Keysight Technologies
Switch to the MXA Signal Analyzer to Quickly Troubleshoot Wireless Design Problems

Three reasons why the Keysight MXA signal analyzer helps you optimize your test system performance

Keysight N9020B MXA signal analyzer
- More, fully configurable displays
- Color coded traces and results, coupled markers, and RMS and peak EVM trace results
- Exceptional user experience

Wireless test systems must meet stringent standards and corresponding internal test specifications. Ensuring your signal analyzer is built to meet the complexity of today's signal and wireless standards with the best signal processing power, computational capabilities, wide digitizing bandwidths, and measurements from basic spectrum to advanced digital demodulation is critical for successful, cost effective results. The Keysight Technologies, Inc. N9020B MXA signal analyzer helps you optimize your test system by providing industry-leading performance for wireless R&D, design validation and manufacturing with wider bandwidth, best-in-class phase noise, and real-time analysis.

Experience greater signal coverage
The MXA's wide bandwidth and fast sweeps help to analyze the full bandwidth of the signal under test and find the lowest powered spurs.

Make measurements with confidence
Use Noise Floor Extension (NFE) to automatically characterize and subtract noise in all measurement configurations, including challenging OFDM schemes with closely-spaced subcarriers.

Gain more insight into time-varying spurious signals
Upgrade to real-time signal analysis in order to enable a closer look at spurious signal variability, or periodicity, for correlation to other signals or system activity and root cause analysis.
Experience the powerful combination of the MXA multi-touch pinch/zoom display and Keysight’s 89600 VSA software to see through the complexity of leading-edge wireless signals such as LTE-A.

1. Enhance your perspective with multi-measurement mode
2. Get to the root problem quickly with advance trouble-shooting tools
3. Trace details and color coding quickly identify problems

Closest competitive product display:

- No trace color coding
- Limited marker results, trace information, and display configurability

Identify problems faster and troubleshoot to root cause more quickly with advanced digital modulation measurements and displays

1. Making spectrum emission mask (SEM) and adjacent channel power (ACP) measurements to design and test a wireless device that complies with today’s latest standards requires a signal analyzer with sufficient dynamic range and sensitivity. Signal analyzers that meet the requirements, often do not provide much margin and require long measurement times in order to adequately reduce the noise in the measurement.

2. Wide IF bandwidth is highly desirable for performing modulation quality measurements such as error vector magnitude (EVM), which require capture of the entire modulation bandwidth to demodulate the signal. It is also important for demodulation when dealing with multi-carrier signals and carrier aggregation, including wide bandwidth signals such as LTE and 802.11ac. Also, higher carrier frequencies require analyzers to support wide bandwidth analysis to the instrument’s max frequency.

3. Growing complexity in transmission schemes, such as increasing from single carriers to multi-subcarriers with OFDM, requires very low phase noise to ensure orthogonality. For signals such as LTE and its 15 kHz subcarrier spacing, phase noise performance is very important at offsets from 1 to 10 kHz, and for evaluating the oscillators and synthesizers in systems it is important at all offsets.

Accurately characterize device performance by meeting stringent ACP and SEM requirements with MXA’s up to 116 dB third-order dynamic range. The fastest, most accurate signal and spectrum measurements available in a mid-range analyzer provide increased throughput: 1.5 s sweep rate across 26.5 GHz span with 20 kHz RBW, ± 0.23 dB absolute amplitude accuracy, -173 dBm/Hz DANL and +19 dBm TOI at 2 GHz. Real-time spectrum analysis helps to discover and measure time-varying spurious signals for capture and analysis.

Keysight’s MXA provides excellent wideband IF performance to 26.5 GHz with a flat IF frequency response of ± 0.2 dB at 2 GHz across 160 MHz bandwidth, wide spurious-free dynamic range of -72 dB across 160 MHz, high signal to noise ratio of 140 dB at 1.8 GHz, and exceptionally low EVM of -48 dB (equalization on preamble only) for 802.11ac demodulation. MXA bandwidths are upgradeable.

The MXA’s phase noise of -114 dBc/Hz, at 10 khz offset, provides the ability to achieve the lowest internal EVM floor for cellular communication standards like LTE. Low EVM allows for subsystem evaluation to tighter specs than the systems they’re embedded in. Low phase noise and the resulting EVM improve margins and, therefore, design quality and manufacturing yield.

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