

MXE



MXE X-Series EMI Receiver N9038A

- 20 Hz up to 26.5 GHz frequency range
- Compliant with CISPR 16-1-1 2010 and MIL STD 461F
- ± 0.75 dB amplitude accuracy
- -167 dBm DANL with Noise Floor Extension technology





The X-Series Difference

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 additional 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.

www.agilent.com/find/X-Series



Summary of Key Specifications

Frequency ranges	Minimum: 20 Hz
	Maximum: 8.4 and 26.5 GHz
CISPR bandwidths	200 Hz, 9 kHz, 120 kHz, 1 MHz
6 dB bandwidths	10 Hz to 1 MHz, in decade steps
CISPR detectors	Quasi-peak, EMI-average, RMS-average
Measurement detectors	Peak, negative peak, sample, normal, RMS, average
Displayed average noise level (DANL)	-167 dBm at 1 GHz, preamplifier and noise floor extension on
Amplitude accuracy	± 0.75 dB
Third-order intermodulation (TOI) distortion	+15 dBm at 1 GHz
VSWR	Meets CISPR requirements
Inputs	Input 1: Full range Input 2: 1 GHz maximum - pulse protected

Express Your Insight



When you're testing a new product, the designers are counting on your expertise and advice. That's why the Agilent MXE is more than a CISPR-compliant EMI receiver: it also includes X-Series signal analysis and graphical measurement tools that make it easy to examine signal details. With these diagnostic capabilities, the MXE complements your knowledge and helps you advise the designers if a device fails compliance testing. Equip your lab with the MXE—and express your insight.

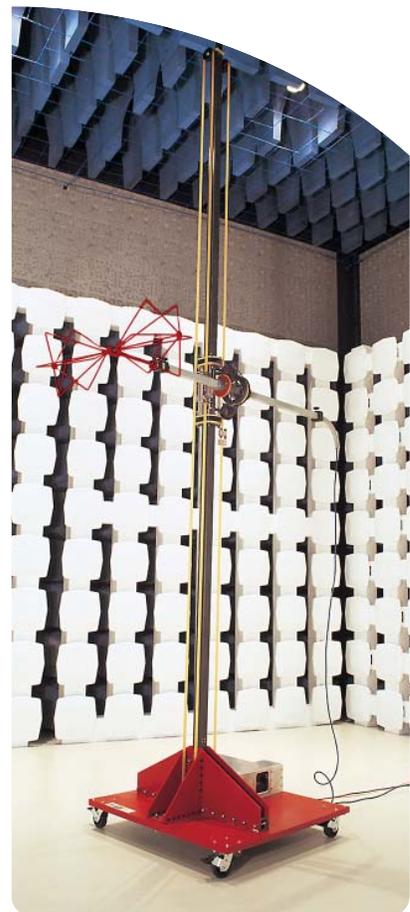
Complement your knowledge with versatile EMI and signal analysis tools

Enhance test accuracy and repeatability with the MXE's outstanding measurement accuracy (± 0.75 dB at 1 GHz) and sensitivity (-167 dBm DANL at 1 GHz). By allowing you to move seamlessly between EMI receiver and spectrum analyzer modes, the MXE speeds your evaluation of signal details. You can also use

the instrument's extensive built-in diagnostic tools, including detectors, meters, Signal List, marker functions, Strip Chart, span zoom, zone span, and spectrogram displays to provide more details on interference.

Be ready for present and future opportunities with the MXE

Built on the future-ready X-Series platform, the MXE helps you get the most out of your equipment budget. The MXE gives you the flexibility to test new products and types of products from 20 Hz up to 26.5 GHz. In addition, its broad measurement and analysis capabilities provide opportunities for you to expand your testing and consulting services. You can easily upgrade instrument functionality and applications via flexible licensing. With the MXE's proven X-Series reliability and robust hardware architecture, as well as Agilent's responsive service, you can increase system uptime.



All-Digital IF Architecture

Digital intermediate frequency (IF) receiver architecture improves measurement accuracy compared to analog IF architecture. In analog IF, gain blocks, log amps, resolution bandwidths, and detectors are implemented with analog hardware. Even the best of these designs exhibit performance differences when receiver settings are changed from the settings used for calibration. The differences are then exacerbated over temperature.

Digital IF realizes these components digitally after the signal has been digitized, which significantly reduces associated errors. Digital IF can also improve EMC measurement throughput by removing the need for users to bring the signal being measured to the top of the reference level. Analog receivers require this step for every measurement to minimize the effects of analog hardware errors.

Maximize Compliance Measurement Throughput and Accuracy

The MXE is ideally suited for high-performance commercial and military electromagnetic compliance (EMC) testing. In addition to CISPR and MIL STD compliant specifications, the receiver offers a range of built-in features that enhance EMC measurements.

Easily identify results

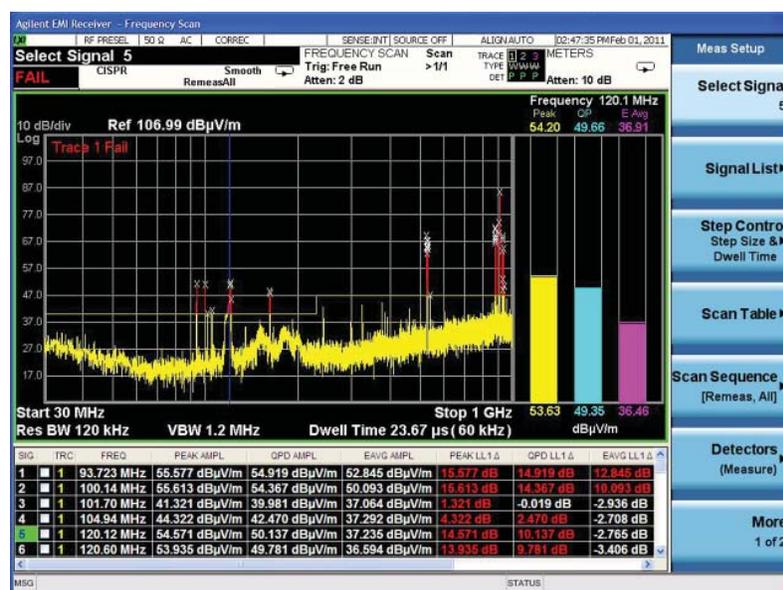
- Observe receiver measurements, DUT emissions scans, and suspect frequency lists on a single display
- Monitor three color-coded detectors updated simultaneously
- View color-coded signals when limits and margins are exceeded, and, since each detector can be assigned to a specific limit line, test QP and EMI-AVG limits at the same time

Customize analysis

- Display up to six built-in limit lines at once with customer-selectable margins for each limit line
- Apply custom data correction for your antenna, cable, and external preamplifier using the built-in amplitude correction capability
- Recall custom-configured measurement states from built-in storage locations

Speed measurements

- Use built-in Scan, Search, and Measure algorithms that mirror CISPR-recommended methodologies
- Measure each selected detector outputs to individual limit lines
- Shorten your suspect list to critical signals using extensive list manipulation capability



The MXE receiver display provides a simplified view into the emissions performance of the device under test

Improve Time-to-Market with Extensive Diagnostic Capabilities

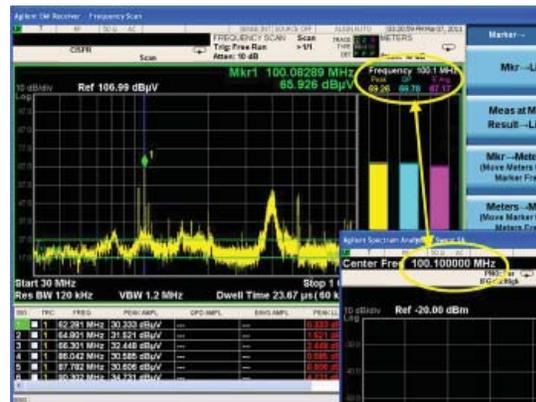
Verifying product compliance is just one facet of EMI testing. Diagnosing and resolving emissions problems is an altogether different challenge.

In addition to offering world-class EMI compliance measurement, the MXE offers a full range of diagnostic tools that can greatly speed the time-to-repair, so you can help designers get their products to market faster. These diagnostic capabilities include:

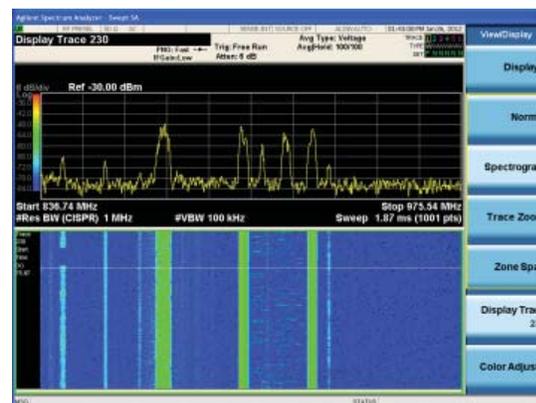
- Agilent's world-class spectrum analysis capability, including a full suite of resolution and video analysis bandwidths, detectors, multiple markers, and PowerSuite measurements
- Agilent-exclusive Strip Chart to capture up to 2 hours of gapless data for a simultaneous view of the output from three detectors as a function of time
- Spectrogram capability for tracking signal characteristics over time
- Global Center Frequency linkage between the receiver and spectrum analyzer to move seamlessly between these modes
- The ability to divide scans into sub-ranges and choose the largest signal in each sub-range to be placed in the signal list



Strip Chart view provides a unique, gapless view of simultaneous detector response and is useful for tracking DUT performance as a function of turntable or antenna position



Use Global Center Frequency to move seamlessly between receiver and signal analyzer



Spectrogram analysis allows users to understand both the amplitude- and time-varying nature of emissions using signal marker capability

Enhance Precompliance Measurements

Give your precompliance measurements the same power and ease-of-use that the MXE EMI receiver gives to your full compliance measurements. The Agilent N6141A and W6141A EMI measurement applications deliver the measurement functionality of the MXE to any instrument in the X-Series signal analyzer family—CXA, EXA, MXA, or PXA.

www.agilent.com/find/N6141A

www.agilent.com/find/W6141A

Protect Your Investment with a Future-Ready Solution

A truly future-ready receiver offers flexibility to upgrade and enhance every major subsystem: mechanical, electrical, firmware, and software. The MXE delivers in all four areas:

- A mechanical assembly that provides four 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 standard-compliant capabilities

This versatility allows the MXE to evolve as your needs change, helping protect your equipment investment.

Build a Complete EMC Test Solution

With Agilent Solutions Partners, use a single point of contact to purchase a complete solution that meets MIL-STD and commercial specifications, combining the MXE EMI receiver with chambers, antennas, software, value-added integration, probes, and more.

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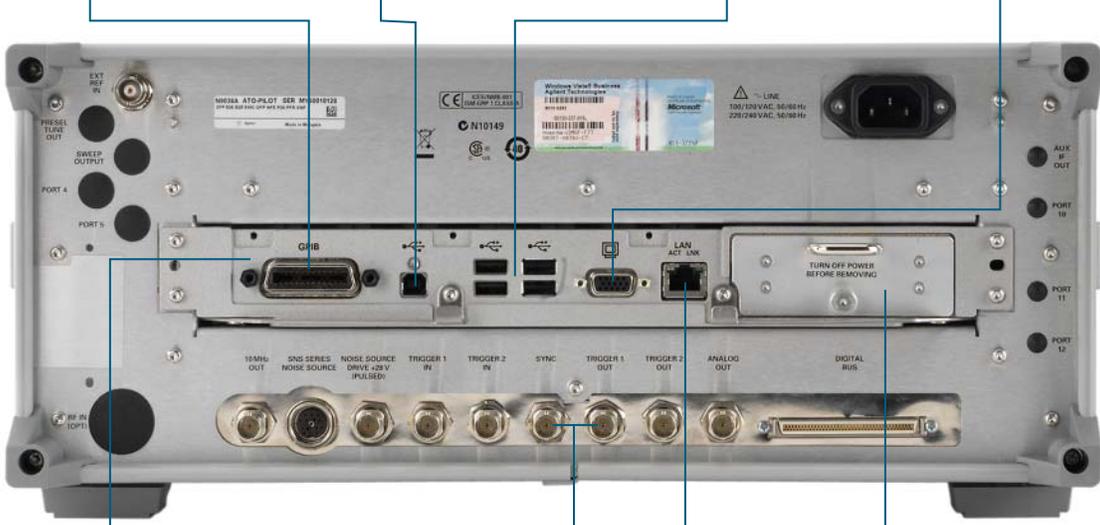
MXE Front and Rear Panels

Comprehensive display provides view of detectors, suspect list, and measurements. View up to three different detectors. Save files fast with the quick-save feature. Two USB 2.0 ports conveniently located on the front of the instrument.



Second input pulse-protected to 2 kW. Identify signals quickly and view information easily on the 21.4-cm, high-resolution XGA display. Get answers quickly with the comprehensive, context-sensitive embedded help system. Navigate the interface and help system using the front-panel keys, or a mouse and keyboard.

Send and receive SCPI commands over the GPIB interface. Acquire IQ waveform data quickly or control the MXE 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 to the VGA video output.



Removable CPU enables processor, memory, and I/O upgrades. Synchronize other test equipment with the analyzer using the external trigger output signals. Control the MXE remotely over 1000Base-T LAN. Removable solid-state drive. Additional solid-state drive available for instrument security.

Related Literature

Agilent MXE Signal Analyzers

Data Sheet 5990-7421EN

Configuration Guide 5990-7419EN

X-Series Measurement Applications Brochure 5989-8019EN

X-Series Signal Analysis Brochure 5990-7998EN



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