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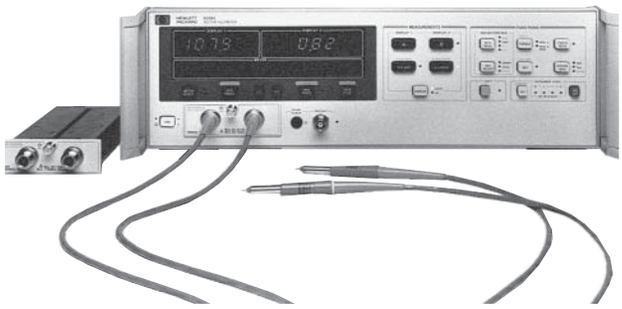
Network Analyzers

Vector Voltmeter and Input Modules

HP 8508A
HP 85081B
HP 85082A
HP 11570A

- RF voltage and phase measurements
- 100 kHz to 1 GHz high-impedance probe inputs
- 300 kHz to 2 GHz 50 Ω inputs



HP 8508A Option 001

HP 8508A Vector Voltmeter

The HP8508A vector voltmeter is a fully-automatic tuned receiver that makes RF voltage and phase measurements easy. The narrowband measuring technique gives a dynamic range of over 90 dB and a sensitivity of 10 μV to trace even the smallest signal. The vector voltmeter also measures the difference between the two input channels with at least 0.1 degree resolution over a full +180 to –180 degree range, so it can be used for another complete set of measurements—such as electrical length, phase distortion, or impedance. The standard unit is supplied with the HP 85081B input module, which has two high-impedance probe inputs that operate from 100 kHz to 1 GHz. Its ability to store reference and use it in later measurements means individual circuit sections can be characterized and adjusted independently. Any CW source can be used as a stimulus—even a source that is part of the device being tested—so measurements can be made under normal operating conditions. To adapt the probe inputs for measurements in a 50 Ω environment, the HP 11570A accessory kit provides two HP 11536A probe tees, an HP 11549A power splitter, and two HP 908A 50 Ω terminations. Option 050 is supplied with the HP 85082A input module. Its 50 Ω inputs operate from 300 kHz to 2 GHz, and provide the accuracy and dynamic range to make measurements on active and passive components.

HP 8508A with HP 85081B High-Impedance Input Module Specifications

Frequency Range: 100 kHz to 1 GHz (300 kHz to 2 GHz[1])
Maximum Input: 2 V peak ac (+16 dBm[1]), ±50 Vdc
A- (ref) Channel Minimum: 10 mV (–47 dBm[1]), 100 kHz to 300 kHz 1mV (–47 dBm[1]), 300 kHz to 3 MHz 300 μV, 3 MHz to 1 GHz (–57 dBm, 3 MHz to 2 GHz[1])
B-Channel Noise Level: 10 μV (–87 dBm[1])
Input Crosstalk: >100 dB, 1 MHz to 500 MHz > 80 dB, 500 MHz to 1 GHz (>70 dB, 1 GHz to 2 GHz[1])

Magnitude Accuracy

Absolute Accuracy (A,B 100 mV, 15° to 30°C)	+1/–1.5 dB, 100 kHz to 300 kHz ±.5 dB, 300 kHz to 1 MHz ±.3 dB, 1 MHz to 100 MHz ±.6 dB, 100 MHz to 300 MHz ±1 dB, 300 MHz to 1 GHz (±1 dB, 300 MHz to 1.5 GHz[1]) (+1/–2 dB, 1.5 GHz to 2 GHz[1])
Ratio Accuracy (A,B 100 mV, 15° to 30° C)	±1 dB, 100 kHz to 300 kHz ±.4 dB, 300 kHz to 1 MHz ±.2 dB, 1 MHz to 100 MHz ±.4 dB, 100 MHz to 300 MHz ±.6 dB, 300 MHz to 1 GHz (±.6 dB, 300 MHz to 1.5 GHz[1]) (±1 dB, 1.5 GHz to 2 GHz[1])
Phase Accuracy (in degrees) (A,B 100 mV, 15° to 30° C)	±4, 300 kHz to 1 MHz ±1, 1 MHz to 100 MHz ±4, 100 MHz to 300 MHz ±6, 300 MHz to 1 GHz (±6, 300 MHz to 1.5 GHz[1]) (±12, 1.5 GHz to 2 GHz[1])

[1]Specifications apply to HP 85082A 50 Ω input module only.

Search and Lock Time: Lockup (within one range): 40 ms, frequencies up to 3 MHz; 20 ms, frequencies greater than 3 MHz

General: HP 8508A only

Power: 100, 120, 220 or 240 V +5%/–10%, 48 to 440 Hz, 40 VA
Size: 425.5 mm W x 133 mm H x 473.3 mm D (16.75 in x 5.25 in x 18.65 in)
Option 001: 524.5 mm W x 158.8 mm H x 524.5 mm D (19.75 in x 6.25 in x 20.65 in)
Weight: net, 8.1 kg (18 lb); shipping, 11 kg (24 lb).
Option 001: net, 9.4 kg (21 lb); shipping 12.5 kg (28 lb).

HP 11570A Accessory Kit

50 Ω Tees: For monitoring signals on 50 Ω transmission line. Kit contains two 50 Ω tees, both with type-N female connectors.
50 Ω Power Splitter: All connectors type-N female
HP 908A 50 Ω Termination: For terminating 50 Ω coaxial systems in their characteristic impedance. Kit contains two 50 Ω terminations, both with type-N male connectors.
HP 11512A Short: Type-N male

Ordering Information

HP 8508A Vector Voltmeter (includes HP 85081B)
  Opt 001 Bail Handle and Front Protective Cover
  Opt 801 Two each HP 11576A 10:1 Divider and HP 10216A Isolators
HP 85081B Input Module (100 kHz to 1 GHz, high-impedance probe inputs)
HP 85082A Input Module (300 kHz to 2 GHz, 50 Ω Type-N inputs)
HP 11570A Accessory Kit (for measurement of 50 Ω systems with standard HP 8508A)