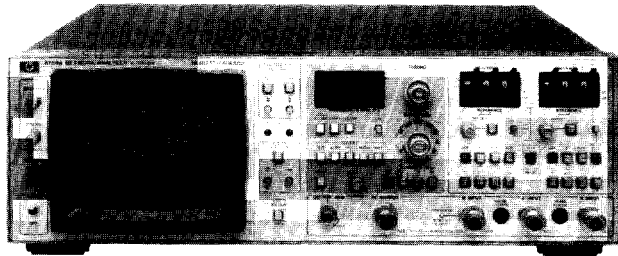


NETWORK ANALYZERS

RF Network Analyzer, 4 MHz to 1300 MHz Model 8754A

- Integrated source, receiver, and display
- Lock to external source
- Three inputs, two measurement channels
- 80 dB dynamic range



HP 8754A

Description

The HP 8754A is a complete stimulus/response test system which combines a 4-1300 MHz swept source, three-input narrowband, tuned receiver, and both rectilinear and polar displays in a compact package. The convenient built-in source incorporates digital display of the start or center frequency, the ability to sweep all or any portion of the 4-1300 MHz range, and crystal markers at 1, 10, or 50 MHz intervals to enable accurate frequency calibration and measurement. The receiver provides 80 dB dynamic range in two independent measurement channels to allow simultaneous measurement of any two transmission or reflection parameters using a single test setup. Measurements of absolute power, magnitude ratio, phase angle, and reflection coefficient (or return loss) are displayed on the fully calibrated CRT with resolutions up to 0.25 dB and 2.5 degrees per major division. With these features the HP 8754A offers a high level of operating convenience and technical performance to swept magnitude and phase measurements in laboratory, production, and field testing applications at an economical price.

A comprehensive line of 50-ohm and 75-ohm test sets allow you to tailor your test setup for a specific measurement using the minimum of equipment, or to provide the maximum in versatility for a wide range of applications. Signal separation devices include the HP 11850 Power Splitter for precision transmission measurements, and the HP 85044 Transmission/Reflection Test Set for simultaneous transmission and reflection measurements. Matched cable sets, precision adapters, and transistor fixtures provide convenient, reliable connections to the test device. Adding the HP 8750A Storage Normalizer provides flicker-free rectilinear displays regardless of sweep rate. The HP 8750A will automatically store and subtract out the frequency response of a test set or cable if necessary, eliminating the need to use a grease pencil when making normalized measurements. For applications that require exceptional frequency accuracy and stability, the HP 8754A may be used with external sources such as the HP 8660, 8662A, 8663A, 8556B, or 8642A/B Signal Generators.

HP 8754A Network Analyzer Specifications

Frequency range: 4 to 1300 MHz.

Spectral Purity (+10 dBm RF output level)

Residual FM (swept and CW): ≤ 7 kHz rms (10 kHz bandwidth).

Harmonics: -28 dBc.

Output power range: 0 to +13 dBm typical, ± 0.5 dB flatness.

Input channel: two test inputs (A and B) and one reference (R) input.

Input connectors: type-N Female, 50 ohms nominal impedance.

Input port match: ≥ 20 dB Return Loss (1.22 SWR).

Maximum input level: 0 dBm at R, A, B inputs.

Damage level: +20 dBm (50 Vdc).

Noise level: < -80 dBm at A and B inputs.

Minimum R input level: -40 dBm (≥ -40 dBm required to operate R input phase-lock).

Crosstalk between channels: > 83 dB.

Magnitude frequency response (flatness)

Absolute (A,B): $\leq \pm 1$ dB.

Ratio (A/R, B/R): $\leq +0.3$ dB.

Magnitude dynamic accuracy: ± 0.3 dB from 0 to -50 dBm, ± 0.5 dB from -50 to -60 dBm, ± 1 dBm from -60 to -70 dBm, ± 2.5 dB from -70 to -80 dBm.

Absolute power measurements (A, B, and R): typically ± 0.5 dBm at 0 dBm, 50 MHz input.

Phase frequency response: $\pm 2.5^\circ$ (typically $\pm 1^\circ$);

Phase range: $\pm 180^\circ$.

Phase dynamic accuracy: $\pm 2^\circ$ from 0 to -50 dBm, $\pm 4^\circ$ from -50 to -70 dBm.

Electrical length adjustment range: typically 0 to 16 cm length for transmission phase; typically 0 to 8 cm reference plane extension for reflection measurements.

Display

Measurement functions: CRT displays either polar trace or Channel 1 and Channel 2 rectilinear traces.

Video filter: typically 100 Hz (10 kHz without filter).

Graticule size: rectilinear 10 cm by 8 cm; polar 8 cm in diameter.

Smith chart overlays: 2, 1, 0.2 and 0.1 full scale (furnished).

CRT photography: Tektronix C-5B Oscilloscope Camera is recommended (UV illumination will not excite P39 CRT phosphor for graticule exposure).

Resolution: 10, 2.5, 1, 0.25 dB magnitude per major division. 90, 45, 10, 2.5 degrees phase per major division.

Accuracy: $\pm 2\%$ ± 0.05 division for rectilinear trace. Within 2.5 mm for polar trace.

General

Sweep output: -5 V to $+5$ V.

External sweep inputs: 0 to 10 V nominal.

X-Y Recorder/External CRT Output

Horizontal and vertical: 0.1 V/div.

Penlift/blanking: +5 V Blanking and Penlift.

External marker input: typically -13 dBm RF signal produce a marker at the frequency of the RF signal.

Magnitude/phase output: -10 mV/degree and -100 mV/dB.

Probe power: Two +15 Vdc and -12.6 Vdc.

Storage-Normalizer interfaces: directly compatible with the HP 8750A Storage-Normalizer. HP 8501A Storage-Normalizer requires a single internal adjustment for compatibility.

Programming connector: outputs include magnitude/phase and sweep outputs and inputs described above as well as measurement mode selection by TTL levels or contact closures.

External source: the HP 8754A sweep-out voltage is provided to frequency modulate (sweep) an external signal generator for narrow-band measurement applications. A sweep input is provided to synchronize the CRT display for use with an externally swept source (HP 8620 and 8350 series).

Temperature

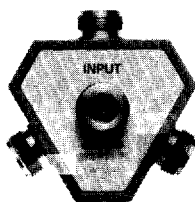
Operating: 0° to 55° C except where noted.

Storage: -40° C to $+75^\circ$ C.

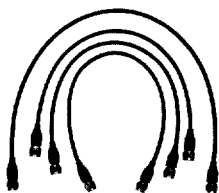


HP 85044A

	HP 85044A	HP 85044B
Impedance:	50 ohm	75 ohm
Frequency Range:	300 kHz - 3 GHz	300 kHz - 2 GHz
Directivity:	35 dB to 1.3 GHz 30 dB to 3.0 GHz	35 dB to 1.3 GHz 30 dB to 2.0 GHz
Typical Tracking:		
Transmission Magnitude, Phase:		
.3 MHz to 2.0 MHz	±1.0 dB, +10°	±1.0 dB, ±10°
2.0 MHz to F _{max}	±1.0 dB, ±5°	±1.0 dB, ±5°
Reflection Magnitude, Phase:		
.3 MHz to 2.0 MHz	±1.0 dB, ±25°	±1.0 dB, ±25°
2.0 MHz to F _{max}	±1.0 dB, ±5°	±1.0 dB, ±5°
Effective Source Match:		
Test Port:		
.3 MHz to 2.0 MHz	15 dB	15 dB
2.0 MHz to 1.3 GHz	20 dB	17 dB
1.3 GHz to F _{max}	16 dB	16 dB



HP 11850C



HP 11851B

HP 11850C 50 Ω Three-Way Power Splitter
HP 11850D 75 Ω Three-Way Power Splitter

General: one output port provides the reference output and the other two output ports can be used for independent transmission measurements. Use the HP 11851B RF Cable Set for interconnections. Detailed specifications on page 245.

HP 11851B RF Cable Set

General: three 61 cm (24 in.) 50 Ω cables, phase matched to ±2° and one 86 cm (34 in.) 50 Ω cable. Used with HP 85044A/B and 11850C/D. Detailed specifications on page 245.

EMI: VDE 0871/0875 and CISPR publication 11.
Safety: conforms to the requirements of IEC 348.
Power: selection of 100, 120, 220 and 240 V +5% -10%. 48 to 66 Hz, 20 VA max.
Size: 425.5 mm W x 133 mm H x 505 mm D (16³/₄" x 5¹/₄" x 19⁷/₈").
Weight: net, 16.8 kg (37 lb); shipping, 19 kg (42 lb).

Adapter Kits

General: the HP 11853A, 11854A, 11855A, and 11856A accessory kits are available to provide precision Type N and BNC adapters and calibration standards for use with the HP 11850C/D, and 85044A/B test setups. Detailed specifications on page 245.

HP 85044A 50 Ohm Transmission/Reflection Test Set
HP 85044B 75 Ohm Transmission/Reflection Test Set
General: the HP 85044 contains a power splitter and directional bridge that permits simultaneous transmission and reflection measurements. Detailed specifications on the HP 85044A and 85044B appear on page 244. For interconnections from the HP 85044A to the HP 8754A use the HP 11851B RF Cable Set. The major specifications of the HP 85044A and 85044B are:

Ordering Information	Price
HP 8754A Network Analyzer	\$15,540
Opt 908: Rack Flange Kit	add \$32.50
Opt 910: Extra Manual	\$80
Opt 913: Rack Mount Kit	add \$35
HP 11850C 50 Ω Three-Way Power Splitter	\$900
HP 11850D 75 Ω Three-Way Power Splitter	\$1,400
HP 85044A 50 Ω Transmission/Reflection Test Set	\$3,000
HP 85044B 75 Ω Transmission/Reflection Test Set	\$3,500
HP 11851B RF Cable Set	\$800
HP 11857D Test Port Extension Cables	\$1,050