

Keysight Technologies

Enhanced Display Package Option
EDP X-Series Signal Analyzers
and EMI Receiver

Technical Overview



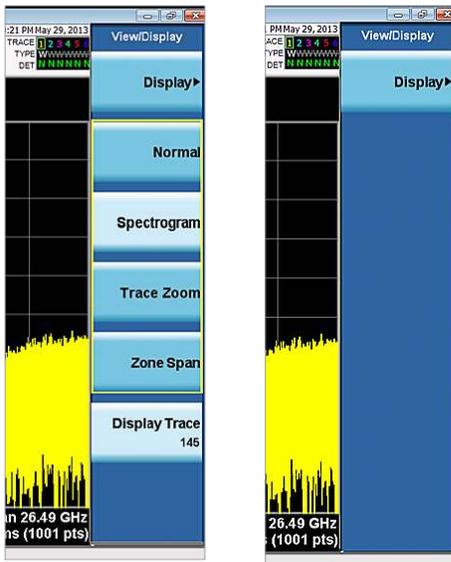
Enhanced Display Package

- Spectrogram adds time data to the spectrum display with flexible markers for deeper insights
- Trace zoom offers a close-up view for better visualization of crowded spectra
- Zone span aids deep analysis of a specific spectral region
- No extra hardware required; license-key upgradable

Offering deeper insight to measurement results

The Keysight Technologies, Inc. X-Series signal analyzers provide optimized RF performance including dynamic range, accuracy, and measurement speed at a variety of price points to best suit your measurement needs. In addition, the enhanced display package (Option EDP) available for X-Series signal analyzers is a valuable tool to help you visualize, analyze, and interpret results for effective troubleshooting.

Option EDP is available for all the X-Series signal analyzers including the PXA, MXA, EXA, and CXA and comes standard in the MXE EMI receiver. It is activated by a license-key without requiring any additional hardware. Option EDP adds three display views to the analyzer: spectrogram, trace zoom, and zone span. The additional display views can be found in the graphic user interface as additional soft-keys under the "View/Display" menu (Figure 1).



(a) Option EDP licensed (b) Option EDP not licensed

Figure 1. Option EDP adds three soft keys to the included spectrum display

Spectrogram

The spectrogram view is a visual representation of the spectrum trace of an RF signal as it varies with time. Under the spectrogram view, the display splits into two windows—the standard spectrum trace is at top and the spectrogram window at bottom. In the spectrogram window, spectrum trace history is displayed. Each horizontal line in the spectrogram display represents one historical trace. The data streams upwards from newest to oldest; the latest trace displays on the bottom and the oldest trace on the top (Figure 2).

The spectrogram view provides a quick look at a history of 300 traces. Since this is swept spectrum analysis, each horizontal line in the spectrogram represents a single trace, and the vertical axis represents time. The colors in the spectrogram represent signal amplitude. The key to these colors is displayed next to the Y-Axis in the upper window. A user can define the color scale (hue) to obtain the optimized color contrast.

Under spectrogram view, most functions and settings work the same as the standard display view, including the marker functions which enable quantitative analysis for the events. The spectrogram is particularly useful in visualizing signals such as low-rate FM and in quantifying the time sequence of frequency hopping signals.

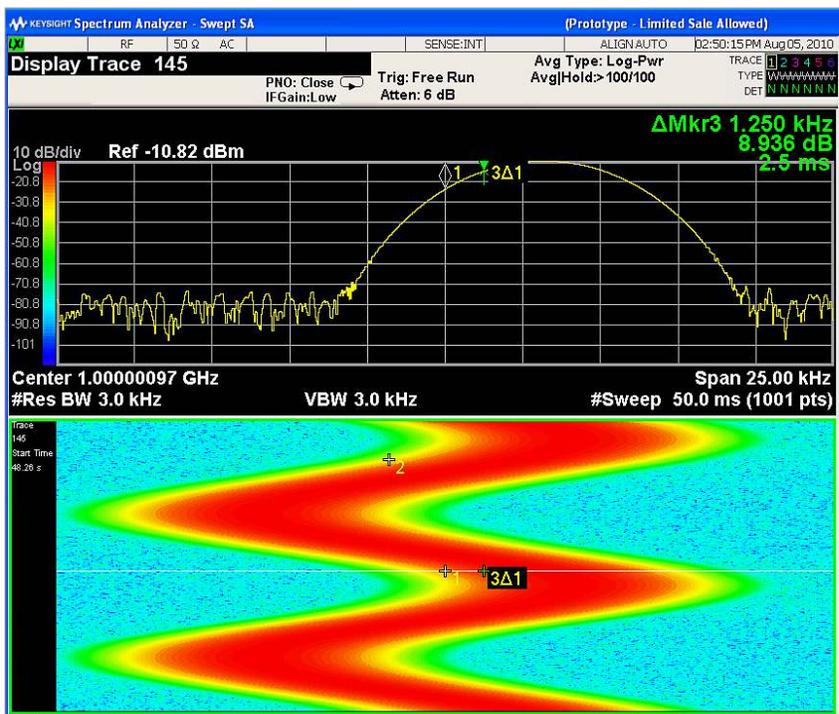


Figure 2. The spectrogram at the bottom window shows spectrum trace over time

Trace zoom

In the trace zoom view, the screen is split into two windows. The top window is a standard spectrum analyzer window, and the bottom window, or zoom window, shows a close-up representation of the traces in the top window (Figure 3). The data in both windows is identical, but the bottom window typically shows fewer data points, spread across the whole display, which allows users to see the data in those points more clearly, particularly when the trace data in the top window is very dense.

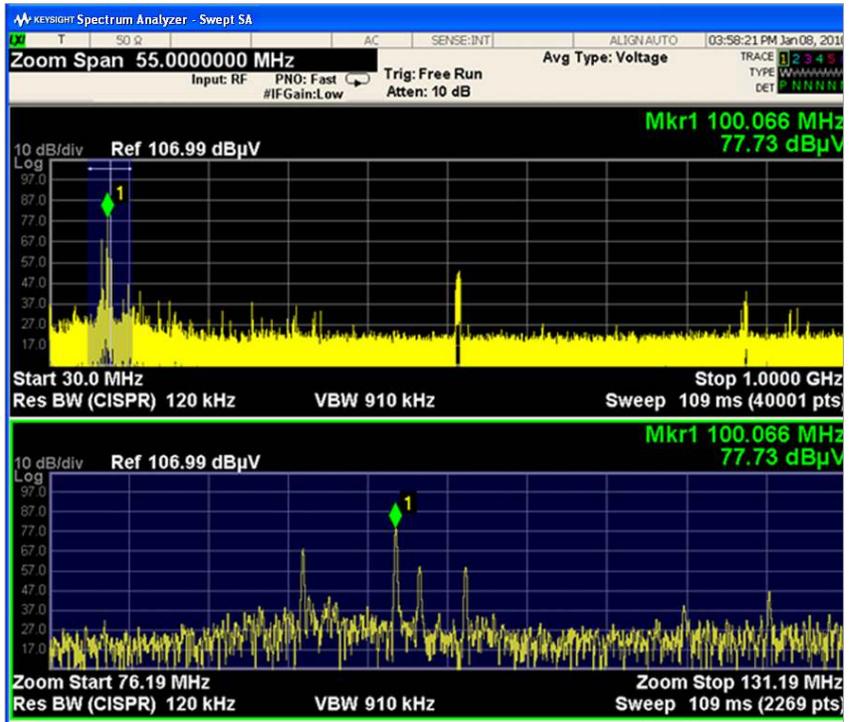


Figure 3. The bottom trace zoom window offers a close-up view of a segment of the trace in the top window

The zoom region is indicated by blue shading over that region. The top window indicates which subset of the data is being magnified in the bottom window. The entire zoom window is shaded, to identify that it represents the close-up view of the shaded region in the top window.

It is important to understand that the data and state in the two windows are identical. The zoom window is simply a close-up view of a segment of the traces in the top window. Therefore all traces and markers are the same in both windows; and any state changes you make will affect them both.

The trace zoom display mimics the zoom functions of a camera—it stretches out a region with crowded signals to help you better visualize signals of interest. Customers working on electromagnetic interference (EMI) testing find this feature most helpful when analyzing the interference signals that are close to each other in frequency domain.

Zone span

In the zone span view, the screen is also split into two windows. The top window is a standard spectrum analyzer window, and the bottom window, or zone window, shows a window that represents a region, or zone, within the top window (Figure 4). The data in the two windows represents two completely separate sweeps; each window sweeps only when the focus (indicated by a thick green border) is on that window. It is important to understand that the data in the window without the focus remains unchanged until the focus is moved to that window.

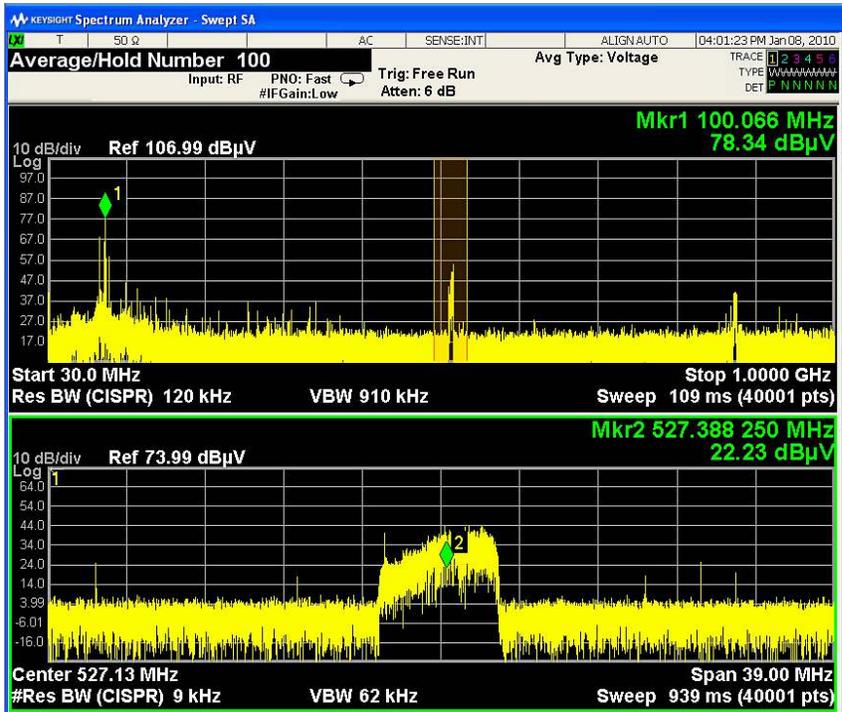


Figure 4. Zone span splits the display into two windows: the normal swept SA window (top) and the zone window (bottom)

In the top window, the zone region is indicated by light orange shading and solid orange boundary lines. The zone window is not shaded orange; this indicates that, unlike trace zoom, the data in the zone window is not the same as in the top window, but is from a separate sweep. Furthermore, a different state (such as RBW, VBW, sweep time, and points) can be set within the zone window to optimize the analysis of the signals in that region. This feature allows a user to scan across a wider frequency range, then focus on the region that is of particular interest for deeper analysis. Zone span is a very handy tool for EMI applications and design troubleshooting.

Ordering Information

Instrument option

N9030A PXA signal analyzer

Model-Option	Description	Notes
N9030A-EDP	Enhanced display package	Ordered with a new instrument
N9030AK-EDP	Enhanced display package	Upgrade kit, ordered for your existing PXA

N9020A MXA signal analyzer

Model-Option	Description	Notes
N9020A-EDP	Enhanced display package	Ordered with a new instrument
N9020AK-EDP	Enhanced display package	Upgrade kit, ordered for your existing MXA

N9010A EXA signal analyzer

Model-Option	Description	Notes
N9010A-EDP	Enhanced display package	Ordered with a new instrument
N9010AK-EDP	Enhanced display package	Upgrade kit, ordered for your existing EXA

N9000A CXA signal analyzer

Model-Option	Description	Notes
N9000A-EDP	Enhanced display package	Ordered with a new instrument
N9000AK-EDP	Enhanced display package	Upgrade kit, ordered for your existing CXA

N9038A MXE EMI receiver

Model-Option	Description	Notes
N9038A-EDP	Enhanced display package	Standard

Hardware configurations

N9030A PXA signal analyzer

Model-Option	Description	Notes
N9030A-503, -508, -513, -526, -543, -544, or -550	3.6, 8.4, 13.6, 26.5, 43, 44, or 50 GHz frequency range	One required

N9020A MXA signal analyzer

Model-Option	Description	Notes
N9020A-503, -508, -513 or -526	3.6, 8.4, 13.6, or 26.5 GHz frequency range	One required

N9010A EXA signal analyzer

Model-Option	Description	Notes
N9010A-503, -507, -513, -526, -532, or -544	3.6, 7.0, 13.6, 26.5, 32, or 44 GHz frequency range	One required

N9000A CXA signal analyzer

Model-Option	Description	Notes
N9000A-503, -507, -513, or -526	3.6, 7.5, 13.6, or 26.5 GHz frequency range	One required

N9038A MXE EMI receiver

Model-Option	Description	Notes
N9038A-508, -526, or -544	8.4, 26.5, or 44 GHz frequency range	One required

Web

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