Signal Hound®

VSG25A Vector Signal Generator

100 MHz to 2.5 GHz

100 MHz Modulation Bandwidth

-40 dBm to +10 dBm output power

Easily generate analog, digital, and arbitrary waveforms

1000+ simultaneous tones

6 nanosecond pulses

USB-powered

Low-cost

Powerful software and API included

Built in support for BPSK, DBPSK, QPSK, OQPSK, DQPSK, π/4 DQPSK, 8-PSK, D8PSK, 16-PSK, QAM16, QAM64, QAM256, ASK, FSK, GFSK, OOK, MSK, and GMSK modulation types

Symbol rates from 4k to 45M with RC, RRC, and Gaussian filters

Alpha of .01 to 1.0

VSG25A Vector Signal Generator

6 May 2015

The VSG25A hardware features a 12-bit I/Q baseband arbitrary waveform generator which can be clocked at virtually any frequency from 54 kHz to 180 MHz, and includes a 4096x16 bit pattern buffer for built-in or custom modulation.

FREQUENCY RANGE

100 MHz to 2.5 GHz (useable down to 80 MHz)

FREQUENCY RESOLUTION < 1 Hz

TIMEBASE

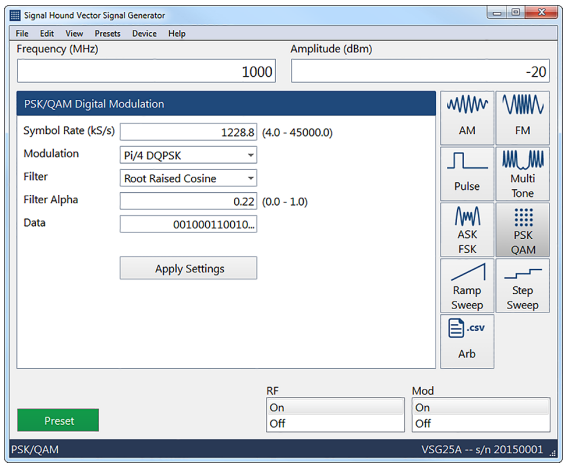
- Accuracy (excluding temperature drift): ± 5 ppm / year
- Temperature Drift: typically -0.2 ppm / °C.
- Adjustable to ± 1 ppm

AMPLITUDE

CW Absolute Amplitude Accuracy: -40 to +10 dBm, ± 1.5 dB

TYPICAL SSB PHASE NOISE (1 GHZ)

OFFSET	dBc / Hz
100 Hz	-68
1 kHz	-88
10 kHz	-102
100 kHz	-105
1 MHz	-132



The VSG25A user interface

MODULATION MODES AM/FM

- Modulation Rate: 30 Hz to 40 MHz
- AM THD: < 1%
- FM THD: < 0.1% (0.01% typical)

PULSE

- Pulse width: 6 ns to 25 ms
- Duty cycle minimum: 0.00025% (pulse period ≤1.0 s)
- Duty cycle maximum 99.9% (“off” time > 6 ns)
- On / off ratio > 45 dB (typically 60 dB)

MULTI-TONE TEST PATTERN

- Tone count, 2 to 1023 with optional center notch
- Tone spacing: 1 kHz to 10 MHz
- Tone Phase Relationship: parabolic or random

PREPROGRAMMED MODULATION TYPES:

- AM, FM, CW, FSK, GFSK, OOK, ASK, MSK, GMSK, BPSK, DBPSK, QPSK, DQPSK, Pi/4DQPSK, OQPSK, 8-PSK, 16-PSK, 16-QAM, 64-QAM, 256-QAM.
- Filters: Raised cosine, root raised cosine, Gaussian, alpha 0.01 to 1.0
- Pattern: PN7, PN9, and custom

CUSTOM MODULATION

- Input I/Q data: User-generated csv file
- Pattern Length: 2 to 2048 samples
- Pattern Period: 2 to 65,535 samples

DAC CLOCK/SAMPLE RATE: 53.333 kHz to 180 MHz

MECHANICAL / ENVIRONMENTAL

- RF output connector: SMA (f)
- Power Requirements: USB 2.0 port
- Operating temperature (calibrated): 18°C to 28°C
- Operating temperature (uncalibrated): 0°C to 50°C
- Size: 5.5” x 2.25” x 1”
- Weight: 5 oz.

SYSTEM REQUIREMENTS

Windows® 7 operating system, or later, and a USB 2.0 port.