



Advanced Vector Signal Generation at Breakthrough Pricing

9 kHz-22 GHz



Key Specifications

Frequency Range	9 kHz–22 GHz CW Mode 9 kHz–6 GHz IQ Mode
Output Power Range	-135 dBm–+25 dBm
Power Resolution	0.01 dB
Frequency Resolution	0.001 Hz
Phase Noise	<-122 dBc/Hz @ 1 GHz, offset 20 kHz (Typ.)
Amplitude Accuracy	≤ 0.7 dB (Typ.)
IQ Mod Bandwidth	150MHz
Digital Modulation	QAM, PSK, ASK, FSK
Analog Modulation	AM, FM, ΦM, Pulse (single, double, train) (opt)
Function Generator	50 MHz
Display	5" capacitive touch screen

Advanced Vector Signal Generation

- Extended frequency coverage up to 22 GHz for demanding microwave applications
- Comprehensive IQ modulation with up to 150 MHz bandwidth for complex signal testing
- Rich vector modulation library: QAM (16-512), ASK (2-16), PSK (BPSK to $\pi/8$ -D8PSK), FSK (2-MFSK)

Communications Testing Excellence

- Built-in Signal Studio compatibility for wireless standards (WLAN, WCDMA, LTE, 5G/NR)
- Real-time modulation mode, local ARB mode, and remote ARB mode support
- AWGN interference simulation for realistic channel testing

Professional Vector Capabilities

- Internal baseband signal generator with external analog baseband input support
- Multiple scanning methods: frequency, amplitude, frequency + amplitude sweeps
- Power de-embedding with external power meter kit for transmission loss correction

Research & Education Value

- Integrated 50 MHz function generator consolidates test equipment needs
- Intuitive touch interface with signal flow diagram operation mode
- Industry-leading value with vector specifications comparable to instruments costing 2-3x more

Competitive Comparison Matrix

Brand	Model	Frequency Range	Output Power	Phase Noise	Level Accuracy	Function Generator	Display	Warranty
UNI-T	USG5000V	9 kHz - 22 GHz	-135 to +25 dBm	<-122 dBc/Hz	≤ 0.7 dB	50 MHz	5" touch	5 Years
Keysight	N5173B	9 kHz - 40 GHz	-20 to +19 dBm	<-122 dBc/Hz	≤ 0.6 dB	Optional	5"	3 Years
Keysight	N5182B	9 kHz - 6 GHz	-144 to +19 dBm	<-131 dBc/Hz	≤ 0.6 dB	Optional	5"	3 Years
Keysight	N5186A	9 kHz - 8.5 GHz	-127 to +19 dBm	<-122 dBc/Hz	≤ 0.6 dB	Optional	5"	3 Years
Rigol	DSG3000B	9 kHz - 13.6 GHz	-110 to +20 dBm	<-116 dBc/Hz	≤ 0.5 dB	200 kHz	4.3" touch	3 Years
Rohde & Schwarz	SMM100A	100 kHz - 44 GHz	-127 to +18 dBm	<-129 dBc/Hz	≤ 0.6 dB	Optional	5" touch	3 Years
Rohde & Schwarz	SMBV100B	9 kHz - 6 GHz	-127 to +34 dBm	<-134 dBc/Hz	≤ 0.6 dB	Optional	5" touch	3 Years
Rohde & Schwarz	SMW200A	100 kHz - 44 GHz	-120 to +18 dBm	<-134 dBc/Hz	≤ 0.6 dB	Optional	5" touch	3 Years
Siglent	SSG5000A	9 kHz - 20 GHz	-130 to +20 dBm	<-120 dBc/Hz	≤ 0.7 dB	1 MHz	5" touch	3 Years
Siglent	SSG6000A	100 kHz - 40 GHz	-130 to +24 dBm	<-135 dBc/Hz	≤ 0.7 dB	1 MHz	5" touch	3 Years

Advanced Vector Modulation Technology

The USG5000V series employs sophisticated vector signal generation to deliver exceptional performance at frequencies up to 22 GHz with IQ modulation capabilities up to 6 GHz. The USG5014V covers CW frequencies up to 14 GHz, while the USG5022V-P extends coverage to 22 GHz with a mechanical attenuator for enhanced level accuracy. Both instruments maintain impressive phase noise performance (<-122 dBc/Hz at 1 GHz, 20 kHz offset) across their operating range.

The built-in 110 dB dynamic high-precision programmable attenuator enables output signals from -135 dBm to +25 dBm, providing exceptional dynamic range for testing both highly sensitive receivers and power amplifier characterization. The vector modulation supports up to 150 MHz modulation bandwidth with internal baseband signal generation.

Specialized Vector Applications

The USG5000V series excels in modern wireless communications testing including 5G/NR, LTE, WLAN, and IoT device validation. The comprehensive vector modulation library supports everything from basic QPSK to advanced 512QAM schemes. Optional pulse modulation capabilities support radar system testing with minimum 20 ns pulse width and 70 dB on-off ratio.

The integrated Signal Studio software compatibility enables rapid generation of standards-compliant waveforms for cellular communications, wireless connectivity, and custom applications. This integration eliminates the need for separate waveform generators in many test setups, reducing both equipment costs and bench space requirements.

Why UNI-T? Over 35 years of innovation. 5-Year Warranties. US-Support. 30-Day No Hassle Returns.