



Agilent Technologies

HEWLETT PACKARD



NETWORK ANALYZERS

RF Network Analyzer, 500 kHz to 1.3 GHz (cont.)

Model 8505A



8503A



8502A



11850A



11851A

8502A 50Ω Transmission/Reflection Test Set 8502B 75Ω Transmission/Reflection Test Set

Frequency range: 500 kHz to 1.3 GHz.

Impedance: 8502A, 50Ω; 8502B 75Ω.

Directivity: ≥ 40 dB.

Frequency Response

Transmission: $\leq \pm 0.8$ dB and $\leq \pm 8^\circ$.

Reflection: $\leq \pm 1.5$ dB and $\leq 15^\circ$ from 0.5–1300 MHz; $\leq \pm 10^\circ$ from 2–1300 MHz.

Port Match

Test port: ≥ 26 dB return loss from 2–1300 MHz (≥ 24 dB for 8502B); ≥ 20 dB return loss from 0.5–2 MHz (≥ 18 dB for 8502B).

Test port open/short ratio: ± 0.75 dB and $\pm 6^\circ$ from 2–1000 MHz (± 0.9 dB and $\pm 7.5^\circ$ for 8502B); ± 0.9 dB and $\pm 7.5^\circ$ from 1000–1300 MHz; ± 1.25 dB and $\pm 10^\circ$ from 0.5–2 MHz.

Reference and reflection ports: ≥ 25 dB return loss from 2–1000 MHz; ≥ 23 dB return loss from 0.5–1300 MHz.

Input port: ≥ 23 dB return loss.

Nominal insertion loss:

Input to Test Port: 13 dB (8502A), 19 dB (8502B).

Input to Reference Port: 19 dB (8502A), 19 dB (8502B).

Input to Reflection Port: 19 dB (8502A), 31 dB (8502B).

Maximum operating level: +20 dBm.

Damage level: 1 watt CW.

RF Attenuator range: 0 to 70 dB in 10-dB steps.

Connectors test port: 50Ω Type N Female for 8502A and 75Ω Type N Female for 8502B; all other RF ports 50Ω Type N Female; Bias input, BNC Female.

DC Bias input: ± 30 V dc and ± 200 mA.

Includes: 8502B includes 50Ω/75Ω minimum loss pad.

Recommended accessory: 11851A RF Cable Kit for either 8502A or 8502B.

Size: 61.5 H x 101 W x 204 mm D (2.44 x 7.5 x 8.0 in.).

Weight: net, 1.7 kg (3.25 lb). Shipping, 3.1 kg (7 lb).

8503A 50Ω S-Parameter Test Set

8503B 75Ω S-Parameter Test Set

Frequency range: 500 kHz to 1.3 GHz.

Impedance: 8503A, 50Ω; 8503B, 75Ω.

Directivity: ≥ 40 dB.

Frequency Response

Transmission (S_{12} , S_{21}): ± 1 dB, $\pm 12^\circ$ from 0.5–1300 MHz.

Reflection (S_{11} , S_{22}): ± 2 dB, $\pm 20^\circ$ from 0.5–1300 MHz; $\pm 15^\circ$ from 2–1300 MHz.

Port Match

Test ports 1 and 2: ≥ 26 dB return loss from 2–1300 MHz (≥ 24 dB for 8503B), ≥ 20 dB return loss from 0.5–2 MHz (≥ 18 dB for 8503B).

Test port 1 and 2 Open/Short Ratio: $\leq \pm 0.75$ dB and $\pm 6^\circ$ from 2–1000 MHz (± 0.9 dB and $\pm 7.5^\circ$ for 8503B); $\leq \pm 0.9$ dB and 7.5° from 1000–1300 MHz; ± 1.25 dB and $\pm 10^\circ$ from 0.5–2 MHz.

Reference and return ports: ≥ 23 dB return loss from 2–1000 MHz; ≥ 20 dB return loss from 0.5–2 MHz and 1000–1300 MHz.

RF input port: 20 dB return loss from 0.5–1300 MHz.

Maximum operating level: +20 dBm.

Damage level: 1 watt CW.

Connectors: test ports. 50Ω APC-7 for 8503A and 75Ω Type-N Female for 8503B; all other RF connectors, 50Ω Type-N Female; Bias inputs BNC Female.

DC Bias input: 30 V dc, ± 200 mA.

Includes: four 19 cm (7.5") cables for connection to 8505A.

Recommended accessory: 11857A 50Ω Test Port Extension Cables or 11857B/C 75Ω Test Port Extension Cables.

Programming: Programming via HP-IB. 0.5 m HP-IB cable included.

Power: 100, 120, 220, or 240 V $\pm 5\%$ –10%, 50 or 60 Hz. Approx. 10 watts (15 watts for 8503B).

Size: 90 H x 426 W x 553 mm D (3.5 x 16.75 x 21.0 in.).

Weight: net, 9.1 kg (20 lb). Shipping, 11.3 kg (25 lb).

Accessories

11850A 50Ω Power Splitter

11850B 75Ω Power Splitter

Frequency range: DC to 1.3 GHz.

Impedance: 11850A, 50Ω; 11850B, 75Ω.

Tracking between any two output ports: ≤ 0.1 dB and $\leq 1.5^\circ$.

Equivalent source match (ratio or leveling): ≥ 32 dB return loss (≤ 1.05 SWR).

Input port match: ≥ 20 dB return loss.

Nominal insertion loss: 9.54 dB for 11850A; 7.78 dB for 11850B.

Frequency response absolute: Input to Output ≤ 0.2 dB.

Maximum operating level: +20 dBm.

Burn-out level: ≥ 1 watt CW.

Connectors: 11850A, 50Ω Type N female; 11850B, three outputs 75Ω Type N female, RF input 50Ω Type N female.

Recommended accessory: 11851A RF Cable Kit.

Includes: 11850B includes three (3) 50Ω/75Ω Minimum Loss Pads.

Size: 46 H x 67 W x 67 mm D (1.88 x 2.63 x 2.63 in.).

Weight: net, 1.8 kg (4 lb). Shipping, 3.1 kg (7 lb).

11851A RF Cable Kit

General: Three 610 mm (24 in.) 50Ω 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 8502A/B Transmission/Reflection Test Set and 11850A/B Power Splitter.

Weight: net, 0.91 kg (2 lb). Shipping, 1.36 kg (3 lb)

11852A 50Ω/75Ω Minimum Loss Pad

General: the 11852A is a low SWR minimum loss pad required for transmission measurements on 75Ω devices with 8505A receiver (50Ω).

Frequency range: DC to 1.3 GHz.

Insertion loss: 5.7 dB.

Return loss: 75Ω side, 50Ω side terminated: Typically ≥34dB (≤1.04 SWR). 50Ω side, 75Ω side terminated: Typically ≥30 dB (≤1.06 SWR).

Typical Flatness: ≤0.1 dB from DC to 1.3 GHz.

Maximum input power: 250 mW (+24 dBm).

Connectors: 50Ω Type N Female and 75Ω Type N male.

Size: 14 D x 70 mm L (0.56 x 2.75 in.).

Weight: net, 0.11 kg (4 oz). Shipping, 0.26 kg (9 oz).

11853A 50Ω Type N Accessory Kit

General: the 11853A furnishes the RF components required for measurement of devices with 50 Type N Connectors using the 11850A, 8502A, or 8503A (8503A also requires the 85032A). Kit contains a Type N Female short, a Type N Male short, two Type N Male barrels, two Type N Female barrels and storage case.

Weight: net, 0.91 kg (2 lb). Shipping, 1.36 kg (3 lb).

11854A 50Ω BNC Accessory Kit

General: the 11854A furnishes the RF components required for measurement of devices with 50 BNC Connectors using the 11850A, 8502A, or 8503A (8503A also requires the 85032A). 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 storage case.

Weight: net, 1.13 kg (2½ lb).

11855A 75Ω Type N Accessory Kit

General: the 11855A provides the RF connecting hardware generally required for measurement of devices with 75Ω Type N connectors using the 8502B, 8503B or 11850B. Kit contains two 75Ω Type N Male barrels, two Type N Female barrels, a 75Ω Type N Female short, a 75Ω Type N Male short, a 75Ω Type N Male termination, and storage case.

Weight: net, 0.91 kg (2 lb). Shipping, 1.36 kg (3 lb).

11856A 75Ω BNC Accessory Kit

General: the 11856A provides the RF connecting hardware generally required for measurement of devices with 75Ω BNC connectors using the 8502B, 11850B, or 8503B. 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, a 75Ω BNC Male termination, and storage case.

Weight: net, 0.91 kg (2 lb). Shipping, 1.36 kg (3 lb).

11857A 50Ω APC-7 Test Port Extension Cables

General: two precision 61 cm (24 in.) cables, phase matched to 4° at 1.3 GHz for use with 8503A S-parameter test set. Connectors are 50Ω APC-7.

Weight: net, 0.91 kg (2 lb). Shipping, 2.3 kg (5 lb).

11857B 75Ω Type N Test Port Extension Cables

General: two precision 61 cm (24 in.) cables, phase matched to 2° at 1.3 GHz for use with 8503B S-parameter test set. One cable has 75Ω Type N Male connectors on both ends; the other has one Type N Male and one Type N Female connector.

Weight: net, 0.91 kg (2 lb). Shipping, 2.3 kg (5 lb).

11858A Transistor Fixture Adapter

General: the 11858A adapts the 11600B and 11602B transistor Fixtures (vertical test port configuration) to the 8503A S-parameter test set. Connectors are APC-7.

Weight: net, 0.91 kg (2 lb). Shipping, 1.36 kg (3 lb).

Ordering Information

	Price
8505A* RF Network Analyzer	\$35,750
Opt 005: Phase Lock	\$1,000
Opt 007: Labeling Interface	\$600
Opt 908: Rack Mounting Kit (for use without front handles)	\$50
Opt 910: Extra Manual	\$75
Opt 913: Rack Mounting Kit	\$62
8503A* 50Ω S-Parameter Test Set	\$5,600
Opt 908: Rack Mounting Kit (for use without front handles)	\$32
Opt 910: Extra Manuals	\$10
Opt 913: Rack Mounting Kit	\$20
8503B* 75Ω S-Parameter Test Set	\$5,600
Opt 908: Rack Mounting Kit (for use without front handles)	\$32
Opt 910: Extra Manual	\$10
Opt 913: Rack Mounting Kit	\$20
8501A* Storage Normalizer	\$6,100
Opt 908: Rack Mounting Kit (for use without front handles)	\$32
Opt 910: Extra Manual	\$25
Opt 913: Rack Mounting Kit	\$20
8502A 50Ω Transmission/Reflection Test Set	\$2,250
Opt 910: Extra Manual	\$6
8502B 75Ω Transmission/Reflection Test Set	\$2,250
Opt 910: Extra Manual	\$6
11850A 50Ω Power Splitter	\$675
11850B 75Ω Power Splitter	\$675
11851A RF Cable Kit	\$600
11852A 50Ω to 75Ω Minimum Loss Pad	\$140
11853A 50Ω Type N Accessory Kit	\$150
11854A 50Ω BNC Accessory Kit	\$165
11855A 75Ω Type N Accessory Kit	\$200
11856A 75Ω BNC Accessory Kit	\$260
11857A 50Ω APC-7 Test Port Extension Cables	\$725
11857B 75Ω Type N Test Port Extension Cables	\$1,175
11858A Transistor Fixture Adapter	\$575
11864A Labeling Interface Kit	\$725

*Front Handles are Standard