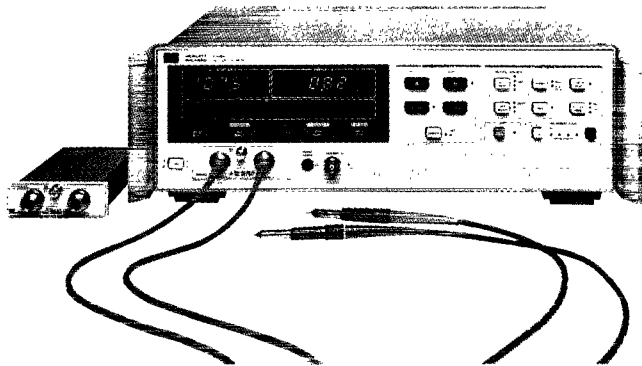


- RF voltage and phase measurements
- 100 kHz to 1 GHz high-impedance probe inputs
- 300 kHz to 2 GHz 50 Ω inputs



HP 8508A Option 001

### HP 8508A 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 μV 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 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 and 70138A with HP 85081B High-Impedance Input Module Specifications

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

**Maximum Input:** 2 V peak ac (+16 dBm\*), ±50 Vdc

**A (ref) Channel Minimum:** 10 mV (-47 dBm\*), 100 kHz to 300 kHz 1 mV (-47 dBm\*), 300 kHz to 3 MHz 300 μV, 3 MHz to 1 GHz (-57 dBm, 3 MHz to 2 GHz\*)

**B Channel Noise Level:** 10 μV (-87 dBm\*)

**Input Crosstalk:** > 100 dB, 1 MHz to 500 MHz > 80 dB, 500 MHz to 1 GHz (> 70 dB, 1 GHz to 2 GHz\*)

#### Magnitude Accuracy

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

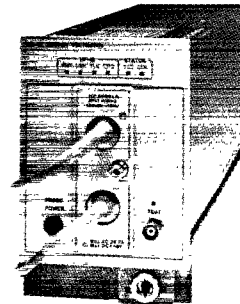
+1/-1.5 dB, 100 kHz to 300 kHz
±.5 dB, 300 kHz to 1 MHz
±.3 dB, 1 MHz to 100 MHz
±.6 dB, 100 MHz to 300 MHz
±1 dB, 300 MHz to 1 GHz
(±1 dB, 300 MHz to 1.5 GHz*)
(+1/-2 dB, 1.5 GHz to 2 GHz*)

**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 dB, 1.5 GHz to 2 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
(±6, 300 MHz to 1.5 GHz*)
(±12, 1.5 GHz to 2 GHz*)

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

(\*Specifications apply to HP 85082A 50 Ω input module only.)

### General: HP 8508A only

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

**Size:** 133 mm H × 425.5 mm W × 473.3 mm D (5.25 in × 16.75 in × 18.65 in) Opt 001: 158.8 mm H × 524.5 mm W × 524.5 mm D (6.25 in × 19.75 in × 20.65 in).

**Weight:** Net, 8.1 kg (18 lb); shipping, 11 kg (24 lb). Opt 001: net, 9.4 kg (21 lb); shipping 12.5 kg (28 lb).

### HP 11570A Accessory Kit

**50 Ω Tee:** For monitoring signals on 50 Ω transmission line. Kit contains two each 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 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)

**Opt 001** Bail handle and front protective cover.

**Opt 801** 2 each HP 11576A 10:1 Divider and HP 10216A Isolators.

**HP 70138A** Vector Voltmeter

**Opt 050** Replaces HP 85081B Input Module with HP 85082A Input Module.

**Opt 100** Deletes Input Module.

**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 (measurement in 50 Ω systems with standard HP 8508A and 70138A)

**HP 85089A** Grounding Clip