



# 85110A Pulsed RF S-Parameter Test Set, 2 GHz to 20 GHz

## Data Sheet

**Frequency Range:** 2 to 20 GHz

**Test Ports:** (port 1 or 2)

Nominal Operating Power Level:

0 to -3 dBm

Connector Type: 3.5 mm, male

Impedance, DC Bias: 50 ohm nominal, 500 mA, 40 Vdc maximum

**Attenuation Range** (Incident Signal):

0 to 90 dB, in 10 dB steps

**RF Input Connector** (Rear Panel):

Maximum Input Power: +14 dBm

Connector Type: 3.5 mm, female

Dynamic Range<sup>1</sup> (for transmission measurements, independent of duty cycle)

**Frequency Range:** (GHz)

2 to 8 8 to 18 18 to 20

**Maximum Power:** (dBm)

Measured at Port 2<sup>2</sup>: +11 +11 +11

**Reference Power:** (dBm)

at Port 1 (nominal): +0 -1 -2

**Minimum Power:** (dBm)

Measured at Port 2

Pulsed: -64 -63 -62

CW: -78 -78 -77

**Receiver:**

Dynamic Range (dB)

Pulsed: 75 74 73

CW: 89 89 88

**System:**

Dynamic Range (dB)

Pulsed: 64 62 60

CW: 78 77 75

<sup>1</sup>Limited by compression level and system noise floor. Noise floor is measured with full two-port error correction, 1024 averages.

<sup>2</sup>This maximum power measurement assumes that the Agilent 85110A test set has its internal step attenuators set to 0 dB. The test can handle up to 20 W (+43 dBm) or power if the step attenuators are activated and an isolator is installed (in the port 2 real panel link).

Measurement Port Characteristics



**Frequency Range: (GHz)**

2 to 8 8 to 18 18 to 20

Residual (dB)

Directivity: 44 44 44

Source Match: 33 31 31

Load Match: 44 44 44

Reflection Tracking:  $\pm 0.003$   $\pm 0.006$   $\pm 0.006$

Transmission Tracking:  $\pm 0.044$   $\pm 0.084$   $\pm 0.094$

Crosstalk: 64 62 61

Pulsed-RF Detectors

**Equivalent Measurement Bandwidth (-3 dB): 1.5 MHz**

Aperature Uncertainty: <1 nanosecond, typical

Transition Time (10% to 90%): 300 nanoseconds

Trigger Level: TTL (falling edge), external

Trigger Width: 100 nanoseconds, minimum

Minimum Time Display: 5 microseconds

Maximum Time Display: 40 milliseconds