



# NETWORK ANALYZERS

## 8757 System Components

Models 8757A, 85021A/B/C, 85020A/B

### HP 8757A Specifications

#### Amplitude Characteristics

Dynamic range on all three (or four) inputs (A, B, (C), and R).

Detector	Range
HP 11664A	+16 to -60 dBm
HP 11664E	+16 to -60 dBm
HP 11664D	+10 to -50 dBm
HP 85025A	
AC mode	+16 to -55 dBm
DC mode	+16 to -50 dBm

**Dynamic accuracy:** dynamic accuracy of a single channel measurement using the HP 11664A/E detectors. Measurement taken at 25°C and at 50 MHz.

$\pm(0.1 \text{ dB} + 0.01 \text{ dB/dB})$  from +10 to -40 dBm

$\pm(0.2 \text{ dB} + 0.02 \text{ dB/dB})$  from -40 to -60 dBm

**Scale resolution:** 0.1, 0.2, 0.5, 1, 2, 5, 10, or 20 dB per division. Independently controlled for each channel.

**Reference offset:** offset level adjustable in 0.01 dB increments from -70 to +20 dBm (power measurement) or -90 to +90 dB (ratio measurement).

#### Display characteristics

##### Resolution

**Vertical:** 0.003 dB (power measurement)  
0.006 dB (ratio measurement)  
0.01 dB for "Display Cursor"

**Horizontal:** 101, 201, 401, 801, or 1601 data points

**Sweep time/number of traces:** minimum sweep time and maximum number of display traces depend on horizontal resolution.

Number of Points	Minimum Sweep Time	Number of Traces
101	50 ms	4
201	100 ms	4
401	200 ms	4
801	200 ms	2
1601	200 ms	1

**Averaging:** 2,4,8,16,32,64,128, or 256 traces may be averaged.

**Normalization:** traces are stored and normalized with the highest resolution, independent of display scale/division or offset. Calibration data can be saved and recalled with instrument states, and is interpolated when the frequency span is decreased.

#### HP-IB Characteristics

**Transfer formats:** Data may be transferred either as ASCII strings (nominally six characters per reading) or as 16 bit integers (most significant byte first). Readings may be taken at a single point, or an entire trace may be transferred at once.

##### Transfer speed:

ASCII format, 401 point trace: 800 ms typical.

ASCII format, point: 10 ms typical.

Binary format, 401 point trace: 35 ms typical.

Binary format, point: 5 ms typical.

#### System Interface

**Description:** the HP 8757A system interface is a dedicated HP-IB port used exclusively by the HP 8757A to control and extract information from a swept source and a digital plotter.

**Swept sources:** HP 8350B with RF plug-in, HP 8340A/8341A synthesized sweeper, or any source that provides a sweep ramp in the range of 0-10 volts (e.g., 2-5 volts).

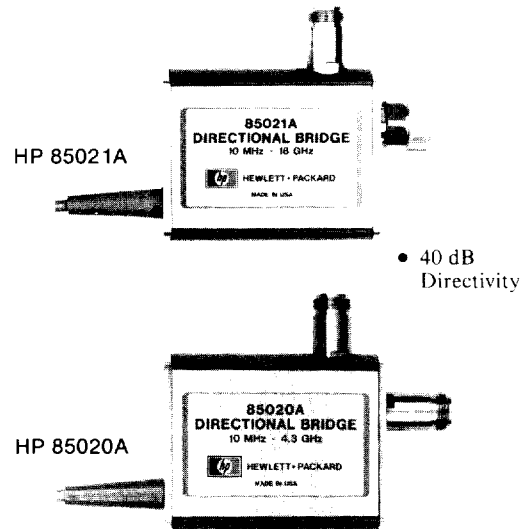
**Plotters:** HP 7470A, 7475A, 7550A, 7090A, 9872C

#### General Specifications

**Power requirements:** 48 to 62 Hz, 115/230 V  $\pm 10\%$ , typically 100 watts.

**Dimensions:** 178 H x 425.5 W x 482 mm D (7.0 x 16.75 x 19.0 in.).

**Weight:** net, 21 kg (46 lb); shipping, 26 kg (57 lb).



• 40 dB Directivity

### Directional Bridges

The HP 85020A/B and HP 85021A/B/C are directional bridges designed especially for the HP 8757A, 8756A and 8755C scalar network analyzers. Each bridge features outstanding directivity and test port match in a compact, rugged package.

Within each bridge, one zero-bias Schottky diode detector measures the return loss of the test device. Ratio measurements can be made by adding a power splitter (HP 11667A/B) and detector (HP 11664A/D/E).

#### HP 85021A/B/C Directional Bridges

The three microwave directional bridges cover the 10 MHz to 26.5 GHz frequency range. Accurately measure SMA devices over the full 10 MHz to 26.5 GHz frequency range with the HP 85021B Bridge with its precise APC 3.5 test port connector. For 10 MHz to 18 GHz reflection measurements choose the HP 85021C with its Type-N test port connector or the rugged APC-7\* test port connector of the HP 85021A.

#### HP 85021A/B/C Specifications

##### Frequency Range

HP 85021A: 0.01 to 18 GHz.

HP 85021B: 0.01 to 26.5 GHz.

HP 85021C: 0.01 to 18 GHz.

**Nominal impedance:** 50 ohms.

**Input Connector**

- HP 85021A: Type-N Female.
- HP 85021B: APC-3.5 Female.
- HP 85021C: Type-N Female.

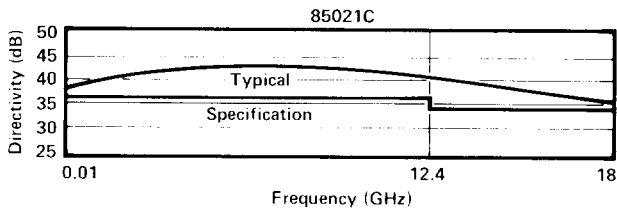
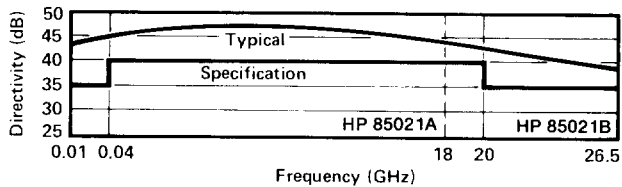
**Output Connector**

- HP 85021A: APC-7.
- HP 85021B: APC-3.5 Female.
- HP 85021C: Type-N Female.

**Maximum power to input port:** +23 dBm.

**Directivity**

- HP 85021A: 0.01 to 0.04 GHz: 36 dB.  
0.04 to 18 GHz: 40 dB.
- HP 85021B: 0.01 to 0.04 GHz: 36 dB.  
0.04 to 20 GHz: 40 dB.  
20 to 26.5 GHz: 36 dB.
- HP 85021C: 0.01 to 12.4 GHz: 36 dB.  
12.4 to 18 GHz: 34 dB.



**Test Port Match (SWR)**

- HP 85021A/C: 0.01 to 8.4 GHz: 1.15.  
8.4 to 12.4 GHz: 1.25.  
12.4 to 18 GHz: 1.40.
- HP 85021B: 0.01 to 8.4 GHz: 1.15.  
8.4 to 20 GHz: 1.40.  
20 to 26.5 GHz: 1.75.

**Typical Input Port Match (SWR)**

- HP 85021A/C: 0.01 to 8.4 GHz: <1.22.  
8.4 to 18 GHz: <1.43.
- HP 85021B: 0.01 to 8.4 GHz: <1.22.  
8.4 to 20 GHz: <1.43.  
20 to 26.5 GHz: <1.93.

**Typical Insertion Loss**

- HP 85021A/B/C: 6.5 dB at 10 MHz.  
8.0 dB at 18 GHz.
- HP 85021B: 10 dB at 26.5 GHz.

**Typical detector flatness:** +3, -1 dB (with leveled RF).

**Typical minimum input power** (for a 40 dB return loss measurement): +7 dBm at 18 GHz.

**Dimensions:** 15 H x 110 W x 96 mm D (1.0 x 4.3 x 3.9 in).

**Weight:** net, 0.5 kg (1.2 lb); shipping, 2.3 kg (5 lb).

**HP 85020A/B Directional Bridges**

The economical HP 85020A/B directional bridges also offer high (40 dB) directivity and excellent port match at RF (to 4.3 GHz) frequencies. For 50 ohm measurements choose the HP 85020A. The HP 85020B is designed for 75 ohm environments. Both RF bridges have Type-N connectors.

**HP 85020A/B Specifications**

**Frequency Range**

- HP 85020A: 0.01 to 4.3 GHz.
- HP 85020B: 0.01 to 2.4 GHz.

**Nominal Impedance**

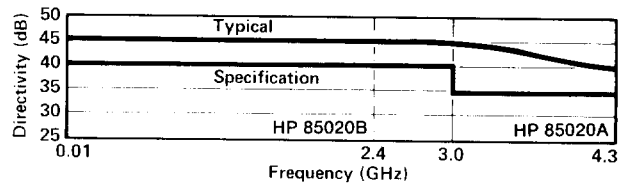
- HP 85020A: 50 ohms.
- HP 85020B: 75 ohms.

**Connectors:** Type-N Female.

**Maximum power to input port:** +23 dBm.

**Directivity**

- HP 85020A: 0.01 to 3 GHz: 40 dB.  
3 to 4.3 GHz: 34 dB.
- HP 85020B: 0.01 to 2.4 GHz: 40 dB.



**Test Port Match (SWR)**

- HP 85020A: 0.01 to 3 GHz: 1.20.  
3 to 4.3 GHz: 1.25.
- HP 85020B: 0.01 to 1.3 GHz: 1.25.  
1.3 to 2.4 GHz: 1.39.

**Typical Input Port Match (SWR)**

- HP 85020A: 0.01 to 4.3 GHz: 1.25.
- HP 85020B: 0.01 to 2.4 GHz: 1.25.

**Typical insertion loss:** 6.5 dB.

**Typical detector flatness:** ±0.5 dB.

**Typical minimum input power** (for a 40 dB return loss measurement): +4 dBm.

**Dimensions:** 25 H x 110 W x 96 mm D (1.0 x 4.3 x 3.9 in).

**Weight:** net, 0.5 kg (1.2 lb); shipping, 2.3 kg (5 lb).