owon®

XSA3000-R Series

Real-Time Spectrum Analyzer + Vector Network Analyzer

Key Features

- Spectrum Analyzer Frequency Range from 9kHz up to 8GHz
- Vector Network Analyzer Frequency Range from 100kHz up to 8GHz
- 100% POI 6.25μs, Dynamic Range 60dB
- -165dBm/Hz Displayed Average Noise Level (Typ.)
- -106dBc/Hz.@10 kHz Offset Phase Noise (1 GHz, Typ.)
- 1Hz Minimum Resolution Bandwidth (RBW)
- Full Amplitude Accuracy < 0.7dB (Typ.)
- Preamplifier and Tracking Generator Standard
- Standard 100 MHz Real Time Analysis Bandwidth
- Distance to Fault Mode (Standard)
- Multiple display modes (Probability Density Spectrum, Time Power, 3D, etc.) for multi-dimensional viewing of complex transient signals
- EMI Measurement Software (Opt.)
- 10.4 inch Multi-Touch Screen , Mouse and Keyboard supported
- Web Browser Remote Control on PC and Mobile Terminals and File Operation
- Communication Interfaces: LAN, USB Device, USB Host

Product Introduction

The XSA3000-R series integrates real-time spectrum analysis and vector network analysis, covering 9kHz – 8GHz (spectrum) and 100kHz – 8GHz (VNA), meeting needs from R&D to production testing.

In spectrum analysis, the XSA3000-R delivers outstanding real-time performance with a 100% probability of intercept (POI) as short as 6.25 µs, and a spurious-free dynamic range up to 60dB. It offers a displayed average noise level (DANL) below

−165dBm/Hz, phase noise of −106dBc/Hz (10 kHz offset), and a minimum resolution bandwidth (RBW) of 1 Hz. With full-scale amplitude accuracy of 0.7 dB, it ensures high sensitivity and dynamic performance when capturing and analyzing transient or low-level signals.

Standard features include a tracking generator, preamplifier, and Distance to Fault mode. Multiple display modes, including probability density spectrum, time power, 3D visualization, enable multi-dimensional signal observation. It comes with 40 MHz real-time bandwidth (optional 100MHz) and optional EMI software.

The 10.4-inch multi-touch LCD supports mouse / keyboard, and enables remote monitoring via PC or mobile browsers. It provides LAN, USB Device, and USB Host interfaces make integration and data transfer easy. With powerful performance and versatility, the XSA3000-R is ideal for research, communications, manufacturing and maintenance.

Overview

1. 10.4-inch LCD, with multi-touch gesture support

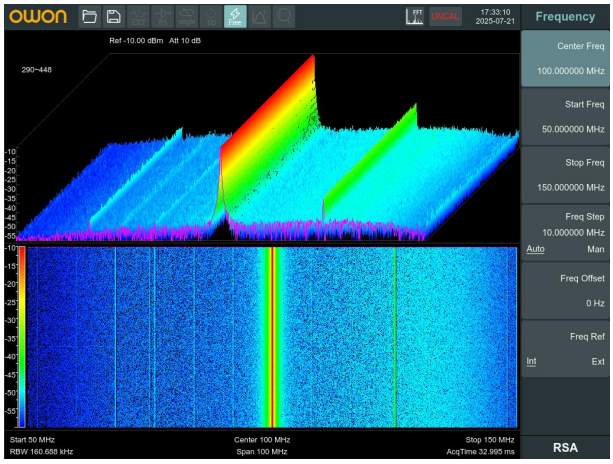
2. RF: 9kHz to 8GHz(max) VNA:S21 input port

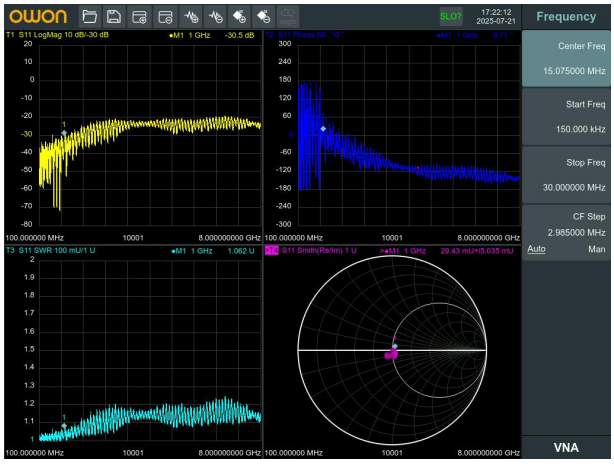
3. Tracking generator: 100kHz to 8GHz (max) VNA: S11 single port and S21output port

4. Earphone interface
5. USB Host
6. Handle
7. Adjustable Tilting Stand
8. HDMI
9. LAN
10. USB Device
11. Reference Clock Input/Output
12. External Trigger Port

A Spectrum Analyzer + Vector Network Analyzer

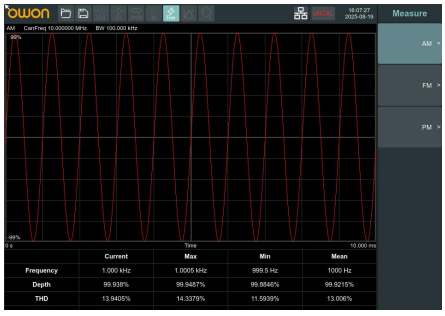
The XSA3000-R Series integrates full-featured Swept-Spectrum and Vector Network Analysis (VNA) modes. It supports multiple display formats including Probability Density Spectrum, Time Power, 3D enabling multi-dimensional visualization of complex transient signals. This all-in-one solution addresses diverse RF challenges, significantly reducing time costs and boosting engineering efficiency.





B Comprehensive Test Functions

a. Supports AM/FM/PM Demodulation Analysis

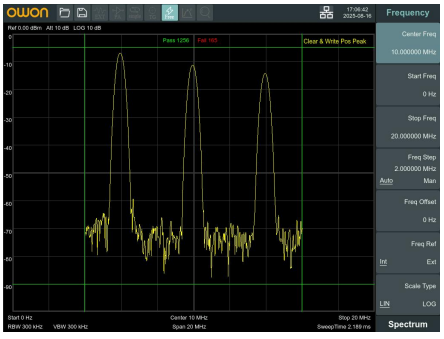


b. Fast Capture

Car remote key, CTPMS tire modules, and small wireless modules often use ASK/FSK modulation. The XSA3000-R can capture ASK/FSK signals, directly acquiring parameters such as centerfrequency,power,and deviation.

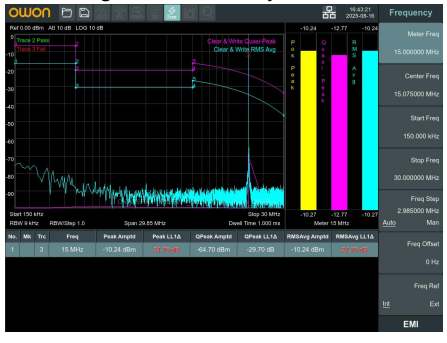
c. PASS/Fail

Quickly determines whether the test results meet the required standards.



d. EMI Measurement Mode

The EMI measurement mode is equipped with an EMI filter and quasi-peak detector, with standard limit lines.Optional EMI pre-test software (instrument or PC) offers over 200 built-in EMC standard templates for automatic analyzer setup, data recording, and on-screen comparison. Users can also define custom regulations for analysis.



e. Waterfall Display

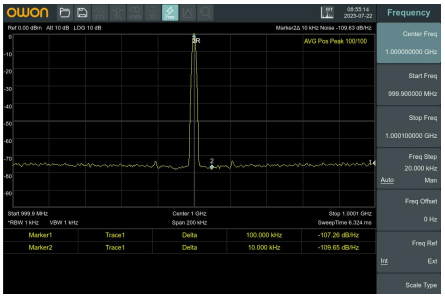
Shows how signal parameters change over time, allowing tracking of frequency and power variations, especially for intermittent signals. Users can analyze signal stability or identify intermittent interference in communication systems.

f. Adjacent Channel Power Ratio (ACPR)

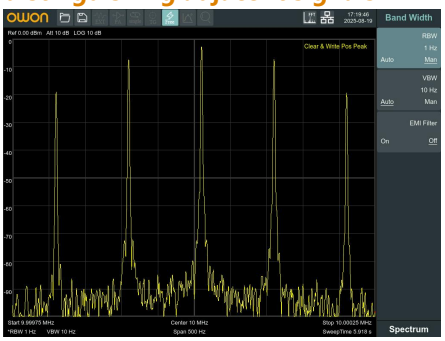
Used to measure the power leakage of a transmitted signal into adjacent channels, evaluating transmitter linearity and interference levels. It helps engineers assess whether RF components such as power amplifiers meet communication standards, ensuring high-quality transmission and efficient spectrum utilization in multi-channel systems.

C Superior Performance

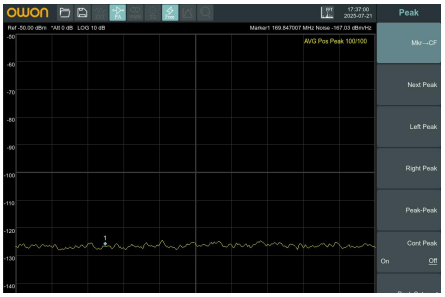
a. Phase noise below -106dBc/Hz @ 1 GHz, 10 kHz offset



b. Minimum resolution bandwidth (RBW) down to 1Hz, effectively distinguishing adjacent signals



c. Displayed average noise level as low as -165dBm/Hz



D Ease of Use

a. 10.4-inch multi-touch LCD with gesture support

b. Supports remote monitoring via web browser

Allows users to view and control tests anytime, anywhere. No dedicated software installation is needed, enabling easy operation, real-time data sharing, facilitating team collaboration, and improving testing efficiency and safety.

c. Supports external mouse and keyboard

Significantly improves operational flexibility and efficiency, especially for parameter input, file editing, or complex settings, providing a smooth operation in labs or fixed test environments.

E Optional Accessories

ORF5060 near-field probe

50Ω N-type or 3.5mm mechanical calibration kit

Main Specifications

The specifications apply under the following conditions:

- The instrument has been warmed up for at least 30 minutes prior to use.
- The instrument is within the calibration cycle and has undergone self-calibration.

Model	XSA3036-R	XSA3060-R	XSA3080-R
Frequency Range	9kHz - 3.6GHz	9kHz - 6GHz	9kHz - 8GHz
Resolution Bandwidth (RBW)	1Hz - 5MHz		
DANL	-165 dBm/Hz		
SSB Phase Noise	-106 dBc/Hz		
Third-order Intercept Point(TOI)	+14 dBm		
Amplitude Accuracy	＜0.7dB		
Tracking generator	100kHz - 3.6GHz	100kHz - 6GHz	100kHz - 8GHz
Real-time Analysis Bandwidth	100MHz		
Spurious-Free Dynamic Range (SFDR)	60dB		
100% Response Shortest Signal Duration	6.25μs		
Real-time Spectrum View	Probability Density Spectrum, Waterfall Chart, 3D Spectrum, Time Power Spectrum		
Vector Network Analysis, (VNA)	Vector S11, Vector S21		
Network Analysis Dynamic Range	90dB		
Cable Fault Location	Distance to fault		
Advanced Measurement Functions	CHP, ACPR, OBW, CNR, Harmonic, Monitor, CCDF, SEM, TOI		
Vector Signal Analysis	AM, FM, ASK		
Electromagnetic Compatibility Testing	EMI Filter and Quasi-Peak Detector, Log Scale and Limit Line		
Communication Interfaces	LAN, USB Device, USB Host		
Remote Control Capability	SCPI / Labview / IVI based on USB-TMC / VXI-11 / Socket / Telnet		
Remote Controller	NI-MAX, Web Browser, Easy Spectrum software, File Explorer		
Display	10.4-inch LCD, supports multi-touch, mouse, and keyboard		

Standard Accessories The accessories subject to final delivery.

USB Cable

Power Cord

Quick Guide

N-BNC

Ordering Information

Order Information	Order Number
Product Information	
Real Time Spectrum Analyzer 9kHz - 3.6GHz, Preamp and TG standard, VNA standard, 100 MHz Analysis Bandwidth	XSA3036-R
Real Time Spectrum Analyzer 9kHz - 6GHz, Preamp and TG standard, VNA standard, 100 MHz Analysis Bandwidth	XSA3060-R
Real Time Spectrum Analyzer 9kHz - 8GHz, Preamp and TG standard, VNA standard, 100 MHz Analysis Bandwidth	XSA3080-R
Standard Accessories	
Quick Guide / Power Cord	————
USB Device Cable	7ULD10
N-BNC Adaptor	7AN-B-6
Common Optional Accessories	
N - N Cable，1m, 6G,	7LN-N-610
N- SMA Cable，1m， 6G	7LN-SAM-610
SMA - SMA Cable, 1m, 6G	7LSAM-S-610
SAM (F) Adaptor	7ASMA-KK-6
N - SMA Adaptor，6G	7AN-SAM-6
N - SMA Adaptor，3G	7AN-SAM-3
433M Line	7SAL433
VNA Optional Accessories	
N type Economic Calibration Kit，DC - 6GHz, 50Ω，Female end	CF5506-F
N type Economic Calibration Kit，DC-6GHz, 50Ω，Male end	CF5506-M
N type Economic Calibration Kit，DC-9GHz, 50Ω，Female end	CF5509-F
N type Economic Calibration Kit，DC-9GHz, 50Ω，Male end	CF5509-M
3.5mm type Economic Calibration Kit，DC-6GHz, 50Ω，Female end	CF6506-F
3.5mm type Economic Calibration Kit，DC-6GHz, 50Ω，Male end	CF6506-M
3.5mm type Economic Calibration Kit，DC-9GHz, 50Ω，Female end	CF6509-F
3.5mm type Economic Calibration Kit，DC-9GHz, 50Ω，Male end	CF6509-M
EMI Measurement Options	
EMI Measurement Software (Embedded)	EMI_LC
EMI Measurement Software (PC-based)	EMI_PC
1MHz - 6GHz Near Field Probe Kit: 3 H-probes (45/30/13 mm), 1 E-probe (3 mm)	ORF5060
Warranty Period	
The warranty for the main unit is three years, excluding accessories.	

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