



11666A



11665B



11667A

11666A Reflectometer Bridge

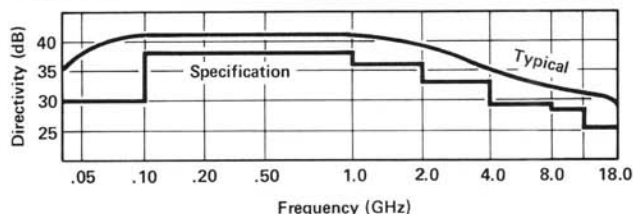
Reflection measurements covering from 40 MHz to 18 GHz with one coupling device can be made with the Model 11666A Reflectometer Bridge. Operation of this type of coupling device is based on principles of the resistive Wheatstone Bridge extended to microwave frequencies. When three bridge arms are 50Ω, the voltage across corners of the bridge is directly proportional to the reflection coefficient of the device connected in the fourth arm. Equivalent directivity is then a measure of how well the bridge circuit is balanced with a 50Ω termination connected. (Ideally this would create a voltage null representing infinite return loss.) The high equivalent directivity achievable over wide bandwidths makes the bridge configuration attractive.

The 11666A is completely dedicated to the 8755; two Schottky diode detectors (which sample the incident and reflected signals for ratioing by the 8755) are incorporated as an integral part of the bridge unit. The effective external leveling achieved by ratioing thus isolates the measurement port from source/bridge input mismatch. With the addition of an external 11664A detector, two simultaneous ratio measurements of insertion and return loss can be made. Small size combined with its wide frequency range and high directivity make the 11666A ideal for production use.

Specifications 11666A (connected to the 8755B Analyzer)

Frequency Range: 40 MHz to 18 GHz.

Frequency Range	Equivalent Directivity	Equivalent Output SWR
40 to 100 MHz	30 dB	1.25
0.1 to 1 GHz	38 dB	1.25
1 to 2 GHz	36 dB	1.25
2 to 4 GHz	33 dB	1.25
4 to 8 GHz	29 dB	1.25
8 to 12 GHz	27 dB	1.27
12 to 18 GHz	26 dB	1.52



Frequency tracking

(between incident and reflected arms): ± 1.6 dB

(between incident and test port, including ± 0.5 dB from 11664A Detector): ± 2.1 dB

Nominal coupling: 6-dB incident arm. 9-dB reflected arm. 9-dB transmission loss.

Input SWR: 1.8.

Maximum input power: +15 dBm.

Connectors: Type N-Female on input and output. APC-7 Optional.

Dimensions: 69.9 mmH \times 69.9 mmW \times 46.6 mmD (2.75" \times 2.75" \times 1.83"). Cable length, 1219 mm (48").

Weight: net, 0.7 kg (1.5 lb). Shipping, 2.26 kg (5.13 lb).

Accessories furnished: 11512A short, Type N-Male (11565A short, APC-7 with Opt 002 and 003).

11667A Power splitter

The 11667A Power Splitter is recommended when making wideband transmission measurements using the 8755 Test Set. This two-resistor type splitter provides excellent output SWR at the auxiliary arm when used for source leveling or ratio measurement applications. The 0.25 dB tracking between output arms over a frequency range from dc to 18 GHz allows wideband measurements to be made with a minimum of uncertainty.

Frequency range: dc to 18 GHz.

Impedance: 50Ω.

	dc-4 GHz	dc-8 GHz	dc-18 GHz
Input SWR:	≤ 1.15	≤ 1.25	≤ 1.45
Equivalent output SWR:	1.10	1.20	1.33
leveling or ratio measurement			
Output tracking: (between output arms)	0.15	0.20	0.25

Insertion loss: 6 dB nominal (input to either output).

Maximum input power: +27 dBm.

Connectors: Type N female on all ports.

Size: 46 H \times 50 W \times 19 mm D (1³³/₁₆" \times 2" \times 3/4").

Weight: net, 0.06 kg (2 oz). Shipping 0.22 kg (8 oz).

Other signal separation devices

Many other signal separation devices are available from HP for use with the 8755. Coaxial couplers from .1 to 18 GHz are available with the 770 series, the 790 series, the 11692. Higher directivity 752 series waveguide couplers can also be used with the 8755S with the addition of appropriate 281 series waveguide to coax adaptors.

11665B Modulator

Function: absorptive on-off modulator designed for and powered by the 8755B plug-in.

Frequency Range	Return Loss On and Off	Insertion Loss On Off
15-40 MHz	≥ 10 dB	≤ 7.0 dB ≥ 35 dB
40 MHz-4 GHz	≥ 15 dB	≤ 3.2 dB ≥ 35 dB
4-8 GHz	≥ 12 dB	≤ 3.8 dB ≥ 40 dB
8-12.4 GHz	≥ 8 dB	≤ 4.3 dB ≥ 45 dB
12.4-18 GHz	≥ 8 dB	≤ 5.0 dB ≥ 45 dB

Modulator drive feedthrough: ≤ 8 mV (peak) at 27.8 kHz at either port when powered by the 8755B. Reduced to ≤ 1 mV (peak) using the 11668A. (See 11668A High Pass Filter).

Drive current: nominally +50 mA in ON condition, -50 mA Off condition.

Weight: net, 0.17 kg (6 oz). Shipping, 0.9 kg (2 lb).