RLC Measurement Package

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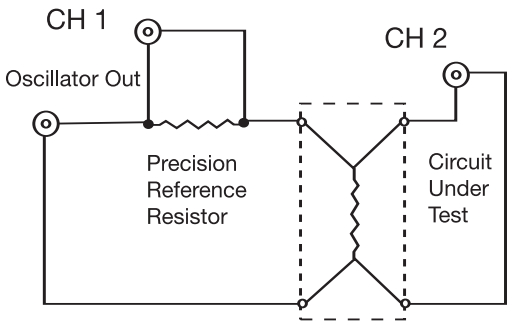
Venable's Frequency Response Analysis Systems RLC Measurements Package

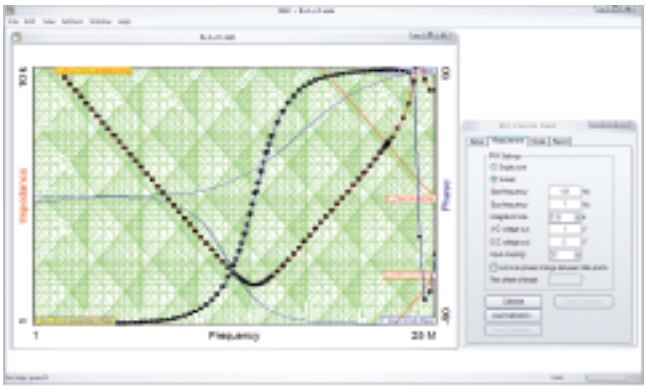
RLC measurement is one of the many uses of the Venable Frequency Response Analysis Systems. This function can be greatly enhanced by adding the RLC Measurement Package to provide an accurate, easily used instrument for measuring values of resistors, inductors, and capacitors, and values of one or two additional parasitic elements. For example, the user can simultaneously measure the capacitance, ESR, and ESL of a capacitor.

The RLC Measurement Package includes the RLC Adapter, the Axial Lead Adapter, a set of Kelvin Clip cables and the necessary software and documentation.

The illustration below shows how the Analyzer is connected to the RLC Adapter. The Oscillator Output jack connects to the oscillator output connector of the frequency response analyzer. CH1 and CH2 jacks mate directly with the analyzer input connectors. These inputs, used to calculate impedance, represent current and voltage in the circuit under test. Calibration data is measured, stored, and used to minimize errors associated with instrument and test circuit parasitics.



The user selects a component type, or an equivalent circuit, and a starting frequency. For single-component measurements, the starting frequency is the test fre quency. For equivalent circuits of two or three components, the starting frequency is automatically varied to locate corner and resonant frequencies used to calculate the component values.



Measured values of components of the circuit under test are displayed on the screen. If the user defines minimum and/or maximum values for any component and measured values are not within specified limits; the system "beeps" and highlights the out-of-spec values.

Specifications

MEASUREMENT FREQUENCY

1 Hz to maximum analyzer frequency, user-selectable for single component, selected automatically for multiple-component circuit.

ACCURACY

1 Hz to 1 kHz	0.1%
1 kHz to 100 kHz	0.2%
100 kHz to 1 Mhz	0.5%

OPTIMUM MEASUREMENT RANGE

Resistance	10 millohms to 1megohm
Inductance	1 microhenry to 10,000 henries
Capacitance	100 picofarads to 1 farad

EXTENDED MEASUREMENT RANGE*

Resistance	100 micro-ohms to 100 megohms
Inductance	10 nanohenrys to 1 megahenry
Capacitance	1 picofarad to 100 farads

*Extended range loses least-significant digit of accuracy for each decade of measured valued outside the optimum measurement or frequency range.

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