Digital Spectrum Analyzer

GA40XX Series

GA4062/GA4032
9kHz~1.5GHz

GA4033/GA4063
9kHz~3GHz

GA4064
9kHz~7.5GHz

Product Overview

GA40XX series is a small size, light weight, cost-effective portable spectrum analyzer to meet your all the RF application demands. It has easy-to-keyboard layout and high-definition 8.5-inch TFT color LCD display; display contains the appropriate settings and alerts. It includes the standard USB, LAN and RS232 communication interface, virtual terminal display and control and remote network access. The spectrum analyzer can be widely applied in many fields of science education, enterprise research and development and industrial production.

Features

- Frequency range of 9 kHz to 1.5GHz/3GHz/7.5GHz
- Displayed average noise level (DANL) ＜-148 dBm
- Phase Noise -90 dBc/Hz, -95 dBc/Hz, -100 dBc/Hz（Offset 10 kHz）
- Full amplitude accuracy ＜1.0 dB
- Minimum resolution bandwidth (RBW) 1 Hz
- Standard preamplifier
- 1.5GHz/3GHz/7.5GHz Tracking Generator(Optional)
- Measurement capabilities and a variety of automatic settings
- 8.5-inch (800x480) widescreen display
- The interface is simple and rich in affinity, operation and has user-friendly design
- Compact portable design, weighing less than 7 kg

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TECHNICAL SPECIFICATIONS

Model No	GA4062	GA4032	GA4033	GA4063	GA4064
Frequency Specifications					
Frequency range	9kHz ~ 1.5GHz		9kHz ~ 3GHz		9kHz ~ 7.5GHz
Internal 10 MHz frequency reference accuracy					
Initial calibration accuracy	$\pm 1 \times 10^{-7}$				
Aging rate	±0.1ppm /year	±1ppm /year	±0.1ppm /year		
Temperature stability	$\pm 5 \times 10^{-8}$ Referenced to frequency reading at 0-50 °C				
Frequency readout accuracy with marker (start, stop, center, marker)					
Marker resolution	(frequency span)/(sweep points -1)				
Uncertainty	± (frequency indication × frequency reference uncertainty +1% × span +10% ×resolution bandwidth + marker resolution+1 Hz)				
Frequency reference uncertainty	= (aging rate × period of time since adjustment + temperature stability)				
Marker frequency counter					
Resolution	1 Hz				
Accuracy	±(marker frequency × frequency reference uncertainty +counter resolution)				
(marker level to displayed noise level > 25 dB; frequency offset 0 Hz)					
Frequency span					
Range	0Hz (zero span), 100 Hz to maximum frequency				
Resolution	1 Hz				
Accuracy	±span/(sweep points -1)				
SSB phase noise					
	<-100dBc/Hz@10kHz	< -90dBc/Hz@10kHz		< -95dBc/Hz@10kHz	
	(Center frequency 500 MHZ, RBW=100Hz, VBW=1Hz 20 °C to 30 °C)				
Resolution bandwidth (RBW)					
-3 dB bandwidth	1 Hz ~ 3 MHz	100 Hz ~ 1 MHz		1 Hz ~ 3 MHz	
Accuracy	± 5%, RBW = 1Hz to 1 MHz Nominal, ±20%, RBW = 3 MHz				
Resolution filter shape factor	< 5 : 1				
Video bandwidth (VBW)					
-3 dB bandwidth	1 Hz to 3 MHz, 1-3-10 sequence				

Amplitude specifications					
Measurement range	+30dBm to displayed average noise level (DANL)				
Input attenuator range	0 dB to 50 dB, in 10 dB steps				
Maximum safe input level					
Average continuous power	+30 dBm, (3 minutes maximum, Input attenuator≥20 dB, preamplifier off				
DC voltage	50V			25V	
Displayed average noise level					
Preamp on	≤−148dBm -160dBm Typical value	≤−128dBm -140dBm Typical value		≤−148dBm -160dBm Typical value	
Preamp off	≤−130dBm	≤−110dBm		≤−130dBm	

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Amplitude specifications(Cont'd)					
Level display range					
Log scale	10 dB to 100 dB, 10 divisions displayed; 1, 2, 5, 10 dB/division				
Linear scale	0% to 100%, 10 divisions displayed				
Scale units	dBm, dBmV, dBuV, dBuV/m, uV, mV, V, mW, W				
Sweep (trace) points	501				
Marker level readout resolution					
Log scale	0.01 dB				
Linear scale	≤1% of signal level Nominal				
Detectors	Normal, Positive peak, Sample, Negative peak				
Number of traces	3				
Level display range					
Trace functions	Clear/write, Maximum hold, Minimum hold, View				
Level measurement error	±(0.6 dB+frequency response), all frequency				
Frequency response	±1 dB				
Reference level					
Setting range	-110 dBm to +30 dBm steps of 1 dB				
Setting resolution Log scale	0.01 dB				
Linear scale Same as log	(2.236 μV to 7.07 V)				
Accuracy	0				
RF Input VSWR (at tuned frequency)					
	< 1.5:1, (10 MHz to 3 GHz, 10 dB or 20 dB attenuation)				
Spurious response					
Second harmonic distortion	< -70dBc, (Mixer signal level at -40 dBm, input attenuation 0 dB, preamp off)				
Third order intermodulation distortion	< -70dBc,(Two -30 dBm tones at input mixer, spaced by 1MHz				
	input attenuation 0 dB, preamp off)				
Input related spurious	< -60dBc, (-30 dBm signal at input mixer)				
Inherent residual response	<-88dBm, (Input terminated 50 Ω and 0 dB RF attenuation, preamplifier off)				

Sweep specifications	
Sweep time	
Range	10ms to 3000s, Span≥100 Hz;100μs to 100s, Span = 0 Hz (zero span)
Sweep mode	Continuous, single
Trigger source	Free run, Line trigger, External trigger
Trigger slope	Positive or Negative edge available

RF input	
Connector and impedance	
	N-Type female, 50 Ω Nominal.
10 MHz reference	
Reference input frequency	10 MHz
Reference input amplitude	0 dBm to +10 dBm
Reference output frequency	10 MHz
Reference output amplitude	0 dBm to +10 dBm
Connector	BNC female, 50 Ω Nominal

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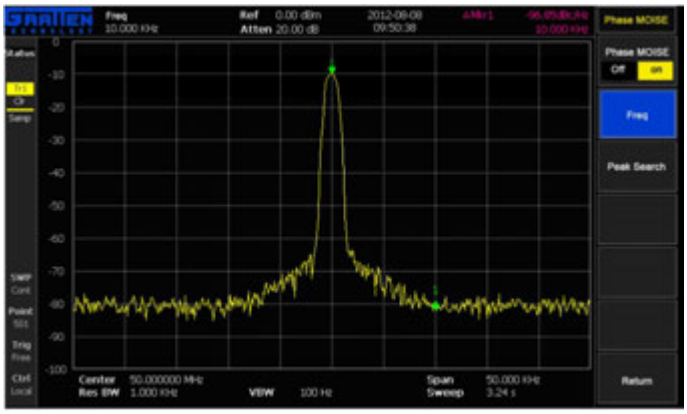
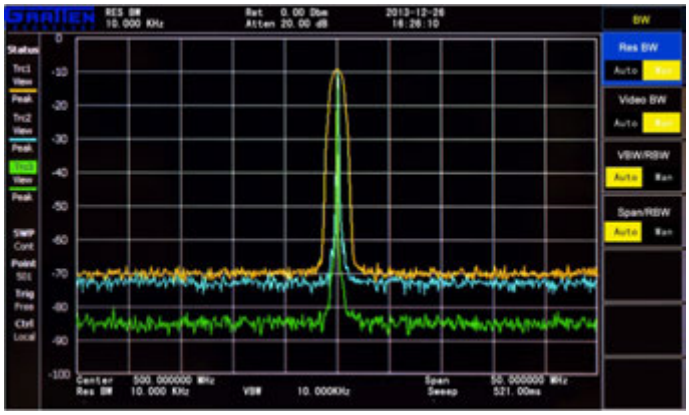
Auto Measurement Functions					
	Phase noise, Adjacent channel power, Occupied bandwidth.				
	Third order intermodulation distortion, Pass/Fail, Standing wave ratio.				
Interface					
Host connector	USB Type-A female				
Device connector	USB Type-mini AB female, LAN, RS232 or VGA				
General specifications					
Display					
Resolution	800 pixels x 480 pixels				
Size and type	8.5 inch TFT color display				
Languages	On-screen GUI: English, Simplified Chinese				
Power requirements					
Adaptor voltage	100 V to 240 V AC, Rate 50/60/400 Hz , Auto-ranging				
Power consumption	less than 35W				
Environmental and size					
Temperature range	0 °C to +40 °C (Operating) -40 °C to +70 °C (Storage)				
Relative humidity	< 95%				
Weight	less than 7kg				
Dimensions	410 mm × 210mm × 136 mm, Approximately (W x H x D)				
Tracking generator (Optional)					
Frequency range	5MHz～1.5GHz		5MHz～3GHz		5MHz～7.5GHz
Output level	0 dBm to -25 dBm, 1 dB steps				
Output flatness	± 3dB				
VSWR	< 2.0: 1, Nominal				
Connector and impedance	N-Type female, 50 Ω				
Standard/Optional	Optional	Standard	Optional		
AM / FM Demodulation Measurement					
AM Demodulation					
Modulation Frequency	20Hz～100kHz				
Frequency Accuracy	1Hz （Modulation Frequency＜1kHz） 0.1% （Modulation Frequency≥1kHz）				
Modulation Depth	5～95%				
Depth Measurement Precision	±4%				
FM Demodulation					
Frequency Accuracy	20Hz～200kHz				
Frequency Offset	1Hz （Modulation Frequency＜1kHz） 0.1% （Modulation Frequency≥1kHz）				
Frequency Offset Precision	20Hz～400kHz				
SINAD	±4%				
Measurement Range					
Measurement Precision	0～60dBc				
	±1dB				

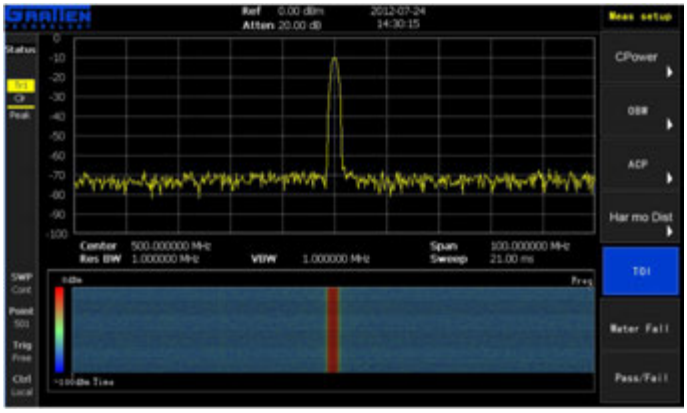
Advanced Measurement Functions



Phase noise measurement display

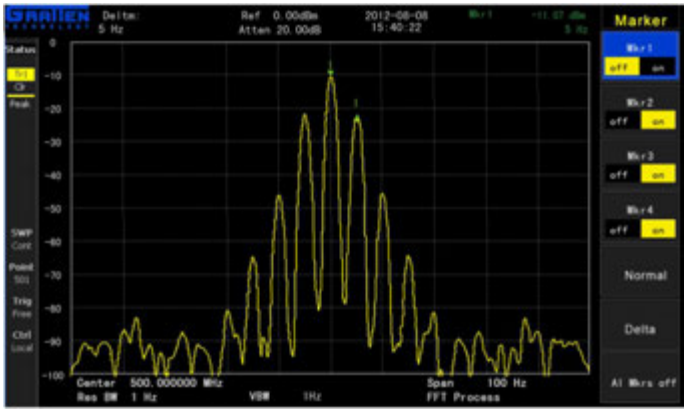


Three simultaneous trace display
at RBW 1M/100K/10K

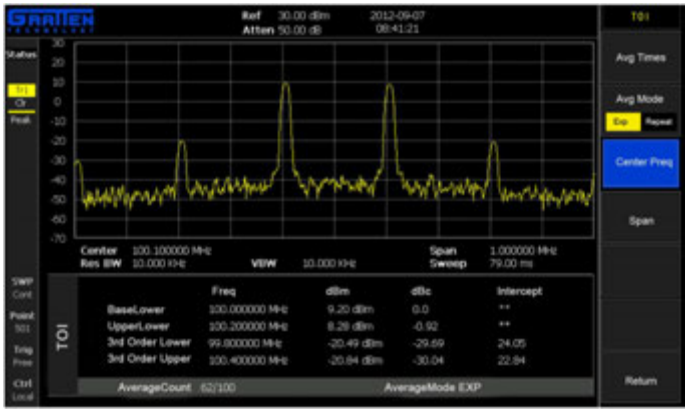


Waterfall plot display

Adjacent channel power



Distinguish similar nearby signal at RBW 1Hz



Third order intermodulation distortion