INSTRUCTION MANUAL

MTi13

265 X 192 PIXEL
THERMAL IMAGER

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1. INTRODUCTION OVERVIEW

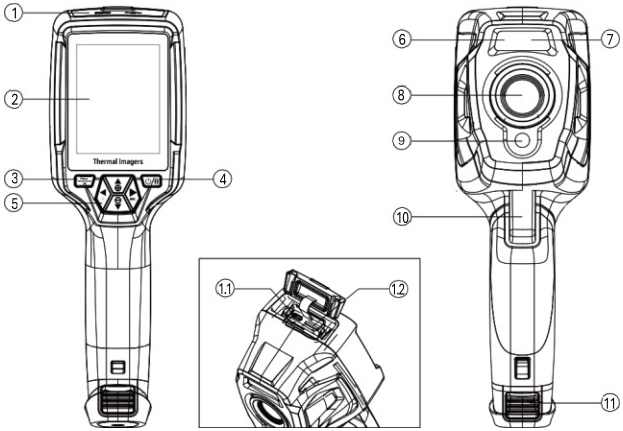
The MTi13 265 x 192 Pixels Thermal Imager is a handheld camera designed for predictive maintenance, troubleshooting, and equipment verification. Simply focus the lens on the target, and thermal and visual images appear on the LCD screen, ready to be saved to a Micro SD card. To transfer images to a PC, just remove the SD card and use the included card reader, or use the "Thermal-X" app to send images and video to a smart device. Additionally, the Thermal Imager supports video recording and playback.

2. SAFETY INFORMATION

- **Laser Warning:** To avoid eye injury, do not look directly into the laser or aim it at people, animals, or reflective surfaces.
- **Device Modifications:** Do not disassemble or modify the Thermal Imager.
- **Exposure to High Energy Sources:** Do not point the Thermal Imager, with or without the lens cover, at high-energy sources (e.g., devices emitting laser radiation or the sun). This may affect accuracy and damage the detector.
- **Temperature Limits:** Use the Thermal Imager only within the temperature range of -20°C to +50°C (-4°F to +122°F). Exposure outside this range can damage the device.
- **Battery Handling:** Use the correct equipment to charge and discharge the battery to avoid performance issues, reduced battery life, overheating, or explosions. Do not remove the battery while the Thermal Imager is on, as this can cause malfunction.
- **Battery Modifications and Care:** Do not disassemble or modify the battery. Damaged protection devices in the battery can cause overheating, explosions, or ignition. If battery fluid contacts eyes, rinse immediately with water and seek medical attention.
- **Battery Impact Avoidance:** Do not pierce, strike, or apply pressure to the battery, and keep it away from fire or direct sunlight. Do not solder directly onto the battery.
- **Charging Temperature:** Only charge the battery between 0°C to +50°C (+32°F to +122°F) to avoid overheating or performance issues.
- **Water Exposure:** Keep the battery away from water and salt water.
- **Cleaning Instructions:** Clean the Thermal Imager case with a damp cloth and mild soap. Avoid abrasives, isopropyl alcohol, and solvents on the case, lens, or screen. Clean the infrared lens gently to protect its anti-reflective coating.
- **Avoiding Condensation:** If moving the Thermal Imager from a cold to warm environment, power it off and wait for condensation to evaporate before use.
- **Storage:** Store the Thermal Imager in a cool, dry place when not in use. Remove the battery when stored for a long periods of time to avoid damage to the battery.

3. DESCRIPTION

1 - Interface and Cover
  1.1 Type C-USB/Charge
  1.2 Micro SD Card Slot
2 - LCD Display
3 - Menu/OK Button
4 - Power/Lock Button
5 - Up/Down/Right and Left Buttons
6 - Flashlight
7 - Laser Pointer
8 - Infrared Camera Lens
9 - Visual Camera
10 - Trigger
11 - Battery



4. BEFORE YOU START

4.1. How to Charge the Battery

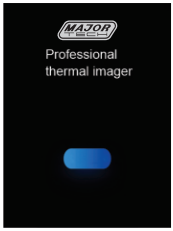
Before using the MTi13 Thermal Imager for the first time, fully charge the battery for about three and a half hours. The battery's status will display on a six-segment charge indicator. Here's how to charge it:

1. Connect the AC power adapter to a wall outlet and plug the DC output into the Thermal Imager's AC power socket. The charge light will turn on, and the battery indicator will display → → → → → while charging.
2. Charge until the charge indicator shows a steady icon, indicating that charging is complete.
3. Disconnect the AC power adapter once the battery is fully charged.

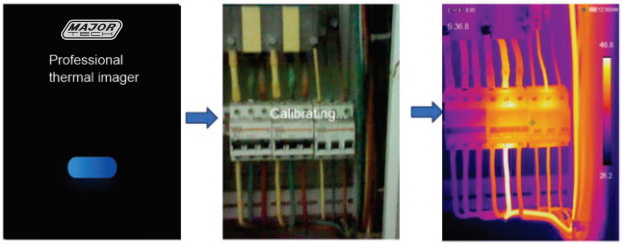
Note: Ensure the Thermal Imager is close to room temperature before charging. Avoid charging in very hot or cold areas, as extreme temperatures can decrease battery capacity.

4.2. Power On

To turn on the Thermal Imager, press the Power Button "⏻".



Note: After powering on, allow the MTi13 Thermal Imager a brief warm-up period for accurate temperature readings and optimal image quality. First, the visible image will appear, followed by a brief calibration of the thermal sensor. Once calibrated, the thermal image will display on the screen.

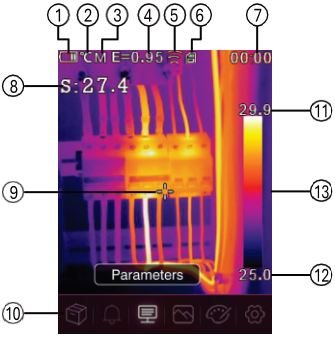


4.3. Power OFF

To turn off the Thermal Imager, press and hold the Power Button "⏻" for two seconds for the power off menu to pop up. Press the "**OK**" button to power off the device. Hold the Power Button for 12 Seconds to force the device to power off.

4.4. Desktop

The desktop is as follows:



1 - Battery Capacity Status
2 - Temperature Unit
3 - Distance Unit
4 - Emissivity
5 - Wifi Status
6 - SD Card
7 - Time
8 - Centre Point Temperature readings
9 - Centre Point Cross
10 - Main Menu
11 - Max Temperature of Current Scene
12 - Min Temperature of Current Scene
13 - Colour Bar

4.5. Shutter

The thermal image on the Thermal Imager may become blurry after a few minutes or when switching targets. To maintain a clear image, the device needs periodic correction.

The Thermal Imager offers two correction modes: Manual and Auto.

- **In Manual Mode**, press and hold the down arrow button to perform a correction.
- **In Auto Mode**, the device corrects itself automatically whenever the thermal image becomes blurry.

4.6. Temperature Measurement

All objects emit infrared energy, with the amount based on their actual surface temperature and emissivity. The Thermal Imager detects this infrared energy to estimate the object's temperature. Many common materials, like painted metal, wood, water, skin, and cloth, emit energy effectively, making it easier to capture accurate temperature readings. High-emissivity surfaces (≥0.90) are good radiators of energy and yield reliable measurements. However, shiny surfaces or unpainted metals, which have an emissivity below 0.6, do not radiate energy as well. For these low-emissivity materials, adjusting the emissivity setting helps improve temperature accuracy. See the Emissivity Adjustment section for details on optimizing settings for accurate readings.

4.7. Emissivity Adjustment

Selecting the correct emissivity value is essential for accurate temperature measurement, as surface emissivity significantly impacts the temperature readings the Thermal Imager detects. By understanding and adjusting emissivity values, you can improve measurement accuracy.

Note: For surfaces with emissivity below 0.60, accurate temperature readings become more challenging. Lower emissivity surfaces introduce more potential error in the Imager's calculations, even with proper emissivity and background adjustments.

You can set emissivity directly as a numerical value or choose from a list of common materials. The LCD screen displays global emissivity as **E=x.xx**.

The following table gives typical emissivity of important materials:

Material	**Emissivity**	**Material**	**Emissivity**
Water	0.96	Tape	0.96
Stainless Steel	0.14	Brass Plate	0.06
Aluminum Plate	0.09	Human Skin	0.98
Asphalt	0.96	PVC Plastic	0.93
Concrete	0.97	Polycarbonate	0.80
Cast Iron	0.81	Oxidized Copper	0.78
Rubber	0.95	Rust	0.80
Wood	0.85	Paint	0.90
Brick	0.75	Soil	0.93

4.8. Reflected Temperature

To improve the accuracy of temperature measurements with infrared instruments, reflection is accounted for using an offset factor, especially important for low-emissivity objects. Typically, reflected temperature matches ambient air temperature. However, if there are nearby objects with high emissions and much higher temperatures, this should be considered. Reflected temperature has minimal impact on high-emissivity objects and can be set individually.

Steps to Set Reflected Temperature:

1. Set the emissivity to 1.0
2. Adjust the lens for a close focus.
3. Look away from the object and take a measurement, then freeze the image.
4. Find the average value of the image and use it as the reflected temperature input.

4.9. Thermal Imager Reporter Software

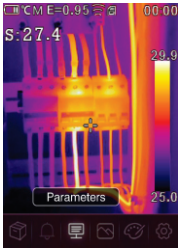
The Thermal Imager comes with Thermal Imager Reporter software, which enables image analysis, data organization, and professional report creation. The software also allows you to add audio annotations and commentary that can be reviewed on a PC.

5. MENUS

The menus, are access for image, measurement, Emiss, Palette, temperature measurement range, take photo and video, review, and settings.

5.1 Main Menu

- Press the "**Menu/OK**" button to open the main menu.
- The Main Menu serves as the primary interface for the Thermal Imager's settings.
- It includes six options: Gallery, Measurement Parameters, Image Mode, Palette, and System Settings.



Gallery: Access saved images and videos.

Alarm: Set the alarm for the Max and Min Temperatures

Parameters: Settings used for temperature calculations

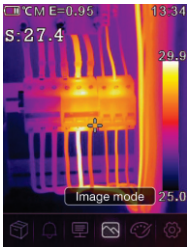
Image Mode: Select the image source displayed on the Thermal Imager's LCD. Options include six modes, such as infrared image, visual image, and fusion.

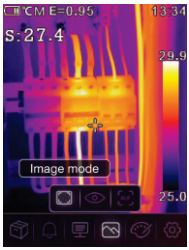
Palette: Choose the colour scheme for the display.

Settings: customize user preferences like language, temperature units, date, and time. Also includes options to restore factory settings and view product information

5.2. Image Mode

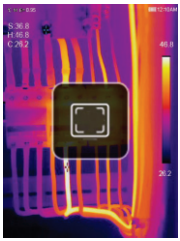
1. In the main menu, press the "**<**" or "**>**" button to highlight "**Image Mode**."
2. Press the "**^**" button to open the Image submenu, showing five image modes.
3. Use the "**<**" or "**>**" button to highlight the image mode you want.
4. The image mode will change as soon as you select it.



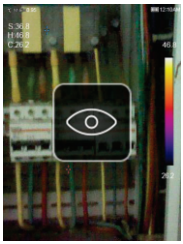


The Thermal Imager offers five display image modes: IR, Visible, Picture-in-Picture, AUF Mode, and Zoom Mode.

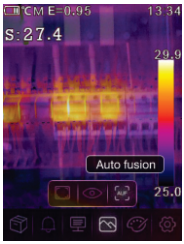
IR: displays infrared image:



Visible: displays only visible image:



AUF: Auto Fusion Mode compares the temperature in the centre area with the rest of the screen. The device then automatically calculates the blending ratio of infrared and visible images for the best results.

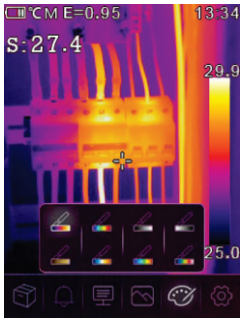


5.3. Image Palette

- The Image Palette allows you to adjust the false-colour display of infrared images, both live and captured.
- A range of palettes is available, tailored for different applications.
- Standard palettes provide an evenly distributed, linear colour scheme, ensuring optimal detail visibility.

5.4 Standard Palette

1. In the main menu, press the "**<**" or "**>**" button to highlight **Palette**.
2. Press the "**^**" button to open the Image submenu, which displays eight colour palette options.
3. Use the "**<**" or "**>**" button to highlight your desired palette.
4. Once selected, the palette mode will switch to the one you've chosen.



Iron	Rainbow	Grey	Grey invert	Brown hot	Blue red	Hot cold	Feather

5.5. Image Adjustment

The device offers three modes for image adjustment: Histogram, Auto, and Manual.

5.5.1. Lock Operation

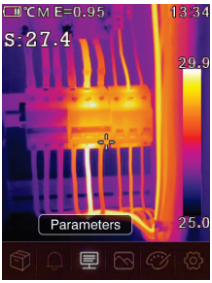
1. Press the "⏻/θ" button to lock the current scene's temperature range. The "θ" icon indicates Manual mode.
2. After locking the temperature range, press the "**^**" or "**v**" buttons to adjust the high and low-temperature levels, allowing you to focus on the temperature range of interest in the image.

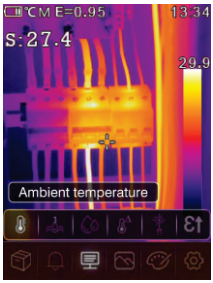
5.5.2. Histogram Mode and Auto Mode

- **Auto Mode:** In this mode, the level and span are automatically determined based on the minimum and maximum temperatures in the thermal image. The relationship between temperature and colour is linear.
- **Histogram Mode:** This mode enhances the thermal image using a histogram algorithm, creating a non-linear relationship between temperature and colour. Certain parts of the image are enhanced for better visibility.
- Press the "⏻/θ" button to toggle between modes.

5.6. Parameter Menu

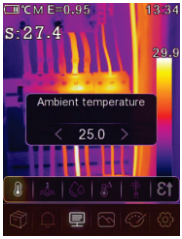
1. In the main menu, press the "**<**" or "**>**" button to highlight **Parameters**.
2. Press the "**^**" button to open the Object Parameter submenu.





5.6.1. Ambient Temperature Compensation

- In the **Ambient Temperature** submenu, use the "**<**" and "**>**" arrows to adjust the temperature value.
- Ambient temperature affects the thermal imager's measurements and can be adjusted within a range of 0°C to 50°C.

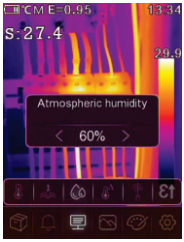


5.6.2. Reflective Temperature

- In the **Reflective Temperature** submenu, use the "**<**" and "**>**" arrows to adjust the temperature values.
- Reflective temperature is crucial for accurate radiometric temperature measurement, as the Thermal Imager compensates for it during calculations.
- For precise readings, ensure the reflective temperature is set accurately.
- Typically, the reflective temperature matches the ambient temperature. However, if there are nearby objects with high temperatures and strong emissions, you must adjust the reflective temperature accordingly.

5.6.3. Atmospheric Humidity

- In the **Atmospheric Humidity** submenu, use the "**<**" and "**>**" arrows to adjust the humidity value.
- Water vapor in the air can absorb infrared radiation, potentially affecting temperature measurement accuracy.
- You can set the compensation humidity level between 10% and 100% to account for varying air moisture.

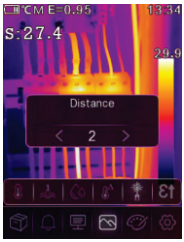


5.6.4. Delta Temperature Compensation

- In the **Delta Temperature** submenu, use the "**<**" and "**>**" arrows to adjust the temperature values.

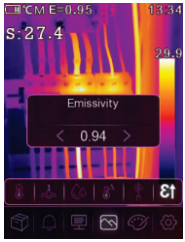
5.6.5. Distance

- In the **Distance** submenu, use the "**<**" and "**>**" arrows to adjust the distance value.
- Various substances in the air can absorb infrared rays, causing the infrared signal from the object to weaken as the distance increases.
- You can set the distance range from 2 meters to 1000 meters to account for this effect.



5.6.6. Emissivity

- In the **Emissivity** submenu, use the "**<**" and "**>**" arrows to adjust the emissivity value.
- Emissivity sets the object's ability to emit infrared radiation, with a value range from 0.01 to 1.00.

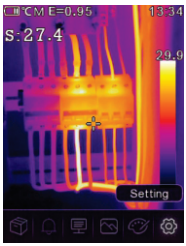


5.6.7. Alarm Mode

- **OFF:** Disables both the alarm display and sound.
- **Above Alarm:** Triggers an alarm (sound and display) when the object's temperature exceeds the upper alarm threshold.
- **Below Alarm:** Triggers an alarm (sound and display) when the object's temperature falls below the lower alarm threshold.

5.7. Settings Menu

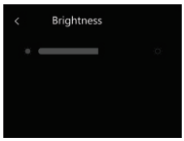
1. In the main menu, press the "**<**" or "**>**" button to highlight **Settings**.
2. The Settings menu will then be displayed.



5.7.1. Device Settings

The Device Settings menu contains multiple pages. Use the "**˅**" button to move to the next item or the "**^**" button to return to the previous item.

Brightness: Use the slider bar to adjust the LCD brightness.



WiFi: Press the **Menu/OK** button to turn on WiFi. The WiFi operates in Access Mode, so you'll need to set the SSID and Password to allow other devices to connect. The default SSID is "xxxxx," and the default password is "12345678".

Time & Date: Press the "**^**" or "**˅**" button to select the year, month, and other time/date settings. Then press the **Menu/OK** or "**>**" button to change the time/date.

Language:

Press the "^" or "˅" button to select your desired language, then press the **Menu/OK** button to confirm and apply the selected language.

Auto Power Off:

- There are four options in the Auto Power Off menu: "OFF", "5 Min", "10 Min", "15 Min", and "30 Min".
- Press the **Menu/OK** button to reset the Auto Power Off timer, starting the countdown again

Info:

The Info menu displays all product details, including the software version, serial number, and other relevant information.

5.7.2. Measure Settings

- Select the **Measure Settings** menu to display the available options.
- The Measure Settings menu includes several options, as shown in the following image.

Max Temp: Press the **Menu/OK** button to toggle the maximum temperature measurement on or off.

Min Temp: Press the **Menu/OK** button to toggle the minimum temperature measurement on or off.

Distance Unit:
- You can switch the distance unit between "m" (meters) and "ft" (feet).
- 1 ft = 0.3048 m and 1 m = 3.2808399 ft.

Temperature Unit:
- There are three temperature units to choose from: **°C** (Celsius), **°F** (Fahrenheit), and **K** (Kelvin).
- **Conversion relationships:**
  - o **°F = (1.8 × °C) + 32**
  - o **K = °C + 273.15**

Temperature Range:
- The available temperature measurement ranges are **-20°C to 150°C** and **0°C to 550°C.**
- For more accurate measurements, it is recommended to select the **-20°C to 150°C** range, as it offers greater precision in the overlapping temperature area

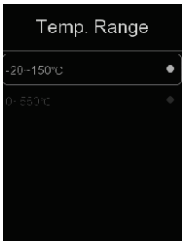
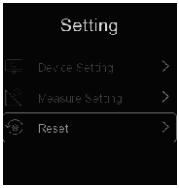
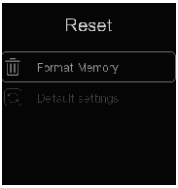


Image Align:
Press the "**<v ^>**" button to align the visual and infrared images.
- Press the "**⏻/θ**" button to cancel the alignment.
- Press the **Menu/OK** button to save the alignment setting.

Reset:

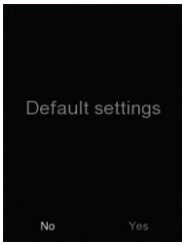




Format Memory:
The **Format Memory** operation will erase all images in the Picture Gallery, but it will not affect the device settings.

Factory Settings:
The Factory Settings of the Thermal Imager are as follows:

item	Parameter	Value
Measurement	Center Spot Measurement	On
	Hot Spot Measurement	Off
	Cold Spot Measurement	Off
Measurement Parameters	Emissivity	0.95
	Reflective Temperature	25°C
System Setting	Language	English



5.8. Camera Menu

The Thermal Imager features both photo and video functions:

- **Photo Function:** The Imager can save thousands of images, each with a resolution of **1280 x 960** in **.jpg** format. These images store both infrared and visible data.
- **Video Function:** The Imager supports **.mp4** video capture for hours, saving infrared data in **.mp4** format.

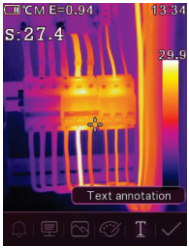
Note: All images and video files are stored on the SD Memory Card and can be easily accessed and analysed using the Thermal Imager's PC software.

5.8.1. Save Image

1. In **Desktop mode**, press the **Trigger** button to freeze the image. The **Save** menu will appear.
2. Use the "**<**" or "**>**" button to highlight **Save**. Press the **Menu/OK** button to save the image. The image will flash for a second, and once saved, it will return to its normal, unfrozen state.

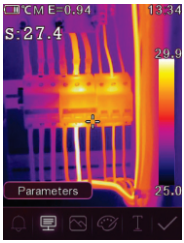
5.8.2. Add Text Note

Press the "**<**" or "**>**" button to highlight **Text Annotation**, then press the **Menu/OK** button. This allows you to add text information to the image. The next time the saved image is opened in the gallery or on PC software, the text will be displayed alongside the picture.



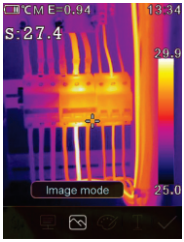
5.8.3. Change Measure Parameters

Press the "**<**" or "**>**" button to highlight **Parameters**, then press the **Menu/OK** button. This will allow you to adjust the image's measurement parameters, including **Emissivity, Ambient Temperature, Humidity, Reflective Temperature, Infrared Compensation,** and **Distance**.



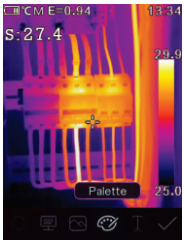
5.8.4. Change Image Mode

You can switch between different image modes: **Thermal, Visible,** and **Auto Fusion**.



5.8.5. Change Colour

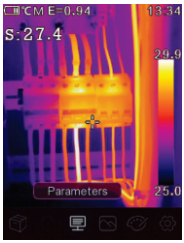
You can change the colour scheme of the image.



5.9. Video Menu

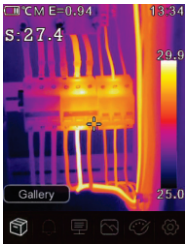
The Thermal Imager supports **.mp4** video capture.

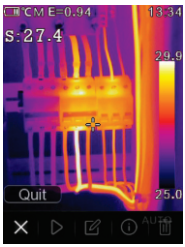
1. In **Desktop mode**, press and hold the **Trigger** button for about **2 seconds** to start video capture, including audio.
2. Press the **Trigger** button again to stop the video capture. The video will be saved in the video file.



5.10. Files Browser

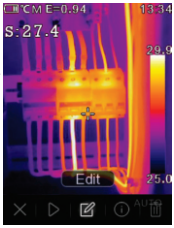
In the main menu, press the "**<**" or "**>**" button to highlight **Gallery**, then press the **Menu/OK** button to open the **Files Browser**. This will display all pictures and videos saved on the SD Memory Card.

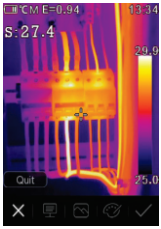




5.11. Analyse an Image

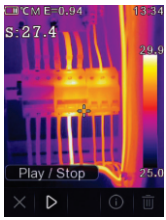
When the current file is an image, press the "**<**" or "**>**" button to highlight **Edit**, then press the **Menu/OK** button to enter **Image Analysis Mode**. In this mode, you can adjust measurement parameters, use analysis tools, and change the image mode and color.

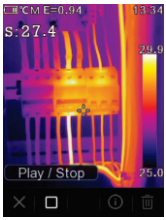




5.12. Play a Video

When the current file is a video, press the "**<**" or "**>**" button to highlight **Play/Stop**, then press the **Menu/OK** button to start or stop the video playback.

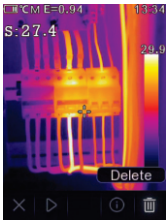


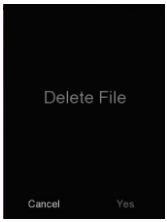


View Image Info

Press the "**<**" or "**>**" button to highlight **Info**, then press the **Menu/OK** button to view the details of the current file.

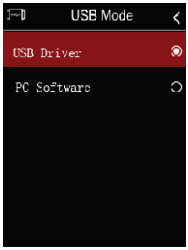
Delete a File Press the "**<**" or "**>**" button to highlight **Delete**, then press the **Menu/OK** button to delete the current file.

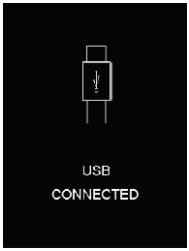




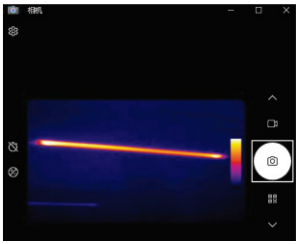
USB Mode There are two modes for USB connection: **Storage** and **PC Camera**. Use the "^" or "˅" button to switch between the modes.

1. USB Driver
In **Storage Mode**, you can browse files stored on the SD card from your computer. When in Storage mode, the image on the right will be displayed:





2. PC Software
In **PC Camera Mode**, the device acts as a USB camera for your computer. When this mode is selected, the the image on the right will be displayed:



6. FAULT DIAGNOSIS AND EXCLUSION

- If you experience any issues while using the thermal imager, refer to the troubleshooting table below for potential solutions.
- If the issue persists, disconnect the power and contact Major Tech's technical support department for assistance.

Phenomenon of the fault	Cause of the fault	Solution
Thermal imager cannot start	No battery	Insert the battery
	No power	Replace the battery or charge it
Thermal imager shut down	No power	Replace the battery or charge it
No Thermal image	The lens cap cover	Open the lens cap

7. ANDROID/IOS APP: THERMAL-X

Software Installation and Uninstallation

System Requirements

- **Android: Android 4.0 or higher, with USB OTG support.**
- **iOS: iPhone 4 or above.**

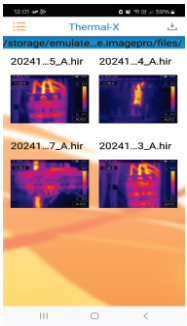
Thermal-X App Installation

- **Android: Search for "Thermal-X" on Google Play and install it.**
- **iOS: Search for "Thermal-X" on the Apple App Store and install it.**

Thermal-X Function

Import Pictures

1. Use the **USB OTG** cable to download the infrared pictures directly from the thermal imager.
2. Copy the infrared pictures from a PC or SD card.



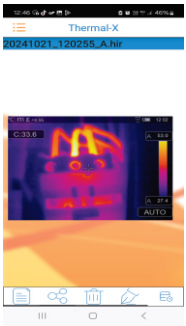
Analyse

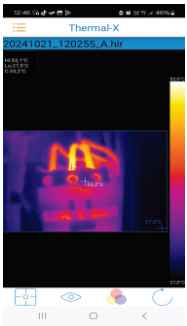
Click the " " icon to apply one of three analysis tools:

Image Mode

To change the image display mode, click the **"Image mode"** icon, and you will have four modes to choose from:

1. **IR Mode:** Only the infrared (IR) picture is displayed.

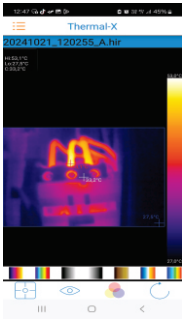




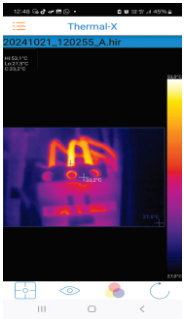
2. **Visible Mode:** Only the visible image is displayed.
3. **IR Fusion Mode:** Combines the infrared image with the visible image to create a fusion.
4. **Visible Fusion Mode:** Displays a full-screen fusion, with the visible image blended with the infrared image.

Colourbar Select

Click the " " icon to choose from eight different colourbars. The colourbar allows you to modify how temperature gradients are visually represented in the thermal image, offering various colour schemes to best highlight specific temperature differences.



Click the " " icon to access the analysis tools for infrared (IR) pictures. The three analysis tools available are:



1. **Point Analyse:**
   - o Add a point to the image.
   - o It will display the temperature of that specific point.

2. **Line Analyse:**
   - o Add a line to the image.
   - o This will display the highest, lowest, and average temperature along that line.

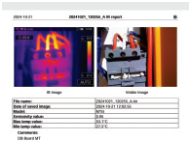
3. **Area Analyse:**
   - o Add a rectangular area to the image.
   - o This will display the highest, lowest, and average temperature within that selected area.

These tools help in precisely analysing the temperature data in different sections of the thermal image.

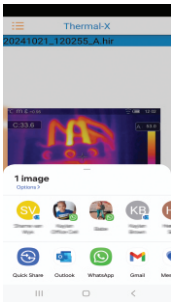
Save and Exit
To save your progress and exit the analysis, click the "" icon. This will save any changes or analyses made on the IR picture and return you to the main page of the app.

Report and Share

1. Report
To generate a report, click the "" icon. This will allow you to save the analysis as a PDF file, which can then be shared or printed.



2. Share
To share the infrared image, click the "" icon. This will allow you to send the image via email, upload it to the cloud, or share it through messaging apps, depending on your device and settings.



PC Software Installation and Uninstallation
System Requirements
- **Windows XP** or a higher version of Windows
- **.NET Framework 2.0** or **.NET Framework 3.5** (includes 2.0)

Installing .NET Framework 2.0

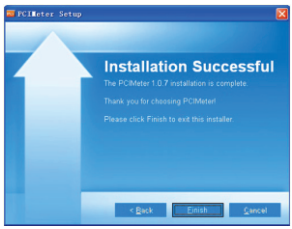
1. If your system does not already have **.NET Framework 2.0** installed, download and run the **Microsoft .NET Framework 2.0** installer from the provided link.
2. Follow the on-screen instructions to install the framework.
3. If **.NET Framework 2.0** is already installed, you do not need to reinstall it.

Installing IRMeter Software

1. **Using Installation USB:**
   Insert the installation USB and follow the instructions for installation.
2. **Using Setup.exe:**
   If you don't have the installation USB, you can run the "**setup.exe**" file to install the software:
   o Double-click on **setup.exe**.
   o Follow the on-screen instructions to complete the installation.

Installing PC Software

1. To install the PC software:
2. After launching the **setup.exe** file, click "**Next**" to proceed with the installation.
3. Follow the on-screen instructions and prompts to complete the installation process.
4. Continue clicking "**Next**" until the installation is finished.
5. Once the installation is complete, click "**Finish**" to finalize the process and close the installer.
6. After installation, you can open the software via the desktop shortcut or the start menu to begin using it.



Run Software
To run the **PCIMeter** software after installation:

1. Ensure that the **PCIMeter** software has been successfully installed on your computer.
2. Find the **PCIMeter** shortcut either on your desktop or in the Start menu.
3. Double-click the shortcut to open and launch the software.

Once the software is running, you can begin using it to analyze infrared images and perform other functions as required.

Uninstalling PC Software
To uninstall the **PCIMeter** software:

1. Open the **Start menu** on your computer.
2. Search for "**PCIMeter**" in the list of installed programs.
3. Right-click on **PCIMeter** and select "**Uninstall**".
4. Follow the on-screen prompts, and when asked, click "**Next**" to proceed with the uninstallation process.
5. Wait for the uninstallation to complete, then confirm by clicking "**Finish**".

Once the process is finished, **PCIMeter** will be removed from your system.

8. SPECIFICATIONS

8.1. Imaging and Optical Data

Function	Range
Field of view (FOV) / Minimum focus distance	62°x 48°/ 0.5m
Spatial resolution (IFOV)	4.6mrad
Thermal sensitivity/NETD	<0.04°C at 30°C/40mk
Image frequency	25Hz
Focus mode	Focus free
Focal length	2.6mm
Focal Plane Array (FPA) / Spectral range	Uncooled microbolometer / 7.5–14 µm
IR resolution	256x192 pixels

8.2. Image Presentation

Function	Range
Display	2.8 in. LCD, 240x320 pixels
Image modes	IR image, Visual image, Auto fusion
Colour palettes	IRON, Rainbow, Grey, Grey Inverted, Brown, Blue-red, Hot-cold, Feather

8.3. Measurement

Function	Range
Object Temperature Range	-20°C to +550°C
Accuracy	±2°C or ±2% of reading (Environment temperature 10 to 35°C, Object temperature >0°C).

8.4. Measurement Analysis

Function	Range
Spot	Center Spot
Automatic Hot /Cold Detection	Auto hot or cold markers
Measurement Corrections	Emissivity, Reflected temperature

8.5. Storage of Videos

Function	Range
Storage Media	8Gbytes Micro SD card and 3.4GB internal EMMC
Video Storage Format	Standard MPEG-4 encode, 240x320 @30fps, on memory card > 30 minutes
Video Storage Mode	IR/visual images; simultaneous storage of IR and visual images

8.6. Storage of Images

Function	Range
Image Storage Format	Standard JPEG or HIR files including measurement data, on memory card >6000 pictures
Image Storage Mode	IR/visual images; simultaneous storage of IR and visual images
Image analyse	Internal image analyse tools, Complete function.

8.7. Set-Up

Function	Range
Set-Up Commands	Local adaptation of units, language, date and time formats, information of camera
Languages	Multinational

8.8. Digital Camera

Function	Range
Built-in Digital Camera	2 Megapixels
Built-in Digital Lens Data	FOV 65°

8.9. Data Communication Interfaces

Function	Range
Interfaces	USB-Type C and WiFi
USB	Data transform between camera and PC Live video between camera and PC
Wifi	802.11, transfer images and realtime video stream.

8.10. Power System

Function	Range
Battery	Li-ion battery, 4 hours operating time
Input Voltage	DC 5V
Charging System	In camera (AC adapter)
Power Management	Automatic shutdown

8.11. Environmental Data

Function	Range
Operating Temperature Range	-15°C to +50°C
Storage Temperature Range	-40°C to +70°C
Humidity (Operating & Storage)	10%~90%
Drop Test	2m
Bump	25g (IEC60068-2-29)
Vibration	2g (IEC60068-2-6)

8.12. Physical Data

Function	Range
Camera Weight, Incl. Battery	<500g
Camera Size (L x W x H)	224 x 77 x 96

9. PRODUCT REGISTRATION

Register your new Major Tech product today to activate your warranty and stay up-to-date with the latest software and firmware updates, ensuring optimal performance and security. By registering, you'll also gain access to exclusive offers and trade-in opportunities, helping you get the most value from your purchase. In addition, you'll receive important safety and recall notifications to keep you informed and protect your device. Should the need arise, registering allows you to directly discuss potential warranty claims with a Major Tech representative, and even report if your product has been sold or stolen, ensuring you receive the support you need.

Scan to Register & Activate Warranty

10. WARRANTY

Warranty Coverage

Major Tech warrants its test instruments to be free from defects in materials or workmanship under normal use and service for a period of two (2) years from the date of shipment. This warranty is extended exclusively to the original purchaser, provided the online Product Registration has been completed on either www.major-tech.com or www.majortech.com.au, depending on which country the product was purchased. This warranty is non-transferable.

Exclusions

This warranty does not cover:

- Disposable batteries and fuses
- Damage caused by leaking batteries (damaging the meter and components)
- Normal wear and tear of mechanical components
- Failures caused by use outside the product's specifications
- Any product which, in the opinion of Major Tech, has been misused, contaminated, or damaged due to neglect.

Check Procedure

Prior to contacting Major Tech or a distributor regarding a warranty claim, please check the following:

- Batteries are installed correctly
- Battery condition – either replace disposable batteries or ensure rechargeable batteries are charged where applicable
- Test leads are inserted in the correct terminals and are fully inserted, no damage to test leads.

Contact Information

For any warranty claims or inquiries, please contact either Major Tech or the distributor from whom the product was purchased.

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