N9020A MXA
X-Series Signal Analyzer

- 20 Hz to 3.6, 8.4, 13.6, or 26.5 GHz frequency range
- +0.23 dB absolute amplitude accuracy
- +16 dBm TOI, -166 dBm DANL
- Up to 40 MHz analysis bandwidth
- Supports more than 25 advanced measurement applications
- Programming language compatible with PSA Series and HP8566/68, 856X Series spectrum analyzers

Agilent Technologies

Superior performance

- 1 Hz to 8 MHz RBW
- 1 dB attenuation step
- Up to 40001 points per trace
- 78 dB W-CDMA ACLR dynamic range
- 40 MHz analysis bandwidth

Broadest set of applications

Enhanced spectrum analysis with more than 25 advanced measurement applications covering communications, wireless connectivity, and general purpose applications.

Industry-leading 89600B vector signal analysis (VSA) software running inside for advanced modulation analysis.

Modern connectivity

- USB 2.0 – seven ports
- LAN – 1000Base-T
- GPIB – Controller or Device
- LXI – class-C compliant

www.agilent.com/find/mxa

Summary of Key Specifications

Frequency ranges	
Option 503	20 Hz to 3.6 GHz
Option 508	20 Hz to 8.4 GHz
Option 513	20 Hz to 13.6 GHz
Option 526	20 Hz to 26.5 GHz
Analysis bandwidth	
Standard	10 MHz
Option B25	25 MHz
Option B40	40 MHz
Measurement speed (nominal)	
Local measurement and display update	< 4 ms
Remote measurement and LAN transfer	< 5 ms
Marker peak search	< 1.5 ms
Center frequency tune and transfer (RF)	< 20 ms
Center frequency tune an nsfer (µW)	< 47 ms
Measurement/mode switching	< 39 ms
W-CDMA ACLR fast measurement mode	< 14 ms (σ = 0.2 dB)
Analog baseband I/Q inputs	
Option BBA	10 MHz bandwidth standard, optional 25 MHz or 40 MHz
W-CDMA ACLR dynamic range (typical)	
	73 dB
	78 dB noise correction on
Displayed average noise level with preamp on – DANL (typical)	
1 GHz	–166 dBm
7 GHz	–166 dBm
13 GHz	–165 dBm
20 GHz	–161 dBm
Displayed average noise level – DANL (typical)	
1 GHz	–154 dBm
7 GHz	–153 dBm
13 GHz	–151 dBm
20 GHz	–146 dBm
Third-order intermodulation distortion – TOI	
1 GHz	+16 dBm
7 GHz	+15 dBm
13 GHz	+15 dBm
20 GHz	+10 dBm
Phase noise (typical)	
	–106 dBc/Hz at 10 kHz offset
Frequency reference	
Aging rate with Option PFR	$\pm 1 \times 10^{-7}$/year
Trace Points	
All spans	1 to 40001

Accelerate to Market

N9020A MXA signal analyzer—built for speed

During the transition from product design to the production line, every device demands decisions that require tradeoffs in your goals—customer specifications, throughput, yield. With a highly flexible signal analyzer, you can manage and minimize those tradeoffs. Agilent's mid-performance MXA is the ultimate accelerator as your products move from design to manufacturing to the marketplace. It has the flexibility to quickly adapt to your evolving test requirements—today and tomorrow. Maximize your flexibility, ramp up faster, and accelerate to market with the Agilent MXA signal analyzer.

Performance required for product development

For product development engineers

Whether you are:

- developing wireless communication products or baseband/RF/microwave devices in the products
- ensuring mobile communication designs comply with strict standards (single- or multi-format)
- evaluating or designing products to pre-release and ratified WiMAX standards or other emerging standards or
- designing and testing components and power amplifiers

The MXA provides the highest performance and accuracy in a midrange signal or spectrum analyzer to help you solve design challenges faster with fewer iterations and increased confidence.

Speed required for manufacturing

For manufacturing engineers

Whether you are:

- measuring complex modulated signals
- expediting automated tests
- under pressure to be first to deliver products to market or
- troubleshooting problems to minimize failures

The MXA provides the fastest, most accurate signal and spectrum analysis measurements in a midrange analyzer to help you dramatically increase throughput and yields.

Since the MXA is up to 300% faster than other signal and spectrum analyzers, it enables you to run more tests in the same amount of time as your current analyzer. Or, you can use fewer analyzers for the same number of tests.

Move Ahead Quickly

Faster time-to-market

The mid-performance MXA is the ultimate accelerator as products move from design to manufacturing to the marketplace. Reuse of test code from development into manufacturing assures that trusted measurement algorithms are used for the product's entire development cycle.

Using the MXA in a development environment ensures that mobile communication designs comply with strict standards (single- or multi-format). In a manufacturing environment, the MXA's speed and accuracy dramatically increase throughput and yields. MXA is your preferred choice to measure complex modulated signals, expedite automated tests, relieve the pressure to be first to market, and troubleshoot problems to minimize failures.

List sweep

Save measurement time by programming the MXA analyzer for fast power measurements using the list sweep feature. Remotely extract amplitude values at known frequencies by making a list of single-point measurements in advance. The MXA can run through the measurements without requiring you to reset the analyzer for each iteration of a measurement cycle.

Up to 40 MHz analysis bandwidth

- Optional 25 MHz or 40 MHz analysis bandwidth
- Supports up to 40 MHz bandwidth CCDF, burst power, IQ waveform, QPSK EVM measurements
- Supports baseband signal analysis up to 40 MHz bandwidth
- Functions with 89600B VSA software and N9064A VXA applications for signal analysis up to 40 MHz bandwidth

Fully calibrated internal preamplifiers up to 26.5 GHz

Analyze low-level signals on the only midrange analyzer to offer a choice of fully calibrated internal preamplifiers up to 26.5 GHz.

- Four different preamp frequencies are available: 100 kHz to 3.6, 8.4, 13.6, or 26.5 GHz
- Select preamp frequency up to the maximum frequency of the instrument
- Gain: +20 dB from 100 kHz to 3.6 GHz, and +35 dB from 3.6 to 26.5 GHz

Key performance specifications

- +16 dBm third-order intercept (TOI)
- –166 dBm displayed average noise level (DANL)
- 0.23 dB absolute amplitude accuracy
- 78 dB W-CDMA ACLR dynamic range

Removable solid-state drive for secure environment

- 80 GB fully-imaged solid-state drive

Looking to optimize speed and price?

Consider the EXA, the X-Series economy signal analyzer. If the EXA meets your performance needs, it delivers the same intuitive user interface and runs the same set of applications as the MXA at a lower price. For more information visit **www.agilent.com/find/exa**

Looking for more bandwidth?

For more bandwidth, the Agilent PXA signal analyzer is the answer, offering up to 140 MHz analysis bandwidth. For more information visit **www.agilent.com/find/pxa**

You Can Upgrade!
Options can be added after initial purchase.

The Cellular Communications Test Solution

Cellular R&D

Designing and redesigning mobile devices requires speed and accuracy. The MXA signal analyzer helps you deliver quality designs with excellent phase and amplitude accuracy as well as ensure your products meet the requirements of the standard.

PowerSuite, included with every MXA, is a unique suite of one-button power measurements that make broadband signal evaluation simple and intuitive. In addition, searching for spurs with one of the 12 markers is intuitive and easy, helping to reduce test cycles.

BTS manufacturing

Designing and manufacturing base transceiver stations (BTS) and components demand efficiency and speed. With time-to-market a key success factor, the pace at which products can be created, tested, and manufactured can determine your position in the market.

The all-digital IF in the MXA gives you confidence in the measurements you are making, reducing the number of measurements and testing cycles required to meet specifications. The MXA supports all major 2G, 2.5G, and 3G wireless formats, simplifying the test process and allowing you to focus on your product. In addition, the MXA helps reduce overall cost of test by accelerating measurements and minimizing rework.

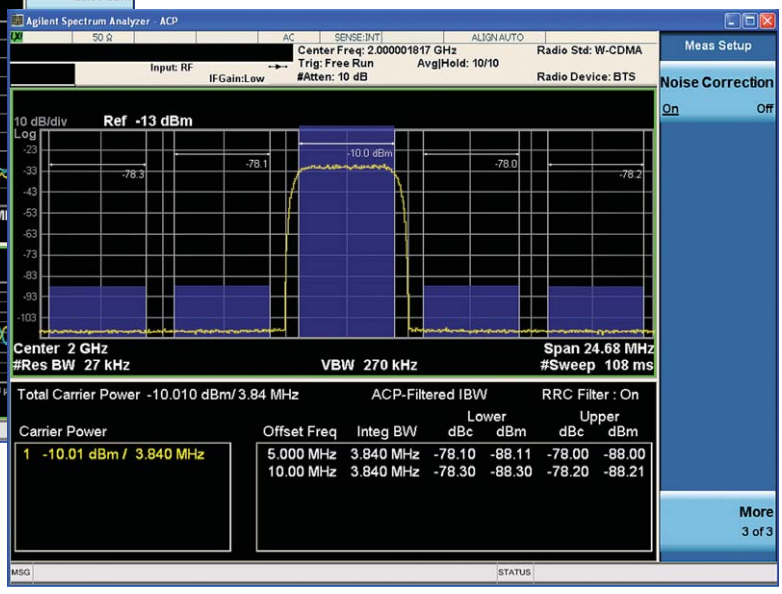
89600B VSA software

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

www.agilent.com/find/89600B

40 MHz BW IQ waveform measurement



78 dB W-CDMA ACLR dynamic range

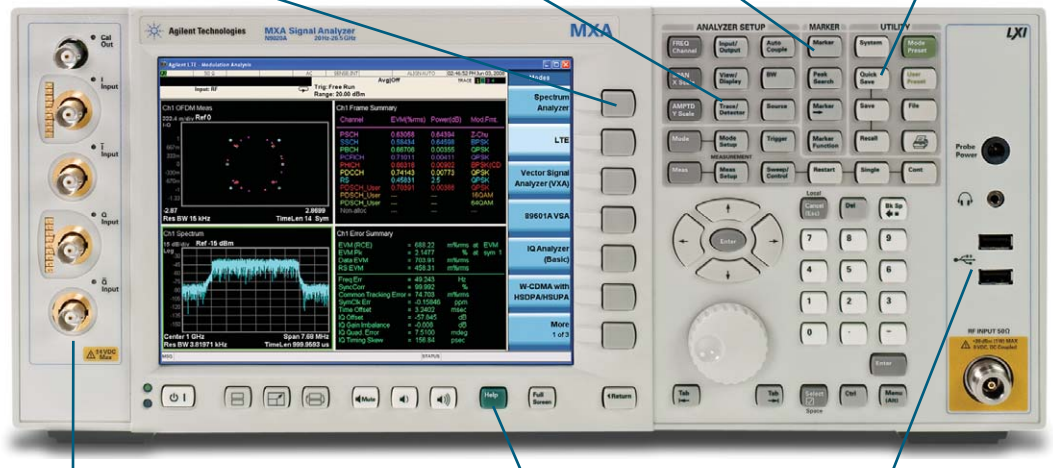
MXA Front and Rear Panels

Soft keys provide tactile feedback to allow quicker navigation of menus and remain clean and smudge free unlike touch screen displays.

Use six traces and three different detectors simultaneously.

Mark the frequency or position of a trace with up to 12 markers that enable easy viewing of measurement results.

Save files quickly and conveniently at the touch of a button with the quick-save feature.



Ensure the analog baseband signal quality with embedded 16-bit ADC. Agilent Infiniium/InfiniiMax probes can be used with calibration utility and cal out port.

Get answers quickly with the comprehensive, context-sensitive, help system.

Two USB 2.0 ports conveniently located on the front of the instrument.

Acquire IQ waveform data quickly or control the MXA remotely from an external PC over the USB 2.0 (type-B port) interface.

Connect external peripherals and transfer data via the USB 2.0 (type-A port) interface.

View the display on an external monitor by connecting it to the VGA video output interface.

Control the MXA remotely over the 1000Base-T LAN interface.

IF output port for wideband and programmable IF output.

Use the MXA in an aerospace and defense environment with 50/60/400 Hz power input.

Removable solid state drive for instrument security.

Evaluate noise figure using SNS or 346 Series noise sources and the N9069A measurement application.

Start measurements based on a specific incident using an external trigger input signal.

Synchronize with other test equipment using the external trigger output signals.

Y-axis screen video output via the analog output port.

X-Series Signal Analysis

Arrive ahead

We can't predict the future, but Agilent can help you shape it with our future-ready test assets. The X-Series is an evolutionary approach to signal analysis that spans instrumentation, measurements, and software. It gives you the flexibility to satisfy your business and technical requirements across multiple products and programs —now and in the future. The X-Series creates a consistent framework that enables your teams to move at a faster pace.

Measurements

Proven algorithms, 100% code-compatibility, and a common UI across the X-Series create a consistent measurement framework for signal analysis that ensures repeatable results and measurement integrity so you can leverage your test system software through all phases of product development. You can further extend your test assets by transporting applications across multiple X-Series analyzers. Learn one X-Series analyzer, know them all.

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

www.agilent.com/find/X-Series

Instruments

X-Series signal analyzers are ready to evolve as technology changes. With upgradeable CPU, memory, disk drives, and I/O ports, you can keep your test assets current and extend instrument longevity. Adding functionality or applications is simply a license-key upgrade, and with proven X-Series reliability you'll enhance asset uptime.

PXA

The high-performance PXA is the evolutionary replacement for your current performance signal analyzer.

MXA

The mid-performance MXA is the ultimate accelerator as your products move from design to manufacturing to the marketplace.

EXA

The economy-class EXA is the fastest way to maximize throughput on the production line.

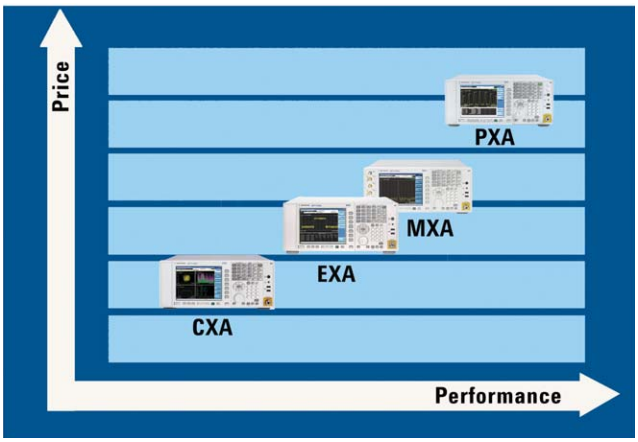
CXA

The low-cost CXA is a versatile tool for essential signal characterization.

Applications and software

All X-Series signal analyzers share a common library of more than 25 advanced measurement applications, and with the open Windows OS you can run applications such as MATLAB or 89600B VSA software.

The industry-leading VSA software supports over 70 signal standards and modulation types, with a first-to-market track record that can accelerate your own designs to market.



Mix and match the X-Series instruments, applications, and software to meet the needs of your specific tests and measurements.

www.agilent.com

www.agilent.com/find/mxa

Related Literature

Agilent MXA Signal Analyzers

Data Sheet 5989-4942EN

Configuration Guide 5989-4943EN

X-Series Measurement Applications Brochure 5989-8019EN

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LXI

www.lxistandard.org
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