



SA9100 Series Spectrum Analyzers

SA9115/9122/9130

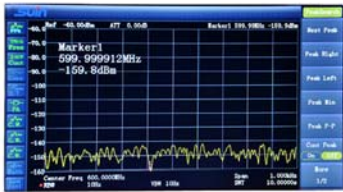
- ▣ All-digital IF technology
- ▣ Frequency Range: 9kHz to 1.5GHz/2.2GHz/3GHz
- ▣ DNAL: -140dBm Typ.
- ▣ Phase Noise: -82dBc/Hz (10kHz offset)
- ▣ Amplitude Resolution: <1.5dB
- ▣ RBW: 10Hz to 1MHz, step 1-3-10
- ▣ Tracking Generator optional
- ▣ Full measuring functions and auto setting
- ▣ 7" TFT LCD
- ▣ USB Host, USB Device, LAN, RS232, VGA

SA9115/9122/9130



Product Overview

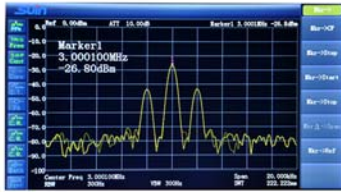
The new high - performance SA9100 Series Spectrum Analyzer were developed with all - digital IF technology to meet demanding customer requirements, its professional bench type, compact size, elegant outlook to show our well design. We provide three selectable frequency range 1.5 GHz/ 2.2 GHz/ 3.0 GHz for users, which are high cost - effective and more flexible for users to choose the most economy models. Offering low phase noise, wide analysis bandwidth, straightforward and intuitive operation, and plenty remote communication port, the spectrum analyzer makes measurements fast and easy, can be widely used in science education, enterprise research and industry production.



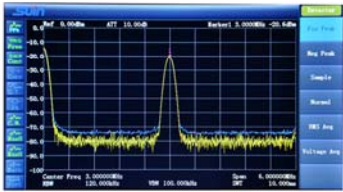
Featuring a low DANL of typ. -140dBm, distinguish two nearby signals clearly with 10Hz RBW



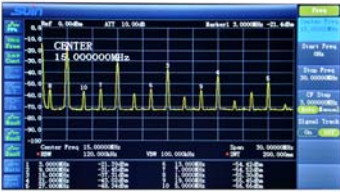
Measurement of FM signal



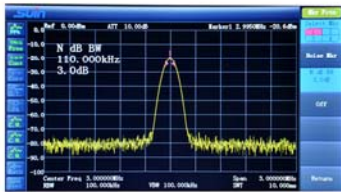
Measurement of AM signal



Display the spectrums when change the RBW settings with different color trace



Advanced function of marker display



Advanced function of N dB measurement

TECHNICAL SPECIFICATIONS

		SA9115	SA9122	SA9130
FREQUENCY				
Frequency				
Range		9kHz to 1.5GHz	9kHz to 2.2GHz	9kHz to 3.0GHz
Resolution		1 Hz		
Internal Frequency Reference				
Frequency Reference		10MHz		
Aging Rate		<2ppm/year		
Temperature Stability		<2ppm (20 °C to 30 °C)		
Frequency Readout Accuracy				
Marker Resolution		span/(sweep points-1)		
Marker Uncertainty		$\pm(\text{frequency indication} \times \text{frequency reference uncertainty} + 1\% \times \text{span} + 10\% \times \text{resolution bandwidth} + \text{marker resolution})$		
Frequency Counter				
Resolution		1Hz, 10Hz, 100Hz, 1KHz, 10KHz, 100KHz		
Uncertainty		$\pm(\text{frequency indication} \times \text{frequency reference uncertainty} + \text{counter resolution})$		
Frequency Span				
Frequency Span Range		0Hz, 100Hz to 1.5GHz	0Hz, 100Hz to 2.2GHz	0Hz, 100Hz to 3.0GHz
Uncertainty		$\pm\text{span}/(\text{sweep points}-1)$		
SSB Phase Noise				
Carrier Offset		10 kHz offset	<-82dBc/Hz	
		100 kHz offset	<-103dBc/Hz	
		1 MHz offset	<-113dBc/Hz	
Bandwidths				
Resolution Bandwidth (-3dB)		10Hz ~ 1MHz, step 1-3-10		
		9 kHz, 120 kHz		
RBW Uncertainty		<5%, nominal		
Resolution Filter Shape Factor(60dB: 3dB)		<5, nominal		
Video Bandwidth (-3dB)		1Hz to 1MHz, step 1-3-10		
AMPLITUDE				
Measurement Range				
Range		DANL to +30dBm		
Maximum Input Level				
DC Voltage		50V		
CW RF Power		+30dBm (1.0W)		
Max.Damage Level		+40dBm (10W)		
Displayed Average Noise Level (DANL)				
0 dB Attenuation, RBW=VBW=10 Hz, Sample Detector, Trace Average ≥ 50				
DANL (Preamplifier Off)		100 kHz to 1 MHz	<-90 dBm, typ. -110 dBm	
		1 MHz to 3.0 GHz	<-120 dBm+3 x (f/1GHz) dB, typ. -125 dBm	
DANL (Preamplifier On)		100 kHz to 10 MHz	<-90 dBm, typ. -110 dBm	
		10 MHz to 3.0 GHz	<-135 dBm+3 x (f/1GHz) dB, typ. -140 dBm	

Level Display		
Level Display		
Logarithmic Level Axis		1 dB to 200 dB
Linear Level Axis		0 to Reference Level
Number of Display Points		601
Number of Traces		3 + Math Trace
Trace Detectors		Normal, Positive-peak, Negative-peak, Sample, RMS, Voltage Average
Trace Functions		Clear Write, Max Hold, Min Hold, Average, View, Blank
Units of Level Axis		dBm, dBmV, dBμV, V, W
Frequency Response		
10 dB RF attenuation, relative to 50 MHz, 20 °C to 30 °C		
Frequency Response	Preamplifier Off	< 1.0 dB (100 kHz to 3.0 GHz)
Frequency Response	Preamplifier On	< 1.5 dB (10 MHz to 3.0 GHz)
Input Attenuation Error		
Setting Range		0 to 50 dB, step 1 dB
Switching Uncertainty	fc=50 MHz, relative to 10 dB, 20 °C to 30 °C	< 0.5 dB
RBW Switching		
Uncertainty	100 Hz to 1 MHz, relative to 1 kHz RBW	<0.1 dB
Reference Level		
Range		-100 dBm to +30 dBm, step 1 dB
Resolution	Log Scale	0.01 dB
	Linear Scale	4 digits
Level Measurement Uncertainty		
(95% confidence level, S/N>20dB, RBW=VBW=1 kHz, preamplifier off, 10 dB attenuation, -50 dBm<reference level<0, 10 MHz<fc<3 GHz, 20 °C to 30 °C)		
Intermodulation		
Second Harmonic Intercept (SHI)		+40 dBm
Third-order Intermodulation (TOI)		+10 dBm (fc > 30 MHz)
Spurious		
Image Frequency		<-60 dBc
Intermediate Frequency		<-60 dBc
Spurious Response		<-90 dBm, typ.
System-related	local oscillators, A/D conversion, subharmonic of first LO, harmonic of first LO	<-60 dBc
Input Related Spurious	Mixer level -30 dBm	<-60 dBc, typ.

SWEEP			
Sweep			
Sweep Time Range	100Hz≤Span≤3GHz Span=0 Hz	10 ms to 3000 s 20 μs to 3000 s	
Sweep Time Uncertainty	100Hz≤Span≤3GHz Span=0 Hz	5%, nominal 0.5%, nominal	
Sweep Mode		Continuous, single	
TRIGGER			
Trigger			
Trigger Source		Free, Video, External	
External Trigger Level		5 V TTL level	
TRACKING GENERATOR Output (SA9130-TG)			
Output			
Frequency Range		9 kHz to 3.0 GHz	
Output Power		-20 dBm to 0 dBm, step 1 dB	
Output Flatness	10MHz to 3.0GHz, relative to 50 MHz	±3 dB	
INPUT/OUTPUT			
RF Input			
Impedance		50 Ω	
Connector		N female	
Tracking Generator Output			
Impedance		50 Ω	
Connector		N female	
10MHz REF In / 10MHz REF Out / External Trigger In			
Connector		BNC female	
10 MHz REF In Amplitude		0 dBm to +10 dBm	
10 MHz REF Out Amplitude		-3dBm to +3dBm	
Trigger Voltage		5 V TTL level	
INTERFACE			
Interface			
Type		USB_HOST, USB_DEVICE, LAN, RS232, VGA	
GENERAL CHARACTERISTIC			
General Characteristic			
Display		7 inch TFT LCD	
Power Supply	Input Voltage	AC100V to 240V	
	Frequency	45Hz to 440 Hz	
	Power Consumption	< 35W	
Environment	Temperature	5°C to 40°C	
	Humidity	80%	
Dimension & Weight		364×155×330mm(W×H×L), 6.0kg	
ACCESSORIES			
Standard		Power Cord	1
		CD(Software+ User's Guide)	1
Options		Tracking Generator N-BNC Adapter, N-SMA Adapter, N-SMA Cable, BNC-BNC Cable USB cable, RS232 cable	



SA9100 Series Spectrum Analyzers

SA9115/9122/9130

SHIJIAZHUANG SUIN INSTRUMENTS CO., LTD
Add: No.85 Xiumen Street, Shijiazhuang, 050011, China
[Http://www.suintest.com](http://www.suintest.com)
Tel: 86-311-86086971, 86013320
Fax: 86-311-86018511
E-mail: export@suintest.com ceodeng@suintest.com