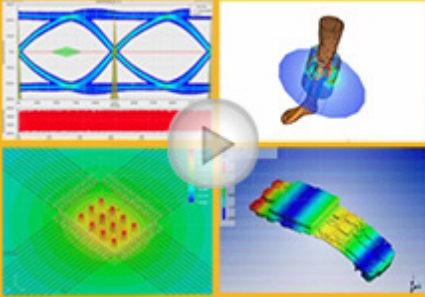


Signal Integrity

Shrinking timing and noise margins are the leading contributors to signal integrity and power integrity issues in electronic products.

ANSYS provides a complete suite of engineering simulation tools to help identify signal integrity and power integrity issues early in the design cycle, for electronics applications including:

ANSYS electromagnetic and circuit simulation products predict EMI/EMC, signal integrity and power integrity issues — enabling your design team to optimize system performance prior



ANSYS and the Electronics Revolution

to build and test. Design automation features enable you to import designs from popular, perform rigorous electromagnetic extraction and then couple to full-circuit simulations.

Introduction to ANSYS SIwave

Prerequisites

A technical education and/or background in electromagnetic is recommended but an electrical engineering degree is not required.

Overview

ANSYS SIwave is a specialized hybrid, full-wave finite element solver engine which enables engineers to perform signal integrity and power integrity analysis of electronic packages and PCBs.

ANSYS DesignerSI platform integrates electromagnetic analysis with circuit and system simulation in a highly accurate design flow for gigabit communication and memory applications such as XAUI, XFI, Serial ATA, PCI Express, HDMI and DDR. By using DesignerSI you can leverage multiple signal-integrity simulation methods such as traditional transient, fast convolution, statistical and IBIS-AMI analyses in a single user interface.

Complementing the engineering efficiency, a set of advanced technologies will be presented that enable faster EM and Circuit simulations through the application of High-performance computing (HPC) and DSO (Distributive Solve Option).

Course Description

This training course teaches students how to effectively use ANSYS SIwave, ANSYS DesignerSI to build an electrical simulation model of a high-speed interconnect, how to analyze it, optimize it and finally interpret the results for signal and power integrity and EMI/EMC applications.

Course Topics Include

Introduction

Geometry Import

Solution Setup

HPC Acceleration

DSO for robust design

Results

SIwave PCB Example

Resonant Modes

Impedance Analysis

Frequency Sweep Analysis

SIwave Package Example

SYZ Analysis

SSN

Package/PCB Merge

SYZ Analysis for SI

DC Analysis

Near- and Far-Field Analysis

PI Advisor for Capacitor Optimization

DesignerSI

Schematic wiring, importing files, variable creation, editing components, viewing results in Reporter

Linear Network Analysis

IBIS AMI and Statistical Eye modeling

SSN circuit example

The logo for CEDA-Labz features the word "CEDA" in a bold, red, sans-serif font, followed by "-Labz" in a black, sans-serif font. A thin horizontal line with a yellow-to-orange gradient is positioned directly beneath the text.