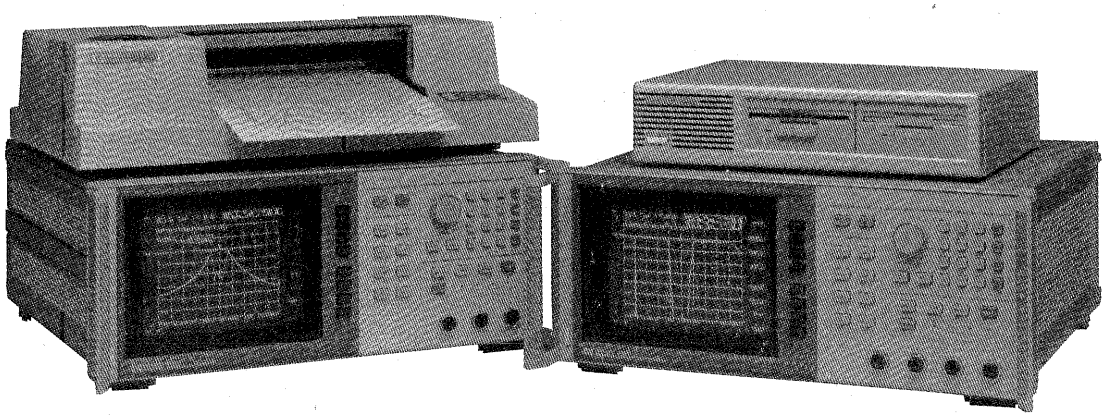
- 76 dB dynamic range
- Optional power calibrator
- 40 dB directivity bridges
- 40 GHz in coax, 110 GHz in waveguide
- Buffered plotter/printer output
- External disk and internal register save/recall
- Limit testing built in
- Color display



DESIGNED FOR HP-IB SYSTEMS

HP 8757E and HP 8757D Option 001

HP 8757D/E Scalar Network Analyzers

Measure insertion loss, gain, return loss, SWR, and power quickly and accurately with either the HP 8757D or HP 8757E Scalar Network Analyzers. With high-performance detectors and directional bridges, and a companion HP source and digital plotter, the HP 8757D and 8757E become the basis of a complete measurement system with superb performance.

A Choice of Two Analyzers

For an economical measurement solution, choose the HP 8757E Scalar Network Analyzer. The HP 8757E features three detector inputs and two independent display channels, allowing simultaneous ratioed or non-ratioed measurement of your device's transmission and reflection characteristics, 76 dB dynamic range (+16 to −60 dBm) for measuring high rejection devices, and a choice between ac (square wave modulated) or dc detection techniques. The internal plotter/printer buffer allows you to send your measurement data directly to a plotter and then proceed to the next measurement, typically in less than 5 seconds. The HP 8757E includes a user-friendly interface, and menu-driven, direct-access softkeys, which simplify its operation.

When your application demands maximum system versatility, choose the HP 8757D Scalar Network Analyzer. It offers all of the performance of the HP 8757E, plus more standard features, limit testing, external disk save/recall, and a color display. Limit testing reduces test time by letting the analyzer make quick and objective pass/fail decisions. External disk save/recall allows your measurement state to be preconfigured by an engineer or skilled specialist and then automatically recalled by production technicians. The result is reduced setup time and greater test integrity at each production station. The precision color display simplifies the separation of measurement information while providing a pleasant display for the technician.

Increase Absolute Power Measurement Accuracy

For near power meter measurement accuracy, configure a system which includes the HP 8757D Option 002 and the HP 85037 Series precision detectors. Option 002 on the HP 8757D adds an internal power calibrator used to characterize the HP 85037 Series detectors' accuracy versus power. In addition, each HP 85037 Series precision detector incorporates a dual diode detector to improve power measurement accuracy when harmonics are present, plus internal frequency correction factors, read by the HP 8757D, for more accurate power versus frequency measurements. The result is a system optimized for swept absolute power measurements.

Systems from 10 MHz to 110 GHz

You can conveniently obtain a 20 GHz or 40 GHz coaxial measurement system by ordering the HP 8757XA (10 MHz to 20 GHz) or HP 8757XB (10 MHz to 40 GHz) scalar measurement system. Or, you can configure your own system to 50 GHz in coax or 110 GHz in waveguide.

The HP 8350B sweeper family offers the benefits of a modular system with choices in source frequency range and output power. When testing narrowband, frequency-selective devices, choose a synthesized sweeper from the HP 8360 Series or an HP 8340B or 8341B. The HP 8360 Series, 8340B, and 8341B provide excellent frequency stability and up to 1 Hz frequency resolution.

Feature	HP 8757D			HP 8757E
Display	Color			Monochrome
Display channels	4			2
Detector inputs	3 standard 4 with Option 001			3
Dynamic range	76 dB			76 dB
AC/DC detection mode	Yes			Yes
Measurement points: Selectable values	101, 201, 401, 801, 1601			101, 201, 401
Channels displayed	3 or 4	2	1	1 or 2
Max points per channel	401	801	1601	401
Plotter/printer buffer	Yes			Yes
Noise figure display capability	Yes			Yes
External disk save/recall	Yes			No
Internal save/recall registers	9			9
Limit testing (channels 1 and 2)	Yes			No
Adaptive normalization	Yes			No
Cursor search functions	Max, Min, bandwidth, n dB			Max, min
SWR display mode	Yes			Yes
Non-standard sweep mode	Yes			Yes
Auxiliary voltage display mode	Yes			Yes
Optional power calibrator	Yes			No
Compatible with HP 85037 series precision detectors	Yes			No

NETWORK ANALYZERS
Scalar Network Analyzers/System Specifications
HP 8757

System Accuracy

Transmission Loss or Gain Measurement Accuracy

Transmission loss or gain measurements are made relative to a 0 dB reference point established at calibration.

Transmission measurement uncertainty
= dynamic power accuracy + mismatch uncertainty

Dynamic power accuracy is the measurement uncertainty due to the change in power level between calibration and the measurement. Mismatch uncertainty is the uncertainty due to reflections in the measurement setup. The frequency response errors of the source, detectors, bridge, and power splitter are removed via calibration.

Transmission Measurement Uncertainty Examples

Assumptions:
- Measurement frequency = 10 GHz
- DUT input/output SWR = 1.5
- Change in power after calibration <30 dB (+0 to −30 dBm range)

Uncertainty Component	HP 85037B precision detector	HP 85025E detector	HP 11664E detector
Dynamic accuracy (±dB)	0.11	0.40	0.30
Mismatch (±dB)	0.45	0.33	0.61
Uncertainty Total (±dB)	0.56	0.73	0.91

Absolute Power Measurement Accuracy:

This specification is useful for determining the accuracy of power measurements in dBm when using the HP 85037 Series precision detectors or the HP 85025 Series precision detectors in DC mode.

Absolute power uncertainty = absolute power accuracy at 50 MHz
+ frequency response + mismatch uncertainty

Absolute Power Measurement Uncertainty Examples

Assumptions:
- Measurement frequency = 10 GHz
- DUT input/output SWR = 1.5
- Measured power = 0 dBm

Uncertainty Component	HP 85037B detector	HP 85025E detector
Absolute power accuracy at 50 MHz (±dB)	0.11	0.40
Frequency response (±dB)	0.18	0.50
Mismatch (±dB)	0.18	0.10
Uncertainty Total (±dB)	0.47	1.00

HP 8757D Option 002 Power Calibrator

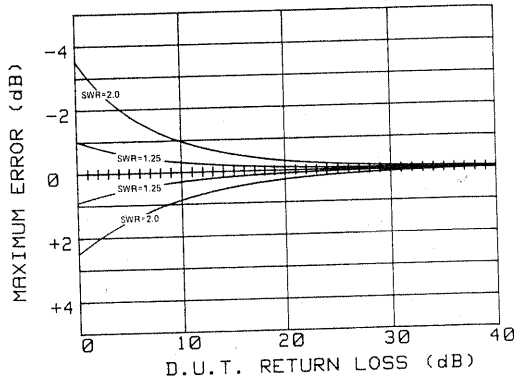
The HP 8757D's internal power calibrator provides a 50 MHz reference standard for characterizing the absolute power accuracy and dynamic power accuracy of the HP 85037 Series precision detectors.

Frequency: 50 MHz ±0.2 MHz
Accuracy at 0 dBm: ±0.05 dB
Linearity: (over any 10 dB range)
±0.08 dB (+20 to +10 dBm)
±0.04 (+10 to −30 dBm)
±0.06 (−30 to −50 dBm)

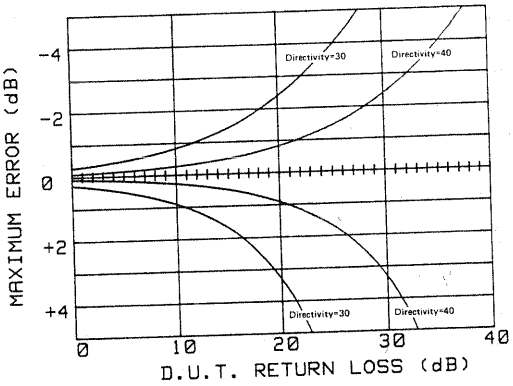
Reflection Measurement Accuracy

Uncertainties due to calibration error and the frequency response of the source, detectors, and bridges are removed via open/short averaging. The remaining uncertainties are primarily the sum of directivity uncertainty, effective source match uncertainty, and dynamic power accuracy. As shown in the graphs below, directivity is the dominant error term when measuring small reflected signals (high return loss) and source match is dominant when measuring large reflected signals (low return loss).

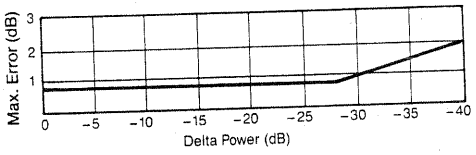
Effect of effective source match on reflection uncertainty:



Effect of directivity on reflection uncertainty:



Dynamic Power Accuracy (HP 85027/20 bridges, 50 MHz, 25 ±5°C, +7 dBm input):



Ordering Information

The HP 8757 Scalar Network Analyzer is ordered with multiple line items to give you maximum flexibility in specifying a system that meets your needs. Consult your local HP sales office if you would like assistance.

Complete Measurement Systems

HP 8757XA 20 GHz Coaxial Scalar System
Includes:
HP 8757D Scalar Network Analyzer
HP 8350B Sweep Oscillator
HP 83592C RF Plug-in (0.01 to 20 GHz)
HP 85027E Directional Bridge (3.5 mm)
HP 85025E Detector (3.5 mm)
HP 85022A Cable Kit

HP 8757XB 40 GHz Coaxial Scalar System
Includes:
HP 8757D Scalar Network Analyzer
HP 8350B Sweep Oscillator
HP 83597A RF Plug-in (0.01 to 40 GHz)
HP 85027D Directional Bridge (2.4 mm)
HP 85025D Detector (2.4 mm)
HP 85022A Cable Kit

Analyzer

HP 8757D Scalar Network Analyzer
Opt 001 Fourth Detector Input
Opt 002 Internal Power Calibrator
Opt 802 HP 9122C Disk Drive and an HP 10833A HP-IB cable
Opt W03* 90-Day On-Site Warranty Conversion
Opt W30 Two-Year Extended Service

HP 8757E Scalar Network Analyzer
Opt W03* 90-Day On-Site Warranty Conversion
Opt W30 Two-Year Extended Service

Sweepers

Choose either HP 8350B with an RF Plug-In, HP 8360 Series, 8340B, or 8341B.

Precision Detectors

HP 85037A 0.01 to 18 GHz, Type-N(m)
Opt 001 7 mm Connector
HP 85037B 0.01 to 26.5 GHz, 3.5 mm(m)

Directional Bridges

HP 85027A 0.01 to 18 GHz, 7 mm, 50 Ω
HP 85027B 0.01 to 26.5 GHz, 3.5 mm (f), 50 Ω
HP 85027C 0.01 to 18 GHz, Type-N (f), 50 Ω
HP 85027D 0.01 to 50 GHz, 2.4 mm (m), 50 Ω
HP 85027E 0.01 to 26.5 GHz, 3.5 mm (m), 50 Ω
HP 85020A 0.01 to 4.3 GHz, Type-N (f), 50 Ω
HP 85020B 0.01 to 2.4 GHz, Type-N (f), 75 Ω

Detectors

HP11664A 0.01 to 18 GHz, Type-N (m)
Opt 001 7 mm Connector
HP 11664E 0.01 to 26.5 GHz, 3.5 mm (m)
HP 11664D 26.5 to 40 GHz, WR-28 Waveguide
HP 11664C Detector Adapter
HP 85025A 0.01 to 18 GHz, Type-N (m)
Opt 001 7 mm Connector
HP 85025B 0.01 to 26.5 GHz, 3.5 mm (m)
HP 85025D 0.01 to 50 GHz, 2.4 mm (m)
HP 85025E 0.01 to 26.5 GHz, 3.5 mm (m)
HP R85026A 26.5 to 40 GHz, WR-28 Waveguide
HP Q85026A 33 to 50 GHz, WR-22 Waveguide
HP U85026A 40 to 60 GHz, WR-19 Waveguide
HP 85025C Detector Adapter

*Only where available

System Verification Kits

HP 85028A 7 mm Directivity Verification Standards
HP 85023A 7 mm, 50 Ω
HP 85023B 3.5 mm, 50 Ω
HP 85023C Type-N, 50 Ω
HP 85023D Type-N, 75 Ω
HP 85023F 2.4 mm, 50 Ω

Filter Kits

HP 11668 High Pass Filter Kit
HP 11678 Low Pass Filter Kit

System Cable Kit

HP 85022A System Cable Kit

Computer

HP A2240A Opt AMR Series 300, Model 362
Includes:
SPU with 2 MB RAM
3½-in Floppy Disk Drive
14-in VGA Color Monitor
52 MB Internal Disk Drive w/HP BASIC Installed
Note: Must order Keyboard Kit A1099A separately.

Disk Drive

HP 9122 3½-in Dual Flexible-Disk Drive

Software (Choose one option)

HP 85016B Measurement Automation and Transmission Line Test Software for HP 8757
Opt 630 3½-in Double-Sided Format Disks
Opt 655 5¼-in Double-Sided Format Disks

Recommended Accessories

Printer
HP 2225A ThinkJet Printer
HP 2227B QuietJet Printer
HP 3630A Opt 002 PaintJet Color Graphics Printer

Plotter
HP 7440A Opt 002 Eight-Pen Graphics Plotter (8½-in × 11 in)
HP 7550B Eight-Pen Vector Plotter (11 in × 17 in)

Optional Accessories

(For ratio and/or modulation measurements)
HP 11636A Power Divider dc to 18 GHz
HP 11636B Power Divider dc to 26.5 GHz
HP 11665B Modulator
HP 11667A Power Splitter dc to 18 GHz
Opt 001 N-male on Input Port; N-female on Output Ports
Opt 002 N-female on Input Port; 7 mm on Output Ports
HP 11667B Power Splitter dc to 26.5 GHz
HP 11667C Power Splitter dc to 50 GHz
HP 11679A Detector Extension Cable, 7.6m (25 ft)
HP 11679B Detector Extension Cable, 61m (200 ft)
HP 11852B 50 to 75 Ω Minimum Loss Pad

Service and Support Products

HP 11613B Calibrator

Upgrade Kits

HP 86383A Upgrade Kit, HP 8757E to 8757D
HP 86383B Upgrade Kit, HP 8757C to 8757D
HP 86383C Upgrade Kit for HP 8757D
Opt 001 Adds Fourth Detector Input
Opt 002 Adds Internal Power Calibrator

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

For the most current prices and product information, contact your local Hewlett-Packard sales office—see page 665.