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Data Sheet

August 13, 2026

AGILENT / KEYSIGHT

Agilent / Keysight E4916A Crystal Impedance /LCR Meter

HP / Agilent E4916A Crystal Impedance / LCR Meter The HP E4916A is a crystal impedance meter that uses the IEC 444 transmission pi-network method rather than an oscillator-based CI meter. It measures crystal resonators from 1 MHz to 180 MHz at drive levels from 0.1 nW to 1 mW (25 ohm DUT in the pi circuit). Option 001 impedance probe raises drive to 20 mW and, with Option 010, adds LCR parameters. HP-IB and a handler/parallel I/O support automated production test. Crystal resonator incoming, intermediate, and final inspection; drive-level dependency (DLD) evaluation; evaporation-monitoring (EM) frequency trapping; load-capacitance measurements with 41900A / 41901A pi fixtures; optional LCR of SMD and leaded parts with 4291A-family fixtures via 16099A. The HP E4916A is a crystal impedance meter that uses the IEC 444 transmission pi-network method rather than an oscillator-based CI meter. It measures crystal resonators from 1 MHz to 180 MHz at drive levels from 0.1 nW to 1 mW (25 ohm DUT in the pi circuit). Option 001 impedance probe raises drive to 20 mW and, with Option 010, adds LCR parameters. HP-IB and a handler/parallel I/O support automated production test. Crystal resonator incoming, intermediate, and final inspection; drive-level dependency (DLD) evaluation; evaporation-monitoring (EM) frequency trapping; load-capacitance measurements with 41900A / 41901A pi fixtures; optional



MODEL

**Agilent / Keysight
E4916A**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

E4916A

LISTING

<https://aumictechlabs.com/products/e4916a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The Agilent/Keysight E4916A Crystal Impedance/LCR Meter is a benchtop instrument engineered for precise characterization of crystal resonators and passive electronic components using the transmission π network method. Compliant with IEC444 standard, it delivers accurate measurements of resonant frequencies (F_r , F_s , F_a , F_L), capacitance (C_i , C_0 , C_1), inductance (L_1), resistance (R_1 , R_0 , G_0), quality factor (Q), spurious response, and equivalent circuit parameters. The meter addresses limitations of conventional oscillation-method approaches, particularly in high-frequency and low-drive-level applications critical to telecommunications, aerospace, and electronic manufacturing.

Technical Specifications

Frequency Range: 1 MHz to 180 MHz with 1 mHz resolution
Frequency Accuracy: ± 2 ppm (± 0.2 ppm with external reference input)
Impedance Measurement: 5 to 125 Ω with 10 m Ω resolution
Drive Level: 0.1 nW to 1 mW; up to 20 mW with optional impedance probe (Option 001)
Return Loss: 20 dB
Maximum Input Level: 0 dBm
Damage Threshold: 25 Vdc, 20 dBm
Noise Floor: -130 dBm/Hz
Measurement Time (F_r/C_i): 125 ms to 10 s

Key Features

- Transmission π network measurement method for high-accuracy crystal characterization
- Adjustable power level control enabling drive-level dependency evaluation
- Built-in DLD (Drive Level Dependency) and EM (Evaporation Monitoring) functions
- PI-Network Calibration function correcting cable extension errors
- Equivalent circuit analysis capabilities
- LCR measurement feature available with Option 010
- Interfaces & Integration HP-IB (Keysight-IB) interface for external equipment connection
- Parallel I/O for automated testing and handler integration
- Compatible with network analyzer test fixtures
- Compatible with HP 41900A Pi-network fixture for LCR mode operation

Typical Applications

Crystal resonator qualification, equivalent circuit parameter extraction, spurious response characterization, and drive-level dependency analysis across telecommunications, aerospace, and high-volume component manufacturing environments.

E4916A Characteristics / Specifications

PARAMETER	VALUE
Model	E4916A
Manufacturer	Hewlett-Packard / Agilent / Keysight
Instrument Type	Crystal impedance / LCR meter
Alias	HP E4916A; Agilent E4916A; Keysight E4916A
Frequency Range	1 MHz to 180 MHz
Frequency Resolution	1 mHz
Frequency Accuracy	2 ppm (improvable to 0.2 ppm with external reference)
Drive Level Standard	0.1 nW to 1 mW (25 ohm DUT with pi circuit)
Drive Level With Option 0	up to 20 mW
Resonator Parameters	Fr, Fs, Fa, FL, CI, Q, C0, C1, L1, R1, R0, G0, spurious, DLD, EM, filter bandwidth
Fr Definition	frequency at which phase is 0 degrees (or $ Z $ minimum if so configured)
Fs Definition	frequency of maximum conductance
Resonator Fr Accuracy	2 ppm (SPC)
Resonator CI Accuracy	5 percent (SPC)
LCR Basic Accuracy Option 0	3 percent (SPC)
LCR Parameters Option 0	Z, Y, theta, R, X, G, B, L, C, D, Q
LCR Measurement Range Option 0	0.2 ohm to 10 kOhm
DC Bias Option 0	plus/minus 30 V maximum (external supply required)
Input Impedance Range Typical	5 to 125 ohm, 10 mOhm resolution
Return Loss Typical	20 dB
Maximum Input Level Typical	0 dBm
Damage Level	25 Vdc, 20 dBm
Average Noise Level Typical	-130 dBm/Hz
Crosstalk Typical	-100 dB

PARAMETER	VALUE
Dynamic Accuracy Midband	0.05 dB / 0.3 deg at -40 to -60 dBm input
External Reference Input	1 / 2 / 5 / 10 MHz, plus/minus 10 ppm
Interfaces	HP-IB and handler / parallel I/O
Save Recall Patterns	10 (with calibration data)
Power Supply	90 to 132 V or 198 to 264 V, 47 to 63 Hz, 100 VA maximum
Operating Temperature Humidity	0 to 55 C / 15 to 95 percent
Dimensions	320 mmWx 100 mmHx 450 mmDWeight: 5.3 kg
Measurement Time Example 100 MHz SHORT	Fr,CI about 240 ms (SPC; data transfer excluded)
Supplied Cables	two BNC 120 cm
Related Lower Cost Model	E4915A, 1 MHz to 180 MHz, -5 dBm fixed, no DLD/EM/LCR Notes Specs from HP E4916A Crystal Impedance Meter product overview (5967-6115E). Confirm Option 001 (impedance probe) and Option 010 (LCR) on the unit. Measurement time varies with resonance frequency andQeven for the same crystal type.
Bandwidth	Fr Definition: frequency at which phase is 0 degrees (or $ Z $ minimum if so configured)
Operating temperature	Humidity: 0 to 55 C / 15 to 95 percent
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Return loss	Typical: 20 dB

General Specifications & Supplementary Characteristics

PARAMETER	VALUE
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Full OEM specifications

Complete technical content extracted from the manufacturer datasheet. Sparse OEM tables are reconstructed as tables below; other text is preserved as paragraphs.

Specifications	
Technical Specifications	
PARAMETER	VALUE
Model	E4916A
Manufacturer	Hewlett-Packard / Agilent / Keysight
Instrument Type	Crystal impedance / LCR meter
Alias	HP E4916A; Agilent E4916A; Keysight E4916A
Frequency Range	1 MHz to 180 MHz
Frequency Resolution	1 mHz
Frequency Accuracy	2 ppm (improvable to 0.2 ppm with external reference)
Drive Level Standard	0.1 nW to 1 mW (25 ohm DUT with pi circuit)
Drive Level With Option 001	up to 20 mW
Resonator Parameters	Fr, Fs, Fa, FL, CI, Q, C0, C1, L1, R1, R0, G0, spurious, DLD, EM, filter bandwidth
Fr Definition	frequency at which phase is 0 degrees (or Z minimum if so configured)
Fs Definition	frequency of maximum conductance
Resonator Fr Accuracy	2 ppm (SPC)
Resonator CI Accuracy	5 percent (SPC)
LCR Basic Accuracy Option 010	3 percent (SPC)
LCR Parameters Option 010	Z, Y, theta, R, X, G, B, L, C, D, Q
LCR Measurement Range Option 010	0.2 ohm to 10 kOhm
DC Bias Option 010	plus/minus 30 V maximum (external supply required)
Input Impedance Range Typical	5 to 125 ohm, 10 mOhm resolution
Return Loss Typical	20 dB
Maximum Input Level Typical	0 dBm
Damage Level	25 Vdc, 20 dBm
Average Noise Level Typical	-130 dBm/Hz
Crosstalk Typical	-100 dB
Dynamic Accuracy Midband	0.05 dB / 0.3 deg at -40 to -60 dBm input

PARAMETER	VALUE
External Reference Input	1 / 2 / 5 / 10 MHz, plus/minus 10 ppm
Interfaces	HP-IB and handler / parallel I/O
Save Recall Patterns	10 (with calibration data)
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Notes

Specs from HP E4916A Crystal Impedance Meter product overview (5967-6115E). Confirm Option 001 (impedance probe) and Option 010 (LCR) on the unit. Measurement time varies with resonance frequency andQeven for the same crystal type.

Ordering Information

OPTION	DESCRIPTION
Option 001	impedance probe raises drive to 20 mW and, with Option 010, adds LCR parameters. HP-IB and a handler/parallel I/O support automated production test.

Available from Aumictech

Used and refurbished unit evaluated in-house. Calibration: Available on request. Used · In stock.

Request a quote: sales@aumictech.com · +1 (484) 841-9341

Aumictech

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<https://aumictechlabs.com>

NIST-traceable calibration · SAM registered ·
30-day returns
NAICS 423690 · 811210 · 541380
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Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.