Agilent Technologies

Back to Basics Seminars (Aug 6-8, 2013)

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IEEE | MACQUARIE UNIVERSITY
Macquarie University IEEE Student Branch

Purpose: To enhance education and industry for RF/MW/MMW measurements basics and techniques

Theme: Back to Basics - VNA SA ZA *

Date: 3 consecutive days in Aug 6 – Aug 8 2013

Time: 9:00AM -12:00PM Presentations; 1:30PM-5:00PM Applications/ Demonstrations

Venue: Room 328, Building W3A, Macquarie University, Australia

* VNA (Vector Network Analyzer); SA (Spectrum/Signal Analyzer); ZA (Impedance Analyzer)

** Demonstrations will be available for appropriate HP/Agilent equipments.

Fundamentals of Vector Network Analysis	Fundamentals of Spectrum and Signal Analysis	Fundamentals of Impedance Analysis and Material Measurements
Learn the principles of measuring high-frequency electrical networks with network analyzers and how the characterization of linear and nonlinear device behaviour can be done. We will cover RF fundamentals and the concepts of reflection, transmission, S-parameters, and X-parameters and review the major components of network analyzers, followed by measurement calibration basics and various calibration techniques for accuracy enhancements.	Learn why spectrum analysis is important for a variety of applications and how to measure system and device performance using a spectrum analyzer. We begin with an introduction to spectrum analyzers and discuss theory of operation. We will examine the instrument's major components and their significance as well as the spectrum analyzer specifications that are important for your application. Digital modulation concepts and analysis tools will be introduced.	Whether your application is in R&D, production, quality assurance, or incoming inspection, Agilent Technologies has the right impedance measurement solution for you. This training will compare different impedance measurement techniques used in LCR meter and impedance analyzers including auto-balancing bridge, I-V, RF I-V and network analysis. Key parameters, conditions, fixtures and compensation techniques will be discussed. Accurate measurements of material dielectric properties will also be introduced including coaxial probe, coaxial/waveguide transmission line techniques and parallel plate.
Applications and Demonstrations	**Applications and Demonstrations**	**Applications and Demonstrations**
- Signal Integrity for PCB Design Verifications - Antenna Test - MMW 1.1THz	- 3GPP Base Station Transmitter Verifications - Signal Monitoring - Digital Receiver Test - 3GPP LTE Amplifier Test	- Accurate Impedance Measurements of Low Dissipation Factor Below 1mU - Accurate Bio-Medical Impedance Measurements with Probe Station - Touch-screen Dielectric Properties Measurements - Comparison of Single-ended and Differential Probe Impedance Measurements

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