TEGAM

Model 3550

IMPEDANCE MEASUREMENT INSTRUMENT

42.0 Hz - 5.00 MHz Programmable LCR Meter

- User Selectable Test Frequency from 42.0 Hz to 5.00 MHz
- Fast -18 mS Measurement Speed
- 0.10 % Basic Accuracy
- Fully Programmable for Production Line Applications
- User Defined Test Voltage and Test Current
- 16 Measurable Parameters
- Absolute or Percentage Comparator
- Binning Function Supports 10 Output Bins
- Three Highly Visible LED Displays
- Standard RS-232C & I/O Connectors
- Optional GPIB or BCD Interfaces
- 1-Year Warranty

The Model 3550 is a fully programmable 42.0 Hz to 5.00 MHz LCR Meter. It is designed for a wide variety of automated or manual testing applications from traditional LCR measurements to frequency characterization of LCR components and materials. There is no need to search hidden submenus to find the instrument's settings. All settings are indicated on the front panel with high visibility LEDs. This simplifies setup and programming verification.

Sixteen AC Measurement Parameters

This meter provides accurate and repeatable measurements of 16 different parameters with a basic accuracy of 0.10 %. Readings are easily viewed on the three displays.

Display A provides 4 1/2-digit readings of Inductance (L), Capacitance (C), Resistance (R), Impedance (|Z|), or Admittance (|Y|).

Display B indicates 4 1/2-digit measurement values for Dissipation Factor (D or Tan ∂), Quality Factor (Q), Equivalent Series Resistance (R_s), Equivalent Parallel Resistance (R_p), Phase Angle (q), Conductance (G), Reactance (X), or Susceptance (B).

Display C provides a 4-digit reading of the output voltage (V), output current (I) or test frequency (f).

All parameters are easily programmed or selected from the front panel and annunciators clearly indicate the active setting. Measurements can be taken as either series or parallel equivalents.

Designed for Component Testing

With over 4,500 programmable frequency points, accurate frequency characterization of components or materials is straightforward. The three instrument measurement modes (Voltage Mode, Constant Voltage Mode, and Constant Current Mode) allow the user to control the test signal independent of the DUT impedance. A built-in comparator with 10-bin capability makes the 3550 very attractive for binning applications. The user can select either Absolute or Percentage comparator operation and can enable an audible pass/fail buzzer. Changeovers are easy because nine different instrument setups may be stored and recalled from instrument memory and a front panel lock feature prevents accidental changes of instrument settings. RS-232C and I/O connector (TTL) interfaces for handlers or sequencers are standard; a GPIB interface is optional. A wide variety of accessories are available to accommodate various test applications. These include Kelvin Klips, Tweezers for Surface Mount Components, Surface Mount Test Fixtures, Radial/Axial Adapters and more. Programming information and connection instructions are included to simplify integration.

Fast, Accurate and Versatile at a Very Reasonable Price

The 3550 increases production line efficiency because it produces an LCR reading in as little as 18 mS. It can measure 16 parameters and produce a reading and a useable comparator output in as little as 40 mS. You would expect to pay much more for an LCR meter with this speed and versatility. This unit handles traditional component test, materials characterization, incoming inspection, plus high-frequency profiling applications, too. The 3550 is built with the quality and reliability of all TEGAM products and is backed with a full 1-year warranty.

Prices and specifications subject to change without notice.

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Model 3550

42.0 HZ TO 5.00 MHZ PROGRAMMABLE LCR METER

Specifications

*Depends on the measurement frequency and signal voltage

Measurement Parameters	Ls, Lp (Inductance)	L	320 nH - 750.0 kH
	Cs, Cp (Capacitance)	C	0.160 pF - 37.0 mF
	Rs, Rp (Resistance)	R	0.01 mΩ - 199.99 MΩ*
	|Z| (Impedance)	|Z|	0.01 mΩ - 199.99 MΩ*
	|Y| (Admittance)	|Y|	5.000 nS - 100.00 S
	G (Conductance)	G	5.000 nS - 100.00 S
	B (Susceptance)	B	5.000 nS - 100.00 S
	X (Reactance)	X	0.01 mΩ - 199.99 MΩ*
	D (Dissipation Factor/Tan Delta)	D	0.0001 - 9.9999
	Q (Quality Factor)	Q	0.1 - 1999.9
	Θ (Phase Angle)	Θ	-180.00° - +180.00°
	V (Inter-Terminal Voltage)	V	0.00V - 5.00 Vrms
	I (Inter-Terminal Current)	I	0.00 mA - 99.99 mA
Measurement Ranges	9 Auto/Manual Ranges		100 mΩ, 1 Ω, 10 Ω, 100 Ω, 1 kΩ, 10 kΩ, 100 kΩ, 1 MΩ, 10 MΩ (Ranges defined by DUT's absolute impedence.)
Typical Basic Accuracy	0.10 %		Dependent Upon Test Variables and Measured Impedance
Measurement Frequency	42.0 Hz-5.00 MHz		±0.01 % Frequency Accuracy
Output Impedance	50 Ω ± 10 %		
Output Voltage Amplitude	42 Hz - 1.00 MHz: 1.01 MHz - 5.00 MHz:	0.01 - 5.00 Vrms 0.05 - 1.00 Vrms	± (10 % + 10 mV) Programmable Test Voltage ± (20 % + 10 mV) Programmable Test Voltage
Output Current Amplitude	42 Hz - 1.00 MHz: 1.01 MHz - 5.00 MHz:	0.01 - 99.99 mArms 0.05 - 20.00 mArms	± (10 % + 10 µA) Programmable Test Current ± (20 % + 10 µA) Programmable Test Current
Maximum Short Circuit Current	99.99 mA		Open Terminal, Fixed Voltage & Fixed Current Modes (The current is limited by maximum test voltage and impedence.)
Measurement Modes	Series or Parallel Equivalent Circuit		*Dependent on the measurement frequency Auto or Manually Selected
Displays	Triple - High Visibility, 4-1/2 Digit LED Displays		
Measurement Speed	18 mS = Best Measurement Time		***NOTE:*** *Measurement speed is determined by a number of factors including RS232, averaging, measurement frequency, auto/manual range, and comparator settings.*
Trigger	Internal and External Triggering		External Triggering is achieved by RS232 or GPIB Interface, Front Panel, or Control Connector in Rear of Unit.
Measurement Terminals	5 Terminal, Kelvin		Configuration: BNC Connectors for Kelvin and a Guard Binding Post
Zero Offset	Open (>1kΩ) or Short Circuit (<1kΩ) Null		
Comparator	HI-GO-LO / 10 Sorting Bins		Absolute or % Comparator for Displays A & B
External Buzzer	Set for PASS/FAIL of Comparator Functions		
Stored Settings	9 Stored Instrument Settings		May be stored or recalled through the front panel or remote interface.
Front Panel Key Lock			User is able to lock the front panel to prevent accidental bumping of the front panel keys.
User Interfaces	CONTROL I/O Connector RS-232C GPIB (IEEE-488)		Standard (I/O Port) Standard Optional P/N 3505
Operating Environment	+18 to +28 °C (+64.4 °C to +82.4 °F) @ <80 % RH Non-Condensing		Double the measurement errors for conditions outside of this range but within +5 °C to +40 °C (+41.0 °F to +104 °F).
Storage Environment	0 °C to +50 °C (+32 °F to +122 °F) @ <80 % RH Non-Condensing		
Power Requirements - user selectable	100, 120, 220, & 240 VAC ±10 % (MAX 250 VAC) @ 50/60 Hz		Consumption: 40 VAC MAX
Dimensions	9.85 in X 5.83 in X 15.75 in (250 X 148 X 400 mm)		W x H x D
Weight	7.0 kg (15.5 lb) Approximate Weight		
Included Accessories	Operation Manual CD		P/N 3550-900-01CD
	Power Cord		P/N 161006600
Optional Accessories	Chip Tweezers		P/N 2005B
	Chip Test Fixture		P/N 3511
	Kelvin Klips		P/N 47454
	Radial Lead Adapter		P/N 3510
	GPIB IEEE-488 Interface		P/N 3505
	Z540 Compliant Calibration with Certificate and Data for 3550		P/N OPT-Z540

NATIONAL INSTRUMENTS

LabVIEW Driver available.

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