KEYSIGHT TECHNOLOGIES (AGILENT HP)

N5182B

The Keysight N5182B is a high-performance MXG X-Series RF Vector Signal Generator, known for its outstanding phase noise, ACPR, and output power characteristics, essential for demanding RF test applications.

SPECIFICATIONS

Frequency

Minimum Frequency	9 kHz Hz
Maximum Frequency	6 GHz Hz
Frequency Resolution	0.01 Hz
Reference Oscillator Aging Rate	±1 ppm/year (standard); ±0.01 ppm/year (Opt. 002)
Frequency Switching Speed (CW Mode)	5 ms (typ)

Output

Maximum Output Power	+18 dBm (standard) dBm
Output Power Range	-144 dBm to +18 dBm (standard)
Phase Noise	-146 dBc/Hz at 20 kHz offset, 1 GHz carrier

Modulation

Modulation	AM, FM, Phase Modulation (ØM), Pulse, ASK, FSK, MSK, PSK, QAM, custom I/Q
Sweep Modes	Step, List
I/Q Modulator Carrier Leakage	<-45 dBc (typ, baseband OFF)
I/Q Modulator Image Rejection	<-45 dBc (typ, baseband OFF)

General

Reference Oscillator	10 MHz internal (standard); external 10 MHz input
Interfaces	1000BaseT LAN (LXI compliant), USB 2.0 (Host & Device), GPIB (IEEE-488)
Display	Integrated
Warm-up Time	60 minutes for rated specifications

Physical

Power Supply	100-240 VAC, 50/60/400 Hz
Dimensions (W×H×D)	426 mm × 88 mm × 489 mm mm
Weight	14.5 kg kg
Rack Units	2U

Frequency Characteristics

Frequency Switching Speed (List Mode)	800 µs

Spectral Purity

Harmonics (1 GHz carrier)	-35 dBc
Non-Harmonic Spurious (1 GHz carrier)	-96 dBc

Analog Modulation

AM Modulation Frequency Range	DC to 50 kHz
FM Deviation (Max at 1 GHz carrier)	4 MHz
PM Deviation (Max at 1 GHz carrier)	2 rad
Narrow Pulse Width	20 ns

Vector Modulation

RF I/Q Modulation Bandwidth	Up to 300 MHz
EVM (160 MHz 802.11ac)	<0.4%
ACPR (W-CDMA 64 DPCH)	≤-73 dBc
Waveform Playback Memory	1024 Msa
Internal Waveform Memory	30 GB (internal, non-removable SSD, Opt. 007); 8 GB (external, removable SSD, Opt. 006)
Baseband Generator Bandwidth	160 MHz
Baseband Generator Mode	Waveform playback and real-time
Real-time I/Q Bandwidth (Baseband Generator)	160 MHz
Supported Wireless Standards	LTE, HSPA+, WLAN (including 802.11ac), GNSS, DVB

Sweep Capabilities

Sweep Modes (Detailed)	Step (Digital), List

External Inputs/Outputs

Low Frequency Output	Yes
10 MHz Reference Output	Yes
Digital I/O (via N5102A)	Yes

Remote Programming and Interfaces

GPIB Interface	Yes
LAN Interface	1000BaseT Ethernet
USB Device Port	USB 2.0 (Device)
USB Host Ports	USB 2.0 (Host)
Programming Language	SCPI, IVI-COM, MATLAB drivers
LXI Compliance	LXI Class C

General Characteristics

Internal Storage	30 GB
Backward Compatibility	ESG, MXG, PSG, 8648x, and more
USB Power Sensor Compatibility	Agilent USB power sensors

RF Output

RF Output Connector	Type N female
Output Impedance	50 Ohm nominal
Output Attenuator Step Size	0.01 dB
Level Accuracy	±0.6 dB (100 MHz to 3 GHz, 0 dBm to +18 dBm); varies with frequency and power
RF Output VSWR	1.5:1 (typ, attenuation >= 10 dB)
RF Output Reverse Power Protection	+50 W

Reference

Reference Input Connector	BNC female
Reference Output Connector	BNC female

Modulation Inputs

External I/Q Inputs	I, Q, and Clock inputs (SMA female)

Control I/O

Trigger In/Out Connectors	BNC female (Event 1, Event 2, Trigger 1, Trigger 2, Ref Out, Marker)

Environmental

Operating Temperature Range	0 °C to 55 °C
Storage Temperature Range	-40 °C to +70 °C
Humidity	5% to 95% relative humidity (non-condensing)
Operating Altitude	Up to 4,600 m (15,000 ft)
Operating Shock	5 g
Operating Vibration	0.05 grms

Power

Power Consumption	400 VA (max), 300 W (typical)
AC Power Frequency	47-63 Hz

Baseband Generator

Baseband Generator Sample Rate	200 MSa/s (Option 657/660); 250 MSa/s (Option 658/659/661/662)
Baseband Generator Vertical Resolution	14 bits

Reference Input/Output

10 MHz Reference Input Level	0 to +10 dBm (nominal +5 dBm)
10 MHz Reference Input Impedance	50 Ohm
10 MHz Reference Output Level	+5 dBm "±2 dB
10 MHz Reference Output Impedance	50 Ohm

Trigger Input/Output

Trigger Input Type	TTL compatible
Trigger Input Impedance	50 Ohm
Trigger Output Type	TTL compatible
Trigger Output Impedance	50 Ohm

TECHNOLOGY

RF Vector Signal Generation

APPLICATIONS

Wireless communication testing, component characterization, radar system development, receiver testing