

KEYSIGHT TECHNOLOGIES (AGILENT HP)

83711B

The Keysight (Agilent HP) 83711B is a synthesized CW signal generator spanning a frequency range of 1 GHz to 20 GHz. Designed to balance performance and value, it utilizes fundamental oscillators and switched low-pass filters to achieve high spectral purity with eliminated subharmonics and low harmonic levels. It delivers high output power (typically greater than +14 dBm) and serves as an ideal local oscillator (LO) driver or signal source for non-modulated test applications. An optional step attenuator (Option 1E1) is available to extend its power range down to -110 dBm for receiver sensitivity testing.

SPECIFICATIONS

General

Interfaces	GPIO (IEEE-488.2)
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Physical

Operating Temperature	0 to 55 °C °C
Dimensions (W×H×D)	426 mm W × 133 mm H × 498 mm D mm
Weight	16 kg kg

Frequency

Frequency Range	1 GHz to 20 GHz
Frequency Resolution (Standard)	1 kHz
Frequency Resolution (Option 1E8)	1 Hz
Internal Reference Aging Rate (Standard)	< 2.0 × 10 ⁻⁶ per year
Internal Reference Aging Rate (Option 1E5)	< 1.5 × 10 ⁻⁹ per day
Reference Output Frequency	10 MHz

Amplitude and Output Power

Maximum Output Power	+11 dBm (1 to 18 GHz); +10 dBm (18 to 20 GHz)
Minimum Output Power (Standard)	-4 dBm
Minimum Output Power (Option 1E1)	-110 dBm
Amplitude Resolution	0.01 dB

Spectral Purity

SSB Phase Noise (10 GHz Carrier, 10 kHz Offset)	<-80 dBc/Hz (<-84 dBc/Hz typical)
SSB Phase Noise (10 GHz Carrier, 100 kHz Offset)	<-100 dBc/Hz

Connectivity and Interfaces

RF Output Connector	Precision 3.5 mm male (standard); Type-N female (with Option 1E2)
Programming Language Support	SCPI

Ordering Options and Accessories

Option 1E1	Adds step attenuator for extended minimum power (-110 dBm)
Option 1E2	Type-N RF output connector (replaces 3.5 mm)
Option 1E5	High-stability timebase
Option 1E8	1 Hz frequency resolution
Option 1E9	Rear panel RF output configuration

RF Output

RF Output Impedance	50 Ω (nominal)
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Power

Power Consumption	400 VA (maximum)
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Environmental

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

Options

Option 1E1 Attenuator Range	0 to 110 dB in 10 dB steps
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