SSG6082A-V
RF Vector Signal Generator

Datasheet

EN01A

SIGLENT TECHNOLOGIES CO.,LTD

SSG6082A-V

General Description

The SSG6082A-V Vector Signal Generator offers an output frequency range from 9 kHz to 8 GHz. It supports AM, FM, and PM analog modulation, as well as pulse modulation and pulse sequence generator functions. It features an internal 500 MHz bandwidth IQ baseband source, which, when combined with the SigIQPro PC software, can generate common digital modulated signals and communication protocol signals such as 5G NR, WLAN, LTE, BLUETOOTH, and IOT. After factory calibration, the RF output exhibits excellent 1 GHz broadband characteristics and good ACPR performance, making it suitable for various applications in research and development, production, and other scenarios.

Features and Benefits

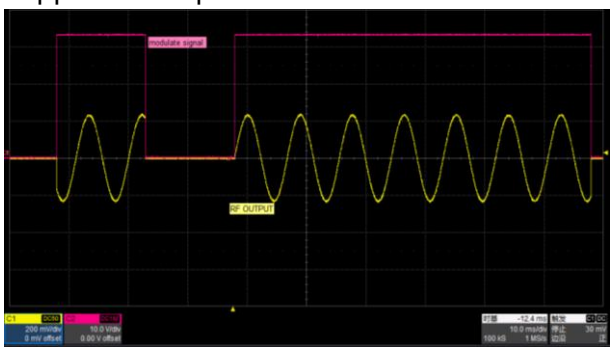
- Highest Frequency: 8 GHz
- Output Frequency Resolution: Up to 0.001 Hz
- Level Setting Range: -140 dBm to 30 dBm
- Phase Noise: < -132 dBc/Hz @ 1 GHz, offset 10 kHz (typical value)
- Amplitude Accuracy: ≤ 0.7 dB (typical value)
- Modulation Support: Supports AM/FM/PM analog modulation, internal and external modulation options.
- Pulse Modulation: Supports pulse modulation function, pulse train generator, and user-defined pulse sequences (optional).
- General Modulation: Capable of real-time output of QAM, FSK, ASK, PSK, multi-tone, and various other modulated signals. Supports playback of waveform files and sequences.
- Support waveform file playback: waveform sequence generation and playback.
- Communication Protocol Signals: Supports generation of common communication protocol signals such as 5G NR, WLAN, LTE, BLUETOOTH, IOT, etc., when used with SigIQPro software.
- MIMO and Other Applications: Supports MIMO and various other application scenarios.
- Real-time IQ Baseband AWGN: Supports real-time IQ baseband AWGN, allowing accurate control of signal and noise power, simplifying additional measurements and calculations required for receiver measurements.
- Power Meter Control Kit: Facilitates power measurement, control of power output, and line loss correction using a power meter.
- Vector Mode S-Parameter Compensation: Supports S-parameter compensation in vector mode to optimize the broadband characteristics of the test system.
- Web Remote Control: Supports web remote control for convenient remote operation by users.

Model and Main index

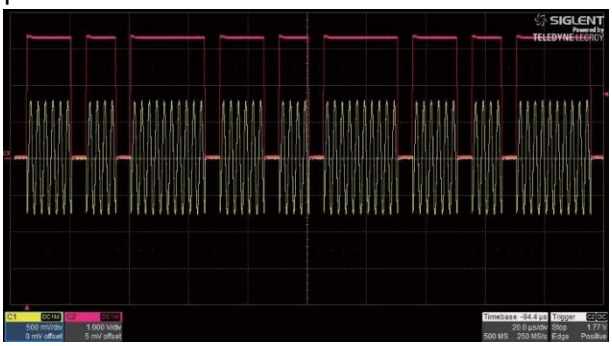
Model	SSG6082A-V
Frequency Range	CW MODE: 9 kHz to 8 GHz IQ MODE: 10 MHz to 8 GHz
Frequency Setting Resolution	0.001 Hz
Amplitude Resolution	0.7 dB
Phase noise	-132 dBc/Hz @ 1 GHz，offset 10 kHz (typical value)
RF （I+Q）bandwidth	500 MHz 1000 MHz（option SSG6080AV-B1000）
Display	5-inch capacitive touchscreen，800 (RGB) × 480

Design Features

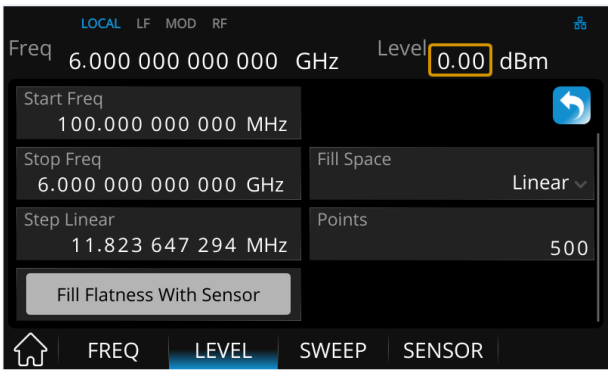
Supports dual-pulse modulation

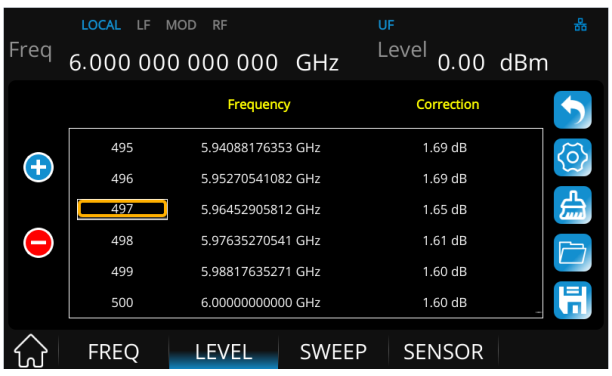


Supports pulse sequence output with up to 2047 pulses

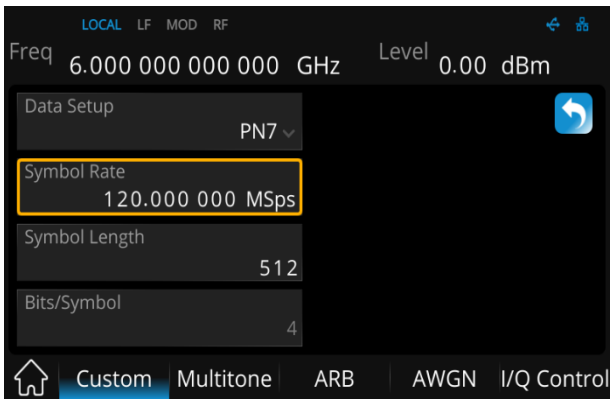


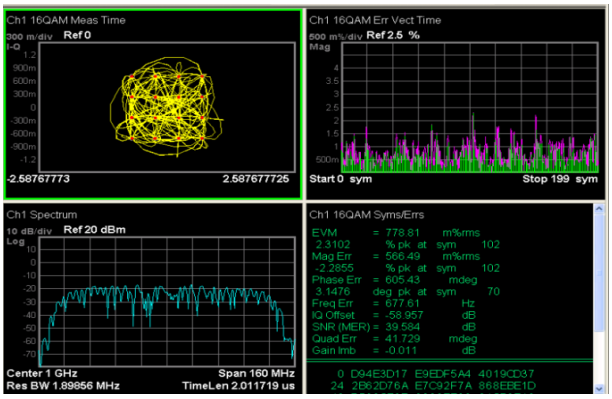
Supports power meter probe kit for flatness correction using a power meter, facilitating convenient line loss correction



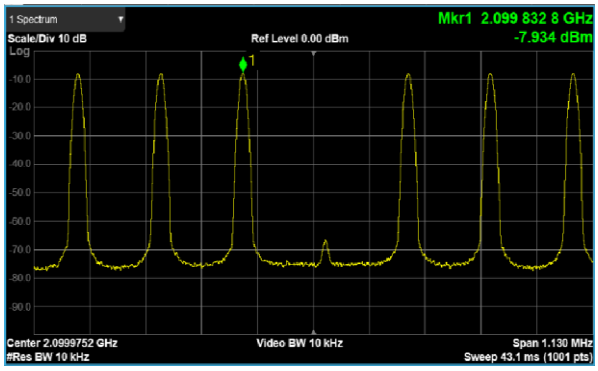


In CUSTOM mode, capable of outputting common IQ modulated signals such as QAM, PSK, ASK, FSK, etc., with a symbol rate up to 625 MHz

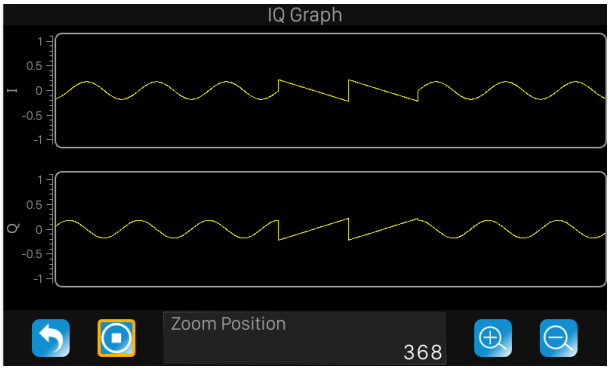




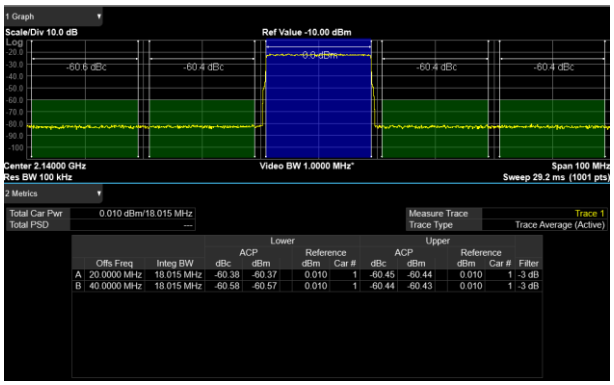
Capable of outputting up to 65536 multi-tone signals.



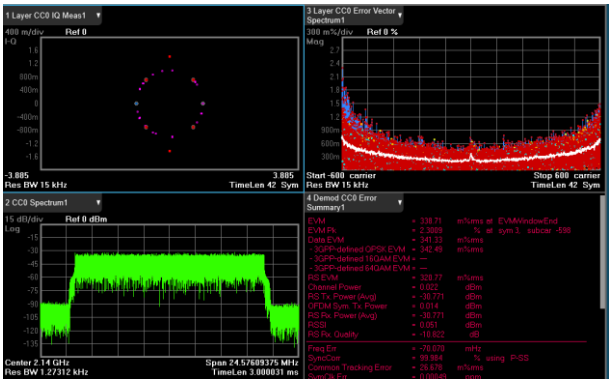
ARB mode to build and replay waveform sequences



In ARB mode, the sampling rate can reach up to 1.25 GHz, and it can be used with the SigIQPro PC software to generate common communication protocol signals such as 5G NR, LTE, WLAN, etc.

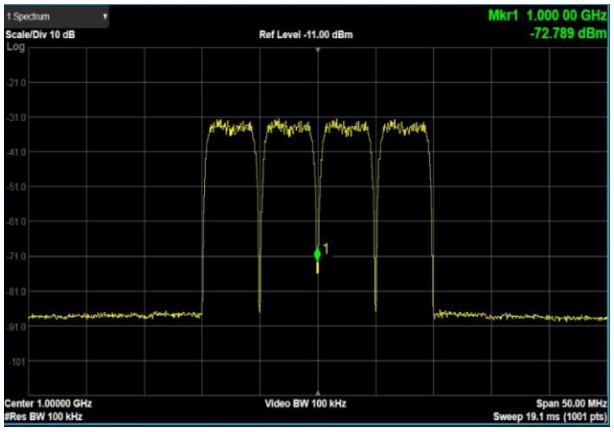


LTE FDD TM1.1 20M ACPR

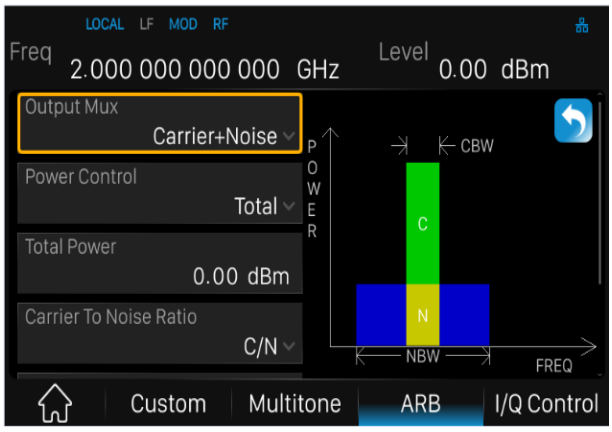


LTE FDD TM1.1 20M EVM

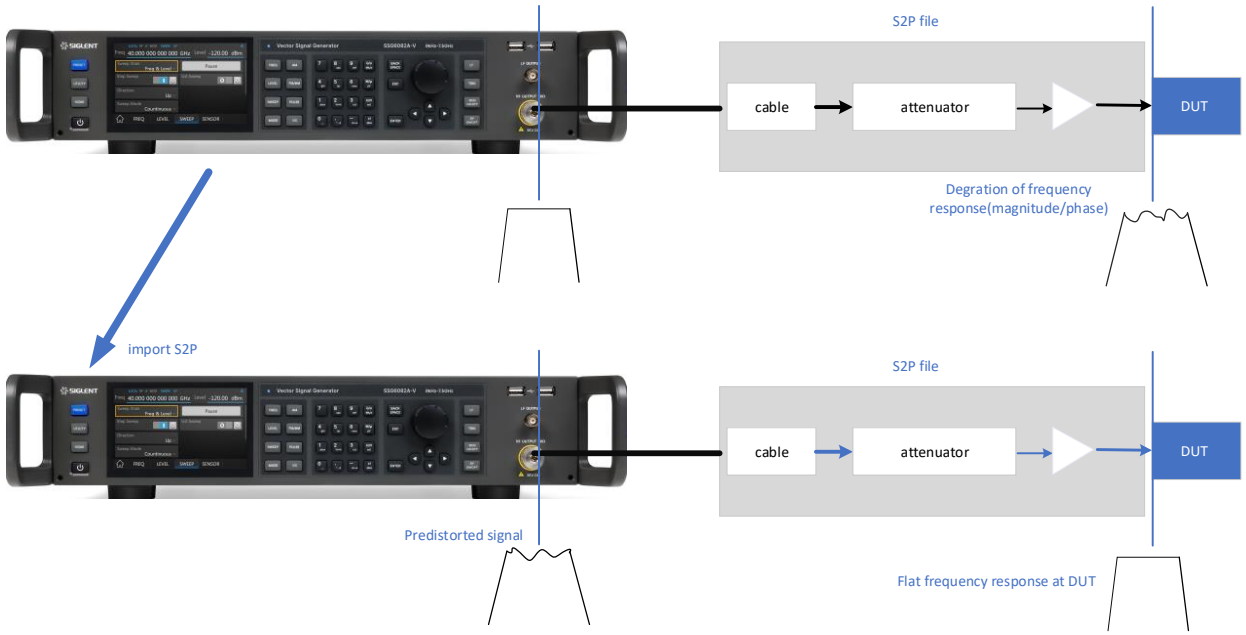
Generating multi-carrier signals in ARB mode



Supports adding real-time AWGN (additive white Gaussian noise) to modulated signals in ARB mode, meeting various test scenarios for receiver measurements

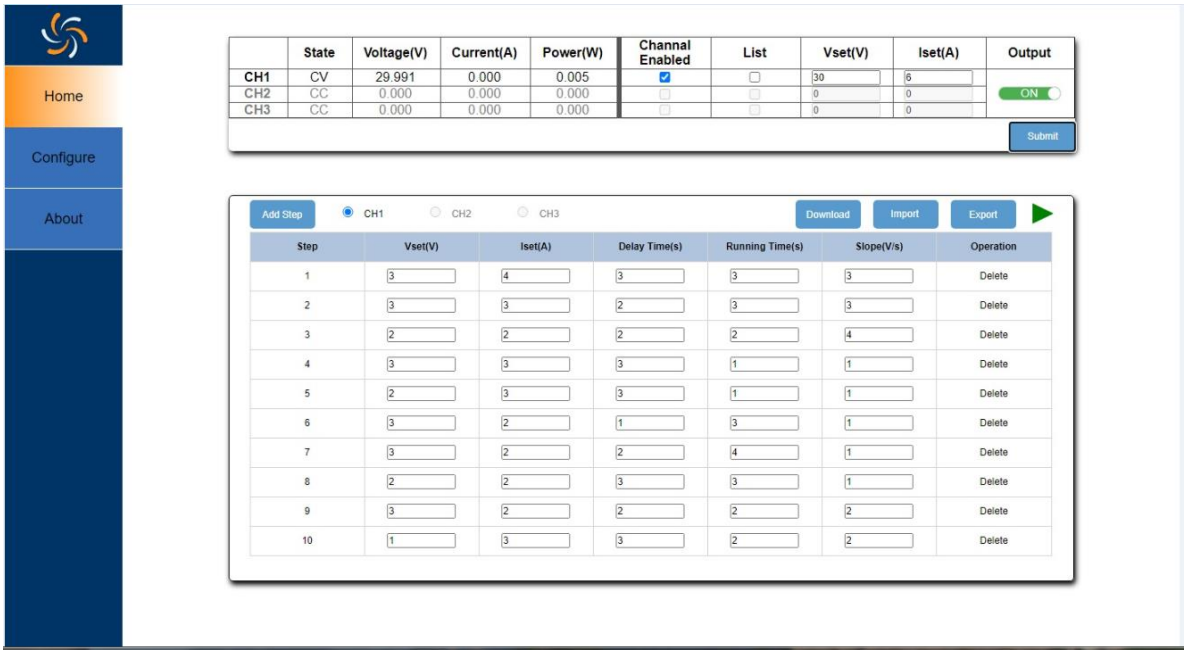


User Vector Compensation: Supports user vector compensation using S-parameters for amplitude frequency response and phase compensation.



Rich Interface

The power supply includes USB and Ethernet communication interfaces as standard, and a USB-GPIB converter module as optional. The embedded Web Server enables control and monitor of the power supply directly from a web browser, eliminating the need to install software drivers or applications.



Web Server Interface

Technical Specifications

The specifications in this manual apply under the conditions that the instrument is within the calibration cycle, has been stored in an indoor environment for at least two hours, and has been warmed up for 40 minutes. Unless otherwise specified, the data in this manual are technical indicators that include measurement uncertainty.
Specifications: All products are guaranteed to meet published specifications when operating temperatures from 5 to 45℃, unless otherwise noted.
Typical (typ.): Performance deemed typical implies that 80 percent of the measurement results will meet the typical published performance with a 95th percentile confidence level at room temperature (approximately 20 ℃). Typical performance is not warranted and does not include measurement uncertainty.
Nominal (nom.): This value indicates the expected mean or average performance, or an attribute whose performance is by design, such as the 50 Ohm connector.

Frequency characteristics		
SSG6082A-V		
Frequency	CW MODE 9 kHz to 8 GHz	
	10 MHz to 8 GHz	
Frequency resolution	0.001 Hz	
Setting time	< 2 ms (typical value) with ALC ON < 5 ms (typical value) with ALC OFF (S&H), CW mode < 10 ms (typical value) with ALC OFF (S&H), IQ mode, with RF broadband compensation off	
Resolution of phase offset setting	0.01	
Phase Offset Setting Range	±180°	
Internal Reference Source:		
Standard		
Reference Frequency	10.000000 MHz	
Initial Accuracy	±100 ppb	
Temperature Stability	±1 ppb, from 0℃ to 50℃	
Frequency Aging Rate	50 ppb/1 year	
Frequency sweep		
Sweep type	Frequency steps with equal or logarithmic intervals Frequency steps with arbitrary list	
Sweep range	Full frequency range	
Sweep shape	Triangle wave, sawtooth wave	
Sweep mode	Single, continuous	
Step spacing	Linear, logarithmic	
Number of points	Step sweep	2 - 65535
	List sweep	1 -65535

Dwell time range	10 ms - 100 s
Dwell time setting resolution	0.1 ms
Trigger source	Automatic, key trigger, external trigger, bus trigger (GPIB, USB, LAN)
Trig Edge	Rising edge trigger, falling edge trigger (only when the trigger is external)

Level characteristics

ALC modes

The SSG6082A-V includes three ALC operating modes:

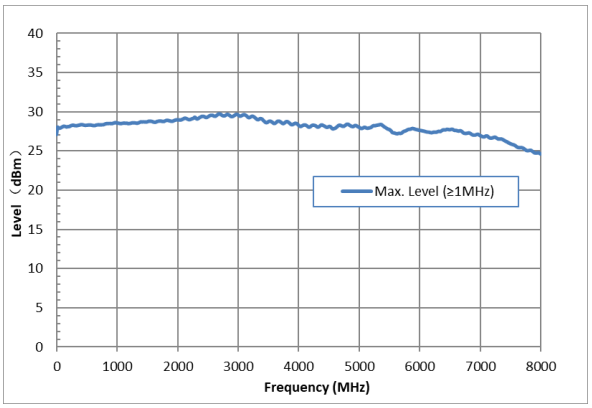
ALC STATE AUTO : The best suited ALC mode is set automatically.

ALC STATE ON : The level control loop is closed. This mode is suitable for CW, FM and PM.

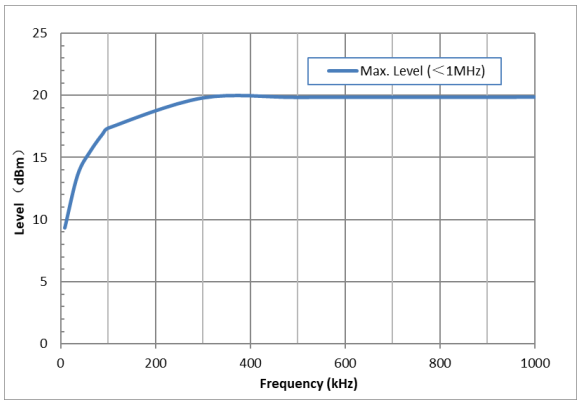
ALC STATE SAMPLE & HOLD (S&H) : When the frequency or amplitude changes, the level control loop is closed first, then the control voltage is sampled and kept constant. When the ALC operating mode is automatic, amplitude modulation or pulse modulation, IQ modulation mode will work in this state.

Level characteristics				
Level setting (PEP)				
Level setting range	9 kHz ≤ f < 300 kHz		-140 dBm to + 9 dBm	
	300 kHz ≤ f < 1 MHz		-140 dBm to + 25 dBm	
	1 MHz ≤ f ≤ 8 GHz		-140 dBm to + 30 dBm	
Resolution of setting	0.01 dB			
Level of performance range				
9 kHz ≤ f < 300 kHz	-110 dBm to + 8 dBm			
300 kHz ≤ f < 1 MHz	-110 dBm to + 20 dBm			
1 MHz ≤ f ≤ 4 GHz	-130 dBm to + 24 dBm			
4 GHz < f ≤8 GHz	-130 dBm to + 20 dBm			
Level error (ALC on, temperature is 20 ℃ ~30 ℃)				
	Max performance power to -40 dBm	-40 dBm to -90 dBm	-90 dBm to -110 dBm	-110 dBm to -130 dBm
9 kHz ≤ f < 300 kHz	≤ 0.7 dB	≤0.7 dB	≤1.1 dB	
300 kHz ≤ f < 1 MHz	≤ 0.7 dB ≤ 0.5 dB (typ.)	≤ 0.7 dB ≤ 0.5 dB (typ.)	≤1.1 dB ≤0.7 dB (typ.)	≤ 1.6 dB
1 MHz ≤ f ≤ 8 GHz	≤ 0.7 dB ≤ 0.5 dB (typ.)	≤ 0.7 dB ≤ 0.5 dB (typ.)	≤ 1.1 dB ≤ 0.7 dB (typ.)	≤ 2 dB
Additional level error	ALC State Off (S&H)		< 0.3 dB	
VSWR				
Output impedence VSWR in 50 Ω system				
VSWR	1 MHz ≤ f ≤ 8 GHz			≤ 2 (nom.)
Level setting				
Level setting time	CW mode, IQ mode, fixed frequency, temperature range 20°C - 30°C, broadband compensation off			< 5 ms
	CW mode, IQ mode, fixed frequency, temperature range 20°C - 30°C, broadband compensation on			< 10 ms
Reverse power				
Maximum permissible DC	50 V			

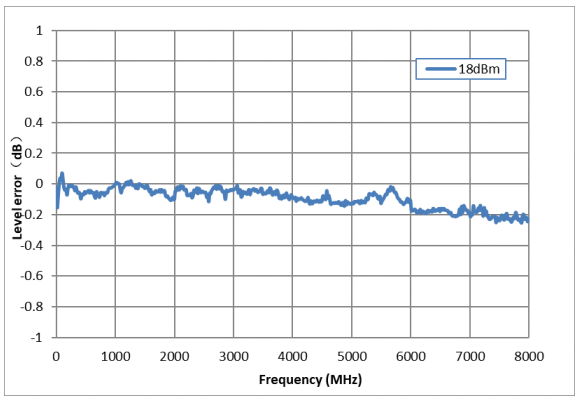
voltage		
Maximum reverse input power	1 MHz ≤ f ≤ 8 GHz	+ 30 dBm
Level step sweep		
Maximum permissible DC voltage	50 V	
Maximum reverse input power	1 MHz ≤ f ≤ 8 GHz	+ 30 dBm
Level step sweep		
Sweep type	Amplitude step (linear or logarithmic step), arbitrary list	
	Full specified level range	
Sweep shape	Triangle, saw-tooth	
Sweep range	The device output range	
Trigger mode	Free run, single	
Step spacing	Linear	
Sweep points	Step sweep	2 - 65535
	List sweep	1 -65535
Dwell time setting range	10 ms - 100 s	
Dwell time setting resolution	0.1 ms	
Trigger source	Automatic, key trigger, external trigger, bus trigger	
Trigger Edge	Positive, negative	



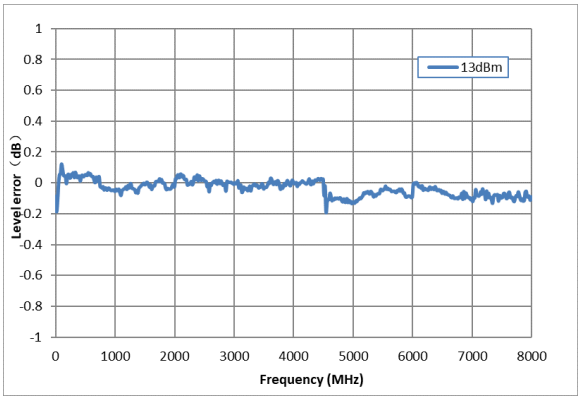
CW Signal Maximum Output Power vs Frequency (f ≥ 1 MHz)



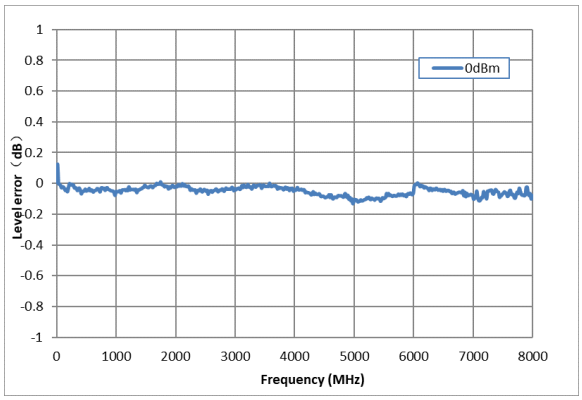
CW Signal Maximum Output Power vs Frequency (f < 1 MHz)



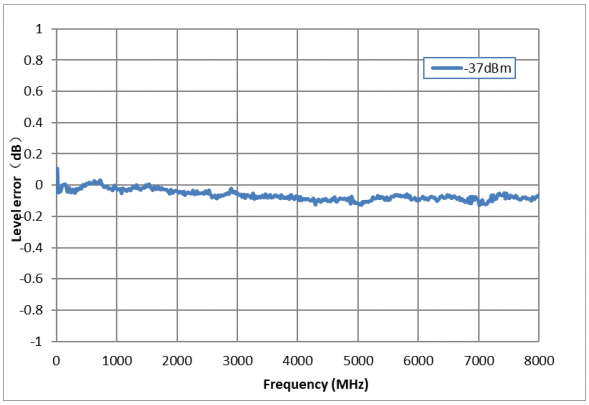
Measured level error versus frequency, Level = +18 dBm



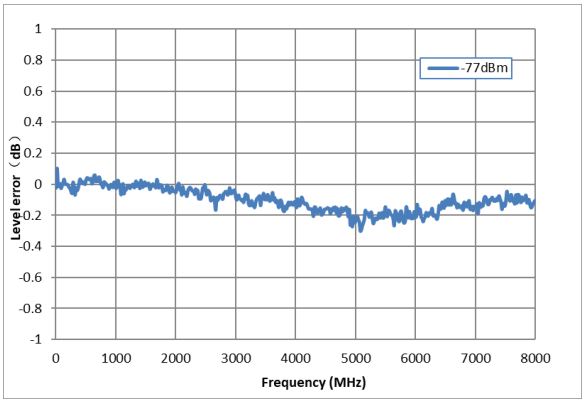
Measured level error versus frequency, Level = +13 dBm



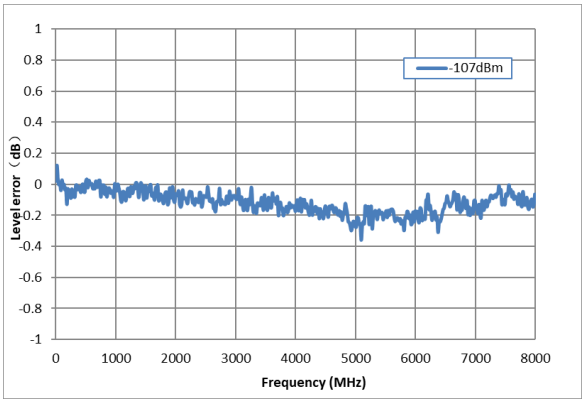
Measured level error versus frequency, Level = 0 dBm



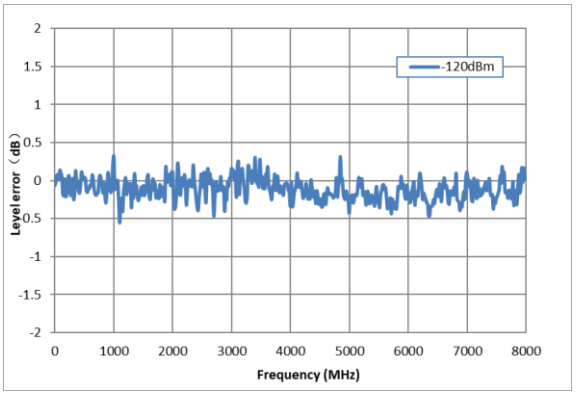
Measured level error versus frequency, Level = -37 dBm



Measured level error versus frequency, Level = -77 dBm



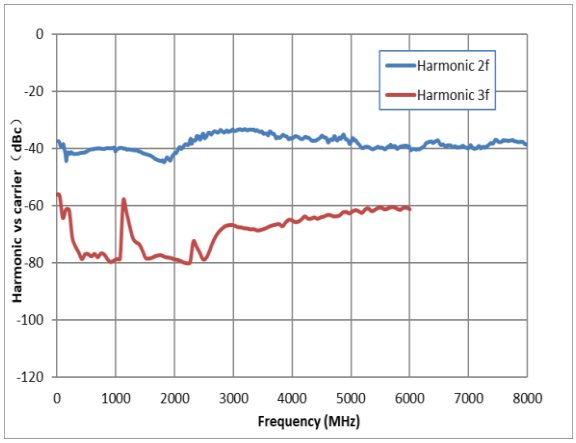
Measured level error versus frequency, Level = -107 dBm



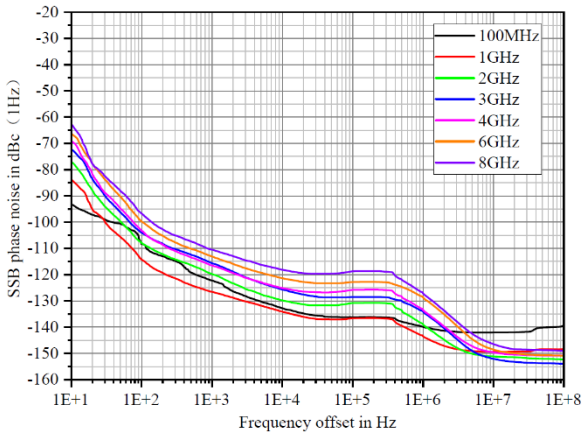
Measured level error versus frequency, Level = -120 dBm

Spectral purity		
Harmonics	CW mod, 1 MHz < f ≤ 8 GHz, Level < +13 dBm	< -30 dBc
Sub harmonics	CW mod, 1 MHz < f ≤ 8 GHz, Level ≤ +13 dBm	< -80 dBc
Non-harmonics	CW mod, offset > 10 kHz, Level ≤ +13 dBm, 1 MHz < f ≤ 8 GHz	< -65 dBc
Wideband noise	Carrier offset = 40 MHz, measurement bandwidth: 1 Hz In CW mode, output = 8 dBm: For frequencies 10 MHz < f < 250 MHz: < -135 dBc For frequencies 250 MHz < f < 1 GHz: < -145 dBc (Typ < -150 dBc) For frequencies 1 GHz < f < 8 GHz: < -148 dBc (Typ < -152 dBc)	
SSB Phase noise	CW mod, offset = 10 kHz, 1 Hz measurement bandwidth	
	f = 100 MHz	< -132 dBc/Hz(typ.)
	f = 1 GHz	< -132 dBc/Hz (typ.)
	f = 2 GHz	< -128 dBc/Hz (typ.)
	f = 3 GHz	< -126 dBc/Hz (typ.)

	f = 4 GHz	< -123 dBc/Hz (typ.)
	f = 5 GHz	< -120 dBc/Hz (typ.)
	f = 6 GHz	< -119 dBc/Hz (typ.)
	f = 7 GHz	< -118 dBc/Hz (typ.)
	f = 8 GHz	< -117 dBc/Hz (typ.)
Residual Frequency Modulation	In CW mode, carrier frequency 1 GHz, Level = 10 dBm, 300 Hz to 3 kHz: 100 MHz (typical value)	
Residual Amplitude Modulation	In CW mode, carrier frequency 1 GHz, Level = 10 dBm, 300 Hz to 30 kHz: < 0.02% (typical value)	



Measured harmonics versus carrier frequency at level ≤ +13 dBm



Measured phase noise

Internal modulation generator (LF)		
Waveforms	Sine wave, square wave, saw-tooth, triangle, DC	
Frequency range	Sine wave	0.1 Hz - 1 MHz [2]
	Square wave, triangle, saw-tooth	0.1 Hz - 20 kHz
Resolution of frequency setting	0.01 Hz	
Frequency error	Similar with RF source	
Frequency response	Sine wave < 0.3 dB	
Level Offset	Setting range	$\min\ (2.5\mathrm{V} - \frac{1}{2}\mathrm{LEVEL},\ 2\mathrm{V})$
	Offset resolution	0.01 V
Output voltage range [3]	Vp at connector	1 mVpp - 3 Vpp
	Resolution of amplitude setting	1 mVpp
DC Voltage Error	1% of set value ± 3 mV	
Output impedance	50 Ω (nom.)	

[2] When use modulation and LF simultaneously, the LF frequency range and wave type will be restricted.
[3] Measured value with a load of 50 Ω.

LF frequency sweep	
Operating mode	Digital sweep in discrete steps
Step spacing	Linear, logarithmic
Sweep shape	Sawtooth wave，triangle wave
Sweep direction	Upward, downward
Sweep range	0.01 Hz - 1 MHz
Trigger mode	Automatic, key trigger, external trigger, bus trigger
Trigger edge	Positive, negative
Dwell time setting range	1 ms - 500 s
Dwell time setting resolution	0.1 ms

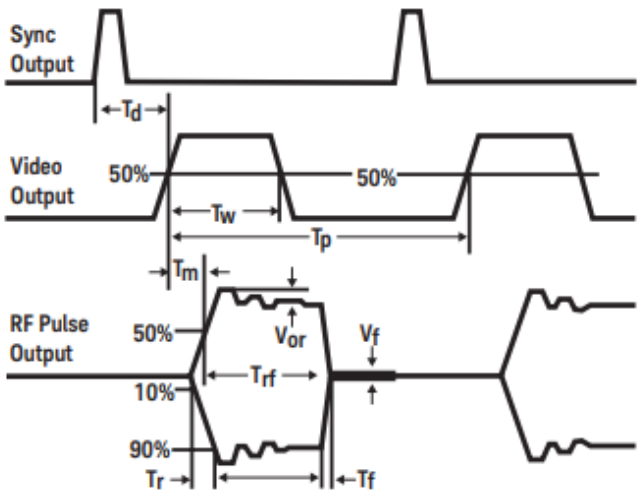
Analog modulation					
	Simultaneous modulation				
	Amplitude modulation	Frequency modulation	Phase modulation	Pulse modulation	IQ modulation
Amplitude modulation		●	●	(●)	(●)
Frequency modulation	●		×	●	●
Phase modulation	●	×		●	●
Pulse modulation	●	●	●		(●)
IQ modulation	(●)	●	●	(●)	
●=compatible, ×=incompatible, (●) =compatible limitations; (●) indicates limited compatibility. Enabling pulse modulation reduces the performance of amplitude modulation. For IQ modulation，if RF blanking is enabled, pulse modulation cannot be used.					

Amplitude modulation		
Modulation source	Internal, external, internal + external	
AM depth setting range	0% ~ 100%	
Resolution of setting	0.1%	
AM depth error	f-mod = 1 kHz, m < 80%, Level = 0 dBm	< 4% of setting+1%
AM distortion	f-mod = 1 m < 30%, level=0 dBm	< 3% (typ.)
Modulation frequency	m < 80%, 10 Hz-100 kHz	< 3 dB (nom.)
Frequency Modulation and Phase Modulation Frequency Bands		
Band		N
1	9 KHz < f ≤ 1 MHz	1
2	1 MHz < f ≤ 250 MHz	1/8

3	250 MHz < f ≤ 400 MHz	1/32
4	400 MHz < f ≤ 800 MHz	1/8
5	800 MHz < f ≤ 1600 MHz	1/4
6	1600 MHz < f ≤ 3200 MHz	1/2
7	3200 MHz < f ≤ 6400 MHz	1
8	6400 MHz < f ≤ 8000 MHz	1
Modulation source	Internal, external, internal + external	
Maximum deviation	N*4 MHz (typ.)	
Resolution	0.1% of set deviation or 1 Hz, whichever is larger	
FM deviation error	Fmod = 1 kHz, internal	< (2% of setting + 20 Hz)
FM distortion	Fmod = 1kHz, deviation ≤ N*4 MHz	< 0.5% (nom.)
Modulation frequency response	10 Hz - 100 kHz	< 3 dB (nom.)
Phase modulation		
Modulation source	Internal, external, internal + external	
Maximum deviation	N*5 rad	
Resolution	0.1% of set deviation or 0.01 rad, whichever is larger	
ΦM deviation error	Fmod = 1 kHz, internal, Deviation ≤ N*5 rad	< (2 % of setting + 0.05 rad)
ΦM distortion	Fmod = 1 kHz, Deviation ≤ N*5 rad	< 0.5 % (nom.)
Modulation frequency response	10 Hz - 100 kHz	< 3 dB (nom.)
Pulse modulation		
Modulation source	Internal, external	
On/off ration	1 MHz < f < 8 GHz	> 80 dBc
Rise / fall time (10 % / 90 %)	10 % to 90 % of RF amplitude	< 15 ns
Pulse repetition time	Setting range	40 ns - 300 s
Pulse Amplitude Accuracy/ALC Off	±0.5 dB typ	
Bandwidth Compression	10 ns	
Video Feedthrough	< 20 mV	
Video Delay	45 ns	
RF Delay	40 ns	
Pulse Overshoot	< 8%	
Pulse generator		

Pulse modes	Single pulse, double pulse	
Pulse source	Internal, external	
Pulse polarity	Positive, negative	
Pulse period	Setting range	40 ns - 300 s
	Resolution of setting	10 ns
Pulse width	Retting range	40 ns - 300 s
	Resolution of setting	10 ns
Double pulse Delay	Setting range	40 ns - 300 s
	Resolution of setting	10 ns
2# Width	Setting range	40 ns - 300s
	Resolution of setting	10 ns
Trigger modes	Automatic，external trigger，external gate，key trigger，bus trigger（GPIB，USB，LAN）	
Trigger Edge	Normal，inverse (used in external gate trigger mode)	
Trigger Slope	Positive, negative (used in external trigger mode)	
External trigger delay	140 ns - 300 s	
External trigger delay resolution of setting	10 ns	
Pulse train generator（SSG6080AV-PT）		
Number of pulses		1 - 2047
Number of repetitionsper pulse		1 - 65535
Pulse on time and off time setting rang		40 ns - 300 s
Pulse on time and off time setting resolution		10 ns

Td video delay (variable)
Tw video pulse width (variable)
Tp pulse period (variable)
Tm RF delay
Trf RF pulse width
Tf RF pulse fall time
Tr RF pulse rise time
Vor pulse overshoot
Vf video feedthrough



Vector Modulation Specification

IQ modulation external inputs		
Modulation Source		
RF Modulation Bandwidth	External Baseband Source	
	10 MHz < f < 2 GHz	±25% of carrier frequency
	2 GHz ≤ f ≤ 7.5 GHz	1000 MHz
	Internal Baseband Source	
	10 MHz < f < 2 GHz	±25% of carrier frequency
	2 GHz ≤ f ≤ 7.5 GHz	1000 MHz
Specification RF Modulation Bandwidth Flatness		
External Baseband Source	< 9 dB	
Internal Baseband Source	< 1.3 dB (0.8 nominal)	
Carrier Leakage	< -45 dBc	
Image Rejection	< -40 dBc	
Internal I/Q baseband generator adjustment		
I/Q offset	±100 %	
I/Q gain	±4 dB	
Quadrature angle adjustment	±20°	
Analog Baseband Input		
Input Mode	Single-ended	
Full-Scale Input Voltage	$\sqrt{V_I^2 + V_Q^2} = 0.5V_{rms}$	
I/Q output		
Impedance	50 Ω nominal per output	
	100 Ω difference output	
Maximum voltage per output with sine wave Output	f ≤ 250MHz	Single-ended, 1 V peak-to-peak
		Differential, 2 V peak-to-peak
	250MHz < f ≤ 500MHz	Single-ended, 0.5 V peak-to-peak
		Differential, 1 V peak-to-peak
Amplitude flatness(50 Ω load)	<1.5 dB, with calibration on	
Differential mode I or Q offset	±0.5 V into 50 Ω load, accuracy 1% + 0.1% bias voltage + 1 mV	
Common mode I/Q offset	±2.5 V into 50 Ω load, accuracy 1% ± 4 mV	
Broadband Noise	10 MHz Sine Wave Output, offset 1 MHz: < -150 dBc/Hz	
Internal Baseband generator		
Sample rate	400Hz to 625 MHz	

	400 Hz to 1250 MHz（option SSG6080AV-B1000）		
RF bandwidth (I+Q)	500 MHz nominal 1000 MHz（option SSG6080AV-B1000）		
Frequency offset range	250 MHz		
	500 MHz（option SSG6080AV-B1000）		
Arbitrary waveform memory	Max playback capacity		2048 MSa
	Max storage capacity include markers		64 GBytes
Waveform segments	Segment length		200 Sa - 2 GSa
Waveform sequences	Max. number of segments / sequences		1024
	Max. number of repetitions		65535
Triggers	Types	Continuous, single, gated, segment advance	
	Source	Trigger key, external, bus（GPIB, LAN, USB）	
	Modes	Continuous	Free run, trigger and run, reset and run
		Single	NO retrigger, buffered trigger, restart on trigger
		Gated	Negative polarity or positive polarity
		Segment advanced	Single or continuous
Trigger latency	534 ns + 8 sample clock period, nominal		
	534 ns + 0.8 us + 8 sample clock period, nominal		
Trigger Delay Setting	3.2 ns ~ 42 s		
Trigger accuracy	3.2 ns		
Markers	Marker polarity		Negative, positive
	Number of Marker		4
	RF blanking/ Burst On/ Off ratio		＞70 dBc (typ.)
AWGN（Additive White Gaussian Noise）			
Type	Real time		
Modes of operation	Standalone, or digitally added to signal played by arbitrary waveform		
Bandwidth	± 250 MHz		
	±500 MHz（option SSG6080AV-B1000）		
Carrier to noise ratio	±100 dB		
Carrier-to-noise formats	C/N，Eb/N0		
Custom digital modulation mode			
Symbol Rate	200 Hz - 312.5 MHz 200 Hz - 625 MHz（option SSG6080AV-B1000）		
Modulation type	PSK	BPSK，QPSK，8PSK，DBPSK，DQPSK，D8PSK，OQPSK，PI/4-DQPSK，PI/8-D8PSK	

	QAM	16QAM, 32QAM, 64QAM, 128QAM, 256QAM, 512QAM, 1024QAM
	MFSK	2FSK，4FSK，8FSK，16FSK，MSK
	ASK	2ASK，4ASK，8ASK，16ASK
User		

Multi-tone	
Number of tones	1 to 65536，with selectable on/off state per tone
Frequency spacing	±10 Hz to ±250 MHz ±10 Hz to ±500 MHz（option SSG6080AV-B1000）
Phase (per tone)	Fixe or random

3GPP WCDMA distortion performance			
Power level ≤ 4 dBm			
Offset	Configuration	Frequency	Level ≤ 4 dBm
Adjacent（5 MHz）	1DPCH，1 carrier	1800 to 2200 MHz	72dBc（typ）
Adjacent（10 MHz）			74dBc（typ）
Adjacent（5 MHz）	Test mode 1 with 64 DPCH，1 carrier	1800 to 2200 MHz	69 dBc（typ）
Adjacent（10 MHz）			69 dBc（typ）

3GPP LTE-FDD distortion performance			
Offset	Configuration	Frequency	Level ≤ 4 dBm
Adjacent (10 MHz)	10 MHz E-TM1.1 QPSK	1800 to 2200 MHz	65 dBc（typ）
Adjacent (20 MHz)			65 dBc（typ）

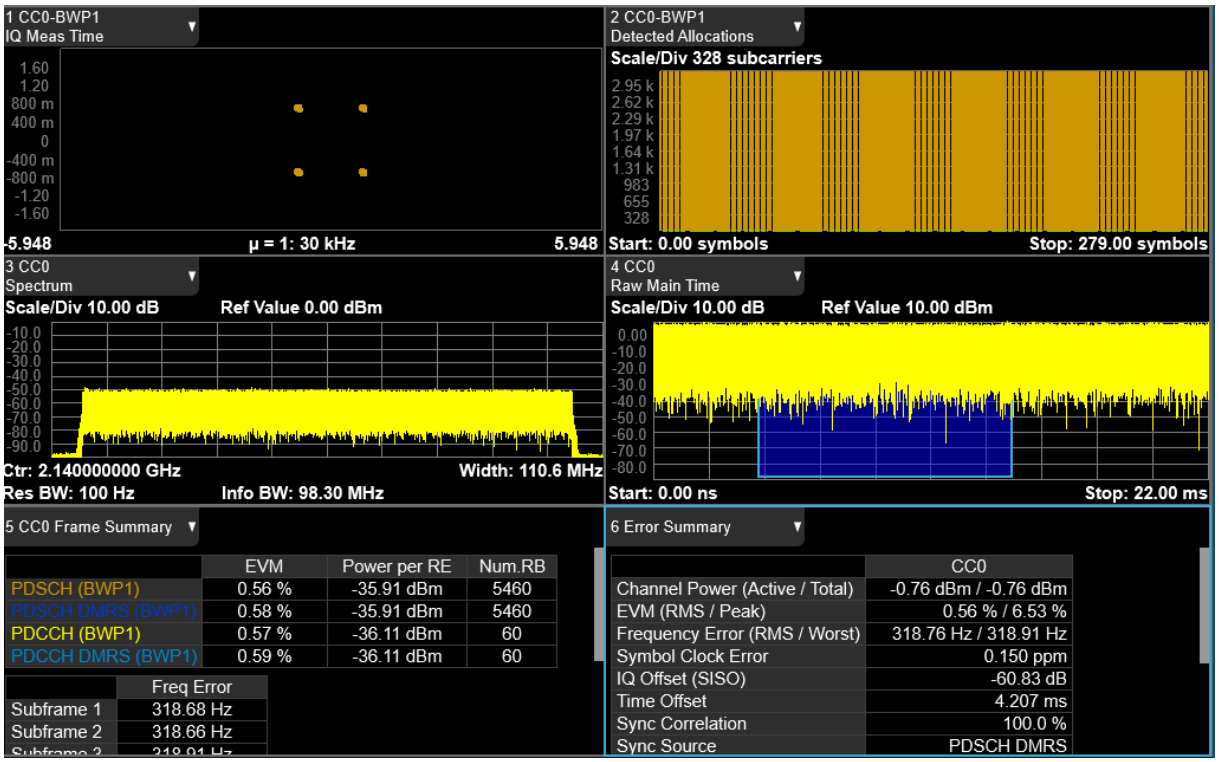
GSM/EDGE output RF spectrum				
			GSM	EDGE
Offset	Configuration	Frequency	Power level ≤ 4 dBm	
200 kHz	1 normal timeslot burst	800 to 900 MHz 1800 to 1900 MHz	-36 dBc（typ）	-38 dBc（typ）
400 kHz			-41 dBc（typ）	-42 dBc（typ）
600 kHz			-71 dBc（typ）	-72 dBc（typ）
800 kHz			-82 dBc（typ）	-82 dBc（typ）
1200 kHz			-84 dBc（typ）	-84 dBc（typ）

EVM performance					
Format	W-CDMA	LTE FDD	GSM	EDGE	CDM2000
Modulation type	QPSK	64 QAM	GMSK (burst)	3 pi/ 8PSK (burst)	QPSK
Modulation rate	3.84 Mcps	10 MHz BW	270.833 Ksps	70.833 Ksps	1.2288 Mcps

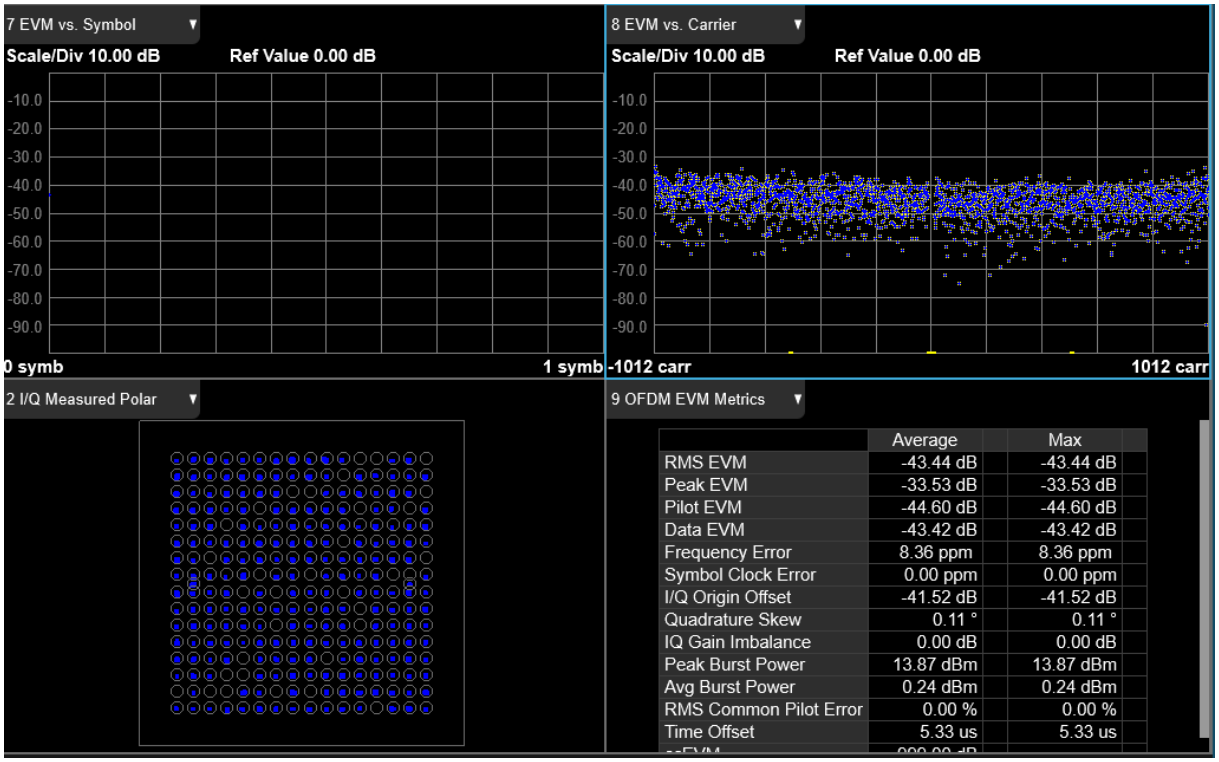
Channel configuration	1 DPCH	E-TM 3.1	1 timeslot	1 timeslot	Pilot channel
Frequency	1800 to 2200 MHz	1800 to 2200 MHz	800 to 900 MHz 1800 to 1900 MHz	800 to 900 MHz 1800 to 1900 MHz	800 to 900 MHz 1800 to 1900 MHz
EVM power level	< 4 dBm				
EVM	< 0.4 % (measured value)	< 0.45 % (measured value)	< 0.4 % (measured value)	< 0.8 % (measured value)	< 1.1 % (measured value)

EVM performance		
Format	QPSK	16 QAM
Modulation type	QPSK	16 QAM
Modulation rate	5 Msps（root-Nyquist filter α=0.25）	
Frequency	≤ 8 GHz	≤ 6 GHz
power level	≤ 4 dBm	
EVM	< 1 %	< 1 %

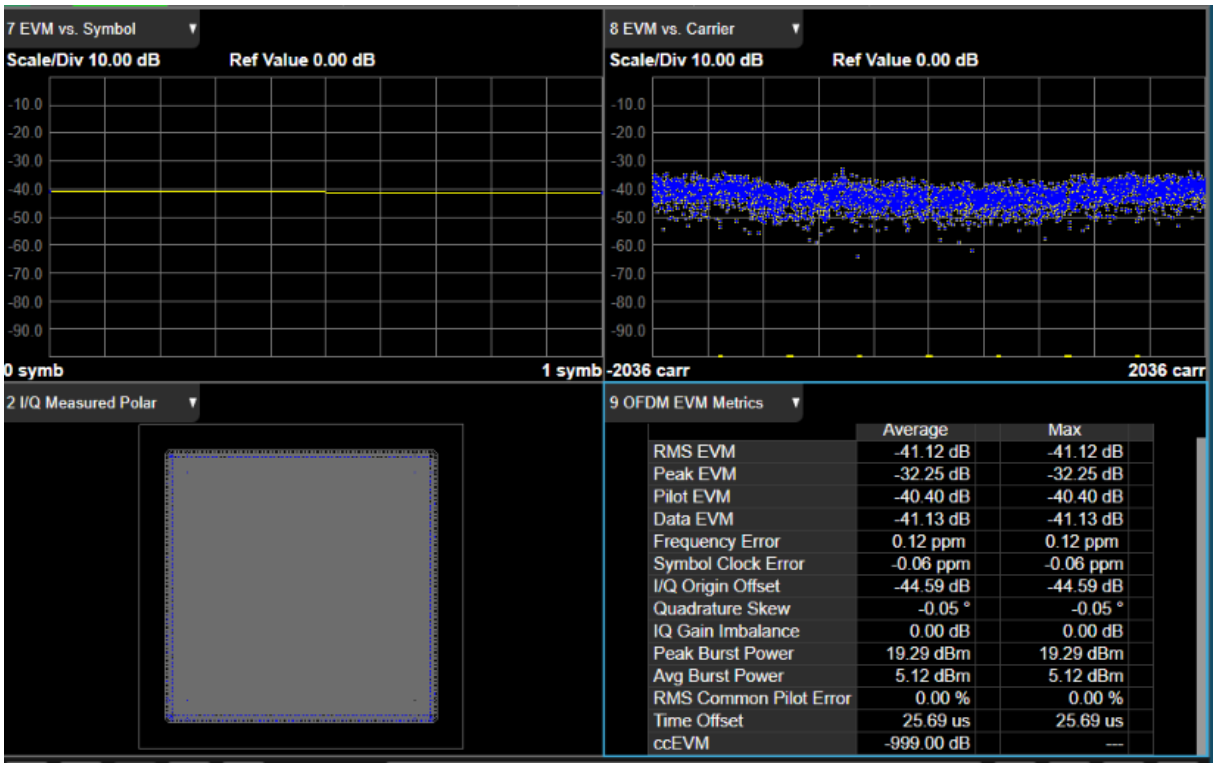
5G NR Test Mode TM1.1 100M Bandwidth 3.9G Carrier, ACPR Test Value



5G NR Test Mode TM1.1 100M Bandwidth 3.9G Carrier, EVM Test Value



IEEE 802.11ax 160M Bandwidth, Carrier Frequency 6GHz, EVM Test Value



IEEE 802.11be 320M Bandwidth, Carrier Frequency 7GHz, EVM Test Value

Connectors

Front panel connectors		
RF output	Impedance	50 Ω
	Connector	N female
Modulation generator output (LF)	Impedance	50 Ω
	Connector	BNC阴头
USB-host2	USB-A 2.0	
USB-host3	USB-A 2.0	
Rear panel connectors		
TRIG IN/ OUT	Impedance	100 kΩ
	Connector	BNC female
	Active trigger voltage	5 VTTL
EXT MOD INPUT	Impedance	High impedance
	Connector	BNC female
PULSE IN/ OUT	Impedance	Input: High impedance Output: 50 Ω
	Connector	BNC
	Input / output voltage	CMOS 3.3 V
10 MHz IN	Impedance	50 Ω
	Connector	BNC female
	Input power range	-5 dBm ~ 10 dBm
10 MHz OUT	Impedance	50 Ω
	Connector	BNC female
	Input power range	> 0 dBm
LO Input	Impedance	50 Ω
	Connector	BNC female
	Input power range	-5 dBm ~ 5 dBm
LO Output	Impedance	50 Ω
	Connector	SMA female
	Input power range	> 5dBm
SIGNAL VALID	Impedance	50 Ω
	Connector	BNC female
	Output voltage	CMOS 3.3 V

	range	
I Input	Impedance	50 Ω
	Connector	BNC female
Q Input	Impedance	50 Ω
	Connector	BNC female
I+ output	Impedance	50 Ω
	Connector	BNC female
I- output	Impedance	50 Ω
	Connector	BNC female
Q+ output	Impedance	50 Ω
	Connector	BNC female
Q- output	Impedance	50 Ω
	Connector	BNC female
PATTERN_TRIG	Impedance	High impedance
	Connector	BNC female
	Input voltage range	CMOS 3.3 V
IQ_EVENT	Impedance	50 Ω
	Connector	BNC female
	Output voltage range	CMOS 3.3 V
User	Impedance	50 Ω
	Connector	BNC female
	Output voltage range	CMOS 3.3 V
Communication Interface		
USB-HOST	USB-A 3.0	
USB-DEVICE1	USB-B 3.0	
LAN	LAN（VXI11，10/100/1000Base，RJ-45）	

General Specification	
Display	TFT LCD, 800(RGB*480, 5inch capacitive touch screen
Storage	Internal (Flash) 64 G Byte, external (USB storage device)
Input Voltage Range, AC	100 V - 240 V (±10%), 50/60 Hz
Power Consumption	135 W (with all options operating)
Temperature	Working temperature 0 ℃ to 50 ℃, Storage temperature -20 ℃ to

	70 ℃
Humidity	0 ℃ to 30 ℃, ≤ 95 % relative humidity; 30 ℃ to 50 ℃, ≤ 75 % relative humidity
Dimensions	W×H×D=482×104×540 mm
Weight without package	10.66 kg
Electromagnetic Compatibility and Safety	
EN IEC 61326-1: 2021 / EN IEC 61000-3-2: 2019A1:2021	Class A
EN 61000-3-3: 2013+A2:2021	Plt：0.65 Pst：1.00; Dmax：4.00 % dc：3.00 %;
IEC 61000-4-2: 2008	AD ±8.0 kV，CD ±4.0 kV
IEC 61000-4-3: 2020	80 MHz to 1000 MHz: 10 V/m；1.4 GHz to 2.0 GHz: 3 V/m； 2.0 GHz to 2.7 GHz: 1 V/m
IEC 61000-4-4: 2012+ A1: 2010	AC Line：+/- 1.00 kV
IEC 61000-4-5: 2014+A1:2017	Line to Line: 1.0 kV，Line to Earth: 2.0 kV
IEC 61000-4-6: 2008	0.15 - 80 MHz: 3V 1 kHz 80 % AM
IEC 61000-4-8: 2009	30 A/m，50/60 Hz
IEC 61000-4-11: 2004	Voltage Dips：0%/0.5P；40%/10P；70%/25P； Short Interruptions Test Level%UT:0%/250P
Safety	
IEC 61010-1:2010/ EN 61010-1:2010	
Canada：CAN/ CSA-C22.2 No.61010-1:2012	
RoHS	
2011/65/EU	

Ordering information

Product Description	SSG6080A-V Series Signal Generator	Order Number
Product code	SSG6082A-V	SSG6082A-V
Standard configurations	Quick start, an USB cable, calibration certificate, power cord	
Option	Pulse modulation	SSG6080AV-PU
	Pulse train generator	SSG6080AV-PT
	1G RF bandwidth	SSG6080AV-B1000
	Bluetooth Signal Playback	SigIQPro-BT
	IOT Signal Playback	SigIQPro-IOT
	General OFDM Signal Playback	SigIQPro-OFDM
	5G NR Wireless Communication Protocol Signal Playback	SigIQPro-5G NR
	LTE FDD Wireless Communication Protocol Signal Playback	SigIQPro-LTE FDD
	LTE TDD Wireless Communication Protocol Signal Playback	SigIQPro-LTE TDD
	IEEE.802.11.ax Protocol Signal Playback	SigIQPro-IEEE.802.11.ax
	IEEE.802.11.be Protocol Signal Playback	SigIQPro-IEEE.802.11.be
	IEEE.802.11 b/g/a/n/ac Signal Playback	SigIQPro-IEEE.802.11 b/g/a/n/ac
	GSM/EDGE Signal Playback	SigIQPro-GSM/EDGE
	WCDMA FDD HSPA/ /HSPA+.	SigIQPro-WCDMA/HSPA+
	Rack Mount Kit	SSG6000A-RMK
	USB-GPIB Conversion Adapter	USB-GPIB

About SIGLENT

SIGLENT is an international high-tech company, concentrating on R&D, sales, production and services of electronic test & measurement instruments.

SIGLENT first began developing digital oscilloscopes independently in 2002. After more than a decade of continuous development, SIGLENT has extended its product line to include digital oscilloscopes, isolated handheld oscilloscopes, function/arbitrary waveform generators, RF/MW signal generators, spectrum analyzers, vector network analyzers, digital multimeters, DC power supplies, electronic loads and other general purpose test instrumentation. Since its first oscilloscope was launched in 2005, SIGLENT has become the fastest growing manufacturer of digital oscilloscopes. We firmly believe that today SIGLENT is the best value in electronic test & measurement.

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