



PXA *Drive your evolution*

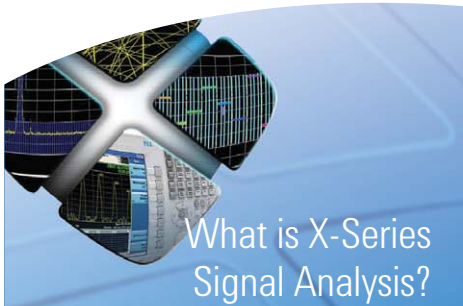


## PXA X-Series Signal Analyzer N9030A

- 3 Hz up to 50 GHz frequency range
- Up to 75 dB spurious-free dynamic range with 160 MHz analysis bandwidth
- $\pm 0.19$  dB amplitude accuracy
- $-172$  dBm DANL with Noise Floor Extension technology



**Agilent Technologies**



## What is X-Series Signal Analysis?

### Future-ready

Optimize your investment and extend instrument longevity with upgradeable processor, memory, connectivity, and more to keep your test assets current today and tomorrow.

### Consistent measurement framework

Achieve measurement integrity across your organization and drive more productivity in less time by leveraging a proven foundation for signal analysis and identical operation across the X-Series instruments.

### Broadest set of applications

Address the changing demands of technology with more than 25 measurement applications, the ability to run software inside the open Windows® operating system, and a first-to-market track record in emerging standards.

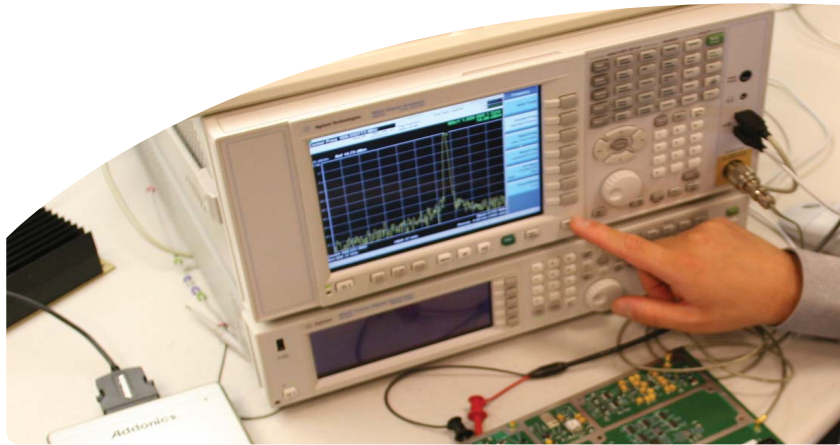
Stay ready, stay in sync, and **arrive ahead**—with the Agilent X-Series.



## Summary of Key Specifications

Frequency ranges	Minimum: 3 Hz
	Maximum: 3.6, 8.4, 13.6, 26.5, 43, 44, 50 GHz
	Up to 325 GHz and beyond with external mixing
Analysis bandwidth	10, 25, 40, and 160 MHz
Displayed average noise level (DANL)	-172 dBm at 1 GHz, preamplifier and noise floor extension on
Third-order intermodulation (TOI) distortion	+22 dBm at 1 GHz
W-CDMA ACLR dynamic range	-83 dBc (-88 dBc nominal) with noise correction on
Phase noise	-129 dBc/Hz at 10 kHz offset (1 GHz carrier)
Amplitude accuracy	± 0.19 dB

[www.agilent.com/find/X-Series](http://www.agilent.com/find/X-Series)



## Drive Your Evolution

In real-world signal analysis, the ability to evolve equals success. For future designs, excellent measurement performance enables detailed analysis of complex signals. For existing technologies, versatile capabilities help you reduce product cost. And for legacy test systems, drop-in replacement ensures ongoing stability.

Designed for the real world, Agilent's future-ready PXA signal analyzer is the evolutionary replacement for your current high-performance analyzer. It helps you sustain past achievements, enhance current designs, and accelerate future innovations. Take control with the PXA signal analyzer—and drive your evolution.

## Evolve in R&D

With the performance and flexibility of the PXA, you'll be equipped to create state-of-the-art original designs. Unravel complex signals through the PXA's broad set of measurement applications and demodulation capabilities, such as the Agilent 89600 VSA software and MATLAB.

## Evolve in operations (ATE)

The ATE system you create today will be able to keep pace with future changes. Through its outstanding speed and performance, the PXA will help you reduce measurement uncertainties and improve yields.

Whatever the pace of your product life cycle, you can drive your evolution with the Agilent PXA signal analyzer.



## What it means to be "future ready"

A truly future-ready signal analyzer offers flexibility to upgrade and enhance every major subsystem: mechanical, electronic, firmware, and software. The PXA delivers in all four areas:

- A mechanical assembly that provides seven expansion slots for future enhancements
- A removable CPU motherboard that enables CPU, memory, and I/O upgrades
- GPIB and LXI/LAN ports for automated testing
- Firmware-based measurement applications that add specific or standards-compliant capabilities
- An open Windows operating system that lets you run software applications inside the analyzer

These capabilities let you and the PXA evolve as your needs change—and help protect your equipment investment.



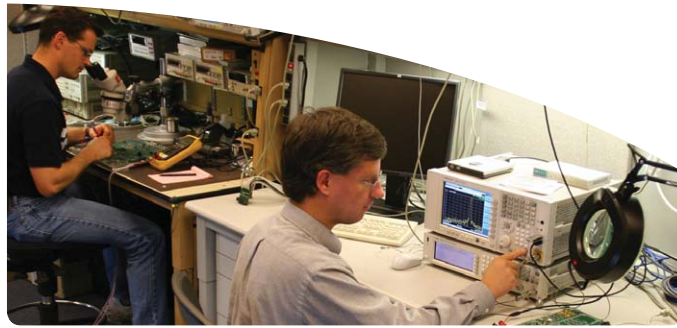
**You Can Upgrade!**

Options can be added after initial purchase.

## Go deeper with Noise Floor Extension

In 2000, we introduced near-noise correction for ACPR measurements in the PSA signal analyzer. Today, our Noise Floor Extension (NFE) technology provides a dramatic improvement in the PXA signal analyzer's ability to accurately measure low-level signals approaching the theoretical "kTB" noise floor.

NFE compensates for the noise contribution from active microcircuits in the RF and IF chain. The foundation of this technique is a comprehensive calibration procedure performed prior to shipment. With increased averaging, the analyzer's effective noise floor can be extended by up to 10 dB because 90% or more of the contributed noise power is predictable, which means it can be measured, calibrated, and then eliminated during normal measurements.



## Maximize Signal Insights With Outstanding Performance

### Measure with confidence

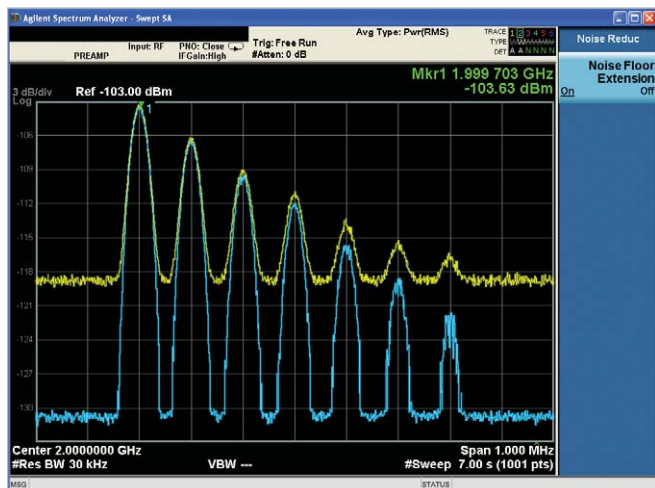
The PXA is ideally suited for high-performance R&D applications in aerospace defense and commercial wireless communications. The PXA analyzes signals over wider bandwidths, reduces measurement uncertainty, and reveals previously hidden signals with:

- Super-wide IF technology that provides almost twice the PSA's internal measurement bandwidth, an industry-leading 160 MHz, with up to 75 dB of spurious-free dynamic range
- $\pm 0.19$  dB power measurement accuracy
- $-172$  dBm/Hz effective sensitivity (DANL, at 2 GHz using NFE and optional RF preamp on)

- Excellent TOI distortion of +22 dBm at 1 GHz with up to  $-88$  dBc 3GPP ACPR and 115 dB of third order dynamic range at 2 GHz
- $-129$  dBc/Hz at 10 kHz offset close-in phase noise (1 GHz carrier)
- Signal measurement up to 50 GHz, or up to 325 GHz and beyond with external mixing

For greater insight, we offer Agilent-exclusive NFE technology (see sidebar). Within the PXA, this technique reduces the measurement noise by up to 3.5 dB for CW and pulsed signals and up to 8 dB for noise-like signals.

Every PXA also includes I/Q analyzer functionality and the Agilent PowerSuite. I/Q analyzer allows viewing of magnitude, phase, or I/Q behavior for complex modulated signals over the maximum available analysis bandwidth. PowerSuite provides a wealth of one-button, standards-based measurements such as TOI, harmonic distortion, and burst power.



Noise Floor Extension technology



## Achieve Faster Throughput and Greater Efficiency

Hewlett Packard and Agilent have contributed decades of innovations and product excellence in spectrum and signal analysis. Naturally, many users of our past-generation analyzers are looking to migrate to the latest technology with more performance, faster measurement time, and the highest level of backwards compatibility.

### Up to 70% faster to improve measurement time

Enhance your test systems with the power of the PXA. Compared to past-generation analyzers, the PXA offers improved speed and performance, leading to improved yields and reduced measurement uncertainties.

The PXA's speed advantage can translate into fewer test stations. It provides up to 70% faster test times than the Agilent PSA spectrum analyzer, and is often much faster than the HP/Agilent 856x spectrum analyzers.

### Expect great reliability and uptime

To help you maximize system uptime, expect the PXA to provide excellent reliability based on the proven dependability and reliability of the X-Series. X-Series instruments share a common architecture and simplified design that includes one-third fewer major subassemblies compared to our past-generation analyzers.

### Simplify migration and match past results

We've also made it easy for you to migrate PSA-based systems. By design, the PXA utilizes the same command language (SCPI) as the PSA for the most commonly used spectrum and signal analysis functions. The PXA also includes extensive command aliasing, which allows it to parse, accept, and process legacy PSA commands without interruption.

To further maximize compatibility, the PXA is designed to match previous results through core spectrum measurements that use the same proven algorithms as several other Agilent signal analyzers.

Learn more by downloading the "Why Migrate from the PSA to the PXA" technical overview, literature number 5990-3990EN.



[www.agilent.com/find/psa2pxa](http://www.agilent.com/find/psa2pxa)

# Reveal New Levels of Signal Detail with Advanced Capabilities

Today and tomorrow, you can configure and reconfigure the PXA to fit evolving requirements. This starts with optional advanced measurement applications such as noise figure, phase noise, cellular communications, wireless connectivity, and digital video. Identical across the X-Series, these applications use the same measurement algorithms and provide consistent results whether you run them on the PXA, MXA, EXA, or CXA. To save time, ensure ease of use, and simplify programming, all four models use the same user interface and SCPI commands.

The ability to run the same library of X-Series advanced measurement applications ensures consistent, repeatable results. Available transport of the applications across the X-Series lets you mix and match the hardware that provides your required levels of performance for the specific measurement at hand.

Our integrated approach to the X-Series control code, applications, functions, and user interface ensures a seamless transition from R&D to manufacturing. To enhance ease-of-use, the user interface retains the look and feel of our classic spectrum analyzers while giving you access to a wealth of advanced measurement techniques and analysis capabilities.

## Delve deeply into complex and modulated signals

Agilent's industry-leading 89600 VSA software and VXA measurement application provide comprehensive signal visualization and analysis in the time, frequency, and modulation domains. With support for over 75 signal standards and modulation types, you'll be ready to analyze radar and communications signals, modulations from 2 FSK to 1024QAM, and standards ranging from RFID to LTE-Advanced.

## Do more with built-in capabilities; optimize connectivity and control

For power and noise-figure measurements, the PXA includes built-in support for USB power sensors and Agilent smart noise sources (SNS Series). As a system controller, the PXA can also control other instruments through its GPIB, LAN, and USB ports, and the Windows XP Pro operating system. In controller mode, the PXA can replace the test-system PC, potentially simplifying system architecture as well as security procedures in classified military ATE applications. In addition, external mixing allows you to measure signals up to 325 GHz and beyond.

## 89600 VSA software

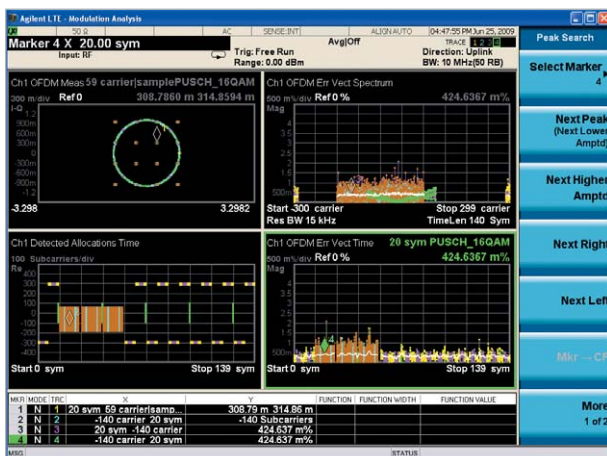
On the leading edge of wireless design, signal interactions can cause the unexpected. Recognizing there is a problem is relatively easy—achieving the clarity to find the root cause is the real challenge.

Agilent 89600 VSA software is your window into what's happening inside complex wireless devices.

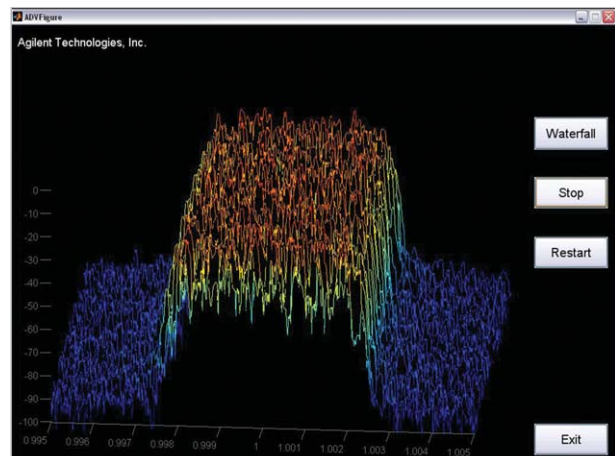
[www.agilent.com/find/89600\\_VSA](http://www.agilent.com/find/89600_VSA)

## Explore evolving standards

If you're analyzing evolving signals and standards, built-in drivers make it easy to integrate the PXA into your MATLAB environment. To help you get started, we provide several example programs and an application note that explains how to develop your own programs or applications in MATLAB.

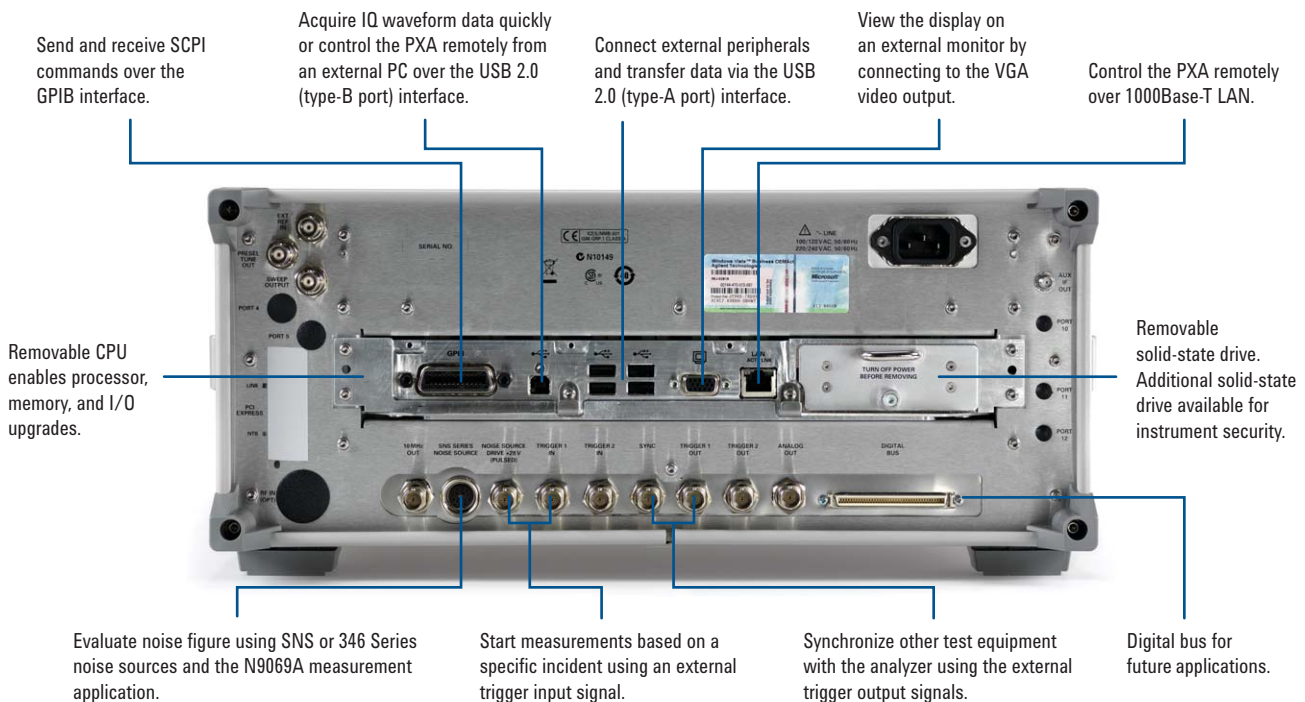
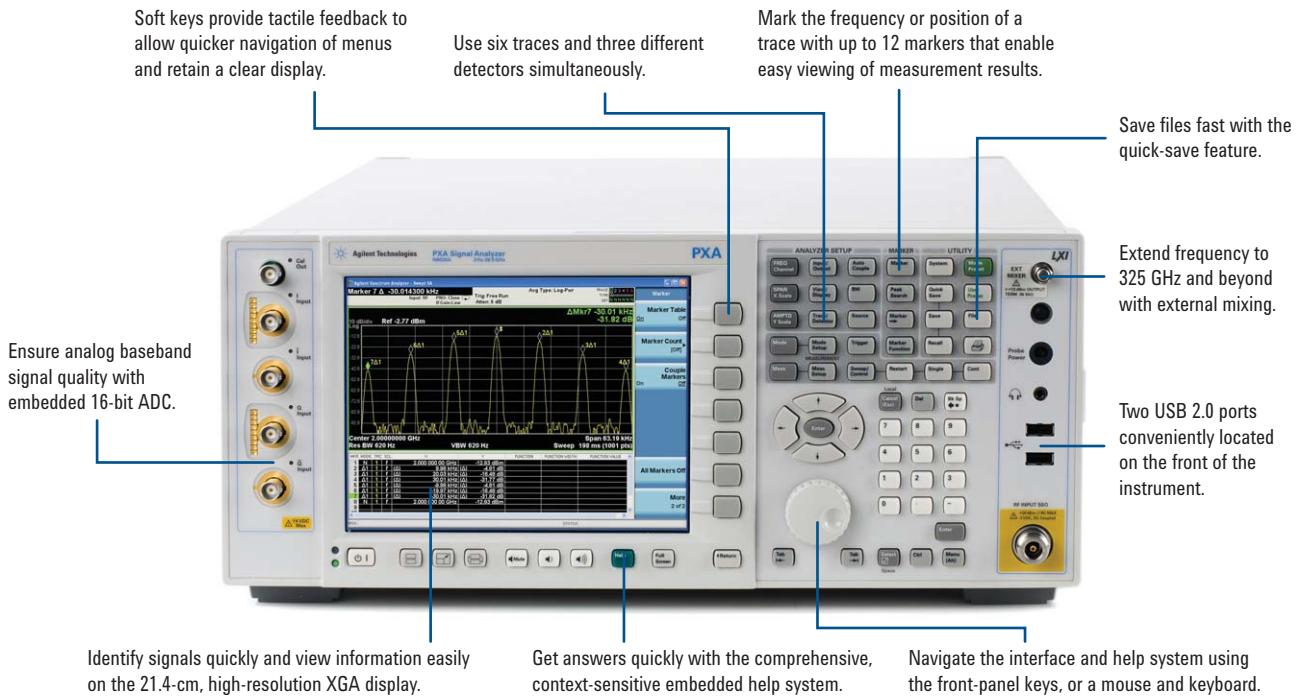


LTE modulation analysis (N9080A)



MATLAB application (N6171A)

# PXA Front and Rear Panels



# Related Literature

## Agilent PXA Signal Analyzers

*Data Sheet* 5990-3952EN

*Configuration Guide* 5990-3953EN

*X-Series Measurement Applications Brochure* 5989-8019EN

*X-Series Signal Analysis Brochure* 5990-7998EN



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