

Table 1-1. HP 8562A/B Specifications (1 of 8)

FREQUENCY			
Frequency Range			
Internal Mixing	1 kHz to 22 GHz		
Internal Mixing Bands	Frequency Band	Harmonic Mixing Mode (N)*	
	1 kHz to 2.9 GHz	1—	
	2.75 GHz to 6.46 GHz	1—	
	5.86 GHz to 13.0 GHz	2—	
	12.4 GHz to 19.7 GHz	3—	
	19.1 GHz to 22.0 GHz	4—	
External Mixing	18 to 325 GHz		
External Mixing Bands	Frequency Band	Frequency Range (GHz)	Harmonic Mixing Mode (N)*
	K	18.0 to 26.5	6—
	A	26.5 to 40.0	8—
	Q	33.0 to 50.0	10—
	U	40.0 to 60.0	10—
	V	50.0 to 75.0	14—
	E	60.0 to 90.0	16—
	W	75.0 to 110.0	18—
	F	90.0 to 140.0	24—
	D	110.0 to 170.0	30—
	G	140.0 to 220.0	36—
	Y	170.0 to 260.0	44—
	J	220.0 to 325.0	54—
Frequency Readout Accuracy			
Accuracy of Start, Center, Stop, or Marker Frequency	$\langle \pm(\text{frequency readout} \times \text{frequency reference accuracy} + 5\% \text{ of frequency span} + 15\% \text{ of resolution bandwidth} + 250 \text{ Hz})$		
Frequency Count Marker Resolution	Selectable from 10 Hz to 1 MHz		
Frequency Count Marker Accuracy (For signal-to-noise ratio ≥ 25 dB)	$\langle \pm(\text{marker frequency} \times \text{frequency reference accuracy} + 50 \text{ Hz} \times N + 1 \text{ LSD})^*$		
Delta Frequency Count Accuracy (For signal-to-noise ratio ≥ 25 dB)	$\langle \pm(\text{delta frequency} \times \text{frequency reference accuracy} + 100 \text{ Hz} \times N + 2 \text{ LSD})^*$		
Frequency Reference Accuracy	$\langle \pm 4 \times 10^{-6}$ per year		
Includes aging, temperature drift, and settability			
Stability			
Residual FM (Zero span)	$\langle 50 \text{ Hz} \times N^*$ peak-to-peak in 100 ms		
Spectral Purity			
Noise Sidebands 30 kHz offset	$\langle (-100 + 20 \log N) \text{ dBc/Hz}^*$		

* N is the harmonic mixing mode. The desired 1st LO harmonic is always higher than the tuned frequency by the 1st IF frequency (3.9107 GHz for the 1 kHz to 2.9 GHz band and 310.7 MHz for all other bands).

Table 1-1. HP 8562A/B Specifications (2 of 8)

FREQUENCY (Continued)	
Frequency Span Range Internal Mixing External Mixing Accuracy Resolution Bandwidths (-3 dB) Range Accuracy 1 MHz resolution bandwidth 300 kHz to 300 Hz resolution bandwidth 100 Hz resolution bandwidth Selectivity (60 dB/3 dB bandwidth ratio) Bandwidth Shape Video Bandwidth Post-detection low-pass filter averages displayed noise for a smooth trace. Range	0 Hz, 10 kHz to 19.25 GHz over the 10-division CRT horizontal axis, variable in approximately 1% increments or in a 1, 2, 5 sequence Minimum span = $2.5 \text{ kHz} \times N^*$ $< \pm 5\%$ 100 Hz to 1 MHz selectable in a 1, 3, 10 sequence $< \pm 25\%$ $< \pm 10\%$ $< \pm 30\%$ $< 15:1$ Synchronously tuned, 4-pole filters 1 Hz to 1 MHz in a 1, 3, 10 sequence
AMPLITUDE	
MEASUREMENT RANGE Maximum Safe Input Power Average Continuous Power Input Attenuation ≥ 10 dB Peak Pulse Power Input Attenuation ≥ 30 dB DC Gain Compression With ≤ -3 dBm at Input Mixer 10 MHz to 22 GHz (Input mixer power = Input power - Input Attenuation)	+ 30 dBm (1 Watt) + 50 dBm (100 Watts) for pulse widths $< 10 \mu\text{s}$ and $< 1\%$ duty cycle 0 Volts < 1.0 dB
* N is the harmonic mixing mode. The desired 1st LO harmonic is always higher than the tuned frequency by the 1st IF frequency (3.9107 GHz for the 1 kHz to 2.9 GHz band and 310.7 MHz for all other bands).	

Table 1-1. HP 8562A/B Specifications (3 of 8)

AMPLITUDE (Continued)		
Displayed Average Noise Level With no signal at input, 100 Hz resolution bandwidth, 1 Hz video bandwidth, and 0 dB input attenuation		
Frequency Range	HP 8562A	HP 8562B
10 kHz	< -90 dBm	< -90 dBm
100 kHz	< -100 dBm	< -100 dBm
1 MHz to 2.9 GHz	< -121 dBm	< -121 dBm
2.9 GHz to 6.46 GHz	< -121 dBm	< -121 dBm
6.46 GHz to 13.0 GHz	< -110 dBm	< -110 dBm
13.0 GHz to 19.7 GHz	< -105 dBm	< -105 dBm
19.7 GHz to 22.0 GHz	< -100 dBm	< -100 dBm
Spurious Responses		
All input-related spurious responses, except as noted below, with < -40 dBm mixer level ¹	HP 8562A < -60 dBc 10 MHz to 6.46 GHz	HP 8562B < -60 dBc 10 MHz to 2.9 GHz
Second Harmonic Distortion		
Frequency Range	HP 8562A	HP 8562B
10 MHz to 2.9 GHz	< -72 dBc, -40 dBm Mixer Level ¹	< -72 dBc, -40 dBm Mixer Level ¹
2.75 GHz to 22.0 GHz	< -100 dBc, -10 dBm Mixer Level ¹	< -60 dBc, -40 dBm Mixer Level ¹
Third Order Intermodulation Distortion		
With -30 dBm total power at input mixer ¹		
Frequency Range	HP 8562A	HP 8562B
10 MHz to 2.9 GHz	< -70 dBc	< -70 dBc
2.75 GHz to 22 GHz	< -75 dBc	< -75 dBc
Image, Multiple, and Out-of-Band Responses		
Frequency Range	HP 8562A	HP 8562B
10 MHz to 18 GHz	< -70 dBc	unspecified
10 MHz to 22 MHz	< -60 dBc	unspecified
Residual Responses		< -90 dBm
200 kHz to 6.46 GHz, with no signal at input, 0 dB input attenuation		
DISPLAY RANGE		
Amplitude Scale	10 vertical CRT divisions with the reference level (0 dB) at the top graticule line	
¹ Mixer level = Input level - input attenuation		

Table 1-1. HP 8562A/B Specifications (4 of 8)

AMPLITUDE (Continued)		
DISPLAY RANGE (Continued)		
Calibration		
Log	10 dB/Div for 90 dB display from reference level 5 dB/Div for 50 dB display expanded from reference level** 2 dB/Div for 20 dB display expanded from reference level 1 dB/Div for 10 dB display expanded from reference level**	
Linear	10% of reference level per division when calibrated in voltage	
Reference Level Range		
Log, adjustable in 0.1 dB steps		
Frequency Band	Range (dBm)	
10 kHz to 2.9 GHz	-120 to +30	
2.75 GHz to 6.46 GHz	-120 to +30	
5.86 GHz to 13.0 GHz	-115 to +30	
12.4 GHz to 19.7 GHz	-105 to +30	
19.1 GHz to 22.0 GHz	-100 to +30	
Linear, settable in 1% steps		
Frequency Band	Range	
10 kHz to 2.9 GHz	2.2 μ V to 7.07V	
2.75 GHz to 6.46 GHz	2.2 μ V to 7.07V	
5.86 GHz to 13.0 GHz	4.0 μ V to 7.07V	
12.4 GHz to 19.7 GHz	12.6 μ V to 7.07V	
19.1 GHz to 22.0 GHz	22 μ V to 7.07V	
AMPLITUDE ACCURACY		
REFERENCE LEVEL UNCERTAINTY		
Frequency Response		
With 10 dB input attenuation		
In-Band		
Frequency Range	HP 8562A	HP 8562B
1 kHz to 2.9 GHz	< ± 1.2 dB	< ± 1.2 dB
2.9 GHz to 6.46 GHz	< ± 2.5 dB	< ± 2.0 dB
6.46 GHz to 13.0 GHz	< ± 3.5 dB	< ± 2.5 dB
13.0 GHz to 19.7 GHz	< ± 4.0 dB	< ± 3.0 dB
19.7 GHz to 22.0 GHz	< ± 4.3 dB	< ± 4.3 dB
Referenced to CAL OUTPUT (300 MHz)		
1 kHz to 22.0 GHz	< ± 5.1 dB	< ± 5.1 dB
**These scales are available only in sweep times ≥ 30 ms (digital display mode).		

Table 1-1. HP 8562A/B Specifications (5 of 8)

AMPLITUDE ACCURACY (Continued)		
	HP 8562A	HP 8562B
Band Switching Uncertainty Additional uncertainty added to In-Band Frequency Response for measurements between any two bands.	< +0.5 dB	< +0.5 dB
Calibrator Uncertainty (-10 dBm, 300 MHz)	< ±0.3 dB	
Input Attenuator Switching Uncertainty 20 to 70 dB settings, referenced to 10 dB input attenuation Frequency Range 1 kHz to 12.4 GHz 12.4 GHz to 19.4 GHz 19.4 GHz to 22.0 GHz	< ±1.1 dB/10 dB step, 2.0 dB max < ±1.3 dB/10 dB step, 2.5 dB max < ±1.8 dB/10 dB step, 3.5 dB max	
IF Gain Uncertainty 0 dBm to -80 dBm reference levels with 10 dB input attenuation	< ±1.0 dB	
Resolution Bandwidth Switching Uncertainty Referenced to 300 kHz resolution bandwidth	< ±0.5 dB	
IF Alignment Uncertainty Uncertainty when using 100 Hz and 300 Hz resolution bandwidths 300 Hz resolution bandwidth 100 Hz resolution bandwidth	< ±0.5 dB < ±2.0 dB	
Pulse Digitization Uncertainty Pulse response mode, PRF >720/sweep time Log Linear	< 1 dB peak-to-peak < 4% of reference level peak-to-peak	
SCALE FIDELITY		
Log	< ±0.4 dB/4 dB from reference level to a maximum of ±1.5 dB over 0 to 90 dB range	
Linear	< ±3% of reference level	

Table 1-1. HP 8562A/B Specifications (6 of 8)

SWEEP	
Sweep Time Range Span = 0 Span = 0 Span ≥ 10 kHz Accuracy (Span = 0) Sweep time ≥ 30 ms Sweep time < 30 ms Sweep Trigger	50 μ s to < 30 ms (analog display) 30 ms to 60 s (digital display) 50 ms to 100 s (digital display) $< \pm 1\%$ $< \pm 15\%$ Free Run, Single, Line, Video, External
INPUTS AND OUTPUTS	
IF INPUT Connector Input level for full-screen deflection (external mixing mode, 0 dBm reference level, 30 dB conversion loss) HP-IB Connector Interface Functions Direct Plotter Output CAL OUTPUT Connector Frequency Amplitude 1ST LO OUTPUT Connector Amplitude 10 MHz REF IN/OUT Connector Frequency	SMA female, front panel -30 dBm ± 1.5 dB IEEE-488 bus connector SH1, AH1, T6, TE0, L4, LE0, SR1, RL1, PPI, DC1, DT0, C1, C28, E1 Supports HP 7225A, HP 7440A, HP 7470A, HP 7475A, HP 7550A, HP 9872A/B/C/T BNC female, front panel 300 MHz $\pm (300 \text{ MHz} \times \text{frequency reference accuracy})$ -10 dBm ± 0.3 dB SMA female, front panel +16.5 dBm ± 2.0 dB (20°C to 30°C) BNC female, rear panel 10 MHz $\pm (10 \text{ MHz} \times \text{frequency reference accuracy})$
GENERAL	
Environmental Military Specification Calibration Interval Warmup	Per MIL-T-28800C, Type III, Class 3 Style C as follows: 1 year 5 minutes from ambient conditions***
*** 2 hours for conditions of internal condensation, 30 minutes to meet frequency response specifications without preselector peaking	

Table 1-1. HP 8562A/B Specifications (7 of 8)

GENERAL (Continued)	
Environmental (Continued)	
Temperature	
Operating	-10°C to +55°C
Non-operating	-62°C to +85°C
Humidity	95% at 40°C for 5 days
Altitude	
Operating	15000 feet
Non-operating	50000 feet
Rain Resistance	Drip-proof at 16 liters/hour/square foot
Vibration	
5 to 15 Hz	0.059 inch peak-to-peak excursion
15 to 25 Hz	0.039 inch peak-to-peak excursion
25 to 55 Hz	0.020 inch peak-to-peak excursion
Pulse Shock	
Half Sine	30 g for 11 ms duration
Transit Drop	8-inch drop on 6 faces and 8 corners
Electromagnetic Compatibility	<p>Conducted and radiated interference is in compliance with CISPR publication 11 (1985) and Messempefaenger-Postverfuegung 526/527/79 (Kennzeichnung Mit F-Nummer/Funkschutzzeichen). Meets the requirements of MIL-STD-461B, Part 4, with the exceptions shown below.</p> <p>Conducted Emissions</p> <p>CE01 (Narrowband): 1 kHz to 15 kHz only</p> <p>CE03 (Narrowband): Full limits</p> <p>CE03 (Broadband): 20 dB relaxation from 15 kHz to 100 kHz</p> <p>Conducted Susceptibility</p> <p>CS01: Full limits (limited to 36 Hz for HP 8562B)</p> <p>CS02: Full limits</p> <p>CS06: Full limits</p> <p>Radiated Emissions</p> <p>RE01: 15 dB relaxation to 30 kHz and exceptioned from 30 kHz to 50 kHz</p> <p>RE02: Full limits to 1 GHz</p> <p>Radiated Susceptibility</p> <p>RS01: Full limits</p> <p>RS02: Exceptioned</p> <p>RS03: Limited to 1 V/m from 14 kHz to 1 GHz, with 20 dB relaxation at IF frequencies (30 dB relaxation at IF frequencies for Option 001 instruments)</p>

Table 1-1. HP 8562A/B Specifications (8 of 8)

GENERAL (Continued)		
Power Requirements		
115 Vac Operation		
Voltage	90 to 140V rms	
Current	3.2A rms max	
Frequency	47 to 440 Hz	
230 Vac Operation		
Voltage	180 to 250V rms	
Current	1.8A rms max	
Frequency	47 to 66 Hz	
Maximum Power Dissipation	180 Watts	
Weight	HP 8562A 20 kg (44 lbs)	HP 8562B 19 kg (41.8 lbs)
Dimensions		
Without handle or cover	184 mm high x 337 mm wide x 460.5 mm deep	
With handle and cover	200 mm high x 373 mm wide x 500 mm deep	

Legend: inches
(millimeters)