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**Agilent Technologies**

Innovating the HP Way

## HP 86205A & 86207A 50Ω & 75Ω RF Bridges



### Technical Data

**300 kHz to 6 GHz (50Ω)  
300 kHz to 3 GHz (75Ω)**



The HP 86205A/86207A high directivity RF Bridges offer unparalleled performance in a variety of general purpose applications. They are ideal for accurate reflection measurements and signal-leveling applications. They combine the directivity and broad-band frequency range of directional bridges and the low insertion loss and flat coupling factor of directional couplers.

- **40 dB directivity**

Excellent directivity allows you to measure high return loss devices and good port match lets you

measure low return loss devices. This is especially important when making reflection measurements with scalar network analyzers, vector network analyzers and spectrum analyzers.

- **Wide frequency range**

The bridges have an exceptionally wide RF frequency range: 300 kHz to 6 GHz for the 50Ω HP 86205A and 300 kHz to 3 GHz for the 75Ω HP 86207A. They are ideal accessories when used with the HP 8753 family of RF vector network analyzers.

- **Low insertion loss**

These bridges offer low insertion loss, (nominally 1.5 dB), which is significantly less than the typical 6 to 8 dB normally associated with RF bridges. Low insertion loss means more power to the device under test. This is required for the measurement of high-power solid state amplifiers and traveling wave tube amplifiers.

- **Flat coupling factor**

The frequency response of the coupled arm for these bridges is very flat, within  $\pm 0.2$  dB of the nominal value of 16 dB. This is important in applications such as external power leveling where a power meter or diode detector is used to remotely level the output power from an RF source and when measuring power level dependent devices such as the LO input to a mixer or the RF input to an amplifier during compression testing.

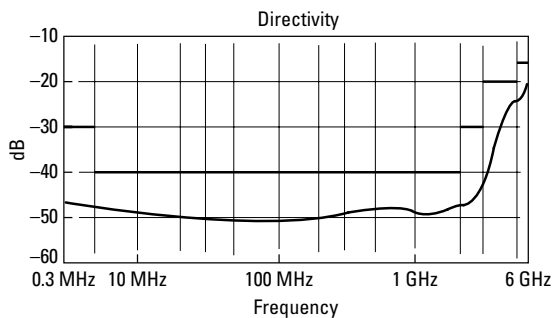
## Specifications

**Specifications** describe the instrument's warranted performance over the temperature range of 0° C to 55° C.

**Supplemental characteristics** are intended to provide information useful in applying the instrument by giving supplemental, but not warranted performance parameters. These are denoted as "typical."

### HP 86205A

Frequency range	300 kHz to 6 GHz
Impedance	50 Ohms (nominal)
Directivity (25° C, ±5°)	30 dB, 0.3 MHz to 5 MHz 40 dB, 5 MHz to 2 GHz 30 dB, 2 GHz to 3 GHz (typical) 20 dB, 3 GHz to 5 GHz (typical) 16 dB, 5 GHz to 6 GHz



Port match	23 dB, 0.3 MHz to 2.0 GHz (1.15 SWR) 20 dB, 2.0 GHz to 3 GHz (1.22 SWR) (typical) 18 dB, 3 GHz to 5 GHz (1.29 SWR) (typical) 16 dB, 5 GHz to 6 GHz (1.38 SWR)
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### Supplemental characteristics

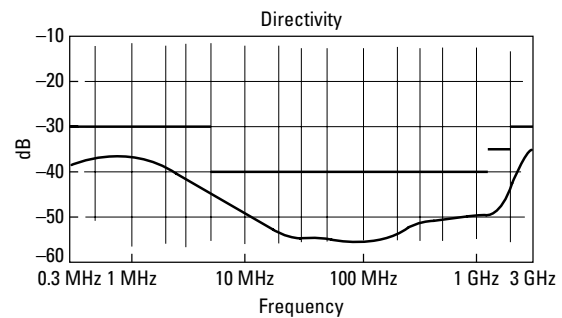
Insertion loss	1.5 dB, +0.1 dB/GHz
Insertion loss deviation	±0.2 dB
Coupling factor	(<3 GHz) 16.0 dB, +0.15 dB/GHz (>3 GHz) 16.5 dB, -0.20 dB/GHz
Coupling factor deviation	(<3 GHz) ±0.2 dB, (>3 GHz) ±0.4 dB
Maximum input power	25 dBm
Maximum DC, volts (through arm)	30 VDC
Maximum DC, volts (coupled arm)	0 VDC
Maximum DC, amps (through arm)	1 amp
Below 1 MHz directivity and port match will be slightly degraded above 200 ma bias current.	
Connectors	type-N (female)
Dimensions	160 W x 93 H x 23 mm D (6.3 W x 3.7 H x 1 in D)
Weight	net 0.57 kg (1.3 lbs), shipping 1.80 kg (4.0 lbs)

### Ordering information

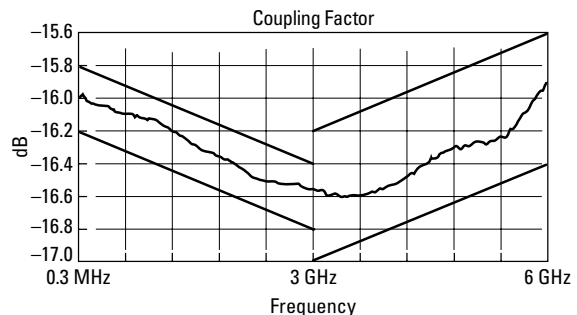
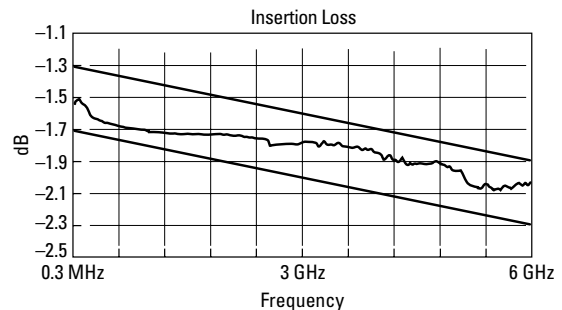
<b>Model</b>	
HP 86205A RF Bridge (50Ω)	
HP 86207A RF Bridge (75Ω)	

### HP 86207A

Frequency range	300 kHz to 3 GHz
Impedance	75 Ohms (nominal)
Directivity (25° C, ±5°)	30 dB, 0.3 MHz to 5 MHz 40 dB, 5 MHz to 1.3 GHz 35 dB, 1.3 GHz to 2 GHz (typical) 30 dB, 2 GHz to 3 GHz



Port match	20 dB, 0.3 GHz to 1.3 GHz (1.22 SWR) (typical) 18 dB, 1.3 GHz to 2 GHz (1.29 SWR) (typical) 18 dB, 2 GHz to 3 GHz (1.29 SWR)
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