

KEYSIGHT TECHNOLOGIES (AGILENT HP)

83621B

The Keysight (Agilent/HP) 83621B is a high-performance synthesized sweep generator designed specifically as a dedicated source for the Agilent 8510 series microwave vector network analyzers. Operating over a broad frequency range of 45 MHz to 20 GHz with a precise 1 Hz resolution, it combines the speed and versatility of a sweep oscillator with the frequency accuracy of a synthesizer. To reduce system costs, it features a simplified design without a front panel keyboard, display, or modulation circuitry, with complete control managed via the HP 8510 system bus.

SPECIFICATIONS

General

Interfaces	GPIB (IEEE-488.2), HP 8510 System Bus
Display	None (No front panel display or keyboard; fully automated dedicated source)
Warm-up Time	36 hours to meet aging rate specs, 1 hour for standard operation

Physical

Power Supply	90 to 132 VAC (48 to 440 Hz) / 198 to 264 VAC (48 to 66 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	45 MHz to 20 GHz
Frequency Resolution	1 Hz
Frequency Switching Time	< 15 ms (to within 100 Hz)
Internal Reference Frequency	10 MHz
Timebase Aging Rate	< 1 × 10 ⁻⁹ /day (after 30 days warm-up)
Timebase Temperature Stability	< 1 × 10 ⁻⁸ over 0 to 55 °C
External Reference Input Frequency	10 MHz (± 100 Hz)
External Reference Input Level	-3 to +20 dBm (nominal)

RF Output Specifications

Maximum Levelled Power	+10 dBm
Minimum Levelled Power	-20 dBm (without step attenuator)
Power Level Resolution	0.1 dB
Power Flatness (45 MHz to 2 GHz)	±0.5 dB
Power Flatness (2 to 20 GHz)	±0.7 dB
Source Impedance	50 ohms (nominal)
Source SWR (45 MHz to 2 GHz)	< 1.5:1
Source SWR (2 to 20 GHz)	< 2.0:1
Output Connector	Precision 3.5 mm (male)

Spectral Purity

Harmonics (45 MHz to 2 GHz)	< -30 dBc
Harmonics (2 to 20 GHz)	< -50 dBc
Non-Harmonic Spurious (45 MHz to 2 GHz)	< -50 dBc
Non-Harmonic Spurious (2 to 20 GHz)	< -60 dBc
Subharmonics	None (45 MHz to 20 GHz)
Single-Sideband Phase Noise (10 GHz, 10 kHz offset)	-85 dBc/Hz
Single-Sideband Phase Noise (10 GHz, 100 Hz offset)	-70 dBc/Hz
Single-Sideband Phase Noise (10 GHz, 1 kHz offset)	-78 dBc/Hz
Single-Sideband Phase Noise (10 GHz, 100 kHz offset)	-85 dBc/Hz
Single-Sideband Phase Noise (10 GHz, 1 MHz offset)	-110 dBc/Hz

Sweep Modes & Triggering

Sweep Modes	Stepped Sweep, Analog Sweep
Sweep Trigger Sources	External, Internal, Single, GPIB
Sweep Output Voltage	0 to 10 V ramp (nominal)

Modulation

Pulse Modulation	Not supported (no modulation capabilities)
Amplitude Modulation (AM)	Not supported (no modulation capabilities)
Frequency Modulation (FM)	Not supported (no modulation capabilities)
Phase Modulation	Not supported (no modulation capabilities)

System Integration & Interface

HP 8510 System Bus Compatibility	Dedicated link for 8510 systems
Z-Axis Blanking Output	Yes (rear panel)
External ALC Input	Yes (rear panel)
10 MHz Reference Output Level	0 dBm (nominal)

Physical & Electrical Specifications

Storage Temperature Range	-40 to +75 °C
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Options & Configurations

Option 004	Rear Panel RF Output
Option 1E5	High Stability Timebase (aging rate < 5 × 10 ⁻¹⁰ /day)

Power Requirements

AC Input Voltage	90 to 132 VAC / 198 to 264 VAC (auto-selected)
AC Input Frequency	48 to 66 Hz
Power Consumption	400 VA maximum

Environmental

Operating Altitude	Up to 4,570 m (15,000 ft)
Storage Altitude	Up to 15,240 m (50,000 ft)
Operating Humidity	Up to 95% relative humidity at 40 °C

Connectivity

GPIO Interface Functions	SH1, AH1, T6, TE0, L4, LE0, SR1, RL1, PP0, DC1, DT0, C0, E2
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Frequency

Frequency Bands	0.045 - 2.0 GHz (Band 0), 2.0 - 7.0 GHz (Band 1), 7.0 - 13.5 GHz (Band 2), 13.5 - 20 GHz (Band 3)
Phase Offset Adjustment Range	Adjustable in 1° nominal increments

Sweep

Step Sweep Dwell Time Range	1 ms to 10 s
Number of Step Sweep Points	2 to 801
List Sweep Point Limit	Up to 801 points

Power

User Flatness Calibration Points	Up to 801 points
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Control

Programming Languages	SCPI, HP 8340/8341 compatible commands
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Compliance

EMC Compliance	MIL-STD-461C RE02, FCC Class A, CISPR 11/EN 55011 Class A
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Interfaces

Rear Panel Connectors	GPIB, HP 8510 System Bus, External ALC Input, 10 MHz Reference Input/Output, Sweep Output, Stop Sweep, Z-Axis Blanking, Trigger Input/Output
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TECHNOLOGY

Synthesized Sweeper

APPLICATIONS

Dedicated RF source for HP 8510 microwave vector network analyzer systems

Generated by SpecAtlasHub (specatlashub.com). Specifications are compiled from available sources and are subject to change — verify critical values against the manufacturer before purchase.