Free EM Software Training

20 minute, hands-on training in Sonnet's Booth #2524

IMS2010
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SONNET®

High Frequency Electromagnetic Software

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SONNET®

class schedule

	Tuesday 25 May	Wednesday 26 May	Thursday 27 May
9:30 am	Intro: A Single Stub Tuner	Intro: CPW Modeling	Intro: Parametric CPW Z_0
10:30 am	Intro: CPW Modeling	Intro: Discontinuity Modeling with EM	Spiral Inductor Modeling
11:30 am	Sonnet Interface: AWR MWO®	Sonnet Interface: Cadence Virtuoso™	Sonnet Interface: Agilent ADS™
12:30 pm	Via Modeling with EM	Sonnet Release 13 Preview	Modeling PCBs with SMDs in EM
1:30 pm	Fast EM-based Filter Design	EM-based TLine Model Extraction	Driving Sonnet with Matlab®
2:30 pm	High Performance EM Computing	4 GHz Suspended Stripline Coupler	Surface Roughness Modeling in EM
3:30 pm	Modeling Anisotropic Substrates	Fast EM-based Filter Design	
4:30 pm	Spiral Inductor Modeling	Intro to CST MWS®: Coax to µStrip	

All classes are 20 minutes and will be held in Sonnet's booth #2524

Laptops for training are provided for all appropriate classes

class abstracts

Intro: A Single Stub Tuner in 40 clicks

Live training to teach you to drive the Sonnet high frequency EM simulator. Set-up and simulate a Sonnet project with a hands-on planar microstrip filter example. This class is suitable for first time users.

Intro: CPW Modeling

Learn to drive the Sonnet high frequency EM simulator with this introductory hands-on lab. We will teach you to use the Sonnet environment to model coplanar waveguide (CPW) transmission line structures. Learn the ropes with CPW port setup, and receive tips that will lead you to accurate modeling of conductor-backed and topside-only CPW designs.

Sonnet Interface: AWR MWO

AWR Microwave Office users can easily access the Sonnet Suites 3D planar EM simulators from the MWO environment. Let us show you how to use Sonnet as your EM simulation and EM extraction client with live demonstrations of interoperability between MWO and Sonnet.

Via Modeling with EM

In this session you will create and simulate a standard PCB via and extract an equivalent circuit model that can be used in other circuit simulators or for designer insight.

Fast EM-based Filter Design

Sonnet demonstrates its ability to apply optimization with EM accuracy at circuit theory speeds. Watch and participate as a 60 GHz interdigital bandpass filter is designed from start to finish, utilizing Sonnet's ***emCluster*** computing. A must-see for any filter designer.

High Performance EM Computing

Learn to leverage the latest computing hardware technology to run the fastest EM simulations possible! We'll show you how the Sonnet High Performance Solver utilizes parallel processing on multi-core CPUs to model each frequency, uses 64-Bit technology to model extraordinarily large circuits and uses a cluster computing environment to drastically reduce model simulation time.

Modeling Anisotropic Substrates

It turns out nearly all substrate materials are anisotropic, i.e., the dielectric constant depends on the direction. A common problem caused by anisotropy is that your filter design has the right center frequency, but the wrong bandwidth. We show how to easily measure anisotropy and include its effect in your Sonnet EM analyses.

Spiral Inductor Modeling

Hands-on training for the MMIC or RFIC designer. Create and simulate a spiral inductor in a typical semiconductor process, starting with inductor layout and process stack, and ending with data curves to show how inductance and Q vary with frequency. Learn how easily planar spiral inductor designs can be developed and simulated in the Sonnet 3D planar EM environment.

Intro: Discontinuity Modeling with EM

Learn to drive the Sonnet high frequency EM simulator in this hands-on session. You will use Sonnet's packaged application examples and examine the process of extracting equivalent electrical models for common (and unusual) planar circuit discontinuities. Examples include a transmission line step width, tapered width, line bend and a notched line.

Sonnet Interface: Cadence Virtuoso

Sonnet provides Cadence Virtuoso users with an integrated high frequency EM model extraction client. We'll demonstrate how to take a Cadence Virtuoso layout cell, auto-launch an EM simulation, and automatically incorporate EM extraction models for frequency and time domain simulation with Cadence Spectre and Spectre/RF. If you are designing RFICs and need an accurate, efficient and hassle-free EM model extractor for good RF models, please join us!

Sonnet Release 13 Preview

The new Sonnet Suites Release 13 is in the development pipeline. Significant features are planned for planar component modeling, equivalent circuit model extraction, and further enhancements in processing speed. In this presentation, we'll give you a sneak preview of some of the major new features and enhancements coming in Release 13.

EM-based TLine Model Extraction

Live training to teach you to drive the Sonnet high frequency EM simulator. You will learn to simulate single and coupled planar microwave transmission lines, and extract various transmission line parameters (Normal Modes, RLGC matrixes, Propagation Constants, etc.). This class is suitable for new users.

4 GHz Suspended Stripline Coupler

We'll show you a fast and accurate way to tune/optimize a planar coupler design implemented in suspended stripline using a combination of circuit theory and EM analysis with AWR Microwave Office and Sonnet. See how Sonnet's Co-calibrated Ports can be used to introduce incremental tuning ports, giving your circuit design tool access to new and highly accurate tuning and optimization capabilities.

Intro to CST MWS: Coax to uStrip

Learn to drive the CST Microwave Studio (MWS) full 3D EM simulator. Create and simulate a full 3D model of a coax to microstrip transition. See electrical performance and powerful visualization features. You will see why CST MWS is heralded as the industry's most intuitive and powerful full 3D high frequency EM simulator.

Intro: Parametric CPW Z_0

Learn to create your own characteristic impedance (Z_0) curves based on swept geometry parameter analysis in the Sonnet EM simulator. In this lab, you will start with a CPW transmission line, apply a geometry control parameter, and with a single analysis create a Z_0 curve parameterized to geometry variation.

Sonnet Interface: Agilent ADS

Agilent ADS users have the opportunity to use Sonnet's shielded-domain 3D planar EM simulation as a direct simulation client within ADS. We'll demonstrate how to drive Sonnet from the ADS schematic, the ADS layout, from the Momentum EM simulator settings or simply import pre-existing Sonnet projects (including layout) into ADS schematic look-alike elements.

Modeling PCBs with SMDs in EM

Learn to incorporate surface mount devices (SMDs) in RF printed circuit board (PCB) simulations in the Sonnet EM analysis environment. You will build up and simulate an RF power amplifier design on a popular microwave PCB material, incorporate an RF Power GaN HEMT in SMD format, and conduct EM simulation on the full circuit. Warning: High power circuit!

Driving Sonnet with Matlab

Learn to drive the Sonnet high frequency EM simulator from Matlab. Generate and manipulate Sonnet projects from Matlab using the new Sonnet / Matlab API. This class is suitable for those familiar with Sonnet and/or Matlab.

Surface Roughness Modeling in EM

A typical PCB electro-deposited foil will have 3 microns RMS surface roughness, required for good adhesion. However, surface roughness increases loss. Previous models either grossly over- or under-estimate roughness loss. In addition, these old models fail to include the substantial (up to 15%) effect roughness has on effective dielectric constant. We demonstrate how these problems are now completely solved.