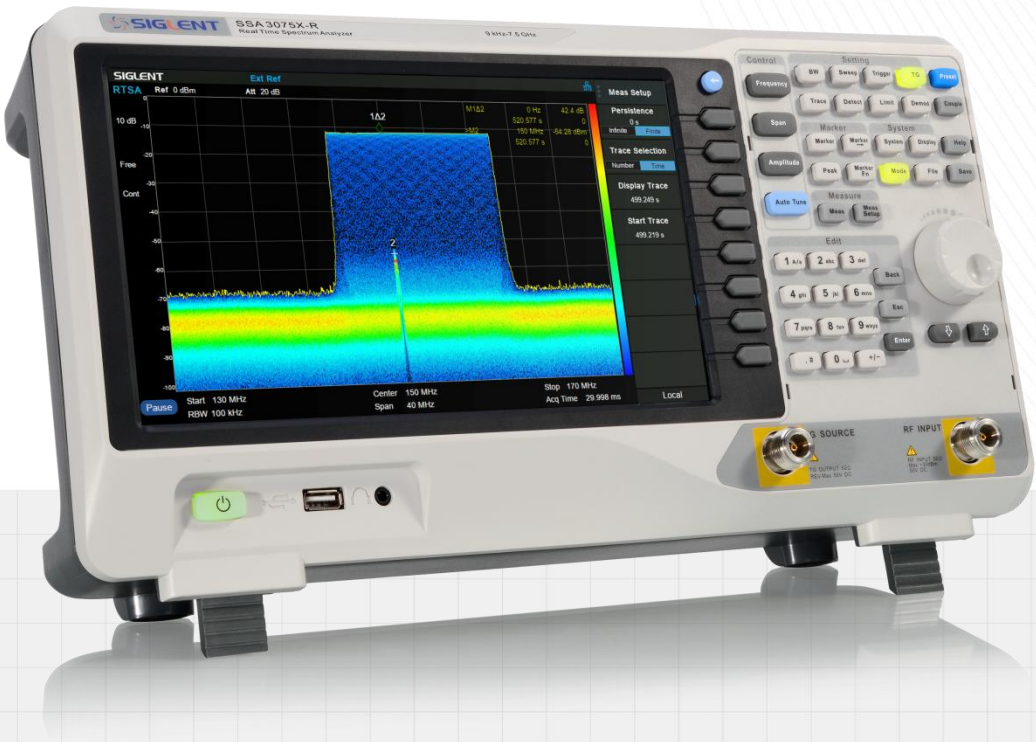
SSA3000X-R

Real-Time

Spectrum Analyzer

DataSheet DS0703R_E01A



SIGLENT TECHNOLOGIES CO.,LTD

General Description

The SIGLENT SSA3000X-R real-time spectrum analyzers are powerful and flexible tools for complex RF spectrum and signal analysis. With a capability of 40 MHz analysis bandwidth and 7.2 µs 100% POI, the analyzer can provide multi-dimensions data displays, advanced triggering, and RF data capturing, to solve modern RF spectrum challenges, like hopping frequency, conflict channel, spectrum interference, etc. They also provide standard tracking generator for network analysis, optional wide band digital modulation analysis, and EMI measurement.

Applications include broadcast monitoring/evaluation, cellular site, IoT, WiFi, Bluetooth surveying, research and development, education, production, and maintenance.

Features and Benefits

- Spectrum Analyzer Frequency Range from 9 kHz up to 5.0 GHz / 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
- Up to 40 MHz Real Time Analysis Bandwidth (Opt.)
- 100% POI 7.20 µs, Dynamic Range 60 dB
- Multi-view for Density, Spectrogram, PvT and 3D
- Advanced Measurement Kit (Opt.)
- Reflection 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

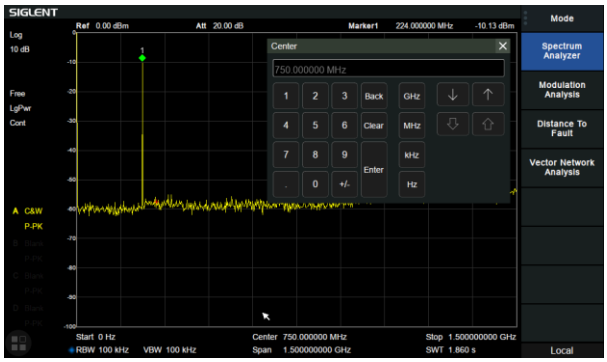
Models and Main index

Model	SSA3050X-R	SSA3075X-R
Frequency Range	9 kHz~5.0 GHz	9 kHz~7.5 GHz
Resolution Bandwidth	1 Hz~3 MHz	1 Hz~3 MHz
Displayed Average Noise Level	-165 dBm/Hz	-165 dBm/Hz
SSB Phase Noise	<-98 dBc/Hz	<-98 dBc/Hz
Third-order intercept(TOI)	+14 dbm	+14 dbm
Total Amplitude Accuracy	< 0.7 dB	< 0.7 dB
Tracking Generator	100 kHz - 5.0 GHz	100 kHz - 7.5 GHz
Real Time Band Width	25 MHz, 40 MHz (Option)	
SFDR	60 dB	
100% POI	7.20 μs	
RTSA Measurement	Density, Spectrogram, 3D, PvT	
Touch Screen	Multi Touch, Mouse and Keyboard supported	
Advanced Measurement	CHP, ACPR, OBW, CNR, Harmonic, TOI, Monitor	
Modulation Analysis	AM, FM, ASK, FSK, MSK, PSK, QAM	
Reflection Measurement	VSWR measurement using Reflection Bridge	
EMI Measurement	EMI Filter and Quasi-Peak Detector, Log Scale and Limit Line	
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	

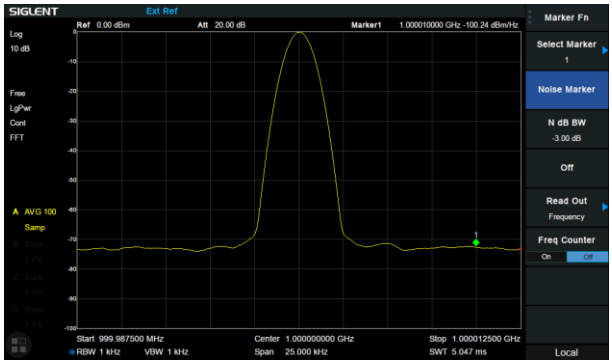
Design Features

Spectrum Analyzer Mode

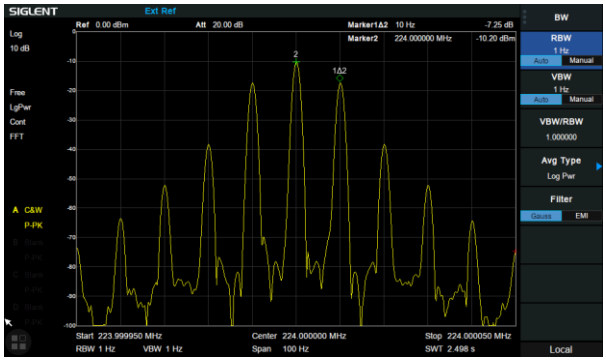
10.1 Inch Display with Multi-Touch Screen



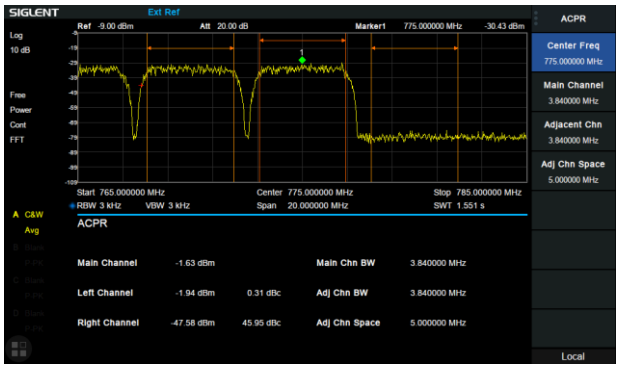
Phase noise <-98 dBc/Hz@1 GHz



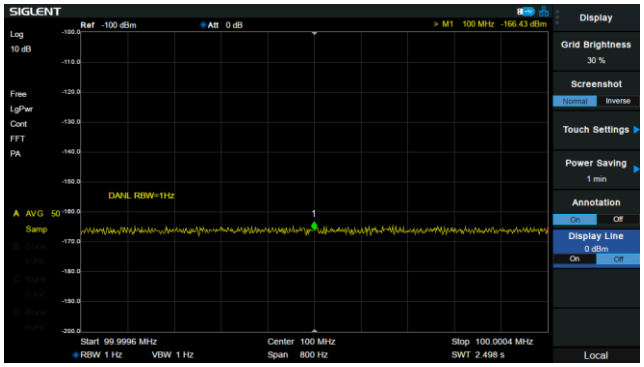
Minimum 1 Hz Resolution Bandwidth (RBW)



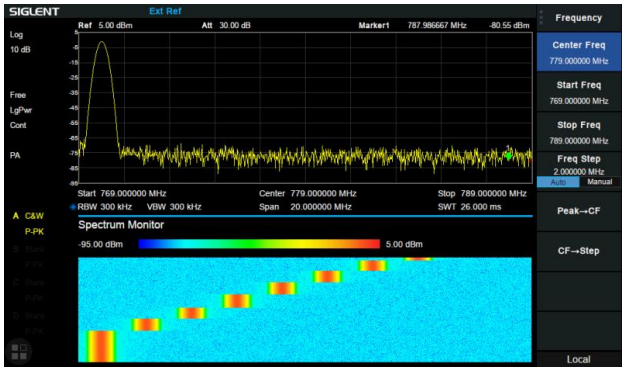
ACPR in Advanced Measurement Kit



-165 dBm/Hz Displayed Average Noise Level

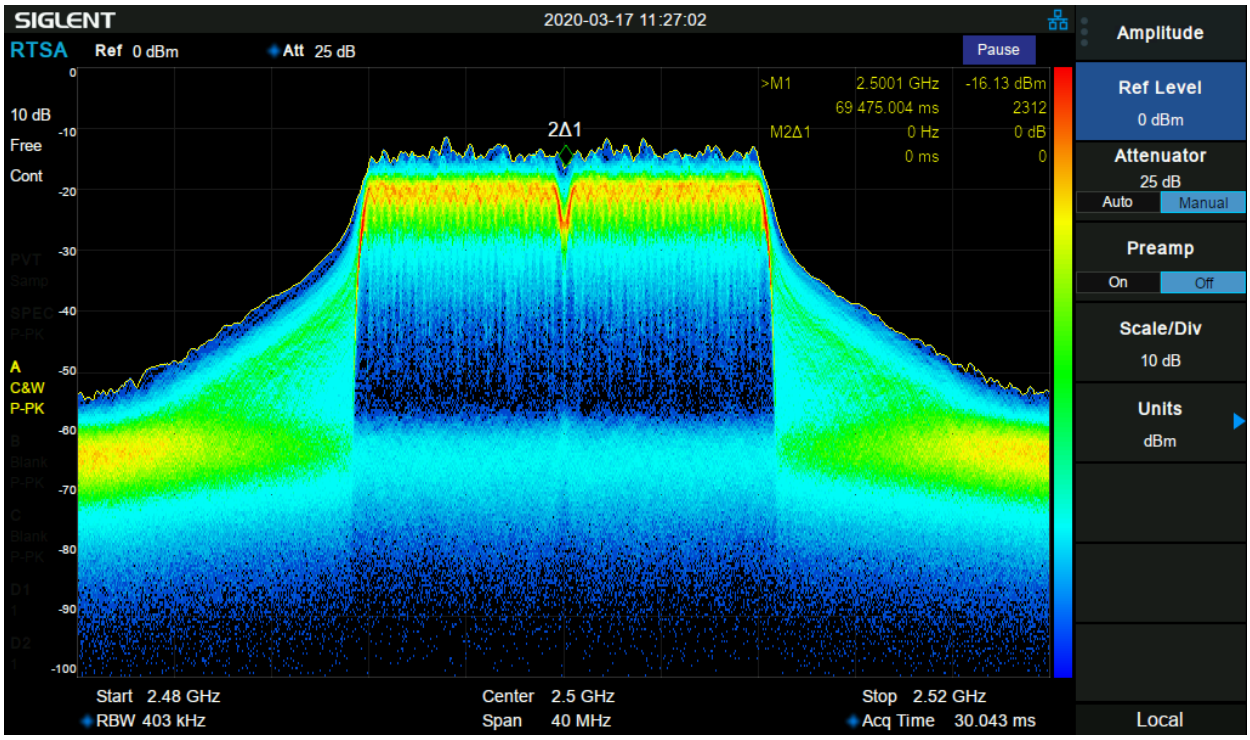


Monitor in Advanced Measurement Kit



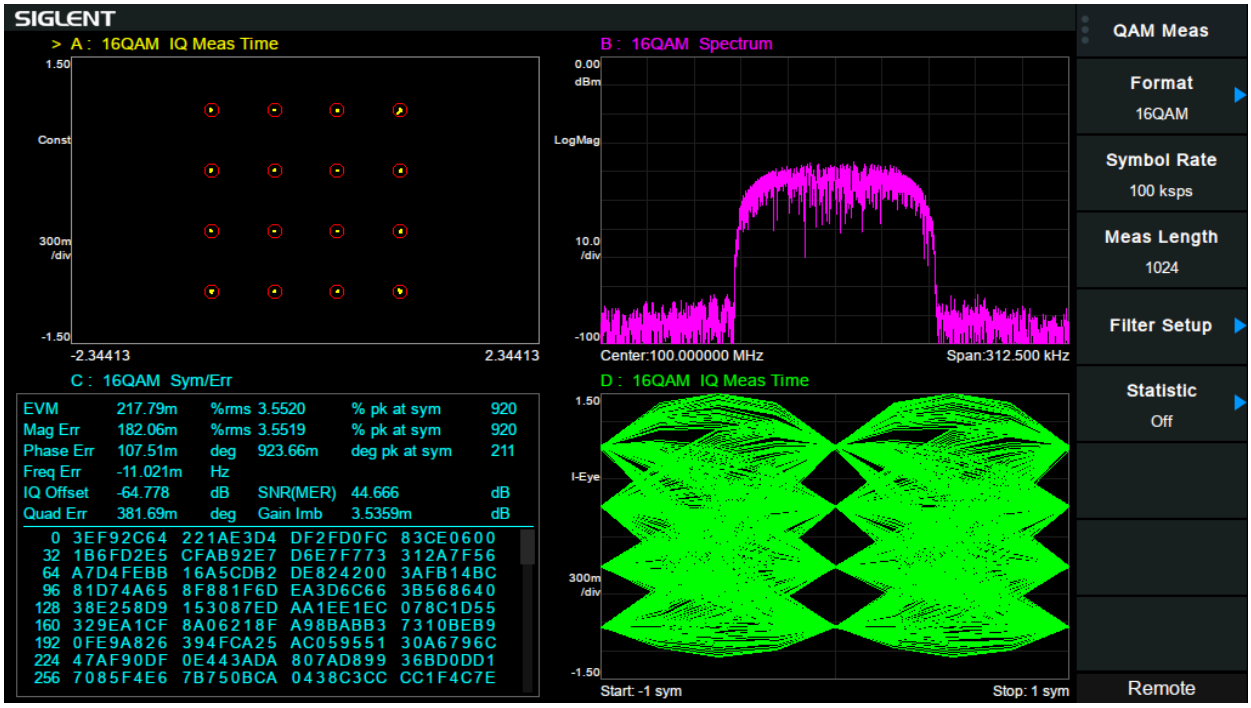
Real Time Analysis Mode

Density,3D,Spectrogram,PvT,Multi-view and dimensions to monitor complex signals



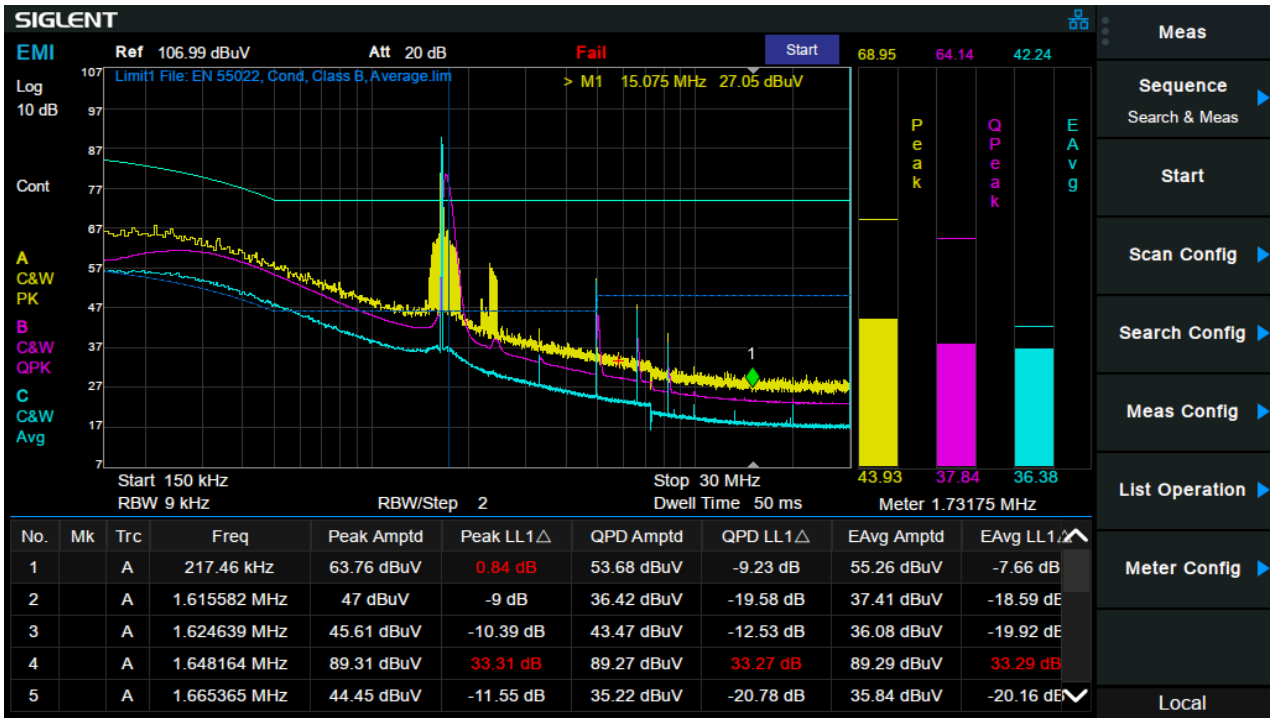
Modulation Analysis Mode

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



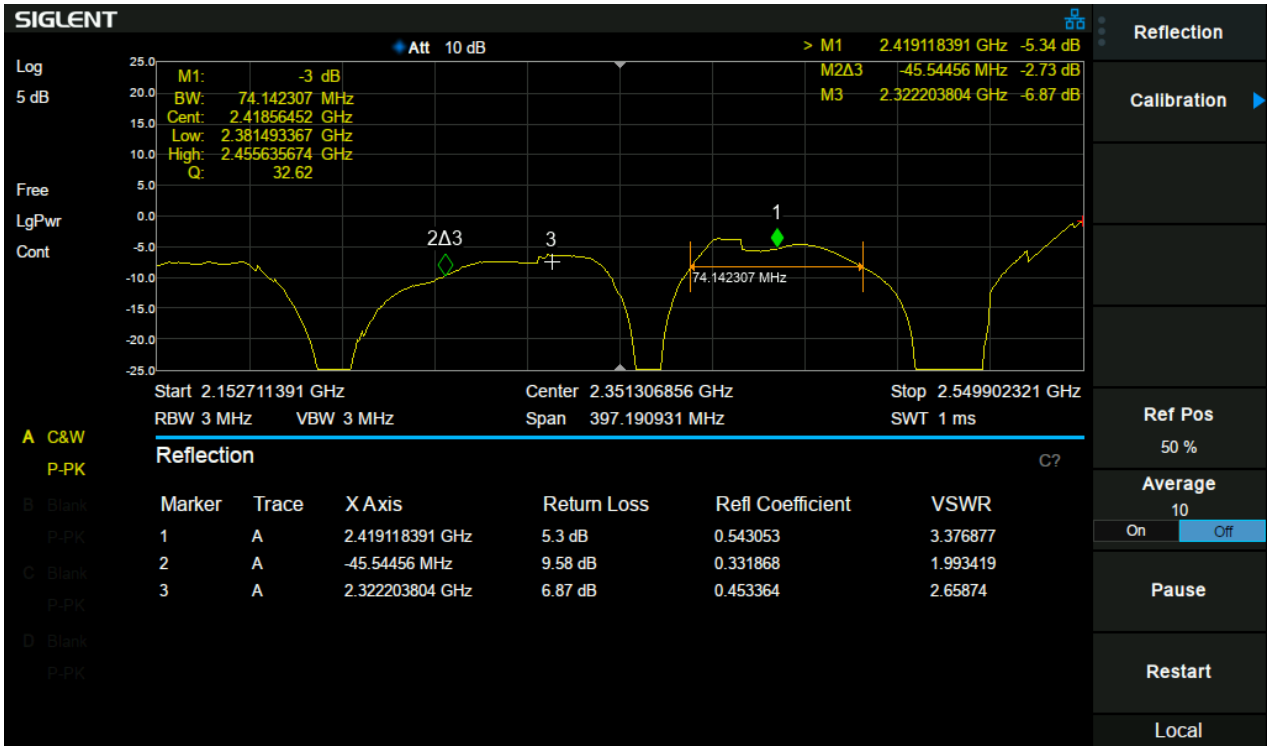
EMI Measurement Mode

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



Reflection Measurement

VSWR and Return Loss measurement with Q value calculation, using an external reflection bridge or coupler.



Accessories

Utility Kit

Near Field Probe Set

USB-GPIB Adaptor

6U Rack Mount

Soft Carrying Bag

Reflection Bridge

Calibration Kit

Specifications

Specifications are valid under the following conditions: The instrument is within the calibration period, has been stored between 0 and 50°C for at least 2 hours prior to use, and has been powered on and warmed up for at least 40 minutes. The specifications include the measurement uncertainty, unless otherwise noted.

Specifications: All products are guaranteed to meet published specifications when operating at room temperature (approximately 25°C), unless otherwise noted.

Typical: Performance deemed typical implies that 80 percent of the measurement results will meet the typical published performance with a 95th percentile confidence level at room temperature (approximately 25°C). Typical performance is not warranted and does not include measurement uncertainty.

Nominal: The expected performance or design attribute

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Spectrum Analyzer Mode

Frequency and Time Characteristic

Frequency		
	SSA3050X-R	SSA3075X-R
Frequency range	9 kHz~5.0 GHz	9 kHz~7.5 GHz
Frequency resolution	1 Hz	
Frequency Span		
Range	0 Hz, 100 Hz to Max Frequency	
Accuracy	± Span / (number of display points - 1)	

Internal Reference Source	
Reference frequency	10.000000 MHz
Reference frequency accuracy / uncertainty	± [(time since last adjustment × frequency aging rate) + temperature stability + initial calibration accuracy]
Initial calibration accuracy	<1 ppm
Temperature stability	<1 ppm, 0 °C ~50 °C
Frequency aging rate	<0.5 ppm/first year, 3.0 ppm/20 years
Marker	
Marker resolution	Span / (number of display points - 1)
Marker uncertainty	± [frequency indication × reference frequency uncertainty + 1% × span + 10% × resolution bandwidth + marker resolution]
Frequency Counter resolution	0.1 Hz
Bandwidths	
Resolution bandwidth (-3dB)	1 Hz ~ 3 MHz, in 1-3-10 sequence
Resolution filter shape factor	< 4.8 : 1 (60 dB:3 dB), Gaussian-like
RBW uncertainty	< 5%
Video bandwidth (-3dB)	1 Hz ~ 10 MHz, in 1-3-10 sequence
VBW uncertainty	< 5%

Sweep and Trigger	
Sweep time	1 ms to 7500 s
Sweep mode	RBW = 3k Hz ~ 3 MHz, Sweep RBW = 1 Hz ~ 10 kHz, FFT
Sweep rule	Single, Continuous
Trigger source	Free, Video, External
External trigger	5V TTL level, Rising edge/Falling edge

Amplitude Accuracy and Range Specifications

Amplitude and Level	
Measurement range	DANL to +10 dBm, 100 kHz ~ 1 MHz, Preamp off DANL to +20 dBm, 1 MHz ~ 7.5 GHz, Preamp off
Reference level	-200 dBm to +30 dBm, 1 dB steps
Preamplifier	20 dB (nom.)
Input attenuation	0 ~ 50 dB, 1 dB steps
Maximum input DC voltage	+/- 50 V_{DC}
Maximum average power	30 dBm, 3 minutes, fc ⩾10 MHz, att > 20 dBm, preamp off
Maximum damage level	33 dBm, fc⩾10 MHz, att>20 dBm, preamp off
Level Display	
Logarithmic level axis	1 dB to 200 dB
Linear level axis	0 to reference level, 0% to 100%
Units of level axis	dBm, dBmV, dBμV, dBμA, Volt, Watt
Number of display points	751
Number of traces	4
Trace detectors	Positive-peak, Negative-peak, Sample, Normal, Average(Voltage/RMS/Video)
Trace functions	Clear write, Max Hold, Min Hold, View, Blank, Average, Math

SSB Phase Noise	
Offset	20 °C to 30 °C, fc = 1 GHz, Normalized to 1 Hz
10 kHz	-96 dBc/Hz, -98 dBc/Hz (typ.)
100 kHz	-95 dBc/Hz, -97 dBc/Hz (typ.)
1 MHz	-112 dBc/Hz, -114 dBc/Hz (typ.)

Displayed Average Noise Level (DANL)			
		SSA3050X-R	SSA3075X-R
	20 °C to 30 °C, att = 0 dB, RBW = 1 Hz, sample detector, trace average > 50, TG off		
Preamp off	100 kHz ~1 MHz	-105 dBm, -109 dBm (typ.)	-105 dBm, -109 dBm (typ.)
	1 MHz~10 MHz	-122 dBm, -126 dBm (typ.)	-122 dBm, -126 dBm (typ.)
	10 MHz~200 MHz	-142 dBm, -146 dBm (typ.)	-142 dBm, -146 dBm (typ.)
	200 MHz~1.5 GHz	-142 dBm, -147 dBm (typ.)	-142 dBm, -147 dBm (typ.)
	1.5 GHz~3.2 GHz	-140 dBm, -145 dBm (typ.)	-140 dBm, -145 dBm (typ.)
	3.2 GHz~5.0 GHz	-137 dBm, -143 dBm (typ.)	-137 dBm, -143 dBm (typ.)
	5.0 GHz~6.5 GHz		-136 dBm, -141 dBm (typ.)
	6.5 GHz~7.5 GHz		-134 dBm, -139 dBm (typ.)
Preamp on	100 kHz ~1 MHz	-133 dBm, -136 dBm (typ.)	-133 dBm, -136 dBm (typ.)
	1 MHz~10 MHz	-151 dBm, -154 dBm (typ.)	-151 dBm, -154 dBm (typ.)
	10 MHz~200 MHz	-161 dBm, -165 dBm (typ.)	-161 dBm, -165 dBm (typ.)
	200 MHz~1.5 GHz	-159 dBm, -163 dBm (typ.)	-159 dBm, -163 dBm (typ.)
	1.5 GHz~3.2 GHz	-159 dBm, -162 dBm (typ.)	-159 dBm, -162 dBm(typ.)
	3.2 GHz~5.0 GHz	-157 dBm, -161 dBm (typ.)	-157 dBm, -161 dBm (typ.)
	5.0 GHz~6.5 GHz		-157 dBm, -160 dBm (typ.)
	6.5 GHz~7.5 GHz		-155 dBm, -159 dBm (typ.)

Frequency Response	
	20 °C to 30 °C, 30% to 70% relative humidity, att = 20 dB, relative to 50 MHz
Preamp off	±0.8 dB, ±0.4 dB (typ.)
Preamp on	±1.2 dB, ±0.6 dB (typ.)
Error and Accuracy	
Resolution bandwidth switching uncertainty	Logarithmic resolution, relative to RBW = 10 kHz
	± 0.2 dB (nom.)
Input attenuation switching uncertainty	20 °C to 30 °C, fc = 50 MHz, preamp off, relative to att = 20 dB
	± 0.5 dB
Absolute amplitude accuracy	20 °C to 30 °C, fc = 50 MHz, RBW = VBW = 1 kHz, att = 20 dB, peak detector, 95% reliability
	±0.4 dB, input signal -20 dBm, Preamp off
	±0.6 dB, input signal -40 dBm, Preamp on
Total amplitude accuracy	20 °C to 30 °C, fc>100 kHz, input signal -50 dBm ~ 0 dBm, att = 20 dB, RBW=VBW=1 kHz, peak detector, preamp off, 95% reliability
	±0.7 dB
RF input VSWR	Att = 10 dB, 1 MHz~7.5 GHz
	<1.5 (nom.)

Distortion and Spurious Responses	
Second harmonic distortion (SHI)	20 °C to 30 °C, fc ≥ 50 MHz, mixer level -20 dBm, att = 0 dB, preamp off
	-65 dBc / +45 dBm (nom.)
Third-order intercept (TOI)	20 °C to 30 °C, fc ≥ 50 MHz, two -20 dBm tones spaced by 100 kHz, att = 0 dB, preamp off
	+14 dBm (typ.)
1dB gain compression	20 °C to 30 °C, fc ≥ 50 MHz, att = 0 dB, preamp off
	> 0 dBm (nom.)
Residual response	20 °C to 30 °C, input terminated = 50 Ω, att = 0 dB
	< -90 dBm
Input related spurious	20 °C to 30 °C, mixer level = -30 dBm
	<-65 dBc

Tracking Generator

Frequency Parameter		
Frequency Range	SSA3050X-R	SSA3075X-R
	100 kHz ~ 5.0 GHz	100 kHz ~ 7.5 GHz
Frequency Resolution	1 Hz, Zero Span	
RBW, sweep mode	3 kHz ~ 3 MHz	
Power Parameter		
Output level	-40 dBm ~ 0 dBm	
Output level resolution	1 dB	
Output flatness	+/-3 dB (nom.)	
Normalization Trace	Ref A/B/C/D->Ref trace	
VSWR	< 2 (nom.)	
Connector and Impendence	N-type female, 50 Ω	
Average safe reverse power	Total : 30 dBm (1 W)	
Maximum safe reverse level	Voltage: ±50 V_{DC}	

Advanced Measurement Kit (Option SSA3000XR-AMK)

Power Measurement	
CHP, Channel Power	Channel Power, Power Spectral Density
ACPR, Adjacent Channel Power Ratio	Main CH Power, Left channel power, Right channel power
OBW, Occupied Bandwidth	Occupied Bandwidth, Transmit Frequency Error
T-Power, Time Domain Power	Zero Span Integrated Power
CNR, Carrier Noise Ratio	C/N, Noise Power
Non-Linear Measurement	
Harmonic measurement	Max Harmonic number 10
TOI, Third-Order Intercept	Measure the third-order products from two tones
Spectrum Monitor Measurement	
Spectrogram	

Reflection Measurement Kit (Option SSA3000XR-Refl)

Stimulus and Measurement		
	SSA3050X-R	SSA3075X-R
Frequency Range	100 kHz ~ 5.0 GHz	100 kHz~7.5 GHz
RBW	3k Hz ~ 1 MHz	
Stimulus Power	-40 ~ 0 dBm	
Format	VSWR, Return Loss, Reflection Coefficient	
Calibration	Open	
	Open + Short	
	Open + Load	
Marker Function	N dB BW, Q measurement	

Real-Time Spectrum Analyzer Mode

Frequency and Time			
Real-Time Bandwidth	25 MHz (Default)		
	40 MHz (Option SSA3000XR-RT40)		
100% POI Minimum Signal Duration	Full Span, Kaiser Window, Frequency Mask Triggering at full amplitude accuracy		
	7.20 μs		
Measurement view	Density		30 ms ~ 50 s
	3D+Spectrogram		30 ms ~ 50 s
	Spectrogram		100 us ~ 50 s
	PvT+Spectrum		100 us ~ 50 s
Points	800		
MAX Sample rate	51.2 MHz		
FFT	150 000(40 MHz analysis BW)		
Marker	8		
Span min	5 kHz		
Window	Kaiser(Default), Hanning, Flattop, Gaussian, Blackman-Harris, Rectangular		
RBW	Any SPAN, six RBW for every window (only one for Rectangular), default min RBW. Typical RBW for Kaiser：		
	Span	RBW min	RBW MAX
	40 MHz	100.43 kHz	3.3142 MHz
	20 MHz	50.21 kHz	1.657 MHz
	10 MHz	25.11 kHz	828.55 kHz
	1 MHz	2.51 kHz	82.85 kHz
	100 kHz	251 Hz	8.285 kHz
Spectrogram / PvT Maximum stored	50 000 (Loop store)		

Different RBW and span, 100% POI (μs)						
Analysis BW	RBW1	RBW2	RBW3	RBW4	RBW5	RBW6
40 MHz	26.56	16.56	11.56	9.06	7.81	7.20
20 MHz	46.56	26.56	16.56	11.56	9.06	7.81
10 MHz	86.56	46.56	26.56	16.56	11.56	9.06
1 MHz	806.56	406.56	206.56	106.56	56.56	31.56

Different window length for RBW						
Length\Type	1024	512	256	128	64	32
Kaiser(Beta=12)	398.2849	198.9478	99.2793	49.4450	24.5279	12.0693
Hanning	533.4785	266.4785	132.9785	66.2285	32.8535	16.1660
Flattop	212.2447	106.0182	52.9050	26.3483	13.0700	6.4309
Gaussian(alpha=3.5)	404.8707	202.2399	100.9244	50.2666	24.9376	12.2729
Blackman-Harris	399.2401	199.4250	99.5174	49.5636	24.5868	12.0983
Rectangular	801	400.5000	200.2500	100.1250	50.0625	25.0313

Amplitude Accuracy and Range		
Detector	+Peak, -Peak, Sample, Average	
Trace	3	
Spectrum Density Display	0~100% (resolution 0.1%)	
Dynamic range for Spectrogram	200 dB	
Amplitude	Flatness	< 0.4 dB
	Resolution	0.01 dB
	Dynamic range	< 60 dB
Trigger	Free Run, PvT, External	
Frequency Mask Trigger (FMT)	Source	Traces
	Type	Greater Than, Less Than, Outside Mask, Inside Mask
	Actions	Stop, Beep
Colour Mode	Warm(Default), Cool, Gray	

Modulation Analyzer Mode

Common Parameter		
	SSA3050X-R	SSA3075X-R
Frequency Range	2 MHz~5.0 GHz	2 MHz to 7.5 GHz
Carrier Power Accuracy	±2 dB (nom.)	
Carrier Power Range	-30 dBm to +20 dBm (nom.)	

Recording	
Data Packing	I = Q = 4 Byte
Memory	60 MByte
Length (IQ pairs)	7.5 MSample (60MB/8B)
Length (Time units)	Samples / (Span x 1.25)
PC Software	Analysis and Playback in Easy VSA Software
Playback	Easy VSA, Easy IQ and SSG5000X signal generator

Analog Modulation Analysis (Option SSA3000XR-AMA)

AM		
Modulation rate range	20 Hz to 100 kHz	
Accuracy	1 Hz (nom.)	Modulation rate < 1 kHz
	< 0.1% modulation rate (nom.)	Modulation rate ≥ 1 kHz
Modulation depth range	5% to 95%	
Accuracy	±4% (nom.)	
FM		
Modulation rate range	20 Hz to 200 kHz	
Accuracy	1 Hz (nom.)	Modulation rate < 1 kHz
	< 0.1% modulation rate (nom.)	Modulation rate ≥ 1 kHz
Frequency deviation	1 kHz to 400 kHz	
Accuracy	±4% (nom.)	

Digital Modulation Analysis (Option SSA3000XR-WDMA)

Measurement	
Modulation Type (The analysis BW is same with real-time BW in RTSA mode)	ASK: 2ASK; FSK: 2,4,8,16 level; MSK: GMSK; PSK: BPSK,QPSK,OQPSK,8PSK; DPSK: DBPSK, DQPSK, D8PSK, $\pi/4$ -DQPSK, $\pi/8$ -D8PSK; QAM: 16,32,64,128,256
Meas Length	16 to 4096
Points/Symbol	4,6,8,10,12,14,16
Symbol Rate	1 ksps to 25 Msps, Symbol Rate* Points/Symbol <=160 Msps
Filter	
Meas/Ref Filter	Nyquist, Squrt Nyquist, Gauss, Half Sine, Rectangular
Length	2 to 128
Alpha/BT	Alpha 0.01~1, BT 0.01~10
Trace	
Trace Data	IQ Meas Time, IQ Meas Spectrum, IQ Ref Time, IQ Ref Spectrum, Time, Spectrum, Symbol Error Chart, Err Vector Time, Err Vector Spectrum, IQ Mag Err, IQ Phase Err
Layout	Single, Stacked 2, Grid 1 2, Grid 2*2
Trace Formats	Log mag, Lin mag, Real, Imag, I-Q, Constellation, I-eye, Q-eye, Wrap Phase, Unwrap Phase, Trellis eye
Symbol Error Chart	
PSK/DPSK/MSK/QAM	EVM (rms EVM, peak EVM), Magnitude error, Phase error, IQ offset, Carrier offset, SNR Quadrature error, Gain imbalance(not support for MSK)
ASK	ASK Error, ASK depth, carrier offset
FSK	FSK Error, Magnitude error, FSK deviation, carrier offset

EMI Measurement Mode

Option SSA3000XR-RCV

Measurement	
Measurement View	Frequency scan, Meter, Signal list
Pre-compliance Sequence	Scan, Search, Meas
EMI filter RBW (-6dB)	200 Hz, 9 kHz, 120 kHz, 1MHz(following CISPR 16-1-1)
RBW uncertainty	< 5%
Detector	Peak, Voltage Average, Quasi-Peak(following CISPR 16-1-1)
Dwell time	0 us ~ 10 s
RBW/Steps	0.1, 0.3, 0.5, 1, 2, 3
Corrections	4
Limit and Trace	3
Limit Standards	EN550xx, GB9254, FCC Part15, User defined
Attenuator	0-50 dB
Report	Signal List
Frequency scale	Linear, Logarithmic

Inputs and Outputs

Front Panel	
RF input, Port 2	N-type female, 50 Ω (nom.)
TG Source, Port 1	N-type female, 50 Ω (nom.)
USB host	USB-A plug, version 2.0
Ear Phone Jack	3.5 mm
Rear Panel	
USB device	USB-B plug, version 2.0
LAN	10/100 Base, RJ-45
10 MHz reference output	10 MHz, >0 dBm, BNC-type female, 50 Ω (nom.)
10 MHz reference input	10 MHz, -5 to +10 dBm, BNC-type female, 50 Ω (nom.)
External trigger input	5V TTL level, BNC-type female, 10 kΩ
Remote Control	
Communication Interface	LAN, USB Device, USB Host (USB-GPIB adaptor)
Remote Control Capability	SCPI / Labview / IVI based on USB-TMC / VXI-11 / Socket / Telnet; NI-MAX; Web Browser (HTML 5 Supported); Easy Spectrum software; File Explorer (FTP)

General Specification

Structure	
Dimensions	393 mm × 207 mm × 116.5 mm (W×H×D)
Weight	Net: 4.70 kg (10 lb); Shipping: 5.50 kg
Display	TFT LCD, 1024 × 600, 10.1 inch capacitive multi-touch screen
Storage	Internal (Flash) 256 MB, external (USB storage device) 32 GB
Working Environment	
Source	AC voltage range: 100-240 V, 50/60 Hz or 100-120 V 400 Hz; Power consumption: 70 W (MAX)
Temperature	Working temperature: 0 °C to 40 °C, Storage temperature: -20 °C to 70 °C
Humidity	0 °C to 30 °C, ≤ 95% Relative humidity 30 °C to 50 °C, ≤ 75% Relative humidity
Altitude	Operating: less than 3 km
Electromagnetic Compatibility	
EN 61326-1: 2013 / EN 61000-3-2: 2014	Class A(The active input power of the EUT is less than 75 W. According to EN 61000-3-2, no limits are necessary.)
EN 61000-3-3: 2013	Plt: 0.65 Pst: 1.00, dmax: 4.00 %, dc: 3.00 %; dt Lim: 3.30 % dt>Lim: 500ms
IEC 61000-4-2: 2008	AD ±8.0 kV, CD ±4.0 kV
IEC 61000-4-3: 2006 + A1: 2007 + A2: 2010	80 MHz to 1000 MHz: 10V/m, 1.4 GHz to 2.0 GHz:3 V/m, 2.0 GHz to 2.7 GHz:1V/m
IEC 61000-4-4: 2004 + A1: 2010	AC Line:±2.00 kV
IEC 61000-4-5: 2005	Line to Line: 1.0 kV, Line to Earth: 2.0 kV
IEC 61000-4-6: 2008	0.15-80 MHz:3 V 1 KHz 80% AM
IEC 61000-4-8: 2009	30 A/m, 50/60 Hz
IEC 61000-4-11: 2004	Voltage Dips:0%/0.5P; 40%/10P; 70%/25P; Short Interruptions Test Level % UT: 0%/250P
Safety	
IEC 61010-1:2010/EN 61010-1:2010	
CAN/CSA-C22.2 No.61010-1:2012, CAN/CSA-C22.2 No.61010-2-30:2012, UL 61010-1:2012, UL 61010-2-30:2012	
RoHS	
2011/65/EU	

Ordering Information

Product	Description	Order Number
Product Code	Real Time Spectrum Analyzer, 9 kHz ~ 5.0 GHz, Preamp and TG standard	SSA3050X-R
	Real Time Spectrum Analyzer, 9 kHz ~ 7.5 GHz, Preamp and TG standard	SSA3075X-R
Standard Accessories	Quick Start, USB Cable, Power Cord	
Common Options and Accessories	Advanced Measurement Kit	SSA3000XR-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)-SMA(M) cable, 70cm, 6 GHz	N-SMA-6L
	N(M)-N(M) cable, 70cm, 6 GHz	N-N-6L
	N(M)-BNC(M) cable, 70cm, 2 GHz	N-BNC-2L
	N(M)-SMA(M) cable, 100cm, 18 GHz	N-SMA-18L
	N(M)-N(M) cable, 100cm, 18 GHz	N-N-18L
	USB-GPIB Adaptor	USB-GPIB
	Soft carrying bag	BAG-S2
	6U Rack Mount Kit	SSA-RMK
Real-Time Options	40 MHz Real-Time BandWidth	SSA3000XR-RT40
Reflection Measurement Options	Reflection Measurement	SSA3000-Refl
	Reflection Bridge(1 MHz ~ 2.5 GHz)	RB3X25
	50 Ω N type Mechanical Calibration Kit: Open(M),Short(M),Match(M),Through Adapter(M-M)	F503ME
EMI Measurement Options	EMI Measurement Mode	SSA3000XR-RCV
	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. The analysis BW is the Real-Time BW in RTSA mode	SSA3000XR-WDMA
	Easy VSA Software	EasyVSA

About SIGLENT

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

SIGLENT first began developing digital oscilloscopes independently in 2002. After more than a decade of continuous development, SIGLENT has extended its product line to include digital oscilloscopes, function/arbitrary waveform generators, RF generators, digital multimeters, DC power supplies, spectrum analyzers, vector network analyzers, isolated handheld oscilloscopes, electronic load and other general purpose test instrumentation. Since its first oscilloscope, the ADS7000 series, was launched in 2005, SIGLENT has become the fastest growing manufacturer of digital oscilloscopes. We firmly believe that today SIGLENT is the best value in electronic test & measurement.

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