

Agilent E1416A Power Meter

Data Sheet

- 1-Slot, C-size, message based
- Single channel
- ± 0.02 dB or $\pm 0.5\%$ instrumentation accuracy
- 100 kHz to 110 GHz, sensor dependent
- -70 to $+44$ dBm
- 1 mW power reference

Description

The Agilent Technologies E1416A Power Meter is a **C-size, 1-slot, message-based VXI module**. It is a high-performance, single-channel, programmable, average power meter compatible with the Agilent 8480 family of thermocouple and diode power sensors.

This power meter makes accurate and reliable average power measurements. With its powerful programming capability, exceptional accuracy and reliability, it lets you measure your test signal with speed, precision, and confidence!

Refer to the Agilent Technologies Website for instrument driver availability and downloading instructions, as well as for recent product updates, if applicable.



Agilent E1416A



Agilent Technologies

Product Specifications

Characteristics

Frequency:	Allows entry of test signal frequency for cal factor selection
Offset:	Allows measurement to be offset by ± 99.99 dB
Resolution:	Selection of 0.1, 0.01, and 0.001 dB. Auto Filter Mode automatically selects the required number of averages for the chosen range and resolution
Averaging:	Selectable from 1 to 1024 readings (<i>in powers of 2</i>)
Duty cycle:	Displays peak power representation of measured RMS power for rectangular pulses
Sensor tables:	Allows entry and storage of up to 10 sensor cal factor tables versus frequency
Save/recall states:	Saves and recalls 10 complete E1416A operating states

General

Frequency:	100 kHz to 110 GHz sensor dependent
Power range:	-70 to +44 dBm (<i>100 pW to 25 W</i>), sensor dependent
Dynamic range:	50 dB in 10 dB ranges
Results units:	W, dBm (<i>absolute</i>), %, dB <i>relative</i>
Accuracy:	± 0.02 dB or $\pm 0.5\%$ (instrument, absolute mode). In ranges of 4 or 5, add sensor linearity percentage
Zero set:	$\pm 0.5\%$ of full scale on most sensitive range. Divide by 10 for each higher range, ± 1 count
Power reference:	1.00 mW (<i>50 MHz oscillator factory set to $\pm 0.7\%$ traceable to NIST</i>)

Functions

Power:	Yes
Offset:	Yes
Averaging:	Yes
Duty cycle:	Yes

General Specifications

VXI Characteristics

VXI device type:	Message based
Size:	C
Slots:	1
Connectors:	P1/2
Shared memory:	n/a
VXI buses:	n/a

Instrument Drivers - See the Agilent Technologies Website (http://www.agilent.com/find/inst_drivers) for driver availability and downloading.

Command module firmware:	n/a
Command module firmware rev:	n/a
I-SCPI Win 3.1:	n/a
I-SCPI Series 700:	n/a
C-SCPI LynxOS:	n/a
C-SCPI Series 700:	n/a
Panel Drivers:	Yes
VXI plug&play Win Framework:	Yes
VXI plug&play Win 95/NT Framework:	Yes
VXI plug&play HP-UX Framework:	No

Module Current

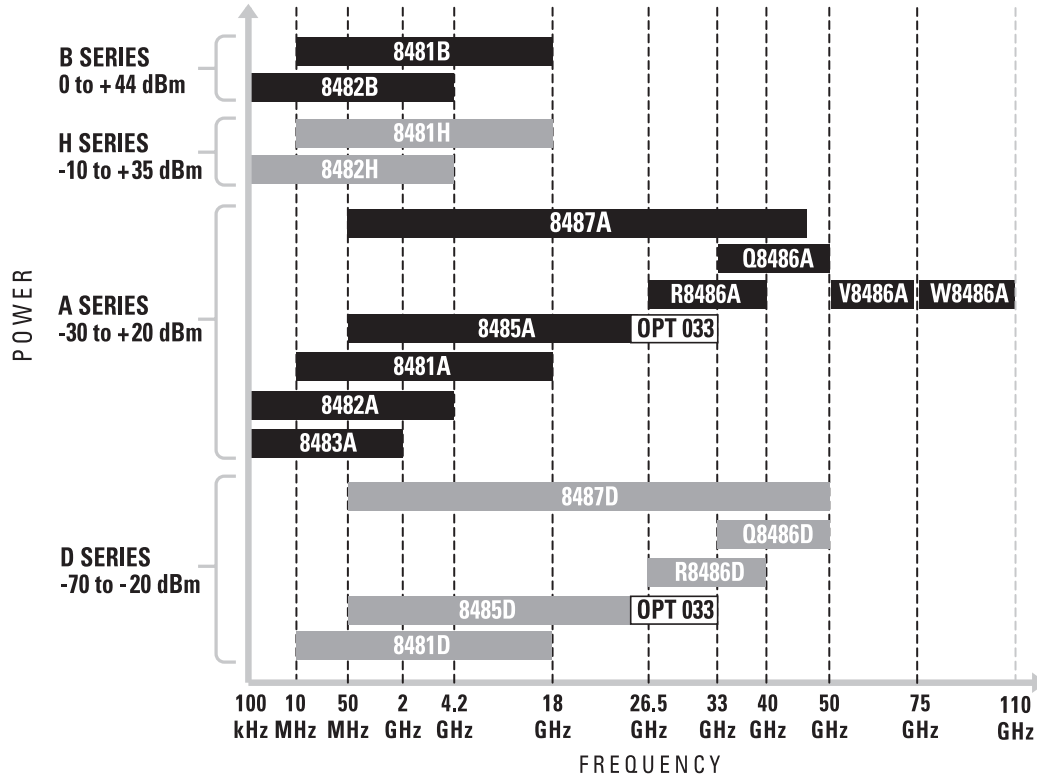
	I_{PM}	I_{DM}
+5 V:	1	0.1
+12 V:	0	0
-12 V:	0	0
+24 V:	0.1	0.01
-24 V:	0.1	0.01
-5.2 V:	0	0
-2 V:	0	0

Cooling/Slot

Watts/slot:	12.20
ΔP mm H ₂ O:	1.00
Air Flow liter/s:	0.20

Ordering Information

Description	Product No.
Power Meter, C-Size VXI	E1416A
Delete Cable	E1416A 004
Service Support Kit	E1416A 915
Additional User Manual	E1416A 916
3 Yr. Retn. to Agilent to 1 Yr. OnSite Warr.	E1416A W01
5-ft (1.5 m) Power Sensor Cable	11730A
10-ft (3.0 m) Power Sensor Cable	11730B
20-ft (6.1 m) Power Sensor Cable	11730C
50-ft (15.2 m) Power Sensor Cable	11730D
100-ft (30.5 m) Power Sensor Cable	11730E
200-ft (61.0 m) Power Sensor Cable	11730F
High-power Thermocouple Power Sensor	8481B
Mil Std 45662A Calibration Certification	8481B 1BN
Extra Manual Set	8481B 910
High-power Sensor, 100 kHz to 4.2 GHz	8482B
Mil Std 45662A Calibration Certification	8482B 1BN
3-watt Power Sensor, 10 MHz to 18 GHz	8481H
Mil Std 45662A Calibration Certification	8481H 1BN
Extra Manual Set	8481H 910
3-watt Power Sensor, 100 kHz to 4.2 GHz	8482H
Mil Std 45662A Calibration Certification	8482H 1BN
Extra Manual Set	8482H 910
Power Sensor, 50 MHz to 26.5 GHz	8485A
Specified Performance for 0.05-33 GHz	8485A 033
Mil Std 45662A Calibration Certification	8485A 1BN
Extra Manual Set	8485A 910
Power Sensor, 10 MHz to 18 GHz	8481A
APC-7 Connector	8481A 001
Japanese Operating Manual	8481A 030
Mil Std 45662A Calibration Certification	8481A 1BN
Extra Manual Set	8481A 910
Power Sensor, 100 kHz to 4.2 GHz	8482A
Japanese Operating Manual	8482A 030
Mil Std 45662A Calibration Certification	8482A 1BN
Extra Manual Set	8482A 910
75-ohm Power Sensor, 100 kHz to 2 GHz	8483A
Japanese Operating Manual	8483A 030
Mil Std 45662A Calibration Certification	8483A 1BN
Extra Manual Set	8483A 910
Power Sensor, 26.5-40 GHz	R8486A
Power Sensor, 33-50 GHz	Q8486A
Power Sensor, 50 MHz to 50 GHz	8487A
V-band Power Sensor, 50 GHz to 75 GHz	V8486A
W-band Power Sensor	W8486A
Diode Power Sensor, 10 MHz to 18 GHz	8481D
Mil Std 45662A Calibration Certification	8481D 1BN
Extra Manual	8481D 910
High-sensitivity Diode Power Sensor	8485D
Specified Performance for 0.05-33 GHz	8485D 033
Mil Std 45662A Calibration Certification	8485D 1BN
Extra Manual	8485D 910
Diode Power Sensor, 50 MHz to 50 GHz	8487D
Waveguide Power Sensor, 26.5-40 GHz	R8486D
Waveguide Power Sensor, 33-50 GHz	Q8486D



The E1416A is functionally equivalent to the Agilent 437B⁽¹⁾ or 70100A. It is compatible with all 8480 series sensors (and 11722A) as shown here.

⁽¹⁾The Agilent 437B has been obsoleted and replaced by the E4418B.

Agilent Technologies' Test and Measurement Support, Services, and Assistance

Agilent Technologies aims to maximize the value you receive, while minimizing your risk and problems. We strive to ensure that you get the test and measurement capabilities you paid for and obtain the support you need. Our extensive support resources and services can help you choose the right Agilent products for your applications and apply them successfully. Every instrument and system we sell has a global warranty. Support is available for at least five years beyond the production life of the product. Two concepts underlie Agilent's overall support policy: "Our Promise" and "Your Advantage."

Our Promise

Our Promise means your Agilent test and measurement equipment will meet its advertised performance and functionality. When you are choosing new equipment, we will help you with product information, including realistic performance specifications and practical recommendations from experienced test engineers. When you use Agilent equipment, we can verify that it works properly, help with product operation, and provide basic measurement assistance for the use of specified capabilities, at no extra cost upon request. Many self-help tools are available.

Your Advantage

Your Advantage means that Agilent offers a wide range of additional expert test and measurement services, which you can purchase according to your unique technical and business needs. Solve problems efficiently and gain a competitive edge by contracting with us for calibration, extra-cost upgrades, out-of-warranty repairs, and on-site education and training, as well as design, system integration, project management, and other professional engineering services. Experienced Agilent engineers and technicians worldwide can help you maximize your productivity, optimize the return on investment of your Agilent instruments and systems, and obtain dependable measurement accuracy for the life of those products.

By internet, phone, or fax, get assistance with all your test & measurement needs.

Online assistance:

www.agilent.com/find/assist

Phone or Fax

United States:
(tel) 1 800 452 4844

Canada:
(tel) 1 877 894 4414
(fax) (905) 282 6495

China:
(tel) 800 810 0189
(fax) 1 0800 650 0121

Europe:
(tel) (31 20) 547 2323
(fax) (31 20) 547 2390

Japan:
(tel) (81) 426 56 7832
(fax) (81) 426 56 7840

Korea:
(tel) (82 2) 2004 5004
(fax) (82 2) 2004 5115

Latin America:
(tel) (305) 269 7500
(fax) (305) 269 7599

Taiwan:
(tel) 080 004 7866
(fax) (886 2) 2545 6723

Other Asia Pacific Countries:
(tel) (65) 375 8100
(fax) (65) 836 0252
Email: tm_asia@agilent.com

Product specifications and descriptions in this document subject to change without notice.

© Agilent Technologies, Inc. 2001
Printed in USA September 1, 2001
5965 5564E



Agilent Technologies