

Elitech ICT-220

# Elitech ICT-220 Bluetooth Thermocouple Thermometer User Manual

MODEL: ICT-220

Brand: Elitech

Overview

Safety Information

Package Contents

Setup

Operation

Maintenance

Troubleshooting

Specifications

Warranty & Support

1. PRODUCT OVERVIEW

The Elitech ICT-220 is a dual-channel Bluetooth thermocouple thermometer designed for precise temperature measurement and data logging. It supports K-type thermocouples and offers real-time data viewing via a dedicated mobile application. This device is suitable for various applications including industrial, HVAC, freezer, and laboratory environments.

Key features include:

- Real-time data viewing and graphing on the "Elitech Tools" APP.
- Optional 5000-group recording capacity with unlimited data storage when connected to the APP.
- Support for two K-type thermocouples with ADJ Temperature Compensation.
- Switchable Fahrenheit/Celsius units.
- Functions for MAX/MIN/AVG temperature, and temperature difference (T1-T2).
- Data hold, LCD backlight control, and auto-off features.
- Magnetic design for convenient placement.



Figure 1: Elitech ICT-220 Thermometer with connected K-type thermocouples and the accompanying mobile application interface.

## 2. SAFETY INFORMATION

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Please read all safety warnings and instructions before using this product to prevent electric shock, fire, or injury. Keep this manual for future reference.

- Do not attempt to repair or modify the device. Refer all servicing to qualified personnel.
- Ensure proper connection of thermocouples to avoid inaccurate readings or damage.
- Do not expose the device to extreme temperatures, humidity, or direct sunlight.
- Avoid dropping the device or subjecting it to strong impacts.
- Always use the specified battery type (AA batteries) and dispose of them properly.
- Keep the device away from strong electromagnetic fields.
- This device is not waterproof. Do not soak in water or other liquids.

## 3. PACKAGE CONTENTS

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Verify that all items are present in the package:

- Elitech ICT-220 Thermometer Unit
- 2 x K-Type Thermocouples
- Nylon Tie
- 3 x AA Batteries (pre-installed or included separately)
- User Manual (this document)



Figure 2: All items included in the Elitech ICT-220 product package.

## 4. SETUP GUIDE

### 4.1. Battery Installation

1. Locate the battery compartment cover on the back of the device.
2. Open the cover and insert 3 AA batteries, ensuring correct polarity (+/-).
3. Close the battery compartment cover securely.

## 4.2. Thermocouple Connection

1. Identify the two input ports labeled T1 and T2 on the top of the thermometer.
2. Connect the K-type thermocouples to the respective ports. Ensure the yellow and red prongs are inserted into the correct terminals (yellow to positive, red to negative).
3. The device will display temperature readings for T1 and T2 once connected.



Figure 3: Connecting K-type thermocouples to the Elitech ICT-220 device.

## 4.3. Mobile Application Installation

The Elitech ICT-220 integrates with the "Elitech Tools" mobile application for enhanced functionality, including real-time data graphing, report generation, and advanced settings.

1. Download the "Elitech Tools" app from the App Store (iOS) or Google Play Store (Android).
2. Install the application on your smartphone or tablet.

## 4.4. Bluetooth Pairing

1. Ensure Bluetooth is enabled on your mobile device.

2. Power on the Elitech ICT-220 thermometer.
3. Open the "Elitech Tools" app and follow the on-screen instructions to search for and connect to your ICT-220 device. The device name will typically appear as "ICT-220" or similar.
4. Once paired, the Bluetooth icon on the thermometer's display will indicate a successful connection.

## 5. OPERATING INSTRUCTIONS

### 5.1. Device Controls



Figure 4: Elitech ICT-220 Button Functions.

- **Power Button (Red):** Press and hold to power ON/OFF the device.
- **Settings Button (Gear Icon):** Press and hold to enter the settings menu. Press to navigate within menus.
- **Temperature Interface Switch (Three Lines Icon):** Press to cycle through different display modes (e.g., T1, T2, T1-T2).
- **Bluetooth ON/OFF (Bluetooth Icon):** Press to toggle Bluetooth connectivity.
- **Temperature Change Display (Wave Icon):** Press to view temperature change trends.
- **Buzzer ON/OFF (Speaker Icon):** Press to enable or disable the buzzer.
- **HOLD Button:** Press to hold the current temperature readings on the display.

### 5.2. Real-time Temperature Measurement

After connecting the thermocouples and powering on the device, the current temperatures for T1 and T2 will be displayed on the LCD screen. The acquisition frequency is greater than 5 times per second, with a response time (T99) of less than 2 seconds for bare wire thermocouples.



# Faster Response Time More Frequent Data Grabs

T99  
< 2 Seconds  
(Bare Wire)

Acquisition  
Frequency  
> 5 Times/s



Figure 5: Real-time temperature display on the ICT-220.

## 5.3. Switching Temperature Units

To switch between Celsius (°C) and Fahrenheit (°F):

1. Press and hold the **Settings Button** (Gear Icon) to enter the settings menu.
2. Use the navigation buttons to select "UNIT".
3. Press the **Settings Button** again to toggle between °C and °F.
4. Exit the settings menu to apply the changes.



Figure 6: Changing temperature units on the ICT-220.

#### 5.4. MAX/MIN/AVG and Temperature Difference

The device can display maximum, minimum, average temperatures, and the difference between T1 and T2.

1. Press the **Temperature Change Display Button** (Wave Icon) to cycle through MAX, MIN, and AVG interfaces for T1 and T2.
2. Press the **Temperature Interface Switch Button** (Three Lines Icon) to view the temperature difference (T1-T2).

## Real-time Data Viewing on APP

Acquisition frequency > 5 times/s. Response time: T99 < 2s.



Figure 7: Display modes for MAX/MIN/AVG and temperature difference.

### 5.5. Data Logging and Reporting (via App)

The Elitech ICT-220, when connected to the "Elitech Tools" app, offers advanced data logging capabilities.

- **Real-time Graphing:** View live temperature data in a graphical format on the app.
- **Data Storage:** The device has an optional 5000-group recording capacity. When connected to the app, data storage is unlimited.
- **Report Generation:** The app can automatically generate CSV/PDF reports of recorded data.
- **OTA Firmware Upgrade:** The app supports Over-The-Air firmware upgrades to keep your device up-to-date.



# Instant Data Analysis with CSV/PDF Report

OTA Upgrade Keep Up-To-Date



Figure 8: Real-time data viewing on the Elitech Tools app.



Figure 9: Instant data analysis and OTA upgrade capabilities.

## 5.6. ADJ Temperature Compensation

The device supports ADJ Temperature Compensation for improved accuracy. This setting can be accessed and adjusted within the device's settings menu or through the Elitech Tools app.

### 5.7. Magnetic Design

The Elitech ICT-220 features a built-in magnet, allowing it to be conveniently attached to metal surfaces, such as air conditioning units, for hands-free operation.

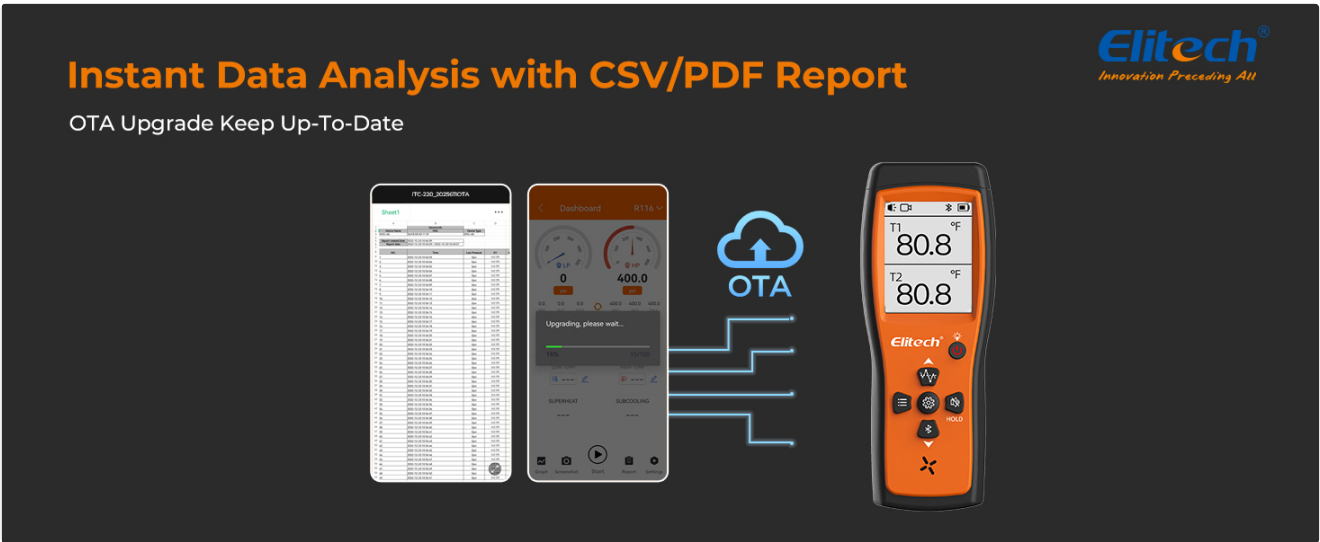


Figure 10: Magnetic design for hands-free use.

## 6. MAINTENANCE

### 6.1. Cleaning

To clean the device, use a soft, damp cloth. Do not use abrasive cleaners or solvents **Do not soak the device in water or any other liquid.**

### 6.2. Battery Replacement

When the battery indicator on the display shows low power, replace the AA batteries as described in the Setup Guide (Section 4.1).

### 6.3. Storage

When not in use for extended periods, remove the batteries to prevent leakage. Store the device in a cool, dry place, away from direct sunlight and extreme temperatures.

## 7. TROUBLESHOOTING

Problem	Possible Cause	Solution
Device does not power on.	Low or dead batteries; incorrect battery installation.	Replace batteries with new AA batteries, ensuring correct polarity.
Inaccurate temperature readings.	Thermocouples not properly connected; damaged thermocouples; need for calibration.	Ensure thermocouples are securely connected. Replace damaged thermocouples. Perform ADJ compensation or calibration if necessary.

Problem	Possible Cause	Solution
Cannot connect to mobile app via Bluetooth.	Bluetooth not enabled on device/phone; device too far from phone; app not updated.	Ensure Bluetooth is active on both devices. Keep devices within range. Update the "Elitech Tools" app to the latest version. Restart both devices.
Data logging not working.	Device not connected to app; insufficient memory (if not connected to app).	Ensure the device is paired and connected to the "Elitech Tools" app. The 5000-group capacity is optional; for unlimited storage, maintain app connection.
Display is dim or not working.	Low batteries; display damage.	Replace batteries. If the issue persists, contact customer support.

## 8. SPECIFICATIONS

- **Model Number:** ICT-220
- **Temperature Range (K-type thermocouples):** -58~482°F (-50~250°C)
- **Accuracy:**  $\pm(0.5^{\circ}\text{C} + 0.5\% \text{ of reading})$
- **Resolution:** 0.1°C/°F (1.0°C/°F > 100°C/212°F)
- **Acquisition Frequency:** >5 times/s
- **Response Time (T99):** <2s
- **Display Type:** Digital LCD with backlight
- **Connectivity:** Bluetooth
- **Power Source:** 3 x AA batteries (included)
- **Battery Life:** Approximately 150 hours
- **Outer Material:** Plastic
- **Product Dimensions:** 9.65 x 3.58 x 2.09 inches
- **Product Weight:** 13.44 ounces
- **Special Feature:** Dual digital thermometer, magnetic design
- **Specification Met:** ASME, ASTM

## 9. WARRANTY & SUPPORT

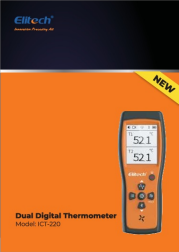





### 9.1. Warranty Information

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

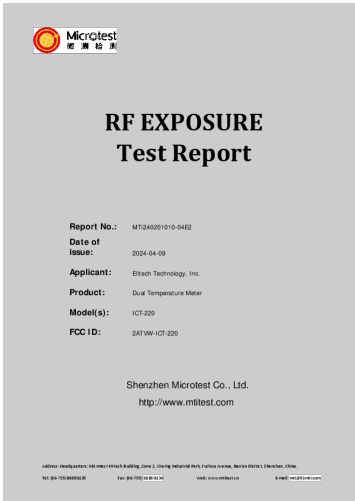
### 9.2. Customer Support

If you encounter any issues or have questions regarding your Elitech ICT-220 thermometer, please contact Elitech customer support. You can find contact information on the Elitech website or in your product documentation.

For additional resources and product information, visit the Elitech store online: [Elitech Store](#)

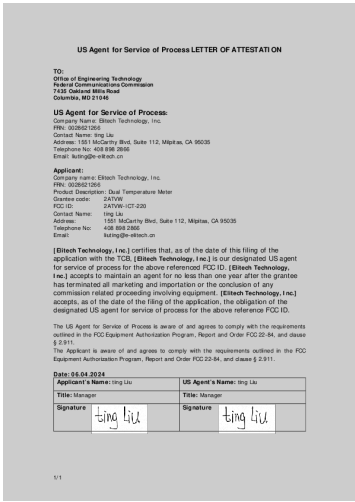
	<p><a href="#">Elitech ICT-220 Dual Digital Thermometer: User Guide and Features</a></p> <p>Discover the Elitech ICT-220, a precise dual digital thermometer with K-type thermocouple support, Bluetooth connectivity, and mobile app integration for advanced temperature monitoring and data analysis.</p>
	<p><a href="#">Elitech RCW-600WIFI IoT Temperature Monitor User Manual</a></p> <p>User manual for the Elitech RCW-600WIFI, a two-channel IoT temperature monitor with WiFi connectivity for remote data viewing, monitoring, and management in food, catering, logistics, and HACCP industries.</p>
	<p><a href="#">Elitech RC-5 Quick Start Guide: Temperature Data Logger</a></p> <p>Quick start guide for the Elitech RC-5 temperature data logger, covering battery installation, software setup, logger operation, technical specifications, and troubleshooting.</p>
	<p><a href="#">Elitech LogEt 5i User Manual: Single-Use IoT Data Logger</a></p> <p>Comprehensive user manual for the Elitech LogEt 5i single-use IoT data logger. Covers product features, technical specifications, operating instructions, safety precautions, and data management for temperature, humidity, and light monitoring in logistics and cold chain applications.</p>
	<p><a href="#">Elitech RC-5+ Temperature Data Logger: User Manual and Specifications</a></p> <p>This manual provides detailed instructions for using the Elitech RC-5+ USB temperature data logger, covering setup, operation, data download, and analysis with Elitech software. Features and technical specifications are also included.</p>
	<p><a href="#">Elitech RC-51 Multi-use Temperature Data Logger User Guide and Specifications</a></p> <p>Comprehensive guide to the Elitech RC-51 multi-use temperature data logger, covering product overview, technical parameters, usage instructions, data viewing, battery replacement, and PDF report content. Features include a wide temperature range, high accuracy, and large storage capacity for logistics and cold chain monitoring.</p>





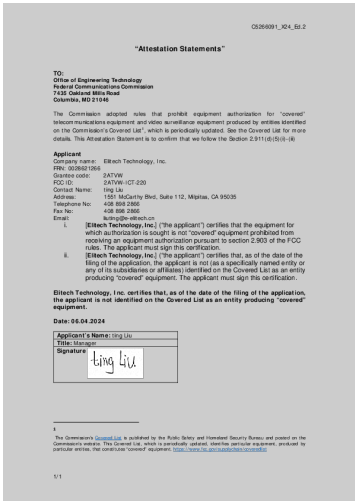
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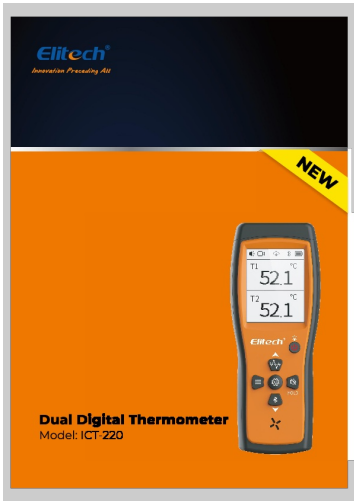
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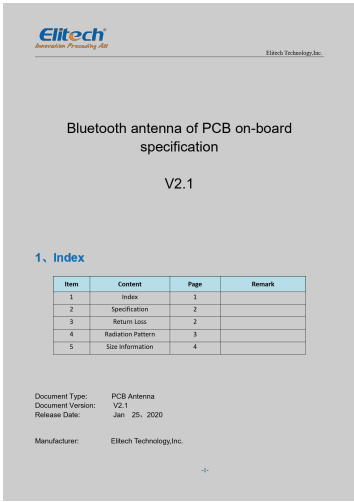


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[pdf] Specifications

FSC BT816 wanzhifu Antenna Specification Elitech Technology Inc ICT 220 2ATVW 2ATVWICT220 ict

Elitech Technology, Inc. Bluetooth antenna of PCB on-board specification V2.1 1 Index  
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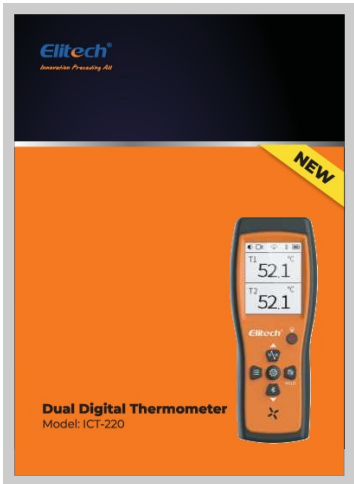
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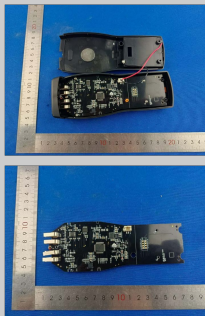
Hank Yan External photos Elitech Technology Inc ICT 220 2ATVW 2ATVWICT220 ict

Page 1 of 4 Photographs of the EUT External Photos Model: **ICT-220** Address:

Headquarters: Microtest Hi-tech Building, Zone 2, Xinxing Industrial Park, Fuzhou Avenue, Bao an District, Shenzhen, China. Tel: 86-755 88850135 Fax: 86-755

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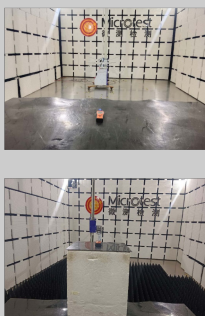
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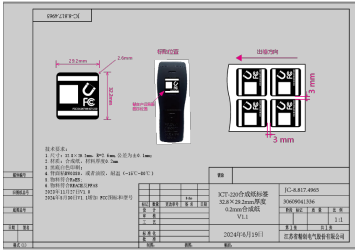
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Page 1 of 1 Photographs of the test setup Model: **ICT-220** Radiated emissions below 1GHz Radiated emissions above 1GHz Address: Headquarters: Microtest Hi-tech

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