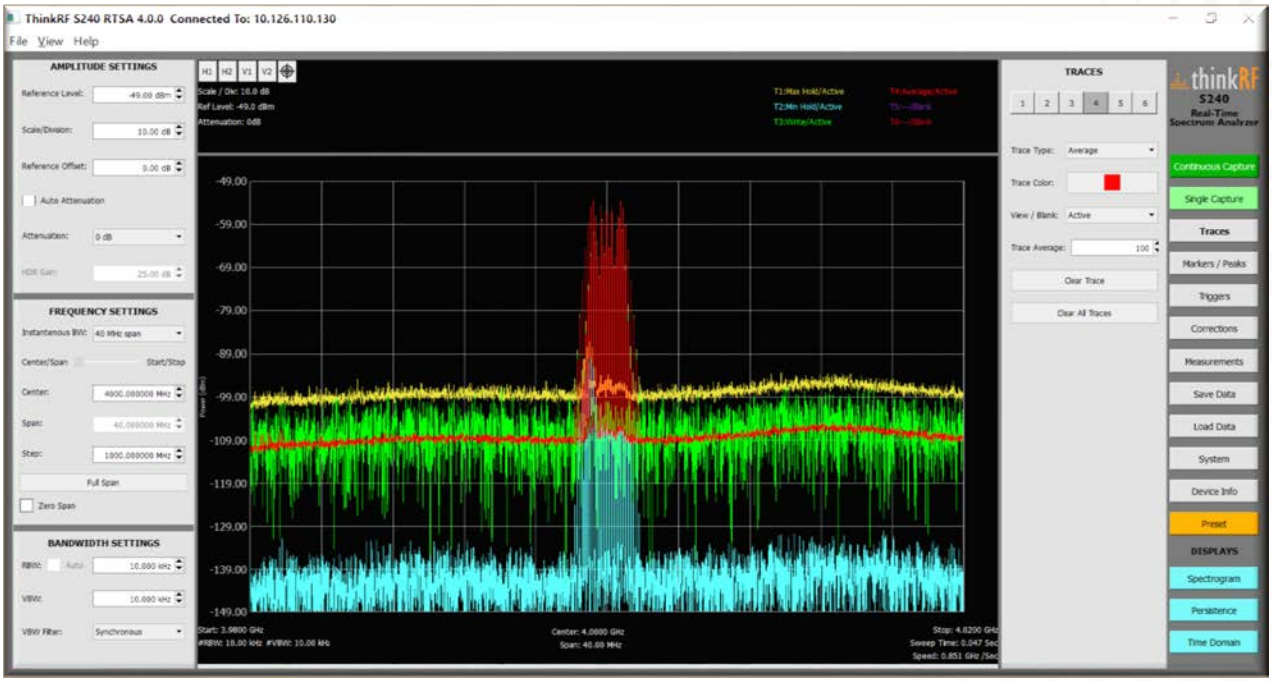
Product Brochure

S240

Real Time Spectrum Analysis
Software Application

Featuring

- Clean, simple and user friendly graphical user interface (GUI)
- Three visualization modes – Spectrogram, Persistence & Time Domain
- 100 MHz, 40 MHz, 10 MHz, 100 kHz Real-Time Bandwidth
- Frequency ranges of 100 kHz to 8 GHz / 18 GHz / 27 GHz

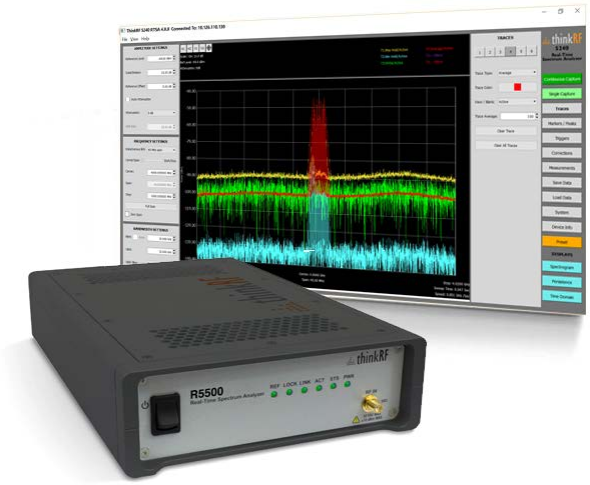


thinkRF

Overview

ThinkRF S240 Real Time Spectrum Analysis Software

The ThinkRF S240 Real Time Spectrum Analysis software harnesses the power of the R5500 to provide all of the visualization capabilities you'd expect, while still being cost-effective and easy to use. The intuitive graphical user interface (GUI) vastly improves on previous versions of the software to be more user friendly and require fewer clicks.



Along with this enhanced usability, the S240 software has introduced more measurement capabilities, including occupied bandwidth, zero-span mode and calibrated time-domain data. Features such as signal capturing, triggering and cursors have all been improved to enable better analysis, and frequently used settings can be saved to make setup more efficient.

Working with the R5500 Real Time Spectrum Analyzer, the S240 gives users the performance and capabilities they need. With 100 MHz, 40 MHz, 10 MHz or 100 kHz real-time bandwidth at frequency ranges of 100 kHz to either 8 GHz, 18 GHz or 27 GHz, it is powerful enough for any application, including test and measurement, situational awareness, research or real-time spectrum monitoring.

Features and Capabilities

The Performance You Need

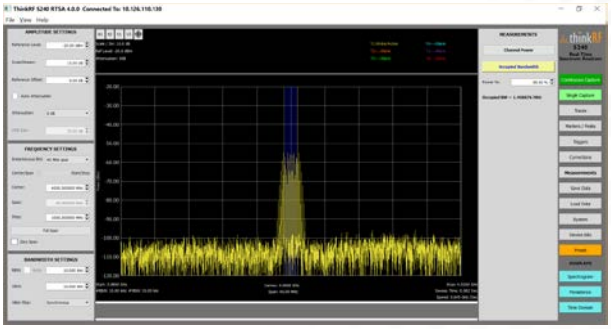
The ThinkRF S240 Real Time Spectrum Analysis software is a cost-effective way to get all of the functions you'd expect in an RTSA application. You get the performance you need to fully harness the power of the R5500 Real Time Spectrum Analyzer.

All functions have been made easily accessible in an intuitive soft menu on the right hand side of the display. Commonly used settings including Amplitude, Frequency and Bandwidth, are presented on the left and are always available to the user.

Automatic Measurements

The S240 supports two standard measurements that are critically important for users analyzing modern devices and signals such as Wi-Fi, Bluetooth, and cellular standards such as 3G/4G/5G/LTE.

Channel Power, which determines the power contained within a channel bandwidth, has been improved and is now easier to access. New to the S240 is the Occupied Bandwidth measurement. This determines the bandwidth which contains a percentage of the total integrated power of the signal, centered on the assigned channel frequency.



Features and Capabilities (cont')

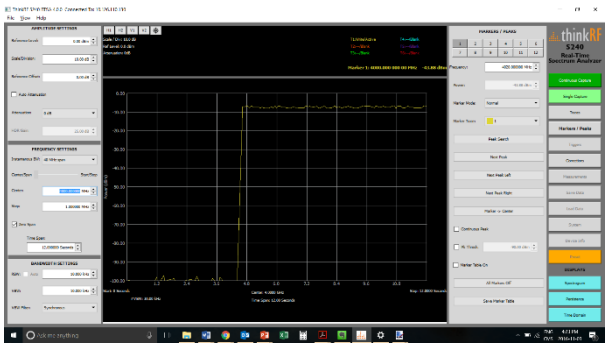
Corrections

To ensure the accuracy of the data and to eliminate known errors, the S240 includes highly effective correction functions. The first is the IQ Imbalance Correction, which removes the duplicate image of a signal that results from the architecture design of the R5500. Depending on the signal, the option is available for the user to remove wideband signal errors as well.

The S240 also provides advanced Spur Mitigation capabilities to remove nearly all spurs above a specified threshold with a single button press. Both algorithms have been improved from previous releases to make these corrections more effective, ensuring the user has the most accurate data possible.

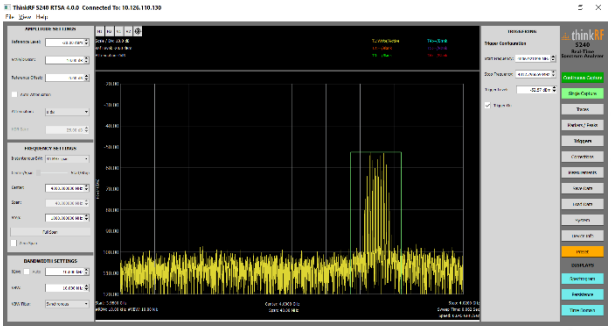
Zero-Span Mode

Also newly added to the S240 is a Zero-Span Mode, where power is displayed as a function of time. Zero-Span Mode is useful for taking pulsed power measurements at a specified frequency. By adjusting the resolution bandwidth (RBW), it is possible to get a range of measurements including power, power-in-band, and rise and fall times.



Triggering

Trigger capabilities in the S240 allow the user to set up the parameters of a signal of interest and capture data only when the signal falls within that specified range. This makes it far easier to identify and capture specific signals, and allows the user to save data more easily by keeping the file size manageable.



Traces, Markers and Cursors

Up to six traces can be displayed to show clear/write, max hold, min hold and the average of a signal. The S240 also supports up to 12 markers, which can be placed anywhere on the display or set to automatically find the center, peak, continuous peak or peak threshold. The markers can be assigned to a specific trace and can be saved and displayed in the marker table.

Further, vertical and horizontal cursors give the user more measurement capabilities to quickly and accurately measure the frequency or amplitude, or the difference between two points. The cross hair cursor lets the user hover over an area and quickly see the measurement.

Saving and Loading Data

Users can easily save and play-back data for future in-depth analysis that is difficult to conduct in real time. Triggers can be set up so that data is only saved if the signal falls within the specified range, or the user can manually record a period of time. Data can be reloaded into the application for further viewing, and future versions of the S240 will expand on these capabilities.

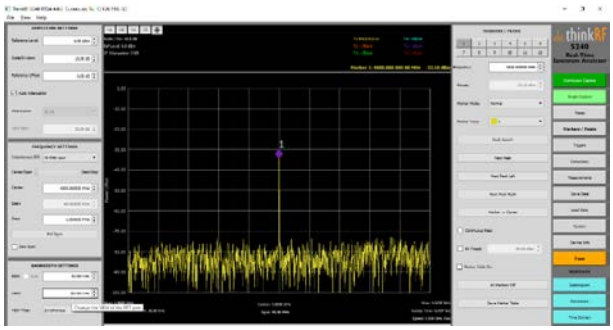
Visualization Modes

Complete Analysis

In addition to the standard frequency domain view, the S240 features three data visualizations that give users a complete view of the spectrum. With a single click, users can easily access whichever view they need and stack them to compare signals across different domains.

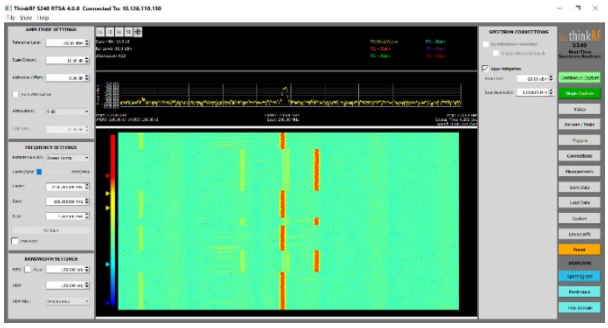
Frequency Domain

This standard spectrum graph plots power versus frequency, and allows the user to see how much of a signal lies within each frequency band. Within this mode, users can apply multiple cursors, traces and measurements to analyze specific signals of interest.



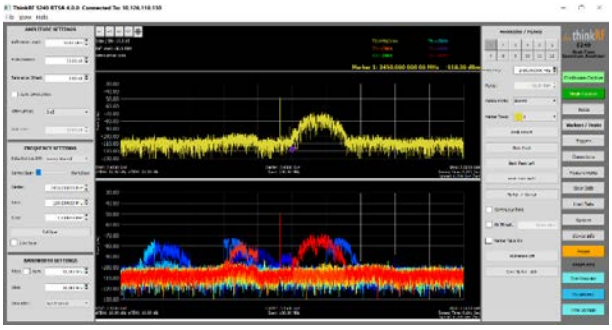
Spectrogram View

The Spectrogram view provides a 3-dimensional view of the spectrum, adding the dimension of time. It allows the users to see the periodicity of any given signal, or measure how often a signal hops. The vertical axis shows time, with time-zero at the top, while the horizontal axis shows frequency and bandwidth. The color of the measurements can be customized to indicate the relative magnitude of power of the signal.



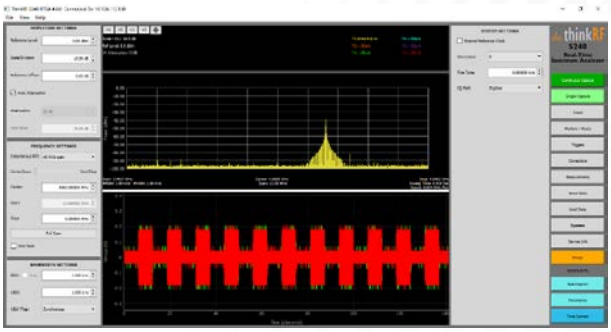
Persistence View

The Persistence view is commonly called the Power Spectral Density Display. It displays the same information as the frequency domain view, but signals persist on the screen and then gradually fade out over time. This makes it possible to view signals that are too fast to see in the spectrum graph. The color is an indication of how dense or how often the signal is present at respective power levels.



Time Domain View

The Time Domain view shows voltage on the vertical axis and time on the horizontal axis, allowing the user to view the shape of the signal as well as variations in the signal over time. The Time Domain view also displays the duration and amplitude of the signal.



About ThinkRF

ThinkRF enables the cost-effective research, testing and monitoring of all wireless devices by delivering high performance Real Time Spectrum Analyzers to customers across industries. Using patented software-defined radio technologies, the ThinkRF Real Time Spectrum Analyzer solutions provide the performance, versatility and portability needed for aerospace & defense firms, manufacturers, spectrum regulators, wireless service providers and OEMs & system integrators.

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