

# SIGLENT TECHNOLOGIES

## RF PRODUCT CATALOG

- Spectrum Analyzer
- Spectrum & Vector Network Analyzer
- Vector Network Analyzer
- RF/MW Signal Generator



# CATALOG

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# Company Profile

**SIGLENT TECHNOLOGIES Co., Ltd.**

**Every Bench. Every Engineer. Every Day.**

**SIGLENT** has been providing test & measurement solutions for almost 18 years from its headquarter in Shenzhen, China. There are more than 300 employees, one third of whom are high-educated R&D engineers.

**SIGLENT** has many patent technologies. We are dedicated to develop sophisticated and high quality digital oscilloscopes, waveform generators, RF signal generators, handheld digital oscilloscopes, spectrum analyzers, vector network analyzers and DC power supplies, DC Electronic Loads, digital multimeters. We strive to deliver the highest quality of customer service and satisfaction to our customers.



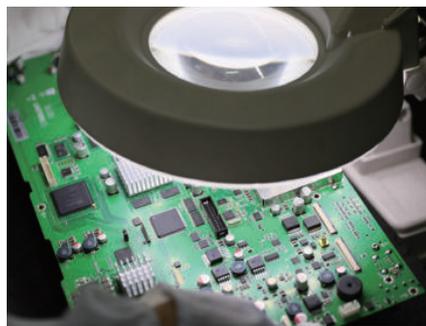
## **SIGLENT** provides the following instruments:

- Digital Oscilloscope
- Handheld Oscilloscope
- Waveform Generator
- RF/MW Signal Generator
- Spectrum Analyzer
- Vector Network Analyzer
- DC Power Supply
- DC Electronic Load
- Digital Multimeter
- Probes & Accessories

**SIGLENT** sincerely invite you to join

Please email :

[sales@siglent.com](mailto:sales@siglent.com)





# SNA6000A

## Vector Network Analyzer



### Features and Benefits

- Frequency range: 100 kHz - 13.5 GHz and 100 kHz - 26.5 GHz
- Frequency resolution: 1 Hz
- Level resolution: 0.05 dB
- Range of IFBW: 1 Hz~10 MHz
- Setting range of output level: -55 dBm ~ +10 dBm
- Dynamic range: 135 dB
- Types of calibration: Response calibration, Enhanced Response calibration, Full-one port calibration, Full-two port calibration, Full-three port calibration, Full-four port calibration, TRL calibration
- Types of measurement: Scattering-parameter measurement, differential-parameter measurement, receiver measurement, time-domain parameter analysis, limit test, ripple test, impedance conversion, fixture simulation, adapter removal/insertion, spectrum analysis frequency offset, scalar mixer measurement, pulse measurement, Material Measurement
- Internal Bias-Tee connections
- Interface: LAN, USB Device, USB Host (USB-GPIB)
- Remote control: SCPI/ Labview/ IVI based on USB-TMC / VXI-11 / Socket /Telnet / WebServer
- 12.1-inch touch screen
- Video output: HDMI/DVI-D/DP

 Design features

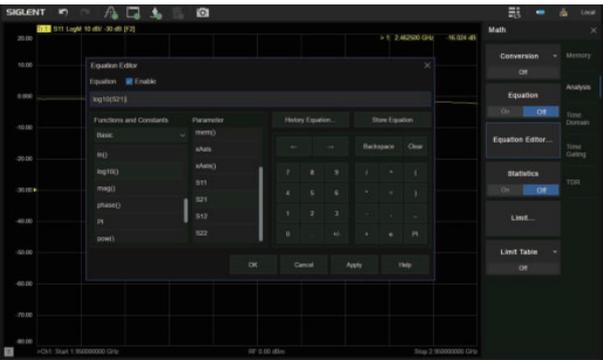
• Multi-format display



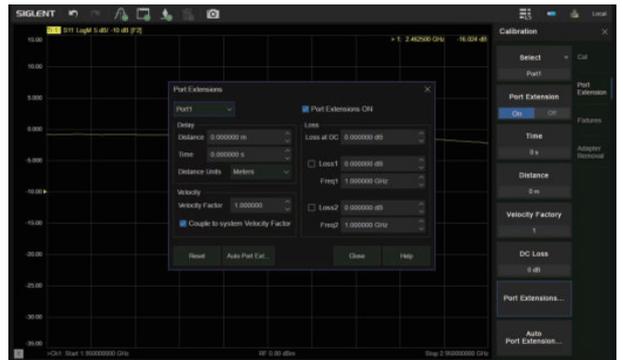
• Impedance conversion



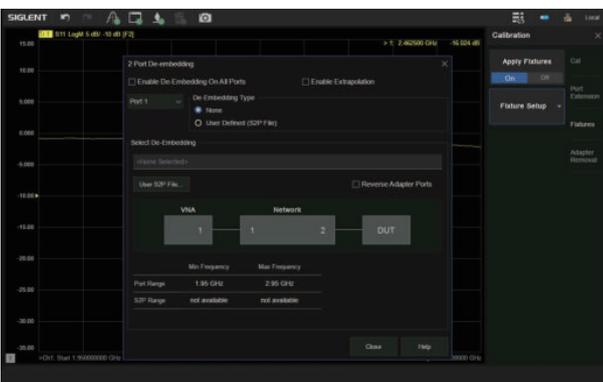
• Equation Editor



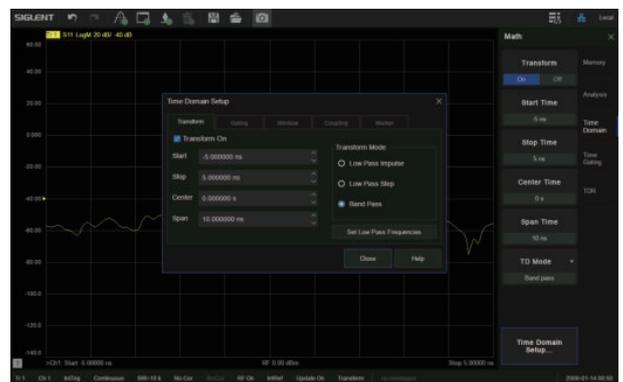
• Port Extensions



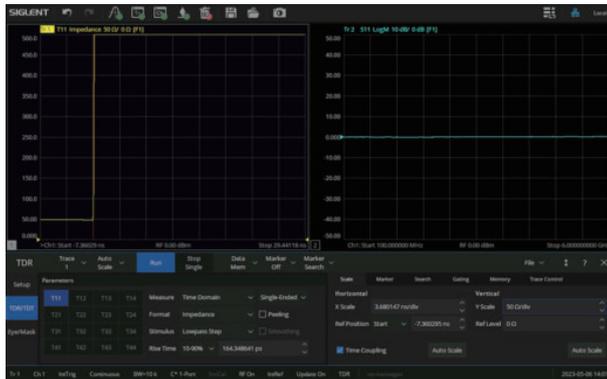
• Embedding and De-Embedding



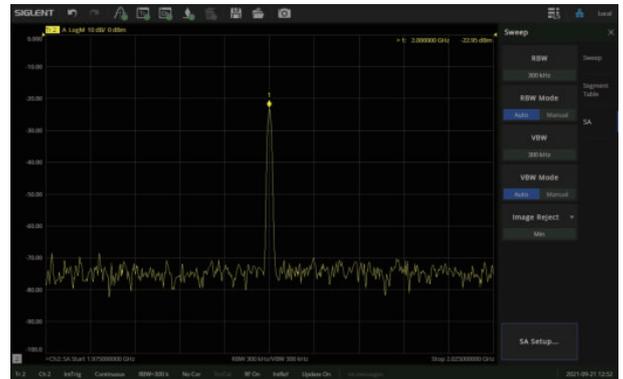
• Time-Domain analysis



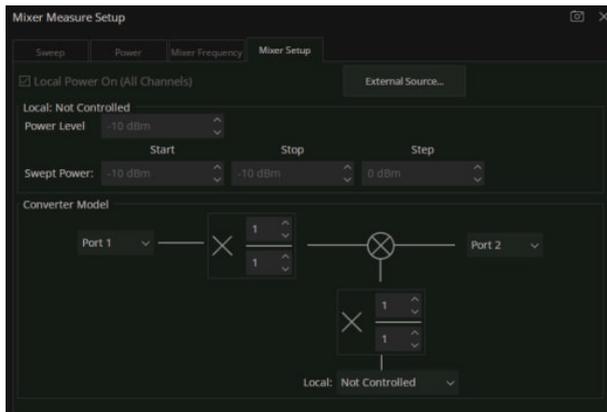
## • Enhanced Time-Domain analysis (TDR)



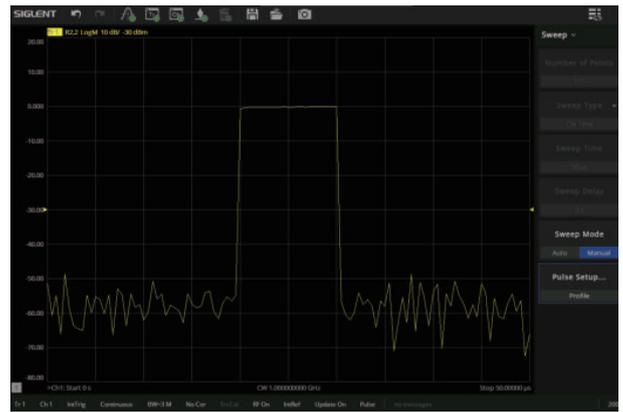
## • Spectrum analysis



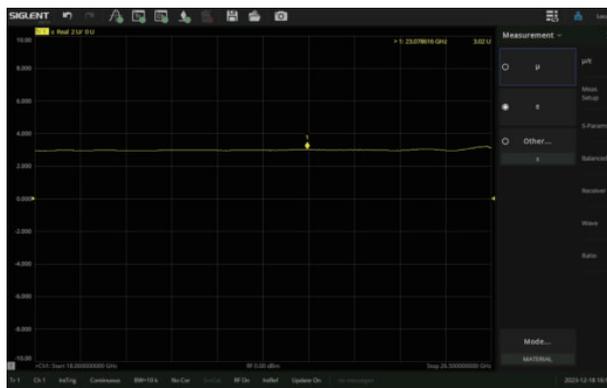
## • Scalar mixer measurement



## • Pulse Modulation



## • Material Measurement



## • Switch matrix measurement





## Model and Main index

Model	SNA6034A SNA6134A	SNA6032A SNA6132A	SNA6024A SNA6124A	SNA6022A SNA6122A
Frequency range	100 kHz~26.5 GHz		100 kHz~13.5 GHz	
Ports	4	2	4	2
Frequency resolution	1 Hz			
Level resolution	0.05 dB			
Range of IFBW	1 Hz~10 MHz			
Number of points	2 to 100,001			
Setting range of output level	-55 dBm ~ +10 dBm			
Dynamic range	135 dB			
Types of calibration	Response calibration, Enhanced Response calibration, Full-one port calibration, Full-two port calibration, Full-three port calibration, Full-four port calibration, TRL calibration			
Types of measurement	Scattering-parameter measurement, differential-parameter measurement, receiver measurement, time-domain parameter analysis, limit test, ripple test, impedance conversion, fixture simulation, adapter removal/insertion, enhanced time-domain parameter analysis (TDR), spectrum analysis, frequency offset, scalar mixer measurement, pulse measurement, Material Measurement			
Bias-Tees	Support			
Interface	LAN, USB Device, USB Host (USB-GPIB)			
Remote control	SCPI/ Labview/ IVI based on USB-TMC/ VXI-11/ Socket/ Telnet/ WebServer			
Display	12.1-inch touch screen			
Video output	HDMI/DVI-D/DP			



## Ordering Information

Items	Description	Order Number
Products	4 ports, 26.5G Vector Network Analyzer	SNA6034A
	2 ports, 26.5G Vector Network Analyzer	SNA6032A
	4 ports, 13.5G Vector Network Analyzer	SNA6024A
	2 ports, 13.5G Vector Network Analyzer	SNA6022A
	4 ports, 26.5G Vector Network Analyzer (Includes front panel jumper interface)	SNA6134A
	2 ports, 26.5G Vector Network Analyzer (Includes front panel jumper interface)	SNA6132A
	4 ports, 13.5G Vector Network Analyzer (Includes front panel jumper interface)	SNA6124A
	2 ports, 13.5G Vector Network Analyzer (Includes front panel jumper interface)	SNA6122A
Standard Accessories	1 x Quick-start, 1 x Power-cable, 1 x USB-cable, 1 x calibration-certificate, 1 x Wireless mouse, 1 x Protective Cover	
Optional Accessories	High-performance reference source	SNA6000-HPR
	Time-Domain analysis	SNA6000-TDA
	Enhanced Time-Domain analysis	SNA6000-TDR
	Spectrum analysis	SNA6000-SA
	Scalar mixer measurement	SNA6000-SMM
	Pulse measurement	SNA6000-PM
	Material Measurement	SNA6000-MT
	SEM5000A series electronic calibrators	SEM5000A
	N-type, Male, 50Ω Calibration Kit, 0-4.5 GHz	F503ME
	N-type, Female, 50Ω Calibration Kit, 0-4.5 GHz	F503FE
	N-type, Male, 50Ω Calibration Kit, 0-9 GHz	F504MS

Items	Description	Order Number
Optional Accessories	N-type, Female, 50Ω Calibration Kit, 0-9 GHz	F504FS
	N-type, Male, 50Ω Calibration Kit, 0-9 GHz	Y504MS
	N-type, Female, 50Ω Calibration Kit, 0-9 GHz	Y504FS
	N-type, Male and Female, 50Ω Calibration Kit,0-9 GHz	F504TS
	N-type, Male and Female, 50Ω Calibration Kit,0-18 GHz	F505TS
	3.5 mm, Male, 50Ω Calibration Kit, 0-4.5 GHz	F603ME
	3.5 mm, Female, 50Ω Calibration Kit, 0-4.5 GHz	F603FE
	3.5 mm, Male, 50Ω Calibration Kit, 0-9 GHz	F604MS
	3.5 mm, Female, 50Ω Calibration Kit, 0-9 GHz	F604FS
	3.5 mm, Male and Female, 50Ω Calibration Kit, 0-9 GHz	F604TS
	3.5 mm, Male, 50Ω Calibration Kit, 0-26.5 GHz	Y606MS
	3.5 mm, Female, 50Ω Calibration Kit, 0-26.5 GHz	Y606FS
	3.5 mm, Female, 50Ω Calibration Kit, 0-26.5 GHz	F606FS
	3.5 mm, Male and Female, 50Ω Calibration Kit, 0-26.5 GHz	F606TS
	50Ω Waveguide calibration kit, 18-26.5 GHz	KWR42A
	N(M)-SMA(F) RF Cable DC~6 GHz,1000 mm	S06-NMSF-1M
	N(M)-SMA(F) RF Cable DC~18 GHz,1000 mm	S18-NMSF-1M
	2.9 mm(M)- 2.9 mm (F) RF Cable DC~40 GHz,1000 mm	S40-29M29F-1M
	N(M)-SMA(M) RF Cable DC~18 GHz,1000 mm	N-SMA-18L
	N(M)-N(M) RF Cable DC~18 GHz,1000 mm	N-N-18L
	SMA(M)-SMA(M) RF Cable DC~18 GHz,1000 mm	SMA-SMA-18L
	SMA(M)-SMA(M) RF Cable DC~26.5 GHz,1000 mm	SMA-SMA-26L
	SMA(F)-SMA(M) RF Cable DC~26.5 GHz,1000 mm	SMAF-SMA-26L
	NMD 3.5 female-NMD 3.5 Male DC-26.5 GHz,635 mm	V26-N35MN35F-25IN
	NMD 3.5 female-APC 3.5 female DC-26.5 GHz,635 mm	V26-N35FA35F-25IN
	USB-GPIB Adapter	USB-GPIB
	RF demonstration board	SNA-TB01
	Adjustable Differential TDR probe DC-18 GHz	ADP-18
	Adjustable Differential TDR probe DC-26.5 GHz	ADP-26
	Adjustable Single-end TDR probe DC-18 GHz	ASP-18
	Adjustable Single-end TDR probe DC-26.5 GHz	ASP-26



# SNA5000A

## Vector Network Analyzer



### Features and Benefits

- Frequency range: 9 kHz~8.5 GHz and 100 kHz~26.5 GHz
- Frequency resolution: 1 Hz
- Level resolution: 0.05 dB
- Range of IFBW: 1 Hz~10 MHz
- Setting range of output level: -55 dBm~+10 dBm
- Dynamic range: 125 dB
- Types of calibration: Response calibration, Enhanced Response calibration, Full-one port calibration, Full-two port calibration, Full-three port calibration, Full-four port calibration, TRL calibration
- Types of measurement: Scattering-parameter measurement, differential-parameter measurement, receiver measurement, time-domain parameter analysis, limit test, ripple test, impedance conversion, fixture simulation, adapter removal/insertion, spectrum analysis frequency offset, scalar mixer measurement, pulse measurement, Material Measurement, Gain Compression measurement, Vector mixer measurement
- Support Bias-Tees
- Interface: LAN, USB Device, USB Host(USB-GPIB)
- Remote control: SCPI/Labview/IVI based on USB-TMC/VXI-11/Socket/Telnet/WebServer
- 12.1-inch touch screen
- Video output: HDMI

## Design features

### Gain compression measurement



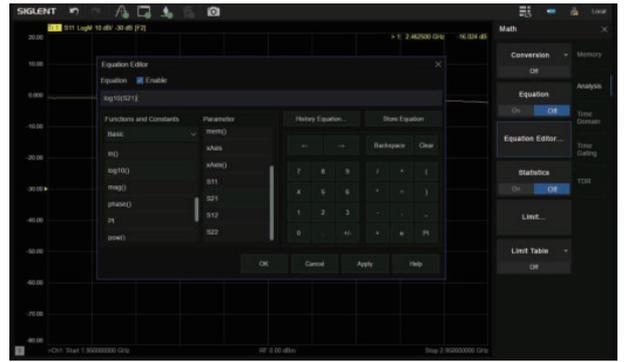
### Vector mixer measurement



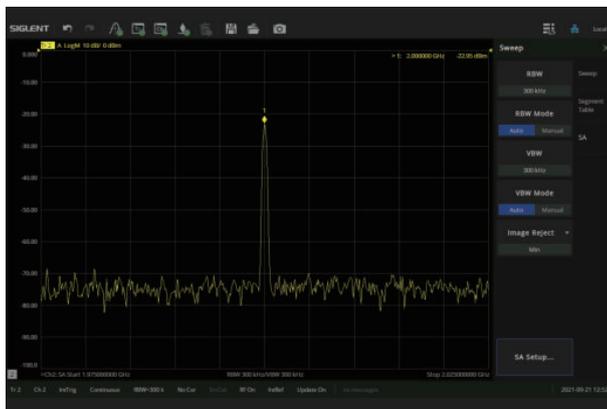
### Impedance conversion



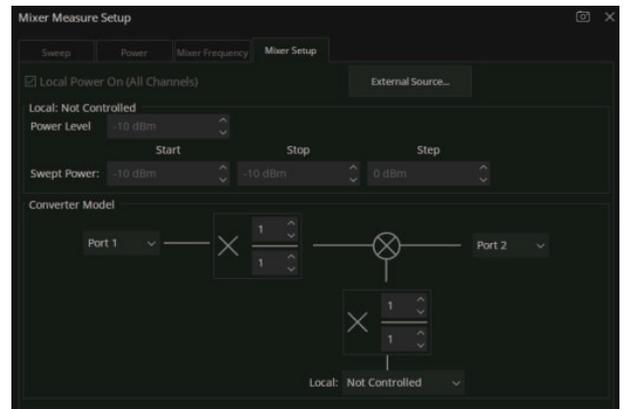
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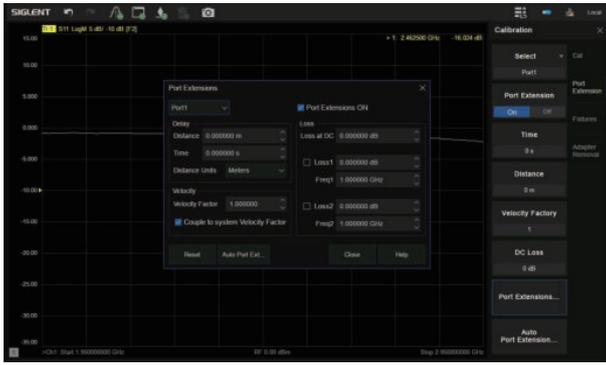
### Spectrum analysis



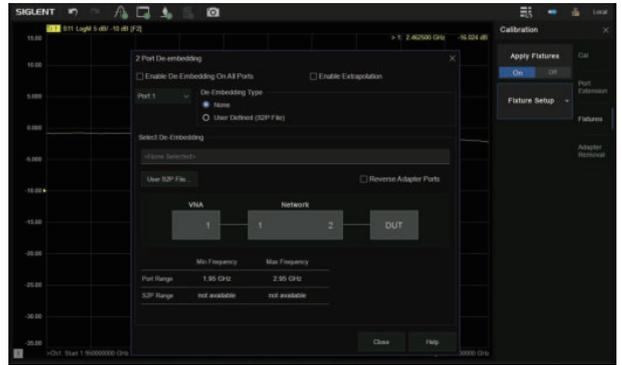
### Scalar mixer measurement



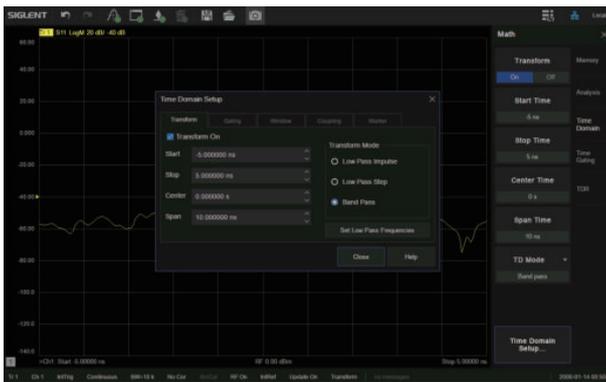
## • Port Extensions



## • Embedding and De-Embedding



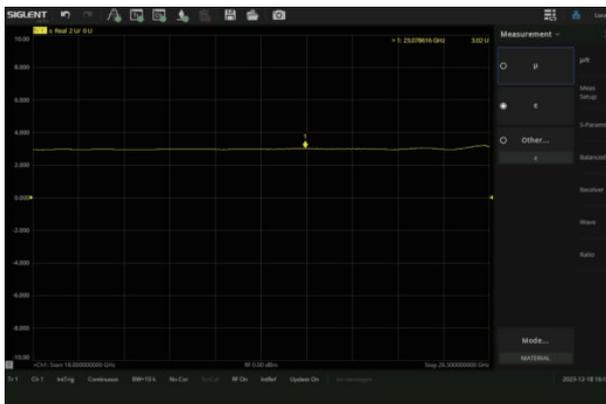
## • Time-Domain analysis



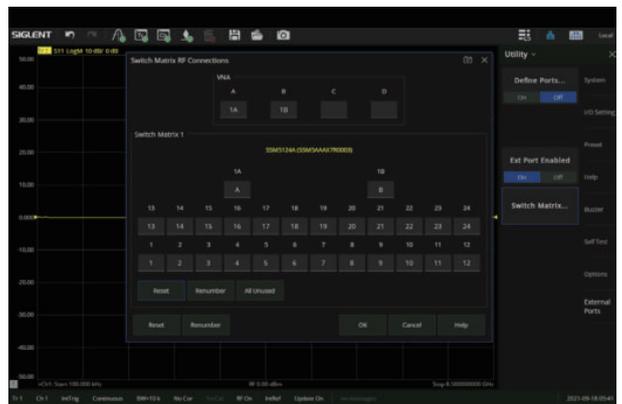
## • Enhanced Time-Domain analysis(TDR)



## • Material Measurement



## • Switch matrix measurement





## Model and Main index

Model	SNA5002A SNA5004A	SNA5012A SNA5014A	SNA5022A	SNA5032A
Frequency range	9 kHz~4.5 GHz	9 kHz~8.5 GHz	100 kHz~13.5 GHz	100 kHz~26.5 GHz
Ports	2/4	2/4	2	2
Frequency resolution	1 Hz			
Level resolution	0.05 dB			
Range of IFBW	1 Hz~10 MHz			
Setting range of output level	-55 dBm ~ +10 dBm			
Dynamic range	125 dB			
Types of calibration	Response calibration, Enhanced Response calibration, Full-one port calibration, Full-two port calibration, Full-three port calibration, Full-four port calibration, TRL calibration			
Types of measurement	Scattering-parameter measurement, differential-parameter measurement, receiver measurement, time-domain parameter analysis, limit test, ripple test, impedance conversion, fixture simulation, adapter removal / insertion, enhanced time-domain parameter analysis (TDR), spectrum analysis, frequency offset, scalar mixer measurement			
Bias-Tees	Support			
Interface	LAN, USB Device, USB Host(USB-GPIB)			
Remote control	SCPI/Labview/IVI based on USB-TMC/VXI-11/Socket/Telnet/WebServer			
Display	12.1-inch touch screen			
Video output	HDMI			



## Ordering Information

Items	Description	Order Number
Products	2 ports, 4.5G Vector Network Analyzer	SNA5002A
	2 ports, 8.5G Vector Network Analyzer	SNA5012A
	4 ports, 4.5G Vector Network Analyzer	SNA5004A
	4 ports, 8.5G Vector Network Analyzer	SNA5014A
	2 ports, 13.5G Vector Network Analyzer	SNA5022A
	2 ports, 26.5G Vector Network Analyzer	SNA5032A
Standard Accessories	1 x Quick-start, 1 x Power-cable, 1 x USB-cable, 1 x calibration-certificate, 1 x Wireless mouse, 1 x Protective Cover	
Optional Accessories	High-performance reference source	SNA5000-HPR
	Time-Domain analysis	SNA5000-TDA
	Enhanced Time-Domain analysis	SNA5000-TDR
	Spectrum analysis	SNA5000-SA
	Scalar mixer measurement	SNA5000-SMM
	Performance Tests	SNA5000-PV
	Pulse measurement	SNA5000-PM
	Material Measurement	SNA5000-MT
	Gain Compression measurement	SNA5000-GC
	Vector mixer measurement	SNA5000-VMM
	SEM5000A series electronic calibrators	SEM5000A
	N-type, Male, 50Ω Calibration Kit, 0-4.5 GHz	F503ME
	N-type, Female, 50Ω Calibration Kit, 0-4.5 GHz	F503FE
	N-type, Male, 50Ω Calibration Kit, 0-9 GHz	F504MS
	N-type, Female, 50Ω Calibration Kit, 0-9 GHz	F504FS

Items	Description	Order Number
Optional Accessories	N-type, Male, 50Ω Calibration Kit, 0-9 GHz	Y504MS
	N-type, Female, 50Ω Calibration Kit, 0-9 GHz	Y504FS
	N-type, Male and Female, 50Ω Calibration Kit,0-9 GHz	F504TS
	N-type, Male and Female, 50Ω Calibration Kit,0-18 GHz	F505TS
	3.5 mm, Male, 50Ω Calibration Kit, 0-4.5 GHz	F603ME
	3.5 mm, Female, 50Ω Calibration Kit, 0-4.5 GHz	F603FE
	3.5 mm, Male, 50Ω Calibration Kit, 0-9 GHz	F604MS
	3.5 mm, Female, 50Ω Calibration Kit, 0-9 GHz	F604FS
	3.5 mm, Male and Female, 50Ω Calibration Kit, 0-9 GHz	F604TS
	3.5 mm, Male, 50Ω Calibration Kit, 0-26.5GHz	Y606MS
	3.5 mm, Female, 50Ω Calibration Kit, 0-26.5 GHz	Y606FS
	3.5 mm, Female, 50Ω Calibration Kit, 0-26.5 GHz	F606FS
	3.5 mm, Male and Female, 50Ω Calibration Kit, 0-26.5 GHz	F606TS
	50Ω Waveguide calibration kit, 18-26.5 GHz	KWR42A
	N(M)-SMA(F) RF Cable DC~6 GHz,1000 mm	S06-NMSF-1M
	N(M)-SMA(F) RF Cable DC~18 GHz,1000 mm	S18-NMSF-1M
	2.9 mm(M)- 2.9 mm (F) RF Cable DC~40 GHz,1000 mm	S40-29M29F-1M
	N(M)-SMA(M) RF Cable DC~18 GHz,1000 mm	N-SMA-18L
	N(M)-N(M) RF Cable DC~18 GHz,1000 mm	N-N-18L
	SMA(M)-SMA(M) RF Cable DC~18 GHz,1000 mm	SMA-SMA-18L
	SMA(M)-SMA(M) RF Cable DC~26.5 GHz,1000 mm	SMA-SMA-26L
	SMA(F)-SMA(M) RF Cable DC~26.5 GHz,1000 mm	SMAF-SMA-26L
	NMD 3.5 female-NMD 3.5 Male DC-26.5 GHz,635 mm	V26-N35MN35F-25IN
	NMD 3.5 female-APC 3.5 female DC-26.5 GHz,635 mm	V26-N35FA35F-25IN
	USB-GPIB Adapter	USB-GPIB
	RF demonstration board	SNA-TB01
	Adjustable Differential TDR probe DC-18 GHz	ADP-18
	Adjustable Differential TDR probe DC-26.5 GHz	ADP-26
	Adjustable Single-end TDR probe DC-18 GHz	ASP-18
	Adjustable Single-end TDR probe DC-26.5 GHz	ASP-26



# SHN900A

## Portable Vector Network Analyzer



### Features and Benefits

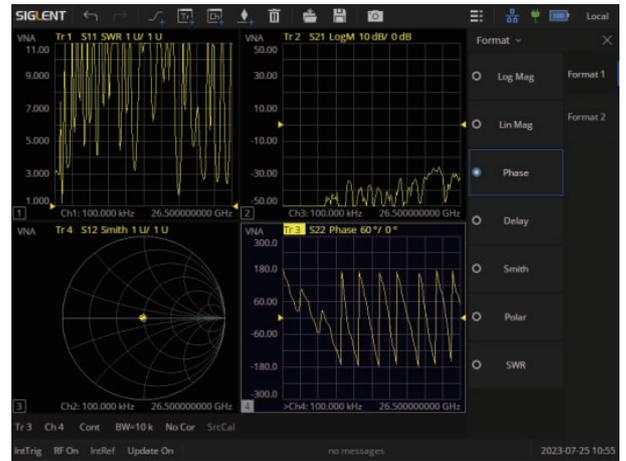
- Standard VNA and CAT mode, Optional SA mode
- Frequency range: 30 kHz - 26.5 GHz
- Frequency resolution: 1 Hz
- Level resolution: 0.05 dB
- Range of IFBW: 10 Hz~3 MHz
- Setting range of output level: -45 dBm ~ +10 dBm
- Dynamic range: 110 dB(Typ.)
- Types of calibration: Response calibration, Enhanced Response calibration, Full-one port calibration, Full-two port calibration, TRL calibration
- Types of measurement: Scattering-parameter measurement, differential-parameter measurement, receiver measurement, time-domain parameter analysis, limit test, ripple test, impedance conversion, fixture simulation, adapter removal/insertion, spectrum analysis frequency offset, scalar mixer measurement, pulse measurement
- Internal Bias-Tee connections
- Support GPS, Time and Location Information Saving
- Interface: LAN, USB Device, USB Host (USB-GPIB)
- Remote control: SCPI/ Labview/ IVI based on USB-TMC / VXI-11 / Socket /Telnet / WebServer
- 8.4-inch touch screen, Mouse, Keyboard
- Typical working time 4 hours, 3.2 kg net weight

**Design features**

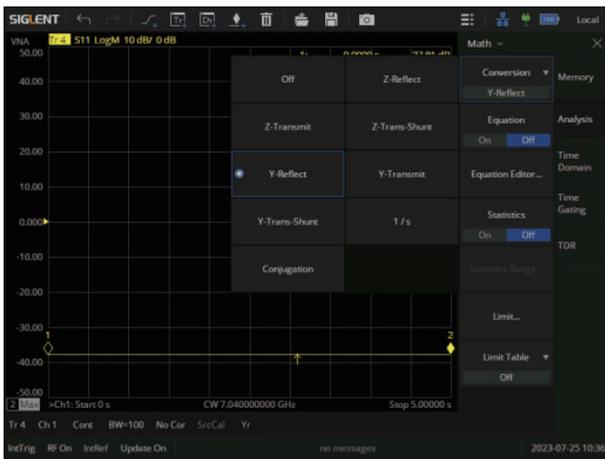
• Multi-window display



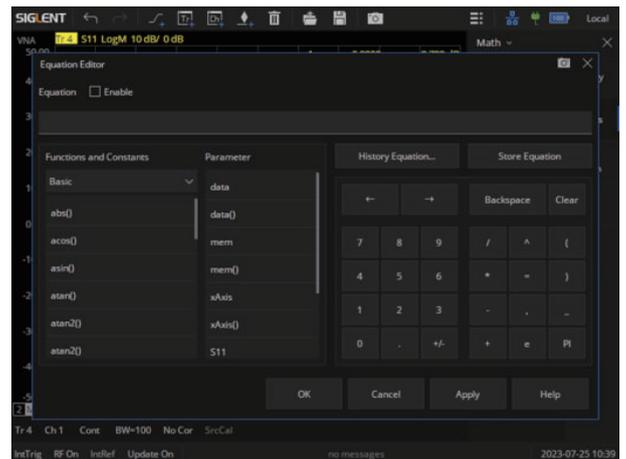
• Multi-format display



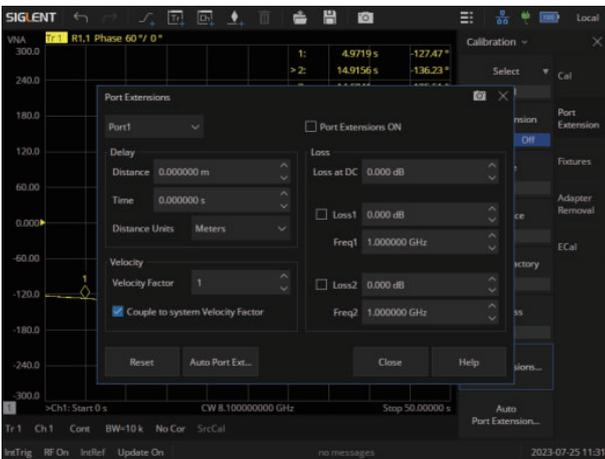
• Impedance conversion



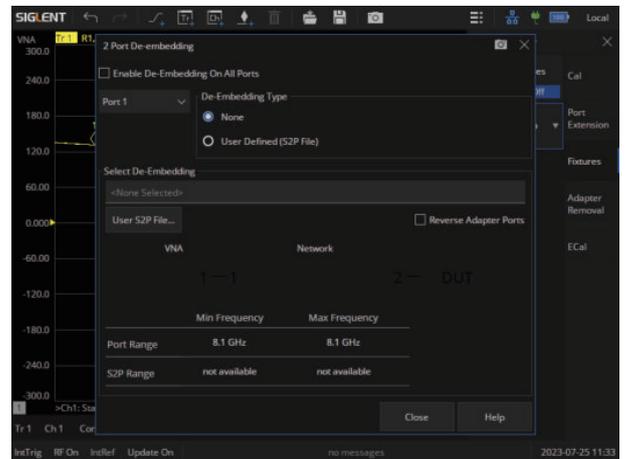
• Equation Editor



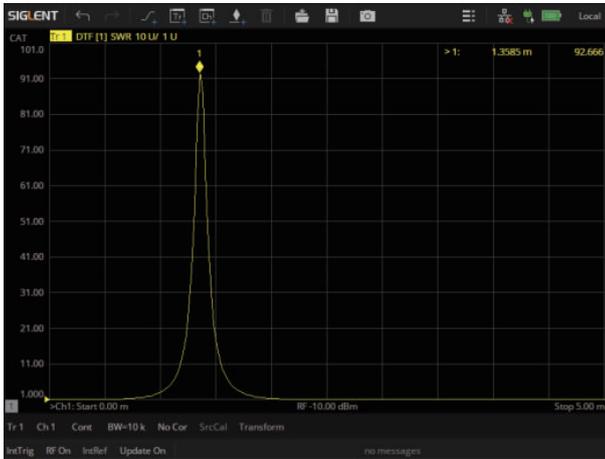
• Port Extensions



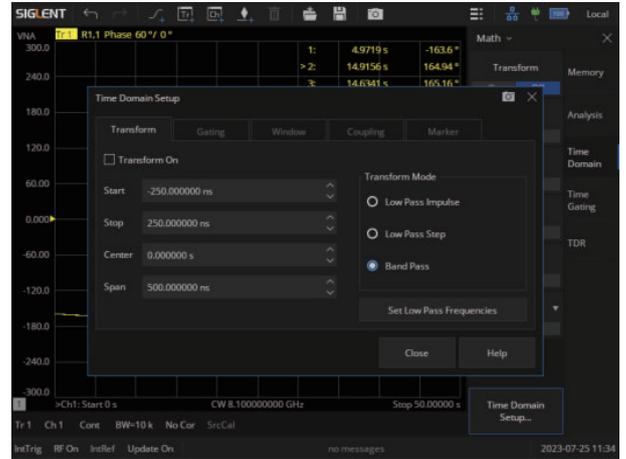
• Embedding and De-Embedding



## CAT



## Time-Domain analysis



## Enhanced Time-Domain analysis (TDR)



## Spectrum analysis



## Model and Main index

Model	SHN914A	SHN920A	SHN926A
Frequency range	30 kHz~14 GHz	30 kHz~20 GHz	30 kHz~26.5 GHz
Ports	2		
Frequency resolution	1 Hz		
Level resolution	0.05 dB		
Range of IFBW	10 Hz~3 MHz		
Setting range of output level	-45 dBm ~ +10 dBm		
Dynamic range	110 dB (Typ.)		
Types of calibration	Response calibration, Enhanced Response calibration, Full-one port calibration, Full-two port calibration, TRL calibration		
Types of measurement	Scattering-parameter measurement, differential-parameter measurement, receiver measurement, time-domain parameter analysis, limit test, ripple test, impedance conversion, fixture simulation, adapter removal/insertion, enhanced time-domain parameter analysis (TDR), spectrum analysis, frequency offset, scalar mixer measurement, pulse measurement		
Bias-Tees	Support		
Interface	LAN, USB Device, USB Host (USB-GPIB)		
Remote control	SCPI/ Labview/ IVI based on USB-TMC/ VXI-11/ Socket/ Telnet/ WebServer		
Display	8.4-inch touch screen		
GPS	Support		



## Ordering Information

Items	Description	Order number
Products	2 ports, 14 G Vector Network Analyzer	SHN914A
	2 ports, 20 G Vector Network Analyzer	SHN920A
	2 ports, 26.5 G Vector Network Analyzer	SHN926A
standard fittings	Quick Start, USB Type C Line, Rechargeable lithium battery, AC-DC adapter, Portable bag	
TDA Option	Time Domain Analysis	SHN900-TDA
TDR Option	Enhanced Time Domain Analysis	SHN900-TDR
SA Option	Spectrum analysis	SHN900-SA
	3.5 mm, Male, 50 $\Omega$ Calibration Kit, 0~4.5 GHz	F603ME
	3.5 mm, Female, 50 $\Omega$ Calibration Kit, 0~4.5 GHz	F603FE
	3.5 mm, Male, 50 $\Omega$ Calibration Kit, 0~9 GHz	F604MS
	3.5 mm, Female, 50 $\Omega$ Calibration Kit, 0~9 GHz	F604FS
	3.5 mm, Male and Female, 50 $\Omega$ Calibration Kit, 0~9 GHz	F604TS
	3.5 mm, Male and Female, 50 $\Omega$ Calibration Kit, 0~26.5 GHz	F606TS
	Electronic Calibration Kit	SEM5000A
	RF Test Demo Board	SNA-TB01
	Adjustable Differential TDR probe DC-18 GHz	ADP-18
	Adjustable Differential TDR probe DC-26.5 GHz	ADP-26
	Adjustable Differential TDR probe DC-18 GHz	ASP-18
	Adjustable Differential TDR probe DC-26.5 GHz	ASP-26
	SMA(M)-SMA(M) cable DC-18 GHz, 1000 mm	SMA-SMA-18L
	SMA(M)-SMA(M) cable DC-26.5 GHz, 1000 mm	SMA-SMA-26L
	SMA(F)-SMA(M) cable DC-26.5 GHz, 1000 mm	SMAF-SMA-26L
	NMD 3.5 female-NMD 3.5 Male DC-26.5 GHz, 635 mm	V26-N35MN35F-25IN
	NMD 3.5 female-APC 3.5 female DC-26.5 GHz, 635 mm	V26-N35FA35F-25IN
	USB-GPIB Adaptor	USB-GPIB
	GPS antenna, SMA(M), 1000 mm	ANT-GPS1



# SSM5000A

## Switch Matrix



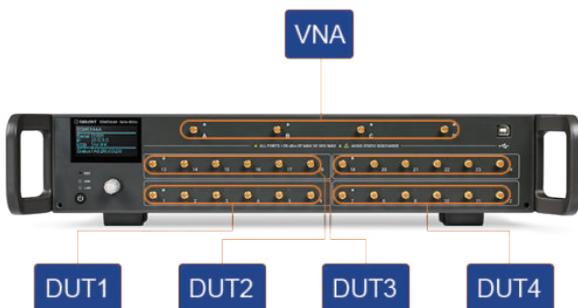
### Features and Benefits

- Characteristic impedance: 50  $\Omega$
- Highest frequency: 9 GHz (or 26.5 GHz)
- Maximum number of input ports: 4
- Maximum number of output ports: 24
- RF connector: 3.5 mm female
- Maximum input power: 20 dBm
- Maximum input DC voltage: 35 V
- Interface: LAN, USB Device, Direct Control (in), Direct Control (out)
- Screen size: 2.4-inch

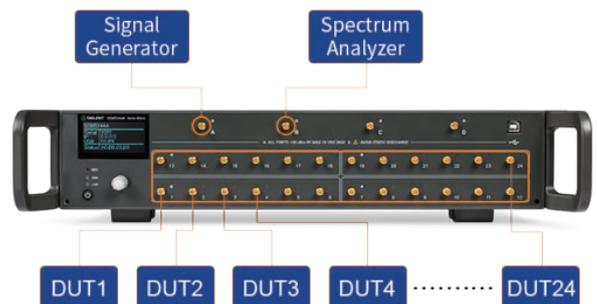


### Design features

#### • Network Analyzer Test Port Extension



#### • Signal Generator and SA Test Port Extension





## Model and Main index

Model	SSM5122A	SSM5124A	SSM5142A	SSM5144A	SSM5321A	SSM5342A
Frequency range	9 kHz ~ 9 GHz	9 kHz ~ 9 GHz	9 kHz ~ 9 GHz	9 kHz ~ 9 GHz	100 kHz ~ 26.5 GHz	100 kHz ~ 26.5 GHz
Input	2	2	4	4	2	4
Output	12	24	12	24	6	12
RF connector	3.5 mm Female					
Maximum input power	20 dBm					
Maximum input DC voltage	35 V					
Screen size	2.4-inch					
Size	W×H×D = 88.5×425×417.6 mm					



## Ordering Information

Items	Description	Frequency range	Order number
Products	2 input ports, 12 output ports	9 kHz ~ 9 GHz	SSM5122A
	2 input ports, 24 output ports	9 kHz ~ 9 GHz	SSM5124A
	4 input ports, 12 output ports	9 kHz ~ 9 GHz	SSM5142A
	4 input ports, 24 output ports	9 kHz ~ 9 GHz	SSM5144A
	2 input ports, 6 output ports	100 kHz ~ 26.5 GHz	SSM5321A
	4 input ports, 12 output ports	100 kHz ~ 26.5 GHz	SSM5342A
Standard Accessories	One Quick-start, One Power-cable, One USB-cable, One certificate of qualification	-	-



# SSU5000A

## Mechanical Switch



### Features and Benefits

- Maximum frequency: 18 GHz/ 26.5 GHz/ 50 GHz
- 1 to 4 SPDT switches or 1 to 2 SP6T switch configurations
- SCPI Controllable via VISA and EasySSU software
- USB Connectivity
- Size: WxHxD=153x62.4x137.5 mm
- RF connector: SMA female or 2.4 mm female



### Model and Main index

Model	SSU5181A/SSU5182A SSU5183A/SSU5184A	SSU5261A/SSU5262A SSU5263A/SSU5264A	SSU5265A SSU5266A	SSU5501A/SSU5502A SSU5503A/SSU5504A
Frequency range	DC ~ 18 GHz	DC ~ 26.5 GHz	DC ~ 26.5 GHz	DC ~ 50 GHz
Number of Switches	1/2/3/4	1/2/3/4	1/2	1/2/3/4
Switch Type	SPDT	SPDT	SP6T	SPDT
RF connector	SMA female			2.4 mm female
Driving voltage	12 V			
Maximum driving current	1.25 A			
Size	W×H×D = 153×62.4×137.5 mm			
Weight	885 g			



## Ordering Information

Model	Product Description
SSU5181A	DC ~ 18 GHz, including one SPDT mechanical switch
SSU5182A	DC ~ 18 GHz, including two SPDT mechanical switches
SSU5183A	DC ~ 18 GHz, including three SPDT mechanical switches
SSU5184A	DC ~ 18 GHz, including four SPDT mechanical switches
SSU5261A	DC ~ 26.5 GHz, including one SPDT mechanical switch
SSU5262A	DC ~ 26.5 GHz, including two SPDT mechanical switches
SSU5263A	DC ~ 26.5 GHz, including three SPDT mechanical switches
SSU5264A	DC ~ 26.5 GHz, including four SPDT mechanical switches
SSU5265A	DC ~ 26.5 GHz, including one SP6T mechanical switch
SSU5266A	DC ~ 26.5 GHz, including two SP6T mechanical switches
SSU5501A	DC ~ 50 GHz, including one SPDT mechanical switch
SSU5502A	DC ~ 50 GHz, including two SPDT mechanical switches
SSU5503A	DC ~ 50 GHz, including three SPDT mechanical switches
SSU5504A	DC ~ 50 GHz, including four SPDT mechanical switches
Standard Configurations	Quantity
USB-cable	1
Quick-start	1
AC-DC adapter	1
Power cord	1
Certificate of qualification	1



# SSA5000A

## Spectrum Analyzer

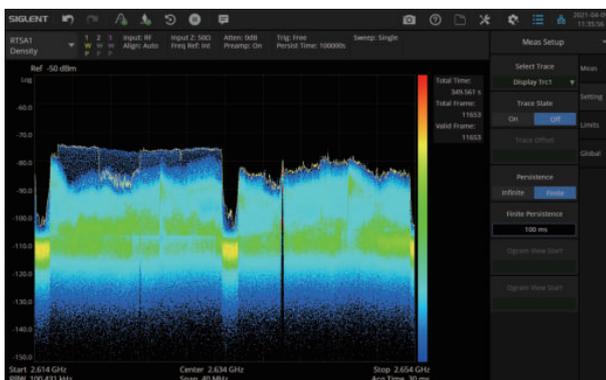
### Features and Benefits

- Spectrum Analyzer Frequency Range from 9 kHz up to 13.6 GHz/26.5 GHz
- -165 dBm/Hz Displayed Average Noise Level (Typ.)
- -105 dBc/Hz@1 GHz, 10 kHz offset SSB Phase Noise (Typ.)
- 25 MHz/40 MHz Analysis Bandwidth
- 100% POI 7.20  $\mu$ s, Dynamic Range 60 dB, Multi-view for Density, Spectrogram and PVT
- Channel power, ACPR, OBW, Harmonic, TOI measurement etc.
- Analog Modulation Analysis and Vector Digital Modulation Analysis
- 12.1 inch Multi-Touch Screen, HDMI output
- Web Browser Remote Control on PC and Mobile Terminals and File Operation

### Design features

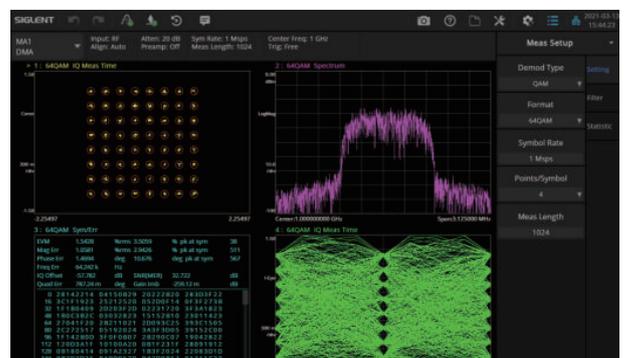
#### Real Time Analysis Mode

Multi-view and dimensions to monitor complex signals



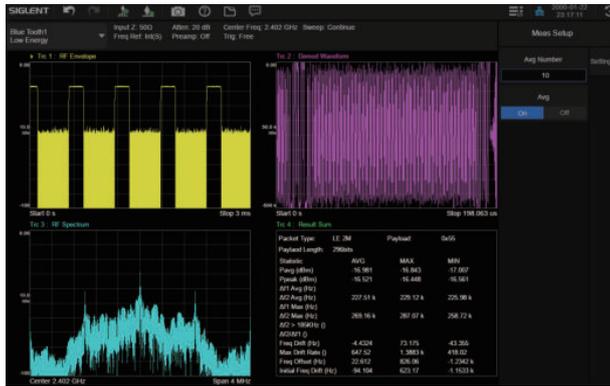
#### Modulation Analysis Mode

AM/FM/PM analog modulation , and ASK/FSK/PSK/MSK/QAM vector modulation a nalysis



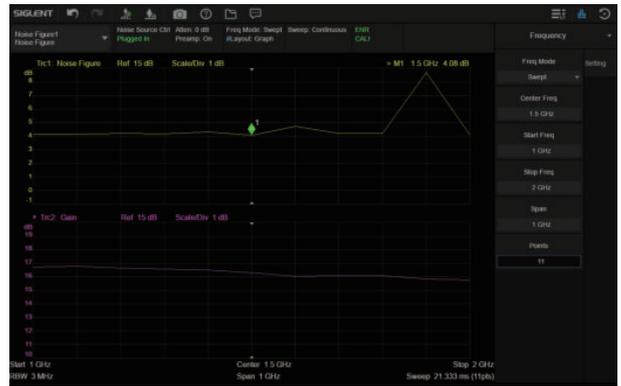
**Bluetooth Signal Modulation Analysis**

Provide transmitter tests of Low Energy, Basic Rate and Enhanced Data Rate Bluetooth standard



**Noise Figure Mode**

The noise figure of systems such as amplifiers and frequency converters



**Phase Noise Analysis**

One-sided band phase noise test analysis, jitter analysis, etc



**Pulse Measurement Analysis**

Measure the time and frequency parameters of the RF pulses



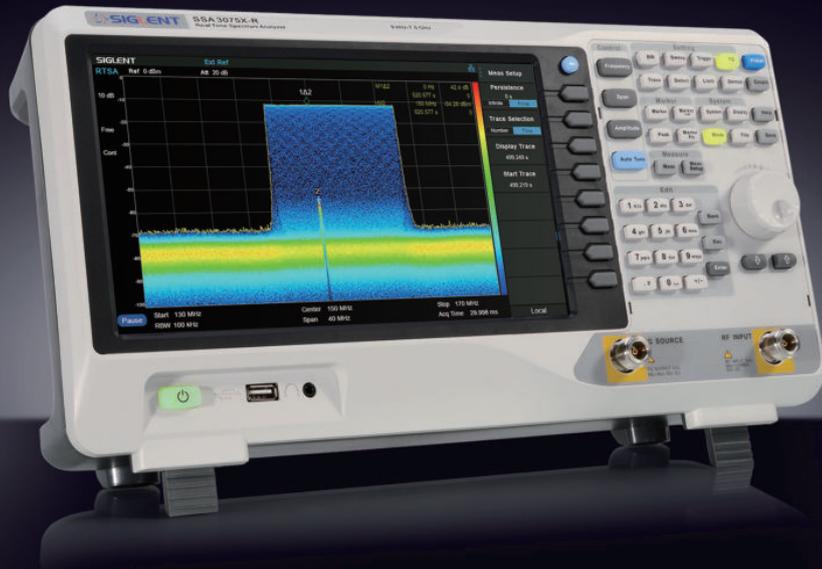
**Model and Main index**

Model	SSA5083A	SSA5085A
Frequency Range	9 kHz~13.6 GHz	9 kHz~26.5 GHz
Displayed Average Noise Level	-165 dBm/Hz	
SSB Phase Noise	<-105 dBc/Hz	
Analysis Bandwidth	25 MHz, 40 MHz (opt.)	



## Ordering Information

Product	Description	Order Number
Product Code	Spectrum Analyzer, 9 kHz ~ 13.6 GHz	SSA5083A
	Spectrum Analyzer, 9 kHz ~ 26.5 GHz	SSA5085A
Standard	Quick Start, USB Cable, Power Cord, Wireless Mouse, 2.92F-2.92F-40A	
Options	SSA5083A upgrade to SSA5085A	SSA5000-F5
	Pre-Amplifier, 9 kHz ~ 13.6 GHz	SSA5000-P3
	Pre-Amplifier, 9 kHz ~ 26.5 GHz	SSA5000-P5
	40 MHz analysis bandwidth	SSA5000-B40
	Real-Time Spectrum Analysis	SSA5000-RTA1
	Advanced Measurement Kit	SSA5000-AMK
	IQ Data Acquisition	SSA5000-IQA
	Pulse Measurement	SSA5000-PU
	Phase Noise Measurement	SSA5000-PN
	Noise Figure Measurement	SSA5000-NF
	Analog Modulation Analysis	SSA5000-AMA
	Digital Modulation Analysis	SSA5000-DMA
	Bluetooth Analysis	SSA5000-BT
	EMI Measurement	SSA5000-EMI
	IF Output	SSA5000-IFO
Accessories	OCXO Precise Reference source, Factory installed	10M_OCXO_L
	2.92mm(F)-2.92mm(F) adaptor, DC ~ 40 GHz	2.92F-2.92F-40A
	N(M)-N(M) cable, DC ~ 18 GHz, 1000 mm	N-N-18L
	N(M)-SMA(M) cable, 18 GHz, 1000 mm	N-SMA-18L
	SMA(M)-SMA(M) cable, 18 GHz, 1000 mm	SMA-SMA-18L
	SMA(M)-SMA(M) cable, 26.5 GHz, 1000 mm	SMA-SMA-26L
	SMA(F)-SMA(M) cable, 26.5 GHz, 1000 mm	SMAF-SMA-26L
	USB-GPIB Adaptor	USB-GPIB
300 kHz~3 GHz Near Field Probe Kit: 3 H-probes (20/10/5 mm), 1 E-probe (5 mm)	SRF5030T	



# SSA3000X-R

## Real-Time Spectrum Analyzer



### Features and Benefits

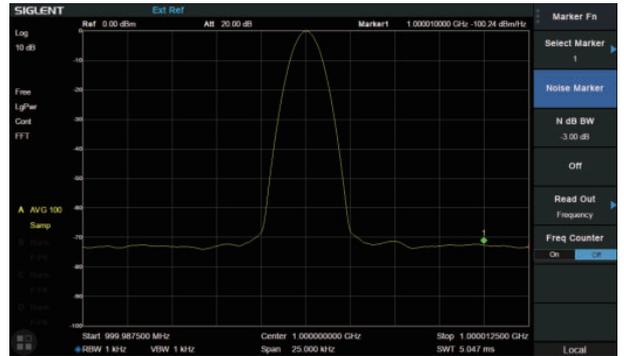
- Spectrum Analyzer Frequency Range from 9 kHz up to 7.5 GHz
- Vector Network Analyzer Frequency Range from 100 kHz up to 7.5 GHz
- -165 dBm/Hz Displayed Average Noise Level (Typ.)
- -98 dBc/Hz.@10 kHz Offset Phase Noise (1 GHz, Typ.)
- Level Measurement Uncertainty < 0.7 dB (Typ.)
- 1 Hz Minimum Resolution Bandwidth (RBW)
- Preamplifier and Tracking Generator Standard
- Up to 40 MHz Real Time Analysis Bandwidth (Opt.)
- 100% POI 7.20  $\mu$ s, Dynamic Range 60 dB, Multi-view for Density, Spectrogram, PVT and 3D
- Distance To Fault
- Advanced Measurement Kit (Opt.)
- Modulation Analysis Mode (Opt.)
- EMI Measurement Mode (Opt.)
- 10.1 inch Multi-Touch Screen , Mouse and Keyboard supported
- Web Browser Remote Control on PC and Mobile Terminals and File Operation

## Design features

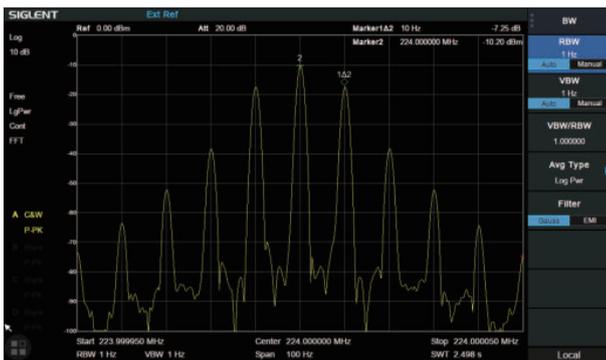
### • 10.1 Inch Display with Multi-Touch Screen



### • Phase noise <math><-98\text{ dBc/Hz}</math>@1 GHz



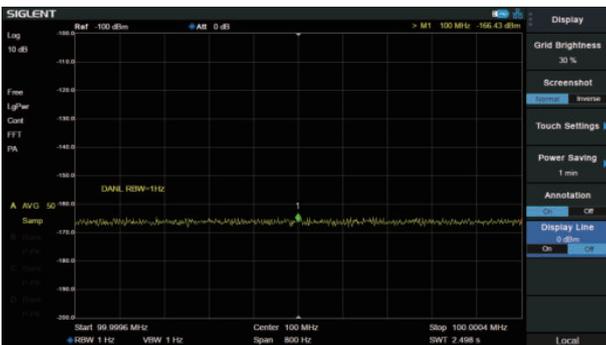
### • Minimum 1 Hz Resolution Bandwidth (RBW)



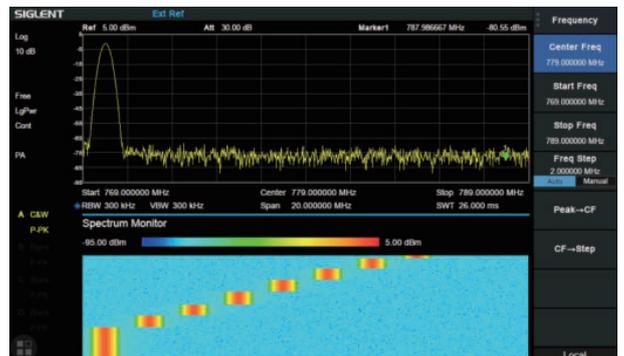
### • ACPR in Advanced Measurement Kit



### • -165 dBm/Hz Displayed Average Noise Level

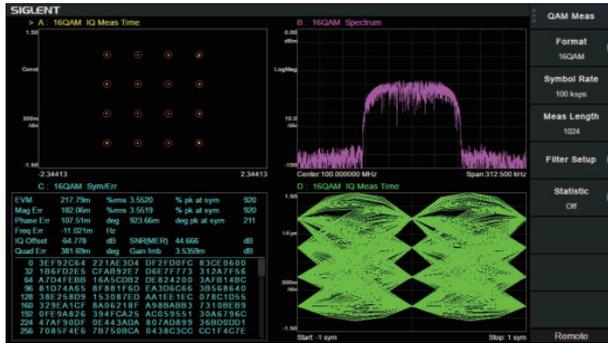


### • Monitor in Advanced Measurement Kit



## • Modulation Analysis Mode

AM/FM, ASK/FSK/PSK/MSK/QAM Vector Signal Modulation Analysis and EVM evaluation. The analysis BW is same with real-time BW in RTSA mode





## Ordering Information

Product	Description	Order Number
Product Code	Real Time Spectrum Analyzer, 9 kHz~3.2 GHz, Preamp and TG standard, VNA standard	SSA3032X-R
	Real Time Spectrum Analyzer, 9 kHz~5.0 GHz, Preamp and TG standard, VNA standard	SSA3050X-R
	Real Time Spectrum Analyzer, 9 kHz~7.5 GHz, Preamp and TG standard, VNA standard	SSA3075X-R
Standard Accessories	Quick Start, USB Cable, Power Cord	
Common Options and Accessories	Advanced Measurement Kit	SSA3000XR-AMK
	40 MHz Analysis BandWidth	SSA3000XR-RT40
	Utility Kit: N(M)-SMA(M) cable(6 GHz), N(M)-N(M) cable(6 GHz), N(M)-BNC(F) adaptor x2, N(M)-SMA(F) adaptor x2, 10 dB 1W attenuator	UKitSSA3X
	N(M)-BNC(M) cable, 70 cm, 2 GHz	N-BNC-2L
	N(M)-SMA(M) cable, 70 cm, 6 GHz	N-SMA-6L
	N(M)-N(M) cable, 70 cm, 6 GHz	N-N-6L
	N(M)-SMA(M) cable, 100 cm, 18 GHz	N-SMA-18L
	N(M)-N(M) cable, 100 cm, 18 GHz	N-N-18L
	SMA(M)-SMA(M) cable, 100 cm, 18 GHz	SMA-SMA-18L
	USB-GPIB Adaptor	USB-GPIB
	Soft carrying bag	BAG-S2
	6U Rack Mount Kit	SSA-RMK
VNA Options	N type Economic Calibration Kit, DC~4.5 GHz, 50 Ω	F503ME
	N type Economic Calibration Kit, DC~4.5 GHz, 50 Ω	F503FE
	3.5 mm type Economic Calibration Kit, DC~4.5 GHz, 50 Ω	F603ME
	3.5 mm type Economic Calibration Kit, DC~4.5 GHz, 50 Ω	F603FE
	N type Standard Calibration Kit, DC~9 GHz, 50 Ω	F504MS
	N type Standard Calibration Kit, DC~9 GHz, 50 Ω	F504FS
	3.5 mm type Standard Calibration Kit, DC~9 GHz, 50 Ω	F604MS
	3.5 mm type Standard Calibration Kit, DC~9 GHz, 50 Ω	F604FS
EMI Measurement Options	EMI Measurement Mode	SSA3000XR-EMI
	300 kHz~3 GHz Near Field Probe Kit: 3 H-probes (20/10/5 mm), 1 E-probe (5 mm)	SRF5030T
Modulation Analysis Options	Analog Modulation Analysis: AM, FM	SSA3000XR-AMA
	Digital Modulation Analysis: ASK, FSK, MSK, PSK, QAM	SSA3000XR-WDMA



# SSA3000X Plus

## Spectrum Analyzer



### Features and Benefits

- Frequency Range from 9 kHz up to 7.5 GHz
- -165 dBm/Hz Displayed Average Noise Level (Typ.)
- -98 dBc/Hz.@10 kHz Offset Phase Noise (1 GHz, Typ.)
- Level Measurement Uncertainty < 0.7 dB (Typ.)
- 1 Hz Minimum Resolution Bandwidth (RBW)
- Preamplifier Standard
- Tracking Generator included at no charge
- Vector Signal Modulation Analysis (Opt.)
- EMI Filter and Quasi-Peak Detector (Opt.)
- Advanced Measurement Kit (Opt.)
- 10.1 Inch Multi-Touch Screen , Mouse and Keyboard supported
- Web Browser Remote Control on PC and Mobile Terminals and File Operation

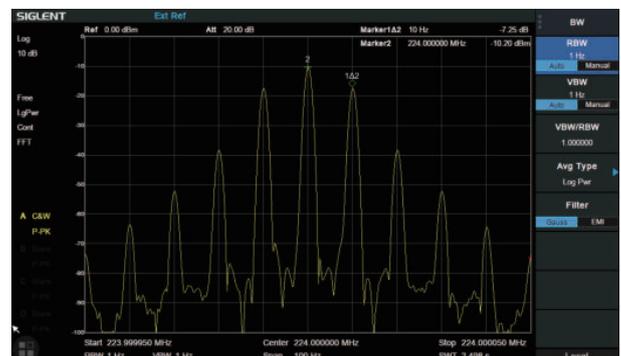


### Design features

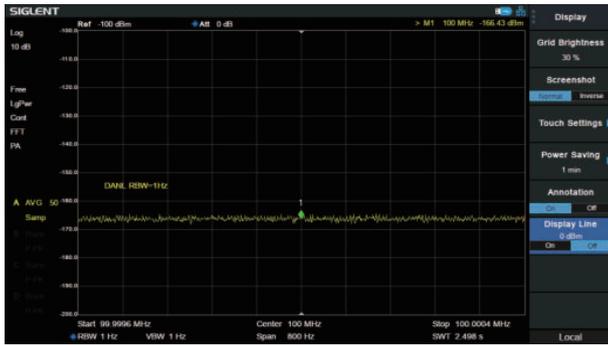
#### • 10.1 Inch (1024x600) Touch Screen



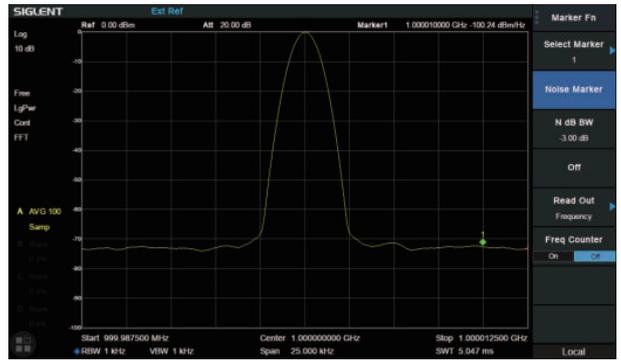
#### • Minimum 1 Hz Resolution Bandwidth (RBW)



## • -165 dBm/Hz Displayed Average Noise Level



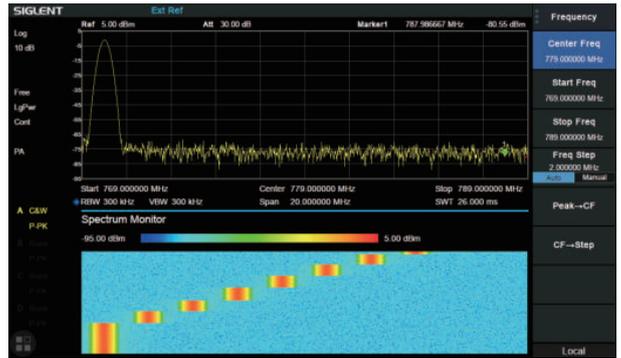
## • Phase noise <-98 dBc/Hz@1 GHz



## • Advanced Measurement Kit

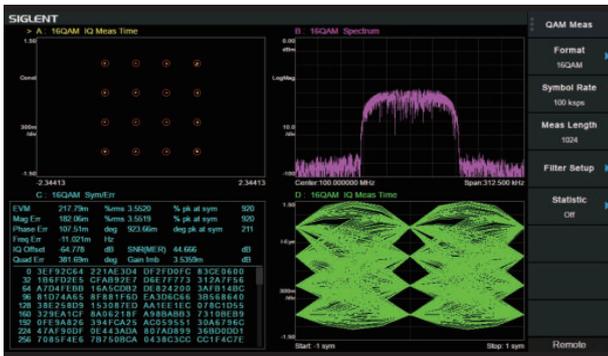


## • Spectrum Monitor in Advanced Measurement Kit



## • Modulation Analysis Mode

AM/FM, ASK/FSK/PSK/MSK/QAM Vector Signal Modulation Analysis, EVM evaluation



## • EMI Measurement Mode

EMI Measurement with CISPR 16-1-1 EMI filter, Quasi-peak Detector, and pre-stored standards





## Model and Main Index

Model	SSA3015X Plus	SSA3021X Plus	SSA3032X Plus	SSA3075X Plus
Frequency Range	9 kHz~1.5 GHz	9 kHz~2.1 GHz	9 kHz~3.2 GHz	9 kHz~7.5 GHz
Resolution Bandwidth	1 Hz~1 MHz	1 Hz~1 MHz	1 Hz~1 MHz	1 Hz~3 MHz
Displayed Average Noise Level	-156 dBm/Hz	-161 dBm/Hz	-161 dBm/Hz	-165 dBm/Hz
SSB Phase Noise	< -99 dBc/Hz	< -98 dBc/Hz	< -98 dBc/Hz	< -98 dBc/Hz
Third-order intercept	+10 dBm	+10 dBm	+10 dBm	+14 dBm
Total Amplitude Accuracy	< 1.2 dB	< 0.7 dB	< 0.7 dB	< 0.7 dB
Tracking Generator	100 kHz~1.5 GHz	100 kHz~2.1 GHz	100 kHz~3.2 GHz	100 kHz~7.5 GHz
Touch Screen	Multi Touch, Mouse and Keyboard supported			
Advanced Measurement	CHP, ACPR, OBW, CNR, Harmonic, TOI, Monitor			
Reflection Measurement	VSWR measurement using Reflection Bridge			
EMI Test	EMI Filter and Quasi-Peak Detector, Log Scale and Limit Line			
Modulation Analysis	AM, FM; ASK, FSK, MSK, PSK, QAM			
Communication Interface	LAN, USB Device, USB Host (USB-GPIB)			
Remote Control Capability	SCPI/Labview/IVI based on USB-TMC/VXI-11/Socket/Telnet			
Remote Controller	NI-MAX, Web Browser, Easy Spectrum software, File Explorer			



## Ordering Information

Product	Description	Order Number
Product Code	Spectrum Analyzer, 9 kHz ~ 1.5 GHz	SSA3015X Plus
	Spectrum Analyzer, 9 kHz ~ 2.1 GHz	SSA3021X Plus
	Spectrum Analyzer, 9 kHz ~ 3.2 GHz	SSA3032X Plus
	Spectrum Analyzer, 9 kHz ~ 7.5 GHz	SSA3075X Plus
Standard Accessories	Quick Start, USB Cable, Power Cord	
Common Options and Accessories	Tracking Generator	SSA3000XP-TG
	Advanced Measurement Kit	SSA3000XP-AMK
	Utility Kit: N (M)-SMA (M) cable (6 GHz), N (M)-N (M) cable (6 GHz), N (M)-BNC (F) adaptor x2, N (M)-SMA (F) adaptor x2, 10 dB 1W attenuator	UKitSSA3X
	N (M)-BNC (M) cable, 70 cm, 2 GHz	N-BNC-2L
	N (M)-SMA (M) cable, 70 cm, 6 GHz	N-SMA-6L
	N (M)-N (M) cable, 70 cm, 6 GHz	N-N-6L
	N (M)-SMA (M) cable, 100 cm, 18 GHz	N-SMA-18L
	N (M)-N (M) cable, 100 cm, 18 GHz	N-N-18L
	SMA (M)-SMA (M) cable, 100 cm, 18 GHz	SMA-SMA-18L
	USB-GPIB Adaptor	USB-GPIB
	Soft carrying bag	BAG-S2
	6U Rack Mount Kit	SSA-RMK
Reflection Measurement Options	Tracking Generator	SSA3000XP-TG
	Reflection Measurement	SSA3000-RefI
	Reflection Bridge Kit: Reflection Bridge (1 MHz~2.5 GHz), N(M)-N(M) adaptors x2	RB3X25
	50 Ω, N type Male, 4.5 GHz Economic Calibration Kit: Open(M), Short(M), Match(M), Through Adapter(F-F)	F503ME
EMI test Options	EMI Measurement Mode	SSA3000XP-EMI
	300 kHz~3 GHz Near Field Probe Kit: 3 H-probes (20/10/5 mm), 1 E-probe (5 mm)	SRF5030T
Modulation Analysis Options	Digital Modulation: ASK, FSK, MSK, PSK, QAM	SSA3000XP-DMA
	Analog Modulation: AM, FM	SSA3000XP-AMA



# SSA3000X

## Spectrum Analyzer



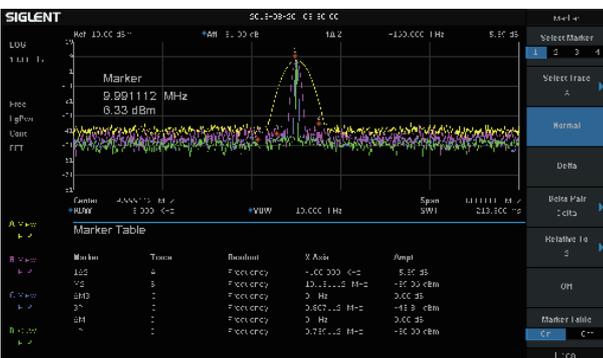
### Features and Benefits

- All-Digital IF Technology
- Frequency Range from 9 kHz up to 3.2 GHz
- -161 dBm/Hz Displayed Average Noise Level (Typ.)
- -98 dBc/Hz @10 kHz Offset Phase Noise (1 GHz, Typ.)
- Total Amplitude Accuracy < 0.7 dB
- 1 Hz Minimum Resolution Bandwidth (RBW)
- Preamplifier Standard
- Up to 3.2 GHz Tracking Generator Kit
- Reflection Measurement Kit (Opt.)
- Advanced Measurement Kit (Opt.)
- EMI Pre-compliance Measurements Kit (Opt.)
- 10.1 Inch WVGA (1024x600) Display

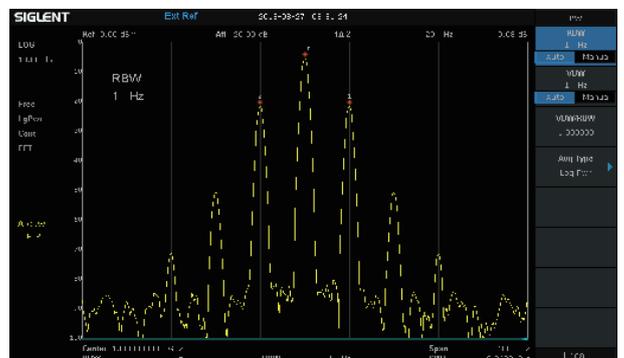


### Design features

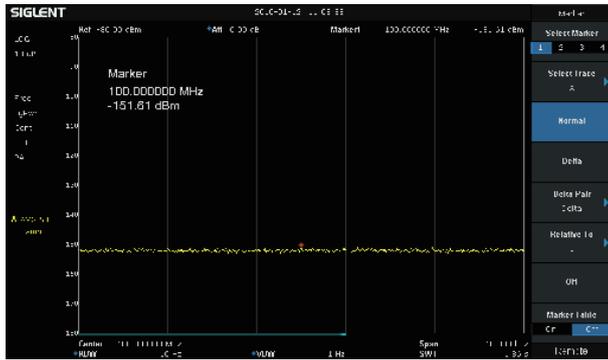
- Support four traces and cursors independently



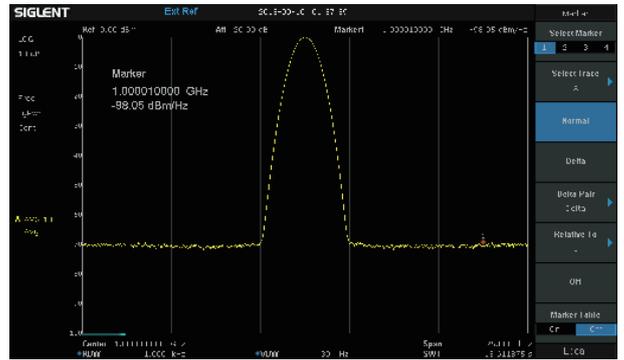
- 1 Hz Minimum Resolution Bandwidth (RBW)



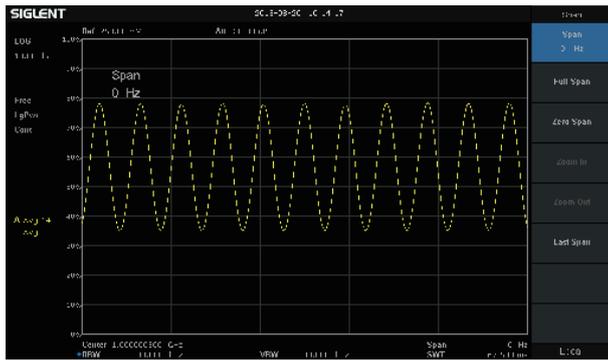
- 151 dBm Displayed Average Noise Level (RBW=10 Hz)



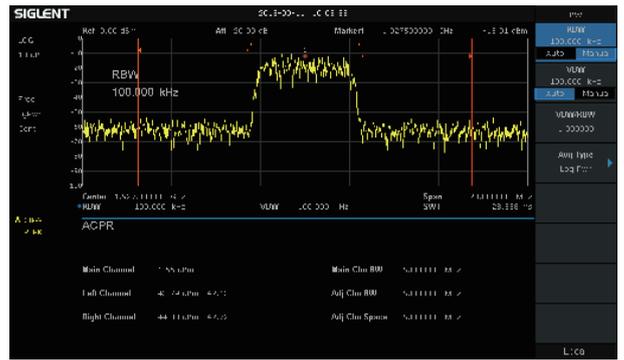
- Phase noise -98 dBc/Hz@1 GHz, offset 10 kHz



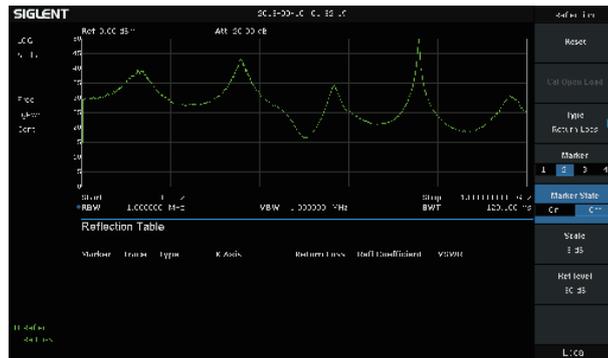
- Demodulation at the zero span



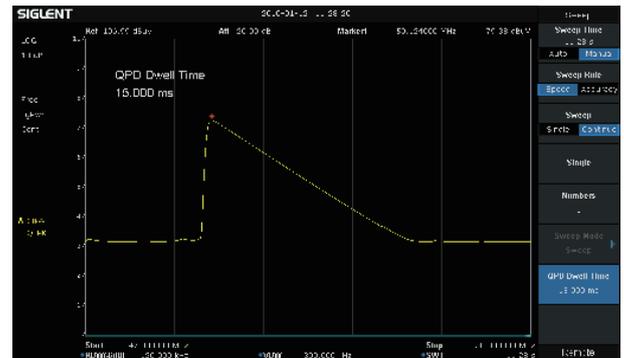
- Advanced power measurement, calculate the ACPR parameters



- Reflection measurement, acquire characteristic curve of the Return Loss



- EMI filter, Quasi-Peak detector following CISPR 16



## Model and Main index

Model	SSA3021X	SSA3032X
Frequency Range	9 kHz~2.1 GHz	9 kHz~3.2 GHz
Resolution Bandwidth	1 Hz~1 MHz, in 1-3-10 sequence	1 Hz~1 MHz, in 1-3-10 sequence
Displayed Average Noise Level	-161 dBm/Hz, Normalize to 1 Hz (typ.)	-161 dBm/Hz, Normalize to 1 Hz (typ.)
Phase Noise	<-98 dBc/Hz@1 GHz, 10 kHz offset	<-98 dBc/Hz@1 GHz, 10 kHz offset
Amplitude Precision	< 0.7 dB	< 0.7 dB



## Ordering Information

Product Description	SSA3000X Spectrum Analyzer	Order Number
Product code	Spectrum Analyzer, 9 kHz~3.2 GHz	SSA3032X
	Spectrum Analyzer, 9 kHz~2.1 GHz	SSA3021X
Standard configurations	A Quick Start, A USB Cable, A Power Cord, A Calibration Certificate	QG-SSA3000X
Utility Options	Tracking Generator Kit	TG-SSA3000X
	Advanced Measurement Kit	AMK-SSA3000X
	Utility Kit: N(M)-SMA(M) cable N(M)-N(M) cable N(M)-BNC(F) adaptor(2 pcs) N(M)-SMA(F) adaptor(2 pcs) 10 dB attenuator	UKitSSA3X
	N(M)-SMA(M) cable	N-SMA-6L
	N(M)-N(M) cable	N-N-6L
	N(M)-BNC(M) cable	N-BNC-2L
	Soft carrying bag	BAG-SCC
	Rack Mount Kit	SSA-RMK
	EMI Options	EMI Measurement Kit: EMI Filter and Quasi Peak Detector, EMI test option in EasySpectrum Software
Near Field Probe:H field probe sets(25 mm, 10 mm, 5 mm, 2mm), 30 MHz~3.0 GHz		SRF5030
Near Field Probe:H field probe sets(20 mm, 10 mm, 5 mm) , E field probe (5 mm), 300 kHz~3.0 GHz		SRF5030T
Reflect Measurement Options	Tracking Generator Kit	TG-SSA3000X
	Reflect Measurement Kit	Refl-SSA3000X
	VSWR Bridge Kit: including Refl-SSA3000X VSWR Bridge(1 MHz~2 GHz) N(M)-N(M) adaptor(2 pcs)	RBSSA3X20



# SHA860A

## Portable Signal Analyzer



### Features and Benefits

- Frequency Range 9 kHz~3.6/7.5 GHz, 5 kHz usable
- Displayed Average Noise Level (DANL) -165 dBm/Hz
- SSB Phase Noise -104 dBc/Hz.@1 GHz, 10 kHz offset
- Analysis Bandwidth 40/110 MHz
- 5G NR OTA Measurement, multi-PCI and multi-beam analysis
- LTE FDD and TDD OTA Measurement, multi-PCI analysis
- Channel Power, Occupied Bandwidth, Adjacent Channel Power, SHI and TOI etc.
- IQ Data Acquisition in 110 MHz Band Width
- Real-Time Spectrum Analysis in 110 MHz Band Width, 100% POI time 3.51  $\mu$ s
- Pulse Profile Measurements
- Indoor and outdoor map for Coverage Mapping
- Trace Recording/Playback with GNSS location
- AM/FM/PM Analog Modulation Analysis, and ASK/FSK/PSK/MSK/QAM Digital Modulation Analysis
- AM/FM/PM Analog Modulation Audio Tune & Listening
- Field Strength (EMF) Measurements and EMI Measurements
- Independent Source to 7.5 GHz
- Vector Network Analyzer, 1-Path 2-Ports S11 and S21 Network Analysis, S11 directionality 40 dB, S21 dynamic 114 dB
- Cable and Antenna Test, Distance To Fault and Time Domain Analysis
- TTA test, bias out 12V to 32V DC
- Chargeable Battery working time 2.5 hours, 3.2 kg net weight
- 8.4 Inch Multi-Touch Screen, mouse and keyboard supported

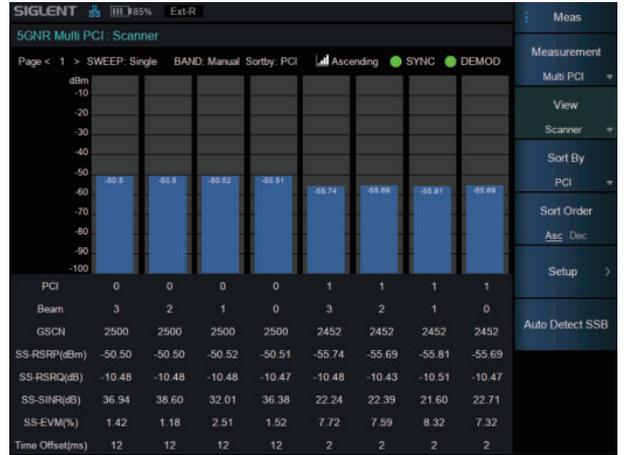


## Design features

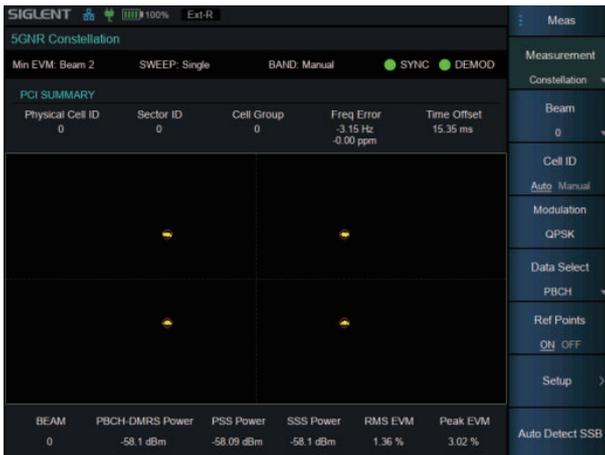
### • 5G NR OTA Measurement



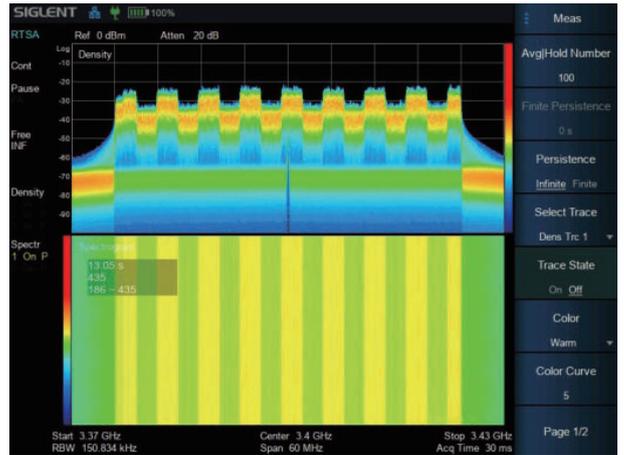
### • 5G NR multi-PCI and multi-beam analysis



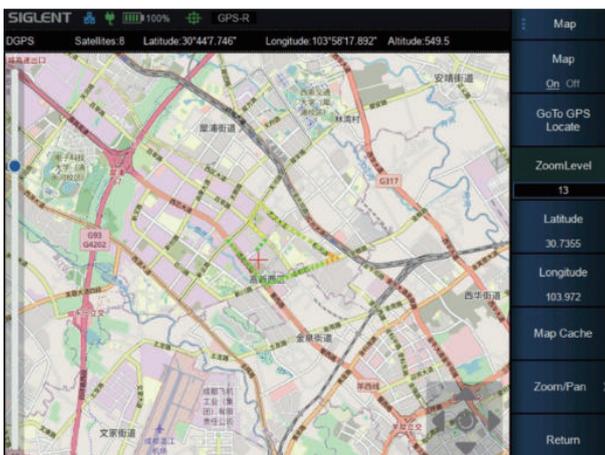
### • 5G NR Constellation



### • Real-Time Spectrum Analysis



### • Outdoor and Indoor map, GPS logging



### • Pulse Profile Measurements



## Model and Main index

Model	SHA861A	SHA862A
Frequency range	9 kHz~3.6 GHz (5 kHz usable)	9 kHz~7.5 GHz (5 kHz usable)
Frequency resolution	1 Hz	



## Ordering Information

Product	Description	Order Number
Product code	Spectrum Analyzer 9 kHz~3.6 GHz, BW 40 MHz	SHA861A
	Spectrum Analyzer 9 kHz~7.5 GHz, BW 40 MHz	SHA862A
Standard Accessories	Quick Start, USB type-C cable, Power cord, AC-DC adapter, Rechargeable lithium battery, Portable bag	
Options	SHA861A to SHA862A	SHA860-F2
	Analysis Bandwidth 110 MHz	SHA860-B1A
	Advanced Measurement Kit	SHA860-AMK
	EMI Measurement	SHA860-EMI
	5G NR OTA Measurement	SHA860-NR
	LTE TDD/FDD OTA Measurement	SHA860-LTE
	Real-Time Spectrum Analysis	SHA860-RTA
	IQ Data Acquisition	SHA860-IQA
	Pulse Profile Analysis	SHA860-PU
	Digital Modulation Analysis	SHA860-DMA
	Analog Modulation Analysis	SHA860-AMA
	Source	SHA860-SOR
	Cable and Antenna Test	SHA860-CAT
	Vector Network Analysis	SHA860-VNA
	Bias Out	SHA860-BIAS
	GPS Receiver	SHA860-GPS
	Outdoor/Indoor Map	SHA860-MAP
Outdoor/Indoor Map Tile Download PC Software	EasyMap	
General Accessories	Rechargeable lithium battery, 10.8 V	10V8-BAT
	AC-DC adapter, 12 V, 4 A	12V-AP-4A
	Portable bag	BAG-H2
	GPS antenna, SMA(M), 1000 mm	ANT-GPS1
	Directional Antenna Suit: Antennas (10 MHz~200 MHz, 200 MHz~500 MHz, 500 MHz~8 GHz), Handler with preamplifier (10 dB, 9 kHz~8 GHz)	ANT-DA1
	Near field probe kit: H-field probes (20 mm, 10 mm, 5 mm), E-field probe (5 mm), 300 kHz~3 GHz	SRF5030T
	Utility Kit: N(M)-SMA(M) cable (6 GHz), N(M)-N(M) cable (6 GHz), N(M)-BNC(F) adaptor x2, N(M)-SMA(F) adaptor x2, 10 dB 1W attenuator	UKitSSA3X
	N(M)-BNC(M) cable, DC~2 GHz, 700 mm	N-BNC-2L
	N(M)-SMA(M) cable, DC~6 GHz, 700 mm	N-SMA-6L
	N(M)-N(M) cable, DC~6 GHz, 700 mm	N-N-6L
	N(M)-N(M) cable, DC~18 GHz, 1000 mm	N-N-18L
	N(M)-SMA(M) cable, DC~18 GHz, 1000 mm	N-SMA-18L
	SMA(M)-SMA(M) cable, DC~18 GHz, 1000 mm	SMA-SMA-18L
CAT&VNA Accessories	Integrated N type Calibration Kit, Male, DC~9 GHz, 50 Ω	Y504MS
	Integrated N type Calibration Kit, Female, DC~9 GHz, 50 Ω	Y504FS
	Integrated 3.5mm type Calibration Kit, Male, DC~26.5 GHz, 50 Ω	Y606MS
	Integrated 3.5mm type Calibration Kit, Female, DC~26.5 GHz, 50 Ω	Y606FS
	N type Standard Calibration Kit, Male & Female, DC~9 GHz, 50 Ω	F504TS
	3.5mm type Standard Calibration Kit, Male & Female, DC~9 GHz, 50 Ω	F604TS
	N type Economic Calibration Kit, Male, DC~4.5 GHz, 50 Ω	F503ME
	N type Economic Calibration Kit, Female, DC~4.5 GHz, 50 Ω	F503FE
	N type Standard Calibration Kit, Male, DC~9 GHz, 50 Ω	F504MS
	N type Standard Calibration Kit, Female, DC~9 GHz, 50 Ω	F504FS
	3.5mm type Economic Calibration Kit, Male, DC~4.5 GHz, 50 Ω	F603ME
	3.5mm type Economic Calibration Kit, Female, DC~4.5 GHz, 50 Ω	F603FE
	3.5mm type Standard Calibration Kit, Male, DC~9 GHz, 50 Ω	F604MS
	3.5mm type Standard Calibration Kit, Female, DC~9 GHz, 50 Ω	F604FS



# SHA850A

## Portable Spectrum Analyzer



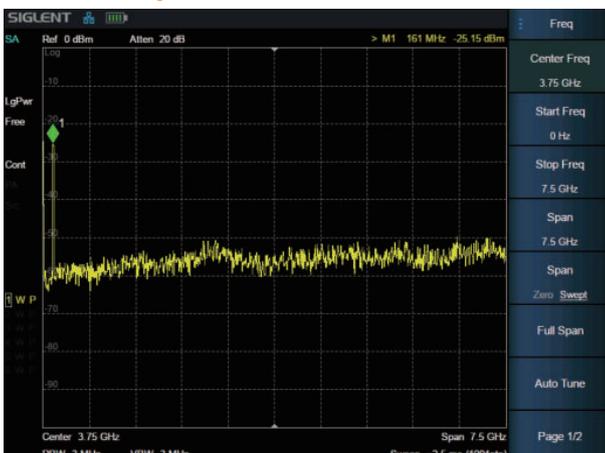
### Features and Benefits

- Spectrum Analyzer Frequency Range from 9 kHz up to 7.5 GHz, -165 dBm/Hz Displayed Average Noise Level (Typ.), -104 dBc/Hz.@10 kHz Offset Phase Noise (1 GHz, Typ.), 1 Hz up to 10 MHz Minimum Resolution Bandwidth (RBW), Preamplifier and independent signal source up to 7.5 GHz, GPS positioning and logging
- Cable and Antenna Test Frequency Range from 100 kHz up to 7.5 GHz, Distance To Fault and Time Domain Analysis
- Vector Network Analyzer, Bias out up to 32VDC
- Typical working time 4 hours, 3.2 kg net weight, 8.4 Inch Multi-Touch Screen , Mouse and Keyboard supported

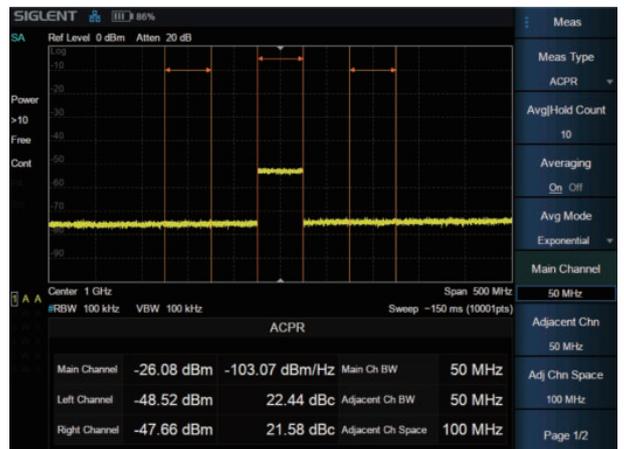


### Design features

#### • Spectrum Analyzer 8.4 inch multi-touch screen and full keyboard control



#### • Channel Power and ACPR measurement



● **GPS Location and trace log recorder, sync 10MHz reference clock**

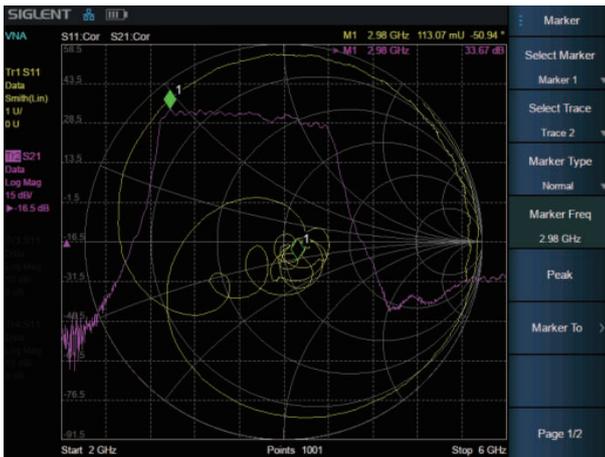


● **Interference analysis with directional antenna**



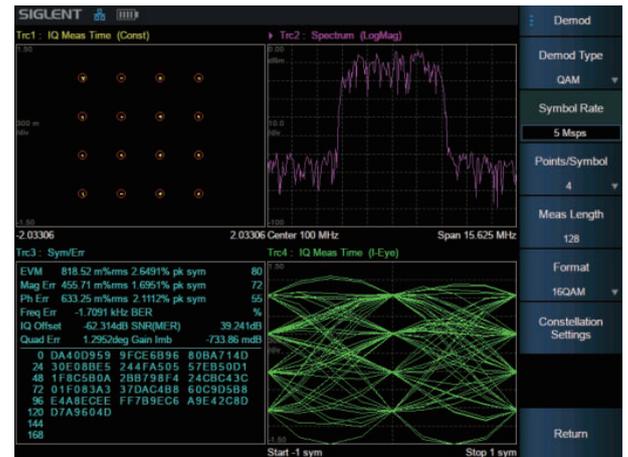
● **Vector Network Analyzer**

100 kHz-7.5 GHz Vector S11 and S21 measurement, Multi Formats Overlay Display



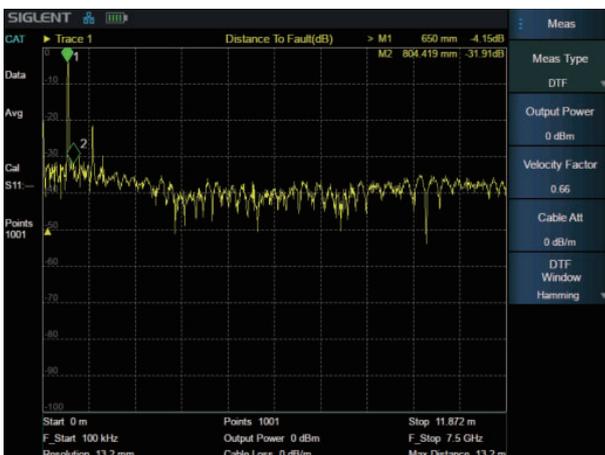
● **Modulation Analysis**

AM/FM/PM analog modulation, and ASK/FSK/PSK/MSK/QAM digital modulation analysis



● **Cable and Antenna Test**

Cable and Antenna Test based on Timing Domain Analysis





## Model and Main index

Model	SHA851A	SHA852A
Spectrum Analyzer	9 kHz~3.6 GHz	9 kHz~7.5 GHz
Cable and Antenna Test	100 kHz~3.6 GHz	100 kHz~7.5 GHz



## Ordering Information

Product	Description	Order Number
Product code	Spectrum & Vector Network Analyzer, 9 kHz~3.6 GHz	SHA851A
	Spectrum & Vector Network Analyzer, 9 kHz~7.5 GHz	SHA852A
Standard Accessories	Quick Start, USB type-C cable, Power cord, AC-DC adapter, Rechargeable lithium battery, Portable bag	
Options	SHA851A to SHA852A	SHA850-F2
	Source	SHA850-SOR
	Vector Network Analysis	SHA850-VNA
	Advanced Measurement Kit	SHA850-AMK
	Analog Modulation Analysis	SHA850-AMA
	Digital Modulation Analysis	SHA850-DMA
	DC Bias Out	SHA850-BIAS
	GPS Receiver	SHA850-GPS
	GPS Logging(need GPS Receiver)	SHA850-GPSM
General Accessories	Rechargeable lithium battery	10V8_BAT
	AC-DC adapter	12V_AP_4A
	Portable bag	BAG-H2
	GPS antenna, SMA(M), 100 cm	ANT-GPS1
	S5000 Directional Antenna Suit: S5001-VHF (10 MHz~200 MHz), S5001-UHF (200 MHz~500 MHz), S5001-LP (500 MHz~8 GHz), Preamp (10 dB, 9 kHz~8 GHz)	ANT-DA1
	Near field probe kit: 300 kHz~3 GHz, H-field probes (20 mm,10 mm,5 mm), E-field probe (5 mm)	SRF5030T
	Utility Kit: N(M)-SMA(M) cable(6 GHz), N(M)-N(M) cable(6 GHz), N(M)-BNC(F) adaptor x2, N(M)-SMA(F) adaptor x2, 10 dB 1W attenuator	UKitSSA3X
	N(M)-BNC(M) cable, DC~2 GHz, 700 mm	N-BNC-2L
	N(M)-SMA(M) cable, DC~6 GHz, 700 mm	N-SMA-6L
	N(M)-N(M) cable, DC~6 GHz, 700 mm	N-N-6L
	N(M)-N(M) cable ,DC~18 GHz, 1000 mm	N-N-18L
	N(M)-SMA(M) cable ,DC~18 GHz, 1000 mm	N-SMA-18L
	SMA(M)-SMA(M) cable ,DC~18 GHz, 1000 mm	SMA-SMA-18L
CAT&VNA Accessories	N type Integrated Calibration Kit, Male, DC~9 GHz,50 Ω	Y504MS
	N type Integrated Calibration Kit, Female, DC~9 GHz,50 Ω	Y504FS
	N type Precision Calibration Kit, DC~9 GHz, 50 Ω	F504TS
	3.5 mm type Precision Calibration Kit, DC~9 GHz, 50 Ω	F604TS
VNA Options	2 ports, 9 kHz ~ 4.5 GHz, SMA female	SEM5002A
	2 ports, 9 kHz ~ 9 GHz, SMA female	SEM5012A
	2 ports, 100 kHz ~ 13.5 GHz, 3.5 mm female	SEM5022A
	2 ports, 100 kHz ~ 26.5 GHz, 3.5 mm female	SEM5032A
	4 ports, 9 kHz ~ 4.5 GHz, SMA female	SEM5004A
	4 ports, 9 kHz ~ 9 GHz, SMA female	SEM5014A
	4 ports, 100 kHz ~ 13.5 GHz, 3.5 mm female	SEM5024A
	4 ports, 100 kHz ~ 26.5 GHz, 3.5 mm female	SEM5034A



# SVA1000X

## Spectrum & Vector Network Analyzer



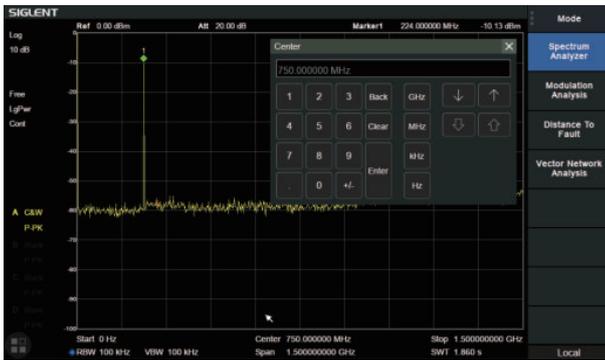
### Features and Benefits

- Spectrum Analyzer Frequency Range from 9 kHz up to 7.5 GHz
- Vector Network Analyzer Frequency Range from 100 kHz up to 7.5 GHz
- -165 dBm/Hz Displayed Average Noise Level (Typ.)
- -98 dBc/Hz.@10 kHz Offset Phase Noise (1 GHz, Typ.)
- Level Measurement Uncertainty < 0.7 dB (Typ.)
- 1 Hz Minimum Resolution Bandwidth (RBW)
- Preamplifier Standard
- Tracking Generator Standard
- Distance To Fault (Opt.)
- Vector Signal Modulation Analysis (Opt.)
- EMI Filter and Quasi-Peak Detector Kit (Opt.)
- Advanced Measurement Kit (Opt.)
- 10.1 Inch Multi-Touch Screen , Mouse and Keyboard supported
- Web Browser Remote Control on PC and Mobile Terminals and File Operation

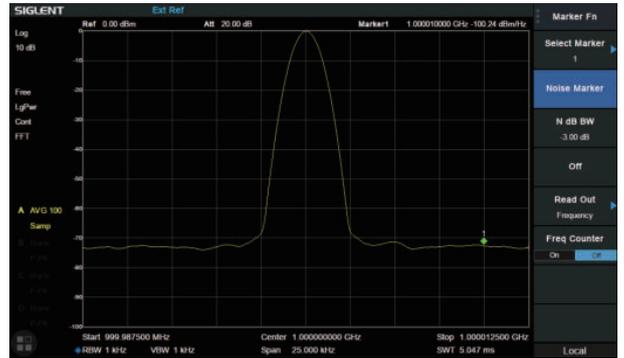


## Design features

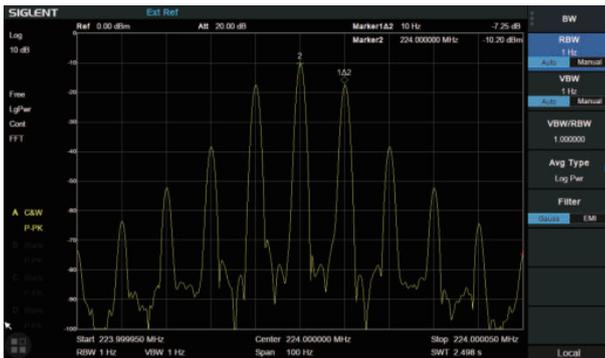
• 10.1 Inch Display with Multi-Touch Screen



• Phase noise <math>< -98 \text{ dBc/Hz}</math>@1 GHz, offset 10 kHz



• Minimum 1 Hz Resolution Bandwidth (RBW)



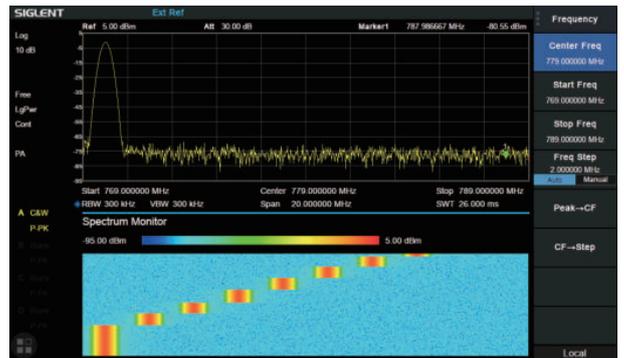
• ACPR in Advanced Measurement Kit



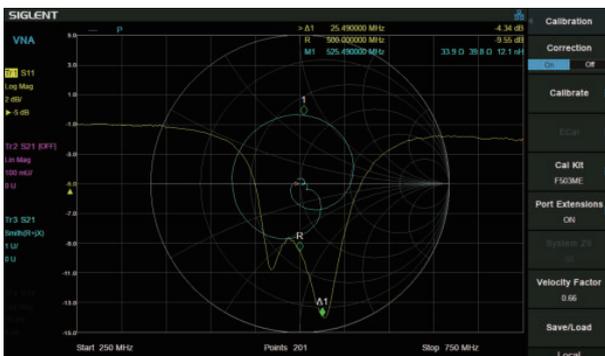
• -165 dBm/Hz Displayed Average Noise Level



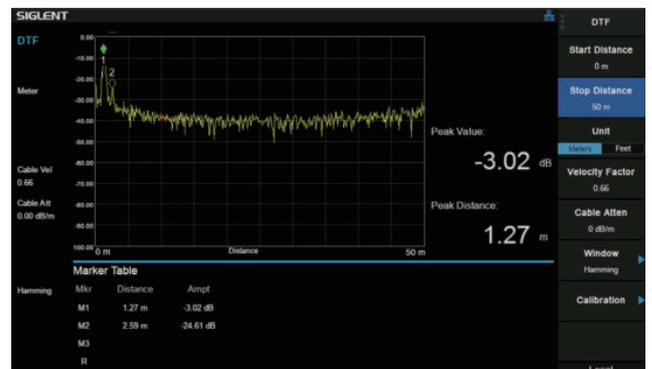
• Monitor in Advanced Measurement Kit



• 100 k-7.5 GHz Vector S11 and S21 measurement, Multi Formats Overlay Display

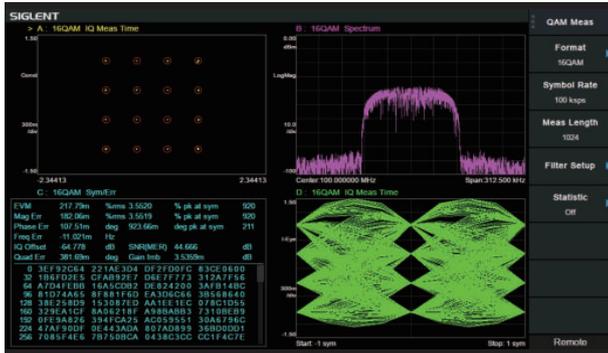


• Cable and Antenna Test based on Timing Domain Analysis



## ● Modulation Analysis Mode

AM/FM, ASK/FSK/PSK/MSK/QAM Vector Signal Modulation Analysis, EVM evaluation



## ● EMI Measurement Mode

EMI Measurement with CISPR 16-1-1 EMI filter, Quasi-peak Detector, and pre-stored standards



## Model and Main index

Model	SVA1015X	SVA1032X	SVA1075X
Spectrum Analyzer Frequency Range	9 kHz~1.5 GHz	9 kHz~3.2 GHz	9 kHz~7.5 GHz
Vector Network Analyzer Frequency Range	100 kHz~1.5 GHz	100 kHz~3.2 GHz	100 kHz~7.5 GHz
Resolution Bandwidth	1 Hz~1 MHz	1 Hz~1 MHz	1 Hz~3 MHz
Displayed Average Noise Level	-156 dBm/Hz	-161 dBm/Hz	-165 dBm/Hz
SSB Phase Noise	<-99 dBc/Hz	<-98 dBc/Hz	<-98 dBc/Hz
Total Amplitude Accuracy	< 1.2 dB	< 0.7 dB	< 0.7 dB
Tracking Generator	100 kHz~1.5 GHz	100 kHz~3.2 GHz	100 kHz~7.5 GHz
VNA measurement	Vector S11, Vector S21		
Distance to Fault	VNA Timing Domain Analysis Locator		
Touch Screen	Multi Touch, Mouse and Keyboard supported		
Advanced Measurement	CHP, ACPR, OBW, CNR, Harmonic, TOI, Monitor		
Reflection Measurement	VSWR measurement using Reflection Bridge		
EMI Test	EMI Filter and Quasi-Peak Detector, Log Scale and Limit Line		
Modulation Analysis	AM, FM; ASK, FSK, MSK, PSK, QAM		
Communication Interface	LAN, USB Device, USB Host (USB-GPIB)		
Remote Control Capability	SCPI/Labview/IVI based on USB-TMC/VXI-11/Socket/Telnet		
Remote Controller	NI-MAX, Web Browser, Easy Spectrum software, File Explorer		



Ordering Information

Product	Description	Order Number
Product Code	Spectrum & Vector Network Analyzer, 1.5 GHz	SVA1015X
	Spectrum & Vector Network Analyzer, 3.2 GHz	SVA1032X
	Spectrum & Vector Network Analyzer, 7.5 GHz	SVA1075X
Standard Accessories	Quick Start, USB Cable, Power Cord	
Common Options and Accessories	Advanced Measurement Kit	SVA1000X-AMK
	Utility Kit: N (M)-SMA (M) cable (6 GHz), N (M)-N (M) cable (6 GHz), N (M)-BNC (F) adaptor x 2, N (M)-SMA (F) adaptor x 2, 10 dB 1W attenuator	UKitSSA3X
	N (M)-SMA (M) cable, 70 cm, 6 GHz	N-SMA-6L
	N (M)-N (M) cable, 70 cm, 6 GHz	N-N-6L
	N (M)-BNC (M) cable, 70 cm, 2 GHz	N-BNC-2L
	N (M)-N (M) cable, 100 cm, 18 GHz	N-N-18L
	N (M)-SMA (M) cable, 100 cm, 18 GHz	N-SMA-18L
	SMA(M)-SMA(M) cable, 100 cm, 18 GHz	SMA-SMA-18L
	USB-GPIB Adaptor	USB-GPIB
	Soft carrying bag	BAG-S2
	6U Rack Mount Kit	SSA-RMK
VNA Options	Distance To Fault	SVA1000X-DTF
	Mechanical Calibration Kit: Open (M), Short (M), Match (M,50), Through (F-F), 4.5 GHz, N-Male connector	F503ME
	Mechanical Calibration Kit: OSLT, DC - 4.5 GHz, N-Female connector	F503FE
	Mechanical Calibration Kit: OSLT, DC - 4.5 GHz, 3.5mm SMA-Male connector	F603ME
	Mechanical Calibration Kit: Open (M), Short (M), Match (M,50), Through (F-F), 4.5 GHz, SMA-Female connector	F603FE
	Mechanical Calibration Kit: OSLT, DC - 9 GHz, N-Male connector	F504MS
	Mechanical Calibration Kit: OSLT, DC - 9 GHz, N-Female connector	F504FS
	Mechanical Calibration Kit: OSLT, DC - 9 GHz, 3.5 mm SMA-Male connector	F604MS
	Mechanical Calibration Kit: OSLT, DC - 9 GHz, 3.5 mm SMA-Female connector	F604FS
	N-type, Male and Female, 50 Ω Calibration Kit, 0~9 GHz	F504TS
3.5 mm, Male and Female, 50 Ω Calibration Kit, 0~9 GHz	F604TS	
EMI test Options	EMI Measurement Kit: EMI Filter and Quasi Peak Detector, EMI Receiver Mode in EasySpectrum Software	SVA1000X-EMI
	300 kHz~3 GHz Near Field Probe Kit: 3 H-probes (20/10/5 mm), 1 E-probe (5 mm)	SRF5030T
Modulation Analysis Options	Digital Modulation: ASK, FSK, MSK, PSK, QAM	SVA1000X-DMA
	Analog Modulation: AM, FM	SVA1000X-AMA
VNA Options	2 ports, 9 kHz ~ 4.5 GHz, SMA female	SEM5002A
	2 ports, 9 kHz ~ 9 GHz, SMA female	SEM5012A
	2 ports, 100 kHz ~ 13.5 GHz, 3.5 mm female	SEM5022A
	2 ports, 100 kHz ~ 26.5 GHz, 3.5 mm female	SEM5032A
	4 ports, 9 kHz ~ 4.5 GHz, SMA female	SEM5004A
	4 ports, 9 kHz ~ 9 GHz, SMA female	SEM5014A
	4 ports, 100 kHz ~ 13.5 GHz, 3.5 mm female	SEM5024A
4 ports, 100 kHz ~ 26.5 GHz, 3.5 mm female	SEM5034A	



# SSG6000A

## RF Signal Generator



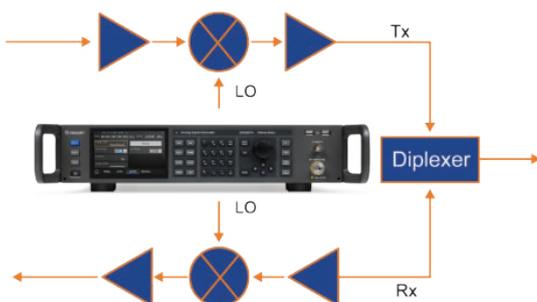
### Features and Benefits

- Frequency up to 13.6 GHz/ 20 GHz/ 40GHz
- 0.001 Hz frequency setting resolution
- Level setting range: -130 dBm ~ 24 dBm
- Phase Noise: -135 dBc / Hz @ 1 GHz, 20 kHz offset (typ.)
- Level error  $\leq 0.7$  dB (typ.)
- Provides AM/PM/FM analog modulation with internal, external or Int+Ext source
- Single pulse, double pulse and pulse train generator (option)
- The power meter control kit can easily use the power meter to measure power, control power output and correct line loss
- 5 inch TFT capacitive touch screen, mouse and keyboard supported
- Web browser remote control on PC and mobile terminals
- Standard interface includes USB Host, USB Device (USB TMC), LAN (VXI-11, Socket, Telnet). Optional interface: GPIB

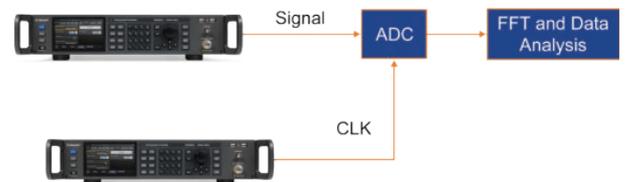


### Design features

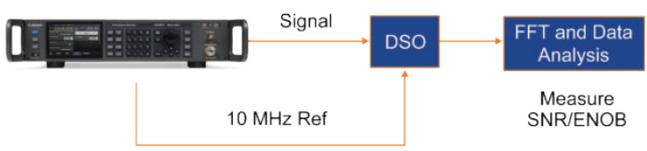
#### • LO in Up/Down Converter Measurement



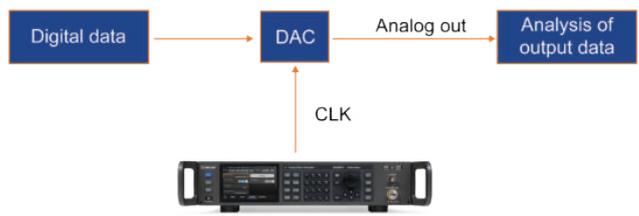
#### • ADC Measurement



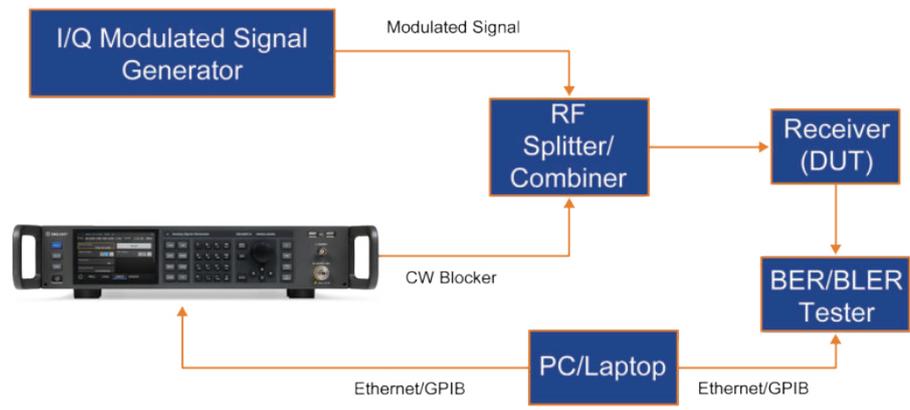
## • DSO Measurement



## • DAC Measurement



## • Receiver Blocking Test



## Model and Main index

Model	SSG6083A	SSG6085A	SSG6087A
Frequency Range	CW MODE 100 kHz~13.6 GHz	CW MODE 100 kHz~20 GHz	CW MODE 100 kHz~40 GHz
Frequency Resolution	0.001 Hz		
Amplitude Resolution	0.01 dB		
Level error	≤ 0.7 dB(typ.)		
Phase noise	-135 dBc/Hz @1 GHz, offset 20 kHz (typ.)		
Display	5 inch capacitance touch screen, RGB (800*480)		



## Ordering Information

Product Description	SSG6000A Signal Generator	Order Number
Product code	Analog Signal Generator 100 kHz~13.6 GHz	SSG6083A
	Analog Signal Generator 100 kHz~20 GHz	SSG6085A
	Analog Signal Generator 100 kHz~40 GHz	SSG6087A
Standard configurations	Quick start, an USB cable, calibration certificate, power cord, 2.92 mm female to female adapter	
option	Pulse modulation	SSG6080A-PU
	Pulse train generator	SSG6080A-PT
	Rack mount kit	SSG6000A-RMK
	USB-GPIB adapter	USB-GPIB
	Upgrade 13.6 GHz to 20 GHz	SSG6080A-F85



# SSG6082A-V

## Vector Signal Generator

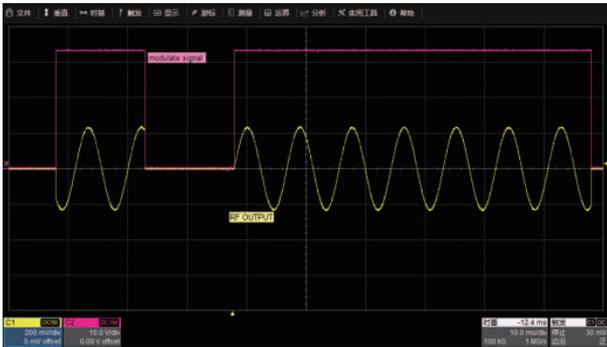


### Features and Benefits

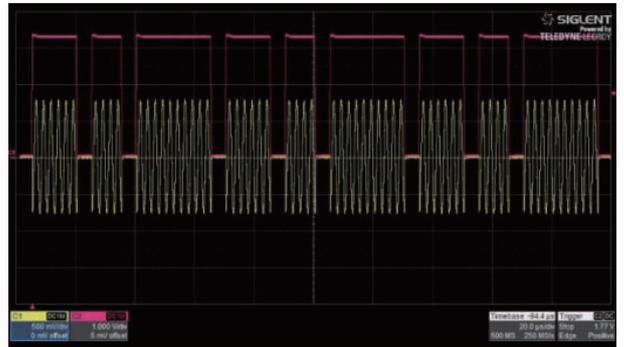
- Highest Frequency: 8 GHz
- Output Frequency Resolution: Up to 0.001 Hz
- Level Setting Range: -140 dBm to 30 dBm
- Phase Noise: < -132 dBc/Hz @ 1 GHz, offset 10 kHz (typical value)
- Amplitude Accuracy:  $\leq 0.7$  dB (typical value)
- Modulation Support: Supports AM/FM/PM analog modulation, internal 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.

 Design features

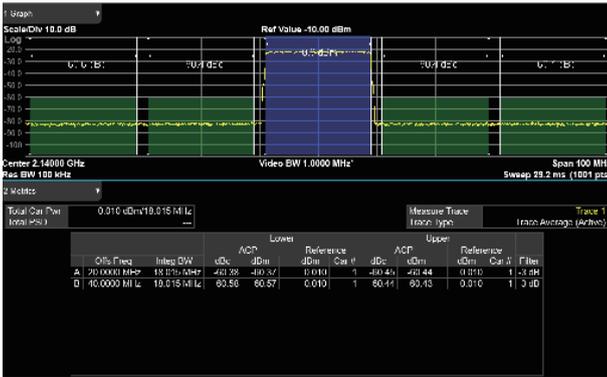
- Supports dual-pulse modulation



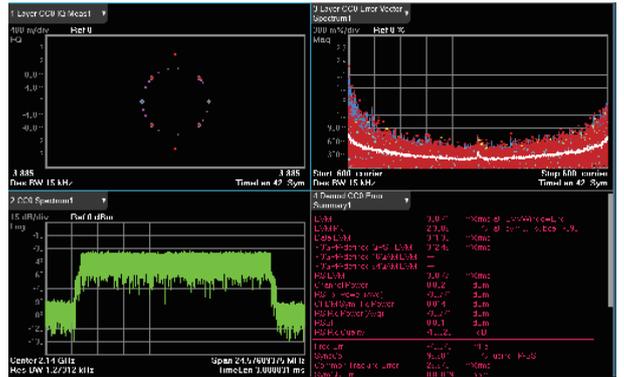
- Supports pulse sequence output with up to 2047 pulses



- 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.

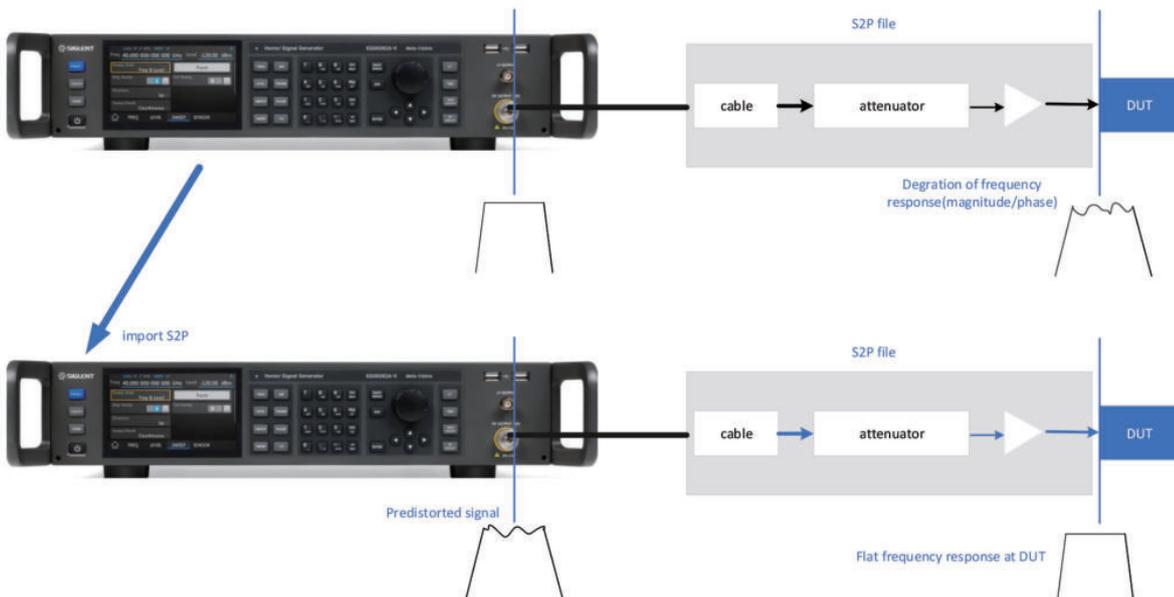


LTE FDD TM1.1 20M ACPR



LTE FDD TM1.1 20M EVM

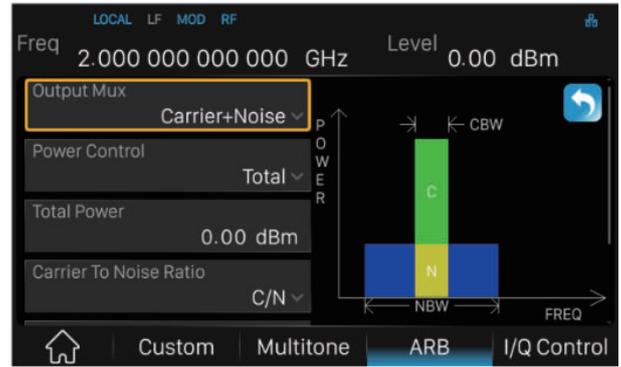
- User Vector Compensation: Supports user vector compensation using S-parameters for amplitude frequency response and phase compensation.



• **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**



## 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	0.01 dB
Phase noise	-132 dBc/Hz @ 1 GHz, offset 10 kHz (typical value)
Display	5-inch capacitive touchscreen, 800 (RGB) × 480

## Ordering Information

Product Description	SSG6082A-V Vector Signal Generator	Order Number
Product code	CW MODE: 9 kHz to 8 GHz IQ MODE: 10 MHz to 8 GHz	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
	Rack Mount Kit	SSG6000A-RMK
USB-GPIB Conversion Adapter	USB-GPIB	



# SSG5000A

## RF Signal Generator



### Features and Benefits

- Frequency up to 13.6 GHz / 20 GHz
- 0.001 Hz frequency setting resolution
- Level setting range: -130 dBm ~ 25 dBm
- Phase Noise: -120 dBc / Hz @ 1 GHz, 20 kHz offset (typ.)
- Level error  $\leq 0.7$  dB (typ.)
- Provides AM, FM, PM analog modulation with internal, external or Int+Ext source
- Single pulse, double pulse and pulse train generator (option)
- The power meter control kit can easily use the power meter to measure power, control power output and correct line loss
- 5 inch TFT capacitive touch screen, mouse and keyboard supported
- Web browser remote control on PC and mobile terminals
- Standard interface includes USB Host, USB Device (USB TMC), LAN (VXI-11, Socket, Telnet). Optional interface: GPIB



### Model and Main index

Model	SSG5083A	SSG5085A
Frequency Range	CW MODE 9 kHz~13.6 GHz	CW MODE 9 kHz~20 GHz
Frequency Resolution	0.001 Hz	
Amplitude Resolution	0.01 dB	
Level error	$\leq 0.7$ dB(typ.)	
Phase noise	-120 dBc/Hz @1 GHz, offset 20 kHz (typ.)	
Display	5 inch capacitance touch screen, RGB (800*480)	



## Ordering Information

Product Description	SSG5000A Signal Generator	Order Number
Product code	Analog Signal Generator 9 kHz~13.6 GHz	SSG5083A
	Analog Signal Generator 9 kHz~20 GHz	SSG5085A
Standard configurations	Quick start, an USB cable, calibration certificate, power cord	
option	Pulse modulation	SSG5080A-PU
	Pulse train generator	SSG5080A-PT
	110 dB Attenuator module <sup>[1]</sup>	SSG5080A-LP
	Rack mount kit	SSG-RMK
	USB-GPIB adapter	USB-GPIB
	Upgrade 13.6 GHz to 20 GHz	SSG5080A-F85

[1] Assembled and calibrated in factory only



# SSG5000X

## RF Signal Generator

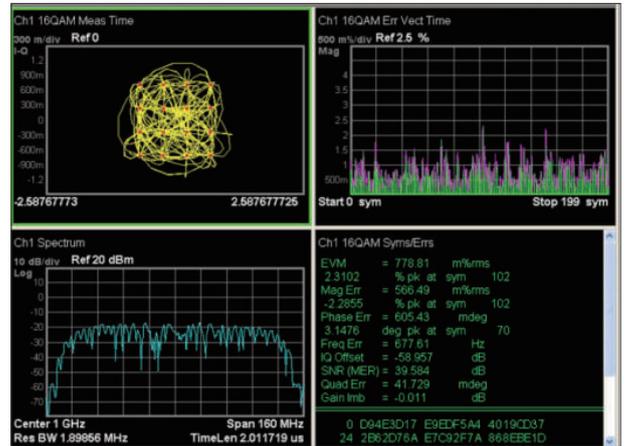
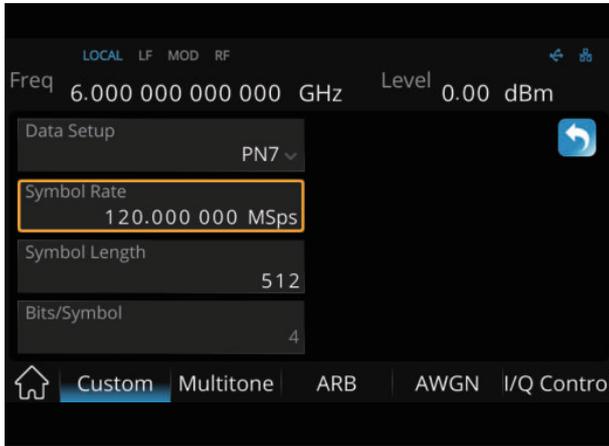


### Features and Benefits

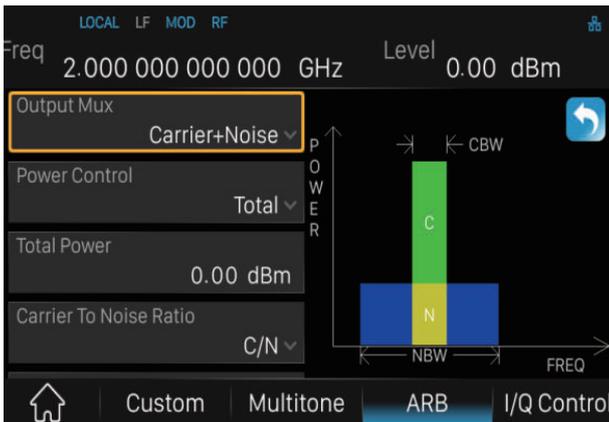
- Frequency up to 4 GHz/6 GHz
- 0.001 Hz frequency setting resolution
- High output power up to +26 dBm (typ.)
- Phase Noise: -120 dBc/ Hz @ 1 GHz, 20 kHz offset (typ.)
- User flatness correction with power sensor to correct the cable loss
- Provides AM, FM, PM analog modulation with internal, external or Int+Ext source
- Single pulse, double pulse and Pulse train generator (option)
- Internal IQ modulation with 150 MHz modulation bandwidth with perfect in-factory calibration
- Internal include some digital communication stand file such as 5G-NR, LTE, WCDMA, WLAN, and playback them
- Internal Custom mode generate common IQ signal such as QAM, FSK, ASK, MSK
- Analog differential I/Q outputs
- External analog I/Q input
- USB-power meter measurement
- 5 inch TFT capacitive touch screen, mouse and keyboard supported
- Web browser remote control on PC and mobile terminals
- Standard interface included USB Host, USB Device (USB TMC), LAN (VXI-11, Socket, Telnet). Optional interface: GPIB

**Design features**

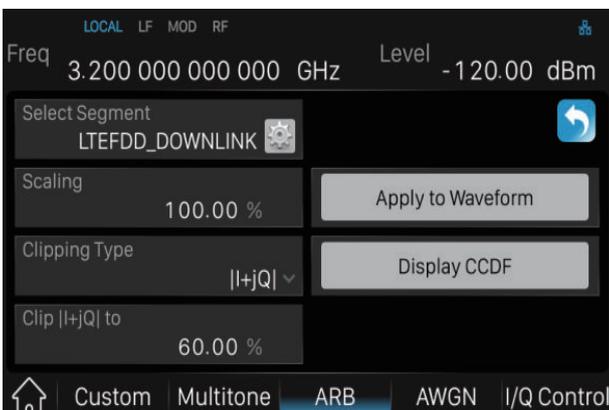
- Custom mod can generate IQ modulated signal such as QAM, PSK, ASK, FSK, the maximum sample rate is 120 Msps/s



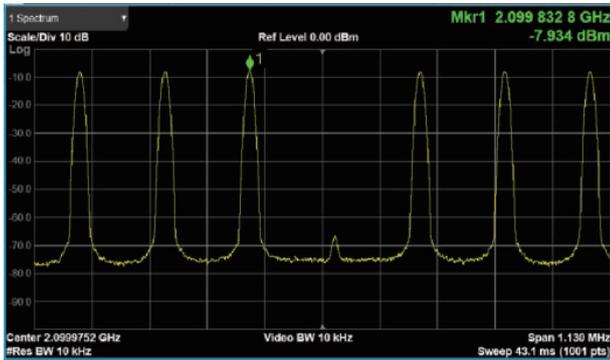
- ARB mode to add real time AWGN to the digital IQ to satisfy the receiver performance tests of receiver



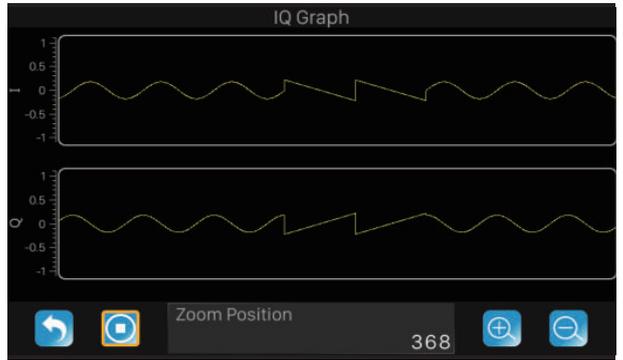
- ARB mod to clip the signal of the peak power and display the CCDF (cytotoxic cell differentiation factor)



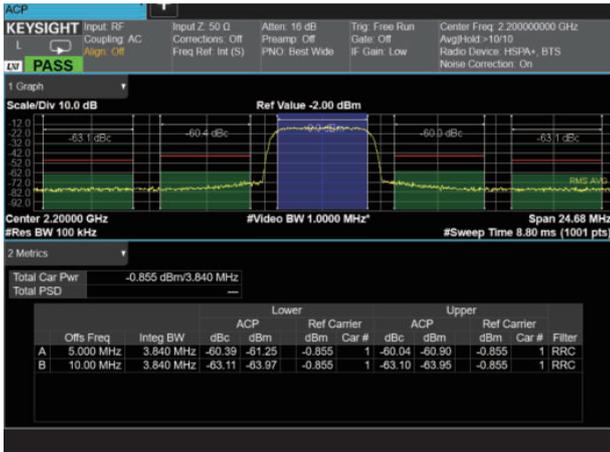
• Multi-tone mode to output multi-signal



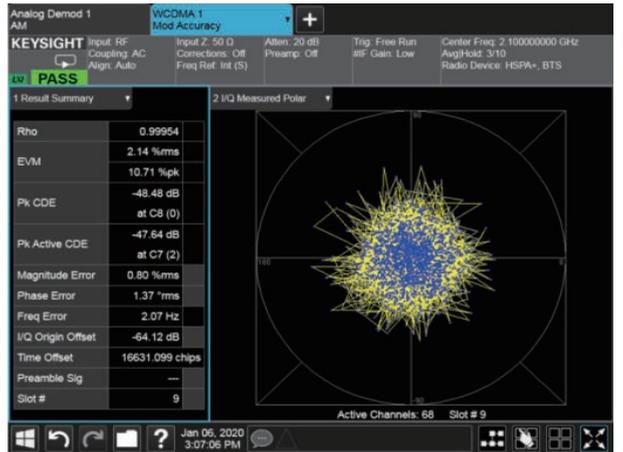
• ARB mode to build and replay waveform sequence



• Arb mode to replay back communication stand files

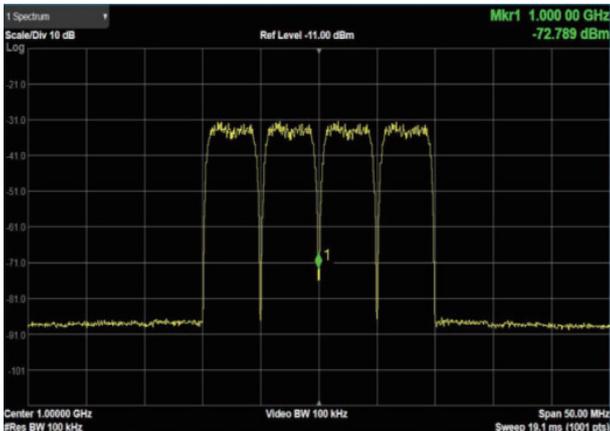


3 GPP WCDMA TM 1-64 DPCH ACPR

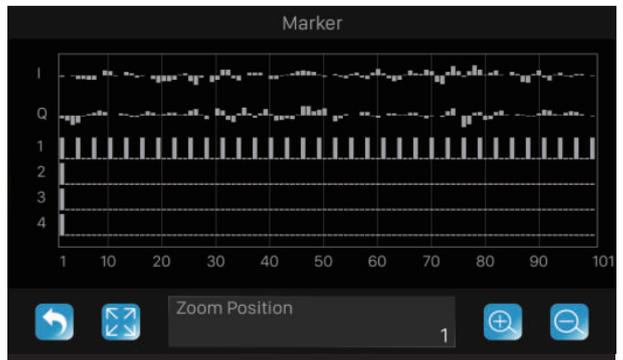


3 GPP WCDMA TM 1-64 DPCH EVM

• ARB mod to generate multi-carrier



• ARB mod to use the marker to label symbol of the waveform files and simultaneously output a pulse from the invent interface, this can synchronize another device.





### • SigIQPro Signal Generation Software (Optional)

SigIQPro is a flexible PC-based signal generation software that takes signal generation to a whole new level, making it easy to generate complex signals that are fully compliant with Bluetooth, IoT and other communication standards. SIGLENT instruments and SigIQPro signal generation software integrate simulation, design and test to easily meet the needs of users at all stages of design, R&D, and production



## Model and Main index

Model	SSG5040X	SSG5060X	SSG5040X-V	SSG5060X-V
Frequency Range	CW MODE 9 kHz~4 GHz	CW MODE 9 kHz~6 GHz	CW MODE 9 kHz~4 GHz IQ MODE 10 MHz~4 GHz	CW MODE 9 kHz~6 GHz IQ MODE 10 MHz~6 GHz
Frequency Resolution	0.001 Hz			
Amplitude Resolution	0.01 dB			
Phase noise	-120 dBc/Hz @1 GHz, offset 20 kHz (typ.)			
Display	5 inch capacitance touch screen, RGB (800*480)			



## Ordering Information

Product Description	SSG5000X Signal Generator	Order Number
Product code	Analog Signal Generator 9 kHz ~ 4 GHz	SSG5040X
	Analog Signal Generator 9 kHz ~ 6 GHz	SSG5060X
	Vector Signal Generator 10 MHz ~ 4 GHz	SSG5040X-V
	Vector Signal Generator 10 MHz ~ 6 GHz	SSG5060X-V
Standard configurations	Quick start, an USB cable, calibration certificate, power cord	
option	Pulse train generator	SSG5000X-PT
	Rack mount kit	SSG-RMK
	USB-GPIB adapter	USB-GPIB
	Upgrade 4 GHz to 6 GHz	SSG5000X_F60
	Upgrade IQ bandwidth from 75 MHz to 150 MHz	SSG5000XV_B150
	Precision Frequency Reference	10M_OCXO_L <sup>[1]</sup>
	Generate IOT waveform at device	SSG5000XV-IOT
	SigIQPro for Bluetooth waveform playback license <sup>[2]</sup>	SigIQPro-BT
	SigIQPro for IOT waveform playback license	SigIQPro-IOT
SigIQPro for OFDM waveform playback license	SigIQPro-OFDM	

[1] Assembled and calibrated in factory only

[2] See the SigIQPro User Manual for details



# SSG3000X

## RF Signal Generator



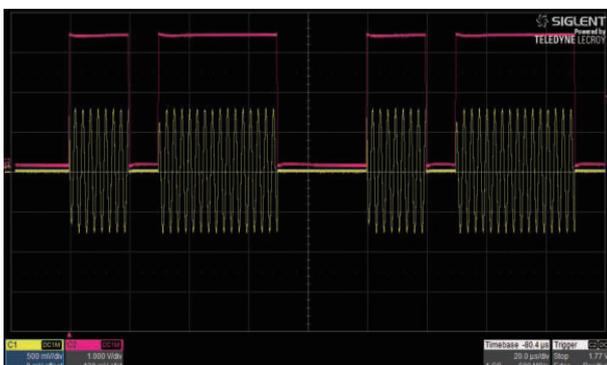
### Features and Benefits

- Frequency up to 2.1 GHz/3.2 GHz
- 0.01 Hz frequency setting resolution
- Level output from -110 dBm to +13 dBm
- Maximum level up to +20 dBm (typ.)
- Phase Noise: -110 dBc/ Hz @ 1 GHz , 20 kHz offset (typ.)
- Level accuracy  $\leq 0.7$  dB (typ.)
- Provides AM, FM & PM analog modulation with internal, external or Int+Ext source
- Pulse modulation, on/off ratio  $\geq 70$  dBc
- Pulse train generator (option)
- External IQ modulation with SDG6000X as the baseband IQ signal
- USB-power meter measurement
- 5 inch TFT capacitive touch screen, mouse and keyboard supported
- Web browser remote control on PC and mobile terminals
- Standard interface include USB Host, USB Device (USB TMC), LAN (VXI-11, Socket, Telnet). Optional interface: GPIB

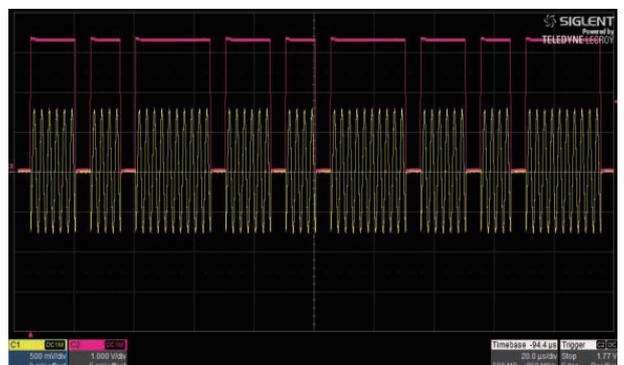


### Design features

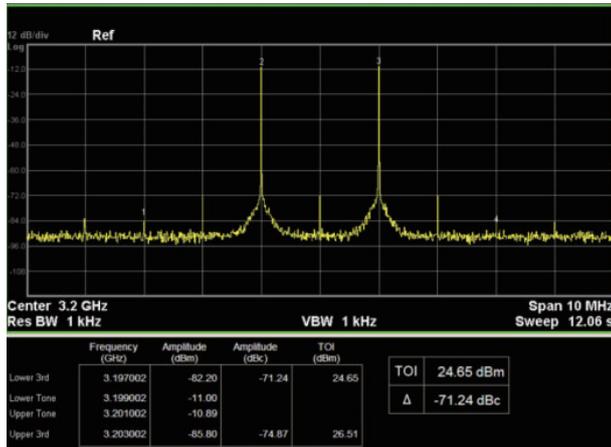
#### • Double pulse modulation



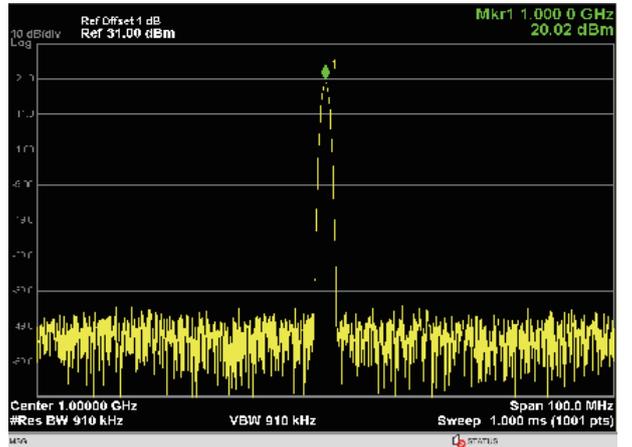
#### • Pulse train generator



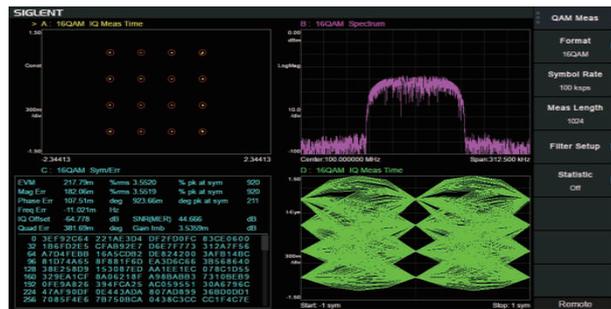
- Provides double-tone signal with IQ modulation, easily do TOI testing



- Maximum output level up to +20 dBm



- External IQ modulation using the SDG6000X as the baseband source



- Example for auto level control





## Model and Main index

Model	SSG3021X	SSG3032X	SSG3021X-IQE	SSG3032X-IQE
Frequency Range	CW MODE 9 kHz~2.1 GHz	CW MODE 9 kHz~3.2 GHz	CW MODE 9 kHz~2.1 GHz IQ MODE 10 MHz~2.1 GHz	CW MODE 9 kHz~3.2 GHz IQ MODE 10 MHz~3.2 GHz
Frequency Resolution	0.01 Hz			
Amplitude Resolution	0.01 dB			
Level accuracy	0.7 dB (typ.)			
Phase noise	-110 dBc/Hz @1 GHz ,offset 20 kHz (typ.)			
Display	5 inch capacitance touch screen, RGB (800*480)			

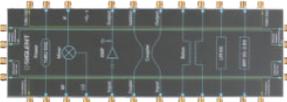


## Ordering Information

Product Description	SSG3000X Signal Generator	Order Number
Product code	Signal Generator 9 kHz~2.1 GHz	SSG3021X
		SSG3021X-IQE
	Signal Generator 9 kHz~3.2 GHz	SSG3032X
		SSG3032X-IQE
Standard configurations	quick start, an USB cable, calibration certificate, power cord	
option	pulse train generator	SSG3000X-PT
	rack mount kit	SSG-RMK
	USB-GPIB adapter	USB-GPIB
	Upgrade 2.1 GHz to 3.2 GHz	SSG3000X-21BW32
	Upgrade 2.1 GHz to 3.2 GHz (with external IQ)	SSG3000X-IQE-21BW32

Type	Model	Picture	Specifications
<b>Near-field Probe</b>	SRF5030T		Near Field Probe: H field probe sets (20 mm, 10 mm, 5 mm) , E field probe (5 mm), 300 kHz~3.0 GHz; distinguished within 10 cm range of the magnetic field; for EMI radiation interference and the intensity detector
<b>GPIB</b>	USB-GPIB Adapter		The USB Device interface extends into the GPIB interface, USB-GPIB adapter can more easily complete the task of the operation command through the GPIB, USB follow the USB2.0 specification, GPIB follow the IEEE488.2 standard
<b>Cable</b>	N-BNC-2L		N-BNC cable for SSA3000X Series; 2 GHz bandwidth
	N-N-6L		N-N cable for SSA3000X, SSA3000X Plus, SSA3000X-R, SVA1000X Series; 6 GHz bandwidth
	N-SMA-6L		N-SMA cable for SSA3000X, SSA3000X Plus, SSA3000X-R, SVA1000X Series; 6 GHz bandwidth
	N-N-18L		N(M)-N(M) cable for SSA3000X, SSA3000X Plus, SSA3000X-R, SVA1000X series, 100 cm, 18 GHz bandwidth
	N-SMA-18L		N(M)-SMA(M) cable for SSA3000X, SSA3000X Plus, SSA3000X-R, SVA1000X series, 100 cm, 18 GHz bandwidth
	SMA-SMA-18L		SMA(M)-SMA(M) cable, 18 GHz
	SMA-SMA-26L		SMA(M)-SMA(M) cable, 26 GHz
	SMAF-SMA-26L		SMA(F)-SMA(M) cable, 26 GHz
	2.92F-2.92F-40A		2.92 mm Female - 2.92 mm Female adaptor, 40 GHz
	V26-N35MN35F-25IN		NMD 3.5 mm(M) – NMD 3.5 mm(F), 26.5 GHz
	V26-N35FA35F-25IN		NMD 3.5 mm(F) – APC 3.5 mm(F), 26.5 GHz

Type	Model	Picture	Specifications
Reflection Bridge	RB3X25		VSWR bridge: (1 MHz~2.5 GHz), N (M) -N (M) adaptor (2 pcs)
Utility Kit	UKitSSA3X		Utility Kit for SSA3000X Series: N (M) -SMA (M) cable, N (M) -N (M) cable, N (M) -BNC (F) adaptor (2 pcs), N (M) -SMA (F) adaptor (2 pcs), 10 dB attenuator
VNA Calibration Kit	F503ME		Mechanical Calibration Kit: Open (M), Short (M), Match (M,50), Through (F-F), 4.5 GHz
	F503FE		Mechanical Calibration Kit: OSLT, DC - 4.5 GHz, N-Female connector
	F504MS		Mechanical Calibration Kit: OSLT, DC - 9 GHz, N-Male connector
	F504FS		Mechanical Calibration Kit: OSLT, DC - 9 GHz, N-Female connector
	F504TS		N-type, Male and Female, 50 Ω Calibration Kit, 0~9 GHz
	F505TS		Mechanical Calibration Kit: OSLT, DC - 18 GHz, N-Male and Female connector
	F603ME		Mechanical Calibration Kit: OSLT, DC - 4.5 GHz, 3.5 mm SMA-Male connector
	F603FE		Mechanical Calibration Kit: Open (M), Short (M), Match (M,50), Through (F-F), 4.5 GHz, SMA-type
	F604MS		Mechanical Calibration Kit: OSLT, DC - 9 GHz, 3.5 mm SMA-Male connector
	F604FS		Mechanical Calibration Kit: OSLT, DC - 9 GHz, 3.5 mm SMA-Female connector
	F604TS		3.5 mm, Male and Female, 50 Ω Calibration Kit, 0~9 GHz
	F606TS		Mechanical Calibration Kit: OSLT, DC - 27 GHz, 3.5 mm-Male and Female connector
	Y504MS		
	Y504FS	Integrated Mechanical Calibration Kit: OSLT, DC - 9 GHz, N-Female	
	KWR42A		50 Ω Waveguide Calibration kit, 18~26.5 GHz

Type	Model	Picture	Specifications
Rack Mount	SSA-RMK		Rackmount kit , compatible with the SSA3000X,SSA3000X Plus, SVA1000X,SSA3000X-R model; Height 6U
	SSG-RMK		Rack Mount kit; SSG3000X, SSG5000X, SSG5000A, SDG7000A; Height 3U
	SSG6000A-RMK		Rack Mount kit; SSG6000A; Height 2U
RF Test board	SNA-TB01		Board integrated with RF components like amplifier, mixer, filter for vector network analyzer demonstration
Rechargeable lithium battery	10V8_BAT		10.8V, 74 Wh
Antenna	ANT-GPS1		GPS antenna, SMA(M), 100 cm
	ANT-DA1		Directional Antenna Suit, N type, ANT-DA11 antenna (10 MHz~200 MHz), ANT-DA12 antenna (200 MHz~500 MHz), ANT-DA13 antenna (500 MHz~8 GHz), Amplifier handle 12dB@1GHz(typ.)
	ANT-DA11		Contains amplifier handle and 10 MHz ~ 200 MHz antenna. Antenna gain 10 dB (typical value); SWR <1:1.9 (typical value); 50 Ω/N type, female; polarization direction horizontal and vertical
	ANT-DA12		Contains amplifier handle and 200 MHz ~ 500 MHz antenna. Antenna gain 10 dB (typical value); SWR <1:1.9 (typical value); 50 Ω/N type, female; polarization direction horizontal and vertical
	ANT-DA13		Contains amplifier handle and 500 MHz ~ 8 GHz antenna. Antenna gain 10 dB (typical value); SWR <1:1.9 (typical value); 50 Ω/N type, female; polarization direction horizontal and vertical
TDR Probe	ADP-18		Adjustable differential TDR probe DC~18 GHz
	ADP-26		Adjustable differential TDR probe DC~26.5 GHz
	ASP-18		Adjustable single-end TDR probe DC~18 GHz
	ASP-26		Adjustable single-end TDR probe DC~26.5 GHz

Type	Model	Picture	Specifications
AC-DC adapter	12V_AP_4A		12V, 4A
Carry Bag	BAG-S2		Soft Carry Case for SDS2000X, SDS5000X HD, SDS5000L, SDS5000X, SSA3000X, SVA1000X, SSA3000X Plus
	BAG-H2		Soft Carry Case for SHA860A, SHA850A, SHN900A
VNA Calibration Kit	SEM5002A		2 ports, 9 kHz ~ 4.5 GHz, SMA female
	SEM5012A		2 ports, 9 kHz ~ 9 GHz, SMA female
	SEM5022A		2 ports, 100 kHz ~ 13.5 GHz, 3.5 mm female
	SEM5032A		2 ports, 100 kHz ~ 26.5 GHz, 3.5 mm female
	SEM5004A		4 ports, 9 kHz ~ 4.5 GHz, SMA female
	SEM5014A		4 ports, 9 kHz ~ 9 GHz, SMA female
	SEM5024A		4 ports, 100 kHz ~ 13.5 GHz, 3.5 mm female
	SEM5034A		4 ports, 100 kHz ~ 26.5 GHz, 3.5 mm female
Switch Matrix	SSM5122A		2 input ports, 12 output ports, 3.5 mm female, 9 kHz ~ 9 GHz
	SSM5124A		2 input ports, 24 output ports, 3.5 mm female, 9 kHz ~ 9 GHz
	SSM5142A		4 input ports, 12 output ports, 3.5 mm female, 9 kHz ~ 9 GHz
	SSM5144A		4 input ports, 24 output ports, 3.5 mm female, 9 kHz ~ 9 GHz
	SSM5321A		2 input ports, 6 output ports, 3.5 mm female, 100 kHz ~ 26.5 GHz
	SSM5342A		4 input ports, 12 output ports, 3.5 mm female, 100 kHz ~ 26.5 GHz

Type	Model	Picture	Specifications
<b>Mechanical Switch</b>	SSU5181A		DC ~ 18 GHz, including one SPDT mechanical switch, SMA female
	SSU5182A		DC ~ 18 GHz, including two SPDT mechanical switches, SMA female
	SSU5183A		DC ~ 18 GHz, including three SPDT mechanical switches, SMA female
	SSU5184A		DC ~ 18 GHz, including four SPDT mechanical switches, SMA female
	SSU5261A		DC ~ 26.5 GHz, including one SPDT mechanical switch, SMA female
	SSU5262A		DC ~ 26.5 GHz, including two SPDT mechanical switches, SMA female
	SSU5263A		DC ~ 26.5 GHz, including three SPDT mechanical switches, SMA female
	SSU5264A		DC ~ 26.5 GHz, including four SPDT mechanical switches, SMA female
	SSU5265A		DC ~ 26.5 GHz, including one SP6T mechanical switch, SMA female
	SSU5266A		DC ~ 26.5 GHz, including two SP6T mechanical switches, SMA female
	SSU5501A		DC ~ 50 GHz, including one SPDT mechanical switch, 2.4 mm female
	SSU5502A		DC ~ 50 GHz, including two SPDT mechanical switches, 2.4 mm female
	SSU5503A		DC ~ 50 GHz, including three SPDT mechanical switches, 2.4 mm female
	SSU5504A		DC ~ 50 GHz, including four SPDT mechanical switches, 2.4 mm female
<b>PC Software</b>	SigIQPro		A comprehensive PC-based software for general and standards-based signals creation, supporting 5G NR, LTE, WLAN, Bluetooth, IoT, Custom OFDM, etc
<b>Noise Source Driver</b>	NSD28		Noise source driver, connect spectrum analyzer to noise source

## Other Products Overview

SIGLENT also provides other instruments like Oscilloscopes, AWG, Multimeters, Electronic loads, power supplies.

### ※ Oscilloscopes ※



	SDS7000A	SDS6000A	SDS6000L	SDS5000X HD	SDS5000L	SDS5000X	SDS3000X HD	SDS2000X HD
Bandwidth	3 GHz ~ 8 GHz	350 MHz ~ 2 GHz	500 MHz ~ 2 GHz	350 MHz ~ 1 GHz	350 MHz ~ 1 GHz	350 MHz ~ 1 GHz	350 MHz ~ 1 GHz	200 MHz ~ 350 MHz
Sample rate	20 GSa/s	5 GSa/s (10 GSa/s ESR)	5 GSa/s (10 GSa/s ESR)	5 GSa/s	5 GSa/s	5 GSa/s	4 GSa/s	2 GSa/s
Analog channel	4	4	4/8	4/6/8	8	4	4	4
Memory depth	2 Gpts	500 Mpts	500 Mpts	2.5 Gpts	2.5 Gpts	250 Mpts	400 Mpts	200 Mpts
Waveform update Rate	1,100,000 wfm/s	750,000 wfm/s	750,000 wfm/s	160,000 wfm/s	160,000 wfm/s	500,000 wfm/s	890,000 wfm/s	500,000 wfm/s
Protocol analysis	Standard: I2C, SPI, UART, CAN, LIN Optional: CAN FD, CAN XL(decode only, SDS7000A), FlexRay, I2S, MIL-STD-1553B, SENT, Manchester (decode only), ARINC429(only SDS7000A, SDS6000A, SDS5000X HD, SDS5000L, SDS5000X, SDS3000X HD), USB 2.0 (decode only, SDS7000A)							
Sequence	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
History	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Math traces	4	4	4	8	8	2	4	2
FFT points	32 Mpts	8 Mpts	8 Mpts	8 Mpts	8 Mpts	2 Mpts	4 Mpts	2 Mpts
Search and Navigate	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
DVM	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Counter	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Histogram	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bode plot	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Power analysis	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Eye/Jitter analysis	Yes	Yes	Yes					
Compliance Test	Yes							
RTSA	Yes							
Digital channels	Yes	Yes	Yes	Yes		Yes	Yes	Yes
AWG	50 MHz	25 MHz	25 MHz	50 MHz	50 MHz	25 MHz	50 MHz	25 MHz
Zone Trigger	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Webserver	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
HDMI output	Yes	Yes	Yes	Yes	Yes			
Probe Adapters	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Screen	15.6" touch	12.1" touch	None	12.1" touch	None	10.1" touch	10.1" touch	10.1" touch

	SDS2000X plus	SDS2000X-E	SDS1000X HD	SDS800X HD	SDS1000X-E	SDS1104X-U	SDS1000CML+
Bandwidth	100 MHz ~ 500 MHz	200 MHz ~ 350 MHz	100 MHz ~200 MHz	70 MHz ~200 MHz	100 MHz ~ 200 MHz	100 MHz	70 MHz ~ 150 MHz
Sample rate	2 GSa/s	2 GSa/s	2 GSa/s	2 GSa/s	1 GSa/s	1 GSa/s	1 GSa/s
Analog channel	2/4	2	2/4	2/4	2/4	4	2
Memory depth	200 Mpts	28 Mpts	100 Mpts	100/50 Mpts	14 Mpts	14 Mpts	2 Mpts
Waveform update Rate	500,000 wfm/s	400,000 wfm/s	500,000 wfm/s	500,000 wfm/s	400,000 wfm/s	400,000 wfm/s	
Protocol analysis	Standard: I2C,SPI, UART, CAN, LIN Optional: CAN FD, FlexRay, I2S,MIL-STD-1553B, SENT, Manchester (decode only)	I2C, SPI, UART, CAN, LIN	I2C, SPI, UART, CAN, LIN, CAN FD(Decode Only), FlexRay(Decode Only)	I2C, SPI, UART, CAN, LIN			
Sequence	Yes	Yes	Yes	Yes	Yes	Yes	
History	Yes	Yes	Yes	Yes	Yes	Yes	
Math traces	2	1	4	4	1	1	1
FFT points	2 Mpts	1 Mpts	2 Mpts	2 Mpts	1 Mpts	128 kpts	
Search and Navigate	Yes	Yes	Yes	Yes	Yes	Yes	
DVM							
Counter	Yes		Yes	Yes			
Histogram	Yes						
Bode plot	Yes	Yes	Yes	Yes	Yes		
Power analysis	Yes		Yes	Yes			
Eye/Jitter analysis							
Digital channels	Yes	Yes	Yes	Yes	Yes		
AWG	50 MHz	25 MHz	25 MHz	25 MHz	25 MHz		
Zone Trigger	Yes						
Webserver	Yes	Yes	Yes	Yes	Yes		
HDMI output							
Porbe Adapters							
Screen	10.1" touch	7" LCD	10.1" touch	7" touch	7" LCD	7" LCD	7" LCD

## ※ Arbitrary Waveform Generator ※



	SDG7000A	SDG6000X	SDG2000X	SDG1000X Plus	SDG1000X	SDG800
Bandwidth	350/500 MHz, 1 GHz	200/300/500 MHz	40/80/120 MHz	25/30/60 MHz	30/60 MHz	5/10/30 MHz
Number of channels	2 Differential/ Single-ended	2 Single-ended	2 Single-ended	2 Single-ended	2 Single-ended	1 Single-ended
Output range	± 24 V (48 V)	±10V	±10V	±10V	±10V	±10V
Digital bus(Optional)	16-bit, LVTTTL or LVDS output Bit rate 1μbps ~ 1 Gbps					
Sampling rate	5 GSa/s	2.4 GSa/s (2X Interpolation)	1.2 GSa/s (4X Interpolation)	1 GSa/s (4X Interpolation)	150 MSa/s	125MSa/s
Vertical resolution	14-bit	16-bit	16-bit	16-bit	14-bit	14-bit
Arbitrary waveform length	24 pts ~ 512 Mpts/ch	2 ~ 20 Mpts	8 ~ 8 Mpts	8 Mpts/CH	16 kpts	16 kpts
Modulation types	AM, FM, PM, PWM, FSK, PSK, ASK, QAM	AM,FM,PM,ASK,FSK, PSK,PWM, QAM	AM,FM,PM,ASK, FSK,PSK,PWM	AM, DSB-AM, FM, PM, FSK, ASK, PSK, PWM	AM, DSB-AM, FM,PM, FSK, ASK, PSK, PWM	AM, DSB-AM, FM, PM, FSK, ASK, PWM
Harmonic output	16	10	10	16	16	
Sweep & Burst	Yes	Yes	Yes	Yes	Yes	Yes
IQ Signal Generator	Yes	Yes				
PRBS Generator	Yes	Yes		Yes		
Display	5" touch screen , 800*480	4.3" touch screen, 480*272	4.3" touch screen, 480*272	4.3" LCD, 480*272	4.3" LCD, 480*272	3.5" LCD, 320*240



## ※ Power Supply ※

	SPS6000X	SPS5000X	SPD4000X	SPD3000X	SPD3303C	SPD1000X
Output Channel	1	1/2/3	4	3	3	1
Max. Voltage	100V/200 V	40/50/80/160 V	15/30/32 V	32 V	32 V	16/30 V
Max. Current	25/50 A	7.5/15/22.5/30/ 45/60/90 A	3.2/6/10 A	3.2 A	3.2 A	5/ 8 A
Max. Power	1500 W	180/360/720/1080 W	240/285/400 W	220 W	220 W	128/150 W
Resolution	10 mV/10 mA	1 mV/1 mA	1 mV/1 mA	1 mV/1 mA	10 mV/10 mA	1 mV / 1 mA
Screen	3.12" OLED	2.4" OLED	4.3" LCD	4.3" LCD	LED	2.8" LCD

## ※ DC Electronic Load ※

	SDL1020X	SDL1020X-E	SDL1030X	SDL1030X-E
Min. readback resolution	0.1 mV, 0.1 mA	1 mV, 1 mA	0.1 mV, 0.1 mA	1 mV, 1 mA
Input power	200 W		300 W	
Input current	30 A			
Input voltage	150 V			
CC Dynamic mode frequency	25 kHz			
Current slew rate	0.001 A/us~2.5 A/us			
Display	3.5 inch TFT-LCD display			

## ※ Digital Multimeter ※

	SDM3045X	SDM3055	SDM4055A	SDM3065X	SDM4065A
Reading resolution	4 1/2	5 1/2	5 1/2	6 1/2	6 1/2
DC voltage	600 mV ~ 1000 V	200 mV ~ 1000 V	200 mV ~ 1000 V	200 mV ~ 1000 V	200 mV ~ 1000 V
AC voltage	600 mV ~ 750 V	200 mV ~ 750 V	200 mV ~ 750 V	200 mV ~ 750 V	200 mV ~ 750 V
DC current	600 μA ~ 10 A	200 μA ~ 10 A	200 uA ~ 10 A	200 μA ~ 10 A	200 uA ~ 10 A
AC current	60 mA ~ 10 A	20 mA ~ 10 A	20 mA ~ 10 A	200 μA ~ 10 A	200 uA ~ 10 A
Scanner card	Not support	Support	Support	Support	Support
Display	4.3" TFT-LCD, 480*272		5-inch TFT touchable display screen	4.3" TFT-LCD, 480*272	5-inch TFT touchable display screen

\* SDM4055A/SDM4065A Not for sale in North America.



### Service Promise:

Since the date of purchase, we offer three year’s warranty for the main unit:

- During the warranty period, if the products cause any hardware or software failure because of the quality, Siglent's after-sales service center or Siglent's designated maintenance points will offer the maintenance of the fault products for the user.
- Because of improper use or any other artificial reason, the damage won't be included in the free maintenance.

### 1. Extension after-sales service

Extension service is based on the main unit (not including accessories) as an object. During the extension service, Siglent still offer free maintenance after the standard warranty period.

#### 1.1 Three advantages:

- Guarantee investment. To extend the life cycle of the products.
- Save money. To prevent the high cost of maintenance after the warranty period.
- Avoid the repeated investment. To prevent buying new equipments because it can't be repaired after the warranty period.

#### 1.2 The content of the extension service

You can buy the following extension service according to your demand:

Solution	Viability	Instruction
ES4	One year after the warranty period	According to the service terms, Siglent will offer another one year for the after-sales maintenance service
ES5	Two years after the warranty period	According to the service terms, Siglent will offer another two years for the after-sales maintenance service

### 2. Calibration services

After long-term use, oscilloscope will cause the deviation of measured value and waveform display, because of its work temperature and humidity. Siglent will restore the original performance and accuracy of factory setting to calibrate the deviation.

- Eliminate the error of measurement
- Restore the original performance and accuracy of the factory setting to the “new” state
- The upgrade of the firmware and the software
- Make the instruments comply with the standard of the ISO9001 quality management process
- Traceable calibration certificates



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