SVA1000X Spectrum & Vector Network Analyzer

DataSheet DS0701X_E04B



SIGLENT TECHNOLOGIES CO.,LTD

General Description

The SIGLENT SVA1000X series spectrum & vector network analyzers are powerful and flexible tools for RF signal and network analysis.

With a frequency range to 7.5 GHz, the analyzer delivers reliable automatic measurements and multiple modes of operation: the base model are a spectrum analyzer and a vector network analyzer, optional functions include a distance-to-fault locator, a vector signal modulation analyzer. Applications include broadcast monitoring/evaluation, site surveying, S-parameter measurement, cable and antenna testing, analog/digital modulation analysis, EMI pre-compliance test, research and development, education, production, and maintenance.

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.)
- Analog and Digital Signal Modulation Analysis Mode (Opt.)
- EMI Measurement Mode (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

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Models and Main index

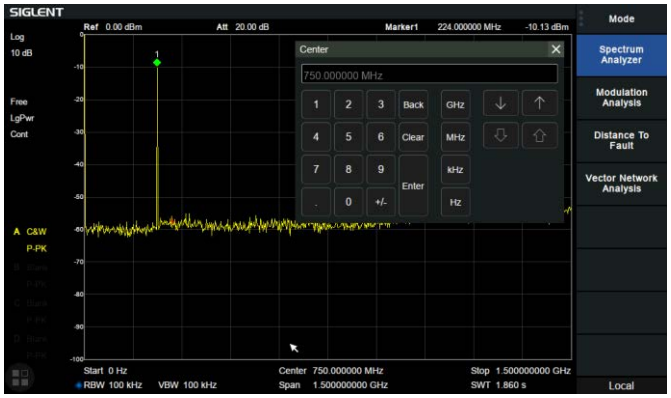
Model	SVA1015X	SVA1032X	SVA1075X
Spectrum Analyzer Frequency Range	9 kHz~1.5 GHz	9 kHz~3.2 GHz	9 kHz~7.5 GHz
Vector Network Analyzer Frequency Range	10 MHz~1.5 GHz	100 kHz~3.2 GHz	100 kHz~7.5 GHz
Resolution Bandwidth	1 Hz~1 MHz	1 Hz~1 MHz	1 Hz~3 MHz
Displayed Average Noise Level	-156 dBm/Hz	-161 dBm/Hz	-165 dBm/Hz
SSB Phase Noise	<-99 dBc/Hz	<-98 dBc/Hz	<-98 dBc/Hz
Third-order intercept(TOI)	+10 dBm	+10 dBm	+14 dBm
Total Amplitude Accuracy	< 1.2 dB	< 0.7 dB	< 0.7 dB
Tracking Generator	5 MHz~1.5 GHz	100 kHz~3.2 GHz	100 kHz~7.5 GHz
VNA measurement	Vector S11, Vector S21		
VNA Dynamic Range	90 dB		
Distance to Fault	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		

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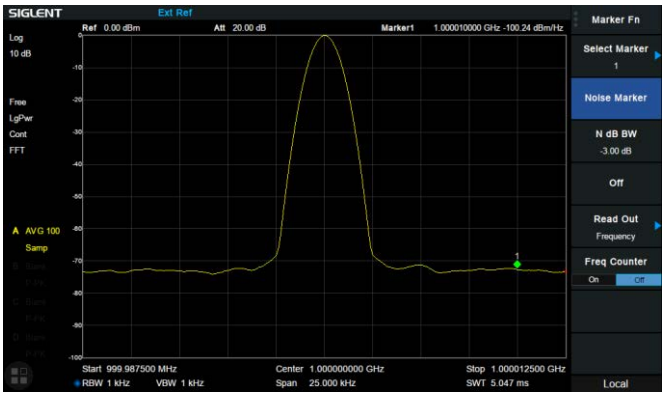
Design Features

Spectrum Analyzer Mode

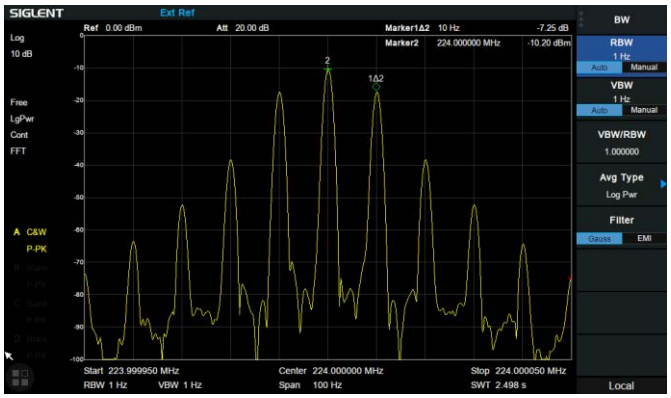
10.1 Inch Display with Multi-Touch Screen



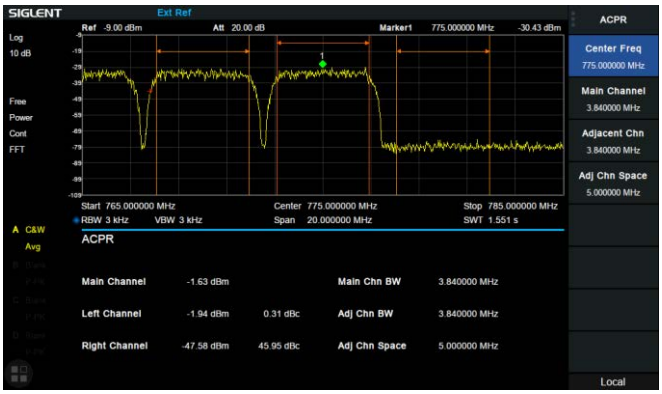
Phase noise <-98 dBc/Hz@1 GHz



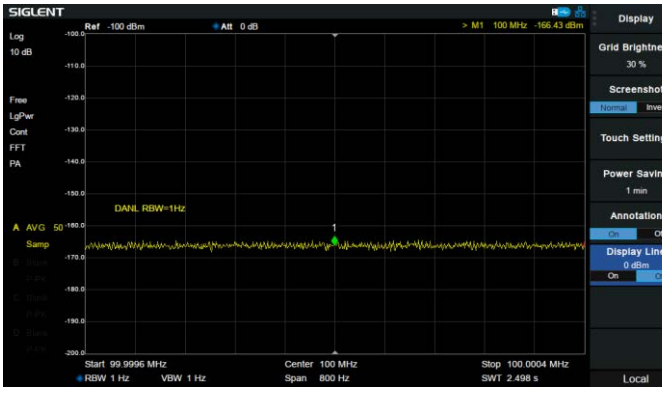
Minimum 1 Hz Resolution Bandwidth (RBW)



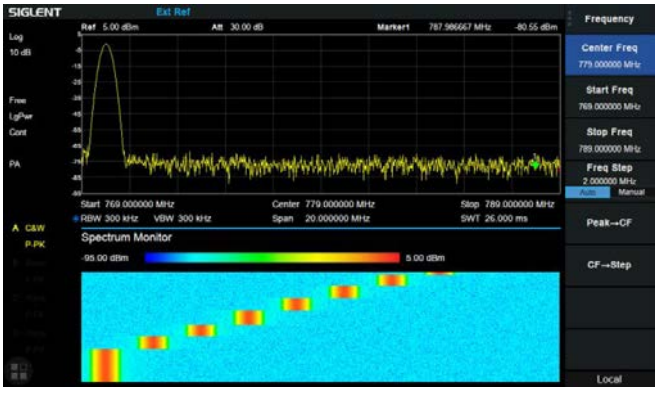
ACPR in Advanced Measurement Kit



-165 dBm/Hz Displayed Average Noise Level



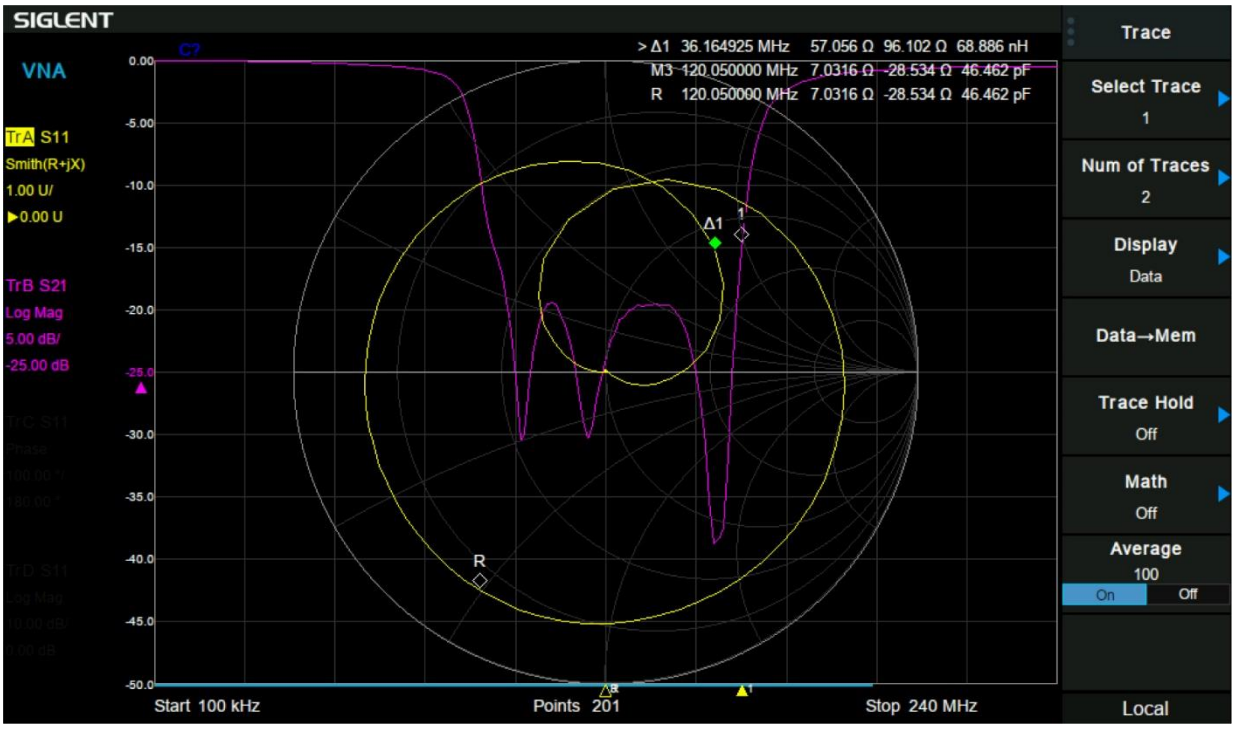
Monitor in Advanced Measurement Kit



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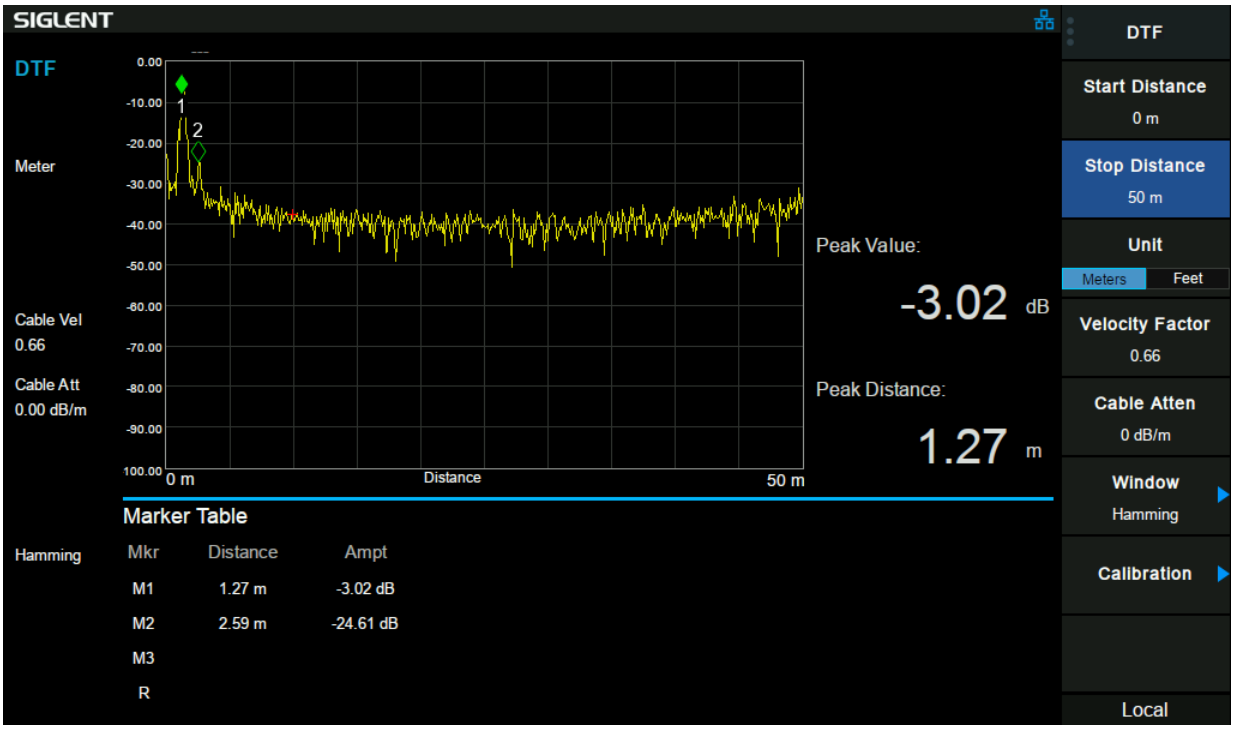
Vector Network Analyzer Mode

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



Distance To Falut Mode

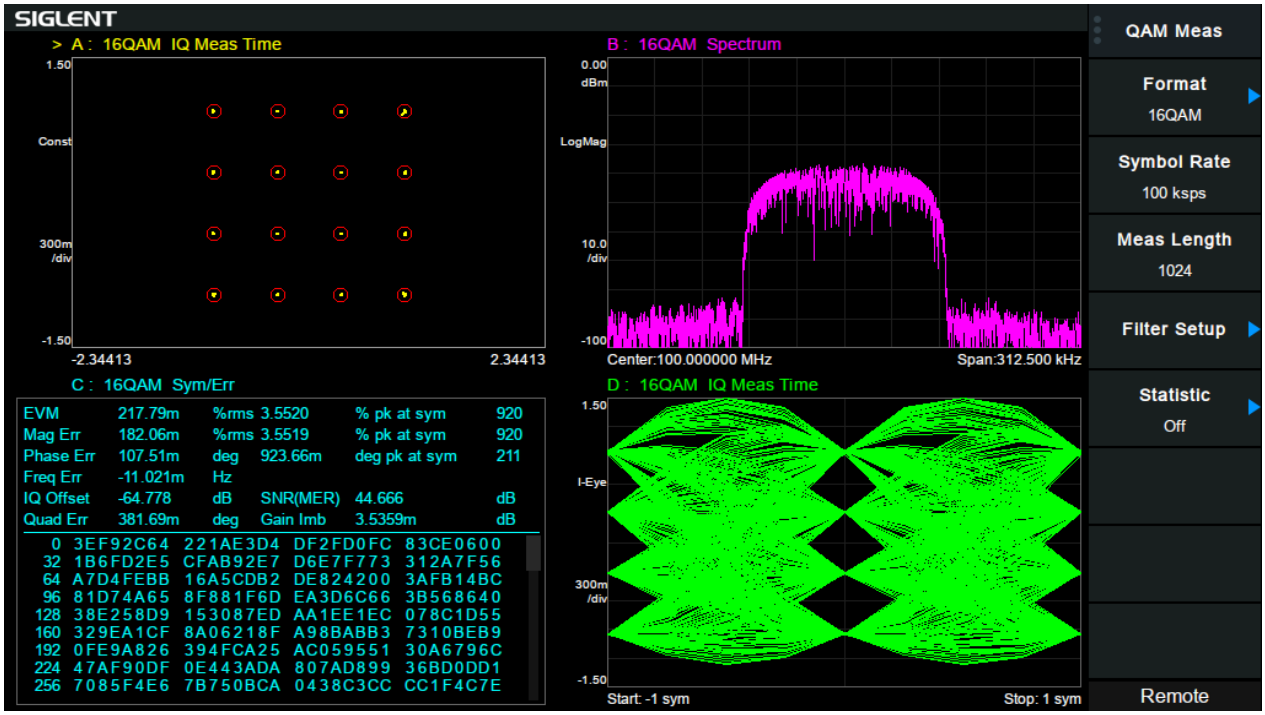
Cable and Antenna Test based on Timing Domain Analysis



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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.



No.	Mk	Trc	Freq	Peak Amptd	Peak LL1△	QPD Amptd	QPD LL1△	EAvg Amptd	EAvg LL1△
1		A	217.46 kHz	63.76 dBuV	0.84 dB	53.68 dBuV	-9.23 dB	55.26 dBuV	-7.66 dB
2		A	1.615582 MHz	47 dBuV	-9 dB	36.42 dBuV	-19.58 dB	37.41 dBuV	-18.59 dB
3		A	1.624639 MHz	45.61 dBuV	-10.39 dB	43.47 dBuV	-12.53 dB	36.08 dBuV	-19.92 dB
4		A	1.648164 MHz	89.31 dBuV	33.31 dB	89.27 dBuV	33.27 dB	89.29 dBuV	33.29 dB
5		A	1.665365 MHz	44.45 dBuV	-11.55 dB	35.22 dBuV	-20.78 dB	35.84 dBuV	-20.16 dB

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Accessories

Utility Kit



Near Field Probe Set



USB-GPIB Adaptor



6U Rack Mount



Soft Carrying Bag



50 Ω Mechanical Calibration Kit:



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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 60 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			
	SVA1015X	SVA1032X	SVA1075X
Frequency range	9 kHz ~ 1.5 GHz	9 kHz ~ 3.2 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/year, 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 + 10% × resolution bandwidth + ½ * marker resolution + 1 Hz]
Frequency Counter resolution	0.01 Hz 0.1 Hz
Bandwidths	
Resolution bandwidth (-3dB)	1 Hz ~ 1 MHz, in 1-3-10 sequence 1 Hz~3 MHz
Resolution filter shape factor	< 4.8 : 1 (60 dB:3 dB), Gaussian-like
RBW uncertainty	<5%
Video bandwidth (-3dB)	1 Hz ~ 3 MHz, in 1-3-10 sequence 1 Hz~10 MHz
VBW uncertainty	<5%

Sweep and Trigger				
Sweep time		1 ms to 1500 s	1 ms to 3200 s	1 ms to 7500 s
RBW	Sweep	30 Hz ~ 1 MHz	30 Hz ~ 1 MHz	3 kHz ~ 3 MHz
	FFT	1 Hz ~ 10 kHz	1 Hz ~ 10 kHz	1 Hz ~ 10 kHz
Sweep rule		Single, Continuous		
Trigger source		Free, Video, External		
External trigger		5V TTL level, Rising edge/Falling edge		

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Amplitude Accuracy and Range Specifications

Amplitude and Level			
	SVA1015X	SVA1032X	SVA1075X
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 ~ 30 dB, 1 dB steps	0 ~ 50 dB, 1 dB steps	
Maximum input DC voltage	+/- 50 VDC		
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		
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), Quasi-peak		
Trace functions	Clear write, Max Hold, Min Hold, View, Blank, Average, Math		

SSB Phase Noise			
	SVA1015X	SVA1032X	SVA1075X
Offset	20 °C to 30 °C, fc = 1 GHz, Normalized to 1 Hz		
10 kHz	-95 dBc/Hz, -99 dBc/Hz (typ.)	-95 dBc/Hz, -98 dBc/Hz (typ.)	-96 dBc/Hz, -98 dBc/Hz (typ.)
100 kHz	-96 dBc/Hz, -98 dBc/Hz (typ.)	-96 dBc/Hz, -97 dBc/Hz (typ.)	-95 dBc/Hz, -97 dBc/Hz (typ.)
1 MHz	-115 dBc/Hz, -120 dBc/Hz (typ.)	-115 dBc/Hz, -117 dBc/Hz (typ.)	-112 dBc/Hz, -114 dBc/Hz (typ.)

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Displayed Average Noise Level (DANL)				
		SVA1015X	SVA1032X	SVA1075X
	20 °C to 30 °C, att = 0 dB, RBW = 1 Hz, sample detector, trace average > 50, TG off			
Preamp off	100 kHz ~1 MHz	-100 dBm, -102 dBm (typ.)	-107 dBm, -111 dBm (typ.)	-105 dBm, -109 dBm (typ.)
	1 MHz~10 MHz	-124 dBm, -130 dBm (typ.)	-132 dBm, -136 dBm (typ.)	-122 dBm, -126 dBm (typ.)
	10 MHz~200 MHz	-128 dBm, -134 dBm (typ.)	-137 dBm, -141 dBm (typ.)	-142 dBm, -146 dBm (typ.)
	200 MHz~1.5 GHz	-121 dBm, -127 dBm (typ.)	-135 dBm, -139 dBm (typ.)	-142 dBm, -147 dBm (typ.)
	1.5 GHz~3.2 GHz		-126 dBm, -132 dBm (typ.)	-140 dBm, -145 dBm (typ.)
	3.2 GHz~5.0 GHz			-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	-120 dBm, -122 dBm (typ.)	-132 dBm, -137 dBm (typ.)	-133 dBm, -136 dBm (typ.)
	1 MHz~10 MHz	-147 dBm, -152 dBm (typ.)	-148 dBm, -154 dBm (typ.)	-151 dBm, -154 dBm (typ.)
	10 MHz~200 MHz	-150 dBm, -156 dBm (typ.)	-156 dBm, -161 dBm (typ.)	-161 dBm, -165 dBm (typ.)
	200 MHz~1.5 GHz	-142 dBm, -148 dBm (typ.)	-155 dBm, -158 dBm (typ.)	-159 dBm, -163 dBm (typ.)
	1.5 GHz~3.2 GHz		-145 dBm, -149 dBm (typ.)	-159 dBm, -162 dBm (typ.)
	3.2 GHz~5.0 GHz			-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.)

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Frequency Response			
	SVA1015X	SVA1032X	SVA1075X
	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		
	±1.2 dB	±0.7 dB	±0.7 dB
RF input VSWR	Att = 10 dB, fc≥1 MHz		Att = 20 dB, fc≥1 MHz
	<1.5 (nom.)		<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		
	+10 dBm (typ.)	+10 dBm (typ.)	+14 dBm (typ.)
1dB gain compression	20 °C to 30 °C, fc ≥ 50 MHz, att = 0 dB, preamp off		
	> -5 dBm (nom.)	> -5 dBm (nom.)	> 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		

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Tracking Generator

Frequency Parameter			
	SVA1015X	SVA1032X	SVA1075X
Frequency Range	5 MHz ~ 1.5 GHz	100 kHz ~ 3.2 GHz	100 kHz~7.5 GHz
Frequency resolution	1 Hz, Zero Span		
RBW, sweep mode	100 Hz ~ 1 MHz	100 Hz ~ 1 MHz	3k Hz ~ 3 MHz
Power Parameter			
Output level	-20 dBm ~ 0 dBm	-20 dBm ~ 0 dBm	-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

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	

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Vector Network Analyzer Mode

Vector Network Analyzer

Stimulus and Measurement			
	SVA1015X	SVA1032X	SVA1075X
Frequency Range	10 MHz ~ 1.5 GHz	100 kHz ~ 3.2 GHz	100 kHz ~ 7.5 GHz
Measurement	S11, S21		
IFBW	10 kHz		
Port1 Stimulus Power	0 dBm (nom.)	-5 dBm (nom.)	0 dBm (nom.)
Format	Lin Mag, Log Mag, Phase, Group Delay, SWR, Smith Chart (Lin/Phase, Log/Phase, Real/Imag, R+j*X, G+j*B), Polar Chart (Lin/Phase, Log/Phase, Real/Imag)		
Sweep Points	101~751, default 201		
Trace	4 traces, Mem, Math, Hold, Overlay		
Marker	(6+Ref)* 4 traces		
Calibration			
Directivity of Calibration	S11, Log mag, Average=50, >50MHz		
	> 40 dB		
Dynamic Range	S21, IFBW=10 kHz, Port1 level=-5 dBm, Log Mag, Average=50		
100 kHz ~ 10 MHz		70 dB (typ.)	60 dB (typ.)
10 MHz ~ 1.5 GHz	80 dB (typ.)	80 dB (typ.)	90 dB (typ.)
1.5 GHz ~ 3.2 GHz		80 dB (typ.)	90 dB (typ.)
3.2 GHz ~ 7.5 GHz			80 dB (typ.)
Trace Noise	10 kHz RBW, Log mag, Average = 50, >10MHz		
	0.1 dB		
Calibration Type	Short Response		
	Open Response		
	Full 1-Port(OSL)		
	Response Through		
	Enhanced Response		
Mechanical Calibration Kit	F503ME, F503FE, F603ME, F603FE, F504MS, F504FS, F604MS, F604FS, 85032B\E, 85033E, 85032F, User Cal Kit		
Port Extensions	Port 1, Port 2, Auto Open Port 1		
System Z0	50 Ω		
Velocity Factor	0.1~1		

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Distance to Fault Mode

Distance to Fault

Measurement			
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Frequency Range	10 MHz~1.5 GHz	100 kHz~3.2 GHz	100 kHz ~ 7.5 GHz
Maximum Distance (meters)	(76800 x Velocity Factor)/(Stop Freq - Start Freq (MHz))		
Resolution (meters)	(150 x Velocity Factor)/(Stop Freq - Start Freq (MHz))		
Windows	Rectangular, Hamming		
Calibration	Full 1-Port(OSL)		
Velocity Factor	0.1~1		

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Modulation Analyzer Mode

Common Parameter			
	SVA1015X	SVA1032X	SVA1075X
Frequency range	2 MHz~1.5 GHz	2 MHz~3.2 GHz	2 MHz ~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 or SSG5000X signal generator

Analog Modulation Analysis

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.)	

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Digital Modulation Analysis

Measurement	
Modulation Type	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 2.5 Msps, Symbol Rate* Points/Symbol <=10 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

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EMI Measurement Mode

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

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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)

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General Specification

Structure			
	SVA1015X	SVA1032X	SVA1075X
Weight	Net: 4.30 kg (9.5 lb); Shipping: 5.10 kg	Net: 4.40 kg (9.7 lb); Shipping: 5.20 kg	Net: 4.70 kg (10.4 lb); Shipping: 5.50 kg
Dimensions	393 mm × 207 mm × 116.5 mm (W×H×D)		
Display	TFT LCD, 1024 × 600, 10.1 inch multi-touch screen		
Storage	Internal (Flash) 256 MB, external (USB storage device) 32 GByte		
Working Environment			
Source	AC voltage range: 100-240 V, 50/60 Hz or 100-120 V 400 Hz;		
Power consumption	35 W	35 W	70 W
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			

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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 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
VNA Options	Distance To Fault Locator	SVA1000X-DTF
	N type Economic Calibration Kit, DC~4.5GHz, 50 Ω	F503ME
	N type Economic Calibration Kit, DC~4.5GHz, 50 Ω	F503FE
	3.5mm type Economic Calibration Kit, DC~4.5GHz, 50 Ω	F603ME
	3.5mm type Economic Calibration Kit, DC~4.5GHz, 50 Ω	F603FE
	N type Standard Calibration Kit, DC~9GHz, 50 Ω	F504MS
	N type Standard Calibration Kit, DC~9GHz, 50 Ω	F504FS
	3.5mm type Standard Calibration Kit, DC~9GHz, 50 Ω	F604MS
	3.5mm type Standard Calibration Kit, DC~9GHz, 50 Ω	F604FS
EMI Measurement Options	EMI Measurement Mode	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
	EasyVSA Software	EasyVSA

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