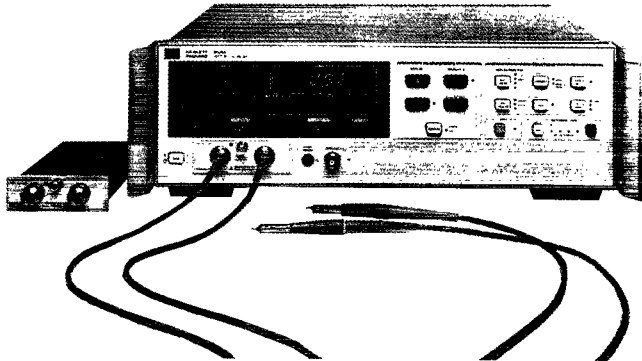


- RF voltage and phase measurements
- 100 kHz to 1 GHz high-impedance probe inputs
- 300 kHz to 2 GHz 50 ohm inputs



HP 8508A Option 001

HP 8508A and HP 70138A Vector Voltmeters

The HP 8508A and HP 70138A vector voltmeters are fully automatic tuned receivers that make RF voltage and phase measurements easy. Their narrowband measuring technique gives a dynamic range of over 90 dB and a sensitivity of $10 \mu\text{V}$ to trace even the smallest signal. These vector voltmeters also measure the phase difference between their two input channels with at least 0.1 degree resolution over a full $+180$ to -180 degree range, so they 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 a 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 50Ω environment, the HP 11570A Accessory Kit provides two HP 11536A Probe Tees, an HP 11549A Power Splitter, and two HP 908A 50Ω Terminations. Option 050 is supplied with the HP 85082A Input Module. Its 50Ω 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 and 70138A with HP 85081B High-Impedance Input Module

Specifications Summary

(*Specifications apply to HP 85082A 50Ω Input Module only.)

Frequency range: 100 kHz to 1 GHz (300 kHz to 2 GHz*)

Maximum input: 2V peak ac ($+16 \text{ dBm}^*$), $\pm 50\text{V}$ dc

A (ref) channel minimum: 10 mV (-47 dBm^*), 100 kHz to 300 kHz 1 mV (-47 dBm^*), 300 kHz to 3 MHz $300 \mu\text{V}$, 3 MHz to 1 GHz (-57 dBm , 3 MHz to 2 GHz*)

B channel noise level: $10 \mu\text{V}$ (-87 dBm^*)

Input crosstalk: $> 100 \text{ dB}$, 1 MHz to 500 MHz $> 80 \text{ dB}$, 500 MHz to 1 GHz ($> 70 \text{ dB}$, 1 GHz to 2 GHz*)

Magnitude Accuracy

Absolute accuracy
(A, B 100 mV, 15° to 30°C):

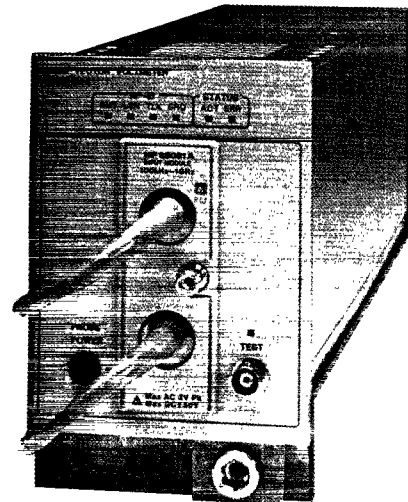
$\pm 1/-1.5 \text{ dB}$, 100 kHz to 300 kHz
 $\pm .5 \text{ dB}$, 300 kHz to 1 MHz
 $\pm .3 \text{ dB}$, 1 MHz to 100 MHz
 $\pm .6 \text{ dB}$, 100 MHz to 300 MHz
 $\pm 1 \text{ dB}$, 300 MHz to 1 GHz
 $(\pm 1 \text{ dB}, 300 \text{ MHz to } 1.5 \text{ GHz}^*)$
 $(+1/-2 \text{ dB}, 1.5 \text{ GHz to } 2 \text{ GHz}^*)$

Ratio accuracy

(A, B 100 mV, 15° to 30°C):

$\pm 1 \text{ dB}$, 100 kHz to 300 kHz
 $\pm .4 \text{ dB}$, 300 kHz to 1 MHz
 $\pm .2 \text{ dB}$, 1 MHz to 100 MHz
 $\pm .4 \text{ dB}$, 100 MHz to 300 MHz
 $\pm .6 \text{ dB}$, 300 MHz to 1 GHz
 $(\pm .6 \text{ dB}, 300 \text{ MHz to } 1.5 \text{ GHz}^*)$
 $(\pm 1 \text{ dB}, 1.5 \text{ GHz to } 2 \text{ GHz}^*)$

HP 70138A



Phase Accuracy

(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
 $(\pm 6, 300 \text{ MHz to } 1.5 \text{ GHz}^*)$
 $(\pm 12, 1.5 \text{ GHz to } 2 \text{ GHz}^*)$

Search and lock time: Lockup (within one range): 40ms, frequencies up to 3 MHz, 20 ms, frequencies greater than 3MHz.

General: HP 8508A only

Power: 100, 120, 220, or 240V $+5\%/-10\%$, 48 to 440Hz, 40VA.

Size: 133 mm H \times 425.5 mm W \times 473.3 mm D (5.25 in \times 16.75 in \times 18.65 in) Opt. 001: 158.8 mm H \times 524.5 mm W \times 524.5 mm D (6.25 in \times 19.75 in \times 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

50Ω Tee: For monitoring signals on 50Ω transmission line. Kit contains two each with Type N female connectors.

50Ω Power Splitter: All connectors Type N female.

HP 908A 50Ω Termination: For terminating 50Ω coaxial systems in their characteristic impedance. Kit contains two each with Type N male connectors.

HP 11512A Short: Type N male.

HP 85089A Grounding Clip

The HP 85089A grounding clip fits over the probe tip of the HP 85081B to provide a ground return when making in-circuit measurements. It also acts as a shorting bar when the probe is not in use to reduce susceptibility to electrostatic damage.

Ordering Information

| | |
|---|-----------|
| HP 8508A Vector Voltmeter (includes HP 85081B) | \$6,200 ☎ |
| Opt 001: Add bail handle and front protective cover. | + \$250 |
| Opt 801: Add 2 each HP 11576A 10:1 Divider and HP 10216A Isolators. | + \$630 |
| HP 70138A Vector Voltmeter | \$5,930 |
| Opt 050: Replace HP 85081B Input Module with HP 85082A Input Module. | \$0 |
| Opt 100: Delete Input Module. | − \$1,500 |
| HP 85081B Input Module (100 kHz to 1 GHz, high impedance probe inputs) | \$1,500 |
| HP 85082A Input Module (300 kHz to 2 GHz, 50Ω Type N inputs) | \$1,500 |
| HP 11570A Accessory Kit (measurement in 50Ω systems with standard HP 8508A and 70138A) | \$1,100 |
| HP 85089A Grounding Clip | \$10 |

☎ For off-the-shelf shipment, call 800-452-4844.