

Table 1-1. Specifications for 86242D, 86245A, and 86250D Installed in 8620C (1 of 2)

Specifications with RF Plug-in installed in 8620C Sweep Oscillator Mainframe	SPECIFICATIONS		
	86242D	86245A	86250D
FREQUENCY¹			
FREQUENCY RANGE, Calibrated:	5.9 – 9.0 GHz	5.9 – 12.4 GHz	8.0 – 12.4 GHz
FREQUENCY ACCURACY² (at 25°C and with FM-NORM-PL switch in NORM position: CW Mode: ³ All Sweep Modes (Sweep Time >0.1 sec):	±35 MHz ±40 MHz	±40 MHz ±50 MHz	±40 MHz ±50 MHz
FREQUENCY STABILITY:			
With Temperature:	<±750 kHz/°C	<±1.2 MHz/°C	<±1.2 MHz/°C
With 10% Line Voltage Change:	<±40 kHz	<±40 kHz	<±40 kHz
With 10 dB Power Level Change from Specified Maximum Power:	<±1.5 MHz	<±1.5 MHz	<±1.5 MHz
With 3:1 SWR Load Variation, All Phases:	<±250 kHz	<±250 kHz	<±250 kHz
RESIDUAL FM in 10 kHz BANDWIDTH:² CW Mode: FM-NORM-PL switch in NORM position:	<15 kHz peak	<15 kHz peak	<15 kHz peak
POWER OUTPUT¹			
POWER LEVEL:^{2,10} (For calibrated frequency range at 25°C): Maximum Leveled Power: Internally Leveled (Option 001):	>+10 dBm (10 mW) >+10 dBm (10 mW)	>+17 dBm (50 mW) >+17 dBm (50 mW)	>+10 dBm (10 mW) >+10 dBm (10 mW)
POWER VARIATION (at specified maximum power):			
Crystal Detector Leveled (External): ^{4,8}	<±0.1 dB	<±0.1 dB	<±0.1 dB
Power Meter Leveled (External): ^{4,5}	<±0.1 dB	<±0.1 dB	<±0.1 dB
Internally Leveled (Option 001):	<±0.5 dB	<±0.6 dB	<±0.5 dB
Power Control Range:	10 dB	10 dB	10 dB
EQUIVALENT SOURCE SWR:² Internally Leveled (Option 001):	<1.6	<1.6	<1.6
SPURIOUS SIGNALS (in dB below fundamental signal at specified maximum power):			
Harmonics:	>30 dB	>17 dB (5.9 – 7.0 GHz) >30 dB (7.0 – 12.4 GHz)	>30 dB
Nonharmonics:	>60 dB	>60 dB	>60 dB
RESIDUAL AM: (AM noise in 100 kHz bandwidth):			
Residual AM:	≥50 dB below carrier at specified maxi- mum power	≥50 dB below carrier at specified maxi- mum power	≥50 dB below carrier at specified maxi- mum power

Table 1-1. Specifications for 86242D, 86245A, and 86250D Installed in 8620C (2 of 2)

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	86242D		86245A		86250D	
MODULATION¹						
EXTERNAL FM² (FM-NORM-PL switch in FM position):						
FM Frequency Response:						
DC to 2 MHz:	±1.5 dB	±1.5 dB	±1.5 dB	±1.5 dB	±1.5 dB	±1.5 dB
DC to 10 MHz ⁹ :	±1.5 dB	±1.5 dB	±1.5 dB	±1.5 dB	±1.5 dB	±1.5 dB
Maximum Deviation for Modulation Frequencies:						
DC to 100 Hz (all instruments):	±150 MHz	±150 MHz	±150 MHz	±150 MHz	±150 MHz	±150 MHz
DC to 1 kHz (Option 008 excluded):	±15 MHz	±15 MHz	±15 MHz	±15 MHz	±15 MHz	±15 MHz
DC to 2 MHz (Option 008 excluded):	±5 MHz	±5 MHz	±5 MHz	±5 MHz	±5 MHz	±5 MHz
90 kHz to 1 MHz ⁹ :	±7 MHz	±7 MHz	±7 MHz	±7 MHz	±7 MHz	±7 MHz
90 kHz to 5 MHz ⁹ :	±5 MHz	±5 MHz	±5 MHz	±5 MHz	±5 MHz	±5 MHz
90 kHz to 10 MHz ⁹ :	±1.5 MHz	±1.5 MHz	±1.5 MHz	±1.5 MHz	±1.5 MHz	±1.5 MHz
INTERNAL AM (Below maximum leveled power):						
1 kHz square wave. RF Blanking, and Marker ON/OFF Ratio:	>40 dB	>40 dB	>40 dB	>40 dB	>40 dB	>40 dB
EXTERNAL AM (LINEAR-SQ WAVE switch in SQ WAVE position): ^{2,7}						
Symmetry: ⁶	40/60	40/60	40/60	40/60	40/60	40/60
ON/OFF Ratio (>+1 volt input) (down from specified maximum power):	>40 dB	>40 dB	>40 dB	>40 dB	>40 dB	>40 dB
UPCONVERTER SIMULATION⁹:						
*Across 30 MHz Sweep Width;						
**Across 50 MHz sweep width:	*	**	*	**	*	**
Linearity at 277 kHz:	≤0.5%	≤0.83%	≤0.5%	≤0.83%	≤0.5%	≤0.83%
Group Delay at 277 kHz:	≤1 ns	≤1.7 ns	≤1 ns	≤1.7 ns	≤1 ns	≤1.7 ns
Differential Gain at 5.6 MHz:	≤0.5%	≤0.83%	≤0.5%	≤0.83%	≤0.5%	≤0.83%
Differential Phase at 5.6 MHz:	≤1°	≤1.7°	≤1°	≤1.7°	≤1°	≤0.83%

¹ Unless otherwise noted, all specifications are at RF OUTPUT and at 0 to 55 degrees C.

² Supplemental characteristics are listed in Table 1-2.

³ Approach desired frequency from low-frequency end of band.

⁴ Excluding coupler and detector variation.

⁵ Use HP Model 432A/B/C power meter. Sweep Duration >10 seconds.

⁶ Specific requirements for compatibility with HP 8755A/B: ±6V, 27.8 kHz squarewave MODULATOR DRIVE output connected to EXT AM input.

⁷ LINEAR-SQ WAVE switch A3S1 is located on A3 ALC Assembly.

⁸ Crystal Detector input to ALC EXT INPUT should be from -55 to -525 mV for specified leveling at specified power output. For use with negative polarity detectors such as HP Model 780 series Directional Detectors, and HP Models 423A/B and 424 Series Crystal Detectors.

⁹ Specification applies to upconverter versions only (Option 008).

¹⁰ For Option 008, less 1 dB (power loss due to insertion loss of additional isolator).

Table 1-2. Supplemental Characteristics (1 of 2)

SUPPLEMENTAL CHARACTERISTICS			
NOTE: Values in this table are not specifications but are typical characteristics included for user information.			
FREQUENCY	86242D	86245A	86250D
FREQUENCY ACCURACY: (FM-NORM-PL switch in NORM position): START-STOP end points and ΔF center frequency: Sweep Time 0.01 to 0.1 sec:	± 35 MHz	± 60 MHz	± 60 MHz
MARKER: Sweep Time 0.01 to 0.1 sec:	± 40 MHz	± 65 MHz	± 65 MHz
ΔF SWEEP WIDTH: MANUAL Sweep: AUTO Sweep (Sweep time 0.01 to 0.1 sec):	$\pm 1\%$ of range $\pm 5\%$ of range	$\pm 1\%$ of range $\pm 5\%$ of range	$\pm 1\%$ of range $\pm 5\%$ of range
CW REMOTE PROGRAMMING: CW Frequency:	$< \pm 5$ MHz	$< \pm 20$ MHz	$< \pm 20$ MHz
RESIDUAL FM IN 10 kHz BANDWIDTH: (FM-NORM-PL switch in NORM position): MANUAL Sweep Mode: AUTO Sweep Mode: All MANUAL, CW, or AUTO sweep modes with FM-NORM-PL switch in FM or PL position:	< 15 kHz peak < 30 kHz peak < 30 kHz peak	< 15 kHz peak < 30 kHz peak < 30 kHz peak	< 15 kHz peak < 30 kHz peak < 30 kHz peak
FREQUENCY STABILITY: DRIFT (per 10 minute interval after 30-minute warm-up):	± 600 kHz	± 600 kHz	± 600 kHz
POWER			
POWER LEVEL: Stability with Temperature Change:	$< \pm 0.1$ dB/ $^{\circ}$ C	$< \pm 0.1$ dB/ $^{\circ}$ C	$< \pm 0.1$ dB/ $^{\circ}$ C
Dynamic Range of POWER LEVEL Control (while maintaining 60/40 symmetry of internal 1 kHz square wave): Leveled: Unleveled:	$> +10$ dBm to < -3 dBm > 20 dB	$> +17$ dBm to $< +4$ dBm > 20 dB	$> +10$ dBm to < -3 dBm > 20 dB
POWER VARIATION: (over dynamic range of POWER LEVEL control): Internally Leveled (Option 001): Unleveled:	$< \pm 0.4$ dB $< \pm 3$ dB	$< \pm 0.4$ dB $< \pm 3$ dB	$< \pm 0.4$ dB $< \pm 3$ dB
SOURCE SWR: Unleveled:	< 2.5	< 2.5	< 2.5

Table 1-2. Supplemental Characteristics (2 of 2)

SUPPLEMENTAL CHARACTERISTICS

NOTE: Values in this table are not specifications but are typical characteristics included for user information.

MODULATION	86242D	86245A	86250D
<p>EXTERNAL FM:³ Sensitivity: FM-NORM-PL Switch in FM or NORM: FM-NORM-PL Switch in PL: Upconverter Mode (Option 008):</p> <p>Maximum Deviation: FM-NORM-PL Switch in NORM (DC-100 Hz): FM-NORM-PL Switch in PL (DC-100 Hz):</p>	<p>-20 MHz/V -6 MHz/V +20 MHz/V</p> <p>±18 MHz ±50 MHz</p>	<p>-20 MHz/V -6 MHz/V +20 MHz/V</p> <p>±18 MHz ±50 MHz</p>	<p>-20 MHz/V -6 MHz/V +20 MHz/V</p> <p>±18 MHz ±50 MHz</p>
<p>EXTERNAL AM (LINEAR-SQ WAVE switch A3S1 in LINEAR position): Frequency Response (with RF signal 6 dB down from specified maximum power): Leveled or Unleveled:</p> <p>Sensitivity:¹ ON/OFF Ratio (Down from specified maximum power with >+6V input):</p>	<p>DC to >30 kHz</p> <p>>20 dB</p>	<p>DC to >30 kHz</p> <p>>20 dB</p>	<p>DC to >30 kHz</p> <p>>20 dB</p>
<p>EXTERNAL AM (LINEAR-SQ WAVE switch A3S1 in SQ WAVE position): Symmetry² (between specified maximum power and -3 dBm):</p>	<p>45/55</p>	<p>45/55</p>	<p>45/55</p>

OSCILLATOR TYPE: Fundamental.

NET WEIGHT: Approximately 2.2 kg (5 lb)

DIMENSIONS: Approximately 15 mm x 13 mm x 30 mm (6 in. x 5 in. x 12 in.)

OUTPUT IMPEDANCE of RF OUTPUT connector: 50 ohms nominal

¹ 20% reduction in power with +1 volt input.

² Specific requirements for compatibility with HP 8755A/B ±6V, 27.8 kHz squarewave MODULATOR DRIVE output connected to EXT AM.

³ A positive voltage input decreases frequency except for Option 008.