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AITRIP LCR-T7

LCR-T7 Transistor Tester User Manual

Model: LCR-T7

Brand: AITRIP

1. Introduction

The AITRIP LCR-T7 Transistor Tester is a versatile multi-function testing device designed for electronics enthusiasts and professionals. It features a 3.5-inch TFT screen and a built-in rechargeable lithium-ion battery, offering portability and ease of use. This tester is capable of identifying and measuring various electronic components, including transistors, capacitors, resistors, diodes, inductors, and more.

Key functionalities include automatic detection of NPN and PNP transistors, N-channel and P-channel MOSFETs, JFETs, triodes, and thyristors. It also provides capacitance, resistance, and inductance measurements, along with zener diode detection and infrared (IR) waveform display for remote control decoding.



Figure 1: LCR-T7 Transistor Tester and its accessories, including test leads, USB charging cable, and sample components.

2. Setup and Charging

2.1 Initial Charge

Before first use, ensure the LCR-T7 tester is fully charged. The device has a built-in high-capacity rechargeable lithium-ion battery.

- Locate the Micro USB charging port on the side of the device.
- Connect the provided USB charging cable to the tester and a standard USB power source (e.g., computer USB port, USB wall adapter).
- The charging indicator (if present) or screen display will show the charging status.
- Charge until the battery indicator shows full capacity.



Figure 2: Detail of the Micro USB charging port and test lead connection points.

2.2 Connecting Components

The LCR-T7 features a ZIF (Zero Insertion Force) socket for easy component insertion and removal, as well as dedicated test points for connecting components via test leads.

- **ZIF Socket:** Lift the lever on the ZIF socket, insert the component leads into the corresponding holes (typically 1, 2, 3), and then press the lever down to secure the component.
- **Test Leads:** For larger components or in-circuit testing (with power off), use the provided test leads. Connect the leads to the designated pins (1, 2, 3) on the device and clip them onto the component.

Important: Always ensure components, especially capacitors, are fully discharged before connecting them to the tester to prevent damage to the device or inaccurate readings.

3. Operating Instructions

3.1 Basic Operation (One-Key Test)

The LCR-T7 is designed for simple, one-key operation for most component tests.

1. Ensure the component is correctly inserted into the ZIF socket or connected via test leads.
2. Press the large yellow "Start" button.
3. The tester will automatically identify the component type and display its parameters on the TFT screen.
4. The test process typically takes a few seconds.



Figure 3: Detailed view of the LCR-T7's display, "Start" button, and ZIF socket for component testing.

3.2 Component Measurement Capabilities

- **Transistors (NPN/PNP, MOSFET, JFET, Triode):** Identifies type, pinout, HFE (gain), and V_f (forward voltage).
- **Diodes:** Identifies type, forward voltage drop, and capacitance. Includes automatic detection of Zener diodes (0.01-30V).
- **Resistors:** Measures resistance from 0.01Ω to 50MΩ.
- **Capacitors:** Measures capacitance from 25pF to 100mF. Displays ESR (Equivalent Series Resistance) for electrolytic capacitors.

- **Inductors:** Measures inductance from 0.01mH to 20H.
- **Thyristors (Triac):** Detects and measures with IGT < 6mA.
- **Battery Voltage:** Measures battery voltage from 0.1V to 4.5V.

3.3 Infrared (IR) Remote Control Decoding

The LCR-T7 can decode infrared signals from remote controls.

1. After a successful component test (or upon powering on), align the infrared remote control with the "IR" light sensor on the tester.
2. Press a button on the remote control.
3. The tester will display the data code and infrared waveform on the screen.

3.4 Auto Power Off

The device features an auto power-off function to conserve battery life. The timeout period is settable, though specific instructions for setting it are not detailed in this manual. Refer to the on-screen menu if available.

4. Maintenance

- **Cleaning:** Use a soft, dry cloth to clean the device. Do not use abrasive cleaners or solvents.
- **Battery Care:** Recharge the battery when the low battery indicator appears. Avoid fully discharging the battery frequently to prolong its lifespan. If storing for extended periods, charge the battery to approximately 50% every few months.
- **Storage:** Store the tester in a cool, dry place away from direct sunlight and extreme temperatures.
- **Component Discharge:** Always discharge capacitors before testing to prevent damage to the tester.

5. Troubleshooting

Problem	Possible Cause / Solution
Device does not power on.	Battery may be depleted. Connect to a USB power source and charge for at least 30 minutes.
"No, unknown, or damaged part ?" message.	• Component not properly inserted or connected. Ensure good contact. • Component is faulty or outside the measurable range. • Capacitor not discharged. Discharge before testing.
Inaccurate readings.	• Component leads are dirty. Clean them. • Battery is low. Recharge the device. • Environmental factors (e.g., extreme temperature). Test in a stable environment.
IR decoding not working.	Ensure the remote control is pointed directly at the IR sensor and within range. Check remote control battery.

6. Specifications

Feature	Specification
Display	3.5 inch TFT Screen
Power Mode	Rechargeable Lithium Battery (included)
Battery Voltage Detection	0.1V - 4.5V
Diode Range	< 4.5V
Zener Diode Detect Area	0.01V - 30V
Transistor Detect Area	0.01V - 4.5V
Triac Range	IGT < 6mA
Capacitance Measurement	25pF - 100mF
Resistance Measurement	0.01Ω - 50MΩ
Inductance Measurement	0.01mH - 20H
Dimensions	Approx. 88 x 80 x 28mm (3.46 x 3.15 x 1.1 inches)
Item Weight	Approx. 0.01 Kilograms (0.35 ounces)

7. Warranty and Support

AITRIP products are manufactured to high-quality standards. For any issues or support inquiries, please contact your retailer or the manufacturer directly. Keep your purchase receipt as proof of purchase for warranty claims.

For further assistance, please visit the official AITRIP support channels or refer to the product listing where you purchased the device for contact information.

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