



VSG60A Vector Signal Generator

50 MHz to 6.0 GHz

40 MHz Streaming Modulation Bandwidth



**-55 dBm to +7 dBm
output power**

**Arbitrary I/Q sample
rates from 12.5 kSPS to
51.2 MSPS. Includes
30.72 MSPS for LTE**

**Stream waveforms of
virtually any size from your
PC or laptop**

**Agile, low phase noise LO
with 200 μ s frequency
hops**

**Amplitude, mixer balance,
and DC offset corrected
over frequency and
temperature**

**Digital oversampling,
baseband filtering, and
harmonic filtering across full
operating range**

**USB-powered, Low-cost,
Powerful software and API included**

VSG60A Agile Vector Signal Generator

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The VSG60A offers the performance and agility of a serious vector signal generator at a fraction of the cost. A low phase noise, agile local oscillator with 200 μ s switch time enables frequency hopping spread spectrum testing. A dual 14-bit DAC runs at 2x or 3x the I/Q symbol rate using digital oversampling to provide a flat, clean baseband. A digitally adjustable internal VCTCXO ensures frequency errors are kept to a minimum over temperature, or an external 10 MHz input may be used for zero ppm frequency error. A trigger output is available to synchronize your VSG60A with other test equipment.

PREPROGRAMMED MODULATION TYPES

CW AM, FM, Pulse, Multitone, Sweep, AWGN, FSK, GFSK, OOK, ASK, MSK, GMSK, BPSK, DBPSK, QPSK, DQPSK, Pi/4DQPSK, OQPSK, 8-PSK, 16-PSK, 16-QAM, 64-QAM, 256-QAM, 802.11a/b/n/ac, arbitrary

DIGITAL MODULATION IMPAIRMENTS

Channel, AWGN, I/Q Offset

CUSTOM MODULATION

Use the API to continuously stream I/Q data to the VSG60A at an arbitrary sample rate up to 51.2 MSPS, or use the software to load a CSV, binary short int, or binary floating point I/Q file. Corrections are automatically applied as the data is streamed to the VSG60A.

Abbreviated Preliminary Specifications

FREQUENCY RANGE

50 MHz to 6 GHz

MODULATION BW

40 MHz

FREQUENCY SWITCH TIME

Queued frequency step time: 200 μ s (rounded up to next I/Q sample clock)

TIMEBASE

Internal 10 MHz VCTCXO with digital adjustment
Stability over temperature: ± 0.28 ppm
Aging: < 1 ppm/year typical

AMPLITUDE

Range: +7 dBm to -55 dBm
Accuracy: ± 2 dB (0.5 dB typical) Baseband
flatness (20 MHz), ± 0.25 dB typical Baseband
flatness (40 MHz), ± 0.5 dB typical

EVM

0.3% typical (1 GHz carrier, 1 MSPS QAM 16, Alpha = 0.35, raised cosine)

SPECTRAL PURITY

Typical Phase Noise (1 GHz)

Offset	dBc/Hz
100 Hz	-89
1 kHz	-114
10 kHz	-125
100 kHz	-127
1 MHz	-135

Non-harmonic spurious: -50 dBc typical for most signals.

Harmonics: -35 dBc typical

MECHANICAL / ENVIRONMENTAL

Power Requirements: USB-powered, 4.5 – 5.25V, 1200 mA typical.

Operating Temperature: 0 to 50 °C

Size and Weight: 8.63" x 3.19" x 1.19", 0.81 lb. (367 gm)