KEYSIGHT TECHNOLOGIES (AGILENT HP)

E4419A

The Keysight (formerly Agilent) E4419A is a high-performance, dual-channel, programmable power meter designed for benchtop and automatic test equipment (ATE) environments. Part of the EPM Series, it delivers fast, accurate, and repeatable RF power measurements. With dual-channel capability, it provides two simultaneous power readings on its high-resolution backlit LCD, supporting compatible E-series and 8480-series power sensors.

SPECIFICATIONS

General

Interfaces	GPIB (IEEE-488), RS-232, RS-422
Display	High-resolution Liquid Crystal Display (LCD) with LED backlighting
Chassis Ground Terminal	Rear panel binding post
Warm-Up Time	30 minutes
Calibration Factor Range	1.0% to 150.0%

Physical

Power Supply	85 to 264 VAC, 50 to 440 Hz, automatic selection, < 70 VA (70 VA max, 25 W typical)
Operating Temperature	0 to 55 °C
Dimensions (W×H×D)	212.6 mm × 88.5 mm × 348.3 mm mm
Weight	4.1 kg
Rackmount Configuration Options	Single or dual rackmount kits available

Measurement

Number of Measurement Channels	2
Frequency Range	100 kHz to 110 GHz (sensor dependent)
Power Range	-70 to +44 dBm (sensor dependent)
Display Resolution	Selectable 1.0, 0.1, 0.01, and 0.001 dB (logarithmic), or 1 to 4 significant digits (linear)
Instrumentation Accuracy	±0.5% (single channel) or ±1.0% (difference/ratio)
Single-Sensor Dynamic Range	90 dB max (E-series sensors), 50 dB max (8480 series sensors)
Measurement Speed (Normal Mode)	20 readings per second (with E-series sensors)
Measurement Speed (Fast Mode)	100 readings per second (with E-series sensors over GPIB)

Reference Calibrator

Calibrator Power Output	1.00 mW (0.00 dBm)
Calibrator Frequency	50 MHz
Calibrator Power Accuracy (at 25 ± 10 °C)	±0.9%
Calibrator Power Accuracy (0 to 55 °C)	±1.2%
Calibrator VSWR	1.06 max
Calibrator Connector Type	Precision Type-N (female)

Sensors & Calibration

Compatible Sensor Families	Agilent/HP 8480 Series and E-Series (except E9320A family)
Calibration Factor Entry Method	Keyboard entry, download via GPIB, or automated read from E-series EEPROM
Sensor Calibration Table Storage	Up to 20 tables of 80 frequency points each (for 8480 series)
Offset Range	±100 dB in 0.001 dB increments

Triggering & Synchronization

Trigger Source	Internal, External, GPIB/Software
Trigger Delay Range	0 to 1,000 ms
Trigger Delay Resolution	1 ms
External Trigger Input Level	TTL compatible (active low)
Recorder Output Voltage Range	0 to 1 V
Recorder Output Impedance	1 kΩ

User Interface

Display Units	Absolute: Watts, dBm; Relative: %, dB
Programming Language	SCPI (Standard Commands for Programmable Instruments)
Code Emulation Mode	HP 438A
Save/Recall Registers	10 instrument states

Connectivity

Sensor Input Connectors Location	Front panel (Option 002: rear panel)
External Trigger Input Connector	BNC (rear panel)
Recorder Output Connector	BNC (rear panel)
Calibrator Output Connector Location	Front panel (Option 002: rear panel)
GPIB Conformance	IEEE 488.2

Power Requirements

Battery Option Availability	Option 001 (rechargeable NiMH battery, up to 3 hours of continuous operation)
Mains Voltage Range	85 to 264 VAC (automatic selection)

Environmental

Storage Temperature Range	-20 °C to +70 °C
Operating Humidity	95% at 40 °C (non-condensing)
Operating Altitude	Up to 4,600 meters (15,000 feet)
Storage Altitude	Up to 15,240 meters (50,000 feet)
Safety Standards Compliance	Conforms to CSA C22.2 No. 1010.1, EN 61010-1 / IEC 1010-1
Electromagnetic Compatibility (EMC)	Conforms to EN 55011 / CISPR 11 Group 1 Class A

Power & Electrical

Power Consumption	70 VA maximum (40 W)
Line Frequency Range	50 to 440 Hz (100 to 120 VAC), 50 to 60 Hz (220 to 240 VAC)

System Capabilities

Maximum Power Sensor Cable Length	121 m (400 ft)

Performance

Channel-to-Channel Isolation	>90 dB (at 1 GHz), >60 dB (at 40 GHz)

Calibrator

Calibrator Output Impedance	50 Ω (nominal)

Display

Display Type	Liquid Crystal Display (LCD)
Display Backlight	LED

Battery Option (Option 001)

Battery Type	Nickel Metal Hydride (NiMH) (Option 001)
Battery Operating Time	Up to 3 hours (backlight on), up to 4 hours (backlight off) (Option 001)
Battery Charge Time	2 hours to 90% capacity, 3 hours to 100% capacity (Option 001)

Interfaces

Serial Interface Connector	6-pin RJ-11
GPIB Subset Compatibility	SH1, AH1, T6, TE0, L4, LE0, SR1, RL1, PP1, DC1, DT1, C0

TECHNOLOGY

RF / Microwave Power Measurement

APPLICATIONS

RF power measurement, automatic test equipment (ATE), benchtop RF calibration