



Smart Tweezers is an R-L-C meter in a tweezer.

Automatic recognition of measurement mode (R, L and C)

Ideal for identifying surface mounted devices.

**The “Smart Tweezer” is an exciting answer to the old problem of testing and troubleshooting SMD components. With the use of only one hand this lightweight unit will quickly evaluate all types of SMD components.**

#### **MEASURING INDUCTANCE, CAPACITANCE AND RESISTANCE**

The primary display shows the present reading.

The secondary display (on top) shows the present reading of additional parameters or measurement conditions when the primary display shows some other feature (L,C). When multiple features present, the secondary display shows one of the values.

The Bar Graph provides an analog indication of the measured input.

#### **MEASURING VOLTAGE**

The Smart Tweezer is able to measure voltage.

In the AUTO MODE, it measures DC voltage from 100uV to 800mV.

In the TRACE MODE, it shows an oscilloscope like picture of AC voltage.

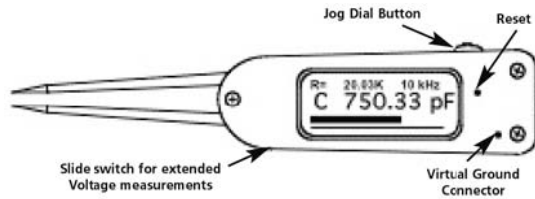
#### **CONTINUITY/OPEN TEST**

The Smart Tweezer is designed to measure continuity.

The beeper sounds for resistance readings below threshold, or to indicate a momentary open circuit.

## OVERVIEW

Smart Tweezers is an R-L-C meter in a set of tweezers. Smart Tweezers is designed for production line component evaluation, on board impedance testing, and SMD components sorting. With automatic recognition of measurement mode (R, L and C) Smart Tweezers is ideal for identifying surface-mounted devices.



Smart Tweezers has a unique mechanical and electronic design that incorporates a built-in direct precision SMD probe designed for component evaluation on the production line, PCB debugging, component impedance testing and the sorting SMD components.

The integrated SMD probe and measurement head, combined with automatic recognition of measurement modes (R, C, and L) and the range of measurement, allows the operator focus on the component under test. As a result testing, sorting and evaluation of components becomes more efficient and cost effective.

## SPECIFICATIONS

### Physical Specifications

Operating Temperature:	0 °C to +55 °C
Storage Temperature:	-40 °C to +60 °C
Relative Humidity:	0 % to 90 % (0 °C to 35 °C) 0 % to 70 % (35 °C to 55 °C)
Altitude Operating:	0-2000 meters
Storage:	10000 meters
Battery Type:	1.5V LR44 Alkaline or Air zinc
Battery Life:	120 hours with air zinc battery
Electromagnetic Compatibility (EMC):	Susceptibility and Emission: FCC 15 part B
Size:	14.0 x 2.5 x 3.0 cm
Weight:	53 grams
Warranty:	1 year

### Basic Specifications

Measured Parameters:	C, L, R, ESR, Rs, Rp
Measuring Frequencies:	100 Hz, 1 kHz, 10 kHz
Measurement rate:	1 time per second, default
DC Voltage:	0 to 800 mV (Up to 8V with optional slide switch manual setting)
Resistance:	0 to 9 M
Capacitance:	10 pF to 499 μF
Inductance:	1 μH to 999 mH
Battery life:	minimum 120 hrs (Air-Zinc batteries)

### Detailed Accuracy Specifications

Accuracy is specified at 18°C to 28°C (64°F to 82°F), with relative humidity to 90%.

#### RESISTANCE

Range:	0.10hm - 5M0hm
Accuracy:	1% in range 0.1R - 5M
Resolution:	0.01R in range 0-10R
Test Frequency:	1 kHz

#### CAPACITANCE

Range:	10pF - 499uF
Accuracy:	5% in range 20pF - 1000uF
Resolution:	0.5pF in range 1pF- 100pF
Test Frequency:	1 kHz C > 1000pF 10 kHz C < 1000pF 100Hz C > 1uF

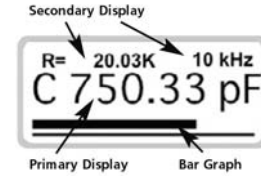
#### INDUCTANCE

Range:	1uH - 1H
Accuracy:	10% in range 1uH - 10uH 5% in range 10uH - 100uH 5% in range 100uH - 1H
Resolution:	0.5uH in range 1uH - 100uH
Test Frequency:	10 kHz L < 1uH 1 kHz L > 1uH 100Hz L > 1mH

## QUICK REFERENCE

### Display Area

Smart Tweezers has two display modes, Primary and Secondary.



### Primary Display

The Primary Display is located in the middle of the display and is the larger of the two displays available. It shows the present reading. For most functions the primary display shows 5 digits.

If **OUT OF RANGE** is displayed an overload condition is present.

### Secondary Display

The Secondary Display is located at the top of the display and is the smaller of the two displays. It shows the present reading of additional parameters, or measurement conditions when the primary display shows some other feature (e.g. L, C).

When multiple features are present, secondary display shows one of the values. For example, ESR value can appear in the secondary display while capacitor value appears in the primary display.

### Bar Graph

The bar graph provides an analog indication of the measured input and is located at the bottom of the display.

## MEASUREMENTS

The default setting is to perform fully automatic auto range measurement for resistance, inductance and capacitance. Most measurement functions also have a manual mode, which can be selected by using the jog dial button. Use the manual setting when you need to measure a specific parameter or need better accuracy.

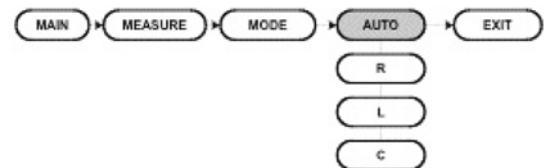
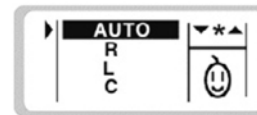
### Measurement Setting Menu

To measure specific components or to change measurement parameters, use Measure menu.



### Measuring Resistance, Inductance or Capacitance

For automatic measurement use AUTO setting (default). To measure only one parameter – resistance, inductance or capacitance set Smart Tweezers as shown below.



**Note:** When measuring small resistance, capacitance or inductance, make sure that terminals are clean.