



## XSA1000TG Series Spectrum Analyzer

- + Frequency Range from 9 kHz up to 3.6 GHz
- + 150dBm Displayed Average Noise Level
- + Phase Noise -82dBc/Hz @1Gz and offset at 10KHz
- + Total Amplitude Accuracy <1.5dB
- + 10Hz Minimum Resolution Bandwidth (RBW)
- + EMI Pre-compliance Test Kit
- + Up to 3.6 GHz Tracking Generator Kit
- + 10.4 inches display

### + Performance Specifications

Model	XSA1015TG	XSA1032TG	XSA1036TG
<b>Frequency</b>			
Range	9kHz-1.5 GHz	XSA1032TG	9kHz-3.6 GHz
Resolution	1Hz		
<b>Frequency span</b>			
Range	0 Hz, 100 Hz to maximum frequency of device		
Accuracy	± span / (swept points -1)		
<b>Internal reference</b>			
Reference frequency	10.000000 MHz		
Reference frequency accuracy	±[ (days from last calibrate × freq aging rate) + temperature stability + initial accuracy ]		
Temperature stability	<2.5ppm (15°C to 35°C)		
Aging rate	<1ppm/year		
<b>Readout</b>			
Marker frequency resolution	span/ (the number of sweep points -1)		
Uncertainty	± (freq indication × freq reference uncertainty +1%× span +10%× resolution bandwidth + Marker Frequency Resolution)		
<b>Frequency counter</b>			
Resolution	1 Hz, 10 Hz, 100 Hz, 1 kHz		
Accuracy	± (marker freq × freq reference uncertainty + counter resolution)		
<b>Bandwidth</b>			
Resolution bandwidth (-3 dB)	10Hz to 500kHz (in 1 to 10 sequence) , 1MHz, 3MHz		
Resolution filter shape factor	<5: 1 nominal (Digital implement, similar to Gauss Pattern)		
Accuracy	<5% nominal		
Video bandwidth (-3 dB)	10Hz to 3MHz		

Amplitude Specification	
<b>Amplitude and electric level</b>	
Amplitude measurement range	DANL to +20 dBm, close the preamplifier
Reference electric level	-80 dBm to +30 dBm, 0.1dBm steps
Preamplifier	20 dB, nominal
Input attenuator range	0~39 dB, 3 dB steps
Max input DC voltage	50 VDC
Max continuous power	30dBm, average continuous power
<b>Displayed average noise level (DANL) Input attenuation 0 dB, 1Hz resolution bandwidth</b>	
Preamp off	1 MHz~10 MHz -140dBm (nominated)
	10 MHz~1GHz -140dBm (nominated)
	XSA1015TG:1GHz~1.5 GHz -138 dBm( nominated )
	XSA1032TG:1GHz~3.2GHz -138 dBm( nominated )
Preamp on	XSA1036TG:1GHz~3.6 GHz -138 dBm( nominated )
	1 MHz~10 MHz -160dBm (nominated)
	10 MHz~1GHz -160dBm (nominated)
	XSA1015TG: 1GHz~1.5 GHz -158 dBm( nominated )
	XSA1032TG: 1GHz~3.2 GHz -158 dBm( nominated )
	XSA1036TG: 1GHz~3.6 GHz -158 dBm( nominated )
<b>Phase noise</b>	
	20 °C ~30 °C, fc=1 GHz
Phase noise	<-82 dBc/Hz @10 kHz offset
	<-100 dBc/Hz @100 kHz offset
	<-110 dBc/Hz @1 MHz offset
<b>Level display range</b>	
Log scale coordinate	1dB ~255dB
Linear scale coordinate	0 to reference level
level unit	dBm, dBuW, dBpW, dBmV, dBuV, W,V
Points	201~1001
Number of traces	5
Detectors	Positive-peak, negative-peak, sample, normal, RMS
Trace functions	Clear write, Max Hold, Min Hold, View, Blank, Average
<b>Frequency response</b>	
	20°C ~30°C, 30%~70% relative humidity, 20 dB input attenuation, reference 50 MHz
Preamp off	±0.8 dB;
Preamp on	±0.9 dB;
<b>Accuracy</b>	
Input Attenuation Switching Uncertainty	20°C ~30°C, fc=50 MHz, Preamplifier Off, 20dB RF attenuation, input signal 1~40 dB ±0.5 dB

Absolute Amplitude Uncertainty	20°C ~30°C, $f_c=50$ MHz, RBW=1 kHz, VBW=1 kHz, peak detector, 20 dB RF attenuation, Preamplifier Off $\pm 0.4$ dB, input signal= -20dBm Preamplifier On $\pm 0.5$ dB, input signal= -40dBm
Uncertainty	input signal range 0dbm~-50dbm $\pm 1.5$ dB
VSWR	input 10 dB RF attenuation, 1 MHz~1.5GHz <1.5, nominal

### Distortion and spurious response

Second harmonic distortion	$f_c \geq 50$ MHz, Preamp off, signal input -30 dBm, 0 dB RF attenuation, 20 °C to 30 °C -65dbc
Third-order intermodulation	$f_c \geq 50$ MHz +10 dBm
1 dB Gain Compression	$f_c \geq 50$ MHz, 0 dB RF attenuation, Preamp off, 20 °C to 30 °C +2 dBm, nominal
Residual response	connect 50 $\Omega$ load at input port, 0 dB input attenuation, 20 °C to 30 °C <-85dBm, nominated
Input related spurious	-30 dBm signal at input mixer, 20 °C to 30 °C <-60 dBc

### Sweep time and triggering

Span range	100Hz $\leq$ SPAN $\leq$ 3GHz 10ms to 3000s zero sweep width 1ms to 3000s
Mode	Continue, single
Trigger	Free run, video

### Tracking generator

Output frequency range	100 kHz~1.5 GHz	100 kHz~3.2 GHz	100 kHz~3.6 GHz (Tracking generator) 35 MHz~3.6 GHz (Tracking generator)
Output power level range	-30 dBm~0 dBm ,		
Output power level resolution	1dB		
Output flatness	+/-3 dB		
Maximum safe reverse level	Average total power: 30 dBm, DC : $\pm 50$ VDC		

### Inputs and Outputs

Front panel RF input connector	50 $\Omega$ , N-type female
Front panel track generator output	50 $\Omega$ , N-type female
10 M reference input	50 $\Omega$ , N-type female

### Communication port

USB HOST, USB DEVICE, LAN, earphone port, REF and VGA

### General technical specification

Display	TFT LCD, 10.4 inches
Weight (without package)	About 5 kg
Dimension (W × H × D)	421 × 221 × 115 (mm)

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Working temperature	0~40 °C
Storage temperature	-20 °C to +60 °C
Power	100V~240V 50/60Hz