Signal Hound

VSG200 Vector Signal Generator
PRELIMINARY

Signal Hound designs and builds premium accessible test and measurement equipment for engineers and RF professionals around the globe.

ADVANCED SIGNAL GENERATION ACROSS A WIDE FREQUENCY RANGE, DELIVERING 40 MHz OF REAL-TIME STREAMING BANDWIDTH IN A COMPACT FORM FACTOR.

The VSG200 offers the performance and agility of a fully-featured vector signal generator and includes a powerful software suite. 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 VSG200 with other test equipment.

APPLICATIONS

- General purpose RF test & measurement
- General purpose RF signal generation
- Arbitrary RF waveform generation
- Pulse / FM chirp generation
- Amplifier EVM testing
- CCDF
- Channel characterization
- WiFi / Bluetooth testing
- Manufacturing test
- Receiver testing with signal impairments
- Antenna pattern measurement

FEATURES

- RF Frequency Range: 100 kHz to 20 GHz
- 40 MHz of real-time streaming bandwidth
- Amplitude Range: -55 dBm to +7 dBm, +10 dBm below 3 GHz
- Arbitrary I/Q sample rates from 12.5 kSPS to 51.2 MSPS
- Low phase noise LO
- External 10 MHz input and trigger output

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Preliminary Specifications

Frequency Range	100 kHz to 20 GHz
Streaming Modulation Bandwidth	• 40 MHz
Arbitrary I/Q Sample Rates	• 12.5 kSPS to 51 MSPS • Includes 30.72 MSPS for LTE
Timebase Accuracy	• ±1 ppm per year
Amplitude Accuracy	Range: -55 dBm to +7 dBm (+10 dBm below 3 GHz, +4 dBm above 14 GHz) Accuracy: +/- 2 dB (0.5 dB typical) Baseband • Flatness (20 MHz), ±0.25 dB typical Baseband • Flatness (40 MHz), ±0.5 dB typical
Error Vector Magnitude	0.3% typical (1 GHz carrier, 1 MSPS QAM 16, Alpha = 0.35, raised cosine)
Phase Noise (1 GHz)	Offset Frequency — dBc/Hz typical • 100 Hz — -89 • 1 kHz — -114 • 10 kHz — -125 • 100 kHz — -127 • 1 MHz — -135
Non-harmonic spurious	-50 dBc typical for most signals, < 6 GHz, -40 dBc above 6 GHz
Harmonics	-35 dBc typical
Operating Temperature	Standard 32°F to 122°F (0°C to +50°C)
Size and Weight	• 8.00” x 5.14” x 1.41” (203mm x 131mm x 36mm) • 2.1 lb. (0.95 kg)
Power Consumption	• 10 Watts (typ)
Interface	USB-C
System Requirements	Windows or Linux Operating System, x64_86 architecture

Ordering Options
Standard, Temperature Range 32°F to 122°F (0°C to +50°C)

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, Custom OFDM, 802.11a/n/ac/ax, arbitrary

DIGITAL MODULATION IMPAIRMENTS

AWGN, I/Q imbalance, multi-path, phase noise, I/Q offset, Sample rate/frequency error, custom channel response

CUSTOM MODULATION

Use the API to continuously stream I/Q data to the VSG200 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 VSG200.