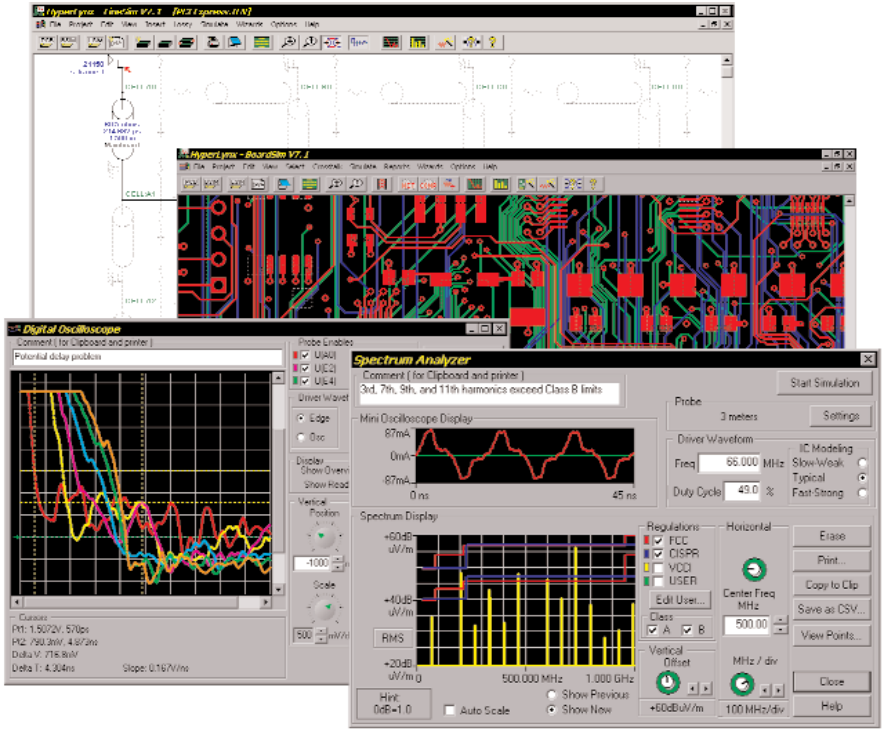
HyperLynx EXT

D A T A S H E E T



HyperLynx EXT includes a complete suite of tools for pre- and post-layout signal integrity, crosstalk and EMC analysis.

Major product benefits:

- Industry-leading ease-of-use.
- Pre- and post-layout analysis — identifies and resolves signal integrity problems before costly layout, prototyping, test cycles and volume production.
- Differential signal simulation and analysis — including differential impedance planning, and optimization of differential terminations.
- Terminator Wizard™ recommends optimal termination strategies — including series termination, parallel, parallel AC and differential.
- Provides an early look at likely EMC failures, including both radiation and trace current analysis.
- Works with all major PCB layout and routing applications.

Overview

Increasingly fast edge-rates in today's integrated circuits (ICs) cause detrimental high-speed effects, even in PCB designs running at low operating frequencies. As driver ICs switch faster, a growing volume of boards suffer from signal degradation, including over/undershoot, ringing, glitching, crosstalk, and timing problems. When degradation becomes serious enough, the logic on a board can fail-making otherwise excellent designs stare blankly into space.

HyperLynx® EXT — including LineSim™ for pre-layout analysis and BoardSim™ for post-route analysis — targets designs at frequencies up to about 500 MHz. At higher speeds, lossy effects (including skin effect and dielectric loss) and via modeling take on gradually increasing importance; the HyperLynx GHz bundle models all of these effects and includes features that address the special needs of gigabit-per-second, SERDES-based designs.

Complete SI and EMC Analysis Suite

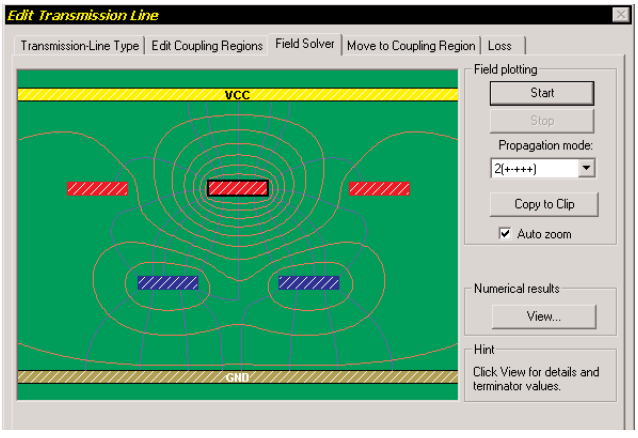
With HyperLynx, you can address high-speed PCB problems throughout your design cycle, beginning at the earliest architectural stages and moving through post-layout verification. The emphasis is on solving problems early — where it is less costly and more efficient. Getting results without spending weeks in training, getting the design right the first time, saving recurrent layout, prototype and test cycles in the lab are also emphasized. Hardware engineers, PCB designers and signal integrity specialists alike can use HyperLynx EXT or HyperLynx GHz as a team — a process that's even easier than using an oscilloscope or spectrum analyzer in the lab.

Mentor Graphics®

LineSim EXT

Pre-layout simulation with LineSim, part of HyperLynx EXT, allows you to predict and eliminate signal integrity problems early to proactively constrain routing, plan stackups, and optimize clock, critical signal topologies, and terminations prior to board layout. LineSim's intuitive point-and-click transmission-line modeling approach is an ideal way to get it right the first time.

- Quickly enter complex interconnect scenarios, including ICs, transmission lines, cables, connectors and passive components.
- Simulate immediately, using industry-standard IBIS models, HyperLynx's 7,000 model IC library, generic models, or build your own models from databook information.
- Experiment with stackup; impedance calculation is automatic.
- Model any combination of transmission lines: microstrip, buried microstrip or symmetric/asymmetric stripline.
- Full analysis of differential pairs to achieve desired differential impedance, and to optimize differential termination.
- Visual IBIS Editor allows you to check and edit IBIS models including a powerful V/I-V/t auto-correct option, and drag and-drop curve correction.
- Antenna Current Probe provides invaluable insight into the root cause of most EMC problems — excessive energy in critical nets on the PCB.



Pre-layout crosstalk analysis allows you to optimize spacing, stackup and termination.

BoardSim EXT

Post-layout signal integrity simulation with BoardSim, part of HyperLynx EXT, allows you to analyze signal integrity and timing at three important stages — following part placement in your PCB layout system, after critical net routing and after detailed routing of an entire board.

- Board Wizard™ scans high-speed nets in batch mode, checking against min and max delay values, crosstalk and over/undershoot limits for each net; automatically producing intuitive reports, including a spreadsheet-compatible list of signal integrity, crosstalk and EMC hot spots on your board.
- Interactive analysis takes you to the next level, simulating batch analysis-identified trouble spots.
- Terminator Wizard automatically recommends optimal termination values, eliminating tedious calculations.
- Quick Terminators allow new termination components to be inserted on-the-fly, enabling real-time analysis
- The Spectrum Analyzer shows predicted radiation at every frequency — compared to FCC, CISPR, and VCCI limits. Analysis takes a fraction of the time, compared to finding emission sources downstream in an anechoic chamber.

BoardSim is compatible with these PCB layout systems:

- Mentor Graphics PADS® PowerPCB™, Expedition™, Board Station®
- Cadence Allegro, SPECCTRA and OrCAD Layout
- Altium Protel and P-CAD
- Intercept Pantheon
- Zuken CADStar, Visula and CR3000/5000 PWS

Minimum Hardware/Software Requirements

Windows XP, 2000, NT 4.0, ME, or 98:

- Pentium II 333 MHz CPU, or faster
- 128 MB RAM; 80 MB hard disk space
- 1024 x 768, 256 color display
- NIC, Parallel port, or USB port to supply HostID to license management software

Sun Solaris™ version 8 or 9:

- 300 MB hard disk space

Recommended patches for Solaris 8:
- Recommended Patch Cluster: March 19, 2002 or later
- Mach 64 Graphics card patch: 108606-31 or later

To learn more about high-speed PCB design, HyperLynx EXT and HyperLynx GHz , visit www.mentor.com/hyperlynx to download the high-speed design tutorial and online demo, or call to schedule a product demonstration.

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