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HANMATEK Ti240

HANMATEK Ti240 Thermal Imager User Manual

Model: Ti240

INTRODUCTION

This manual provides detailed instructions for the safe and effective use of your HANMATEK Ti240 Thermal Imager. The Ti240 is a handheld infrared camera designed for various inspection tasks, including electrical, HVAC, and building diagnostics. It features a 96x96 VOx IR sensor with TISR 240x240 super resolution enhancement, a wide temperature measurement range, and a rugged IP54-rated design.

# Photo & Video Recordings

 60,000 Photos

 ≥9H of Video Recording



Figure 1: Front view of the HANMATEK Ti240 Thermal Imager, showing the display screen, navigation buttons (OK, Up, Down, Power, Return), and the HANMATEK logo.



## SAFETY INFORMATION

Before operating the device, please read and understand all safety warnings and instructions. Failure to do so may result in injury or damage to the device.

- Do not point the thermal imager directly at high-intensity heat sources (e.g., the sun, lasers) as this may damage the sensor.
- Ensure the device is clean and free from debris before use.
- Do not attempt to disassemble or modify the device. Repairs should only be performed by authorized personnel.
- Keep the device away from water and excessive humidity, although it has an IP54 rating for splash resistance.
- Use only the specified charging cable and power adapter.

## PRODUCT COMPONENTS

Familiarize yourself with the main components of your HANMATEK Ti240 Thermal Imager and the contents of the package.

### Package Contents:



Figure 3: The package contents include the thermal imager, packing box, storage bag, multilingual user manual, lanyard, USB charging cable, lens cloth, and an 8GB SD card.

- 1x HANMATEK Ti240 Thermal Camera
- 1x Storage Bag
- 1x Multilingual User Manual (this document)
- 1x Lanyard
- 1x USB Charging Cable
- 1x Lens Cloth
- 1x 8GB SD Card

## SETUP

### 1. Charging the Battery

The device is equipped with a built-in rechargeable Lithium-Ion battery. Before first use, fully charge the device.

1. Locate the USB Type-C port on the device.
2. Connect the provided USB Type-C cable to the device and a compatible USB power adapter (not included) or a computer USB port.
3. The charging indicator on the device will show the charging status. A full charge provides up to 9 hours of operation.

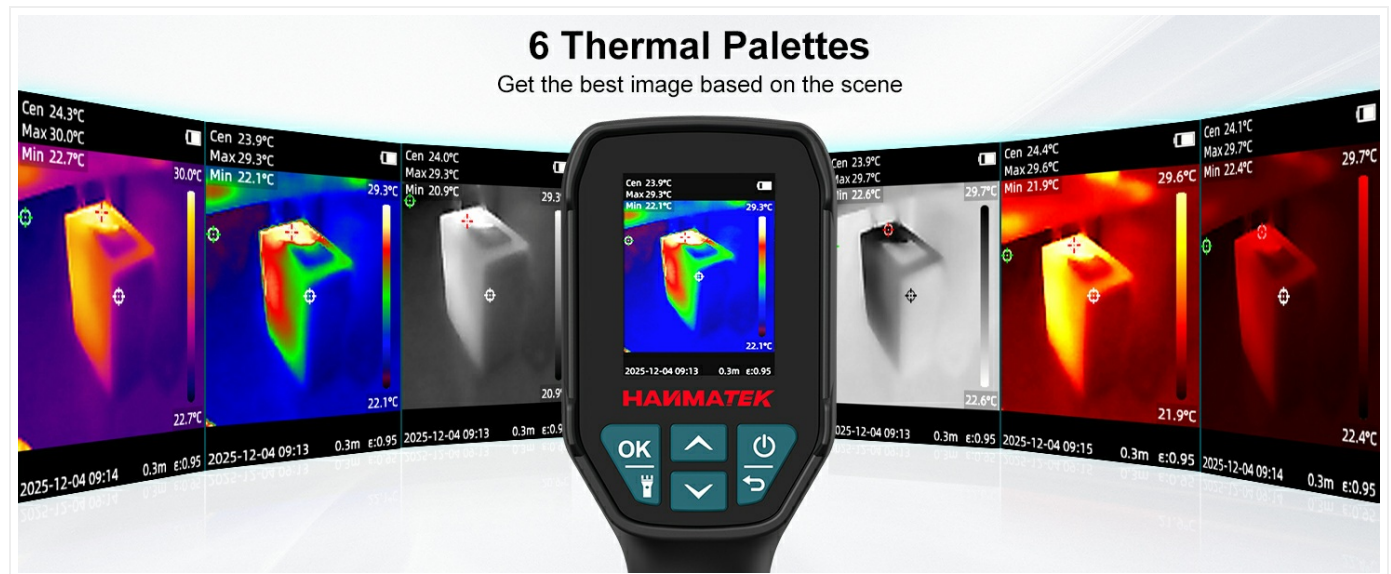


Figure 4: The USB Type-C port for charging the thermal imager, indicating up to 9 hours of battery life.

## 2. Inserting the SD Card

The device comes with an 8GB SD card for storing images and videos.

1. Locate the SD card slot, usually near the USB port.
2. Insert the provided 8GB SD card into the slot until it clicks into place.
3. To remove, gently push the SD card until it springs out.

## 3. Powering On/Off

- To power on: Press and hold the Power button (usually marked with a circle and a vertical line) until the screen illuminates.
- To power off: Press and hold the Power button until the device shuts down.

# OPERATING INSTRUCTIONS

## 1. Basic Navigation

Use the navigation buttons (OK, Up, Down, Return) to interact with the device menu and settings.

- **OK Button:** Confirms selections or enters sub-menus.
- **Up/Down Buttons:** Navigates through menu options or adjusts values.
- **Return Button:** Goes back to the previous menu or exits a function.

## 2. Temperature Measurement

The Ti240 measures temperatures from -20°C to 550°C (-4°F to 1022°F) with an accuracy of  $\pm 2^{\circ}\text{C}$  or  $\pm 2\%$ .

# Accurate Temperature Measurement



Accuracy:  $\pm 2^{\circ}\text{C}$

Temperature Range:

$-20^{\circ}\text{C} \sim 550^{\circ}\text{C}$

$-4^{\circ}\text{F} \sim 1022^{\circ}\text{F}$

Figure 5: The thermal imager displaying its temperature measurement capabilities, including range and accuracy.

### 3. TISR Super Resolution

The TISR (Thermal Image Super Resolution) feature enhances the clarity of thermal images, upscaling the 96x96 IR sensor output to 240x240 pixels for improved detail.

1. Navigate to the 'Settings' menu.
2. Locate the 'TISR' option.
3. Use the OK button to toggle TISR On or Off.

# TISR Resolution Enhancement Technology

Unlock greater details when TISR is enabled



Figure 6: A visual comparison demonstrating the improved image clarity when TISR resolution enhancement is activated.

## 4. Color Palettes

The Ti240 offers multiple color palettes to visualize temperature differences effectively. Select the palette that best suits your inspection environment.

- Available palettes include: White Hot, Black Hot, Rainbow, Iron, Red Hot, and Lava.
- To change the palette: Access the 'Color' option in the main menu or quick settings.

# 6 Color Palettes

Get the best image based on the scene

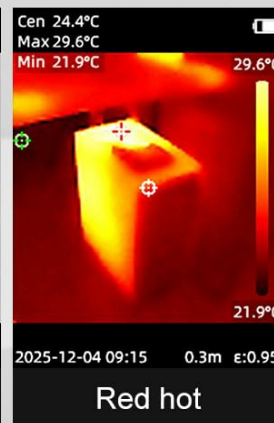
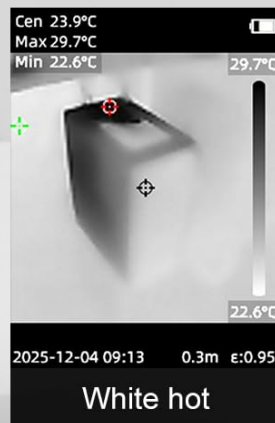
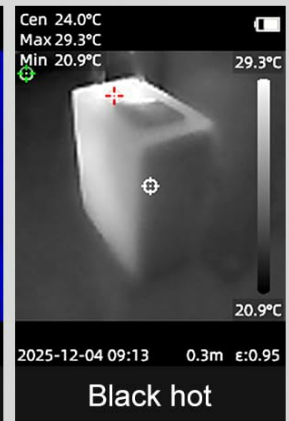
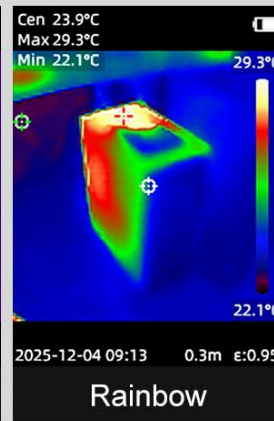
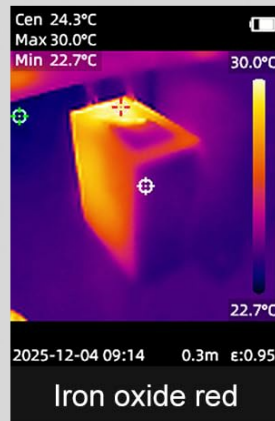


Figure 7: Examples of various color palettes (Iron oxide red, Rainbow, Black hot, White hot, Red hot, Lava) available on the thermal imager for different visual representations of temperature.

## 5. High & Low Temperature Tracking

The device can automatically track the highest, lowest, and center temperatures within the field of view, aiding in quick identification of anomalies.

- The screen displays markers for the high point, low point, and center point temperatures.
- An audible or visual alarm can be configured to alert users when temperatures exceed or fall below preset thresholds.

# High & Low Temperature Tracking



Figure 8: The thermal imager screen indicating the automatically tracked high, low, and center temperature points, along with a high/low temperature alarm notification.

## 6. Advanced Measurement Controls

For improved accuracy, adjust the following parameters:

- **Emissivity:** Adjustable from 0.01 to 1.0. Set this value based on the material being inspected for accurate temperature readings.
- **Distance Setting:** Adjust for optimal focus and measurement accuracy, typically from 0.3m to 3m.
- **Ambient Temperature Compensation:** Compensates for surrounding air temperature, ranging from -10°C to 50°C.

## 7. Photo and Video Recording

The Ti240 allows you to capture thermal images and videos for documentation and analysis.

- To take a photo: Press the trigger button or the designated photo capture button.
- To record video: Press and hold the trigger button or the designated video record button.
- All recordings are saved to the inserted 8GB SD card.

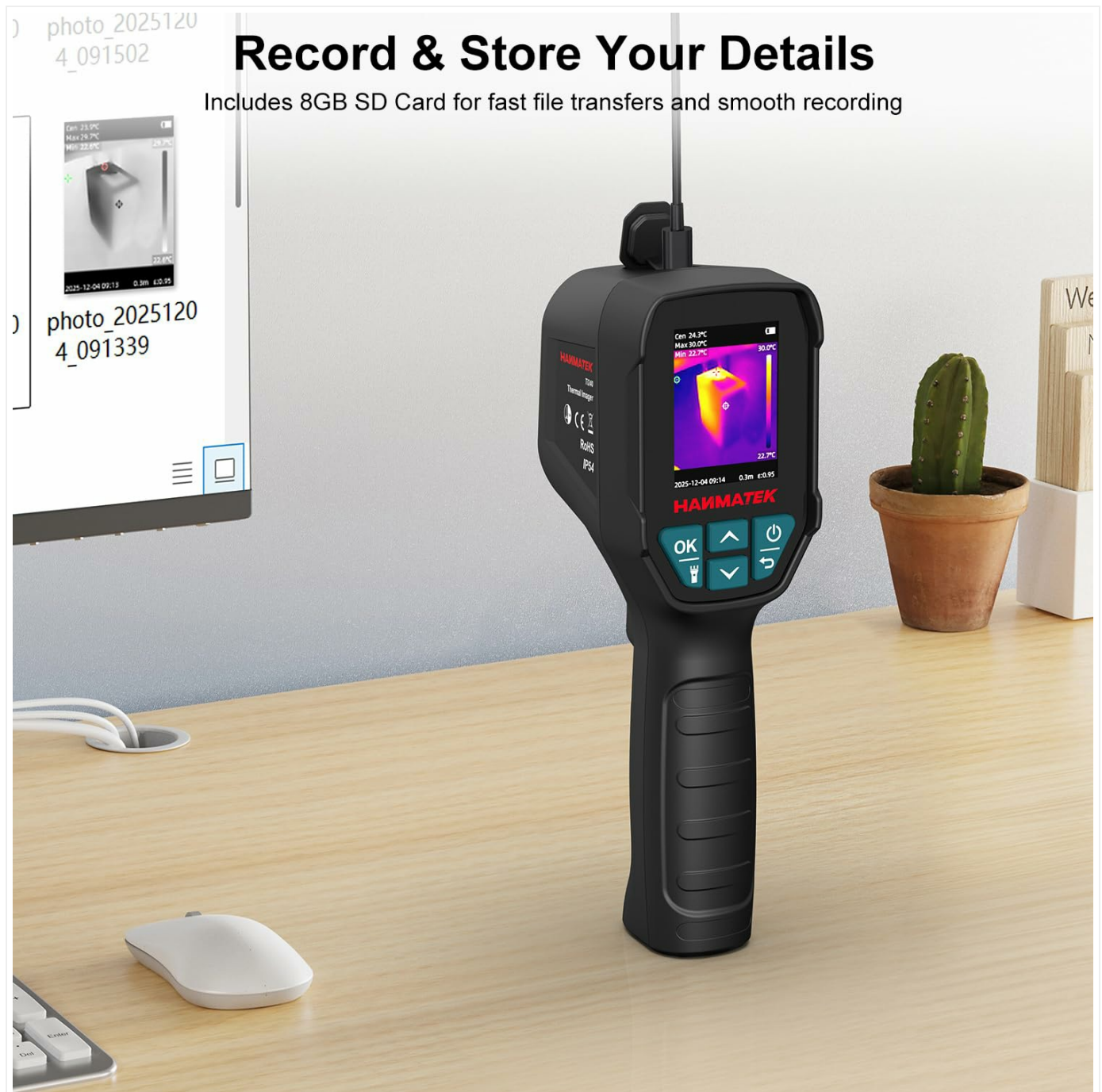


Figure 9: The thermal imager on a desk, demonstrating its ability to record and store details on an 8GB SD card, with images visible on a connected computer screen.

Your browser does not support the video tag.

Video 1: An overview of the HANMATEK Ti240 Thermal Imager, demonstrating its features and usage scenarios.

## 8. PC Image Analysis

Transfer recorded images and videos to a computer for detailed analysis using professional software.

1. Connect the thermal imager to your computer using the USB Type-C cable.
2. The device should appear as a removable storage device.
3. Copy the image and video files from the SD card to your computer.
4. Use compatible thermal analysis software (not provided with the device) to review and analyze the data.

# Detailed Analysis

Professional software for detailed analysis of temperature values in images and videos



Figure 10: The thermal imager positioned next to a computer screen showing professional software used for detailed analysis of thermal images and videos.

## 9. Application Scenarios

The HANMATEK Ti240 Thermal Imager is suitable for a variety of applications, including:

- Motor Detection
- Distribution Cabinet Testing
- Circuit Board Inspection
- Conveyor Pipe Inspection
- Air Vent Inspection
- Air Conditioning Inspection

# Application Scenario

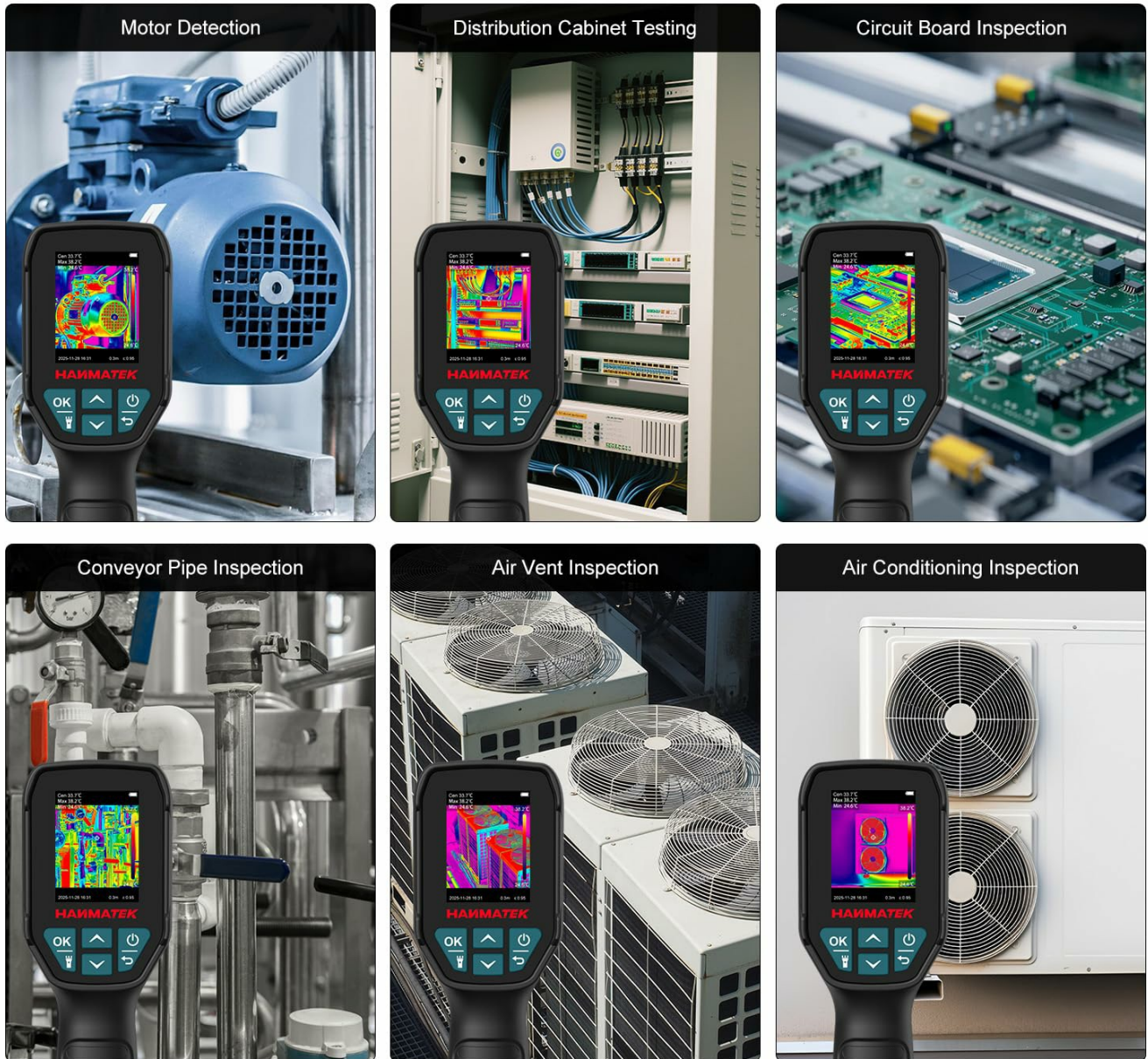


Figure 11: Examples of the thermal imager in use for motor detection, distribution cabinet testing, circuit board inspection, conveyor pipe inspection, air vent inspection, and air conditioning inspection.

## MAINTENANCE

### 1. Cleaning the Device

- Use the provided lens cloth to gently clean the thermal lens and display screen.
- For the device body, use a soft, damp cloth. Do not use abrasive cleaners or solvents.
- Ensure no moisture enters the USB port or SD card slot.

### 2. Battery Care

- Charge the battery regularly, even if the device is not in frequent use, to maintain battery health.
- Avoid storing the device in extreme temperatures.

## TROUBLESHOOTING

| Problem                               | Possible Cause                                          | Solution                                                                                       |
|---------------------------------------|---------------------------------------------------------|------------------------------------------------------------------------------------------------|
| Device does not power on.             | Battery is depleted.                                    | Charge the device using the provided USB cable.                                                |
| Image is blurry or unclear.           | Lens is dirty; TISR is off; incorrect distance setting. | Clean the lens with the lens cloth. Enable TISR in settings. Adjust distance setting.          |
| Cannot save images/videos.            | SD card is full or not inserted correctly.              | Check SD card insertion. Delete old files or replace SD card.                                  |
| Temperature readings seem inaccurate. | Incorrect emissivity setting; external interference.    | Adjust emissivity based on the target material. Ensure no obstructions or strong air currents. |

## SPECIFICATIONS

| Feature               | Detail                          |
|-----------------------|---------------------------------|
| IR Sensor Resolution  | 96x96 VOx                       |
| TISR Super Resolution | 240x240                         |
| Temperature Range     | -20°C to 550°C (-4°F to 1022°F) |
| Measurement Accuracy  | ±2°C or ±2%                     |
| Refresh Rate          | 25Hz                            |
| Emissivity            | Adjustable (0.01-1.0)           |
| Drop Protection       | 1.5m                            |
| IP Rating             | IP54                            |
| Battery Type          | Lithium Ion (included)          |
| Battery Life          | Up to 9 hours                   |
| Charging Port         | USB Type-C                      |
| Storage               | 8GB SD Card (included)          |
| Item Weight           | 1.26 pounds                     |
| Package Dimensions    | 10.51 x 5.79 x 4.69 inches      |

## WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the official HANMATEK website or contact their customer service directly. Keep your purchase receipt for warranty claims.

**Manufacturer:** Shenzhen Hanmatek Precision Technology Co.,Ltd.

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### Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question

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