HP 8753E

30 kHz to 3 or 6 GHz frequency range

Integrated S-parameter test set with solid-state switching

Up to 110 dB dynamic range

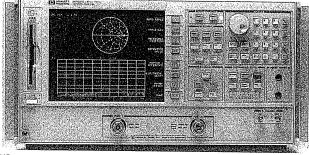
Fast measurement speeds and data-transfer rates

Large LCD display with VGA output for external monitors

Display all four S-parameters at the same time

Save/recall instrument states and data to built-in floppy-disk drive

Optional time-domain and swept-harmonic measurements





Other productivity enhancements include a built-in floppy-disk drive supporting LIF and DOS formats, a faster CPU clock rate, nonvolatile memory of 2MB, serial and parallel interfaces, a DIN keyboard interface, and a real-time clock for time-stamping of printouts and files. Limit testing, arbitrary frequency testing, and marker-tracking functions are included. You can reduce measurement time by using sweptlist mode to choose specific frequencies to test, and to set independent IF bandwidths and power levels in each frequency range. Segmented calibration and interpolated error correction allow you to apply vectoraccuracy enhancement over a subset of the analyzer's calibrated frequency range. The HP 8753E is code-compatible with the HP 8753D, so your existing software does not need to be modified.

HP 8753E RF Network Analyzer

The HP 8753E RF network analyzer offers an unbeatable combination of speed, performance and ease-of-use to meet your measurement needs, whether in the R&D laboratory or on the production floor. With an integrated S-parameter test set covering 30 kHz to 3 or 6 GHz, up to 110 dB of dynamic range, and both frequency and power sweeps, the HP 8753E gives you a complete solution for characterizing the linear and nonlinear behavior of active and passive networks, devices, components and sub-systems. A new processor has been incorporated which makes measurement and data-transfer speeds up to seven times faster than the previous model.

The network analyzer features two independent measurement channels that can measure and display all four S-parameters simultaneously. You can choose to display any combination of reflection and transmission parameters, with magnitude, phase, group-delay, Smithchart, polar, SWR, or time-domain formats. Easy-to-use softkeys let you access measurement functions quickly, and you can view results in overlay or split-screen format on the crisp, LCD color display using one, two or four graticules. A VGA-compatible output has been added to drive larger external monitors for optimum viewing.

Maximum Versatility and Performance

An integrated, synthesized source provides up to 10 mW of output power (100 mW for Option 011), 1 Hz frequency resolution, and linearfrequency, log-frequency, list-frequency, CW, and power sweep types. Three tuned receivers allow independent power measurements or simultaneous ratio measurements over a wide dynamic range of 105 dB at 6 GHz (with Option 006 frequency extension) or 110 dB at 3 GHz (standard). The integrated test set allows you to measure transmission and reflection characteristics of a device to 6 GHz without a frequency doubler.

TRL*/LRM* 1 calibration is available for convenient, accurate measurements in noncoaxial environments. An adapter-removal calibration technique has been added for highly-accurate measurements of non-insertable devices. A high-stability frequency reference, Option ID5, improves the frequency accuracy of measurements of high-Q devices such as SAW and crystal resonators or dielectric-resonance filters. For configuration flexibility, Option 011 deletes the built-in test set so that you can select your own. The HP 8753E Option 011 works with the HP 85046A/B and 85047A S-parameter test sets, and other specialized test sets for specific applications. A new option for automated manufacturing has been added which deletes the internal display and lowers the cost of the instrument (Option 1DT).

Productivity Enhancements

Test sequencing allows rapid, repeated execution of complex measurements with a single keystroke. In test-sequence mode, you make a measurement once from the front panel, and the analyzer stores the keystrokes so that the measurement can be repeated without any additional programming. You can also use a test sequence to control external devices through the parallel or HP-IB port.

Nonlinear Device Testing

For more advanced nonlinear characterization of devices, Option 002 adds harmonic-measurement capability. Swept second- and third-harmonic levels of an amplifier can be displayed absolutely or in dBc relative to the fundamental. With the press of a button, you can measure harmonics down to -40 dBc. Power-meter calibration provides leveled absolute power to devices that are sensitive to absolute input or output levels. The HP 8753E automatically controls an HP 436A, 437B, 438A, EPM-441A or EPM-442A power meter to set the power anywhere in the test setup with power-meter accuracy, or to calibrate the network analyzer receivers for accurate absolute-power measurements.

For measurements of mixers, tuners, and other frequency-translating devices, the frequency-offset mode allows the network analyzer source to be tuned independently from the receivers. Measurements of conversion loss, phase, group-delay, and mixer-tracking can easily be done, with either fixed- or swept-IF testing.

Time-Domain Analysis

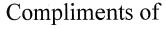
With Option 010, you can view reflection or transmission responses in the time domain. The analyzer computes the inverse FFT of the frequency-domain data to display the reflection or transmission coefficient versus time. Two time-domain analysis modes enable you to view the step or impulse response of your device. Time gating can be used to remove unwanted responses such as connector mismatch, and the gated results can be displayed in either the time or frequency domains.

Key Literature

HP 8753E Network Analyzer Brochure, p/n 5966-0053E HP 8753E Network Analyzer Technical Specifications, p/n 5966-0054E HP 8753E Network Analyzer Configuration Guide, p/n 5966-0055E

For more information, visit our web site: http://www.hp.com/go/8753

'TRL* and LRM* are three-sampler implementations of the through-reflect-line and linereflect-match calibration techniques.





Toll Free: 800-673-4102 www.accusrc.com

Electronic Test Equipment

Network Analyzers

RF Network Analyzers, 30 kHz to 6 GHz

Specifications Summary

Test Set

Integrated S-parameter with complete forward and reverse measurements in 50 Ω (standard) or 75 Ω (Option 075). External test sets supported with Option 011.

Test Port Output

Frequency Characteristics

Range: 30 kHz to 3 GHz (std.); 30 kHz to 6 GHz (Option 006); 300 kHz to 3 GHz (Option 011); 30 kHz to 6 GHz (Option 011, 006)

Resolution: 1 Hz

Accuracy: ± 10 ppm at 25 °C \pm 5 °C

Output Characteristics

Power Range: -85 to 10 dBm; -85 to 8 dBm (Option 075)

Resolution: 0.05 dB Sweep Range: 25 dB

Level Accuracy: ±1.0 dB relative to 0 dBm output level

Level Linearity: (-15 to +5 dBm) ±0.2 dB $(+5 \text{ to } +10 \text{ dBm}) \pm 0.5 \text{ dB}$ (typical 30 kHz to 300 kHz)

Impedance: 50 Ω (standard); 75 Ω (Option 075) 2nd Harmonic: <-25 dBc at +10 dBm (16 MHz to 3 GHz) 3rd Harmonic: <-25 dBc at +10 dBm (16 MHz to 2 GHz)

Nonharmonic Spurious (typical)

Mixer-Related: <-30 dBc at +10 dBm

Test Port Input Characteristics

Frequency Range: 30 kHz to 3 GHz (std.); 30 kHz to 6 GHz (Option 006)

Average Noise Level

3 kHz BW: -82 dBm (<3 GHz), -77 dBm (3 to 6 GHz) **10 Hz BW**: -102 dBm (<3 GHz), -97 dBm (3 to 6 GHz)

Maximum Input Level: +10 dBm Damage Level: +26 dBm or 35 Vdc **Impedance:** 50 Ω (75 Ω with Option 075) Harmonics: (Option 002) 2nd Harmonic: <-15 dBc at +8 dBm 3rd Harmonic: <-30 dBc at +8 dBm

Harmonic Measurement Accuracy (25 \pm 5 °C):

16 MHz to 3 GHz ± 1 dB;

3 GHz to 6 GHz ± 3 dB (with Option 006) Harmonic Measurement Dynamic Range -40 dBc (output= -10 dBm, input < -15 dBm)

Group Delay Characteristics

Range: 1/(2 x minimum aperture) Aperture (selectable) Maximum: 20% of frequency span

Minimum: (frequency span)/(no. of pts. -1)

Group Delay Accuracy (in seconds): ± (phase accuracy in degrees)/ (360 x aperture in Hz)

Physical Characteristics

Size: 425 mm W x 222 mm H x 457 mm D

(16.75 in x 8.75 in x 18 in)

Weight: 21 kg (46 lb) net; 35 kg (77 lb) shipping

Upgrade Kits for the HP 8753E

Upgrade kits retrofit the latest operating system or add optional measurement capability to existing network analyzers. The following kits are for upgrading an HP 8753E.

HP 8753EU Option 002 Harmonic-Measurements Upgrade

This upgrade kit adds harmonic-measurement capability (Option 002) to an HP 8753E network analyzer. This kit includes installation at an HP service center.

HP 8753EU Option 006 6 GHz Upgrade for Standard Units

This kit extends the operating frequency range of the standard HP 8753E from 3 GHz to 6 GHz. No additional test set is needed. Includes installation at an HP service center. Not compatible with Option 075 or Option 011.

HP 8753EU Option 611 6 GHz Upgrade for Option 011 Units

This kit extends the operating frequency range of the HP 8753E Option 011 from 3 GHz to 6 GHz. Includes installation at an HP service center. Not compatible with Option 075.

HP 8753EU Option 010 Time-Domain Upgrade

This upgrade kit adds time-domain-analysis capability (Option 010) to an existing HP 8753E network analyzer. This kit is user-installable.

HP 8753EU Option 099 Firmware Upgrade Kit

This kit provides the latest version of firmware for the HP 8753E network analyzer. The kit is user-installable.

HP 8753EU Option 1D5 High-Stability Frequency Reference Upgrade

This option adds a high-stability frequency reference (Option 1D5) to an HP 8753E network analyzer. Includes installation at an HP service

Upgrade Kits for the HP 8753C/D

HP 8753DU Option 000 Processor UpgradeThis upgrade kit replaces the CPU board in the HP 8753D Standard or Option 011 with the CPU board from the HP 8753E. This upgrade significantly improves the measurement and data-transfer speed of the HP

HP 11883A Harmonic Measurements Upgrade

This upgrade kit adds harmonic measurement capability (Option 002) to an HP 8753C/D network analyzer. This kit includes installation at an

HP 11884A 6 GHz Receiver Upgrade

This kit extends the operating frequency range of the HP 8753C receiver from 3 GHz to 6 GHz. To make transmission/reflection measurements above 3 GHz, the HP 85047A S-parameter test set is required. This kit includes installation at an HP service center.

HP 11884B 6 GHz Upgrade for HP 8753D Standard

This kit extends the operating frequency range of the HP 8753D from 3 GHz to 6 GHz. No additional test set is needed. Includes installation at an HP service center. Not compatible with Option 075 or Option 011.

HP 11884C 6 GHz Upgrade for HP 8753D Option 011

This kit extends the operating frequency range of the HP 8753D Option 011 from 3 GHz to 6 GHz. Includes installation at an HP service center. Not compatible with Option 075.

HP 85019B Time-Domain Upgrade Kit

This upgrade kit adds time-domain analysis capability (Option 010) to an existing HP 8753C/D network analyzer. This kit is user-installable.



Compliments of



Network Analyzers

Test Sets

S-Parameter Test Sets

The S-parameter test sets provide the capability to measure reflection and transmission characteristics (including S-parameters) of two port devices in either direction with a single connection. The test sets are controlled from the analyzer and include programmable step attenuators. These test sets are used with the HP 8753A/B/C or the HP 8753D/E Option 011 only.

HP 85046A/B S-Parameter Test Sets

The HP 85046A/B test sets provide the capability to simultaneously measure the transmission and reflection characteristics of 50 and 75 ohm devices, respectively.

Specifications Summary

| | HP 85046A | HP 85046B |
|--|--------------------------------------|--------------------------------------|
| Impedance | 50 Ω | 75 Ω |
| Frequency Range | 300 kHz to 3 GHz | 300 kHz to 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 ^{1,2,3} | , | |
| 0.3 MHz to 2.0 MHz | ±1.5 dB, ±20° | ±1.5 dB, ±20° |
| 2.0 MHz to F _{max} Reflection Magnitude, | ±1.5 dB, ±10° | ±1.5 dB, ±10° |
| Phase 1.2.3 | | |
| 0.3 MHz to 2.0 MHz | ±1.5 dB, ±25° | ±1.5 dB, ±25° |
| 2.0 MHz to F _{max} | ±1.5 dB, ±10° | ±1.5 dB, ±10° |
| Effective Source Match ^a (test ports) | | |
| 0.3 MHz to 2.0 MHz | 14 dB | 14 dB |
| 2.0 MHz to 1.3 GHz | 20 dB | 17 dB |
| 2.0 MHz to Fmax | 16 dB | 16 dB |
| RF Connectors | | |
| Test Ports | Precision 7 mm | 75 Ω type-N (female) |
| All Others | 50 Ω Type-N (female) | 50 Ω Type-N (female) |

Degrees, specified as deviation from linear phase.

Includes: Four 190-mm (7.5 in) cables with Type-N (male) connectors for connection to the HP 8753. One HP 8753 test set interconnect cable.

Physical Characteristics

Size: 426 mm W x 90 mm H x 508 mm D (16.75 in x 3.5 in x 20 in) Weight: Net, 6.8 kg (15 lb); shipping, 9.1 kg (20 lb)

HP 85047A S-Parameter Test Set

The HP 85047A test set includes a frequency doubler that can be switched in to measure 3 MHz to 6 GHz in a single sweep or switched out to measure 300 kHz to 3 GHz in a single sweep. The HP 8753B/C controls the frequency doubler. (The HP 8753D/E Option 006 and 011 with built-in 6 GHz source does not use the frequency doubler.) Option 006 (6 GHz receiver) is required to activate the HP 85047A.

Specifications Summary

Impedance: 50Ω

Frequency Ranges: 300 kHz to 3 GHz and 3 MHz to 6 GHz (HP 8753B/C); 300 kHz to 6 GHz (HP 8753D/E Option 006 and 011)

Directivity: 300 kHz to 1.3 GHz: 35 dB;

1.3 GHz to 3 GHz: 30 dB; 3 GHz to 6 GHz: 25 dB

Typical Tracking

Transmission Magnitude, Phase: 300 kHz to 3 GHz: ±1.5 dB, ±10°; 3 GHz to 6 GHz: +0.5, -2.5 dB, ±20° Reflection Magnitude, Phase: 300 kHz to 3 GHz: ±1.5 dB, ±10°; 3 GHz to 6 GHz: ±1.5 dB, ±20°

Effective Source Match: 300 kHz to 1.3 GHz: 20 dB; 1.3 GHz to 3 GHz: 16 dB; 3 GHz to 6 GHz: 14 dB Test Ports: Precision 7 mm

All Others: 50 Ω Type-N (female) Includes: Four 190 mm (7.5 in) cables with Type-N (male) connectors for connection to the HP 8753, one HP 8753 test set interconnect cable.

Physical Characteristics

Size: 426 mm W x 90 mm H x 508 mm D (16.75 in x 3.5 in x 20 in) Weight: Net, 10 kg (22 lb); shipping, 15 kg (33 lb)

Solid-State Switching

Solid-state switching allows for simultaneous measurement of forward and reverse parameters and continuous update of all four S-parameters as required for two-port error correction (used to achieve best possible measurement accuracy). Option 009 replaces the standard solid-state RF test port switch with a mechanical RF switch. HP 8753 system specifications for standard and Option 009 test sets are identical. Nominal insertion loss of the solid-state switch is less than 2 dB (at 3 GHz) or 3 dB (at 6 GHz), relative to a mechanical switch.

HP 86389A/B Solid-State Switch Upgrade Kits

Older HP 85046A/B and HP 85047A test sets contained a mechanical RF test port switch. The HP 86389A/B kits retrofit these S-parameter test sets by replacing the mechanical switch with a solid-state RF switch. This solid-state switch allows for simultaneous measurement of forward and reverse parameters and continuous measurement of all four S-parameters (required for two-port error correction).

The HP 86389A retrofits HP 85046A/B test sets, and the HP 86389B retrofits HP 85047A test sets. HP 8753C network analyzers with firmware revision 4.0 or higher and later HP 8753 models support solid-state

Special Test Sets

Special test sets are available to configure the HP 8753E for specific applications. Some examples are listed below. Contact HP for details about these products or for information about additional special options for HP 8753 network analyzers.

HP 8753E Option H14 Configurable Test Set

Offers access to the A and B samplers and the port 1 and 2 couplers.

HP 8753E Option H16 Low Noise Floor

Adds the ability to reverse the port 2 coupler to increase the forward dynamic range by about 12 dB.

HP 8753E Option H36 Duplexer Test Set

Adds a third test port to enable single-connection duplexer measurements. Does not provide Tx-to-Rx and Rx-to-Tx measurements.

HP 8753E Option H39 Three-Port Test Set

Adds a third test port and switching to provide all transmission and reflection measurements for three-port devices.

Accessories



HP 11930A/B Power Limiters

The HP 11930A/B limiters protect the input circuits of network analyzers, spectrum analyzers and sources from transients and short-duration overloads.

Specifications Summary

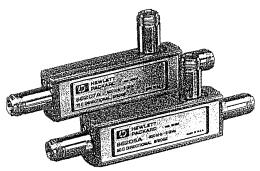
| • | | | |
|---|---|--|--|
| HP 11930A | HP 11930B | | |
| DC – 6 GHz | 5 MHz – 6.5 GHz | | |
| APC-7 | Type-N | | |
| 1.0 dB (dc-3 GHz) 1.5 dB (3-6 GHz) | 1.0 dB (16 MHz – 3 GHz) 1.5 dB (3 – 6.5 GHz) | | |
| 22 dB (30 kHz – 3 GHz) 20 dB (3 – 6 GHz) | 21 dB (16 MHz – 3 GHz) 17 dB (3 – 6.5 GHz) | | |
| 50 ohm nominal | 50 ohm nominal | | |
| | | | |
| 3 watts | 3 watts | | |
| 6 watts | 6 watts | | |
| | DC - 6 GHz APC-7 1.0 dB (dc-3 GHz) 1.5 dB (3-6 GHz) 22 dB (30 kHz - 3 GHz) 20 dB (3-6 GHz) 50 ohm nominal | | |

² F_{max} is the upper frequency limit of the associated test set.

 $^{{\}cal J}$ Can be improved through accuracy enhancement.

Accessories

HP 8753E Series



HP 86205A/86207A

HP 86205A/86207A RF Bridges

The HP 86205A/86207A high directivity RF bridges offer unparalleled performance in a variety of general-purpose applications. They are ideal for accurate reflection measurements and signal leveling applications.

Specifications Summary

| | HP 86205A | HP 86207A |
|---|---|--|
| Impedance Freq. Range Directivity | 50 Ω 300 kHz to 6 GHz 30 dB, 0.3 MHz to 5 MHz 40 dB, 5 MHz to 2 GHz 30 dB, 2 GHz to 3 GHz 20 dB, 3 GHz to 5 GHz (typ.) 16 dB, 5 GHz to 6 GHz (typ.) | 75 Ω 300 kHz to 3 GHz 30 dB, 0.3 MHz to 5 MHz 40 dB, 5 MHz to 1.3 GHz 35 dB, 1.3 GHz to 2 GHz 30 dB, 2 GHz to 3 GHz |
| Coupling Factor Insertion Loss Maximum Input | (< 3 GHz) 16.0 dB, + 0.15 dB/GHz (> 3 GHz) 16.5 dB, - 0.20 dB/GHz 1.5 dB, + 0.1 dB/GHz 25 dBm | |
| RF Connectors | 50 Ω Type-N (female) | 75 Ω Type-N (female) |

Physical Characteristics

Size: 93 mm H \times 160 mm W \times 23 mm D (3.7 in \times 6.3 in \times 1 in) Weight: Net, 0.57 kg (1.3 lb); shipping, 1.8 kg (4 lb)

HP 11850C/D Three-Way Power Splitters

Specifications Summary

| 50 Ω DC to 3 GHz ±0.25 dB, ±3° 30 dB at 1.3 GHz 20 dB at 3 GHz 9.5 dB + 1 dB/GHz | 75 Ω DC to 2 GHz ±0.2 dB, ± 2.5° 30 dB at 1.3 GHz 20 dB at 3 GHz 7.8 dB |
|---|--|
| ±0.25 dB, ±3° 30 dB at 1.3 GHz 20 dB at 3 GHz | ±0.2 dB, ± 2.5° 30 dB at 1.3 GHz 20 dB at 3 GHz |
| 30 dB at 1.3 GHz 20 dB at 3 GHz | ±0.2 dB, ± 2.5° 30 dB at 1.3 GHz 20 dB at 3 GHz |
| 20 dB at 3 GHz | 30 dB at 1.3 GHz 20 dB at 3 GHz |
| | 20 dB at 3 GHz |
| 9.5 dB + 1 dB/GHz | 7.8 dB |
| | |
| | |
| 20 dB · | 20 dB |
| 10 dB | 10 dB |
| | |
| 50 Ω Type-N | 50 Ω Type-N |
| 50 Ω Type-N | 75 Ω Type-N |
| 1 | 10 dB 50 Ω Type-N |

HP 11851B RF Cable Kit

This kit includes three 610-mm (24-in) 50 Ω cables phase matched to 4° at 1.3 GHz and one cable 860 mm (34-in). Connectors are type-N (male).

HP 11852B 50 Ω /75 Ω Minimum Loss Pad

The HP 11852B is a low SWR minimum loss pad required for measurements on 75 Ω devices with the HP 8753.

Frequency Range: DC to 3.0 GHz

Insertion Loss: 5.7 dB

Return Loss: 75 Ω : typically \geq 30 dB, 50 Ω : typically \geq 26 dB

Maximum Input Power: 250 mW (\pm 24 dBm) **RF Connectors:** 50 Ω type-N (f) and 75 Ω type-N (m) standard, 50 Ω type-N (m) and 75 Ω type-N (f) Option 004

Type-N Accessory Kits

Each kit contains a type-N (female) short, a type-N (male) short, two type-N (male) barrels, two type-N (female) barrels, and a storage case.

HP 11853A 50 Ω Type-N Accessory Kit

The HP 11853A accessory kit furnishes the RF components required for measurement of devices with 50 Ω type-N connectors using the HP 11850C, 85044A, 85046A, or 85047A.

HP 11855A 75 Ω Type-N Accessory Kit

The HP 11855A accessory kit furnishes the RF components required for measurement of devices with 75 Ω type-N connectors using the HP 11850D, 85044B, or 85046B. This kit also contains a 75 Ω type-N (male) termination.

BNC Accessory Kits

The BNC accessory kit contains two type-N (male) to BNC(female) adapters, two type-N (male) to BNC (male) adapters, two type-N (female) to BNC (female) adapters, two type-N (female) to BNC (male) adapters, a BNC (male) short, and a storage case.

HP 11854A 50 Ω BNC Accessory Kit

The HP 11854A accessory kit furnishes the RF components required for measurement of devices with 50 Ω BNC connectors using the HP 11850C, 85044A, 85046A, or 85047A.

HP 11856A 75 Ω BNC Accessory Kit

The HP 11856A furnishes RF components required for measurement of devices with 75 Ω BNC connectors using the HP 11850D, 85044B, or 85046B. This kit also contains a 75 Ω BNC (male) termination.

Test Port Cables

HP 11857D 50 Ω APC-7 Test Port Cables

The HP 11857D includes two precision 61-cm (24-in) cables, phase matched to 2° at 1.3 GHz for use with the HP 8753D/E, 85046A or 85047A S-parameter test sets. Connectors are 50 Ω APC-7.

HP 11857B 75 Ω Type-N Test Port Cables

The HP 11857B includes two precision 61-cm (24-in) cables, phase matched to 2° at 1.3 GHz for use with the HP 8753D/E Option 075 or HP 85046B S-parameter test set. One cable has 75 Ω type-N (male) connectors on both ends; the other has one type-N (male) and one type-N (female) connector.

Transit Cases

HP offers a complete line of sturdy transit cases that protect your instrument from shock, vibration, moisture, impact, and contamination, providing a secure enclosure for shipping. Model 9211-2657 fits the HP 8753E and model 9211-2656 fits the HP 8752C.

Calibration Kits

The calibration kits in the HP 8753 family contain precision standards used in accuracy enhancement procedures to characterize the systematic errors of an HP 8753 measurement system.

HP 85031B 7-mm Calibration Kit

The HP 85031B calibration kit contains a set of precision 7-mm fixed terminations, and a one-piece open/short circuit used to calibrate the HP 8753 and its 50 Ω test sets for measurement of devices with precision 7-mm connectors. This kit is specified 300 kHz to 6 GHz.

Compliments of



Toll Free: 800-673-4102 www.accusrc.com Electronic Test Equipment

Accessories

Series

HP 85032 $\rm B$ 50 Ω Type-N Calibration Kit The HP 8 5032B calibration kit contains precision 50 Ω type-N standards used to calibrate the HP 8753 and its 50 Ω test sets for measurement of devices with 50 Ω type-N connectors. Precision phase-matched 7-mm to 50 Ω type-N adapters are included for accurate measurements of noninsertable devices. Standards include fixed terminations, open circuits, and short circuits in both sexes. This kit is specified from dc to 6 GHz.

HP 85032 E 50 Ω Type-N Economy Calibration Kit

The HP 85032E calibration kit contains a type-N(m) fixed termination and a on e-piece type-N(m) open/short circuit. This kit is specified from dc to 6 GHz.

HP 85033 D 3.5-mm Calibration Kit

The HP 85033D calibration kit contains fixed loads and open and short circuits in both sexes to calibrate the HP 8753 and 50 Ω test sets for measurement of devices with precision 3.5-mm and SMA connectors. Phase-m atched 7-mm to 3.5-mm adapters for male and female connectors are included for use with 7-mm test port cables. This kit is specified from dc to 6 GHz.

HP 85036 B 75 Ω Type-N Calibration Kit

The HP 85036B calibration kit contains precision 75 Ω type-N standards used to Calibrate the HP 8753 and its 75 Ω test sets for measurement of devices with 75 Ω type-N connectors. Standards include fixed terminations, op en circuits, and short circuits in both sexes. Precision phasematched adapters are included for accurate measurements of noninsertab $\mathbf{1}$ e devices. This kit is specified from dc to 3 GHz.

HP 85039B Type-F Calibration Kit

The HP 85039B contains 75 Ω type-F calibration standards, both male and female, to calibrate the HP 8753D for measurements of common broadband and CATV components. Standards include a fixed load, open circuit, and short circuit. The following adapters are also included: type-F (f-f), type-F (m-m), type-N (f) to type-F (m) and type-N (m) to type-F (f). A complete male set of standards (fixed load, open, short) and (m-m) a dapter can be ordered as HP 85039B Option 00M and a complete female set as HP 85039B Option 00F.

Ad ditional type-F adapters available: type-F (m) to type-N (m) (85039-60010), type-F (m) to type-F (f) (85039-60012), and type-F (f) to

type-N (f) (85039-60014).

HP 85090 Series Electronic Calibration System

Electronic calibration (ECal) replaces the usual calibration kit standards with a solid-state calibration module. The module is controlled by PC software to present different impedances to the test ports. A full twoport cali bration can be done with a single connection in just a few minutes, with less chance for error and less wear on connectors.

An ECal system requires an HP 85097A PC Interface Kit and an HP 85090 series RF calibration module of the appropriate connector type. The HP 85097A includes software for Windows 95 and NT 4.0 systems, and it is compatible with the HP 8753C/D/E.

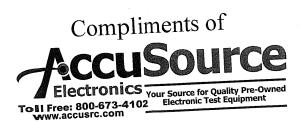
Verific ation Kits

Measuring known devices, other than the calibration standards, is a convenient way of verifying that the HP 8753 measurement system is operating properly.

HP 85029B 7-mm Verification Kit

The HP 85029B verification kit contains a set of precision 7-mm devices, with data traceable to NIST, used to verify the calibrated performance of an HP 8753A/B/C/D/ measurement system. The devices have precision 7-mm connectors and include a 20-dB pad, a 50-dB pad, and a mismatch attenuator. The verification process requires only an HP 85031B calibration kit and an HP 85029B verification kit.

Option 001 is intended solely for use with the HP 8702B lightwave component analyzer. Option 001 adds verification data that is compatible with the HP 8702B.



| Ordering Information | Price |
|--|--------------------|
| HP 8753E Network Analyzer, 30 kHz to 3 GHz | \$32,250 |
| Integrated network analyzer with built-in color display, | , , |
| S-parameter test set, disk drive, and 30 kHz to 3 GHz | |
| synthesized source. Standard 50 Ω version has two 7-mm test ports. | |
| Opt 002 Harmonic Measurement Capability | +\$3,570 |
| Opt 006 6 GHz Frequency Extension | +\$5,000 |
| Opt 010 Time-Domain Capability | +\$5,405 |
| Opt 011 Delete Built-in Test Set Opt 075 75 Ω Impedance | \$6,508 \$0 |
| Opt 1D5 High-Stability Frequency Reference | +\$1,020 |
| Opt 1DT Delete Display | -\$2,000 |
| HP 85047A 50 Ω S-Parameter Test Set—6 GHz | \$11,000 |
| Opt 009 Mechanical Test Port Switch Opt 913 Rackmount Kit (5062-4069) | −\$1,040 +\$42 |
| HP 85046A 50 Ω S-Parameter Test Set—3 GHz | \$9,365 |
| Opt 009 Mechanical Test Port Switch | -\$1,040 |
| Opt 913 Rackmount Kit (5062-4069) HP 85046B 75 Ω S-Parameter Test Set—300 kHz–2 GHz | +\$42 6-6 |
| Opt 009 Mechanical Test Port Switch | \$9,365 \$1,040 |
| Opt 913 Rackmount Kit (5062-4069) | +\$42 5-> |
| HP 85029B Precision 7-mm Verification Kit | \$1,770 |
| Opt 001 Data for HP 8702B | \$0 \$1,250 |
| HP 85031B Precision 7-mm Calibration Kit HP 85032B 50 Ω Type-N Calibration Kit | \$2,030 |
| HP 85032E 50 Ω Type-N Economy Calibration Kit | \$678 |
| HP 85033D 3.5-mm Calibration Kit | \$3,060 |
| HP 85036B 75 Ω Type-N Calibration Kit | \$2,080 |
| HP 85039B Type-F Calibration Kit HP 85097A ECal PC Interface Kit | \$3,600 \$1,400 |
| HP 85090 Series Electronic Calibration Modules | Varies , |
| HP 86205A 50 Ω Bridge | \$1,350 |
| HP 86207A 75 Ω Bridge | \$1,350 |
| HP 11850C 50 Ω Power Splitter HP 11850D 75 Ω Power Splitter | \$989 \$1,770 |
| HP 11851B 50 Ω /Type-N RF Cable Kit | \$800 |
| HP 11852B 50 $\Omega/75 \Omega$ Minimum Loss Pad | \$500 |
| HP 11853A 50 Ω Type-N Accessory Kit | \$500 |
| HP 11854A 50 Ω BNC Accessory Kit HP 11855A 75 Ω Type-N Accessory Kit | \$500 \$500 |
| HP 11856A 75 Ω BNC Accessory Kit | \$500 |
| HP 11857B 75 Ω Type-N Test Port Extension Cables | \$800 |
| HP 11857D 50 Ω APC-7 Test Port Extension Cables | \$800 |
| HP 11930A RF Limiter, APC-7 HP 11930B RF Limiter, Type-N | \$475 \$475 |
| HP 8753EU Upgrade Kits for the HP 8753E | \$0 \$0 |
| Opt 002 Harmonic Measurements Upgrade | +\$3,640 |
| Opt 006 6 GHz Upgrade for Standard Units | +\$6,120 |
| Opt 010 Time-Domain Upgrade Opt 099 Firmware Upgrade Kit | +\$5,520 +\$100 |
| Opt 1D5 High-Stability Frequency | +\$1,020 |
| Reference Upgrade | |
| Opt 611 6 GHz Upgrade for Option 011 Units | +\$6,120 |
| HP 8753DU Option 000 Processor Upgrade HP 11883A Harmonic Measurements (Option 002) | \$6,000 \$3,640 |
| Upgrade . | \$575.5 |
| HP 11884A 6 GHz Receiver (Option 006) Upgrade | \$3,640 |
| HP 11884B 6 GHz (Option 006) Upgrade Kit for HP 8753D | \$6,120 |
| HP 11884C 6 GHz (Option 006) Upgrade Kit | \$6,120 |
| for HP 8753D Option 011 | +-,.== |
| HP 85019B Time Domain (Option 010) Upgrade | \$5,520 |
| HP 86389A Solid-State Switch Upgrade Kit | \$1,560 |
| (for HP 85046A/B Test Sets) HP 86389B Solid-State Switch Ungrade Kit | \$1,560 |
| HP 86389B Solid-State Switch Upgrade Kit | Ψ.,000 |

Indicates QuickShip availability.

(for HP 85047A Test Sets)

For more information on compatible printers, visit our website: http://www.hp.com/go/pcg