

HP 8753E accessories

Calibration kits

Vector accuracy enhancement procedures require that the systematic errors of the measurement system be characterized by measuring known devices (standards) on the system over the frequency range of interest. The following calibration kits contain precision standards in many different connector types. Return loss specifications or typical values are provided where available for the terminations and adapters.

HP 85031B 7-mm calibration kit

Contains precision 7-mm standards used to calibrate the HP 8753E for measurement of devices with precision 7 mm connectors.

Includes	HP part number
7 mm short/open circuit	85031-60001
7 mm 50-ohm term (two each)	00909-60008
Specifications for terminations	DC to 5 GHz: $RL \geq 52$ dB 5 to 6 GHz: $RL \geq 46$ dB

HP 85032B 50-ohm type-N calibration kit

Contains precision 50-ohm type-N standards used to calibrate the HP 8753E and 50-ohm test sets for measurement of devices with 50-ohm type-N connectors. Precision phase-matched 7-mm to type-N adapters are included for accurate measurements of non-insertable devices.

Includes	HP part number
N-male 50-ohm termination	00909-60009
N-female 50-ohm termination	00909-60010
N-male short circuit	85032-60008
N-female short circuit	85032-60009
N-female open circuit	85032-60012
N-male open circuit	85032-60007
7 mm to N-male adapter (two each)	85054-60009
7 mm to N-female adapter (two each)	85054-60001
Specifications for terminations	DC to 3 GHz: $RL \geq 49$ dB 2 to 3 GHz: $RL \geq 46$ dB 3 to 6 GHz: $RL \geq 40$ dB
Typical adapter characteristics	DC to 6 GHz: $RL \geq 30$ dB

HP 85033D 3.5-mm calibration kit

Contains a set of precision 3.5-mm standards to calibrate the HP 8753E and 50-ohm test sets for the measurement of devices with precision 3.5-mm and SMA connectors. Precision phase-matched 7-mm to 3.5-mm adapters are included for accurate measurements of non-insertable devices.

Includes	HP part number
3.5-mm-male 50-ohm termination	85033-60009
3.5-mm-female 50-ohm termination	85033-60010
3.5-mm-female short	85033-60014
3.5-mm-male short	85033-60013
3.5-mm-female open	85033-60012
3.5-mm-male open	85033-60011
7-mm to 3.5-mm female adapter (two)	1250-1747
7-mm to 3.5-mm male adapter (two)	1250-1746
Specifications for terminations	DC to 1.3 GHz: $RL \geq 46$ dB 1.3 to 3 GHz: $RL \geq 44$ dB 3 to 6 GHz: $RL \geq 38$ dB
Typical adapter characteristics	DC to 6 GHz: $RL \geq 34$ dB

HP 85036B 75-ohm type-N calibration kit

Contains a set of precision 75-ohm type-N standards to calibrate the HP 8753E and 75-ohm test sets for measurement of devices with 75-ohm type-N connectors. Precision phased matched adapters are included for accurate measurements of non-insertable devices.

Includes	HP part number
N-male 75-ohm termination	00909-60019
N-female 75-ohm termination	00909-60020
N-female 75-ohm short	85036-60011
N-male 75-ohm short	85036-60012
N-female open	85032-20001
N-male open	85032-60007
N-male to N-male 75-ohm adapter	85036-60013
N-female to N-female 75-ohm adapter	85036-60014
N-male to N-female 75-ohm adapter	85036-60015
Specifications for terminations	DC to 2 GHz: $RL \geq 46$ dB 2 to 3 GHz: $RL \geq 40$ dB

HP 8753E accessories, cont'd

HP 85039B type-F calibration kit

Contains a set of 75-ohm type-F standards to calibrate the HP 8753E and 75-ohm test set for the measurement of devices with type-F connectors.

Includes	HP part number		
F-male 75-ohm termination	85039-60007		
F-female 75-ohm termination	85039-60004		
Specifications for termination	DC to 1 GHz:	RL ≥ 45 dB	
	1 to 3 GHz:	RL ≥ 38 dB	
F-male 75-ohm short	85039-60008		
F-female 75-ohm short	85039-60003		
F-male 75-ohm open	85039-60009		
F-female 75-ohm open	85039-60005		
F-female to F-female 75-ohm adapter	85039-60002		
F-male to F-male 75-ohm adapter	85039-60006		
Typical type-F adapter characteristics	DC to 1 GHz:	RL ≥ 40 dB	
	1 to 3 GHz:	RL ≥ 32 dB	
F-female to N-male 75-ohm adapter	85039-60013		
F-male to N-female 75-ohm adapter	85039-60011		
Typical type-F to type-N adapter characteristics	DC to 1 GHz:	RL ≥ 38 dB	
	1 to 3 GHz:	RL ≥ 32 dB	

Verification kits

Measuring known devices other than the standards used in calibration is an easy way to verify the proper operation of an HP 8753E measurement system. HP offers verification kits which include devices, with data, for verifying the error-corrected measurements of an HP 8753E and 50-ohm test sets.

HP 85029B 7-mm verification kit

Contains a set of precision 7-mm devices, with data traceable to NIST* used to compare the calibrated performance of an HP 8753E measurement system. The HP 85031B 7-mm calibration kit is required for complete verification.

Test-port return cables

Hewlett-Packard offers high quality RF cables used to connect the HP 8753E and test sets to devices under test. These cables offer excellent RF shielding for high dynamic range measurements.

HP 11851B 50-ohm type-N RF cable kit

Recommended for use with the HP 11850C/D three way power splitters. Kit includes three phase-matched 610-mm (24 in) cables and one 860-mm (34 in) cable.

Return loss	> 24 dB to 3 GHz
Phase tracking	± 4° at 1.3 GHz

HP 11857B 75-ohm type-N test port return cables

A pair of 610-mm (24 in) test port return cables for use with the HP 8753E or HP 85046B 75-ohm S-parameter test set.

Return loss	> 24 dB to 2 GHz
Phase tracking	± 2° at 1.3 GHz

HP 11857D 7-mm test-port return cables

A pair of 610-mm (24 in) test port return cables for use with the HP 8753E or HP 85046A, HP 85047A S-parameter test sets. These cables can be used with connector types other than 7-mm with the appropriate precision adapters.

Return loss	>24 dB to 3 GHz
	>20 dB to 6 GHz
Phase tracking	± 2° at 1.3 GHz

HP 11850C/D three-way power splitters

	HP 11850C	HP 11850D
Impedance	50 ohms	75 ohms
Frequency range	DC to 3 GHz	DC to 2 GHz
Tracking	±25 dB, ±3°	±2 dB, ±2.5°
Equivalent source match	30 dB at 1.3 GHz	30 dB at 1.3 GHz
(ratio or leveling)	20 dB at 3 GHz	20 dB at 2 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 Fmax	10 dB	10 dB
Maximum operating level	+20 dB	+20 dB
Damage level	+30 dB	+30 dB
RF connectors		
RF input	50 ohm type-N (f)	50 ohm type-N(f)
All others	50 ohm type-N (f)	75 ohm type-N(f)
Includes		3 each HP 11852B 50 to 75 ohm minimum loss pads
Recommended accessories	HP 11851B RF cable kit	

HP 11667A 50-ohm power splitter

Frequency range	DC to 18 GHz
Typical insertion loss	6 dB
Equivalent source match	26 dB to 4 GHz
	21 dB to 8 GHz
	17 dB to 18 GHz
Tracking	± 15 dB to 4 GHz
(between output arms)	± 2 dB to 8 GHz
	± 25 dB to 18 GHz
Maximum operating level	± 27 dBm
Connectors	50 ohm type-N (f)

1. National Institute of Standards and Technology.

HP 8753E accessories, cont'd

Opt 001	type-N (m) on RF input type-N (f) on outputs
Opt 002	type-N (f) on RF input precision 7-mm on outputs
Dimensions	46 mm H x 52 mm W x 19 mm D (1.8 x 2.0 x 0.7 in)
Recommended accessories	HP 11851B RF cable kit

HP 11852B 50 to 75-ohm minimum loss pad

Frequency range	DC to 3.0 GHz
Nominal insertion loss	5.7 dB
Return loss	32 dB (300 kHz to 2 GHz) 27 dB (2 GHz to 3 GHz)
Maximum input power	250 mW (+24 dBm)
Connectors	50-ohm type-N (f) to 75-ohm type-N (m) standard, 50-ohm type-N (m) to 75-ohm type-N (f) with Option 004
Dimensions	14-mm D x 70-mm L (0.56 in x 2.75 in)
Weight	Net 0.1 kg (0.316 lb)

50-ohm accessory kits

The HP 11853A 50-ohm type-N and the HP 11854A 50-ohm BNC accessory kits provide the RF components generally required when using either the HP 85046A, HP 85047A or the HP 11850C with the HP 8753E Option 011 when measuring devices having 50-ohm type-N or BNC connectors. These kits are supplied with a storage case.

HP 11853A 50-ohm type-N accessory kit

Includes	HP part number
Type-N (f) short	HP 11511A
Type-N (m) short	HP 11512A
Type-N (m) to N (m) adapter	HP 1250-1475
Type-N (f) to N (f) adapter	HP 1250-1472

HP 11854A 50-ohm BNC accessory kit

Includes	HP part number
Type-N (m) to BNC female adapter	1250-1476
Type-N (m) to BNC male adapter	1250-1473
Type-N (f) to BNC male adapter	1250-1477
Type-N (f) to BNC female adapter	1250-1474
BNC (m) short	1250-0929

75-ohm accessory kits

The HP 11855A 75-ohm type-N and the HP 11856A 75-ohm BNC accessory kits provide the RF components generally required when using either the HP 85046B or the HP 11850D power splitter with the HP 8753E Option 011 when measuring devices having 75-ohm type-N or BNC connectors. These kits are supplied with a storage case.

HP 11855A 75-ohm type-N accessory kit

Includes	HP part number
Type-N (f) short	1250-1531
Type-N (m) short	1250-1530
Type-N (m) to N (m) adapter	1250-1528
Type-N (f) to N (f) adapter	1250-1529
Type-N (m) termination	1250-1532

HP 11856A 75-ohm BNC accessory kit

Includes	HP part number
Type-N (m) to BNC (f) adapter	1250-1535
Type-N (m) to BNC (m) adapter	1250-1533
Type-N (m) to BNC (m) adapter	1250-1534
Type-N (f) to BNC (m) adapter	1250-1536
BNC (m) short	1250-0929
BNC (m) termination	11652-60010

RF limiter

Externally attaches to one or both ports of the analyzer. Provides protection against potential high power transients from external devices.

Specifications

HP 11930A 7-mm RF limiter

Frequency range	DC to 6 GHz
Nominal insertion loss	1.0 dB < 3 GHz 1.5 dB < 6 GHz
Return loss	22 dB < 3 GHz 20 dB < 6 GHz
Maximum input power	3W
Maximum DC	30 V, 350 mA

HP 11930B 50-ohm type-N RF limiter**

Frequency range	5 MHz to 6 GHz
Nominal insertion loss	1.0 dB < 3 GHz* 1.5 dB < 6 GHz
Return loss	21 dB < 3 GHz* 17 dB < 6 GHz
Maximum input power	3W

* Return loss and insertion loss limited below 16 MHz by series capacitor.

** Internal bias tees cannot be used with this limiter.

HP 85024A high frequency probe

This probe is designed for easy in-circuit sweep measurements. An input capacitance of only 0.7 pF shunted by 1 megohm of resistance permits high frequency probing without adversely loading the circuit. High probe sensitivity allows measurements to be made while taking advantage of the full dynamic range of the instrument. Two probes may be powered directly from the front panel of the HP 8753E. Refer to technical data sheet #5954-8393.

HP 8753E accessories, cont'd

Specifications

Input capacitance (at 500 MHz)	<0.7 pF (nominal)
Input resistance	1 Megohm (nominal)
Bandwidth	300 kHz to 3 GHz
Gain (at 500 MHz)	0 dB \pm 1 dB
Frequency response	\pm 1 dB (300 kHz to 1 GHz) +2, -3 dB, (1 GHz to 3 GHz)
Input voltage for < 1 dB compression	0.3 V
Supplement characteristics	
Noise figure	< 50 dB (<100 MHz) < 25 dB (100 MHz to 3 GHz)

Includes	HP part/model number
Type-N (m) adapter	11880A
10:1 divider	11881A
Spare 12 mil probes	85024-20012
2.5-inch ground lead	01223-61302
Hook tip	10229
Spanner tip	5060-0549
Probe tip nut driver	8710-1806

HP 8347A RF amplifier

This general purpose broadband amplifier is designed for maximum reliability and configured for convenience when interfacing with the HP 8753E. The HP 8347A RF amplifier delivers increased power across a 300 kHz to 3 GHz frequency range. Adjustable leveled output power between +20 dBm (100 mW) to +5 dBm (3.16 mW) can be achieved.

The HP 8347A provides leveled output power without using an external coupler and detector, since these parts are built-in. The external ALC can be directly connected to the External AM input on the HP 8753E. This capability is especially useful for achieving high dynamic range measurements at faster sweep rates.

Specifications

Frequency	100 kHz to 3 GHz
Gain	25 dB minimum
Output power (leveled) (adjustable)	+5 dBm to +20 dBm
Maximum output power	24 dBm (typical)
Leveled power flatness	\pm 1.5 dB
Impedance	50 ohms nominal
SWR	
Input	2.2:1 max
Output	1.6:1 (ALC on)
Spectral purity	
Harmonics	-20 dBc at dBm
Third order intercept	+30 dBm (nominal)
Typical noise figure	13.5 dB (100 MHz to 3 GHz)
RF connectors	Type-N female
Dimensions	102-mm H x 213-mm W x 297-mm D (4.0 in x 8.4 in x 11.7 in)
Weight	net 3.5 kg (7.7 lb)

HP 11608A transistor fixture

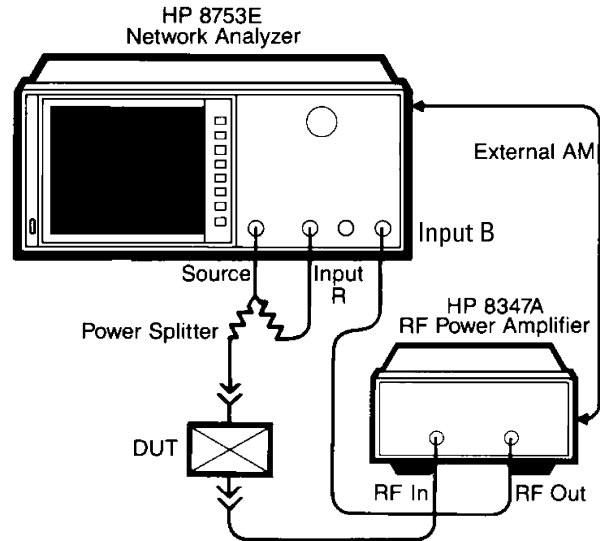
Provides the capability of completely characterizing stripline transistors when used with the HP 8753E or the HP 85046A or HP 85047A S-parameter test sets. A through-line microstrip and bolt-in grounding structure machinable for special packages is included.

Specifications

Frequency range	DC to 12.4 GHz
Impedance	50 ohms nominal
Return loss	> 26 dB to 4 GHz; > 23 dB, 4 to 8 GHz; > 19 dB, 8 to 12.4 GHz
Package styles	
Option 003	0.205 in diameter packages. Includes a short circuit termination and a 50 ohm through-section for calibration.
Connectors	7-mm precision

HP 85043D systems cabinet

The HP 85043D systems cabinet has been ergonomically designed specifically for the HP 8753E Option 011 and the HP 85046A/B or HP 85047A S-parameter test sets. The 132 cm (52-in) system cabinet includes a bookcase, a drawer, and a convenient work surface.



Extended dynamic range test configuration