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Data Sheet

August 13, 2026

AGILENT / HP / KEYSIGHT

Agilent HP Keysight E4991B Impedance Analyzer

Keysight E4991B Impedance Analyzer 1 MHz to 3 GHz The Keysight E4991B is an RF impedance analyzer using the RF-IV method with 0.65 percent basic accuracy overwide impedance range. Frequency options cover 1 MHz to 500 MHz / 1 GHz / 3 GHz, with optional 40 V DC bias, material measurement options, and probe-station connectivity for on-wafer and component impedance work. The Keysight E4991B is an RF impedance analyzer using the RF-IV method with 0.65 percent basic accuracy overwide impedance range. Frequency options cover 1 MHz to 500 MHz / 1 GHz / 3 GHz, with optional 40 V DC bias, material measurement options, and probe-station connectivity for on-wafer and component impedance work.

**MODEL****Agilent / HP /
Keysight E4991B****CALIBRATION****Available on
request****CONDITION****Used****STATUS****In stock****RFQ / SKU****E4991B****LISTING**[https://aumictechlabs.c
om/products/e4991b-2/](https://aumictechlabs.com/products/e4991b-2/)

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SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Keysight E4991B Impedance Analyzer characterizes electronic components, semiconductor devices, and materials across 1 MHz to 3 GHz with $\pm 0.65\%$ basic accuracy. This RF-IV method instrument measures impedance, admittance, reflection coefficient, and equivalent circuit parameters including R, X, L, C, Q, and D. The 10.4-inch color LCD touch screen display supports real-time parameter visualization. DC bias capability (Option 001) provides 0 V to ± 40 V voltage and 0 A to ± 100 mA current sourcing with 1 mV and 2 μ A resolution respectively. Test signal levels span 4.47 mVrms to 502 mVrms (AC voltage), 89.4 μ Arms to 10 mArms (AC current), and -40 dBm to +1 dBm (power). Technical Specifications Frequency Range: 1 MHz to 3 GHz (upgradable

options: 500 MHz, 1 GHz) Impedance Measurement Range (10% accuracy): 120 m Ω to 52 k Ω
Basic Accuracy: $\pm 0.65\%$ Measurement Parameters: $|Z|$, $|Y|$, θ , R, X, G, B, L, C, D, Q, $|\Gamma|$, Γ_x , Γ_y , $\theta\Gamma$,
Vac, Iac, Vdc1, Idc1 Measurement Method: RF-IV External Reference Input: 10 MHz $\pm$ 10 ppm, 0
dBm $\pm$ 3 dB, 50 Ω nominal, BNC female connector Internal Reference Output: 10 MHz $\pm$ 10 ppm, 0
dBm $\pm$ 3 dB into 50 Ω , 50 Ω nominal, BNC female connectorKey Features Dielectric material
measurement (Option 002): direct permittivity and permeability readout including $|\epsilon_r|$, ϵ_r' , ϵ_r'' ,
 $\tan\delta(\epsilon)$, $|\mu_r|$, μ_r' , μ_r'' , $\tan\delta(\mu)$ Temperature dependency analysis (Option 007) On-wafer and micro-
component measurement via probe station kit (Option 010) with guaranteed specifications at 7
mm test head port Equivalent circuit simulation and comparison Pass/fail limit line testing
Compact form factor with minimal footprintTypical Applications Passive component
characterization: capacitors, inductors, ferrite beads Material property evaluation and temperature
coefficient analysis On-wafer device impedance measurement up to 3 GHz Production and quality
assurance testingCompatibility & Integration Dielectric material test fixture: 16453A Magnetic
material test fixture: 16454A N1500A-005 materials measurement suite (up to 1 GHz) 7 mm
connector compatibility with legacy accessories

Features & description

From manufacturer datasheet

Features

• RF-IV measurement method • Basic accuracy 0.65 percent • Z range 120 mOhm to 52 kOhm at 10 percent accuracy class • Frequency options to 500 MHz 1 GHz or 3 GHz • Built-in 40 V DC bias Option 001 • Material permittivity permeability Option 002 • Temperature characteristics Option 007

Applications

• RF component impedance and admittance characterization • Dielectric and magnetic material measurements with options • On-wafer and micro-component impedance to 3 GHz • DC-biased impedance measurements of tunable devices

E4991B Characteristics / Specifications

PARAMETER	VALUE
Model	E4991B
Manufacturer	Keysight
Instrument Type	Impedance Analyzer
Alias	E4991B; Keysight E4991B
Measurement method	RF-IV
Basic accuracy	0.65 percent
Frequency option 500 MHz	1 MHz to 500 MHz
Frequency option 1 GHz	1 MHz to 1 GHz
Frequency option 3 GHz	1 MHz to 3 GHz
Impedance range 10 percent accuracy	120 mOhm to 52 kOhm
DC bias Option 0	built-in 40 V DC bias source
Material Option 0	permittivity and permeability direct read
Temperature Option 0	temperature characteristics analysis
Probe station Option 0	on-wafer / micro-component kit
Frequency upgrades	available between options
Display parameters	ZYthetaDQRXGBCp Cs Lp Ls
Calibration	open short load class fixture cal
Interface class	LAN USB GPIB class family
Application fixtures	Keysight RF impedance test fixtures
Target DUTs	SMD RF components materials wafers
Upper frequency maximum	3 GHz with option
Lower frequency	1 MHz
Accuracy class	0.65 percent basic
Bias voltage maximum Option 0	40 V
Series	E4991B Impedance Analyzer

PARAMETER	VALUE
Form factor	benchtop analyzer Notes Specs from Keysight E4991B brochure 5991-3892EN. Confirm installed frequency option (500M/1G/3G) and Options 001/002/007/010 on the unit.

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.

characteristics Option 007

Technical Specifications

Technical Specifications

PARAMETER	VALUE
Model	E4991B
Manufacturer	Keysight
Instrument Type	Impedance Analyzer
Alias	E4991B; Keysight E4991B
Measurement method	RF-IV
Basic accuracy	0.65 percent
Frequency option 500 MHz	1 MHz to 500 MHz
Frequency option 1 GHz	1 MHz to 1 GHz
Frequency option 3 GHz	1 MHz to 3 GHz
Impedance range 10 percent accuracy	120 mOhm to 52 kOhm
DC bias Option 001	built-in 40 V DC bias source
Material Option 002	permittivity and permeability direct read
Temperature Option 007	temperature characteristics analysis
Probe station Option 010	on-wafer / micro-component kit
Frequency upgrades	available between options
Display parameters	ZYthetaDQRXGBCp Cs Lp Ls
Calibration	open short load class fixture cal
Interface class	LAN USB GPIB class family
Application fixtures	Keysight RF impedance test fixtures
Target DUTs	SMD RF components materials wafers
Upper frequency maximum	3 GHz with option
Lower frequency	1 MHz
Accuracy class	0.65 percent basic
Bias voltage maximum Option 001	40 V
Series	E4991B Impedance Analyzer

PARAMETER

VALUE

Form factor

benchtop analyzer

Notes

Specs from Keysight E4991B brochure 5991-3892EN. Confirm installed frequency option (500M/1G/3G) and Options 001/002/007/010 on the unit.

Ordering Information

OPTION	DESCRIPTION
Option 001	Material permittivity permeability Option 002
Option 007	Technical Specifications
Option 500	MHz: 1 MHz to 500 MHz

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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Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.