

Keysight Technologies

EXG Signal Generator vs. Rohde & Schwarz SMBV100A Signal Generator – Competitive Comparison

EVM

Achieve excellent error vector magnitude (EVM) performance at a lower cost than other equivalent test equipment. The EXG's modulation quality can keep pace with rapidly emerging technologies and standards requiring higher order modulation.

Support for fading conditions

Improve your design with the EXG's new support for device bit error rate (BER) test under fading conditions. Accomplish more robust design by simulating movement through several different real-life conditions.

Maximum output power & ACPR

The EXG's industry-leading maximum output power and low adjacent channel power ratio (ACPR) give you the flexibility to design and test your device to new and emerging technologies and still transmit spectrally pure signals to accurately characterize your device.

Keysight N5172B signal generator at-a-glance Additional features

- Easily test your device's BER under fading conditions
- Select from over 18 Signal Studio software applications
- Upgrade output power, bandwidth, waveform memory and more
- Code compatible API as other X-series signal generators

RF radios are in just about every single communication system in our modern world, and the ability to design and test better and more robust systems comes with a price. Keysight's N5172B keeps that price down while still achieving desired performance. With industry-leading output power, ACPR and EVM, the Keysight EXG ensures radio designs meet specifications.



Specifications ^{1,2,3}	Keysight EXG		R&S SMBV100A	
Frequency range	9 kHz to 3, 6 GHz	•	9 kHz to 3.2, 6 GHz	•
Max output power	26 dBm	✓	18 dBm	X
Level accuracy	0.3 dB typ	✓	0.5 dB	X
Max freq. switching speed	900 μs spec	✓	1 ms	X
Max amp. switching speed	500 μs spec	✓	1 ms	X
Sweep points	3201 (list)	✓	2000 (list)	X
Phase noise	-122 dBc/Hz	•	-122 dBc spec	•
Harmonics	-35 dBc	✓	-30 dBc	X
Modulation type	AM/PM/FM/pulse	•	AM/PM/FM/pulse	•
External IQ inputs	Yes	•	Yes	•
Max bandwidth	120 MHz	X	160 Mhz	✓
ACPR (WCDMA)	-71 dBc spec, -73 typ	✓	-65 dBc spec, -69 dBc	X
EVM (LTE FDD)	0.20%	✓	0.40%	X
Max memory	512 Msa	X	1 Gsa	✓
Warranty	3 year standard	✓	1 year standard	X
Cal cycle	3 years	•	3 years	•

1. This information was prepared in March 2016 and is subject to change without notice.

2. For the most current version of this document, please go to <http://literature.cdn.keysight.com/litweb/5992-1350EN>.

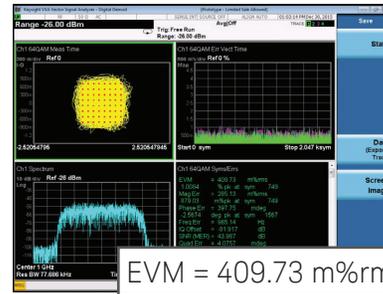
3. The dot (•) means both instruments have the same feature.

EVM

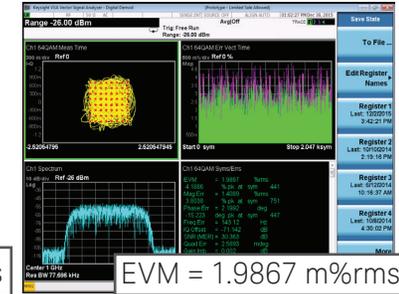
EVM, a merit of modulation error, is used by engineers to test the quality of modulated signals. With the Keysight EXG, you can crawl near the EVM floor to achieve better EVM performance.

	Keysight		Rohde & Schwarz	
Modulating waveform	0.30%	✓	0.60%	X
802.11 a/g	0.40%	✓	0.44%	X
802.11 ac	0.20%	✓	0.40%	X
LTE	0.20%	✓	0.40%	X
CDMA2000	0.80%	X	0.40%	✓
WCDMA 3GPP	0.80%	X	0.25%	✓

Keysight EXG



Rohde & Schwarz SMBV100A



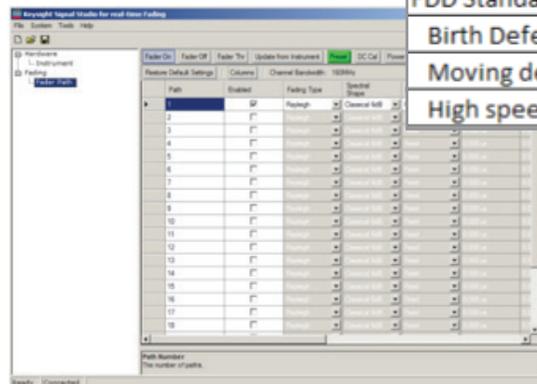
EVM performance between the EXG and R&S. Both software and test conditions that were used for the measurements are the same, illustrating the true performance of each signal generator.

BER under fading conditions

The Keysight EXG + N7605B Signal Studio for real-time fading provides device BER testing under several different fading conditions.

- Birth defect fading
- Moving delay propagation
- High speed train fading

MIMO Fading	No
# of fading paths	6 @ 160 MHz 12 @ 80 MHz 24 @ 40 MHz
802.11p support	YES
Dynamic fading Profiles (required by 3GPP FDD Standards)	
Birth Defect Fading	Yes
Moving delay propagation	Yes
High speed train fading	Yes



No fading applications are available on the Rohde & Schwarz SMBV100A

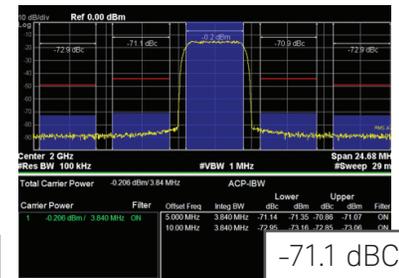
ACPR

Modulating waveform	Keysight		Rohde & Schwarz	
WCDMA	-75 dBc	✓	-69 dBc	X
LTE-FDD	-69 dBc	✓	Not specified	X
EDGE	-38 dBc	•	-38 dBc	•
cdma2000	-79 dBc	•	-79 dBc	•
WiMAX	-68 dBc	✓	Not specified	X

Keysight EXG



Rohde & Schwarz SMBV100A



ACPR performance between the Keysight EXG and R&S SMBV100A. Both software and test conditions that were used for the measurements are the same, illustrating the true performance of each signal generator.

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