

SIGLENT Expands RF Test Capabilities with the New SSG6082A-V Vector Signal Generator

March 12, 2025

With the ongoing advancement of wireless communication, the introduction of new mobile network standards, and the growing adoption of IoT and communication technologies, the demand for high-performance RF solutions continues to rise. Developers and engineers face increasingly stringent requirements, particularly in generating complex modulated signals that are essential for modern communication and IoT applications. To meet these growing demands, Siglent is expanding its portfolio with a new high-performance vector signal generator.



On March 12, 2025, SIGLENT introduced the [SSG6082A-V Vector Signal Generator](#), a high-performance instrument with an output frequency range of 9 kHz to 8 GHz and a 500 MHz bandwidth IQ baseband source, significantly enhancing its portfolio of vector signal solutions. Concurrently, a firmware update for the PC Software SigIQPro will be released in synchronization with the SSG6082A-V, introducing expanded support for WiFi, 5G NR, LTE, and other mainstream communication protocols to streamline the generation of sophisticated signals.

Expanded Output Frequency and Power Range

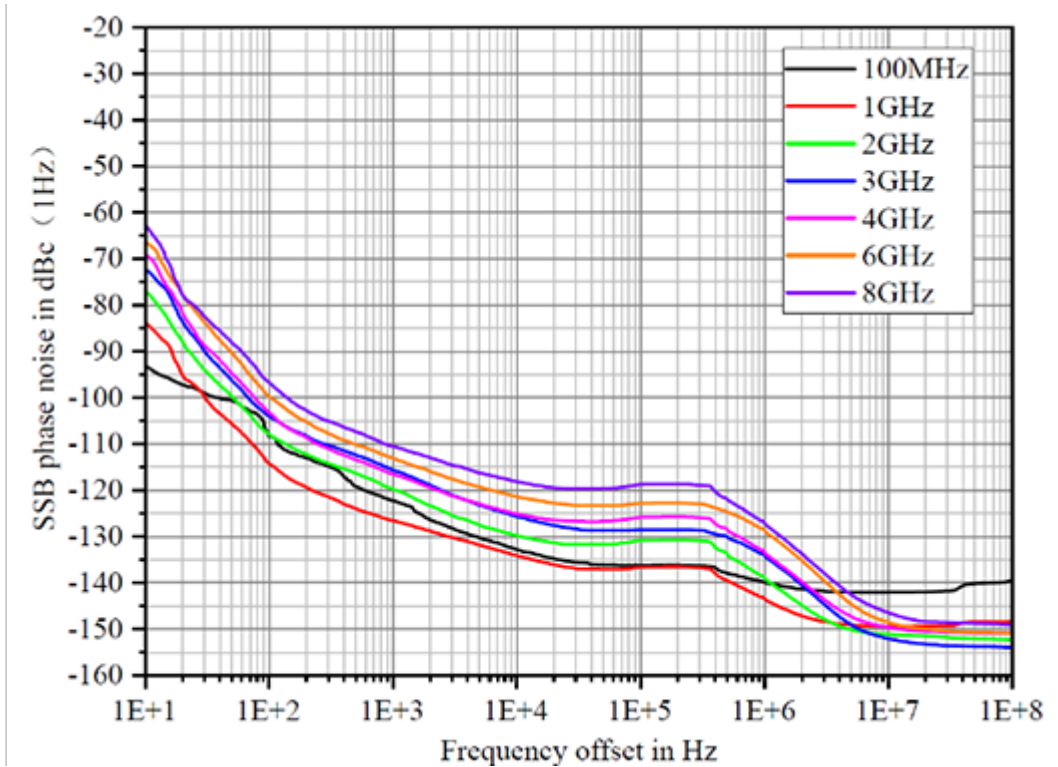
With a maximum frequency of 8 GHz and a peak output level of 30 dBm for CW signals, the new generator serves as both a high-precision RF source and a carrier for modulated signals. Its wide frequency and power range meet the demanding testing requirements of many modern communication systems.

Wider Modulation Bandwidth and Superior Signal Quality

As data exchange rates between devices continue to rise, broadband communication technologies are becoming increasingly prevalent. The SSG6082A-V offers a modulation bandwidth of up to 1 GHz and excellent in-band response, thanks to precise in-factory calibration, making it suitable for a wide range of communication test scenarios.

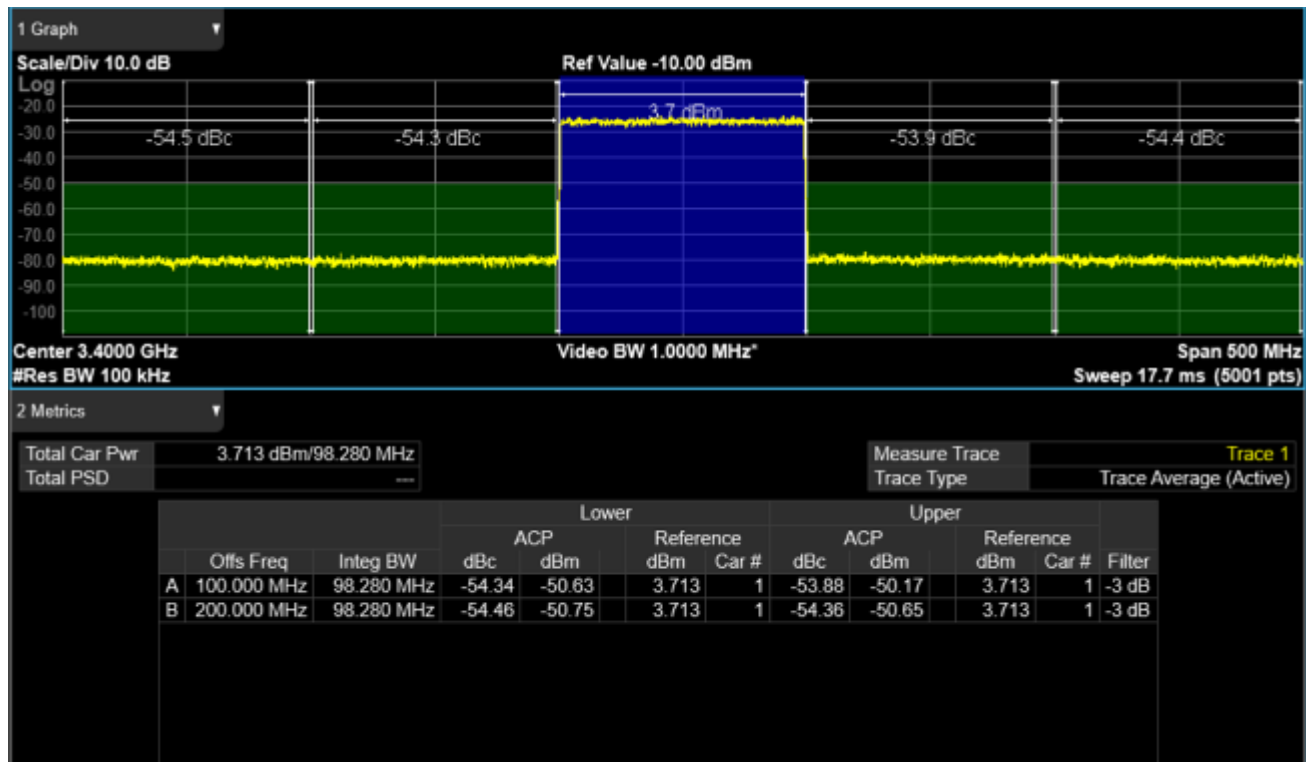
The SSG6000A-V series features ultra-low phase noise, reaching -132 dBc/Hz at a 10 kHz offset for a 1 GHz

signal. Higher spectral purity reduces test errors, enhancing the accuracy and reliability of measurement results. In wireless communication, low phase noise signals help minimize bit error rates (BER), improving communication stability and reliability.



Phase noise at different carrier frequencies

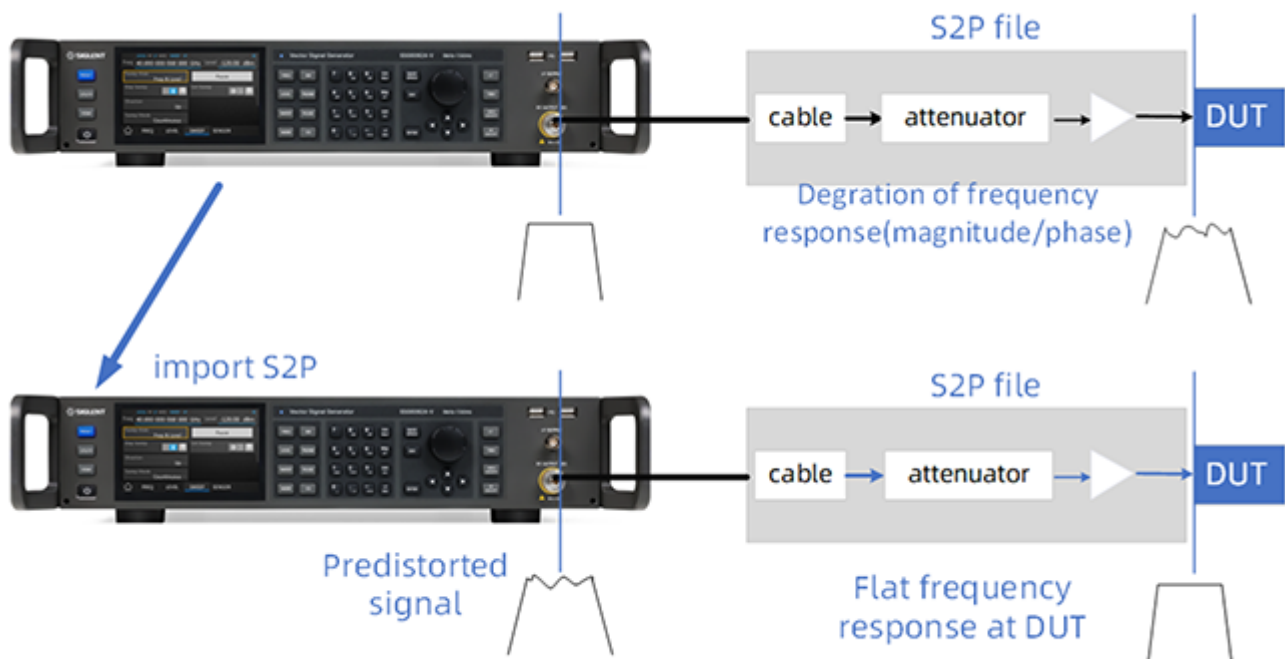
For modulated signals, the SSG6082A-V delivers an excellent adjacent channel power ratio (ACPR), ensuring high-quality signal generation while maintaining the target output power. This minimizes neighboring channel interference during multi-channel testing, enabling more accurate simulation of real-world communication environments.



5G NR Test Mode TM1.1 100M bandwidth ACPR

More Accurate Transmitter Simulation

The SSG6082A-V supports automatic amplitude, frequency, and phase compensation based on the S2P file of the test system. This compensation minimizes phase fluctuations and phase noise while flattening the signal amplitude across the entire frequency range, ensuring consistent signal levels at different frequencies. With enhanced system compatibility, the SSG6082A-V accommodates a broader range of applications, delivering precise and efficient test system performance.



Signal Pre-Distortion Capabilities

Outlook: More Protocols with SigIQPro and Comprehensive Testing Capabilities

As mobile devices continue to evolve with enhanced functionality, the demand for higher data rates and wider coverage is driving the need for more complex signal generation to validate device performance. **SigIQPro** is an essential tool for communication testing, designed to generate high-quality, complex modulated and protocol signals. The upcoming upgrade of SigIQPro, synchronized for release with the SSG6082A-V, will expand its capabilities to include Bluetooth, IoT, GSM/EDGE, WCDMA/HSPA+, LTE FDD/TDD, and 5G NR signal generation, along with broadband signals such as WLAN 802.11 b/g/a/n/ac/ax/be and OFDM.



SigIQPro

Signal Generation

- Bluetooth BR/EDR/LE
- IEEE 802.15.4 O-QPSK BPSK (ZigBee)
- IEEE 802.15.4 SUN FSK/OFDM
- ITU-T G.9959 (Z-WAVE)
- 5G NR Release 17
- LTE FDD/TDD Release 17
- GSM/EDGE
- WCDMA/HSPA+
- IEEE.802.11 b/g/a/n/ac/ax/be
- Custom OFDM
- Custom IQ



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