



HyperLynx Signal Integrity Analysis

The HyperLynx Signal Integrity Analysis course was developed to help you understand basic signal integrity, crosstalk, EMI concepts and gain proficiency in signal integrity, crosstalk and EMI analyses, pre and post layout.

Detailed lab exercises help reinforce what is discussed during the lectures and provide you with extensive tool usage experience under the guidance of our industry expert instructors.

You will learn how to

- Create and simulate LineSim cell-based and free-form schematics
- Investigate termination strategies
- Investigate stackup strategies
- Identify and debug SI and Crosstalk issues
- Read eye diagrams and how to specify a mask
- Simulate EMC and evaluate the results
- Assign models and component values
- Simulate differential pairs
- Evaluate SI and Crosstalk issues
- Translate PCB layout databases
- Run BoardSim simulations interactively and in batch mode
- Run BoardSim for both single and multi-board projects
- Evaluate batch mode simulation reports to identify potential problems

Audience

- Design and CAD Engineers who will use HyperLynx to analyze signal integrity
- Familiarity with High-speed PCB concepts

Key Topics

- Pre Layout Activities
- Post Layout Activities
- Fundamental Concepts of SI and Crosstalk
- LineSim's Free-form and Cell-based User Interface
- Using the Stackup Editor and the Schematic Editor
- Assigning Models and Component Values
- Setting Simulation Power Supply Voltages
- Simulation Analysis via the Scope & Spectrum Analyzer
- Lossy Analysis
- Using the Terminator Wizard
- Technology, Topology, Termination, and Transmission Line Parameter Solutions
- Design Flow



- Pre Layout Activities
- Evaluating Design Tradeoffs
- Constraint Generation
- Passing Constraints to Layout
- Creating and Testing MOD Models (Databook)
- Testing IBIS Models
- BoardSim User Interface
- BoardSim Interactive SI, Crosstalk, and EMI simulations Translating PCB Layouts to HyperLynx
- Batch Mode (Board Wizard) in BoardSim
- Quick Analysis in BoardSim
- Back Annotation
- Termination Strategies Using Quick Terminators
- Finding Possible Solutions by Comparing Potential Solutions Multi-board Analysis Pre Layout
- Multi-board Analysis - Create/edit Multiboard Projects and Caveats
- Multiple Instances (e.g. DIMMS, SIMMS)
- Adding Terminators in Multiboard Projects
- Activating the HyperLynx/SPICE (Eldo or HSPICE) interface
- Post Layout Activities
- Simulating with SPICE models
- Simulating differential pairs