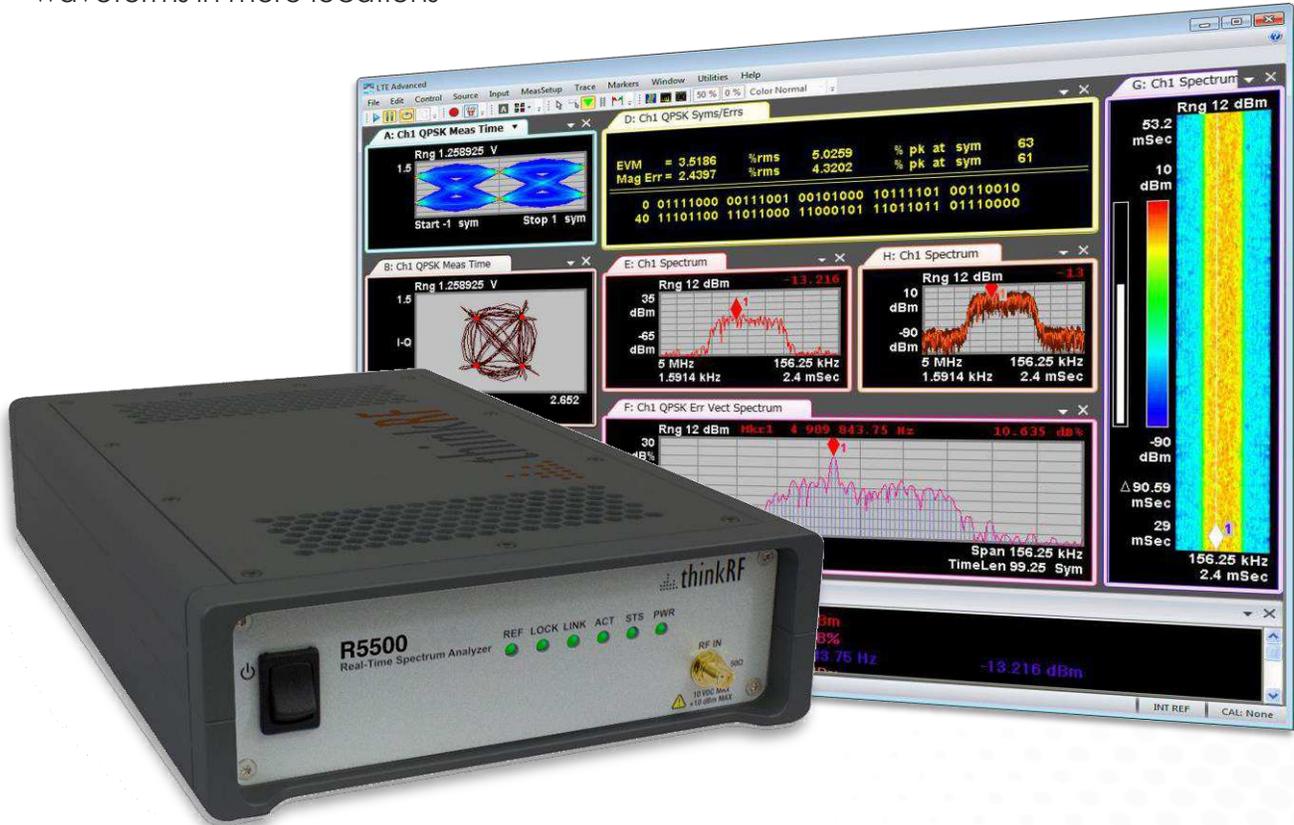


ThinkRF R5500 with Keysight 89600 VSA

Spectrum Monitoring and Analysis Solution

- ThinkRF R5500 Real-Time Spectrum Analyzer is first, third-party product to directly connect with Keysight 89600 VSA Vector Signal Analysis software
- Make consistent measurements across signals, deployments and applications with more than 75 signal standards and modulation types
- Compact, PC-driven, and remotely deployable R5500 allows users to monitor complex waveforms in more locations





Overview

With faster data rates and a more crowded spectral environment, spectrum analysis has become more complex. Achieving the clarity required to pinpoint a signal problem is a difficult challenge.

Open, flexible, robust spectrum monitoring and analysis

The combination of the ThinkRF R5500 Real-Time Spectrum Analyzer and the leading Keysight 89600 VSA software allows users, for the first time, to perform robust and powerful analysis for all forms of signals. Expand your measurement capabilities and perform consistent signal analysis across applications and deployments, including portable, remote, and distributed.

The ThinkRF R5500 real-time spectrum analyzer has the performance of traditional high-end lab spectrum analyzers at a fraction of the cost, size, weight and power consumption. The R5500 serves as the ideal spectrum monitoring and analysis platform having wide bandwidth, deep dynamic range, 27 GHz frequency range in a small one-box platform designed for distributed deployment.

The Keysight 89600 VSA software reaches deeper into signals in time, frequency, and modulation domains, view multiple signals at once, and isolate unexpected interactions with powerful vector signal analysis.

Ideal for Spectrum Monitoring and Analysis

Signals Intelligence (SIGINT)

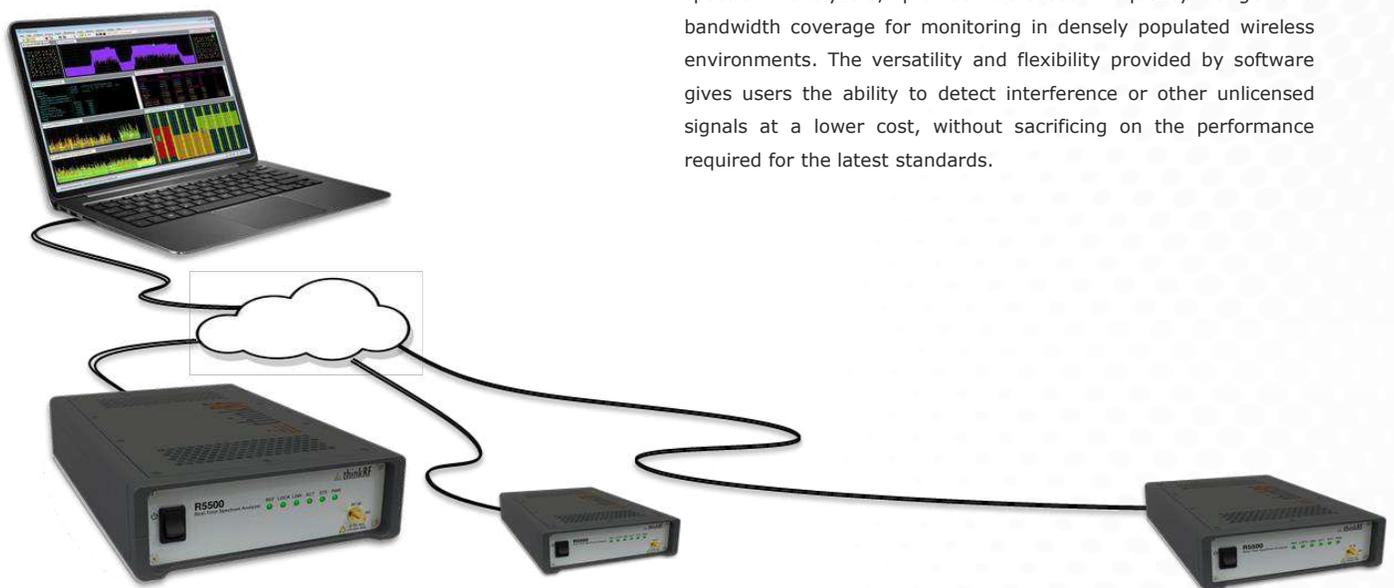
The 89600 VSA on the R5500 platform provides the right mix of performance, versatility, adaptability, and compact form factor for SIGINT users. With increased frequency range and bandwidth performance, fast scan rates, and a high probability of intercept, these analyzers maximize signal detection. And with network and triggering capabilities, they can be deployed remotely for continuous monitoring of the spectrum environment increasing the likelihood of detection.

Technical Security Counter Measures (TSCM)

With a compact, lightweight and portable form factor, TSCM professions can use a single consistent solution for both sweeping and in-place monitoring. The ability to continuously monitor outside of regular working hours, from a remote location, adds another tool for users to detect infrequent or low powered signals that would otherwise be missed.

Regulatory Spectrum Monitoring

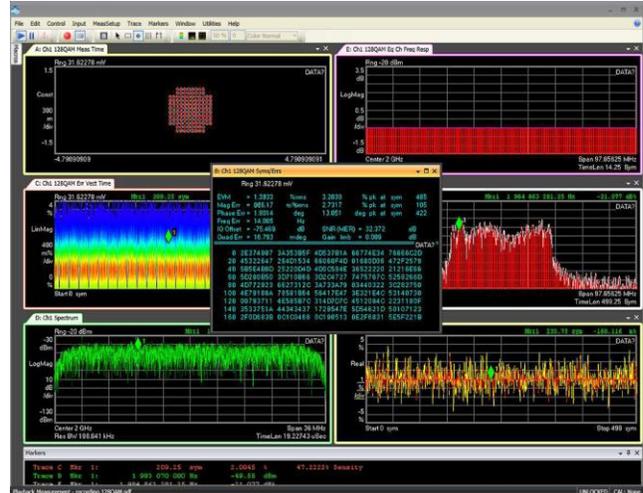
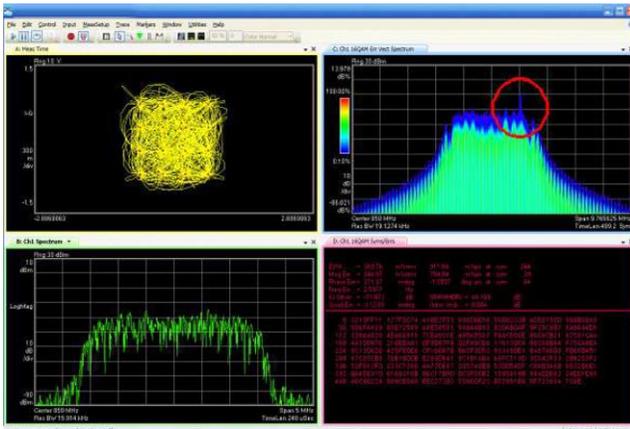
Networked, remote deployable, and portable software-defined spectrum analyzers, with the performance of traditional lab spectrum analyzers, provide increased frequency range and bandwidth coverage for monitoring in densely populated wireless environments. The versatility and flexibility provided by software gives users the ability to detect interference or other unlicensed signals at a lower cost, without sacrificing on the performance required for the latest standards.





Keysight 89600 VSA Vector Signal Analysis software

The leading Keysight 89600 VSA Software is a powerful measurement tool that lets users see through the complexity and analyze and troubleshoot signals in cellular, wireless-connectivity, aerospace, defense, and general-purpose applications. Apply vector signal analysis at virtually any point in your design for consistent and accurate measurements across applications and deployment scenarios.

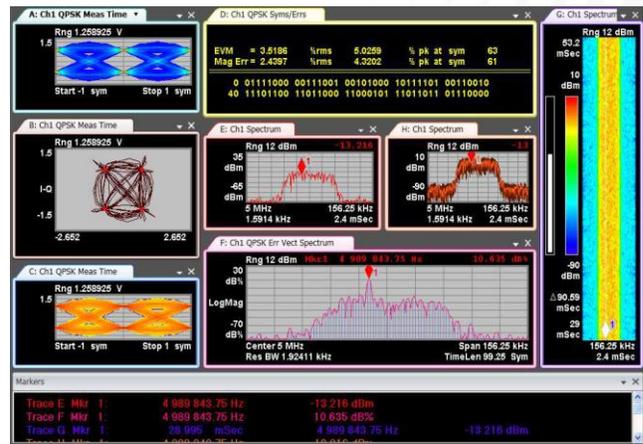


Analyze and display multiple signals at once

The industry's first multi-measurement capability can configure, execute and display multiple measurements simultaneously. Connect to multiple analyzers at the same time to acquire signals from different test points or frequency bands in parallel, and compare and correlate results from different measurements.

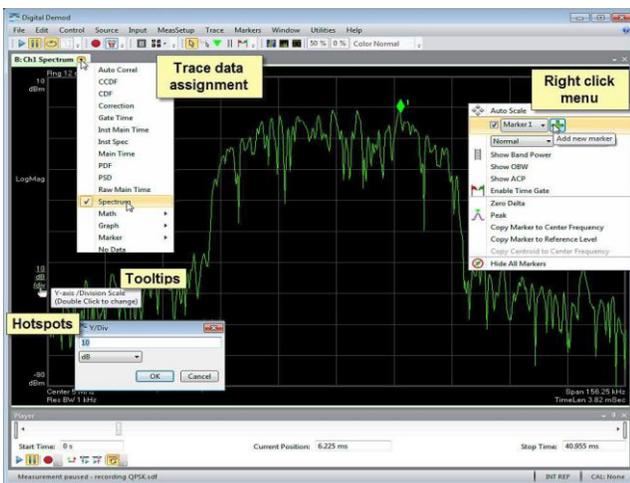
Over 75 signal standards and modulation types

Measure and analyze proprietary signals plus more than 75 signal standards and modulation types. Test today's signals and be ready for tomorrow's standards and modulations, including Cellular LTE, W-CDMA, WLAN 802.11ac/n/a/b/g, Bluetooth, Zigbee, RFID, AM, FM, PM, BPSK, QPSK, QAM, OFDM, and others.



Powerful measurement tools and capabilities

Perform detailed analysis of dynamic signal behaviors with advanced display types including spectrogram, digital persistence, and cumulative history displays, and a comprehensive set of measurement tools and functions. Catch elusive or short duration signals with external triggers, and view multiple facets of complex signals with unlimited markers and traces.





ThinkRF Software-Defined Spectrum Analysis

The ThinkRF R5500 Real-Time Spectrum Analyzer is built on innovative and highly optimizable software-defined radio (SDR) technologies. Users gain greater versatility, better performance, and increased capabilities in a compact and cost-effective unit. An inexpensive standard PC can then be connected to provide the necessary computing power for digital signal processing, signal analysis, and other capabilities.

Advantages of Software-Defined Technologies

- Greater versatility and flexibility to deploy and monitor in more environments and scenarios
- Better frequency and bandwidth performance to detect complex waveforms and a variety of signals of interest
- Ability to upgrade without replacing hardware components to analyze new standards and extend the useful life of the equipment
- Better price-performance ratio in a compact form-factor with reduced size, weight, and power requirements
- Designed and built for today's complex spectrum monitoring applications and requirements



ThinkRF R5500 Real-Time Spectrum Analyzer

Large Frequency Range

The frequencies and bandwidths of commercial wireless systems have been increasing steadily to accommodate the growing demand for larger data rates. The R5500 analyzer supports frequency ranges from 9 kHz up to 27 GHz which enables testing of modern systems and doesn't exclude tests such as third-order intercepts.

Wide Instantaneous Bandwidth

Modern waveforms such as 802.11ac standard utilize waveforms that occupy up to 80 MHz in bandwidth and LTE-Advanced aims to utilize bandwidths of up to 100 MHz. The R5500 provides up to 100 MHz of instantaneous bandwidth in its direct conversion mode.

Deep Dynamic Range

RF measurements for characterizing IP3 generally require a dynamic range of around 100 dB. The R5500 supports multiple ADCs thereby providing wide IBW with 70 dB dynamic range and a narrow IBW with 100 dB dynamic range.

Real-Time Acquisition Memory and Trigger Capability

Modern waveforms such as those associated with the wireless LAN standards utilize packet-based signaling techniques. The R5500 enable real-time capture of multiple data packets by providing real-time hardware-based frequency domain triggering capability in conjunction with real-time memory storage of up to 128 million samples.

Small Size, Weight, and Power

The R5500 has a length and width less than a sheet of paper, weighs less than 3 kg and consumes less than 20 W of power making it a fraction of the size, weight and power of traditional lab spectrum analyzers.

Fast Scan Speed

Scan speed determines how fast the analyzer can jump from analyzing one set of frequencies to another set. The R5500 has fast setup times and provides sophisticated capture control.



Ordering Information

Keysight Vector Signal Analysis Software	Part Number	Description
Vector Signal Analysis Software	89601B-200	Basic vector signal analysis (required)
Multi-Vendor Connectivity option	89601B-301	R5500 connectivity (required)
Signal Analysis options	89601B-xxx	Demodulation and analysis (optional)

ThinkRF Real-Time Spectrum Analyzers	Part Number	Description
8 GHz RTSA	R5500-408	9 kHz to 8 GHz, RTBW up to 100 MHz
18 GHz RTSA	R5500-418	9 kHz to 18 GHz, RTBW up to 100 MHz
27 GHz RTSA	R5500-427	9 kHz to 27 GHz, RTBW up to 100 MHz

About Keysight Technologies

Keysight Technologies is a leading technology company that helps its engineering, enterprise and service provider customers optimize networks and bring electronic products to market faster and at a lower cost. Keysight's solutions go where the electronic signal goes, from design simulation, to prototype validation, to manufacturing test, to optimization in networks and cloud environments. Customers span the worldwide communications ecosystem, aerospace and defense, automotive, energy, semiconductor and general electronics end markets. Keysight generated revenues of \$2.9B in fiscal year 2016. In April 2017, Keysight acquired Ixia, a leader in network test, visibility, and security. More information is available at www.keysight.com.

About ThinkRF

ThinkRF is the leader in software-defined spectrum analysis solutions that monitor, detect and analyze complex waveforms in today's rapidly evolving wireless landscape. Built on patented technology and quality by design principles, the ThinkRF platform offers greater versatility, better performance and additional capabilities for 5G, monitoring, Signals Intelligence (SIGINT), Technical surveillance counter measures (TSCM), and test and measurement applications. Aerospace and defense companies, spectrum regulators and wireless communications providers use the remotely deployable, PC-driven and easily-upgraded platform to replace traditional lab equipment for wireless spectrum analysis.

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