The RF Expert

Compact Vector Signal & Spectrum Analyzer

BA Series

3 YEAR Warranty

Carry Precision With You

The BA series provides real-time spectrum monitoring and analysis of RF frequency circuits with a wide frequency range of from 9kHz to 44GHz. Our analyzer has been developed for field engineers, technicians, wireless equipment manufacturers, service providers, contractors, tower erectors and military field personnel.

Bird combines best-in-class functionality with a compact package and boasts an intuitive touchscreen user interface. SH series lets you experience high performance and rich features that are available wherever you take it.

Signal bursts and transients can be viewed using the "Zero-span" function with video-level triggering (i.e. an oscilloscope with time on the x-axis) or "Waterfall" display (color-coded scrolling chart display) to analyze intermittent signal sources.

PRODUCT FEATURES

- Spectrogram/Waterfall display shows intermittent power levels at a glance.
- FM demodulation allows for rapid verification of communications at the specified frequency.
- Predefined measurements scan and discover spectrum events other analyzers miss.
- View the spectrum with trace display, spectrogram display, or both.
- More than 2x faster sweep times than the competition.
- High-resolution, full-color display for indoor and outdoor viewing.
- Rugged and weather resistant.

PREDEFINED MEASUREMENTS

- Channel Power
- Adjacent Channel Power Ratio (ACPR)
- Phase Noise
- N dB Down Bandwidth
- Occupied Bandwidth (OBW)
- Field Strength
- FM Demodulation
- CNR Loss (GNSS Signal Quality)
- Spectrum Masking and Limit Lines

Bird®

COMPACT VECTOR SIGNAL & SPECTRUM ANALYZER

BA SERIES

Product Overview

BA100 is a compact vector signal analyzer known for its excellent testing performance and measurement sensitivity, catering to the diverse requirements of RF signal test parameters and general spectrum tests. Additionally, it supports signal demodulation, including FM and Digital Signals. The PCB version module is also available for seamless system integration, complemented by an API library for convenient second development

Frequency range **9kHz to 6 / 7.5 / 18 / 31 / 44 GHz**	Aging **±1ppm**
Resolution Bandwidth **10 Hz to 5 MHz**	Second Harmonic Distortion **-80 dBc / -90dBc**
Third-Order Intercept --TOI **+15 dBm / +16.5 dBm**	
Measurement Range **DANL to +20 dBm**	Signal Demodulation **Digital signal**

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COMPACT VECTOR SIGNAL & SPECTRUM ANALYZER

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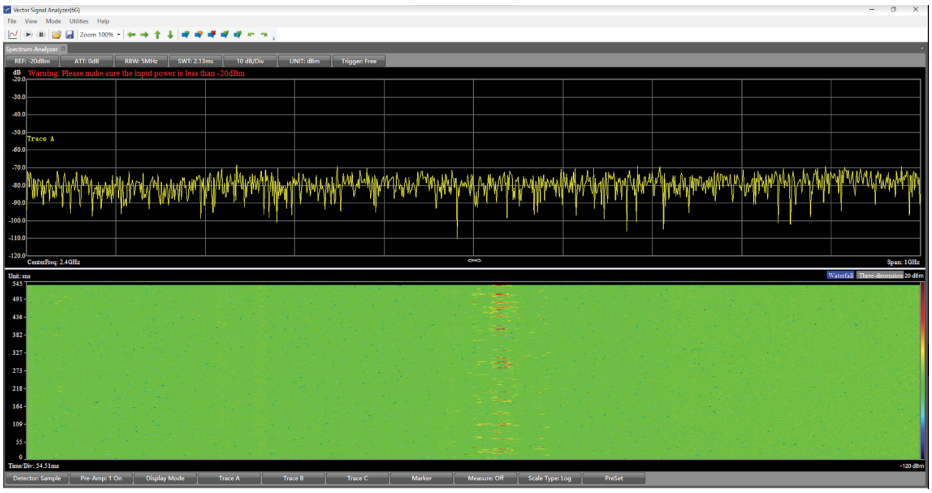
Functions

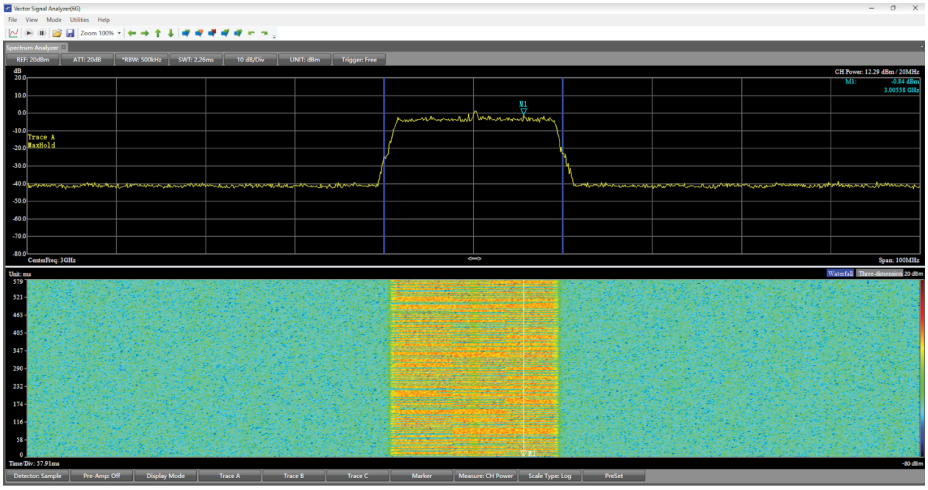
GENERAL SPECTRUM ANALYSIS

The BA100 provides spectrum testing including frequency and power measurements for conventional stable or periodic signals.



WATERFALL DISPLAY

With this function, the BA100 is able to display the frequency and amplitude changes within a spectrum as a function of time (Spectrogram), displaying the spectrum changes that's easily identifiable.



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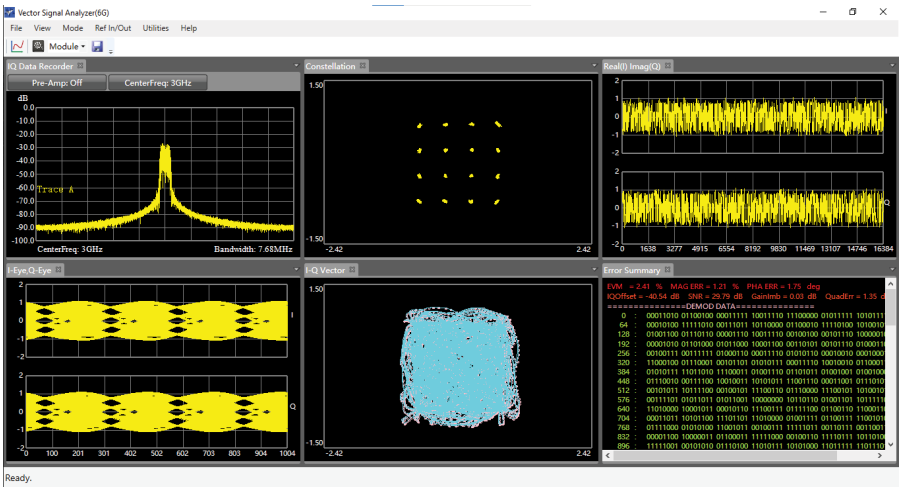
Functions

DIGITAL SIGNAL DEMODULATION

Supports ASK/PSK/FSK/QAM digital signal demodulation, providing various information eg. spectrum, constellation, EVM, etc.



FM DEMODULATION

This function allows the demodulated audio date to be stored in a PC.

IQ DATA RECORDER

Stores IQ data and saves it in a PC (.txt format) for future data playback an analysis .

SPECTRUM PLAYBACK

Allows IQ and Spectrum data (recorded by the BA100) to be played back in its own software.

ZERO SPAN MODE

Users are able to set the instrument's span to - and enter this mode (similar to an oscilloscope) when analyzing the time domain characteristics of a signal. Video trigger may also be used in this mode.

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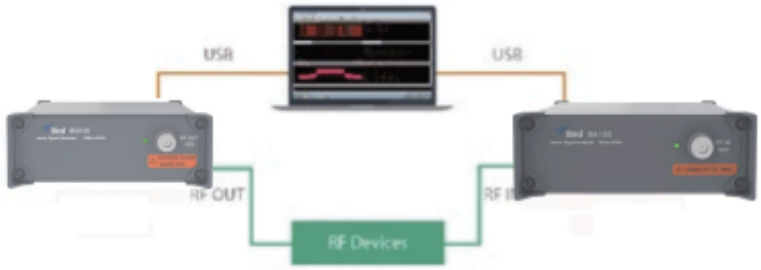
Applications

LABORATORY RF TEST

BA100 vector signal analyzer can perform RF testing in the laboratory. BA100 combines BG100 vector signal source can test intermodulation distortion of amplifiers, mixers, and receivers. This system can also test antennas, amplifiers, and attenuators' performance such as bandwidth, frequency response, and gain.



TEACHING APPLICATION TEST

BA100 vector signal analyzer, combine with BG100 vector signal source, enables a demonstration of the testing of RF microwave devices. It reduces the complexity of RF microwave professional teaching and meets the teaching needs of telecom and electronic engineering related majors.

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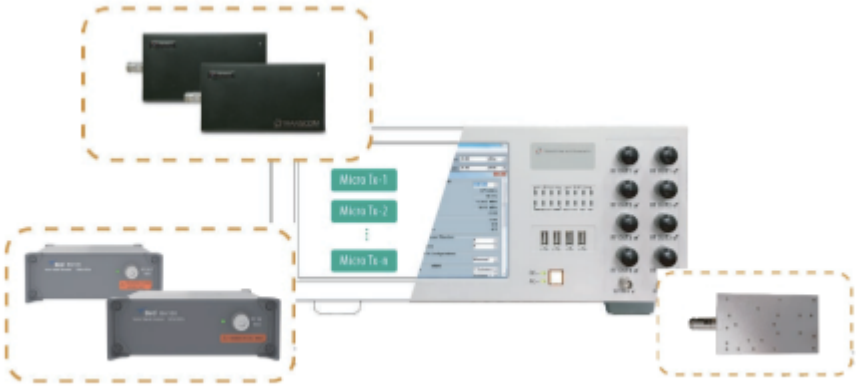
Innovative Features

COMPACT SIZE & FAST DEPLOYMENT

Thanks to its compact form factor, users will be able to build and conduct field tests easily.

SYSTEM INTEGRATION & SECONDARY DEVELOPMENT

Compact form factor, superior specifications, comprehensive telecommunication, general demodulation support and an open API Interface provides user with exactly what they need for a system integration. It also comes in three different product models, a full-sized USB module, a small-size USB module, and a PCB module.



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Specifications

Model	BA100-6G0	BA100-7G5	BA100-18G0
Frequency Range	9 kHz to 6 GHz	9 kHz to 7.5 GHz	9 kHz to 18 GHz
Aging	±1 ppm		
Sweep Time	1.2ms to 1600 s (full span); 2.69ms to 1600s (zero span)		1ms to 1600 s (full span), 1.25 ms to 1600 s (zero span)
Resolution Bandwidth	10 Hz to 5 MHz in 1, 2, 3, 5, 10 steps		
Second Harmonic Distortion	-80dBc		-90dBc
Third Order Intercept (TOI)	+15 dBm		
P1dB	0 dBm nominal		
Single sideband SSB, Phase Noise (dBc/Hz) - 10kHz offset	1GHz:-88 dBc/Hz, (-90 typ.)		1GHz: -109 dBc/Hz, (-110 typ.) 10GHz: -90 dBc/Hz, (-92 typ.)
Single sideband SSB, Phase Noise (dBc/Hz) - 100MHz offset	1GHz: -120 dBc/Hz(-122 typ.)		1GHz: -124 dBc/Hz, (-125 typ.) 10GHz: -118 dBc/Hz, (-120typ.)
Measurement Range/Dynamic Range	DANL to +20 dBm		
Input Attenuator Range	0 to 30 dB, 1 dB step		
Max Safe Input Level vs. Pre-amp"	All Amps Off : +30 dBm 1 Amp On: 0 dBm All Amps On: -20 dBm		
Reference Level Range	-140 dBm to +20 dBm		
RBW Switching Uncertainty	±0.3 dB		
Input Attenuator Uncertainty	±0.6 dB		
Display Average Noise Level,DANL (dBm/Hz)	Preamp Off: 1 GHz, -131 (typi-133); Preamp +20 dB: 1 GHz, -149 (typ -151); Preamp +40 dB: 1 GHz, -168 (typ -169);		Preamp Off: 1 GHz, -133 (typ -135); 10GHz, -128（typ:-130） Preamp +20 dB: 1 GHz, -146 (typ -148); 10GHz, -140（typ:-142） Preamp +40 dB: 1 GHz, -160 (typ -162); 10GHz, -153（typ:-155）
Residual Responses	-70 dBm		-65 dBm
Frequency Span Accuracy	±1%		
RBW Accuracy	≥1 MHz, ±10%, <1 MHz, ±2%		
Amplitude Accuracy	"±1.5 dB (Note: ATT set to 0 dB, input signal -5 to -30 dBm, detector set to positive, sensitivity set to low, RBW auto-coupled, all other settings auto-coupled, 23±5 °C. Half hour warm-up required.)		
Reference Level Accuracy	≥ -60 dBm, ±0.8 dB		
RF In	N (f), 50 ohm		2.4mm (m),50ohm
USB	USB type C		
Power Interface	DC12V		
OS	Window10 and above		
Operating Temperature	0 °C to 50 °C		
Storage Temperature	-20 °C to 70 °C		
Size	11.42 in × 6.89 in × 2.56 in (290 mm × 175 mm × 65 mm)		
Weight	3.97 lbs (1.8 kg)		

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COMPACT VECTOR SIGNAL & SPECTRUM ANALYZER

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Specifications

Model	BA100-31G0	BA100-44G0
Frequency Range	9 kHz to 31GHz	9 kHz to 44GHz
Aging	±1 ppm	
Sweep Time	1ms to 1600 s (full span), 1.25 ms to 1600 s (zero span)	
Resolution Bandwidth	10 Hz to 5 MHz in 1, 2, 3, 5, 10 steps	
Second Harmonic Distortion	-80dBc	
Third Order Intercept (TOI)	+16.5dBm	
P1dB	-5dBm nominal	
Single sideband SSB, Phase Noise (dBc/Hz) - 10kHz offset	1GHz: -108 dBc/Hz, (-110 typ.) 25GHz: -84 dBc/Hz, (-86 typ.)	
Single sideband SSB, Phase Noise (dBc/Hz) - 100MHz offset	1GHz: -127 dBc/Hz, (-129 typ.) 25GHz: -118 dBc/Hz, (-120typ.)	
Measurement Range/Dynamic Range	DANL to +20 dBm	
Input Attenuator Range	0 to 30 dB, 1 dB step	
Max Safe Input Level vs. Pre-amp"	All Amps Off : +30 dBm 1 Amp On: 0 dBm All Amps On: -20 dBm	
Reference Level Range	-140 dBm to +20 dBm	
RBW Switching Uncertainty	±0.3 dB	
Input Attenuator Uncertainty	±0.6 dB	
Display Average Noise Level,DANL (dBm/Hz)	Preamp Off: 1 GHz, -139 (typ -141); 25GHz, -130（typ:-132） Preamp +20 dB: 1 GHz, -151 (typ -153); 25 GHz, -138（typ:-140） Preamp +40 dB: 1 GHz, -161 (typ -163); 25GHz, -154（typ:-156）	
Residual Responses	< -65dBm	
Frequency Span Accuracy	±1%	
RBW Accuracy	≥1 MHz, ±10%, <1 MHz, ±2%	
Amplitude Accuracy	±1.5 dB (Note: ATT set to 0 dB, input signal -5 to -30 dBm, detector set to positive, sensitivity set to low, RBW auto-coupled, all other settings auto-coupled, 23±5 °C. Half hour warm-up required.)	
Reference Level Accuracy	≥ -60 dBm, ±0.8 dB	
RF In	2.4mm (m),50ohm	
USB	USB type C	
Power Interface	DC12V	
OS	Window10 and above	
Operating Temperature	0 °C to 50 °C	
Storage Temperature	-20 °C to 70 °C	
Size	11.42 in × 6.89 in × 2.56 in (290 mm × 175 mm × 65 mm)	
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Features & Ordering List

FEATURES	
Feature	Spectrum analysis, Waterfall plot,FM demodulation, Field strength measurement, AOA (Angle of Arrival) Interference Hunting,Channel Power, Occupied Bandwidth (OBW), Adjacent Channel Power Ratio (ACPR), Phase Noise,N dB Bandwidth
Sweep type	Continuous / Single measurement
Trigger Mode	Free Run Trigger/ Video Trigger (Zero Span)
Marker & Function	Supports up to 8 markers, including 1 reference marker and 7 delta markers.
Log Scale	1 dB/div ~ 10 dB/div, 0.1 dB step
Measurement Unit Options	dBm,dBuV,dBV,W,mW,uW,pW,V,mV,uV,A,mA,uA
Detector Mode	Positive Peak, Negative Peak, Sample, Average, RMS
Multiple Trace/Window Support	Supports up to 4 windows, each with independent parameter settings

ORDER LIST	
MRX-H002	100MHz Bandwidth (hardware upgrade)
MRX-H005	Lowest frequency from 5kHz
MRX-S002	I/Q Analyzer (IQ signal capture software)
MRX-S003	Spectrum playback software
MRX-S006	General Digital Demodulation
MRX-S008	FDD-LTE signal analysis
SPM-BY-05	Extended Warranty - 5 year

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