

KEYSIGHT TECHNOLOGIES (AGILENT HP)

N5181B

The Keysight N5181B MXG X-Series is a high-performance RF analog signal generator offering a frequency range of 9 kHz up to 3 GHz or 6 GHz. Designed to provide unmatched phase noise, excellent non-harmonic spurious performance, and high output power, it is ideal for testing radar receiver sensitivity, driving receiver front-ends for out-of-band rejection, and characterizing ADC or mixer signal-to-noise ratios.

SPECIFICATIONS

Frequency

Minimum Frequency	9 kHz Hz
Maximum Frequency	6 GHz (option dependent) Hz
Frequency Resolution	0.001 Hz
Reference Output Frequency	10 MHz
Reference Output Amplitude	≥ +4 dBm (into 50 Ω)

Output

Maximum Output Power	+24 dBm (at 1 GHz) dBm
Output Power Range	-144 dBm to +24 dBm (at 1 GHz)
Phase Noise	-146 dBc/Hz at 1 GHz, 20 kHz offset

Modulation

Modulation	AM, FM, Phase (PM), Pulse, Pulse Train
Sweep Modes	Digital step and list
Pulse Modulation On/Off Ratio	> 80 dB
Pulse Modulation Rise/Fall Time	< 10 ns (typical)
AM Depth Range	0 to 100%

General

Reference Oscillator	10 MHz (Internal)
Interfaces	1000BaseT LAN (LXI), USB 2.0, GPIB
Backward Compatibility	Compatible with ESG, MXG, PSG, and 8648x signal generators
Calibration Cycle	3 years

Physical

Power Supply	100-120 V (50/60/400 Hz), 220-240 V (50/60 Hz)
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Frequency Specifications

Frequency Options	3 GHz or 6 GHz
Frequency Switching Speed	800 μs (list mode)

Amplitude Specifications

Maximum Output Power (up to 3 GHz)	+24 dBm (specified with electronic attenuator)
Minimum Settable Power	-144 dBm

Spectral Purity

Harmonic Spurious	-35 dBc (at 1 GHz)
Non-harmonic Spurious	-96 dBc (at 1 GHz, > 10 kHz offset)

Amplitude Modulation (AM)

AM Rate	DC to 50 kHz
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Pulse Modulation

Minimum Pulse Width	20 ns (narrow pulse)
Pulse Train Generator	Integrated

Connectivity and Interfaces

Drivers Supported	SCPI, IVI-COM, MATLAB
Power Sensor Compatibility	Agilent USB power sensor compatible with embedded display and SCPI control

Performance

Amplitude Resolution	0.01 dB
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Inputs & Outputs

RF Output Impedance	50 Ω
RF Output Connector	Type-N (female)
Reverse Power Protection	50 W, 50 VDC maximum

Environmental

Operating Temperature	0 °C to 55 °C
Storage Temperature	-40 °C to 70 °C
Operating Altitude	Up to 4600 m (15,000 ft)

TECHNOLOGY

RF Analog Signal Generation

APPLICATIONS

Radar Receiver Testing, ADC/Mixer Characterization, Receiver Front-End Out-of-Band Rejection

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