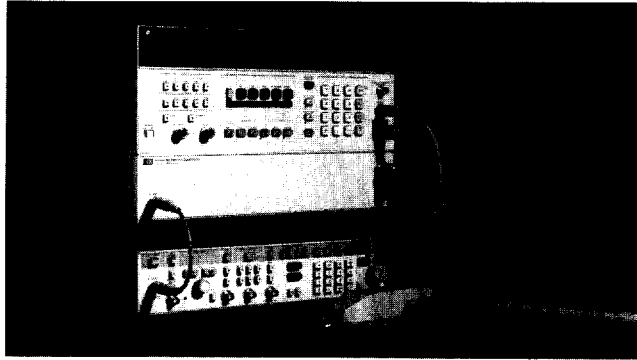


SIGNAL ANALYZERS

150 kHz to 26.5 GHz

Models 8902S, 11792A, 11793A, 11794A

- RF power: digital power meter accuracy
- Tuned RF level: 0 dBm to -100 dBm dynamic range
- AM and FM: 1% accuracy, Φ M: 3% accuracy



HP 8902S

HP 8902S Measurement System

The HP 8902S Measurement System extends the superb measurement performance of the HP 8902A Measuring Receiver to microwave frequencies. The frequency is extended by adding an HP 11793A Microwave Converter and a local oscillator. With the HP 11792A Sensor Module the system delivers the accuracy and resolution of a high performance power meter to 26.5 GHz from +30 dBm to -100 dBm. It accurately measures AM, FM, and Φ M (including residuals and incidentals) with a single keystroke. Adding options 030-037 to the HP 8902A extends the system's capability to include carrier noise measurements. The HP 8902S counts signals to 26.5 GHz with 10 Hz resolution and excellent long-term frequency stability.

The HP 8902S provides flexibility in specifying a solution that meets your exact needs. It can be configured for attenuator calibration, signal generator performance testing, and general signal characterization. For dedicated, preconfigured systems the HP 8902AT Attenuator Calibration System and the HP 8902SG Signal Generator Test System are available.

System Software

Under the control of the HP 11794A Software Pac, the HP 8902S Measurement System functions as a single instrument. You select the frequency and measurement from the front panel of the HP 8902A. The software then calculates and sets the local oscillator frequency, then releases the HP 8902A to make the measurement and display the results.

For a fully automated system the HP 8902S is supported by the HP 11806B Attenuator Test Software and HP 11808A Signal Generator Performance Test Software.

HP 11793A Microwave Converter

The HP 11793A Microwave Converter down converts microwave signals to the frequency range of the HP 8902A Measuring Receiver. For signals above 1.3 GHz, the HP 11793A routes the signal through its internal mixer. Below 1.3 GHz, signals are routed directly to the input of the HP 8902A.

The HP 11793A requires +8 dBm leveled output from the local oscillator. For LOs with insufficient power above 18 GHz, the HP 11793A offers an optional 18 to 26.5 GHz amplifier.

HP 11792A Sensor Module (50 MHz to 26.5 GHz)

The HP 11792A Sensor Module gives you all the performance of the HP 8902S system, plus superb power measurement accuracy, at a single connector. You can characterize a signal without manually switching between the power sensor and the receiver input.

Each HP 11792A Sensor Module is individually calibrated, traceable to the U.S. National Bureau of Standards. The calibration factors are printed on the sensor module for easy reference. Enter these factors into the HP 8902A's non-volatile memory and the instrument automatically compensates for the power sensor's efficiency and mismatch loss at each frequency.

- Carrier Noise (AM and phase noise measurements): ± 0.5 dB accuracy
- RF frequency: 10 Hz resolution
- Audio: frequency, level and distortion

HP 8902S Specifications

RF Power (with HP 11792A Sensor Module)

Range: +30 dBm (1W) to -20 dBm (10 μ W).

Frequency range: 50 MHz to 26.5 GHz.

Linearity: ± 0.02 dB (within range) ± 0.02 dB per range change from reference range ± 1 digit.

Input SWR: < 1.10 , $f_c \leq 2.0$ GHz.

< 1.28 , 2.0 GHz $< f_c \leq 18$ GHz.

< 1.40 , 18.0 GHz $< f_c \leq 26.5$ GHz.

Tuned RF Level¹

Frequency range²: 2.5 MHz to 26.5 GHz.

Dynamic range:

+10 dBm to -117 dBm, 2.5 MHz $\leq f_c \leq 1300$ MHz.

0 dBm to -100 dBm, 1300 MHz $< f_c \leq 18.0$ GHz.

0 dBm to -95 dBm, 18.0 GHz $< f_c \leq 26.5$ GHz.

Relative accuracy: ± 0.02 dB ± 0.02 dB per IF range change ± 0.04 dB per RF range change ± 1 digit.

RF Frequency

Range²: 150 kHz to 26.5 GHz.

Maximum resolution: 10 Hz.

Time base aging rate: $< 5 \times 10^{-10}$ /day, for HP 8672A, HP 8673B/D/E; $< 1 \times 10^{-9}$ /day, for HP 8340A/B, HP 8341A/B.

Amplitude Modulation

Frequency range²: 150 kHz to 26.5 GHz.

Rates: 20 Hz to 100 kHz.

Depths: to 99%.

Accuracy: $\pm 1\%$ of reading ± 1 digit, for rates 50 Hz to 50 kHz and depths $\geq 5\%$.

Frequency Modulation

Frequency range²: 150 kHz to 26.5 GHz.

Rates: 20 Hz to 200 kHz.

Deviations: to 400 kHz.

Accuracy: $\pm 1\%$ of reading ± 1 digit, for rates 50 Hz to 100 kHz.

Phase Modulation

Frequency range²: 150 kHz to 26.5 GHz.

Rates: 200 Hz to 20 kHz.

Deviations: to 400 radians.

Accuracy: $\pm 3\%$ of reading ± 1 digit.

General

Temperature: Operating, 15° C to 35° C; storage, -25° C to 60° C.

Power: 100, 120, 220, or 240V (+5%, -10%); 48-66 Hz; 1300 VA maximum (worst case).

Weight: Net 122.3 kg (270 lb); shipping, 153.3 kg (338.3 lb) worst case.

Ordering Information

HP 8902S Measurement System

For complete ordering information, see the "HP 8902S Measurement System Ordering Information" guide, or call your HP sales office.

HP 11794A Software Pac

\$250

¹An HP 11722A Sensor Module may be used with the HP 8902S to make tuned RF level measurements from 2.5 MHz to 1300 MHz at levels from 0 dBm to -127 dBm.

²Frequency range may be limited by the frequency range of the LO.