

LILLIPUT LCR2020

LILLIPUT OWON LCR2020 LCR Meter User Manual

Model: LCR2020 | Test Frequency: 10Hz~20kHz

1. SAFETY INFORMATION

Please read and understand all safety instructions before operating the LCR Meter. Failure to follow these instructions may result in injury or damage to the instrument.

- **Electric Shock Hazard:** To avoid electric shock, ensure the power cord's protective grounding conductor is properly connected to ground.
- **Internal Components:** This device contains no operator-serviceable parts inside. Refer all servicing to qualified personnel.
- **Fire Protection:** For continued fire protection, use only the specified line fuse.
- **Operating Environment:** Operate the instrument within the specified temperature and humidity ranges to ensure proper function and safety.

2. PRODUCT OVERVIEW

The LILLIPUT OWON LCR2020 is a high-precision LCR meter designed for accurate measurement of inductance, capacitance, and resistance. It features a 3.5-inch color LCD, a basic accuracy of 0.05%, and a measuring speed of up to 40 times per second. The instrument supports a test frequency range of 10Hz to 20kHz.

Front Panel Components

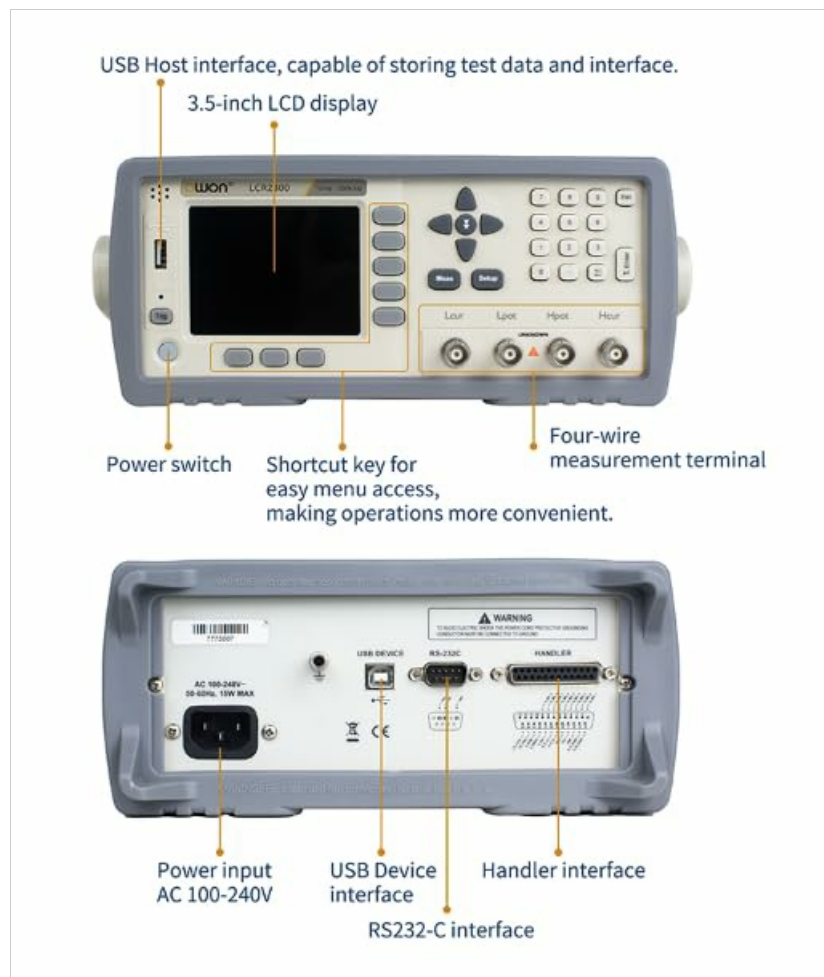


Image Description: This image displays the front panel of the LCR2020 meter. Key labeled components include the USB Host interface for data storage, the 3.5-inch LCD display, the power switch, shortcut keys for menu access, and the four-wire measurement terminals (Lcur, Lpot, Hpot, Hcur).

Rear Panel Connections

FUNCTIONALITY OVERVIEW

Continuously adjustable frequency

The LCR2000 series offers arbitrary test frequencies within the measurement range and allows the selection of test signal levels from 0.01V to 2.00V with a step size of 0.01V.



Multiple parameters and multiple digits display

The main and secondary parameters are displayed in full with six digits each. Additionally, there are two monitoring displays capable of simultaneously showing one of Z, D, Q, θ_r , θ_d , R, X, G, B, Y, Vac, Iac, Δ , $\Delta\%$ with up to 0.05% accuracy. This precision allows the instrument to meet the requirements of accurate testing and batch production for component manufacturers, schools, research institutes, and metrology quality inspection departments.



Automatic range function

The LCR2000 series offers 9-range testing and provides three measurement modes: automatic, locked, and nominal. It can automatically select the optimal range based on the nominal value.



Rich interfaces

The LCR2000 series offers professional sorting functions, with the ability to store 10 sets of files. It includes programmable qualification levels with 9 pass levels, 1 auxiliary level (for secondary parameters not meeting criteria), and 1 fail level, along with main parameter HI/IN/LO levels. It supports percentage sorting or absolute value sorting, and comes equipped with Handler and RS-232C interfaces for use in automated sorting systems, enabling fully automated production line testing. The front USB Host interface allows saving configuration and measurement data to external storage devices.



Image Description: This image shows the rear panel of the LCR2000 meter. Labeled ports include the AC 100-240V power input, USB Device interface, RS232-C interface, and Handler interface for external control and automation.

3. SETUP

Follow these steps to set up your LCR2000 LCR Meter for initial operation.

- Power Connection:** Connect the provided power cord to the AC power input on the rear panel of the instrument. Ensure the other end is securely plugged into a grounded power outlet (AC 100-240V, 50-60Hz).
- Test Fixture/Leads Connection:** Connect the appropriate test fixture (e.g., T10 Test Fixture, F10 SMD Test Clips) or test leads to the four-wire measurement terminals (Lcur, Lpot, Hpot, Hcur) on the front panel. Ensure connections are firm to maintain measurement accuracy.
- Initial Power On:** Press the power switch on the front panel to turn on the instrument. The 3.5-inch color LCD will illuminate, displaying the startup sequence.
- Interface Connections (Optional):** If using external control or data logging, connect the USB Host, USB Device, RS-232C, or Handler interfaces as required.

4. OPERATING INSTRUCTIONS

This section details the primary functions and operational procedures for the LCR2020 LCR Meter.



Image Description: This composite image illustrates key functionalities: continuously adjustable test frequency, multiple parameter display with high precision, automatic range selection, and a depiction of the rich interface options (USB Device, RS-232C, Handler).

4.1 Basic Measurement

- **Selecting Measurement Parameters:** Use the navigation keys and 'Setup' button to select the desired measurement parameters (e.g., L, C, R, Z, D, Q).
- **Connecting the DUT:** Connect the Device Under Test (DUT) to the appropriate test terminals using the test leads or fixture.
- **Initiating Measurement:** Press the 'Meas' button to start a measurement. The results will be displayed on the LCD.

4.2 Test Frequency Adjustment

The LCR2020 allows for continuous adjustment of test frequencies within its 10Hz to 20kHz range. Use the menu options to set the desired frequency with a step size of 0.01V for signal levels from 0.01V to 2.00V.

4.3 Range Selection

The instrument offers 9-range testing with automatic, locked, and nominal modes. In nominal mode, the instrument automatically selects the optimal range based on the nominal value provided.

4.4 DCR Measurement and DC Bias

The LCR2020 supports Direct Current Resistance (DCR) measurement. It also provides an internal D.C. bias voltage of $\pm 2.5V$ for specific testing requirements.

4.5 Interface Usage

- **USB Host:** For storing test data. Connect a USB flash drive to the front panel USB Host port.
- **USB Device / RS-232C / Handler:** These interfaces on the rear panel allow for remote control and data communication with a computer or external automation systems. The instrument supports SCPI and ModbusRTU communication protocols.

5. MAINTENANCE

Proper maintenance ensures the longevity and accuracy of your LCR2020 LCR Meter.

- **Cleaning:** Use a soft, dry cloth to clean the exterior of the instrument. Do not use abrasive cleaners or solvents.
- **Storage:** When not in use, store the instrument in a clean, dry environment away from direct sunlight and extreme temperatures.
- **Calibration:** Regular calibration by qualified personnel is recommended to maintain the instrument's specified accuracy.

6. TROUBLESHOOTING

This section provides solutions to common issues you might encounter.

- **Instrument Does Not Power On:**
 - Check if the power cord is securely connected to both the instrument and a live power outlet.

- Verify the power outlet is functioning correctly.
- Ensure the correct fuse is installed and not blown.

• **Inaccurate Measurements:**

- Ensure test leads and fixtures are properly connected and not damaged.
- Perform an OPEN/SHORT correction before measurement.
- Verify the correct test frequency and measurement range are selected.
- Check for external interference or environmental factors affecting the measurement.

• **Communication Issues (USB/RS-232C/Handler):**

- Ensure the correct cable is used and securely connected.
- Verify communication settings (baud rate, parity, etc.) on both the instrument and the connected device.
- Check if the correct drivers are installed on the computer.

If the issue persists after following these steps, contact customer support or refer to the warranty information.

7. SPECIFICATIONS

Detailed technical specifications for the LCR2020 LCR Meter.



Image Description: This table provides comprehensive specifications for the LCR2000 series, including the LCR2020 model. It details test functions (Cs-Rs, Cp-D, etc.), monitor parameters (Z, D, Q, etc.), test frequency ranges (10Hz~20kHz for LCR2020), basic accuracy (0.05%), measurement speed (40 times/s), display range for various parameters, output impedance, ranging modes, DC bias, correction function, beep feature, memory, trigger mode, interface types, and display size.

Key Specifications (LCR2020)

Parameter	Value
Model	LCR2020
Test Frequency	10Hz 20kHz
Basic Accuracy	0.05%
Measuring Speed	Up to 40 times per second
Display	3.5-inch Color LCD
Ranging	Auto, Hold, Nominal (9 ranges)
DCR Measurement	Supported
Internal D.C. Bias Voltage	±2.5V
Interfaces	RS-232C, Handler, USB Host / Device
Communication Protocol	SCPI, ModbusRTU
Power Source	Corded Electric (AC 100-240V, 50-60Hz)
Item Weight	5 Pounds

8. INCLUDED ACCESSORIES

The following accessories are typically included with your LCR2020 LCR Meter:



Image Description: This image displays the standard accessories provided with the LCR meter. These include a Power Cord, a Quick Guide, a T10 Test Fixture, Test Leads, a Short-circuit foil, and F10 SMD Test Clips.

- Power Cord
- T10 Test Fixture
- Test Leads
- Short-circuit foil
- F10 SMD Test Clips

9. WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the documentation provided with your purchase or visit the official LILLIPUT website. Keep your purchase receipt as proof of purchase for warranty claims.

ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page’s manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

Question

Example: How do I reset this device or fix this error?

Details

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

Submit question