



Radio Wireless Week

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Rump Session

“Test Tools For the Development & Characterization of Wireless Power Amplifiers”

Date: Tuesday, January 22, 2008

Time: 7 pm - 8 pm

Speaker: Pieter Seidel, *Tektronix, Inc.*

Spectral RF distortions from power amplifiers can now be controlled in real-time using digital control loops with much higher spectrum performance and efficiency compared to analog techniques. Cost advantages and manufacturing efficiency have been gained by pushing digital circuitry as far up the RF chain as technology will allow. Yesterday's narrow band, single-carrier, triple conversion systems are being replaced with wide band, multi-carrier transmitters enabled by digital signal processing (DSP) and DACs that produce direct IF, or even direct RF outputs to the RF amplifier. And waveforms are now digitally pre-distorted for maximum efficiency and tight spectrum control.

These innovative RF systems and techniques create new challenges for the design engineers and system operators who must troubleshoot and characterize them. Troubleshooting an RF design now requires the ability to trace a signal from a DSP-generated base-band to a wideband digitally modulated RF output. These digitally generated RF signals create new, transient faults that are difficult to discover, trigger on and measure.

This presentation examines the characteristics of modern RF systems and demonstrates the use of the Tektronix RSA6100A Series of Real-Time Spectrum Analyzers (RTSAs) for troubleshooting and characterizing performance. We will cover basic vector and spectrum measurements, characterizing wide band Digital Pre-Distortion systems and troubleshooting high-bandwidth systems.

Who should attend?

Wireless devices of all types (handset, base station, broadcast, and Radar) are migrating to adaptive linearization technologies. Technology experts, research, design, and test engineers who are required to design, debug, and characterize wireless power amplifier devices will benefit from this seminar. Learn about the new instrument and measurement solutions that are available to simplify your measurement and design challenges.

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