25°C
 Relative humidity 45%RH

Note: Emissivity and reflected temperature are the two most important parameters, so if unsure, use the default values.

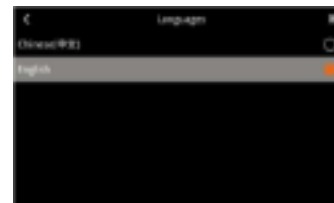


In the system setting interface, press the Up/Down button to select Language/ Alarm/Units Date/Time/Display Brightness/Auto power off/QR code/USB mode/Wi-Fi/ System.



11.1 Language

In the system setting interface, press the OK button to enter the language setting interface. Press the Up/Down button to select English/Chinese, and press the OK button to confirm.

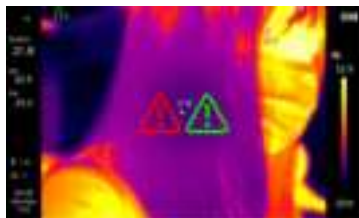


11.2 Alarm

In the system setting interface, press the OK button to enter the alarm setting interface. Press the Up/Down button to select HI/LO Alert, and press the OK button to confirm. When setting the HI/LO Alert, press the Up/Down button to select HI/LO value, press the OK button to modify, and press the Up/Down button to set the value (-30°C~650°C).

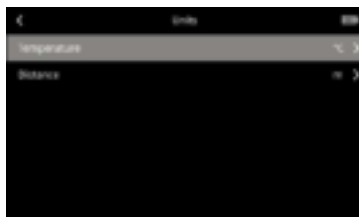


When the measured temperature exceeds the HI value, a red triangle will pop up. When the measured temperature is lower than the LO value, a green triangle will pop up.

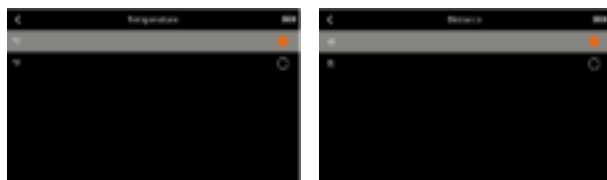


11.3 Units

In the system setting interface, press the OK button to enter the unit setting interface. Press the Up/Down button to select Temperature/Distance, and press the OK button to confirm.



In the temperature setting interface, press the Up/Down button to select °C/°F, and press the OK button to confirm. In the distance setting interface, press the Up/Down button to select m/ft, and press the OK button to confirm.



11.4 Date/Time

In the system setting interface, press the OK button to enter the date/time setting interface. Press the Up/Down button to select Time format/Date/Time, and press the OK button to confirm.

In the time format interface, users can turn on/off the 24-hour clock. In the date/time interface, press the Left/Right button to select Year/Month/Day and Hour/Minute, and press the Up/Down button to set the value.



11.5 Brightness

In the system setting interface, press the OK button to enter the brightness setting interface. Press the Up/Down button to select High/Middle/Low, and press the OK button to confirm.



11.6 Auto Power Off

In the system setting interface, press the OK button to enter the auto power off setting interface. Press the Up/Down button to select 30min/15min/5min, and press the OK button to confirm.



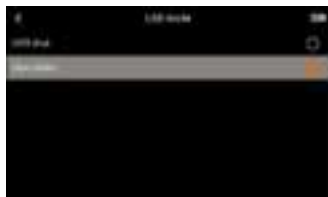
11.7 QR Code

In the system setting interface, press the OK button to enter the QR code setting interface. Press the Up/Down button to select a folder, and press the OK button to open it. Press the Up/Down button to change the name (folder name, for example Folder1) or reset the code (for example QR Code1).



11.8 USB Mode

In the system setting interface, press the OK button to enter the USB mode setting interface. Press the Up/Down button to select USB disk/Live video, and press the OK button to confirm.



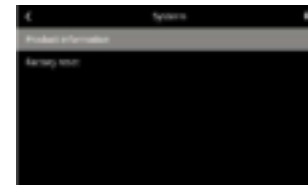
11.9 Wi-Fi

In the system setting interface, press the OK button to enter the Wi-Fi setting interface. Press the Up/Down button to select ID and PW after opening the hotspot, and press the OK button to enter the password modification interface. Press the Up/Down button to modify (Note: Password cannot be less than 8 digits).



11.10 System

In the system setting interface, press the OK button to enter the system setting interface. Press the Up/Down button to select Product information/Factory reset, and press the OK button to confirm.



In the product information interface, users can view the Model/Screen resolution/Model version/version/SD(SD capacity)/Free(Remaining capacity). After selecting Factory reset, a dialogue box "Factory reset?" will pop up. Select Yes, and a prompt "Restoring factory setting..." will appear. Wait for the product to automatically shut down and restart.



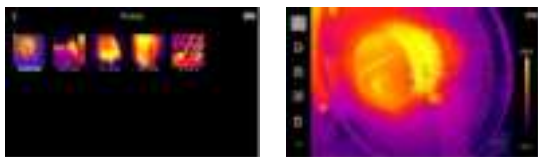
12. Image Viewing

In the main interface, press the image viewing button to enter the multimedia browsing interface. Press the Up/Down button to select all photos/QR Code1/QR Code2/QR Code3/QR Code4/QR Code5, and press the OK button to open the selected folder. Press the Up/Down/Left/Right button to select the image to be viewed, and press the OK button to view this image. Press the Left/Right button to switch between images. When viewing an image, press the OK button to open the submenu of this image. The functions in this submenu are: Message: photo name, Capture Date, modified date, Thermal Resolution, emissivity, highest temperature, lowest temperature, center point temperature, remarks.

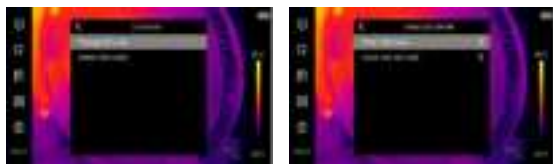
Edit: Markup, Measure, Image, Palette, Isotherm

Remark: The added notes will show in the photo message.

QR code: Users can change or delete the QR code of the current image Delete.

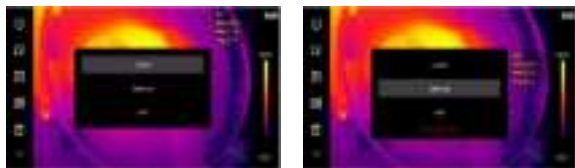


Enter the QR Code interface, select "Change QR code", and the scanning page will pop up. Users can obtain the QR code information by scanning. After scanning the QR code, the "Matching position" page will pop up for users to select a location to store the scanned QR code (Note: The QR code should not be more than 100 characters); Or they can enter the "Select QR code file" interface to select other QR codes (including QR codes created and used by users) or input new QR code.



The purpose of adding QR codes is to classify images. If the added QR codes are stored in the existing folders in the device (including QR1, QR2, QR3, QR4, QR5), the photo with the QR code added can be viewed in the corresponding folder. If the added QR codes are stored in other folders, the photo with the QR code added cannot be found in an existing folder.

After editing images, adding notes or QR codes, a dialogue box "Cover/Save as/Exit" will pop up when returning to the image viewing interface. Select Cover to change the original image and save it and return to the viewing interface; select Save as to add a modified new image and return to the viewing interface (The image name cannot be the same as the name of the existing image in the album, otherwise a dialogue box "Duplicate name" will pop up.); select Exit to not save the modified image.



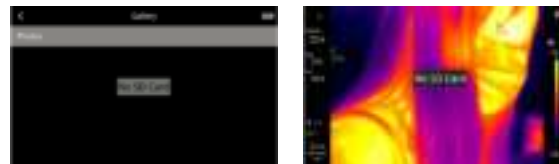
13. Buttons

In the main interface, press the Up/Down button to zoom in. The magnification is displayed on the left, and it will step through 1X, 2X, 4X, and 1X.

In the main interface, press the Left/Right button to adjust the degree of fusion. The optional degrees are 0%, 25%, 50%, 75%, and 100%.

14. SD Card

This device can use Micro SD card to store images. To avoid affecting the operating speed, please copy the backup data regularly and clean up the SD card in time. To avoid causing abnormal data on the SD card, do not insert or remove the SD card repeatedly. Turn off the device when inserting or removing the SD card. If the SD card is removed in the image viewing interface or the users press the trigger to capture images when the SD card is not inserted, a box "No SD Card" will pop up.



15. Maintenance

Use a wet cloth or weak soap solution to clean the outer shell of the device. Do not use abrasives, isopropyl alcohol or solvents to clean the outer shell, lens or windows.

16. Safety Instructions

In order to ensure the accuracy, please read the instructions carefully. Please use this product in accordance with the manual; otherwise the free warranty will not be carried out if the product is damaged. Please do not use this device in flammable, explosive, steamy, humid or corrosive environments. Please do not continue to use the device when it is damaged, broken or corrected, so as to avoid incorrect test results. Please refer to the emissivity information to confirm the actual temperature; otherwise the measured temperature will be inaccurate.

Do not aim the lens at a strong heat source, such as the sun and other high-temperature targets, so as to avoid damage to the lens or the detector. Do not use the product in extremely hot, cold, dusty or high-humidity environments. For specific temperature and humidity requirements, see the parameter table.

The product can be charged with a USB cable. However, in order to improve the charging efficiency, it is recommended to pull out the battery pack and charge the battery pack separately.

Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

"Please note that changes or modifications of this product is not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment."

17. FCC Compliance statement

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

18. Notes

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

19. Common Emissivity

Material	Emissivity	Material	Emissivity
Wood	0. 85	Black paper	0. 86
Water	0. 96	Polycarbonate	0. 8
Brick	0. 75	Concrete	0. 97
Stainless steel	0. 14	Copper oxide	0. 78
Tape	0. 96	Cast iron	0. 81
Aluminum plate	0. 09	Rust	0. 8
Copper plate	0. 06	Gypsum	0. 75
Black aluminum	0. 95	Paint	0. 9
Human skin	0. 98	Rubber	0. 95
Asphalt	0. 96	Soil	0. 93
PVC	0. 93		

Contents of this manual are subject to change without prior notice.

UNI-T®**UNI-TREND TECHNOLOGY (CHINA) CO., LTD.**

No.6, Gong Ye Bei 1st Road,
Songshan Lake National High-Tech Industrial
Development Zone, Dongguan City,
Guangdong Province, China