

# LCR-Reader-MP



## Multipurpose LCR- and ESR-meter



### Simplified Component Testing and PCB Debugging

- Automatic and manual L, C, R, Z, D, Q and ESR measurements
- Automatic component identification
- Automatic test range selection
- 0.1% Basic accuracy
- Automatic/manual frequency settings 100 Hz, 10 Hz, 1, 10, 20, 30, 40, 50, 60, 75, and 100 kHz
- Diode, LED and Continuity tests
- Easy-to-use one-handed design
- Backlit LCD display
- Automatic power off when not in use
- Jog-wheel navigation
- Li-Po battery with micro-USB charging
- Sound Indicator

LCR-Reader-MPA offer a unique solution to efficiently testing Surface Mount Devices with just a touch. The lightweight multimeter is able to identify components and measure with high accuracy and speed; it is also able to troubleshoot PCB circuitry.

The device is easy-to-use, portable and provides all necessary measurement data instantly on the built-in display backlit LCD.

Surface Mount Devices can be difficult to keep track of due to their size and labeling. Testing these components using a multimeter with long wire-leads can be cumbersome and time consuming. LCR-Reader-MPA provides an easy-to-use solution to identifying and sorting components.

The sharp, gold-plated tweezer probes are precise enough to grasp components to a 0201 size, including those on crowded PCBs or without wire leads.

### Time Efficient Automatic Measurements

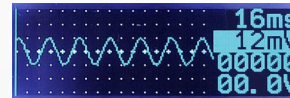
Testing is more efficient with LCR-Reader-MPA; the device is able to determine the best test parameters for the component under test with virtually no set-up. Eliminating trial and error between measurements allows users to quickly sort multiple components.

The device will instantly display all measurement values, including component type, main and secondary impedance values, test frequency, and test mode on the back-lit LCD display. The secondary impedance value include Equivalent Series Resistance (ESR), D and Z values.

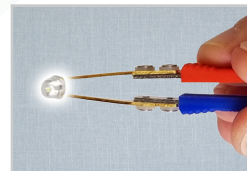
LCR-Reader-MPA has an extensive selection of test modes and settings for any task at hand. These include automatic and manual L, C, R, ESR, Z, D, diode and LED testing, automatic and manual frequency settings of 100Hz, 10 Hz, 1, 10, 20, 30, 40, 50, 60, 75 and 100 kHz, easy Open/Short calibration for better accuracy, frequency meter, automatic test signal adjustment for in-circuit measurements, automatic diode polarity and short circuit detection, pass/ no pass electrolytic cap indication with built-in rejection table, DC measurement of Resistance and Capacitance up to 1 F (1mV?), oscilloscope graphic for alternating voltage measurements and more.



Diode mode



Oscilloscope mode



Testing LED

### Lightweight and Easy-to-Use

The unique design provides simple solutions for testing Surface Mount The unique one-handed design of the multimeter is ergonomic and lightweight. The user is able to use the device comfortably in their hand of choice, leaving the other hand free for other tasks such as note taking. The 1 oz. weight, compact design and long use Li-Po battery is ultimately portable for field work.

The probes are connected using a shielded 4-wire connection with low resistance and capacitance offset during measurements.

## Resistance, Impedance

Range	Resolution	Level	100 Hz, 120 Hz	1 kHz	10kHz	20kHz-100kHz
10Ω	0.001Ω	0.65 Vrms	0.5 %±20	0.2 %±20	0.5 %±20	1%±20
100Ω	0.01Ω	0.65 Vrms	0.2 %±3	0.1%±3	0.2 %±3	1%±3
1kΩ	0.1Ω	0.65 Vrms	0.2 %±2	0.1 %±2	0.2 %±2	0.5%±2
10kΩ	0.001kΩ	0.65 Vrms	0.2 %±2	0.1 %±2	0.2 %±2	0.5%±2
100kΩ	0.01kΩ	0.65 Vrms	0.2 %±2	0.1 %±2	0.2 %±2	0.5%±2
1MΩ	0.1kΩ	0.65 Vrms	0.5 %±3	0.2 %±3	0.5 %±3	5%±3
10MΩ	0.001MΩ	0.65 Vrms	0.5 %±5	0.2 %±5	0.5 %±5	-
20MΩ	0.01MΩ	0.65 Vrms	1.0 %±5	0.5 %±5	-	-

Accuracy for the ranges 1 R ~ 100 R is specified after subtract of the offset resistance

## Inductance

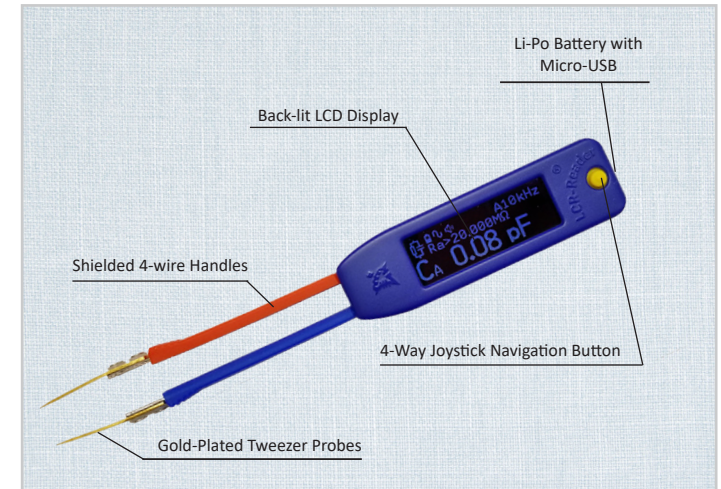
Range	Resolution	Level	100Hz, 120Hz	1kHz	10kHz	20kHz-75kHz	100kHz
10 μH	0.001 μH	0.65 Vrms	-	-	-	-	2.0 %±25
100 μH	0.01 μH	0.65 Vrms	-	-	1.0 %±5	1.0 %±5	1.0 %±3
1000 μH	0.1 μH	0.65 Vrms	-	0.5 %±3	0.2 %±2	0.2 %±2	0.2 %±2
10 mH	0.001 μH	0.65 Vrms	0.5 %±3	0.3 %±2	0.2 %±2	0.2 %±2	0.2 %±2
100 mH	0.01 mH	0.65 Vrms	0.3 %±2	0.2 %±2	0.2 %±2	0.2 %±2	0.2 %±2
1000 mH	0.1 mH	0.65 Vrms	0.2 %±2	0.2 %±2	0.2 %±2	2.0 %±5	2.0 %±5
10 H	1 mH	0.65 Vrms	0.3 %±2	0.3 %±2	1.0 %±3	-	-
100 H	0.01 H	0.65 Vrms	0.5 %±3	1.0 %±3	-	-	-

## Capacitance

Range	Resolution	Level	50Hz	100Hz, 120Hz	1kHz	10kHz	20kHz-75kHz	100kHz
10 pF	0.00 pF	0.65 Vrms	-	-	-	-	-	2.0%±50*
100 pF	0.01 pF	0.65 Vrms	-	-	-	0.5 %±5*	1.0 %±5*	0.2 %±5*
1000 pF	0.1 pF	0.65 Vrms	-	-	1.0 %±10*	0.2 %±2*	0.3 %±2*	0.2 %±2*
10 nF	0.001 nF	0.65 Vrms	-	5%±20	0.1 %±2	0.3%±2	0.2 %±2	0.2 %±2
100 nF	0.01 nF	0.65 Vrms	-	0.5%±2	0.1 %±2	0.2 %±2	0.3 %±2	0.2 %±2
1000 nF	0.1 nF	0.65 Vrms	-	0.5%±2	0.1 %±2	0.2 %±2	0.3 %±3	0.2 %±3
10 μF	0.001 μF	0.65 Vrms	3%±3	0.5%±2	0.2 %±2	0.3%±2	2.0 %±5	2.0 %±5
100 μF	0.01 μF	0.65 Vrms	2%±2	0.5%±2	0.3 %±2	1 %±5	-	-
1000 μF	0.1 μF	0.65 Vrms	0.5 %±2	0.5 %	1.0 %±5	-	-	-
5000 μF	1 μF	0.65 Vrms	1.0 %±5	1.0 %±5	-	-	-	-
40 mF	0.01 mF	0.65 Vrms	5.0 %±5	-	-	-	-	-

Accuracy for the ranges of 10 pF~1000 pF is specified after subtract of the stray capacitances for test leads.

- Automatic component recognition L-C-R and Diode
- Basic Accuracy of 0.1%
- **DC measurement of Resistance and Capacitance up to 1F**
- Pass/No Pass Electrolyte Cap indication with Built-in rejection table
- Automatic detection of diode polarity and short circuits
- Frequency meter
- Oscilloscope graphics for alternating voltage measurements
- Oscilloscope Transient Voltage display up to 100 kHz
- 0.1, 0.5 and 1.0 Vrms test signals; automatic test signal reduction to 0.1 V for in-circuit measurements
- AC/DC Voltage measurements up to 15 V
- DC voltage measurements with automatic polarity detection
- Easy Short/Open calibration and offset removal
- Signal Generator with Sine wave up to 100 kHz
- Large Capacitance test mode up to 640 mF



## Technical Specifications

AC test mode Test frequency:  
Test Frequency Accuracy  
Source impedance:

1 kHz, 10 kHz, 120 Hz, 100 Hz  
0.65, 0.1, +/- 5% Vrms Sine Wave  
±(0.005%±5) Hz 1kΩ +/- 1%

## Measurement Ranges

Resistance R:  
Capacitance C:  
Inductance L:  
Quality factor Q:  
Dissipation factor D:

5 mΩ to 20 MΩ  
1 pF to 640 mF  
10 nH to 100 H  
0.001 to 1000  
0.001 to 1000

## Physical Specifications

Size:  
Weight:  
Operating temperature:  
Battery Type:  
Battery Life (continuous):

180 x 30 x 16 mm (7.1 x 1.1 x 0.63 in.)  
45 grams (1.5 oz.)  
10°C to 40°C  
3.7V LiPo rechargeable 250mAH  
80 hours, 2 hours charging cycle

