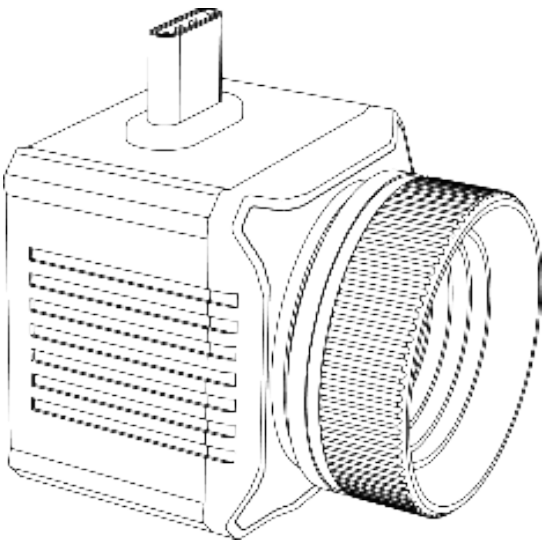
Thermal Master

Thermal Master T2 Max

QUICK START GUIDE



Thermal **Master**

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Precautions for Safe Use

- Please protect the device from vigorous vibration, or impacts by falling objects, and keep the device away from magnetic field interference.
- Do not aim the lens at a strong thermal light source, such as the sun or other high-temperature targets, to avoid damage to the lens or thermal imaging detector.
- Please keep it properly after use. To prevent device failure, disassembling the device shell without permission is strictly prohibited.
- The lens and the metal interface are prone to damage. Do not knock, pry, puncture, or scratch them.
- Do not use the product in extremely cold, extremely hot, dusty, or high-humidity environments. The recommended service temperature is -20°C~+60°C.
- Please store the device in a dry, non-corrosive gas environment and away from direct sunlight.
- Please keep the packaging materials properly in case you need to return the device to the Agent or send it back to the manufacturer in its original package if issues arise.
- If the device fails, please contact the Agent from whom you purchased the device or reach out to our after-sales service office (refer to the last page of this booklet for details). Do not disassemble or modify the device in any way. We assume no responsibility for any problems caused by unauthorized modifications or repairs.

1. Product Overview

T2 Max is equipped with Thermal Master's renowned HD VOx thermal imaging detector and coupled with an adjustable alloy lens to provide 1-15× infinite zoom. Its night vision detection capabilities far surpass those of conventional thermal imaging night vision devices. Additionally, it incorporates self-developed image processing chips. Paired with the RazorX exclusive image algorithm and imaging modes such as the super bird watching mode, it ensures a clearer field of view and sharper images. The device operates at a high frame rate of 50Hz, resulting in smoother imaging. Moreover, the body is made entirely of alloy, making it solid and durable.



1640 Yards
Detection



15X
Digilal Zoom



ArmorX
20 in 1Tactical DIY Themmal



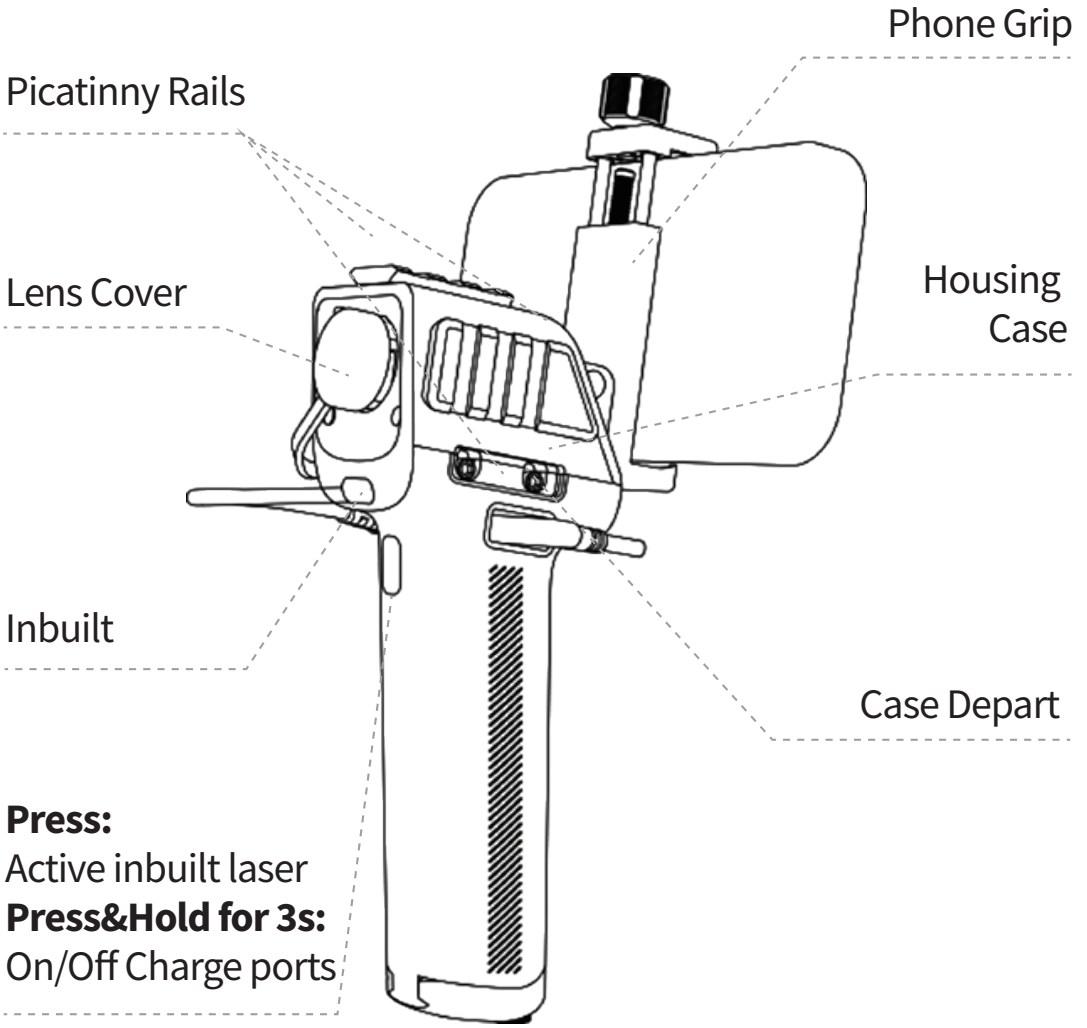
X³
Supper Resolution

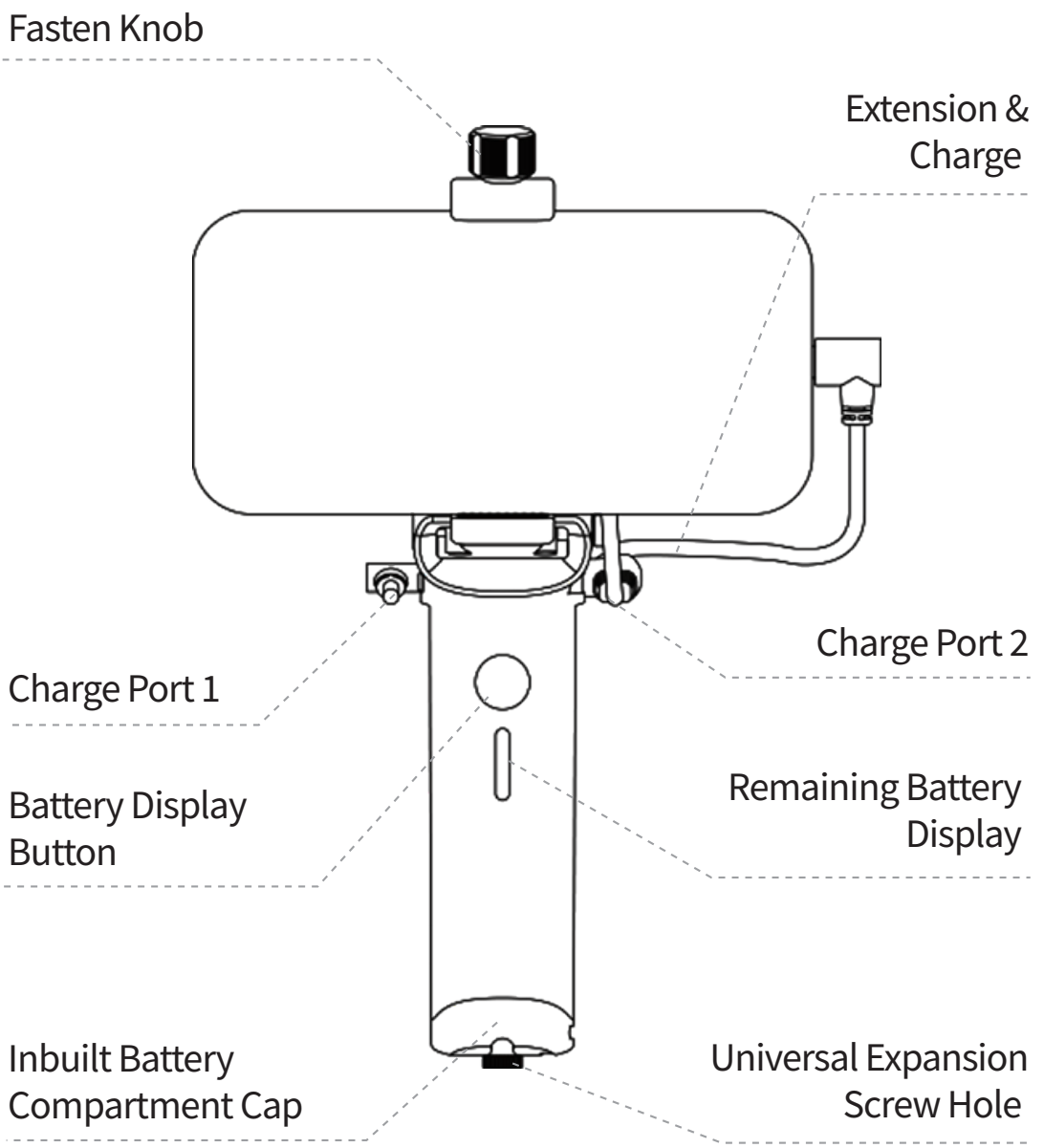


50Hz
High Frame Rate



25mK
Sensitivity


Phone Grip
Picatinny Rails
Lens Cover
Housing Case
Inbuilt
Case Depart
Press:
Active inbuilt laser
Press&Hold for 3s:
On/Off Charge ports


Fasten Knob
Extension & Charge
Charge Port 2
Charge Port 1
Battery Display Button
Remaining Battery Display
Inbuilt Battery Compartment Cap
Universal Expansion Screw Hole

2.Preparations

2.1 Software Downloading

This device must be used together with the mobile app in order to access infrared observation, thermography, and other functions from the app. Please scan the QR code below to obtain the latest version of the app.

Alternatively, search for “Thermal Master” in the app store to download the corresponding software.

2.2 Connection Setup

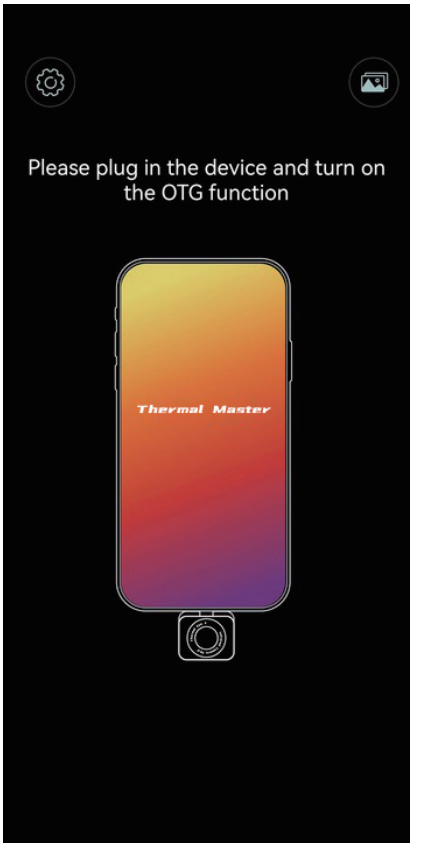
Ensure that all permissions required by the installed app are enabled on your phone. Otherwise, some functions may not be available. These include storage, camera, audio recording, and location permissions for managing the infrared photo album, using the visible light camera, accessing the video-taking function, and acquiring latitude and longitude data, respectively.

Before plugging into the device, ensure that the OTG storage function has been turned on. When using OPPO, vivo, OnePlus, realme, or iQOO smartphones, you will need to manually turn on this function. However, most other smartphones have this function enabled by default.

Once the device is plugged in and recognized by your phone, you

will see a prompt asking, “Do you allow the Thermal Master to access the USB device?” , tap OK.

If the app has been opened and cannot detect the device, the following interface is displayed. This means that some functions are disabled.



3.Specifications

Detector	
Resolution	256×192 to 512×384
Pixel Pitch	12μm
NETD	≤25mK@25°C, F#1.0
Operating Band	8~14μm
Performance	
Frame Rate	50Hz
Operating Temperature	-20°C~60°C
Storage Temperature	-40°C~85°C
Typical Power Consumption	280mW
Processor	Self-developed ASIC chip
Lens	
Focal Length	15mm
Aperture	F0.8@15mm
FOV	11.7°×8.8°@15mm
Focusing	Manual focusing
Shell	
Dimensions	26.2×26.2×40(mm)
Color	Gray
Weight	＜50g
Interface	USB type C

Note: The parameters are updated on March 16, 2024, and are subject to change without notice.
Note: The above temperature measurement parameters are obtained in the laboratory environment.

4.Software Function

4.1 Screen Introduction

The app' s home screen includes left and right function areas and an image area in the middle. The function areas include Setting, Shutter Refresh, X^3 Image Enhancement, Hotspot Tracking, Image Capture, Laser Rangefinding Function (equipped with the Thermal Master LRF TM600 Laser Rangefinder Module), Image Mode, Reticle and Pseudo-color Palette, etc.

The image area displays real-time images. By double-tapping the image, you can enter full-screen mode and indulge in the high image quality. Users can zoom in on the screen using a two-finger gesture, allowing for enhanced visibility within a range of 1~15×.



4.2 Settings

The Setting menu includes PIP, Infrared PIP, Infrared Image Flip, Infrared Image Rotation, Automatic Shutter Switch, Shoot Setting, Thermal Master Rangefinder Setting, General, and Help.

4.2.1 PIP

Dual-Spectrum enables the presence of a small window in the image display area to simultaneously display the image taken by

the phone camera. The small window supports drag operation.

To switch the front and rear cameras of the phone, tap the reversal icon in the small window.

4.2.2 Infrared PIP

By enabling the infrared PIP function, users can capture and magnify the central part of the image four times, displaying it on the home screen. The small window supports drag operation.

4.2.3 Infrared Image Flip

By turning on this function, users can achieve a mirror effect on the screen. By turning off this function, users can restore the normal display.

4.2.4 Infrared Image Rotation

Users can rotate the image by 0° , 90° , 180° , and 270° around the center.

4.2.5 Automatic Shutter Switch

When the switch is turned on, the image will be automatically corrected in the video shooting scenario according to the default settings. When the switch is turned off, users can use the manual shutter for image correction during extended video shooting sessions. Users are recommended to turn it on during daily use.

4.2.6 Shoot Setting

When taking photos, users can choose whether to display temperature data and background information in the Shoot Setting. If temperature data or background information is not needed, it can be left unchecked. If temperature data or background information is needed, check the corresponding option to display it on the photo.

When taking videos, users can choose whether to display temperature data and background information in the Shoot Setting. If temperature data or background information is not

needed, it can be left unchecked. If temperature data or background information is needed, check the corresponding option to display it on the video.

4.2.7 Thermal Master LRF600 Laser Rangefinder Setting

When the Thermal Master laser rangefinder module is in a powered-on and operating status, tap this option to enter the Bluetooth Signal Selection screen. Select the rangefinder Bluetooth signal, and after a successful connection, real-time scanning within 600 meters can be achieved in the upper right corner of the home screen image area.

You can also set the operating time for scanning as well as the display shape of the rangefinding cursor.

4.2.8 General

On the General screen, users can set the language, watermark, and theme.

The default language follows the system. Users can select Chinese, English, or Russian.

Watermark: is displayed in the upper left corner of the screen as the phone rotates. Users can choose to disable the watermark.

Theme Setting: allows users to choose between Following the System, Day, or Night themes.

4.2.9 Help

On the Help screen, users can access information on various aspects such as About Us, Privacy Policy, Help Document, Feedback, Software Version, Firmware Version, SN Code, and Firmware Version Update Checks.

4.3 Image Refresh

Users will hear a “click” sound and see the screen refresh when tapping the Image Refresh button.

The product is designed with an automatic screen refresh

feature. Whenever the screen becomes blurry, it will automatically initiate a screen refresh, accompanied by a "click" sound. This is a normal occurrence.

4.4 X³ Image Enhancement

This is an image enhancement function based on the RazorX exclusive image algorithm. When the function is turned on with one tap, the sensor's original 256 pixels are doubled in image quality through a super resolution algorithm, comparable to the image quality of a similar 512-pixel sensor.

4.5 Hotspot Tracking

By tapping the Hotspot Tracking button, you will see a cross-tracking point in the infrared thermal image, which is used to track the highest temperature point on the screen.

4.6 Image Capture

4.6.1 Tap Image Capture, the infrared image, visible light image (dual-spectrum enabled), and temperature measurement elements (temperature measurement enabled) in the displayed area can be captured and saved to the Album.

4.6.2 By tapping Video Recording, you can capture and save infrared images to the Album.

Taking photos while taking video is supported.

4.6.3 Tap Library to view the photos and videos taken. You can share or delete any photo(s) and video(s) in the Library of the app.

Users can select multiple images and videos by simply tapping on the upper right corner. Specifically, you can conveniently choose up to 9 files at once for batch sharing and deletion.

4.7 Laser Rangefinding

After the Bluetooth signal is successfully connected, tap to activate the Thermal Master LRF Laser Rangefinder (optional) for

ultra-long target indication and continuous laser rangefinding up to 600 meters.

4.8 Image Mode

Tap the icon and select Red Eye (Highlight mode), Green Eye (High Definition mode) or Ninja mode (significantly suppressing screen brightness to improve camouflage in the wild) from the secondary menu that pops up.

4.9 Reticle

By tapping the Cross Cursor button, users will see the cross cursor along with buttons for position control and size control on the screen.

The cross cursor is used to precisely target objects. Users can tap and drag the cross cursor or make slight adjustments by tapping the position control button's four directional arrows (up, down, left, right). Users can also tap the plus and minus buttons of the size control to zoom in and out of the cross cursor.

By tapping the Lock button in the size control, users can lock the cross cursor's position. By moving it left or right, you may switch between the cross cursor's 8 distinct shapes. Furthermore, you can adjust the cross cursor's color by sliding it up or down. The colors that are accessible are white, purple, blue, red, and green.



By tapping the Unlock button, users can freely move the cross cursor.

4.10 Pseudo-color Palette

The software comes with preset options for green-hot, red-hot, iron-red, white-hot, and black-hot. Select different palettes as users prefer or as required.

The choice of palette does not have any impact on temperature measurement.

4.11 Other Functions

By tapping the Hover button, users can flip and mirror the infrared screen in the image area. Additionally, in Display Setting, users can choose to display information by selecting Location Display, Longitude and Latitude Display, Weather Display, Time Display, Speed Display, and Compass Display.

5.FAQs

① Why does my Thermal Master T2 Max not respond after being plugged into the phone?

Please troubleshoot in this order:

a) Ensure that your phone runs with Android 6.0 or later

b) Verify that the OTG option is available on your phone and is enabled. If you are using OPPO, vivo, OnePlus, realme, or iQOO, search “OTG” in Settings and manually turn it on. This function is automatically turned off after 10 minutes of inactivity. On most other phones, OTG is turned on by default and can be used directly.

c) Ensure that you have downloaded the Thermal Master app and granted all permissions required by the app.

d) Try unplugging and re-plugging the T2 Max device. If there is still no response, please contact after-sales personnel for

assistance.

② **Why is my screen upside down or in an incorrect direction?**

Our app supports 90-degree rotation in four directions and mirror adjustment. You can tap the Settings button on the home screen to enter the menu for operations. For details, refer to 4.2.4 of this booklet.

③ **What should I do in the event of a blurry screen?**

Given the operating characteristics of uncooled infrared detectors, you need to refresh the screen using the shutter, that is, tapping the Shutter icon. This helps produce clearer images. The Thermal Master T2 Max is equipped with a manual focus lens, enabling users to fine-tune the lens rotation to achieve optimal image clarity.

④ **Can I use Thermal Master T2 Max to observe scenes underwater, through glass windows, under clothes, or under the skin?**

Thermal Master T2 Max mainly detects the long-wave infrared region of 8~14um, and cannot be used to observe scenes underwater or through ordinary glass. It can only measure the temperature of the surface of clothing and skin.

⑤ **Does the Thermal Master T2 Max pose radiation hazards to the human body?**

No. The Thermal Master T2 Max does not actively emit any hazardous radiation but only collects the heat information of objects. It can be used with peace of mind.

⑥ **How should I increase accuracy in temperature measurement?**

a) Adjust the focal length until images have optimum sharpness

b) Correct distance, ambient temperature, humidity, reflected temperature, and emissivity (the emissivity table of common

objects is attached)

c) Select products with appropriate focal lengths. The larger the focal length, the longer the detection distance (because the ability of the atmosphere to absorb infrared waves is that the longer the distance, the greater the energy attenuation, and the lower the accuracy of temperature measurement)

⑦ **Why does my screen have horizontal, vertical, or wavy lines or ghost images?**

It is generally caused by poor interface contact or external electromagnetic interference of the signal. You can solve the problem through the following steps:

a) Restart the mobile phone, and unplug and reconnect the thermal camera

b) Directly connect to the mobile phone or connect with an extension cable

c) Test with another mobile phone. If the problem persists, return the device to the after-sales service for troubleshooting.

⑧ **Is it normal to always hear a “click” sound inside after connecting the thermal camera?**

Yes, it is. This is the shutter sound of the thermal camera to refresh the image (also called correction). For the blurred image, click it manually for a clearer image and more accurate temperature measurement. When the device is just connected to the mobile phone, the shutter will sound several times. After being used for a few minutes, the inside of the device reaches the thermal balance, and the shuttering frequency will decrease.

6.Product Services

6.1. Service Commitment

Thermal Master Technology Co., Ltd. is committed to providing customers with high-quality training, maintenance, and technical support services. The Company wishes to maintain a long-term relationship with the customers. It continues to offer systems of the latest version and effective, timely support, retraining, and consulting services based on customer needs to help maximize customers' economic benefits.

6.2. After-Sales Contact

Email: support@thermalmaster.com

Tel: +1(346) 247-6555

Website: www.thermalmaster.com

(Official website)

(After-sales customer service)

7.Warranty Certificate

Warranty Card

Dear user,

1.We will offer a two-year free repair or replacement service for any device failure under normal use.

2.The term “failure under normal use” generally refers to product defects from the factory or natural wear and tear caused by the user's normal use without intentional or negligent factors, excluding failures or damages due to any improper operation, unauthorized disassembly, or violation of the Precautions for Safe Use.

3.In case of any fault of your purchased product, please return it to the Agent in time or contact our after-sales service directly.

The warranty would be void if the users themselves disassemble or modify the devices within the warranty period.

Thermal Master Technology Co., Ltd.
May 2024

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This guide may be updated due to product version upgrades or other needs. For the latest specification version, please contact Thermal Master. Thermal Master recommends that you use this guide under the guidance of a professional.