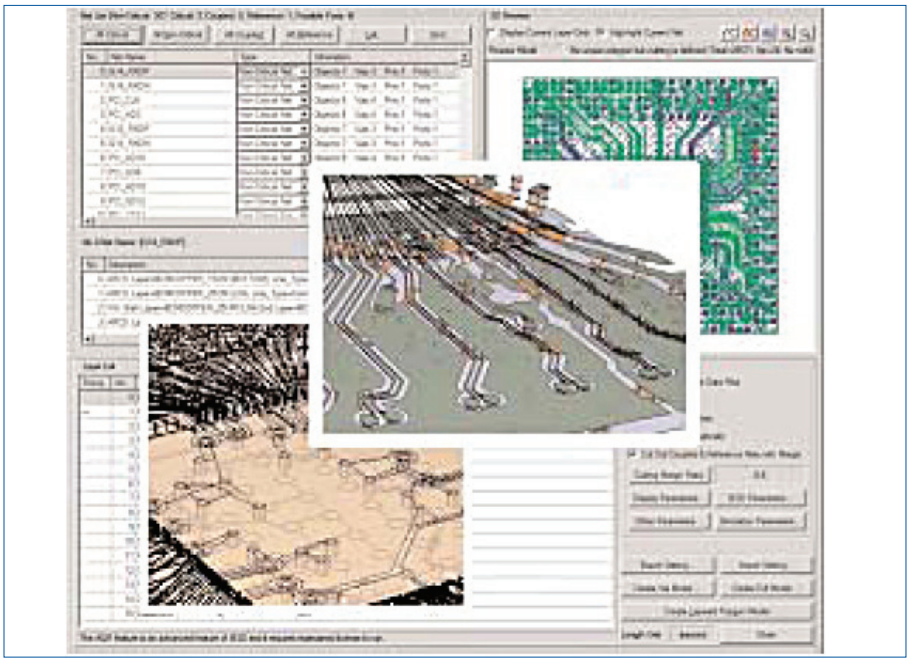
HyperLynx 3D EM



HyperLynx 3D EM with full wave simulation can accurately model complex structures on packages, PCBs and IC/MMIC circuits for optimized system performance.

MAJOR BENEFITS:

- Reliable simulation results that match measurement reduces your EM design costs by avoiding expensive design iterations
- More simulations-per-hour provides design convergence and improves overall design quality by verifying more design issues in less time
- Simulating even your largest structures in the smallest memory available reduces your EM design risks with precise geometry modeling without time-consuming error-prone design partitioning

Overview: Full Package, PCB, and Circuit Solution

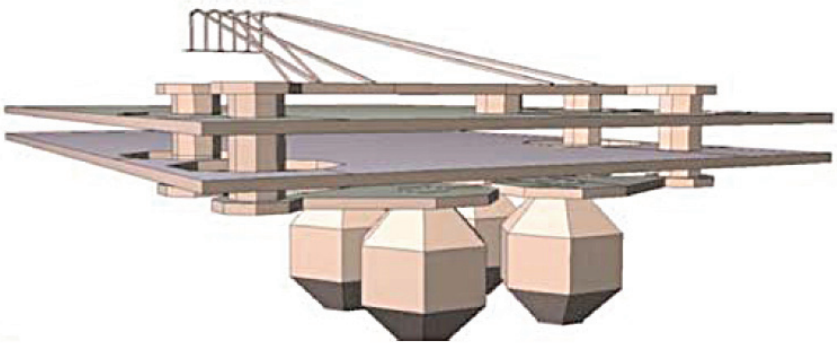
Today's high-frequency IC, MMIC, package and PCB designs need full-wave electromagnetic (EM) accurate circuit models to confidently converge on a final physical implementation that will satisfy your target performance requirements. HyperLynx 3D EM is the industry's leading full-wave 3D EM design and verification solution proven to meet the capacity & run-time performance demands of complete package, PCB or circuit-level simulation and modeling. The results are EM-accurate enabling design and signal integrity (SI) engineers to design and verify even their largest designs with the highest level of confidence. Automatic 3D geometry model creation features full support for modeling entire interconnect paths on package and board, including bond wires, solder balls & bumps, vias, and routing traces. Proprietary non-uniform mesh generation and adaptive curve fitting ensure fast and accurate simulation results for these broadband applications.

High Capacity

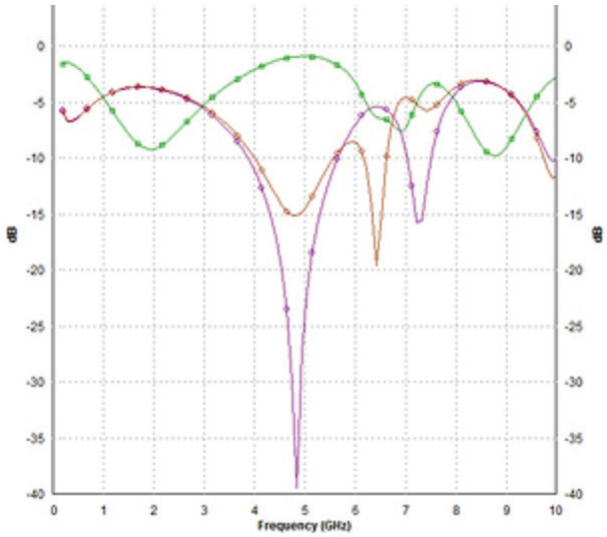
Using other commercial EM tools forces engineers to simplify and/or reduce the size of the structure to be modeled. In many cases, layer stack-up and adjacent metal structures must be trimmed away before the tool can attempt to complete the simulation. As a result, the engineer gives up too much accuracy with these approaches which are too limiting, very time-consuming, and totally inadequate towards capturing all the important parasitic coupling and electrical characteristics of the complete structure. Unfortunately, the designer is left with a poor choice to widen design margins, which leads to under achieving system performance goals and requiring more area or I/Os than necessary. Today, HyperLynx 3D EM introduces the distributed computing technology, which simulates the full structure with the optimal solution in a reasonable length of time.

Auto 3D Geometry Modeling & Meshing

One of the biggest challenges accompanying very large EM structure simulation is the ability for the user to quickly and accurately build a full 3D geometry model. Secondly, generating an EM mesh for such a structure that fits into allowed computer memory without overwhelming the EM engine has long been an unbroken design barrier. HyperLynx 3D EM has successfully shattered this design barrier with integration to a variety of popular layout design tools. Full 3D geometry models of bond wires, solder balls, bumps, vias, traces and dielectric layers are automatically extracted directly from the layout data and meshed to ensure proper handling by the 3D EM engine. Now, design and signal integrity engineers are granted easy access to an accurate EM solution to improve and verify a design's final performance as part of their overall EM design practice.



Process Engineering from Assembly Documentation



HyperLynx 3D EM generates S-parameter models for time and frequency domain simulations.

EM Modeling & Time Domain Simulation

HyperLynx 3D EM delivers multiport S-parameter models (Touchstone Format) and broadband RCLK Spice subcircuit models ready to be plugged into time- or frequency-domain circuit simulators. These models can be directly read in to HyperLynx SI, the leading industry SI and PI analysis tool, for thorough and effective time domain simulations required in DDRx or SerDes designs.

Layout Tools Supported

- Mentor's Expedition, Board Station, and PADS
- Cadence Allegro Package Designer and CDNSiP
- GDSII
- AutoCad DXF
- Gerber

System Requirements

- Windows 32-bit systems
- Windows 64-bit systems
- Linux 32-bit systems (3D engine only)
- Linux 64-bit systems (3D engine only)

For the latest product information, call us or visit: www.mentor.com/hyperlynx

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Corporate Headquarters
Mentor Graphics Corporation
8005 SW Boeckman Road
Wilsonville, OR 97070-7777
Phone: 503.685.7000
Fax: 503.685.1204

Sales and Product Information
Phone: 800.547.3000
sales_info@mentor.com

Silicon Valley
Mentor Graphics Corporation
46871 Bayside Parkway
Fremont, CA 94538 USA
Phone: 510.354.7400
Fax: 510.354.7467

North American Support Center
Phone: 800.547.4303

Europe
Mentor Graphics Deutschland GmbH
Arnulfstrasse 201
80634 Munich
Germany
Phone: +49.89.57096.0
Fax: +49.89.57096.400

Pacific Rim
Mentor Graphics (Taiwan)
Room 1001, 10F
International Trade Building
No. 333, Section 1, Keelung Road
Taipei, Taiwan, ROC
Phone: 886.2.87252000
Fax: 886.2.27576027

Japan
Mentor Graphics Japan Co., Ltd.
Gotenyama Garden
7-35, Kita-Shinagawa 4-chome
Shinagawa-Ku, Tokyo 140-0001
Japan
Phone: +81.3.5488.3033
Fax: +81.3.5488.3004

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