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› HABOTEST /

› HABOTEST HT821A Thermal Imager User Manual

## HABOTEST HT821A

# HABOTEST HT821A Thermal Imager User Manual

Model: HT821A

Overview   Setup   Operation   Introduction   Safety Information   Product  
Applications   Maintenance   Troubleshooting   Specifications   Warranty &  
Support

## 1. INTRODUCTION

This manual provides detailed instructions for the safe and effective use of the HABOTEST HT821A Thermal Imager. The HT821A is a professional-grade handheld thermal imaging camera designed for fast, accurate, and intuitive temperature detection across various applications. It features a temperature measurement range of  $-20^{\circ}\text{C}$  to  $550^{\circ}\text{C}$  ( $-4^{\circ}\text{F}$  to  $1022^{\circ}\text{F}$ ) and an infrared resolution of  $96 \times 96$ , which can be enhanced to  $240 \times 240$  using super-resolution technology. Please read this manual thoroughly before operating the device.

## 2. SAFETY INFORMATION

To ensure safe operation and to prevent damage to the device, please observe the following safety precautions:

- Do not point the thermal imager directly at strong energy sources, such as the sun or high-power lasers, as this may damage the detector.
- Avoid exposing the device to extreme temperatures, high humidity, or corrosive environments.
- Do not disassemble or modify the device. Repairs should only be performed by authorized service personnel.
- Use only the specified charging cable and power adapter.
- Keep the device away from water and other liquids.
- Ensure the device is securely held during operation to prevent accidental drops.
- Dispose of the battery and device according to local regulations.

## 3. PRODUCT OVERVIEW AND COMPONENTS

The HABOTEST HT821A Thermal Imager package includes the following items:

- HABOTEST HT821A Thermal Imager
- USB Data Cable
- User Manual (this document)

Familiarize yourself with the main parts of the thermal imager:



Figure 3.1: Front view of the HABOTEST HT821A Thermal Imager, showing the display screen and control buttons.

## 4. SETUP

### 4.1 Charging the Device

The HT821A Thermal Imager is equipped with a built-in 2000mAh Lithium battery. Before initial use, ensure the device is fully charged.

1. Connect the provided USB-C data cable to the USB-C port on the thermal imager.
2. Connect the other end of the USB-C cable to a compatible USB power adapter (not included) or a computer's USB

port.

3. The charging indicator on the device will illuminate, indicating that charging is in progress.
4. Once fully charged, the indicator light will change (refer to device display for battery status).

## 4.2 Powering On/Off

- **To Power On:** Press and hold the power button (usually marked with a power symbol) until the screen illuminates.
- **To Power Off:** Press and hold the power button until the device powers down.

## 5. OPERATING INSTRUCTIONS

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### 5.1 Basic Temperature Measurement

The HT821A provides real-time temperature readings with automatic tracking of the highest, lowest, and center temperatures on the screen.



Figure 5.1: Display showing automatic tracking of highest and lowest temperature points.

The device automatically identifies and displays the maximum, minimum, and center point temperatures within the field of view, providing immediate insights into temperature distribution.

## 5.2 Super-Resolution Mode

Enhance the clarity of thermal images by activating the super-resolution mode. This technology increases the infrared resolution from 96x96 to 240x240.



Figure 5.2: Comparison of standard and super-resolution thermal images, showing enhanced detail.

- Refer to the device menu for activating or deactivating the super-resolution feature.
- When active, details such as edge contours and internal structures of objects become clearer, aiding in precise target detection and analysis.

## 5.3 Multiple Color Palettes

The HT821A offers 8 pseudocolor palettes to visualize temperature differences. Different palettes can highlight specific temperature ranges or details, making them suitable for various inspection scenarios.

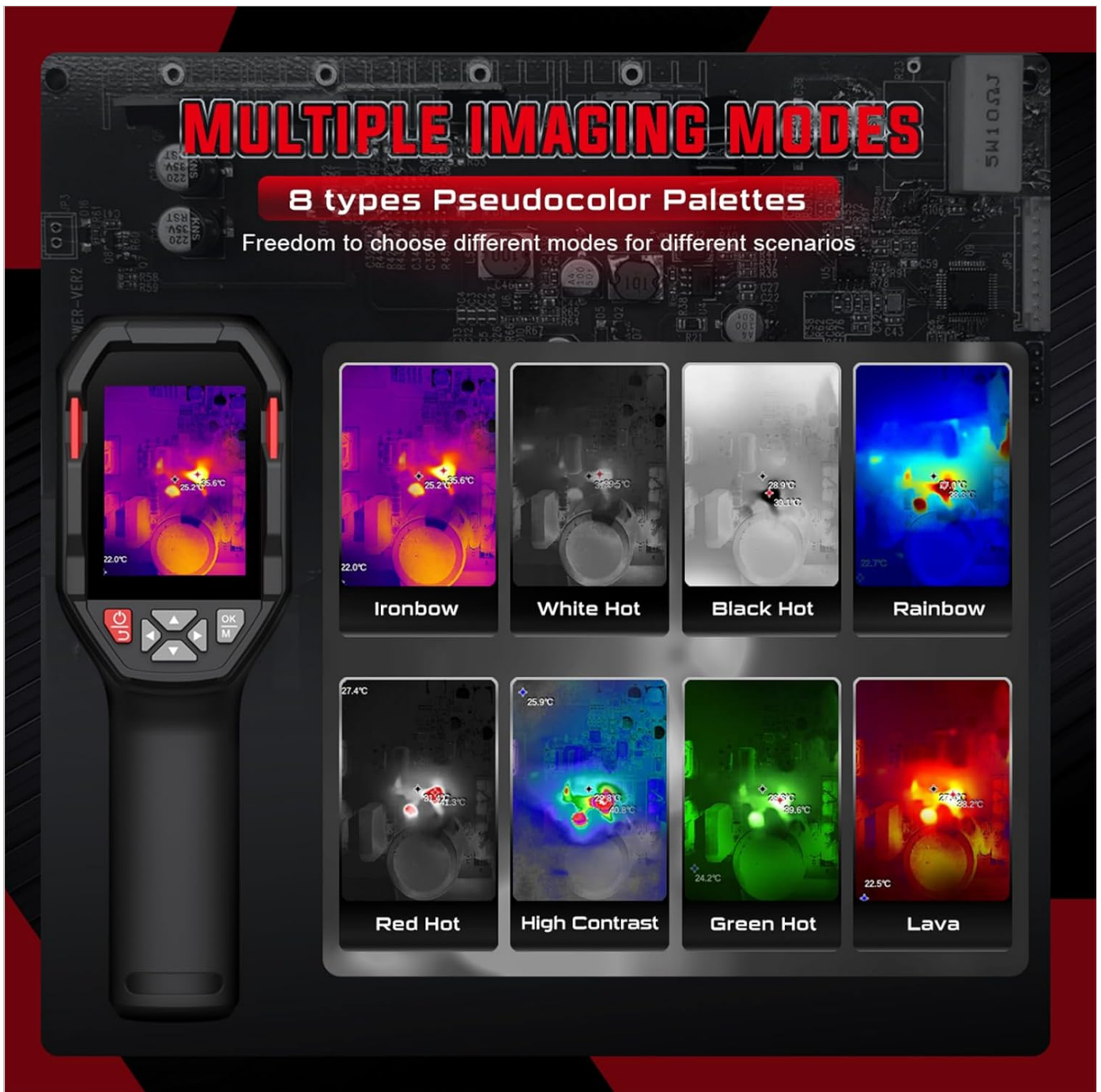


Figure 5.3: Examples of different pseudocolor palettes available on the HT821A.

- Common palettes include Ironbow, White Hot, Black Hot, Rainbow, Red Hot, High Contrast, Green Hot, and Lava.
- Navigate through the device menu to select the desired color palette.

#### 5.4 High and Low Temperature Alarm

Set custom temperature limits to trigger an alarm when measured temperatures exceed or fall below the defined thresholds.

# HIGH AND LOW TEMPERATURE ALARM

You can set a limit value for  
temperature alarm



Temperature measurement range  $-10^{\circ}\text{C} \sim +380^{\circ}\text{C}$   
when the temperature in the screen is higher or lower  
than the set limit value, it will warn you.

Figure 5.4: Visual representation of high and low temperature alarm functionality.

- Access the alarm settings in the device menu.
- Define the upper and lower temperature limits.
- The device will provide a visual or audible alert when temperatures fall outside the set range.

## 5.5 Area Temperature Measurement

The device allows for fixed-area temperature measurement, enabling you to analyze temperatures within a specific region of interest.

# 11 LANGUAGES TO CHOOSE FROM

The instrument comes with 11 languages to meet the needs of customers in different countries and regions.



Figure 5.5: Display with a fixed-area measuring frame, showing center, maximum, and minimum temperatures within that frame.

- Activate the area measurement function through the menu.
- A frame will appear on the screen, and the device will measure the center, maximum, and minimum temperatures exclusively within this frame.

## 5.6 Distance Compensation and Emissivity

- **Distance Compensation:** The HT821A supports distance compensation for improved accuracy, with settings for 0.5 M, 1 M, 2 M, and 3 M. Adjust this setting based on your distance to the target object.
- **Adjustable Emissivity:** The device features adjustable emissivity to ensure accurate readings across different material surfaces. Consult a table of common material emissivities and adjust the setting in the menu accordingly.

## 5.7 Language Settings

The HT821A supports multiple languages for user interface navigation.

Functions	HT821A
Resolution	Super resolution from 96*96 up to 240*240
Operating Bandwidth	8~14um
Frame Rate	25Hz
Netd	40mk@25°C
Field Of View	50°x 37.2°
Temperature Measurement Accuracy	±2°C Or ±2% Of The Reading, Whichever Is Greater
Temperature Measurement	-20°C ~ 550°C / -4°F ~ 1022°F
Temperature Measurement	Supports Full-screen Maximum, Minimum, And Center Point Temperature Measurement
Color Palette	White Heat, Black Heat, High Contrast, Iron Red
Infrared Effect	Soft, Enhanced, High Contrast
Distance Compensation	Supports 0.5 M, 1 M, 2 M, And 3 M
Screen Size	2.8 Inches
Language	Simplified Chinese, Italian, Russian, Japanese, German, English
Interface	USB Type-c (Supports Charging And Data Transfer)
Battery	2000mah Lithium Battery
Image Storage Format	JPG
Temperature Units	Celsius, Fahrenheit
Capacity	8 GB Built-in Memory Card

Figure 5.6: Language selection menu on the HT821A.

- Navigate to the language settings in the device menu.
- Select from available languages including English, Spanish, French, German, Dutch, Japanese, Korean, Russian, Arabic, Simplified Chinese, and Traditional Chinese.

### 5.8 Image Storage and Data Transfer

- **Image Storage:** The device has built-in memory to store thermal images in JPG format. Press the capture button (refer to device layout) to save an image.
- **Data Transfer:** Connect the thermal imager to a computer using the provided USB-C cable. The device will appear as a removable storage device, allowing you to transfer stored images for further analysis.

### 5.9 Flashlight Function

The HT821A includes a built-in flashlight for reliable operation in dark or low-light environments. Activate the flashlight through the device menu or a dedicated button (refer to device layout).

## 6. APPLICATIONS

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The HABOTEST HT821A Thermal Imager is a versatile tool suitable for a wide range of professional and home inspection scenarios.



Figure 6.1: Examples of the HT821A in use for various inspection tasks.

- **Building Inspection:** Detecting insulation deficiencies, moisture issues, and air leaks.
- **Electrical Maintenance:** Identifying overheating components in electrical panels, circuits, and motors.
- **HVAC Performance:** Inspecting heating and cooling systems for blockages or inefficiencies.
- **Mechanical Equipment:** Monitoring machinery for abnormal heat signatures indicating wear or malfunction.
- **Plumbing:** Locating hidden water leaks behind walls or under floors.
- **Automotive Inspection:** Diagnosing engine overheating, brake issues, or HVAC system problems.

## 7. MAINTENANCE

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## 7.1 Cleaning the Device

- Use a soft, dry cloth to clean the exterior of the thermal imager.
- For the lens and screen, use a lens cleaning cloth and a specialized lens cleaning solution. Do not use abrasive materials or harsh chemicals.
- Ensure no moisture enters the device openings.

## 7.2 Battery Care

- Charge the battery regularly, even if the device is not in use, to maintain battery health.
- Avoid fully discharging the battery frequently.
- Store the device in a cool, dry place when not in use for extended periods.

## 7.3 Storage

When storing the thermal imager, ensure it is kept in its protective packaging or a suitable case to prevent damage from impacts or dust. Avoid storing it in direct sunlight or areas with extreme temperature fluctuations.

# 8. TROUBLESHOOTING

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If you encounter issues with your HT821A Thermal Imager, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
Device does not power on.	Low battery or device malfunction.	Charge the device for at least 2 hours. If it still doesn't power on, contact customer support.
Image is blurry or unclear.	Dirty lens, incorrect focus (if applicable), or environmental factors.	Clean the lens with a soft cloth. Ensure the object is within the optimal measurement range. Activate Super-Resolution mode for enhanced clarity.
Inaccurate temperature readings.	Incorrect emissivity setting, distance compensation, or environmental interference.	Adjust the emissivity setting to match the target material. Verify distance compensation is set correctly. Avoid measuring through reflective surfaces.
Cannot transfer images to computer.	Faulty USB cable, incorrect connection, or driver issue.	Ensure the USB-C cable is securely connected to both the device and the computer. Try a different USB port or cable. Restart both devices.

If the problem persists after attempting these solutions, please contact HABOTEST customer support for further assistance.

# 9. SPECIFICATIONS

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The following table outlines the key technical specifications of the HABOTEST HT821A Thermal Imager:

Feature	Detail
Model	HT821A
Resolution	96x96 (Super resolution up to 240x240)
Operating Bandwidth	8-14µm
Frame Rate	25Hz
NETD	40mk@25°C
Field Of View	50°×37.2°
Temperature Measurement Accuracy	±2°C or ±2% of the reading, whichever is greater
Temperature Measurement Range	-20°C to 550°C (-4°F to 1022°F)
Temperature Measurement Features	Supports Full-screen Maximum, Minimum, and Center Point Measurement
Color Palettes	White Heat, Black Heat, High Contrast, Iron Red (and others)
Infrared Effect	Soft, Enhanced, High Contrast
Distance Compensation	Supports 0.5 M, 1 M, 2 M, and 3 M
Screen Size	2.8 Inches
Language Support	Simplified Chinese, Italian, Russian, Japanese, German, English, Spanish, French, Dutch, Korean, Arabic, Traditional Chinese
Interface	USB Type-C (Supports Charging and Data Transfer)
Battery	2000mAh Lithium Battery
Image Storage Format	JPG
Temperature Units	Celsius, Fahrenheit
Internal Storage	8 GB Built-in Memory Card
Outer Material	Plastic

## 10. WARRANTY AND SUPPORT

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### 10.1 Warranty Information

HABOTEST products are manufactured to high-quality standards. For specific warranty terms and conditions, please refer to the warranty card included with your product or visit the official HABOTEST website. The warranty typically covers defects in materials and workmanship under normal use.

### 10.2 Customer Support

If you have any questions, require technical assistance, or need to report a problem with your HABOTEST HT821A Thermal Imager, please contact HABOTEST customer support.

- **Online Support:** Visit the official HABOTEST website for FAQs, product registration, and contact forms.
- **Email Support:** Refer to your product packaging or the official website for the customer support email address.

Please have your product model number (HT821A) and purchase information ready when contacting support.

