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 µs 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

www.SignalHound.com
VSG60A Agile Vector Signal Generator
16 July 2019

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 µs 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
Queue frequency step time: 200 µs (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)

<table>
<thead>
<tr>
<th>Offset</th>
<th>dBC/Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 Hz</td>
<td>-89</td>
</tr>
<tr>
<td>1 kHz</td>
<td>-114</td>
</tr>
<tr>
<td>10 kHz</td>
<td>-125</td>
</tr>
<tr>
<td>100 kHz</td>
<td>-127</td>
</tr>
<tr>
<td>1 MHz</td>
<td>-135</td>
</tr>
</tbody>
</table>

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)