General Information Model 8656A

Table 1-1. Specifications (1 of 3)

Electrical Characteristics	Performance Limits	Conditions
FREQUENCY Range Resolution	100 kHz to 990 MHz 100 Hz 250 Hz	
SPECTRAL PURITY Spurious Signals: Harmonics Non-harmonics Sub-harmonics	<-30 dBc <-60 dBc None	≤+7 dBm output levels >5 kHz from carrier in CW mode
Residual Modulation CW Mode: AM (0.05 to 15 kHz Post Detection Noise Bandwidth)	<-70 dBc	0.1 to 990 MHz
FM (0.3 to 3 kHz Post Detection Noise Bandwidth)	<15 Hz rms <3 Hz rms <6 Hz rms <15 Hz rms	0.1 to 123.5 MHz 123.5 to 247 MHz 247 to 494 MHz 494 to 990 MHz
FM (0.05 to 15 kHz Post Detection Noise Bandwidth)	<30 Hz <8 Hz <16 Hz <30 Hz	0.1 to 123.5 MHz 123.5 to 247 MHz 247 to 494 MHz 494 to 990 MHz
OUTPUT Level Range Resolution Absolute Level Accuracy ¹	+13 dBm to −127 dBm 0.1 dB ≤±1.5 dB	Into 50 ohms Output levels of +13 dBm to -127 dBm; frequencies from 100 kHz to 990 MHz
Level Flatness	≤±1.0 dB	Output level setting of 0.0 dBm; frequencies from 100 kHz to 990 MHz
AMPLITUDE MODULATION Depth ²	0 to 99%	Output levels of +7 dBm and below; frequencies from 100 kHz to 990 MHz
	0 to 30%	Output levels of +10 dBm and below; frequencies from 100 kHz to 990 MHz
Resolution	1%	
Incidental Phase Modulation	<0.3 radian peak	30% AM depth and internal rates

¹Absolute level accuracy includes allowances for detector linearity, temperature, flatness, attenuator accuracy, and measurement error.

²AM depth is further limited by the Indicator Accuracy specification.

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Table 1-1. Specifications (2 of 3)

Electrical Characteristics	Performance Limits	Conditions
AMPLITUDE MODULATION		
(Cont'd)		
Indicator Accuracy ²	±2% (±4% of reading)	Depths <90% and internal rates
AM Rates:		
Internal	400 and 1 kHz, ±3%	
External	25 Hz to 25 kHz	1 dB bandwidth, ac coupled
AM Distortion	<1.5%	0 to 30% AM
(internal rates)	<3%	31 to 70% AM
	<5%	71 to 90% AM
FM MODULATION		
Maximum Peak Devia-		
tion $(\Delta f p k)$: ³		
Rates ≥60 Hz	99 kHz	0.1 to 123.5 MHz (fc)
	25 kHz	123.5 to 247 MHz (fc)
	50 kHz	247 to 494 MHz (fc)
	99 kHz	494 to 990 MHz (fc)
Rates <60 Hz	1600 x Rate	0.1 to 123.5 MHz (fc)
	400 x Rate	123.5 to 247 MHz (fc)
	800 x Rate	247 to 494 MHz (fc)
	1600 x Rate	494 to 990 MHz (fc)
		(FM not specified for fc — Δ fpk <100 kHz)
Resolution	0.1 kHz	Deviations <10 kHz
	1 kHz	Deviations ≥10 kHz
Incidental AM	<0.1%	<20 kHz peak deviation and internal rates
		and carrier frequency ≥500 kHz.
Indicator Accuracy ³	±5% of reading	At internal rates. Add $\pm 5\%$, if 250 Hz
		frequency increments are used.
FM Distortion (Total	<0.5%	100 Hz to 99 kHz peak deviations and
Harmonic Distortion)		internal rates.
FM Rates:		
Internal	400 and 1 kHz, $\pm 3\%$	
External	25 Hz to 25 kHz	1 dB bandwidth, ac coupled
GENERAL		
Operating Temperature	0 to 55°C	
Range		
Power Requirements		
Line Voltage	100, 120, 220, or 240 Vac,	
	+5%, -10%	

 $^{^2\}mathrm{AM}$ depth is further limited by the Indicator Accuracy specification.

³FM deviation is further limited by the Indicator Accuracy specification.

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Table 1-1. Specifications (3 of 3)

Electrical Characteristics	Performance Limits	Conditions
GENERAL (Cont'd)		
Line Frequency	48 to 66 Hz	
Power Dissipation	125VA maximum	
Conducted and Radiated Electromagnetic Interference	MIL STD 461A, VDE 0871	Conducted and radiated interference is within the requirements of methods CE03 and RE02 of MIL STD 461A, VDE 0871, and CISPR Publication 11.
	<1.0 μV	Induced in a two-turn 2.5 cm (1 inch) diameter loop held 2.5 cm (1 inch) away from the front surface.
Net Weight	18.1 kg (40 lb)	
Dimensions (Full Envelope):		
Height	133 mm (5.25 in.) nominal	NOTE: For ordering cabinet accessories, the
Width Depth	425 mm (16.75 in.) nominal 520 mm (20.5 in.) nominal.	module sizes are 5-1/4H, 1MW, 17D.
Electrical Characteristics	Features	
REMOTE OPERATION HP-IB (IEEE 488) Capability:		
Interface	Hewlett-Packard Interface Bus (HP-IB). HP-IB is Hewlett-Packard's implementation of IEEE Standard 488 (and the identical ANSI Standard MC1.1). The Signal Generator's compatibility with HP-IB is defined by the following list of interface functions: SH0, AH1, T0, L2, SR0, RL1, PP0, DC1, DT0, and C0.	
Functions Controlled	All functions controlled from the front panel with the exception of DIS-PLAY, DISPLAY in conjunction with SEQ, Backspace, COARSE TUNE, FINE TUNE, and display HP-IB ADRS are programmable with the same accuracy and resolution as in local operation.	