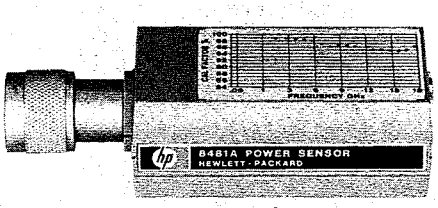
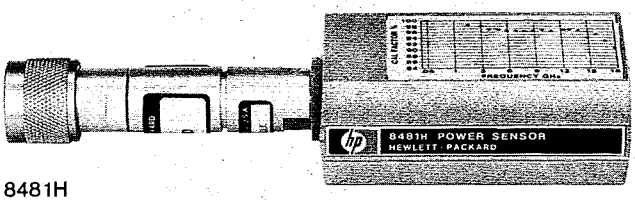
POWER & NOISE FIGURE METERS

Power Sensors

Models 8481A/B, 8481H, 8482A/B, 8482H, 8483A, 8484A, 8485A, 11708A



8481A



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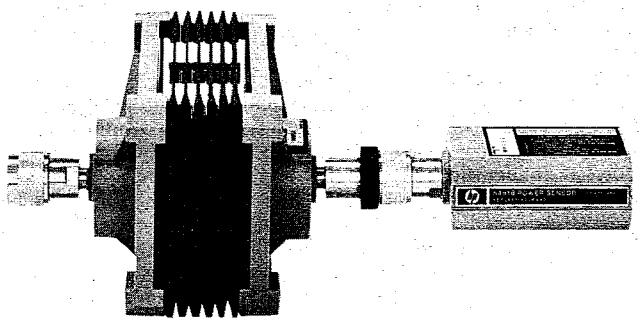

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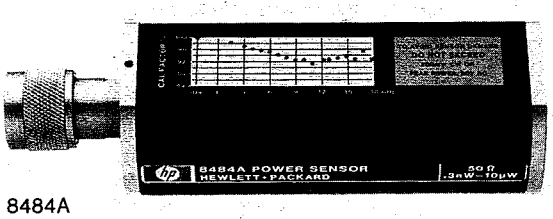
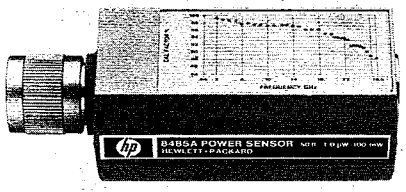


8484A

11708A



8485A

8480 Series Power Sensors

The 8480 series of power sensors have been designed for use with the 435B and 436A Power Meters. They feature wide frequency and amplitude ranges in addition to very low SWR.

The power measurement range of these sensors is from 0.1 nW to 25 Watts. With just three sensors a power measurement range of 114 dB can be achieved.

Wide Frequency Range for Many Applications

Power measurements can be made over a frequency range of 100 kHz to 26.5 GHz. The four frequency ranges covered with these units are 10 MHz to 18 GHz, 100 kHz to 4.2 GHz, 50 MHz to 26.5 GHz, and 100 kHz to 2 GHz, with the 75-ohm unit.

Low SWR for Low Measurement Uncertainty

The 8481/82/83/85 series of sensors use a silicon monolithic thermocouple as the sensing element. The small physical size of the thermocouple enables the sensors to have a very low SWR even at 26.5 GHz. A low SWR reduces mismatch uncertainty error, one of the largest single sources of error in power measurements. The 8484A sensor uses a crystal detector for higher sensitivity without degrading SWR.

Individually Calibrated for More Confidence in Results

Each sensor is individually calibrated, traceable to the National Bureau of Standards. A Cal Factor control on the meter compensates for power sensor efficiency at any frequency. A precise Automatic Network Analyzer printout for Cal Factor and reflection coefficient in magnitude and phase is supplied with the 8481A/B/H, 8484A, and 8485A. This means you can significantly reduce mismatch uncertainty by calculating the mismatch error.

High Power Sensors to 25 Watts

The new 8481B and 8482B high power sensors both have a power range of 1 mW to 25 watts. The 8481B covers a frequency range of 10 MHz to 18 GHz and the 8482B has a frequency range of 100 kHz to 4.2 GHz.

Previous methods of measuring medium power levels usually required adding a separate attenuator in front of a low power sensor. With the 8481/82B power sensors, the attenuator and sensor are combined into one unit. This reduces mismatch uncertainty error and improves accuracy by including the attenuator in the measured Calibration Factor curves. In addition, the design incorporates lightweight, heat-dissipating fins to prevent burns.

Medium Power Sensors to 3 Watts

Model 8481H measures power from 100 μW to 3 watts over a frequency range of 10 MHz to 18 GHz. The 8482H measures power from 30 μW to 3 watts over a frequency range of 100 kHz to 4.2 GHz.

Standard Sensors to 100 mW

The 8481A, 8482A, 8483A, and 8485A power sensors all measure power over a range of 0.3 μW to 100 mW. The 8481A is a 50-ohm sensor with a frequency range of 10 MHz to 18 GHz. The 8482A is a 50-ohm sensor with a frequency range of 100 kHz to 4.2 GHz. The 8485A is a 50-ohm sensor with a frequency range of 50 MHz to 26.5 GHz. The 8483A is a 75-ohm sensor and covers a frequency range of 100 kHz to 2 GHz.

High Sensitivity Sensors

The 8484A measures power from 0.1 nW to 10 μW over a frequency range of 10 MHz to 18 GHz. It is furnished with the 11708A 50 MHz Reference Attenuator for precise calibration with 1 mW Power Meter Reference Oscillator. Noise and drift have been reduced to less than 5% of full scale on the 300 pW range—only 15 pW when it is used with the 435B Power Meter. Noise and drift are even less with the 436A Power Meter.

Broadband Power Sensor

The 8485A thermocouple power sensor covers a frequency range of 50 MHz to 26.5 GHz and a power range of −30 dBm to +20 dBm (1μW to 100μW). Low SWR (<1.25 at 26.5 GHz) reduces mismatch uncertainty which increases power measurement accuracy. The ruggedized APC-3.5 input connector is SMA compatible and repeatable. The actual Cal Factor is plotted on each 8485A label at 34 frequencies. Each unit is shipped with a print-out which lists Cal Factor plus the actual SWR (reflection coefficient) in magnitude and phase.