

KEYSIGHT TECHNOLOGIES (AGILENT HP)

83622B

The Keysight/Agilent/HP 83622B is a high-performance synthesized sweeper that offers a frequency range of 2.0 to 20 GHz. Designed for applications requiring the precision of a synthesized source and the speed of a sweep oscillator, it features indirect synthesis for low phase noise, extensive sweep modes, and versatile modulation capabilities including pulse, amplitude, and frequency modulation.

SPECIFICATIONS

General

Interfaces	GPIB (IEEE-488)
Display	Monochrome CRT

Physical

Power Supply	90 to 132 VAC / 198 to 264 VAC, 48 to 440 Hz, 400 VA maximum
Operating Temperature	0 to 55 °C °C
Dimensions (W×H×D)	425 mm × 178 mm × 648 mm mm
Weight	27 kg kg

Frequency Specifications

Frequency Range	2.0 to 20 GHz
Standard Frequency Resolution	1 kHz
Frequency Resolution (Option 008)	1 Hz
Synthesis Type	Indirect synthesis

RF Output Specifications

Maximum Leveled Power	+13 dBm
Minimum Leveled Power (Option 001)	-110 dBm

Spectral Purity

Harmonics (< 20 GHz)	<-50 dBc
SSB Phase Noise (10 kHz offset)	<-80 dBc/Hz at 10 GHz

Modulation Capabilities

Modulation Capabilities	Pulse, amplitude, and frequency modulation
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Sweep Modes & Triggering

Sweep Modes	CW, manual, step, list, ramp
Sweep Control Functions	Start/stop, center/span, marker (M1-M2), alternate sweep
Sweep Trigger Sources	Auto, external, single, or GPIB
CW Mode Accuracy	Same as time base
Manual Mode Accuracy	Same as time base
Step Sweep Number of Points	2 to 801
Step Sweep Dwell Time Range	1 ms to 10 s
Step Sweep Accuracy	Same as time base
Step Sweep Minimum Step Size	Same as frequency resolution
List Sweep Number of Points	1 to 801
List Sweep Dwell Time Range	1 ms to 10 s
List Sweep Accuracy	Same as time base
List Sweep Minimum Step Size	Same as frequency resolution
Ramp Sweep Time Range	10 ms to 100 s
Ramp Sweep Maximum Rate	300 MHz/ms
Ramp Sweep Accuracy (sweep time ≥ 100 ms and ≤ 5 s)	Lesser of 1% of sweep width or $n \times 1$ MHz + 0.1% of sweep width (for sweep widths $> n \times 10$ MHz)

Performance

CW Switching Time (within frequency band)	< 15 ms
Step or List Mode Switching Time (within frequency band)	< 5 ms
Non-harmonic Spurious	< -60 dBc (at offsets > 3 kHz from carrier)

RF Output

RF Output Connector	Precision 3.5 mm female
Output Impedance	50 Ω nominal

Level

Level Resolution	0.1 dB
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Frequency Reference

Internal Reference Frequency	10 MHz
External Reference Input	1, 2, 5, or 10 MHz (± 5 ppm)
External Reference Input Level	-3 to +20 dBm

Modulation

External AM 3 dB Bandwidth	DC to 100 kHz
External FM Rate (Locked)	100 kHz to 8 MHz
External FM Rate (Unlocked)	100 Hz to 1 MHz
Pulse Modulation Rise/Fall Time	< 10 ns
Pulse Modulation On/Off Ratio	> 80 dB
Pulse Modulation Minimum Pulse Width	< 50 ns (unleveled), < 1 μ s (leveled)
External Pulse Input Threshold	TTL compatible
Internal Modulation Generator Waveforms	Sine, square, triangle, ramp, noise (Option 002 dependent)
Internal Pulse Width Range	25 ns to 419 ms (Option 002 dependent)

System & Control

GPIO Command Languages	SCPI, HP 8340B/8341B emulation
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Output

Output Flatness	± 0.6 dB
Output SWR	< 2.0
Power Level Accuracy	± 0.9 dB
Power Sweep Range	> 15 dB (standard) / > 125 dB (with Option 001 step attenuator)

Reference

Internal Reference Aging Rate	< 1×10^{-9} / day, < 2.5×10^{-7} / year (after 72-hour warm-up)
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TECHNOLOGY

Indirect synthesis

APPLICATIONS

RF and microwave testing, local oscillator emulation, sweep frequency measurements

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