

New Mid-Range Tektronix Real-Time Spectrum Analyzers Show Live RF Seeing is Believing with DPX™ Waveform Image Processing; Tektronix RSA3000B Series Gain Real-Time Imaging Capabilities First Introduced with High Performance RSA6100A

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Tektronix, Inc., a leading worldwide provider of test, measurement and monitoring instrumentation, announced the addition of DPX™ waveform image processor technology to the mid-range RSA3000B Series Real-Time Spectrum Analyzers. This provides a unique live RF view of the spectrum using the RSA3300B and RSA3408B family models, enabling an unprecedented RF signal discovery capability for a broad range of digital RF applications including RFID, radio communications, and spectrum management. DPX transforms volumes of real-time data and produces a live RF spectrum display that reveals previously unseen RF signals and signal anomalies.

The rapid expansion of digital RF applications has driven the measurement needs of many applications including mobile communications and spectrum management beyond the capabilities of swept spectrum and vector signal analysis. Digital RF signals carry complex modulation and change from one instant to the next, hopping frequencies, spiking briefly and then disappearing. These transient and time varying transmission techniques help RF devices avoid interference, maximize peak power and, oftentimes, evade detection.

"Tektronix Real-Time Spectrum Analyzers are the first and only analyzers designed specifically to solve problems created by digital RF technologies," said Rick King, Vice President, Real-Time Spectrum Analyzer product line, Tektronix. "The addition of DPX technology with live RF from the high performance RSA6100A Series combined with a broad range of application-specific measurements makes the mid-range RSA3300B Series and RSA3408B the best choice not only for the toughest RF discovery and debug problems, but also as an everyday spectrum analysis and system characterization tool."

With a spectrum processing rate hundreds of times greater than any spectrum analyzer from other vendors, the RSA3300B series and RSA3408B provide 100% probability of intercept for transients as brief as 31 microseconds on the RSA3408B and 41 microseconds on the RSA3300B Series models. Combined with the exclusive ability to trigger on transient signals in both time and frequency domains, the RSA3300B Series and RSA3408B offer unmatched troubleshooting and debug of digital RF designs.

The RSA3300B series is available with either DC-3 GHz or DC-8 GHz frequency coverage. With 15 MHz capture bandwidth and 70 dB Spurious Free Dynamic Range (SFDR), the RSA3300Bs are ideal for use in the design and debug of 3G mobile systems, Near-Field systems (such as RFID and Bluetooth), and narrow to medium bandwidth communications systems.

The RSA3408B with DC-8GHz frequency coverage, 36 MHz capture bandwidth and 73 dB SFDR is tailored for higher bandwidth and dynamic range applications including 3G mobile components and system debug, WLAN and WiMax system design, demanding spectrum management applications and general purpose digital RF debug.

"Many digital RF applications need to detect and analyze RF signals that quickly change frequencies or use complex characteristics," said David Saar, President, Saar Associates. "Most spectrum analyzers cannot adequately perform the needed measurements for these applications. Tektronix has addressed these problems by adding robust capabilities for the time domain through its RSA family of Real-Time Spectrum Analyzers, often saving hours or days troubleshooting problems. The unique real-time presentation of live RF signals

means that a user will always find a problem signal. This combination of capabilities makes the new RSA3408B and RSA3300B models very attractive for a wide variety of applications."

DPX Makes All the Difference

DPX waveform image processor technology in the RSA3300B Series and RSA3408B models displays the live spectrum by processing >48,000 spectrum measurements per second, similar to the previously announced top-of-the-line RSA6114A model. This is orders of magnitude more information than is shown by any other spectrum analyzer without DPX, minimizing the analysis gaps inherent in swept spectrum and vector signal analyzers. To achieve >48,000 spectrum measurements per second, DPX makes use of dedicated, real-time hardware to process the incoming signal.

In addition to live RF, the waveform image processor also provides an intensity-graded persistence display that holds anomalies until the eye can see them to show the history of occurrence for dynamic signals and immediate feedback on signal variations over time. This provides engineers the ability to rapidly see on screen both transients and signals that ordinarily could not be seen, either because they are masked by other signals or could only be deduced after time consuming offline analysis. DPX waveform imaging will enhance productivity by quickly capturing elusive anomalies and transient events, improving accuracy and insight, and accelerating design debug.

"RF signals are complicated and often change substantially over time," said Mr. Takehiro Kawai, Assistant Manager, RFID Business Development Department, Business Development group, OMRON Corporation. "If we can quickly discover interference, then we can promptly analyze and solve problems. The DPX Live RF display of the RSA3000B series makes this easy, providing an ability to see and intuitively understand RFID signal behavior. Also, RSA3000B's analysis capabilities are also valuable for in-depth analysis of differences with IC tag chips that many companies provide."

Frequency Domain Triggering Through Frequency Mask Trigger (FMT)

The RSA3000B model with 15 MHz bandwidth and the RSA3408B with 36 MHz bandwidth are the only mid-range performance spectrum analyzers that can offer a frequency domain trigger. This is performed using the Frequency Mask Trigger (FMT) feature, finding interfering and transient signals that no other instrument can. FMT ensures that potential systems instabilities are eliminated from the design before they can cause a problem. By displaying a seamless record of frequency and power changes over time, the Tektronix analyzers can solve many transient problems ranging from modulation switching on software-defined radio systems to identification of rogue pulses in RADAR transmission to dynamic modulation changes during a WLAN transmission.

RSA3000B Series Is Part of the Tektronix Digital RF Test Bench

The explosion of digital RF has created a highly complex technology environment, requiring a need for next generation test and measurement instruments. Tektronix offers a digital RF test bench from signal generation to acquisition. Real-Time Spectrum Analyzers seamlessly capture RF signals changing over time and perform spectral, time, and modulation analysis with time-correlated multi-domain views. Arbitrary Waveform Generators generate ideal, distorted or "real-world" signals. Logic Analyzers enable the capture and analysis of the digital I/Q information to more quickly debug elusive problems within the digital baseband segment of a Digital RF design. Digital oscilloscopes allow measurements of strict timing relationships including signal integrity analysis. With these instruments and supporting software, Tektronix provides what customers need to test demanding digital RF applications.

Price and Availability

Prices for the RSA3303B with DPX begin at \$32,900, U.S. MSRP. RSA3300B and RSA3408B software options are available for 3G, WiMAX, WLAN, RFID, Signal Source and General Purpose modulation and RF analysis. All models and options are available for order. Additional information can be found at: http://www.tek.com/products/spectrum_analyzers/rsa3000/.

About Tektronix

Tektronix is a leading supplier of test, measurement, and monitoring products, solutions and services for the communications, computer, and semiconductor industries -- as well as military/aerospace, consumer electronics, education and a broad range of other industries worldwide. With 60 years of experience, Tektronix enables its customers to design, build, deploy, and manage next-generation global communications networks, computing and advanced technologies. Headquartered in Beaverton, Oregon, Tektronix has operations in 19 countries worldwide. Tektronix' Web address is <http://www.tektronix.com/>.

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<http://news.tektronix.com/2008-02-04-New-Mid-Range-Tektronix-Real-Time-Spectrum-Analyzers-Show-Live-RF>