



HP 35677A

### HP 35677A/B S-Parameter Test Sets

While test setups can be constructed from discrete RF components such as power dividers, directional bridges, cables, pads, etc., it is much easier to use a fully integrated test set such as the HP Model 35677A/B.

The test set contains the hardware required to make transmission and reflection measurements in both the forward and reverse directions. The only setup required is to connect the device under test to the two measurement ports; the HP 3577A Network Analyzer controls the switching functions, so that even reverse measurements can be made without changing device connections. The HP 35677A is used for 50 $\Omega$  systems and the HP 35677B is used for 75 $\Omega$  systems.

### HP 35677A/B S-Parameter Test Set Specifications

**Frequency Range:** 100 kHz to 200 MHz.

**Test Port Impedance**

HP 35677A: 50 $\Omega$ .

HP 35677B: 75 $\Omega$ .

**Directivity:** >40 dB.

**Frequency Response**

**Transmission (S<sub>21</sub>, S<sub>12</sub>):**  $\pm 1$  dB,  $\pm 5$  degrees.

**Reflection (S<sub>11</sub>, S<sub>22</sub>):**  $\pm 1$  dB,  $\pm 5$  degrees.

**Port Match**

**Test Ports 1, 2:** HP 35677A, >26 dB; HP 35677B, >24 dB.

**Test Ports 1, 2 Open/Short Ratio:** HP 35677A,  $< \pm 0.75$  dB magnitude and  $< \pm 5$  degrees phase; HP 35677B,  $< \pm 1$  dB magnitude and  $< \pm 7.5$  degrees phase.

**Input Port:** >20 dB return loss.

**Output Ports A, B, and R:** >26 dB return loss.

**Test Port Isolation:** >100 dB.

**Insertion Loss**

**RF Input to Test port 1 or 2:** HP 35677A, typically 13 dB; HP 35677B, typically 19 dB.

**RF Input to Output Ports A, B, or R:** HP 35677A, typically 19 dB; HP 35677B, typically 31 dB.

**Test Port Reciprocity**

**Transmission (S<sub>21</sub>, S<sub>22</sub>):** Typically  $< \pm 0.5$  dB magnitude and  $< \pm 5$  degrees phase.

**Reflection (S<sub>11</sub>, S<sub>22</sub>):** Typically  $< \pm 0.5$  dB magnitude and  $< \pm 5$  degrees phase.

**Incident Power Ratio (Test Port 1 to Test Port 2):** Typically  $< \pm 1.5$  dB.

**RF Input Maximum Operating Level:** +25 dBm or  $\pm 30$  Vdc.

**RF Input Damage Level:**  $\pm 27$  dBm or  $\pm 30$  Vdc.

**Port 1 or 2 Damage Level:** +27 dBm or  $\pm 30$  Vdc.

**Connectors**

**Input Port and Output Ports A, B, and R:** 50 $\Omega$  Type N female.

**Test Ports 1 and 2:** HP 35677A, 50 $\Omega$  Type N female; HP 35677B, 75 $\Omega$  Type N female.

**DC Bias Inputs:** BNC female, rear panel.

**DC Bias Range:** Typically  $\pm 30$  Vdc and  $\pm 20$  mA with some degradation of RF specifications; 200 mA damage level.

**Accessories Supplied**

4 ea. 190 mm (7.5 in.) 50 $\Omega$  cables with Type N male connectors for connection to HP 3577A (HP Part No. 8120-4387).

1 ea. Test Set interconnect cable to HP 3577A (HP Part No. 35677-61620).

1 ea. Rear Panel Lock Foot Kit (HP Part No. 5061-0099).

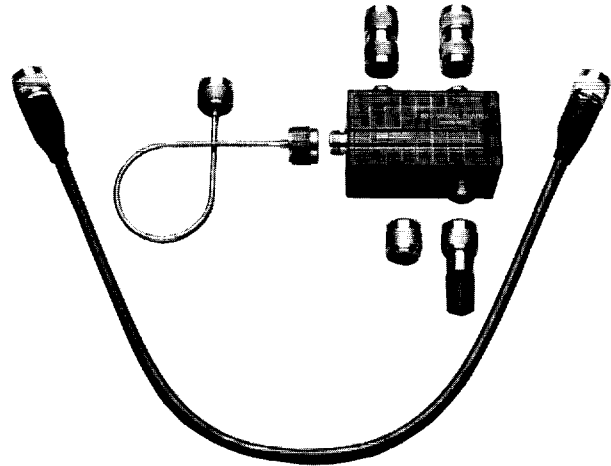
1 ea. Service Manual (HP Part No. 35677-90010).

**General Characteristics**

**Power:** All power is obtained through the HP 35677A interconnect cable.

**Weight:** 6 kg (13 lb) net; 122 kg (25 lb) shipping.

**Dimensions:** 90mm H x 425mm W x 584mm D (3.5 in. x 16.75 in. x 22.75 in.). Add 1 $\frac{1}{8}$  inch to depth to include front panel connectors.



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### HP 35676A/B Reflection/Transmission Test Kits

Low frequency and broadband measurements with the HP 3577A are greatly simplified with the HP 35676A/B Reflection/Transmission Test Kits. Operating in conjunction with internal calibration routines in the HP 3577A, the test kits provide all the measurement capabilities required for reflection, transmission, and impedance measurements throughout the entire 5 Hz to 200 MHz frequency range. Separate versions are available for 50 $\Omega$  (HP 35676A) or 75 $\Omega$  (HP 35676B) environments. Each HP 35676A/B Reflection/Transmission Test Kit contains a precision resistive divider, 50 $\Omega$  (HP 35676A) or 75 $\Omega$  (HP 35676B) reference load, coaxial short, carrying case, and all cables and hardware necessary for basic measurements with the HP 3577A Network Analyzer.

### HP 35676A/B Operating Characteristics\*

**Frequency Range:** 5Hz to 200 MHz.

**Test Port Impedance:** 50  $\pm$  2% typical (HP 35676A)

75  $\pm$  2% typical (HP 35676B).

**Insertion Loss (Source Input to Test Output):** 10  $\pm$  1 dB typical.

**Equivalent Directivity:** 40 dB typical.

**Equivalent Source Match:** 30 dB typical (HP 35676A)

25 dB typical (HP 35676B).

\*Typical, assuming proper calibration with accessories supplied.