

## XWF Series Signal Analyzer



Signal analyzer is an experimental and research tool used for deep analysis of electrical signals, providing spectrum, time domain, and modulation analysis. It is widely used in wireless communication, scientific research and teaching fields, and can accurately measure parameters such as signal frequency, power, modulation quality, etc., to assist in system optimization and debugging.

The XWF series signal analyzer, with its independently developed low phase noise frequency synthesizer, fast sweep frequency, and vector demodulation technology, is leading the way in meeting the requirements of 3G/4G/5G vector signal analysis, especially in the field of 5G demodulation.

### Product Highlights

#### Comprehensive Functionality

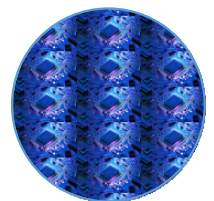
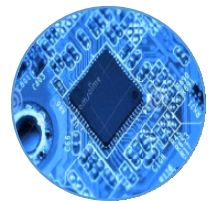
- **High precision spectrum analysis.** Wide frequency range, supporting up to 8GHz, with high resolution and dynamic range, capable of accurately measuring various characteristics of signals in the frequency domain. Among domestic RF instruments, it is industry-leading to support 5G NR and NB-IoT standards with outstanding amplitude accuracy and frequency response performance.
- **Multidimensional measurement.** Not only support spectrum measurement, time-domain measurement, power measurement, and measurement according to defined templates, but it also supports functions such as adjacent channel power suppression ratio measurement and peak to average ratio measurement.
- **Special features.** Support vector signal analysis functions such as EVM, phase error, frequency error, delay measurement IQ offset, 1024QAM high-order demodulation cell ID automatic detection, SSB frequency domain position automatic search, multi carrier bandwidth setting, MIMO measurement, etc., to meet the requirements of complex application scenarios.

#### Independent Research and Development

- **Independent patent research and development.** Independently developed instrument system architecture, hardware design, application software and algorithm implementation, has applied for multiple patents, ensuring safety and reliability without information security risks.
- **Technology leadership and customized development.** Continuously promoting technological innovation, closely following industry standards and user needs, with the ability to carry out targeted functional expansion and customized development.

#### Easy To Use

- **Portable design.** Adopting a lightweight and compact design, the internal components are highly integrated, reducing both volume and weight while ensuring the stability and durability of the instrument.
- **User friendly interface.** Adopting an intuitive and easy-to-use graphical user interface, simplifying the measurement setup process, supporting one click measurement and fast scanning functions.
- **High automation.** Equipped with automatic testing sequences, intelligent recognition of signal types, and automatic calibration functions, significantly improving testing efficiency.
- **Remote control and data export.** Supports LAN interface for remote control, and can easily export test results and generate reports.



## High Quality Service

- **Comprehensive technical support.** Provide detailed user manuals, online help resources, and technical training to ensure that users are proficient in instrument operation.
- **Regular upgrades and maintenance.** Continuously providing update services, firmware versions can be upgraded with just one click to ensure that the instrument functions keep up with the times. At the same time, professional calibration and maintenance services are provided to ensure the long-term stability and accuracy of the instrument.



## Widely Applicable

- **Communication network construction and maintenance.** Widely used in the planning, construction, and daily operation of communication networks, including base station transmission power, coverage effect, interference source positioning, etc.
- **Equipment development and certification.** During the development, production, and certification stages of wireless communication equipment, it is used to ensure the quality and compliance of the transmitted signals of the equipment.
- **Educational and research.** Providing the measurement and analysis of signal characteristics for universities and research institutes, it can be applied in teaching demonstrations, research experiments, and new technology exploration.



## Specifications

Items	Sub items	Parameter
Frequency	Range	XWF-6G: 9kHz ~ 6GHz; XWF-8G: 9kHz ~ 8GHz
	Aging per year	≤ ±0.1ppm/year
Range	Reference power accuracy	±0.23dB
	Input attenuator	6 ~ 36dB
	Adjustable step size for attenuator	2dB
Spectrum purity	Average noise	-160dBm/Hz
	Phase noise	-100dBc/Hz, @1GHz, 100k
	RBW	1Hz ~ 3MHz
Vector analysis	Analyze bandwidth	100M
	64QAM	0.5% Typical values
	256QAM	0.6% Typical values
	1024QAM	0.6% Typical values
Appearance	IO Interface	USB, LAN
	Monitor	8 Inch, TFT LCD
	Weight	14.34kg
	Dimensions	360*350*170mm (Without handles and feet)

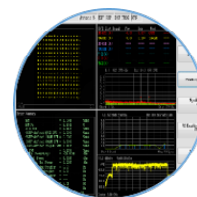
## Functions

Mode	Features	
Spectrum analysis mode	Basic control	Frequency (Center frequency, starting frequency, ending frequency)
		Span (sweep width range, full sweep width, zero sweep width)
		AMPTD (reference level, attenuation, scale)
	Scan Settings	BW (resolution bandwidth RBW, video bandwidth VBW, aspect ratio VBW/RBW)
		Trace (select trace, trace type, Detector)
		Sweep (scan mode, sweep time, and time gate settings)
	Cursor settings	Peak → intermediate frequency
		Peak value → next peak point
		Peak value → previous peak point
		Peak value → Set peak search range (threshold)
		Select Marker (Select tags)
		Normal (Select tag again)
Delta (Bandwidth and power difference)		
Measurement settings	Mark Noise (Noise marking)	
	Mode (Spectrum, W-CDMA, LTE, NB-IoT, NR-5G)	
	Channel Power (Power, power spectral density)	
	Occupied BW (Bandwidth occupied by power)	
	ACP (Main channel power, adjacent channel power)	
Vector signal analysis mode	NR Demodulation	Spectrum Emission Mask (Spectrum emission template)
		CCDF (Complementary Cumulative Density Function Diagram)
		ModeSetup Configuration (uplink and downlink configuration, bandwidth and subcarrier spacing settings)
		MeasSetup Configuration (Test mode configuration, modulation mode configuration in custom mode, frame format configuration, demodulation data length configuration, optional low-frequency and millimeter wave high-frequency bands, bandwidth and subcarrier configuration, sampling rate configuration, frequency and time-domain demodulation data configuration, configuration ID, specified time slot and symbol demodulation, RB configuration, spectrum flipping, channel estimation smoothing and equalization mode configuration, phase compensation configuration, synchronization related parameters configuration, Pdsch and its DmRs related configuration, Pdcch related configuration, broadcast SSB related configuration, multi carrier filter configuration, interface pause)
	LTE demodulation	ModeSetup Configuration (Upstream and downstream configuration, bandwidth and RB number settings)
		MeasSetup Configuration (TDD FDD configuration, bandwidth configuration, synchronization mode configuration, special subframe configuration, UL/DL configuration specifies time slot and symbol demodulation, CP configuration, test mode configuration, demodulation length configuration, RB configuration, configure, spectrum flipping)
	NB_IOT demodulation	ModeSetup Configuration
		MeasSetup Configuration (PCI configuration, bandwidth type configuration, physical cell ID configuration, wireless network identifier rnti configuration, CP mode configuration, modulation mode configuration, specified time slot and symbol demodulation, channel power configuration, configuration of multi carrier filter)
	W-CDMA Demodulation	ModeSetup Configuration
		MeasSetup Configuration (Synchronization mode configuration, scrambling code configuration, testing mode configuration, capture data length configuration, and spectrum flipping configuration)

## Application scenarios

### Network Planning and Deployment

- The XWF series signal analyzer can be used for surveying wireless environments, determining the optimal location and transmission power of base stations, ensuring continuous network coverage, high spectrum utilization, and building high-quality communication networks.
- Can test the downlink signal strength, uplink reception performance, and handover performance of cell overlap areas of base stations, optimize network architecture and parameters, etc.



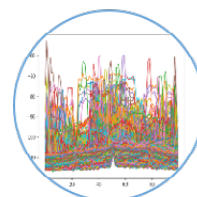
### Equipment research and production

- In the research and development stage of IoT devices (such as sensors, smart meters) or terminal products such as mobile phones, the XWF series signal analyzer can be used to verify whether the transmitted signals of the devices meet standard specifications, including power, spectrum, modulation quality, bit error rate, etc.
- In the quality control process of the production line, the XWF series signal analyzer can be used for factory testing to ensure that the wireless performance of each factory equipment meets the expected communication effects and performance indicators.



### Network Optimization and Troubleshooting

- During network operation, when there are issues such as decreased network performance and increased user complaints, the XWF series signal analyzer can be used for on-site testing to accurately measure and deeply analyze network signal quality, frequency response, and other characteristics. It can identify and locate network problems such as interference sources, weak signal areas, and call drop hotspots.
- For NB IoT devices, the XWF series signal analyzer can also analyze key parameters such as network signal strength, coverage range, connection stability, and interference under low power consumption.



### Regulatory and Compliance Testing

- Relevant government departments and regulatory agencies use the XWF series signal analyzer to conduct compliance checks on operators' networks, ensuring compliance with radio spectrum usage rules and avoiding interference with other wireless services.
- For equipment manufacturers, the XWF series signal analyzer can be used for network certification testing to ensure that the product meets the national and regional radio equipment access requirements.



### Research and Teaching

- In the research of communication technology, the XWF series signal analyzer can be used to collect and analyze actual signals of new modulation technologies, multiple access technologies, MIMO systems, etc., promoting theoretical research and technological progress.
- In higher education and vocational training, the XWF series signal analyzer can be used as an important experimental equipment to help students understand and practice the working principles and testing methods of wireless communication systems.

