

HP 8711A System Specifications

Specifications describe the instrument's warranted performance over the temperature range of 25 ± 5 °C. Broadband mode characteristics apply from 10 to 1300 MHz. Narrowband mode characteristics apply from 300 kHz to 1300 MHz.

Source Characteristics

Frequency	
Range	300 kHz to 1300 MHz
Resolution	1 Hz
Accuracy (synthesized)	<5 ppm

RF Output Power	
Leveled Range	
Standard	0 to +16 dBm, ≤ 1000 MHz 0 to 13 dBm, > 1000 MHz
Option 1EC (75 Ω)	0 to +13 dBm, ≤ 1000 MHz 0 to +10 dBm, > 1000 MHz
Option 1E1 (60 dB step attenuator)	reduces maximum RF output power by 3 dB
Power Flatness (test port)	
Standard	± 1.0 dB
Option 1EC 75 Ω	± 1.5 dB
Option 1E1 (step attenuator)	± 2.0 dB
Option 1EC with 1E1	± 2.0 dB
Signal purity	
Harmonics	< -20 dBc, < 1 MHz < -30 dBc, > 1 MHz

Specifications

Receiver Characteristics

Dynamic Range	
Standard	
Narrowband mode	>60 dB (+10 to <-50 dBm), ≤5 MHz >90 dB (+10 to <-80 dBm), >5 MHz
Broadband mode	>66 dB (+16 dBm to <-50 dBm)
Option 1EC (75 Ω)	
Narrowband mode	>54 dB (+7 to <-47 dBm), ≤5 MHz >84 dB (+7 to <-77 dBm), >5 MHz
Broadband mode	>63 dB (+16 dBm to <-47 dBm)

Maximum Input Level	
Narrowband Mode (compression)	+10 dBm (0.8 dB)
Broadband Mode (compression)	+16 dBm (0.55 dB)

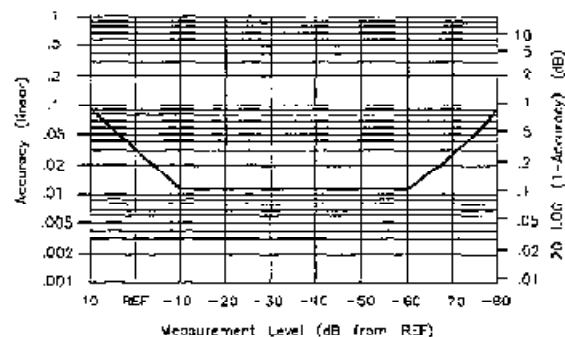
Test Set Characteristics*

Reflection Measurements	
Test Port Match	20 dB
System Directivity	40 dB

* These characteristics apply for an environmental temperature of $25 \pm 5^\circ\text{C}$ with less than 1° deviation from the calibration temperature, at a narrow system bandwidth with spur avoidance activated. Reflection test port characteristics apply at reflection test ports, after a user defined reflection calibration.

Dynamic Accuracy (Narrowband)

Dynamic accuracy is the receiver's accuracy versus input power level.



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**HP 8711A
Supplemental
Operating
Characteristics**

Supplemental operating characteristics are typical but non-warranted performance characteristics. They are representative of most instruments, but not necessarily tested in each. They can be used in applying the instrument. Broadband mode characteristics apply from 10 to 1300 MHz. Narrowband mode characteristics apply from 300 kHz to 1300 MHz.

Source Supplemental Characteristics

Frequency	
Aging	<3 ppm 1st year, <1 ppm/year thereafter
Drift	
with temperature (0 to 55 °C)	±5 ppm
with 10% change in line voltage	<1 Hz
with 3:1 load SWR	<1 Hz
External Reference Input	10 MHz (BNC), >-5 dBm required

Signal Purity	
Non-Harmonic Spurious	
>50 kHz from carrier	<-20 dBc, <1 MHz
<50 kHz from carrier	<-30 dBc, >1 MHz
Phase noise	<-25 dBc, 300 kHz to 1300 MHz
Residual AM	70 dBc/Hz at 10 kHz offset
Residual FM	<-50 dBc in 100 kHz bandwidth
	<1.5 kHz peak, 30 Hz to 15 kHz post detection bandwidth

Sweep Time	
At maximum system bandwidth	
Number of Data Points	Sweep Time
51	<50 ms
101	<60 ms
201	<70 ms
401	<110 ms
801	<210 ms
1601	<400 ms

Specifications

Receiver Supplemental Characteristics

Input Damage Level	+20 dBm, ± 25 Vdc
Noise Reduction Techniques	Averaging, system bandwidth reduction

Test Set Characteristics*

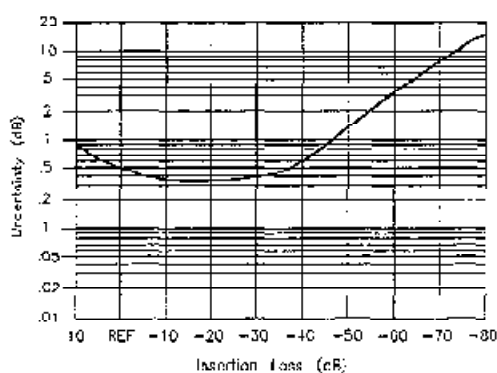
System Directivity (with default calibration)	30 dB
System Directivity (with user calibration)	40 dB
Transmission Measurements	
Transmission Port Match	20 dB
Reflection Port Match	14 dB
* These characteristics apply for an environmental temperature of 25 ± 5 °C with less than 1° deviation from the calibration temperature, at a narrow system bandwidth with spur avoidance activated. Reflection test port characteristics apply at reflection test ports, after a user defined reflection calibration.	

System Accuracy

These characteristics apply for an environmental temperature of 25 ± 5 °C with less than 1° deviation from the calibration temperature, at a narrow system bandwidth with spur avoidance activated. Reflection test port characteristics apply at reflection test ports, after a user defined reflection calibration.

The measurement uncertainty curves utilize an RSS model for the contributions of random errors such as noise, typical connector repeatabilities, and a worst-case model for the contributions of dynamic accuracy and residual systematic errors.

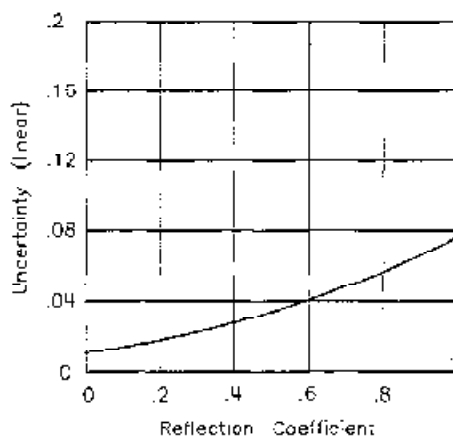
Transmission Accuracy[†]



ad613e

[†] The graphs shown for transmission measurements assume a well-matched device, and do not include errors due to device reflection effects.

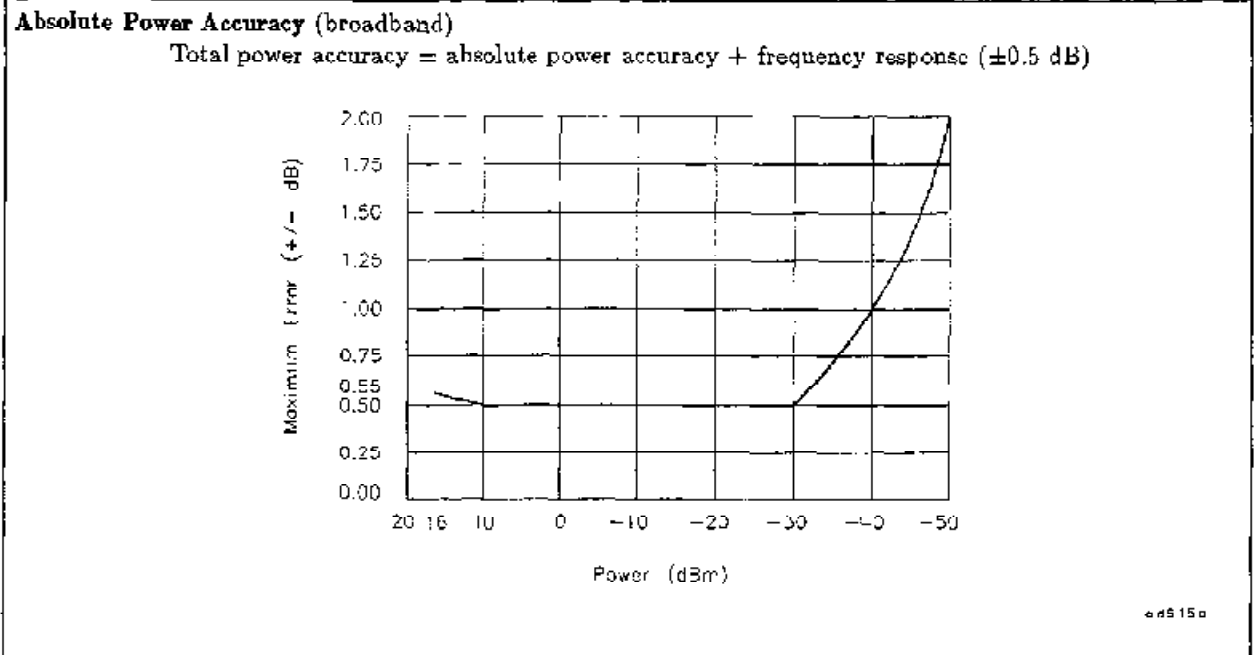
Reflection Accuracy[§]



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[§] The graph for reflection measurement uncertainty applies to a one-port device.

Specifications



Display Characteristics

Display	23 cm (9 in) diagonal
Display Resolution	Vertical 0.003 dB maximum Horizontal 51, 101, 201, 401, 801, 1601 points (user selectable)
External CRT Timing	
Vertical rate	60 Hz
Horizontal rate	24.1 kHz
Pixel rate	33.3 MHz
Vertical backporch	90 μ s (nominal)
Video level	RS-343A compatible
Compatible monitors	multisync, not EGA or VGA
Scale Resolution	0.1, 0.2, 0.5, 1, 2, 5, 10, 20 dB/division
Offset Range	+99 dB to -99 dB in 0.01 dB increments
Markers	Eight individually controlled markers with 1 Hz frequency resolution

General Characteristics

Dimensions	18 cm H x 43 cm W x 48 cm D (7 in x 17 in x 18.75 in)
Weight	20.5 kg (45 lbs)
Power	90 to 132 Vac or 198 to 264 Vac (user selectable) 50 to 60 Hz 230 VA maximum
Operating Environment	
Operating temperature	0 to 55 °C
Storage temperature	-40 to 70 °C

Front Panel Connectors

Connector Type	
Impedance	
Standard	50 Ω (nominal)
Option 1EC	75 Ω (nominal)
Connector Pin Recession	0.204 to 0.207 in

Rear Panel Connectors

External Detector Y-input	See Chapter 2 for compatible detectors
External Detector X-input	See Chapter 2 for compatible detectors
External Trigger In/Out	BNC, TTL open collector
Video Out	BNC, conforms to RS-343A standards
External Reference In	50 Ω BNC, >-5 dBm signal
Aux Input	User displayable voltage input port
Calibrated range	± 10 V
Accuracy	\pm (3% of reading + 20 mV)
Damage level	>14 Vdc (while instrument is on)
For best results, observe frequency limits	<250 Hz in wide bandwidth <100 Hz in medium bandwidth <10 Hz in narrow bandwidth