

KEYSIGHT TECHNOLOGIES (AGILENT HP)

E9301H

The Keysight Technologies (formerly Agilent HP) E9301H is an E-series diode power sensor designed for measuring average power across a wide dynamic range from -50 to +30 dBm over a frequency spectrum of 10 MHz to 6 GHz. It is bandwidth-independent, allowing accurate measurements of various complex modulation formats without the need to match sensor bandwidth.

SPECIFICATIONS

General

Interfaces	Proprietary sensor cable connection to compatible host power meters
Display	None (requires compatible power meter)
Recommended Calibration Cycle	1 year

Physical

Power Supply	Powered directly from compatible power meter via sensor cable
Operating Temperature	0 to 55 °C °C
Dimensions (W×H×D)	38 mm × 30 mm × 150 mm mm
Weight	0.18 kg kg

Measurement Ranges & Power Specifications

Frequency Range	10 MHz to 6 GHz
Frequency Range Minimum	10 MHz
Frequency Range Maximum	6 GHz
Power Measurement Range	-50 to +30 dBm
Power Measurement Range Minimum	-50 dBm
Power Measurement Range Maximum	+30 dBm
Dynamic Range	80 dB
Maximum Continuous Input Power	+33 dBm (2 W)
Maximum Peak Input Power	+33 dBm
Maximum Peak Input Power Duration	< 10 μs

Sensor Technology & Architecture

Sensor Detection Type	Diode-attenuator-diode topology
Measurement Modes Supported	Average power
Modulation Compatibility	All modulation formats (bandwidth independent)
Measurement Paths	Two paths with quick automatic switching

RF Port Characteristics

RF Connector Type	Type-N
Connector Sex	Male
Input Impedance	50 Ω (nominal)
Maximum SWR	1.19

Meter Compatibility & System Integration

Calibration Factor Storage Type	EEPROM
Stored Calibration Data	Calibration factors, linearity, and temperature compensation data
Compatible Power Meter Models	E4418A/B, E4419A/B (EPM series); E4416A/17A (EPM-P series); N1911A/12A (P-series); N1913A/14A (EPM series)

Design

Integrated Attenuator	10 dB
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Performance

Power Linearity (-10 to +20 dBm)	$\pm 3.0\%$ (at 25 °C $\pm$ 10 °C)
Power Linearity (+20 to +30 dBm)	$\pm 3.5\%$ (at 25 °C $\pm$ 10 °C)
Temperature Coefficient (-10 to +20 dBm)	$\pm 4.0\%$ (0 to 55 °C)
Temperature Coefficient (+20 to +30 dBm)	$\pm 4.5\%$ (0 to 55 °C)
Power Linearity (-50 to -10 dBm)	$\pm 3.0\%$
Temperature Coefficient (-50 to -10 dBm)	$\pm 1.5\%$ (0 to 10 °C and 40 to 55 °C)
Maximum SWR (10 MHz to 30 MHz)	1.15
Maximum SWR (30 MHz to 2 GHz)	1.13
Maximum SWR (2 GHz to 6 GHz)	1.19
Zero Set	± 5 nW
Zero Drift	< ± 1.5 nW (over 1 hour at constant temperature)
Measurement Noise	< 7.0 nW (free run, normal mode, average of 100)
Power Range 1 (Low Power Path)	-50 to -10 dBm
Power Range 2 (High Power Path)	-10 to +30 dBm
Path Switching Threshold	-10 dBm (nominal)

System Connections

Sensor Cable Compatibility	E9288A (1.5 m), E9288B (3 m), E9288C (10 m)
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Environmental

Storage Temperature Range	-55 °C to +75 °C
Operating Humidity	Up to 95% RH at 40 °C (non-condensing)
Storage Humidity	Up to 95% RH at 65 °C (non-condensing)
Operating Altitude	Up to 4,600 m (15,000 ft)
Storage Altitude	Up to 15,240 m (50,000 ft)

Accuracy

Calibration Factor Uncertainty (10 to 30 MHz)	±1.8%
Calibration Factor Uncertainty (30 to 500 MHz)	±1.6%
Calibration Factor Uncertainty (500 MHz to 1.2 GHz)	±1.8%
Calibration Factor Uncertainty (1.2 to 6 GHz)	±2.0%

Compliance

Safety Compliance	IEC 61010-1 / EN 61010-1
EMC Compliance	IEC 61326-1 / EN 61326-1

TECHNOLOGY

Diode-attenuator-diode

APPLICATIONS

RF and microwave power measurement

Generated by SpecAtlasHub (specatlashub.com). Specifications are compiled from available sources and are subject to change — verify critical values against the manufacturer before purchase.