



## XSA1000TG Series Spectrum Analyzer

- + Frequency Range from 9 kHz up to 3.6 GHz
- + 150dBm Displayed Average Noise Level
- + Phase Noise -85dBc/Hz @1Gz and offset at 10KHz
- + Total Amplitude Accuracy <1.5dB
- + 10Hz Minimum Resolution Bandwidth (RBW)
- + EMI Pre-compliance Test Kit
- + Up to 1.5 GHz Tracking Generator Kit
- + 10.4 inches display

### + Performance Specifications

Model	XSA1015TG	XSA1036TG
<b>Frequency</b>		
Range	9kHz-1.5 GHz	9kHz-3.6 GHz
Resolution	1Hz	
<b>Frequency span</b>		
Range	0 Hz , 100 Hz to maximum frequency of device	
Accuracy	$\pm \text{span} / (\text{swept points} - 1)$	
<b>Internal reference</b>		
Reference frequency	10.000000 MHz	
Reference frequency accuracy	$\pm [ (\text{days from last calibrate} \times \text{freq aging rate}) + \text{temperature stability} + \text{initial accuracy} ]$	
Temperature stability	<2.5ppm ( 15°C to 35°C )	
Aging rate	<1ppm/year	
<b>Readout</b>		
Marker frequency resolution	$\text{span} / (\text{the number of sweep points} - 1)$	
Uncertainty	$\pm (\text{freq indication} \times \text{freq reference uncertainty} + 1\% \times \text{span} + 10\% \times \text{resolution bandwidth} + \text{Marker Frequency Resolution} )$	
<b>Frequency counter</b>		
Resolution	1 Hz , 10 Hz , 100 Hz , 1 kHz	
Accuracy	$\pm (\text{marker freq} \times \text{freq reference uncertainty} + \text{counter resolution} )$	
<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**
**Amplitude and electric level**

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 , 9 kHz~1.5 GHz
Input attenuator range	0~39 dB , 3 dB steps
Max input DC voltage	50 VDC
Max continuous power	30dBm , average continuous power

**Displayed average noise level ( DANL )**

	Input attenuation 0 dB , 1Hz resolution bandwidth	
Preamp off	1 MHz~10 MHz -130dBm ( nominated )	
	10 MHz~1GHz -130dBm ( nominated )	
	1GHz~1.5 GHz -128 dBm( nominated )	1GHz~3.6 GHz -128 dBm( nominated )
Preamp on	1 MHz~10 MHz -150dBm ( nominated )	
	10 MHz~1GHz -150dBm ( nominated )	
	1GHz~1.5 GHz -148 dBm( nominated )	1GHz~3.6 GHz -148 dBm( nominated )

**Phase noise**

	20 °C ~30 °C , fc=1 GHz
Phase noise	<-85 dBc/Hz @10 kHz offset
	<-100 dBc/Hz @100 kHz offset
	<-110 dBc/Hz @1 MHz offset

**Level display range**

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

**Frequency response**

	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 ;

**Accuracy**

Input Attenuation Switching Uncertainty	20°C ~30°C , fc=50 MHz , Preamplifier Off , 20dB RF attenuation , input signal 0~39 dB ±0.5 dB
Absolute Amplitude Uncertainty	20°C ~30°C , fc=50 MHz , RBW=1 kHz , VBW=1 kHz , peak detector, 20 dB RF attenuation , Preamplifier Off ±0.4 dB , input signal= -20dBm Preamplifier On ±0.5 dB, input signal= -40dBm

Uncertainty	input signal range 0dbm~-50dbm
	±1.5 dB
VSWR	input 10 dB RF attenuation , 1 MHz~1.5GHz
	<1.5 , nominal

### Distortion and spurious response

Second harmonic distortion	fc ≥ 50 MHz , Preamp off, signal input -30 dBm, 0 dB RF attenuation, 20 °C to 30 °C
	-65dbc
Third-order intermodulation	fc ≥ 50 MHz
	+10 dBm
1 dB Gain Compression	fc ≥ 50 MHz , 0 dB RF attenuation , Preamp off , 20 °C to 30 °C
	+2 dBm, nominal
Residual response	connect 50 Ω 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≤SPAN≤3GHz 10ms to 3000s zero sweep width 1ms to 3000s
Mode	Continue, single
Trigger	Free run, video, external

### Tracking generator

Output frequency range	100 kHz~1.5 GHz
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 : ±50 VDC

### Inputs and Outputs

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

### Communication port

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

### General technical specification

Display	TFT LCD , 10.4 inches
Weight (without package)	5 kg
Dimension (W × H × D)	421 × 221 × 115 (mm)
Working temperature	0~40 °C
Storage temperature	-20 °C to +60 °C
Power	100V~240V 50/60Hz