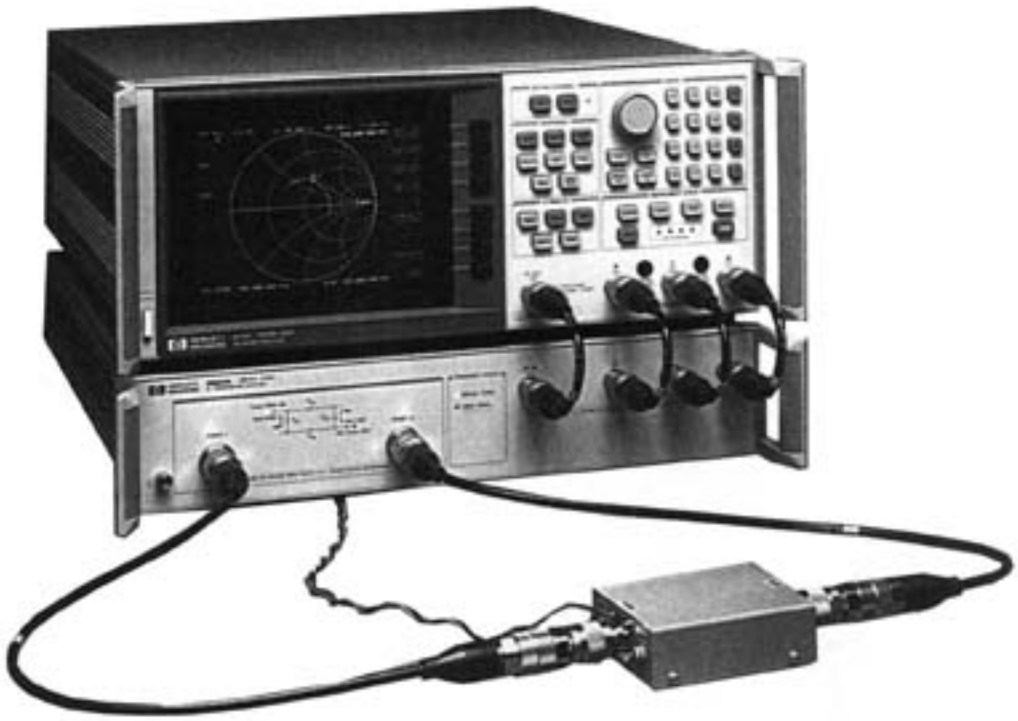
NETWORK ANALYZERS

RF Network Analyzer, 300 kHz to 6 GHz

HP 8753C

- 300 kHz to 6 GHz
- Integrated 1 Hz resolution synthesized source
- Direct save/recall to an external disk drive
- Time domain analysis
- Execute complex test procedures with the test sequence function
- 100 dB of dynamic range
- Group delay and deviation from linear phase
- 0.001 dB, 0.01 deg, 0.01 nanosec marker resolution
- Built-in accuracy enhancement
- Swept harmonic measurements



HP 8753C with HP 85047A

DESIGNED FOR HP-IB SYSTEMS

HP 8753C Network Analyzer

The HP 8753C network analyzer provides excellent RF network measurements for lab and production test areas. When combined with a test set, it provides a complete solution for characterizing linear behavior of either active or passive networks, devices, or components from 300 kHz to 6 GHz. With two independent display channels available, you can simultaneously measure and view the reflection and transmission characteristics of the device under test in overlay or split-screen format on the crisp color display. The easy-to-use softkey selection of measurement functions allows you to measure the magnitude, phase, or group delay characteristics of your device under test.

The test sequence function allows rapid and consistent execution of complex repetitive tests with a single keystroke. In sequencing mode, you make the measurement once from the front panel, and the instrument stores the keystrokes so that no additional programming expertise is required. You can even set other HP-IB instruments with a test sequence. Other productivity enhancements include a plot/print buffer, limit testing, arbitrary frequency testing, and marker tracking functions. Segmented calibration and interpolative error correction allow you to apply vector accuracy enhancement over a subset of the frequency range that you initially calibrated the HP 8753C.

The integrated synthesized source provides >100 mW of output power, 1 Hz frequency resolution, and linear, log, list, power, and CW sweep types. Three tuned, 300 kHz to 3 GHz (Option 006 extends to 6 GHz) receivers allow versatile independent power measurements or simultaneous ratio measurements over a 100 dB dynamic range. By using the HP 85047A Test Set with the HP 8753C, the reflection and transmission characteristics of the device under test can be investigated from 300 kHz to 3 GHz or from 3 MHz to 6 GHz with the test set's frequency doubler enabled.

Non-linear Device Testing

Non-linear device characterization is possible with the HP 8753C. Swept second- and third-harmonic levels of an amplifier can be displayed directly or relative to the fundamental carrier (dBc) when employing the optional harmonic measurement capability (Option 002). Amplifier harmonics up to 40 dBc can be measured quickly and conveniently on a swept-frequency basis for fundamental signals as low as 16 MHz, using the same test configuration used to measure gain. Power meter calibration provides leveled absolute power to devices that are sensitive to absolute input or output levels. The HP 8753C automatically controls an HP 436A, 437B, or 438A Power Meter to set the power anywhere in the test configuration with power meter accuracy.

The HP 8753C has the capability to perform mixer tracking and conversion loss measurements. These are possible because the tuned receiver can be offset from its synthesized source by the LO frequency of the mixer. Both fixed and swept IF measurements can be made.

Time Domain Analysis

Time domain responses can be displayed by the HP 8753C with Option 010. The instrument computes the inverse Fourier transform of the frequency domain data to display the reflection or transmission coefficient versus time. The HP 8753C offers two time domain modes. The low-pass mode provides the traditional Time Domain Reflectometer (TDR) measurement capability and gives the response of the network to a mathematically simulated step or impulse response. This mode gives information of the type of impedance (R, L, C) at the discontinuity. The bandpass time domain mode, which has only the impulse stimulus, has no frequency restrictions and provides the time domain response of frequency selective devices such as SAW filters or antennas. Gating may be used to selectively isolate a single response to view the frequency domain response of individual portions of a component without disturbing the circuit itself.

Specifications Summary

Source
Frequency Characteristics
Frequency range: 300 kHz to 3 GHz
Frequency resolution: 1 Hz
Frequency accuracy: ±10 ppm
Output characteristics
Power range: −5 to +20 dBm
Power accuracy: (50 MHz, +10 dBm) ±0.5 dB
Power linearity (relative to +10 dBm):
0.5 to 0 dBm: ±0.5 dB
0 to +15 dBm: ±0.2 dB
+15 to +20 dBm: ±0.5 dB
Impedance: 50 ohms
Harmonics: ≤ −25 dBc (20 dBm output level)
≤ −50 dBc (0 dBm output level)
Nonharmonics:
Mixer-related: ≤ −32 dBc (20 dBm output level)
≤ −55 dBc (0 dBm output level)
Other spurious:
f < 135 MHz: −60 dBc
f ≥ 135 MHz: −60 dBc + 20*log (f/135 MHz) dBc
Phase noise (10 kHz offset in 1 Hz BW):
f < 135 MHz: −90 dBc
f ≥ 135 MHz: −90 dBc + 20*log(f/135 MHz) dBc

Receiver
Frequency range: 300 kHz to 6 GHz
Inputs:
A, B 100 dB dynamic range <3 GHz
95 dB dynamic range 3 to 6 GHz
Sensitivity (noise level):
3 kHz BW: −90 dBm <3 GHz, −85 dBm 3 to 6 GHz
10 Hz BW: −100 dBm <3 GHz, −95 dBm 3 to 6 GHz
Maximum input level: 0 dBm
Impedance: 50 Ω
Input crosstalk:
300 kHz to 1 GHz: −100 dB
1 GHz to 3 GHz: −90 dB
3 GHz to 4.5 GHz: −85 dB
4.5 GHz to 6 GHz: −75 dB
Dynamic accuracy: ±0.05 dB, ±0.3° over a 50 dB input range
Delay Characteristics
Range: ½* (1/minimum aperture)
Aperture (selectable): frequency span/(# points −1) to 20% of the frequency span
Resolution: 27.8/(aperture in Hz)
typically 0.01 nanoseconds
Accuracy: (phase accuracy)/(360*aperture in Hz)
RF Connectors: 50 Ω Type N (female)

Physical Characteristics
Size: 178 mm H × 425 mm W × 498 mm D, (7.0 in × 16.75 in × 20.0 in).
Weight: Net, 22 kg (48 lb); shipping, 25 kg (55 lb).

Upgrade Kits

The following upgrade kits retrofit the latest operating systems or add optional measurement capability to existing HP 8753A/B/C network analyzers.

HP 11882A Upgrade Kit for the HP 8753A

This kit upgrades an HP 8753A to an HP 8753B with revision 3.0 firmware. New measurement capabilities include mixer measurements, support of 6 GHz and solid-state test sets, interpolative error correction, and the test sequencing function (for built-in automatic measurements). Options for 6 GHz receiver and harmonic measurements can also be added to an HP 8753A after the HP 11882A kit has been installed. This kit includes installation at an HP service center.

HP 11883A Harmonic Measurements Upgrade

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

HP 11884A 6 GHz Receiver Upgrade

This kit extends the operating frequency range of the HP 8753B/C 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 85019A Time Domain Upgrade Kit

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

HP 85019B Time Domain Upgrade Kit

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

HP 86387A Mixer Measurement Upgrade for HP 8753B

This upgrade adds mixer measurement capability to an existing HP 8753B. Phase lock hardware and firmware revision 3.0 is included. This kit includes installation at an HP service center.

HP 86387B Mixer Measurement Upgrade for HP 8753C

This upgrade adds mixer measurement capability to an existing HP 8753C. Phase lock hardware and firmware revision 4.1 is included. This kit includes installation at an HP service center. Not required for HP 8753Cs at revision 4.02 or higher.

HP 86388A Upgrade Kit for the HP 8753B

This kit adds the latest firmware revision to an existing HP 8753B. Significant enhancements include diskfile compatibility with HP 8753C network analyzers and support of solid-state switching test sets. This kit is user installable.

Transmission/Reflection Test Sets

The transmission/reflection test sets provide the capability to simultaneously measure the reflection and transmission characteristics of two port devices. The device must be physically turned around to measure its reverse direction characteristics.

HP 85044A/B Transmission/Reflection Test Sets

The HP 85044A/B test sets provide the capability to measure the reflection and transmission characteristics of 50 Ω and 75 Ω devices, respectively.

Specifications Summary

	HP 85044A	HP 85044B
Impedance:	50 Ω	75 Ω
Frequency range:	300 kHz to 3 GHz	300 kHz to 2 GHz
Directivity[a]:	35 dB to 1.3 GHz	35 dB to 1.3 GHz
	30 dB to 3.0 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, ±10°	±1.5 dB, ±10°
2.0 MHz to F max	±1.5 dB, ±10°	±1.5 dB, ±10°
Reflection magnitude, 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[2,3]: (Test Ports):		
0.3 MHz to 2.0 MHz	14 dB	14 dB
2.0 MHz to 1.3 GHz	20 dB	17 dB
1.3 GHz to F max	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)

Physical Characteristics
Size: 615 mm H × 101 mm W × 204 mm D (2.44 in × 7.5 in × 8.0 in)
Weight: Net, 1.7 kg (3.8 lb); shipping, 2.0 kg (4.4 lb)

[1]Degrees, specified as deviation from linear phase.
[2]F_{max} is the upper frequency limit of the associated test set.
[3]Can be improved through Accuracy Enhancement.

NETWORK ANALYZERS

S-Parameter Test Sets

HP 8753C Series

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 HP 8753C and include programmable step attenuators.

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 Ω and 75 Ω 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	35 dB to 1.3 GHz
	30 dB to 3.0 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 Fmax	±1.5 dB, ±10°	±1.5 dB, ±10°
Reflection magnitude, phase[1,2,3]:		
0.3 MHz to 2.0 MHz	±1.5 dB, ±25°	±1.5 dB, ±25°
2.0 MHz to Fmax	±1.5 dB, ±10°	±1.5 dB, ±10°
Effective source match[3] (Test Ports):		
0.3 MHz to 2.0 MHz	14 dB	14 dB
2.0 MHz to 1.3 GHz	20 dB	17 dB
1.3 GHz 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)

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

Physical Characteristics
Size: 90 mm H × 426 mm W × 553 mm D (3.5 in × 16.75 in × 21.5 in)
Weight: Net, 9.1 kg (20 lb); shipping, 10 kg (22 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 8753C controls the frequency doubler. HP 8753C Option 006 (6 GHz receiver) is required to activate the HP 85047A.

Specifications Summary
Impedance: 50 Ω
Frequency ranges: 300 kHz to 3 GHz
3 MHz to 6 GHz

[1]Degrees, specified as deviation from linear phase.
[2]F max is the upper frequency limit of the associated test set.
[3]Can be improved through Accuracy Enhancement.

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

RF connectors
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 8753C, one HP 8753C test set interconnect cable

Physical Characteristics
Size: 90 mm H × 426 mm W × 533 mm D (3.5 in × 16.75 in × 21.5 in)
Weight: Net, 10 kg (22 lb); shipping, 11.5 kg (25.3 lb)

Solid-State Switching

Solid-state switching allows for simultaneous measurement of forward and reverse parameters and continuous update of all 4 S-parameters as required for 2-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 systems specifications for standard and Option 009 test sets are identical. Nominal insertion loss of the solid-state switch is less than 2 dB (@ 3 GHz) or 3dB (@ 6 GHz), relative to a mechanical switch.

The solid-state switch can be retrofitted into any existing HP 85046A/B or 85047A test set using the HP 86389A or 86389B solid-state switch upgrade kit. Solid-state switching test sets are supported on HP 8753C and HP 8753B network analyzers with firmware revision 3.0 or higher. For HP 8753A/B network analyzers with firmware revision 2.01 or lower, upgrade kits are available, which add support for solid-state test switching test sets.

HP 86389A/B Solid-State Switch Upgrade Kits

The HP 86389A/B kits retrofit any existing HP 85046A/B and HP 85047A S-parameter test set by replacing the mechanical RF test port 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 4 S-parameters (required for 2-port error correction).

The HP 86389A retrofits HP 85046A/B test sets, and the HP 86389B retrofits HP 85047A test sets. HP 8753B/C network analyzers with firmware revision 3.0 or higher support solid-state test sets. HP 8753A/B network analyzers with firmware revision 2.01 or lower must be upgraded (HP 11882A for the HP 8753A, HP 86388A for the HP 8753B). These kits include installation at an HP service center.

Accessories

HP 11850C/D Three-Way Power Splitters Specifications Summary

	HP 11850C	HP 11850D
Impedance:	50 Ω	75 Ω
Frequency range:	dc to 3 GHz	dc to 2 GHz
Tracking:	±.25 dB, ±3°	±.2 dB, ±2.5°
Equivalent source match	30 dB @ 1.3 GHz	30 dB @ 1.3 GHz
(ratio or leveling):	20 dB @ 3 GHz	20 dB @ 3 GHz
Nominal insertion loss:	9.5 dB +1 dB/GHz	7.8 dB
Input port match:		
dc to 1.3 GHz	20 dB	20 dB
1.3 GHz to F max	10 dB	10 dB
RF connectors		
RF input:	50 Ω Type N (female)	50 Ω Type N (female)
All others:	50 Ω Type N (female)	75 Ω Type N (female)

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). Recommended for use with HP 85044A/B Transmission/Reflection Test Set and HP 11850C/D Power Splitter.

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 8753C receiver.

Frequency range: dc to 2.0 GHz
Insertion loss: 5.7 dB
Return loss: 75 Ω typically ≥ 30 dB, 50 Ω typically ≥ 26 dB
Maximum input power: 250 mW (+24 dBm)
RF Connectors: 50 Ω Type N (female) and 75 Ω Type N (male)

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 or 85044B. This kit also contains a 75 Ω Type N (male) termination.

[1] F max is the upper frequency limit of the associated power splitter.

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.

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 85046A S-parameter test set. 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 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.

HP 11600B/11602B Transistor Fixtures

Function: Mounts on front of HP 85046A and 85047A S-Parameter Test Sets, holds devices for S-parameter measurements in a 50 Ω, coax circuit.

Transistor base patterns
Model 11600B: Accepts TO-18/TO-72 packages
Model 11602B: Accepts TO-5/TO-12 packages

Calibration references: short circuit termination and a 50 Ω through-section
Frequency range: dc to 2 GHz
Impedance: 50 Ω nominal
Reflection coefficient: <0.05, 100 MHz to 1.0 GHz: <0.09, 1.0 to 2 GHz
Connectors: Hybrid APC-7; Option 001, Type N (female)

HP 11858A Transistor Fixture Adapter

The HP 11858A adapts the HP 11600B and 11602B transistor fixtures (vertical test port configuration) to the HP 85046A or 85047A S-parameter test set. Connectors are APC-7.

HP 85043B Systems Cabinet

The HP 85043B systems cabinet has been ergonomically designed specifically for the HP 8753C and the HP 85046A/B or 85047A S-parameter test sets. The 122 cm (48 in) system cabinet includes a bookcase, a drawer, and a convenient work surface.

Calibration Kits

Accuracy enhancement procedures characterize the systematic errors of the measurement system by measuring known devices (standards) on the system over the frequency range of interest. The calibration kits in the HP 8753C family contain precision standards with which to characterize the systematic errors of an HP 8753C measurement system.

HP 85031B 7 mm Calibration Kit

The HP 85031B Calibration Kit contains a set of precision 7 mm fixed terminations, an open circuit, and a short circuit used to calibrate the HP 8753C and its 50 Ω test sets for measurement of devices with precision 7 mm connectors.

NETWORK ANALYZERS

Accessories (cont'd)

HP 8753C Series

HP 85032B 50 Ω Type N Calibration Kit

The HP 85032B Calibration Kit contains precision 50 Ω Type N standards used to calibrate the HP 8753C 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 non-insertable devices. Standards include fixed terminations, open circuits, and short circuits.

Option 001 is intended solely for use with the HP8752A network analyzer. Option 001 removes the precision phase-matched 7 mm to Type N adapters.

HP 85033C 3.5 mm Calibration Kit

The HP 85033C Calibration Kit contains precision 3.5 mm standards used to calibrate the HP 8753C and its 50 Ω test sets for measurement of devices with 3.5 mm and SMA connectors. Standards include fixed terminations, open circuits, and short circuits. Precision 7 mm to 3.5 mm adapters are included for accurate measurements of non-insertable devices.

Option 001 is intended solely for use with the HP 8752A network analyzer. Option 001 removes the precision phase-matched 7 mm to 3.5 mm adapters.

HP 85036B 75 Ω Type N Calibration Kit

The HP 85036B Calibration Kit contains precision 75 Ω Type N standards used to calibrate the HP 8753C and its 75 Ω test sets for measurement of devices with 75 Ω Type N connectors. Standards include fixed terminations, open circuits, and short circuits. Precision phase-matched adapters are included for accurate measurements of non-insertable devices.

Verification Kits

Measuring known devices, other than the calibration standards, is a convenient way of verifying that the HP 8753C 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 8753C 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, an HP 85029B verification kit, and an external 3.5-inch disk drive connected to the HP 8753C.

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.

Software

Software operates with a BASIC operating system, using an HP Series 300/400 computer (2 MB of memory required).

HP 85160A Measurement Automation Software

Measurement automation software simplifies device measurements by providing guided measurements, limit testing, sequencing to test all four S-parameters, data formatting flexibility (data files can be formatted to be compatible with Touchstone* linear circuit simulation programs), and complete save/recall capability to a floppy disk. After it is configured, you simply recall a test file and calibration data, connect the device under test, and output the results.

HP 85165A Resonator Measurement Software

Resonator measurement software performs complete characterization of crystals, SAWs, and other resonant devices using the HP 8753C. The software guides the user through the measurement process and calculates key parameters of the device under test according to the EIA-512 resonator measurement standard.

Systems

Two measurement systems are available that will increase measurement efficiency in research and development and production.

HP 8753C Option E02 S-Parameter/Noise Figure Measurement System

Combining the capabilities of the HP 8753C Network Analyzer, the HP 8970B Noise Figure Meter, and a specially designed S-Parameter Test Set, this system allows your key amplifier measurements of gain, phase/linearity, and noise figure to be made through a single RF test port connection.

HP 8753C Option E20 Frequency Converter Measurement System

The HP 8753C Option E20 test system combines the capabilities of the HP 8753C Network Analyzer and a specially designed test set to characterize frequency converter performances with a single RF connection. Make measurements of:

- Conversion loss
- Compression
- Group delay
- Amplitude/phase tracking
- RF and IF port SWR
- IO feedthrough
- Isolation (RF/IF and IF/RF)
- Output power

Ordering Information	Price
HP 8753C Network Analyzer	$26,500
Opt 002 Harmonic Measurement Capability	+$3,500
Opt 006 6 GHz Receiver Option	+$3,500
Opt 010 Time Domain Capability	+$5,300
Opt 802 Add Dual Disk Drive and Cable	+$1,745
Opt 908 Rack Mount Kit (w/o handles 5062-3978)	+$35
Opt 910 Extra Manual (08753-90153)	+$150
Opt 913 Rack Mount Kit (w/handles 5062-4072)	+$40
Opt E02 S-Parameter-Noise Figure Measurement System	+$37,650
Opt E20 Frequency Connector Measurement System	+$40,115
HP 85047A 50 Ω S-Parameter Test Set—6 GHz	$10,800
Opt 009 Mechanical Test Port Switch	−$1,000
Opt 913 Rack Mount Kit (5062-4069)	+$40
HP 85046A 50 Ω S-Parameter Test Set—3 GHz	$9,000
Opt 009 Mechanical Test Port Switch	−$1,000
Opt 913 Rack Mount Kit (5062-4069)	+$40
HP 85046B 75 Ω S-Parameter Test Set—3 GHz	$9,000
Opt 009 Mechanical Test Port Switch	−$1,000
Opt 913 Rack Mount Kit (5062-4069)	+$40
HP 85044A 50 Ω Transmission/Reflection Test Set	$3,200
HP 85044B 75 Ω Transmission/Reflection Test Set	$3,700
HP 85029B Precision 7 mm Verification Kit	$1,600
Opt 001 Data for HP 8702B	$0
HP 85031B Precision 7 mm Calibration Kit	$1,200
HP 85032B 50 Ω Type N Calibration Kit	$1,600
Opt 001 Deletes 7 mm to Type N adapters	− $500
HP 85033C Precision 3.5 mm Calibration Kit	+$2,500
Opt 001 Deletes 7 mm to 3.5 mm adapters	− $500
HP 85036B 75 Ω Type Calibration Kit	$2,000
HP 85043B Systems Rack	$3,200
HP 85160A Measurement Automation Software	$1,550
HP 85165A Resonator Measurement Software	$5,000
HP 11882A Upgrade Kit for HP 8753A	$3,400
HP 11883A Harmonic Measurements (Opt 002) Upgrade	$3,500
HP 11884A 6 GHz Receiver (Opt 006) Upgrade	$3,500
HP 85019A Time Domain (Opt 010) Upgrade (HP 8753A)	$5,300
HP 85019B Time Domain (Opt 010) Upgrade (HP8753B/C)	$5,300
HP 86388A Upgrade Kit for HP 8753B (Rev. 3.00)	$300
HP 86389A Solid-State Switch Upgrade Kit (for HP 85046A/B test sets)	$1,500
HP 86389B Solid-State Switch Upgrade Kit (for HP85047A test sets)	$1,500
HP 11850C 50 Ω Power Splitter	$950
HP 11850D 75 Ω Power Splitter	$1,500
HP 11851B 50 Ω/Type N RF Cable Kit	$950
HP 11852B 50 Ω/75 Ω Minimum Loss Pad	$400
HP 11853A 50 Ω Type N Accessory Kit	$400
HP 11854A 50 Ω BNC Accessory Kit	$400
HP 11855A 75 Ω Type N Accessory Kit	$500
HP 11856A 75 Ω BNC Accessory Kit	$500
HP 11857B 75 Ω Type N Test Port Extension Cables	$1,455
HP 11857D 50 Ω APC-7 Test Port Extension Cables	$1,050
HP 11600B/11602B Transistor Fixtures	$1,800
HP 11858A Transistor Fixture Adapter	$980

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