

KEYSIGHT TECHNOLOGIES (AGILENT HP)

83751B

The Keysight (Agilent/HP) 83751B is a high-power synthesized sweeper that delivers outstanding microwave performance for general-purpose, swept test, and scalar applications. Operating across the 2.0 to 20.0 GHz range, the 83751B combines the accuracy and stability of a synthesized source with the fast sweep speed of a traditional analog sweeper.

SPECIFICATIONS

General

Interfaces	GPIB (IEEE-488)
Display	Vacuum Fluorescent Display (VFD)

Physical

Power Supply	90 to 132 Vac (47 to 440 Hz) or 198 to 264 Vac (47 to 66 Hz), < 250 VA
Operating Temperature	0 to 55 °C °C
Dimensions (W×H×D)	425 mm × 133 mm × 503 mm mm
Weight	16.0 kg

Frequency Specifications

Frequency Range	2.0 to 20.0 GHz
Frequency Resolution (Standard)	100 kHz
Frequency Resolution (Option 1E8)	1 Hz
Internal Reference Aging Rate (Standard)	< 2 × 10 ⁻⁶ per year
Internal Reference Aging Rate (Option 1E5)	< 5 × 10 ⁻¹⁰ per day
Internal Reference Frequency	10 MHz
External Reference Input Frequency	10 MHz (± 5 ppm)
External Reference Input Level	-3 to +20 dBm

RF Output Specifications

Maximum Leveled Power	+17 dBm
Minimum Leveled Power (Standard)	-15 dBm
Minimum Leveled Power (Option 1E1)	-85 dBm
Power Resolution	0.01 dB
Power Level Accuracy	±1.5 dB (typically ±0.7 dB)
Power Level Flatness	±0.6 dB
Output Impedance	50 ohms
Output SWR (Source Match)	< 1.6:1

Spectral Purity

Harmonics	< -30 dBc (at +10 dBm)
Non-harmonics Spurious	< -50 dBc
SSB Phase Noise (10 GHz, 10 kHz offset)	< -75 dBc/Hz
SSB Phase Noise (10 GHz, 100 kHz offset)	< -85 dBc/Hz

Modulation Capabilities

Pulse Modulation On/Off Ratio	> 80 dB
Pulse Rise/Fall Time	< 15 ns
Minimum Pulse Width	< 50 ns

Sweep Modes & Triggering

Sweep Modes	Continuous analog sweep, Stepped sweep, Power sweep, CW
Analog Sweep Time Range	10 ms to 99 s
Step Sweep Time Range	1 ms to 99 s per step
Sweep Trigger Sources	External, Internal, Single, Key, Line
Number of Frequency Markers	5

Inputs & Outputs (Connectivity)

RF Output Connector	3.5 mm (male)
Sweep Output (Ramp Out)	BNC (female), 0 to 10 V
Z-Axis Blanking Output	BNC (female)
External Trigger Input	BNC (female)
External Pulse Input	BNC (female)
External AM Input	BNC (female)
External FM Input	BNC (female)
10 MHz Reference Input	BNC (female)
10 MHz Reference Output	BNC (female)

Remote Programming & Interface

Programming Compatibility	SCPI, Agilent/HP 8350B Compatibility Mode
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Physical & Environmental

Cooling Design	Forced air (fan)
Power Consumption	< 250 VA max
Rackmount Width	Standard 19-inch rack (3U height)

Modulation

Linear AM Sensitivity	100% / V
Log AM Sensitivity	10 dB / V
AM 3 dB Bandwidth	DC to >100 kHz
FM 3 dB Bandwidth (AC-Coupled)	10 kHz to 8 MHz
FM 3 dB Bandwidth (DC-Coupled)	DC to 250 kHz
Maximum FM Deviation	±10 MHz
FM Sensitivity	100 kHz/V, 1 MHz/V, or 10 MHz/V (selectable)
Pulse Input Level	TTL compatible
Internal Pulse Generator Period (Option 1E2)	1 µs to 419 ms
Internal Pulse Generator Width (Option 1E2)	100 ns to 419 ms
Internal Pulse Generator Delay (Option 1E2)	100 ns to 419 ms
Internal Pulse Generator Resolution (Option 1E2)	100 ns

Environmental

Storage Temperature Range	-40 to +75 °C
Operating Humidity Range	Up to 95% relative humidity at +40 °C
Operating Altitude	Up to 4,570 m (15,000 ft)
Non-Operating Altitude	Up to 15,240 m (50,000 ft)

Power

AC Input Voltage	90 - 132 VAC / 198 - 264 VAC (automatic selection)
AC Input Frequency	47 - 440 Hz (90 - 132 VAC) / 47 - 66 Hz (198 - 264 VAC)
Power Sweep Range (Standard)	> 20 dB
Power Sweep Resolution	0.01 dB

Inputs & Outputs

RF Output Connector (Option 1ED)	Type-N (female)
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Frequency

CW Switching Time (Standard)	< 70 ms
CW Switching Time (Option 1E4)	< 15 ms

Sweep

Dwell Time Range	1 ms to 419 s
Dwell Time Resolution	1 ms

TECHNOLOGY

Synthesized Analog Sweeper

APPLICATIONS

Microwave Component Testing, Scalar Network Analysis, Mixer Testing

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