# HyperLynx 3D EM

Electromagnetic design and verification for PCB, packaging, RFIC, MMIC, and planar antenna designs

Overview

HyperLynx® 3D EM presents a full-wave 3D EM design and verification solution that meets the stringent demands of complete package, PCB and circuit-level simulation and modeling.

Its method-of-moments implementation incorporates automatic 3D geometry model creation, full support for modeling entire interconnect paths on package and board (including bond wires, solder balls and bumps, vias and routing traces), proprietary non-uniform mesh generation and adaptive curve fitting.

Using HyperLynx 3D EM, your engineers can create EM-accurate simulations without requiring structure simplification, ensuring precise results.
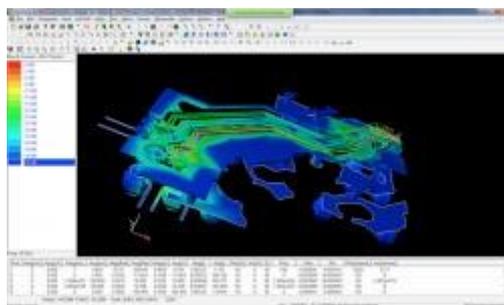

Proven 3D full-wave EM engine ensures accurate results
Full 3D geometry generation with support for modeling entire interconnect paths on package and board, including bond wires, solder balls & bumps, vias, and routing traces
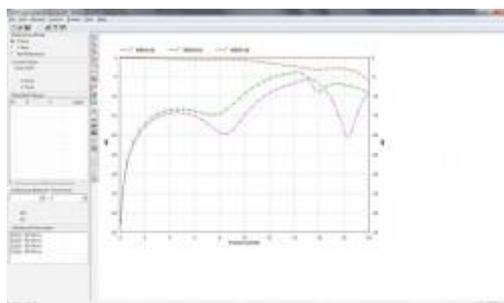
Easy-to-use extraction from layout to EM model

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
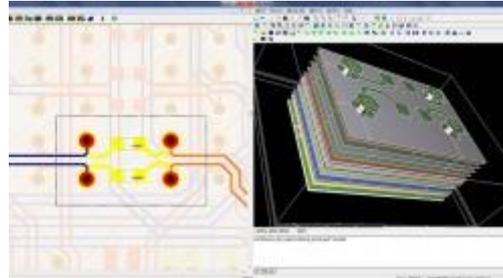
Extract S-parameter models for full system validation
Delivers multiport S-parameter models (Touchstone format) and broadband RCLK SPICE subcircuit models ready to be plugged into time- or frequency-domain circuit simulators

Technical specifications
- Fast structure optimization and a database of solved EM solutions deliver real-time geometry tuning and EM modeling
- Automatic non-uniform mesh generation—even novice users with limited numerical modeling skills can easily achieve expert-level results
- True 3D metallic structure modeling places no limitation on shape or orientation; easily model conical vias, conical helix antennas, wire bonds and any planar microwave or RF structures
- Intuitive graphical user interface provides a large set of polygon and vertex-based editing facilities, speeding up EM structure definition and parameterization
- Rich library of common complicated structures enable the designer to construct complex 3D and multi-layer EM structures in minutes
- Full 3D geometry editor
- Full-wave 3D EM simulation engine (with distributed computing)
- Adaptive broadband curve fitting ensures fast and accurate simulation results
- Choose from a variety of displays for plotting S-, Y-, and Z-parameters in data list, rectangular and Smith Chart