GW Instek GSG-2000 RF Signal Generator
New Product Announcement

This document allows GW Instek's partners to quickly grasp product's main features, FAB and ordering information

GWINSTEK
Simply Reliable

The GSG-2000 series is a basic RF vector signal/ signal generator that covers a frequency range from 9kHz to 6GHz. It is suitable for applications in communications education, RF component testing (such as amplifiers, antennas, and filters), automotive electronic signal testing, and IoT applications. It meets the testing requirements of RF products during production and development stages. Compared to its main competitors, the GSG-2000 series offers superior specifications including a wide amplitude output range of +20dBm to -140dBm, lower phase noise of -117dBc/Hz, and high frequency accuracy with 10ppm frequency stability and 2ppm aging rate. Users have the option to enhance frequency stability and aging rate by selecting the OCXO (Oven Controlled Crystal Oscillator) option, which provides 10ppb stability and 0.1ppm aging rate.

For the signal modulation, the entire series has built-in AM, FM, and PM analog modulation, and GSG-2160 features a digital signal modulation function with a maximum bandwidth of 60MHz digital signal output, supporting ASK, PSK, APSK, QAM, FSK, MSK, User-defined IQ, User-defined FSK modulation signals.

Furthermore, the GSG-2000 series also provides LF signal and Pulse signal output. The LF signal allows users to output Sine, Square, Triangle/Ramp, Gaussian Noise signals, and the Pulse signal output can simulate pulse wave applications of various widths. In addition to the above signal outputs, GSG-2000 also provides AM/FM/digital IQ signal input, as well as independent output ports for digital I or Q signals.

GSG-2000 adopts a seven-inch TFT LCD display that can fully display the parameters and status set by the user, and the series also provides USB, LAN, GPIB (option) communications interfaces, and provides standard SCPI-compatible commands to support remote control . GSG-2000 is designed for 3U high standard rack size.

The GSG-2000 series is available in two models and the main differences are shown in the following table:

	GSG-2160	GSG-2060
Frequency range	9kHz~6GHz	9kHz~6GHz
Analog modulation	AM, FM, PM	
Digital modulation	ASK, PSK, APSK, QAM, FSK, MSK, User-defined IQ, User-defined FSK	N/A
LF output	V	
Pulse output	V	

Features

     * Frequency range: 9kHz ~ 6GHz

     * Frequency resolution: 1mHz

     * Standard 10ppm frequency stability, 2ppm aging rate

      Optional AUX (OCXO): 10ppb frequency stability, 0.1ppm aging rate

     * Amplitude range: -140dBm to +20dBm

     * 0.01dBm amplitude setting resolution

     * Amplitude setting unit: dBm, dBµV, Vrms

     * Phase noise: <-117dBc/Hz (real) @1GHz output and 20kHz offset

     * The sampling speed of digital modulation signal (I/Q) output reaches 180MSa/s

     * Frequency/amplitude switching speed: ≤ 5ms

     * Built-in LF/RF signal output, Pulse signal output

     * The series has built-in AM, FM, PM analog signal modulation functions

     * Supports IQ modulation signal output (GSG-2160 only)

        Up to 60MHz baseband I or Q modulation signal output

        Up to 120MHz RF I+Q modulation signal output

        Built-in ASK, PSK, APSK, QAM, FSK, MSK, self-defined IQ/FSK digital signal modulation functions

     * Provides USB, LAN and GPIB (option), commands comply with SCPI standards

Applications

- Education
- Automotive
- Industrial of RF components, amplifier, antenna, filter...etc
- Analog/Digital communication system
- IoT (Internet of Things) node, gateway

Appearance

1. Frequency, amplitude, sweep setting keys	6. AM/FM/PM/Pulse setting keys	11. AM/FM input port
2. Numeric input keys	7. Trigger/LF/IQ setting keys	12. LF/RF output port
3. Unit selection keys	8. File/Save/Recall/Default/User Default/Utility Setting Buttons	13. I/Q output port
4. F1~F5 function keys	9. LF on/off; RF on/off	14. Trigger 2 in
5. Return key	10. I/Q input port	15. Pulse in/out; Trigger 1 in/trigger out; 10MHz in/out

Important Information for Product Ordering

Key Dates for Product Announcement
1. NPI release and sample order (Nov 25, 2024)
2. Global market announcement (Dec 9, 2024)

Service Policy

- One-year warranty. The GSG-2000 RF vector signal/ signal generator comes with a standard one-year warranty.
- Service support: GSG-2000 RF vector signal/ signal generator is a high-frequency and high-precision test and measurement instrument. Accurate calibration is required after product maintenance. Therefore, the maintenance method requires the instrument to be sent back to GW Instek for maintenance.

Marketing documents and service manuals can be downloaded via the official website. GW Instek will continue to provide after-sales services via the official website. The latest marketing documents and service manuals for the GSG-2000 RF vector signal/ signal generator will be announced in the dedicated dealer zone of the GW Instek website at https://www.gwinstek.com.

Ordering Information

Model name	Reference part number	EAN-13 code
GSG-2060 (GPIB) (CE)	01SG206020GT	4711458121808
GSG-2060 (GPIB+AUX) (CE)	01SG206030GT	4711458121815
GSG-2160 (GPIB) (CE)	01SG216020GT	4711458121884
GSG-2160 (GPIB+AUX) (CE)	01SG216030GT	4711458121891

* AUX is an OCXO (Oven Controlled Crystal Oscillator)

Input Deviation: Standard: 3ppm; **OCXO Option: 0.5ppm**

Temperature Stability: Standard: <10ppm; **OCXO Option: <10ppb**

Aging: Standard: 2ppm/year; **OCXO Option: 0.1ppm/year**

Standard Accessories

Power cord, factory certificate, safety information (GSG-2000 no longer provides paper manuals, please download all files from the website)

Option

Part No.	Model	Description of product name	EAN Code
01RA4470000T	GRA-447	RACK FOR GSG-2000	4711458121907

Product FAB Features, Advantages and Benefits

Features	Advantages	Benefits
GSG-2160 has built-in analog and digital modulation	Provides more diverse testing applications	Improve testing efficiency
Dual baseband can be generated arbitrarily	I/Q waveforms can be independently edited to realize digital synthesized signal output	
Phase Noise <-117dBc/Hz @1GHz output & 20kHz offset	Supports applications testing digital signals such as the Internet of Things	
1mHz frequency resolution	Allows more detailed testing of signal changes	
Provides USBTMC, LAN, GPIB communications interfaces	Interfaces meet users' connection needs	Convenient recording and analysis
Adopts IEEE488.2 standard control command set	Allows users to quickly become familiar with software development/control command sets	
3U standard rack size design	Comes in standard sizes and can be quickly installed on a standard rack	
7" TFT LCD, graphic display design	Allows users to read and operate more efficiently	

Product Features Description

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Provides multifunctional output signals	**6 GHz RF signal output** Both GSG-2160 and GSG-2060 provide RF signal output from 9kHz to 6GHz. GSG-2060 supports analog RF signal output (such as AM, FM, PM), and GSG-2160 supports analog and digital RF signal output. **LF output with built-in function signal** Equipped with an LF function signal (Low Frequency function generator) that can be output independently, and the series provides waveforms such as Sine, Square, Triangle, Ramp, Gaussian noise, etc. Users can use it in conjunction with other input and output functions, or it can be used alone in applications such as circuit design and electronic component testing and other related applications. **Pulse signal output** GSG-2000 has a built-in Pulse signal output. Users can adjust the Pulse duty cycle, which is often used to test digital circuits such as TTL, CMOS, ECL, etc., or to simulate changes in switching signals. **RF and LF signal output ports** **Pulse signal output port** **Digital signal output (GSG-2160 only)** GSG-2160 supports the output of IQ signals with an output bandwidth up to 120MHz (RF BW). In addition, it can also output I & Q components.

Frequency response plot generated by internal input IQ signal

internal IQ bandwidth

● 850MHz ● 1800MHz ● 1900MHz ● 2200MHz ● 3500MHz ● 5800MHz
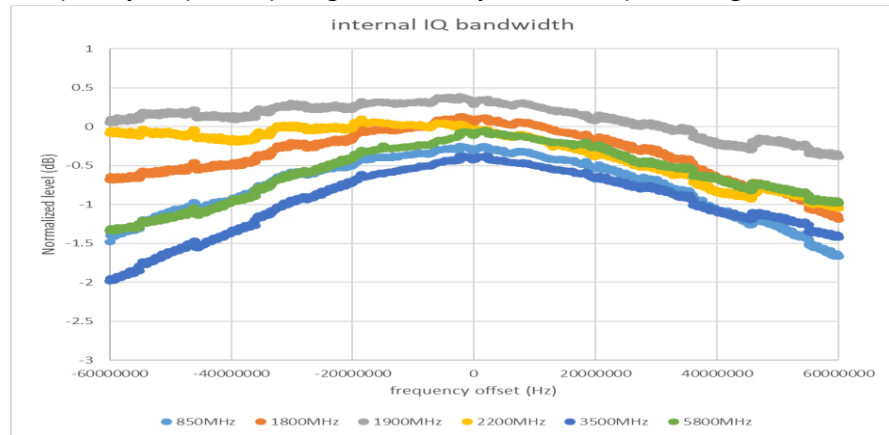
Supports various signal inputs	**External AM/FM signal input**

Users can input AM or FM signals externally for analog modulation related applications.
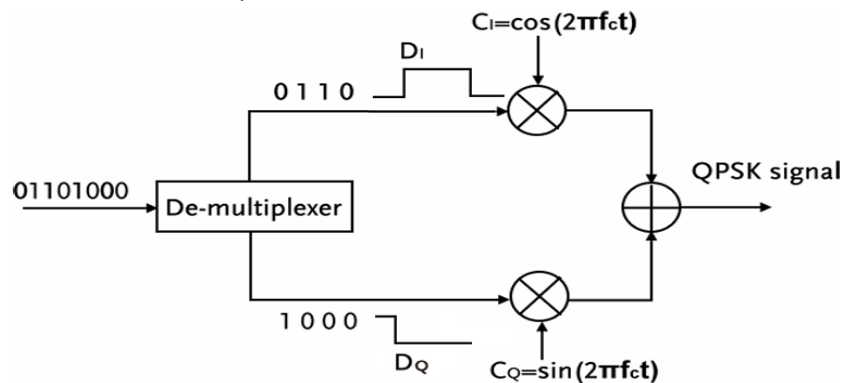

Provides input for external IQ signal

Users can input I and Q data respectively, and then synthesize the required IQ digital signal through the internal RF signal output.

For example, in the QPSK signal in the diagram below, after inputting the corresponding data from I and Q respectively, and selecting the QPSK function, QPSK output can be edited.

Frequency response diagram generated by external input IQ signal
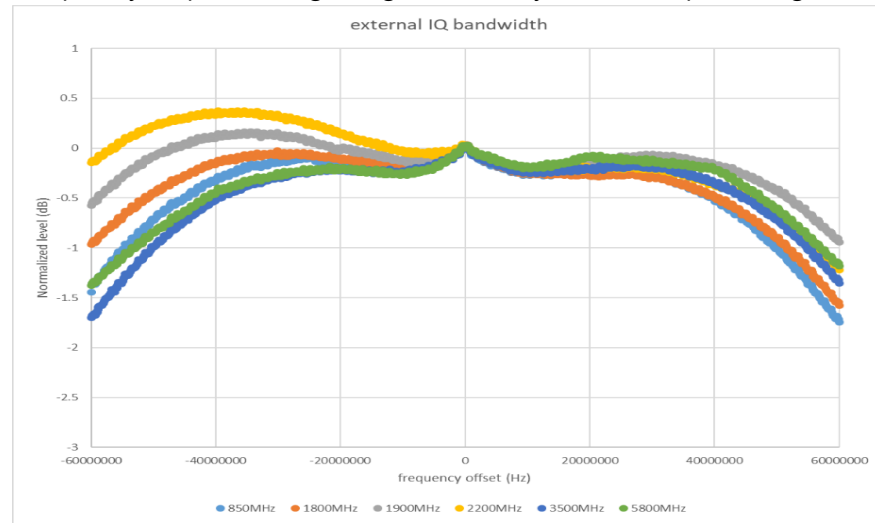
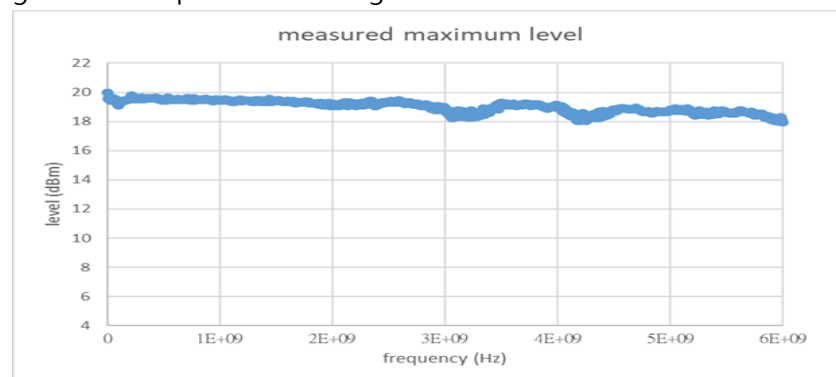|	
Frequency & amplitude switching speed	GSG-2000 can switch between frequencies or amplitudes within 5ms. Faster switching speed allows the output signal to have relatively less signal distortion.
Accurately set resolution	GSG-2000 provides a setting resolution as low as 1mHz in frequency and a setting resolution in amplitude of 0.01dBm, allowing users to process more complex signals. FREQUENCY: 1.000000000000 GHz AMPLITUDE: -140.00 dBm
Wide amplitude output range	GSG-2000 provides a setting range from +20dBm ~ -140dBm, and a guaranteed specification range from +14dBm ~ -110dBm.
Purer signal output	**-117 dBc/Hz phase noise(@1GHz output,20kHz offset)** The output signal provided by GSG-2000 has an optimal phase noise of -117dBc/Hz, which can be applied to a wider variety of applications, such as automotive digital signals, IoT industrial applications and other fields that require pure signals.

Phase Noise @ 20kHz offset (dBc/Hz)			
	MHz	ALC On	ALC Off
Frequency Range	5	-	-122
	100	-112	-115
	250	-112	-117
	1000	-112	-117
	2000	-108	-112
	3000	-107	-110
	6000	-102	-105

The following are the phase noise at each frequency under ALC On and ALC Off.

ALC On:

Measured phase noise CW mode (ALC on)

ALC Off:
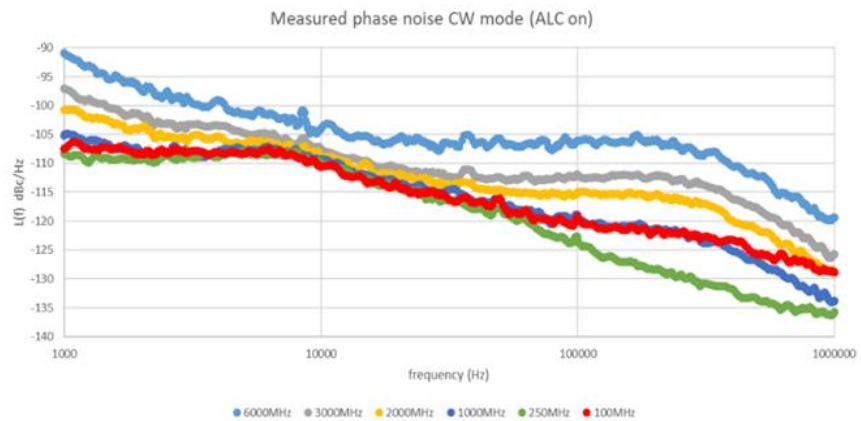
Measured phase noise CW mode (ALC off)
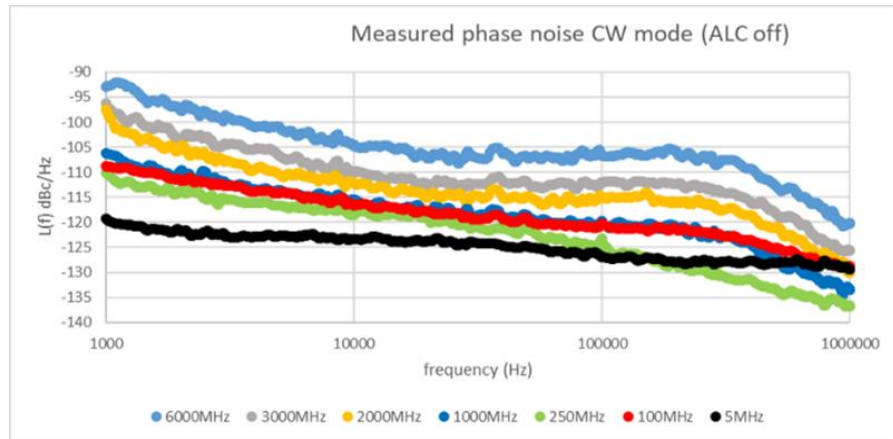
The signal purity of its Harmonic and Spur is also close to the entry-level indicators of major European and American manufacturers.

Harmonics	
Range	Level < =4dBm
9k ≤ freq. < 6000M	**<-35dBc**

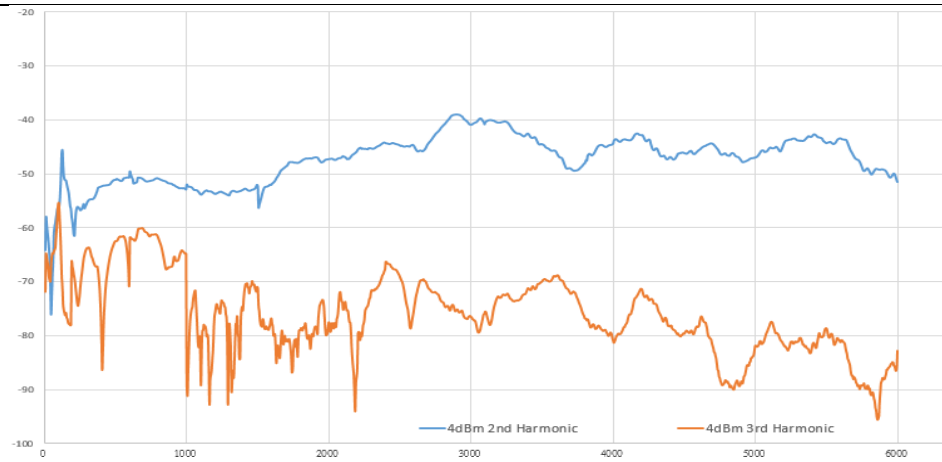| Non-Harmonics		
Level > -10dBm, offset > 10kHz	<-65dBc	1M ≤ freq. < 5M
	<-70dBc	5M ≤ freq. < 187.5M
	<-75dBc	187.5M ≤ freq. < 750M
	<-72dBc	750M ≤ freq. < 1500M
	<-64dBc	1500M ≤ freq. < 3000M
	<-58dBc	3000M ≤ freq. < 6000M

Graphic display design	GSG-2000 utilizes a 7-inch large-size LCD display. All setting parameters, measurement results and current function information can be directly displayed, allowing users to quickly understand the current setting information.

For the first innovation, icons and arrow connections are displayed directly on the screen, allowing users to understand the path of signal generation at a glance. For example, the PSK signal output in the picture below directly displays the block diagram, modulation signal pattern and corresponding parameters on the screen, allowing the user to set related parameters.

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Rich communications interfaces	GSG-2000 provides standard interface LAN and USBTMC output, and optional GPIB interface to meet the user's connection needs under various interfaces. The command supports the standard SCPI IEEE488.2 standard command set.

Comparison with major competitor

1. GSG-2000 vs Rigol DSG3065B/DSG3065B-IQ

	GW	Rigol
Model	GSG-2000	DSG3065B/3065B-IQ
Frequency	9k to 5M (digital synthesis)	9k to 6.5GHz
	5M~6GHz (N=0.25~4)	(N=0.125~2)
	resolution 1mHz	resolution 0.01Hz
Frequency switching	≤5ms (typical)	≤10ms(typical)
phase noise	-117dBc/Hz (1GHz@20kHz, ALC off)	-116dBc/Hz (typical) (1GHz@20k)
Non-Harmonic	<-72dBc@1GHz (0dBm)	<-60dBc(>-10dBm)
Harmonics	<-35dBc (<4dBm)	<-30dBc(<13dBm)
Amplitude	settable range	settable range
	+20~-140dBm	+27~-130dBm
	Spec. +14~-110dBm	Spec. +13~-110dBm
	resolution 0.01dB	resolution 0.01dB
Amplitude accuracy	ALC on ±0.8~1dB	ALC on:±0.7~1.3dB
	ALC off: 0.15dB relative to ALC on	N/A
Amplitude switching	≤5ms typical	≤5ms (typical)
Simultaneous modulation	all modulation except FM and PM	AM, FM, PM, pulse, IQ
Analog modulation	AM, FM, PM	AM, FM, PM
Pulse modulation	on/off ratio	On/off ratio
	>70dB (<3GHz)	>70dB (100k~3.6GHz)
	Edge <20ns	Edge <50ns
Internal LF (AM,FM,PM)	Sine, square, pulse, triangle, Gaussian noise,	Sin, square,
	0.1Hz~10MHz (sine, noise)	DC~200kHz (sine)
	0.1Hz~1MHz(others)	DC~20kHz (square)
	Output: -3~3V offset	output DC :-3~3V
		Output AC:0~3V
IQ modulation	EVM 1% rms meas	EVM ≤ 2%rms (typ.)
		(16 QAM, root cosine filter (α = 0.22), 4 MSps, output level ≤ +4 dBm)
Internal IQ generator	180MSa/s	50MHz sample rate
	RF bandwidth 120MHz	RF bandwidth 60MHz
	waveform length 16Msa	waveform length 16Msa
Digital modulation	(GSG-2160 only) 2ASK, 4ASK, 8ASK, 16ASK, 32ASK, BPSK, QPSK, DQPSK, OQPSK, π/4 DQPSK, 8PSK, D8PSK, 16PSK, 16APSK, 32APSK, 16QAM, 32QAM, 64QAM, 128QAM, 256QAM, 2FSK, 4FSK, 8FSK, 16FSK	(DSG3065B-IQ only) 16QAM, 32QAM, 64QAM, 128QAM, 256QAM, 2ASK, 4ASK, 8ASK, 16ASK, 32ASK, BPSK, QPSK, π/4-QPSK, π/4-DQPSK, 8PSK, MSK, 2FSK, 4FSK, User defined
Interface	USBTMC, LAN, GPIB(Opt)	USB, LAN

2. GSG-2000 vs Keysight N5172B/N5166B

Manufactory	GW	Keysight	
Model	GSG-2000	N5172B	N5166B
Frequency	9k to 5M (digital synthesis)	9k to 5M (digital synthesis)	9k to 5M (digital synthesis)
	5M~6GHz (N=0.25~4)	5M~6G(N=0.25~4)	5M~6G(N=0.25~4)
	resolution 1mHz	resolution 1mHz	resolution 1mHz
Frequency switching	≤5ms typical	≤5ms(typical)	≤5ms(typical)
phase noise	-117dBc/Hz (1GHz@20kHz)	-122dBc/Hz (1GHz@20kHz)	-119dBc/Hz (1GHz@20kHz)
Non-Harmonic	<-72dBc@1GHz (0dBm)	<-72dBc@1GHz	<-72dBc@1GHz
Harmonics	<-35dBc (<4dBm)	<-35dBc (<4dBm)	<-35dBc (<4dBm)
Amplitude	settable range +20~-140dBm	settable range: +30~-144dBm	settable range: +19~-144dBm
	Spec. +14~-110dBm	Max. 13~18dBm (Option) 17~21dBm	Max. 13~18dBm
	resolution 0.01dB	resolution 0.01dB	resolution 0.01dB
Amplitude accuracy	ALC on ±0.8~1dB	ALC on: ±0.6~0.8dB (max to -110dBm)	ALC on: ±0.6~0.8dB (max to -110dBm)
		ALC off power search: ± 0.15dB relative to ALC on	ALC off power search: ± 0.15dB relative to ALC on
	ALC off: 0.15dB relative to ALC on	ALC on IQ: ± 0.25dB relative to ALC on	
Amplitude switching	≤5ms typical	≤5ms (typical)	≤5ms (typical)
Simultaneous modulation	all modulation except FM and PM	all modulation except FM and PM	all modulation except FM and PM
Analog modulation	AM, FM, PM	AM, FM, PM	AM, FM, PM
Pulse modulation	on/off ratio	on/off ratio	on/off ratio
	>70dB (<3GHz)	>80dB	>80dB
	Edge <20ns	Edge <10ns	Edge <10ns
Internal LF (AM,FM,PM)	Sine, square, pulse, triangle, Gaussian noise,	Sin, square, triangle, ramp, pulse, uniform noise, Gaussian noise, DC	Sin, square, triangle, ramp, pulse, uniform noise, Gaussian noise, DC
	0.1Hz~10MHz (sine, noise)	0.1Hz~10MHz (sine, noise)	0.1Hz~10MHz (sine, noise)
	0.1Hz~1MHz(others)	0.F1Hz~1MHz (others)	0.1Hz~1MHz (others)
	Output: -3~3V offset	Output :-5V~5V	Output :-5V~5V
		2 generator (option)	2 generator (option)
IQ modulation	EVM 1% rms meas	EVM 1.1% rms, 0.65% typ. (16QAM,0.25RRC filter, 4Msps, ≤3GHz, ≤ 4dBm)	EVM 1.1% rms, 0.65% typ. (16QAM,0.25RRC filter, 4Msps, ≤3GHz, ≤ 4dBm)
Internal IQ generator	180MSa/s	75MSa/s or 150MSa/s(option)	75MSa/s or 150MSa/s(option)
	RF bandwidth 120MHz	RF bandwidth 60 or 120MHz(option)	RF bandwidth 60 or 120MHz(option)
	waveform length 16Msa	waveform length 32Msa (option)256M/512Msa	waveform length 32Msa (option)256M/512Msa
	(GSG-2160 Only)	waveform sequence max 32000 (seg/seq) / 4M (seg/seq)(option)	waveform sequence max 32000 (seg/seq) / 4M (seg/seq)(option)
Digital modulation	**GSG-2160:** 2ASK, 4ASK, 8ASK, 16ASK, 32ASK, BPSK, QPSK, DQPSK, OQPSK, π/4 DQPSK, 8PSK, D8PSK, 16PSK, 16APSK, 32APSK, 16QAM, 32QAM, 64QAM, 128QAM, 256QAM, 2FSK, 4FSK, 8FSK, 16FSK	4~1024 QAM, ASK(0 to 100%), BPSK, QPSK, OQPSKπ/4-DQPSK, gray coded QPSK, 8PSK, 16PSK, D8PSK, IS95 QPSK, IS95 OQPSK, EDGE, HDQPSK, SOQPSK, 2~16FSK, C4FM, HCPM, MSK, 16APSK, 32APSK, user define(1024 value),	4~1024 QAM, ASK(0 to 100%), BPSK, QPSK, OQPSKπ/4-DQPSK, gray coded QPSK, 8PSK, 16PSK, D8PSK, IS95 QPSK, IS95 OQPSK, EDGE, HDQPSK, SOQPSK, 2~16FSK, C4FM, HCPM, MSK, 16APSK, 32APSK, APCO 25w/C4FM, APCO25 w/CQPSK,

		APCO 25w/C4FM, APCO25 w/CQPSK,	
Interface	USBTMC, LAN, GPIB(Opt)	USBTMC, LAN, GPIB	USBTMC, LAN, GPIB

Product specifications

(The following specifications apply after the instrument has been powered up for at least 60 minutes and the ambient temperature is between 20 and 30 degrees C, unless otherwise specified.)

Model		GSG-2160				GSG-2060		
Frequency Range		9kHz to 6GHz				9kHz to 6GHz		
Signal Type		Analog RF Signal + vector Signal				Analog RF Signal		
Frequency Resolution		1mHz						
Frequency Bands	Band	1	1	2	3	4	5	6
	Frequency Range	9kHz to 5MHz	<5MHz to 187.5MHz	<187.5MHz to 375MHz	<375MHz to 750MHz	<750MHz to 1500MHz	<1500MHz to 3000MHz	<3000MHz to 6000MHz
	N	digital synthesis	1	0.25	0.5	1	2	4
Frequency Switching		≤5ms						
PHASE NOISE								
SSB Phase noise, CW at 20kHz FFSET (dBc/Hz)	Frequency (MHz)	5	100	250	1000	2000	3000	6000
	ALC on	-	-112	-112	-112	-108	-107	-102
	ALC off	-122	-115	-117	-117	-112	-110	-105
Residual FM (0.3kHz to 3kHz) (1GHz CW)		<2Hz						
NON-HARMONICS								
Level > -10dBm, offset >10kHz		1MHz ≤ freq. < 5MHz	5MHz ≤ freq. < 187.5MHz	187.5MHz ≤ freq. < 750MHz	750MHz ≤ freq. < 1500MHz	1500MHz ≤ freq. < 3000MHz	3000MHz ≤ freq. < 6000MHz	
		<-65dBc	<-70dBc	<-75dBc	<-72dBc	<-64dBc	<-58dBc	
HARMONICS								
Range		Level < 4dBm						
9kHz ≤ freq. < 6000MHz		<-35dBc						
FREQUENCY REFERENCE								
Frequency Reference		10MHz						
Output		1Vpp, 50 Ohm Load						
Input		-3 ~ 20dBm, 50 Ohm Load						
Input Deviation		Standard: 3ppm; OCXO Option: 0.5ppm						
Temperature Stability		Standard: <10ppm; OCXO Option: <10ppb						
Aging		Standard: 2ppm/year; OCXO Option: 0.1ppm/year						
AMPLITUDE								
Setting Range		20dBm to -140dBm						
Resolution		0.01dB						
Amplitude Unit		dBm, dBμV, Vrms						
AMPLITUDE ACCURACY								
Absolute level accuracy in CW mode (ALC On)	9kHz < freq. < 3GHz	14 dBm to -60dBm: ±0.6dB ; -60dBm to -90dBm: ±0.8dB; -90dBm to -110dBm:±1dB						
	3GHz < freq. < 6GHz	14 dBm to -60dBm: ±0.8dB ; -60dBm to -90dBm: ±1dB; -90dBm to -110dBm:±1.2dB						
Absolute level accuracy in CW mode		0.15dB						

(ALC Off, power search run, relative to ALC on)	
VSWR (5M ~ 3GHz)	<1.8 (output ≤ -66dBm)
Amplitude Switching (ALC on, CW)	≤5ms
SWEEP	
Mode	frequency, amplitude, list
Dwell Time	100µs to 100s
Number of Points(step)	2 to 65,535
Number of Points(list)	1 to 4096
Triggering	free, trigger key, external, timer
AM	
Source	internal, external
Resolution	0.01%
Depth	0 to 100%
Accuracy (1kHz, 0dBm)	<5MHz; 1.5% setting +1% ; 5M ~ 4GHz; 3% of setting+1% ; 4GHz ~ 6GHz; 5% of setting + 1%
Distortion (1kHz, 80%, <8dBm)	<5MHz; 1.5% ; 5M ~ 4GHz; 2% ; 4GHz ~ 6GHz; 3%
Response	0.1Hz to 20kHz
FM	
Source	internal, external
Max. Deviation	N*1MHz
Rate	Freq. > 10MHz, 0.1Hz to 1MHz ; Freq. < 10MHz, 0.1Hz to 100kHz
Resolution	1mHz
Accuracy (1kHz rate)	2% setting +20Hz
Distortion (1kHz rate, N*50kHz deviation)	0.40%
PM	
Source	internal, external
Max. Deviation	N* 1MHz/rate or 5N rad
Rate	Freq.> 10MHz, 0.1Hz to 1MHz ; Freq. < 10MHz, 0.1Hz to 100kHz
Resolution	0.001rad
Accuracy (1kHz rate)	1% of setting+0.1rad
Distortion (1kHz rate, max deviation)	0.20%
Response	0.1Hz to 1MHz
PULSE	
Mode	Free-run, square, triggered, adjustable doublet, trigger doublet, gated, pulse train and external pulse
Source	internal, external
Pulse Input	-0.5V to 5V, V_{IL}=V_{IH}=1.5V (typ.)
Edge Time	<20ns
On/Off Ratio	5M ~ 3GHz: 70dB / 3G ~ 6GHz: 45dB
Repetition Rate	0.1Hz to 10MHz
Pulse Period	100ns ~ 42s
Resolution	10ns
Width	50ns ~ period-10ns
Pulse Train Number of Patterns	2047
LF	
Waveform	Sine, Square, Triangle, Ramp, Gaussian Noise

Frequency Range	Sine: 0.1Hz to 10MHz; Square, Triangle, Ramp: 0.1Hz to 1MHz; Gaussian Noise: 10MHz BW		
Resolution	1mHz		
Output	2mVpp to 6Vpp		
Impedance	50 Ohm		
VECTOR MODULATION			
Source	internal, external		-
Bandwidth (baseband)	60MHz		-
Bandwidth (RF)	120MHz		-
Carrier Frequency	<5MHz to 6000MHz		-
Carrier Suppression	>50dBc		-
Sideband Suppression	>50dBc		-
Modulation Mode	ASK, PSK, APSK, QAM, FSK, MSK, user define IQ, user define FSK		-
ASK	2ASK (0 to 100%), 4ASK, 8ASK, 16ASK, 32ASK		-
PSK	BPSK, QPSK, DQPSK, OQPSK, π/4 DQPSK, 8PSK, D8PSK, 16PSK		-
APSK	16APSK, 32APSK		-
QAM	16QAM, 32QAM, 64QAM, 128QAM, 256QAM		-
FSK	2FSK, 4FSK, 8FSK, 16FSK		-
Internal Modulation EVM (16QAM, RRC filter, α=0.25, 4Msps, level$\leqq$ 4dBm,ALC off)	<3GHz: 0.8%	3GHz < freq. < 5GHz: 1.2%	-
IQ GENERATOR			
Resolution	16bit		-
Sample Rate	10kHz to 180MHz		-
Baseband Bandwidth	60MHz		-
ARB Memory	Waveform Length	16Msa	-
	Storage Capacity	16GB	-
Trigger Type	free, single, gated, trigger and run		-
Trigger Source	external, trigger key		-
INTERNAL IQ ADJUSTMENT			
IQ Offset	±10%		-
IQ Gain	±6dB		-
IQ Skew	max 30ps ~ 100ps		-
EXTERNAL IQ OUTPUT			
Impedance	50 Ohm per output		-
Maximum Per Output	0.5Vpk		-
Bandwidth	60MHz		-
Common Mode Offset	±1.25V		-
Differential Mode Offset	±50mV		-
EXTERNAL IQ INPUT			
Bandwidth	60MHz		-
Full Scale	±1V into 50 Ohm		-
IQ Offset	±10% full scale		-
IQ Gain	±6dB		-
SIMULTANEOUS MODULATION			
All modulation types (I/Q, FM, AM, ΦM, and pulse modulation) may be simultaneously enabled except: FM and phase modulation.			-

GENERAL SPECIFICATION	
Power Source	AC 100-240V, 50 to 60Hz
Power Consumption	90VA max.
Display	7-inch TFT LCD, 1024(RGB)*600
Interface	GPIB (option), USB, LAN
Temperature & Humidity	Operating Temperature: 0 to 50℃ ; Storage Temperature: -10 to 70℃ ; Humidity: 85% at 40℃
Dimensions (W x H x D) & Weight	430(W) x 140(H) x 540(D)mm, approx. 11.5 kg

Should you have any questions on the GSG-2000 RF signal generator announcement, please do not hesitate to contact us.

Sincerely yours,

Overseas Sales Department

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