Hermes 3D

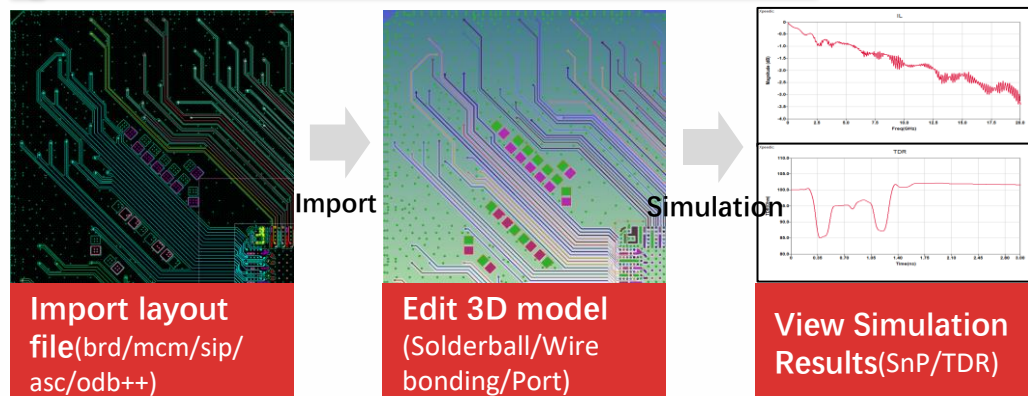## 3D Full-Wave Electromagnetic Simulation of Package and Board

Highlights

1 Hermes 3D offers efficient three-dimensional full-wave electromagnetic simulation for high-speed serial/parallel circuits including package, PCB, and package-PCB combo.

2 The tool provides great compatibility with various file format: brd, mcm, sip, asc, and odb++.

3 The tool has efficient model processing capabilities such as automatically adding Solderball, Wire bonding, Port, Air box, etc.

4 With 3D view function, the tool makes model check much easier and more intuitive.

5 The tool's FEM3D solver uses a three-dimensional full-wave electromagnetic algorithm and Adaptive Mesh technology to handle all the main applications with high accuracy.

Hermes 3D Simulation Process

Import → **Simulation**

Import layout file(brd/mcm/sip/asc/odb++)

Edit 3D model (Solderball/Wire bonding/Port)

View Simulation Results(SnP/TDR)

❖ Hermes 3D is an electromagnetic simulation tool for package and PCB signal integrity analysis. It can quickly and accurately import layout files in multiple formats to check signal integrity indicators, such as insertion loss, return loss, crosstalk, etc.

❖ To meet different requirements for precision and performance, Hermes provides two solvers: FEM3D solver and Hybrid solver

  ❖ FEM3D solver delivers Top level accuracy and the highest quality

  ❖ Hybrid solver ensures the premise of certain precision with faster speed, greatly improving the solving efficiency

❖ In addition, both solvers make use of parallel technology for better efficiency. The distributed and multi-core processing technology is more competitive in the market.
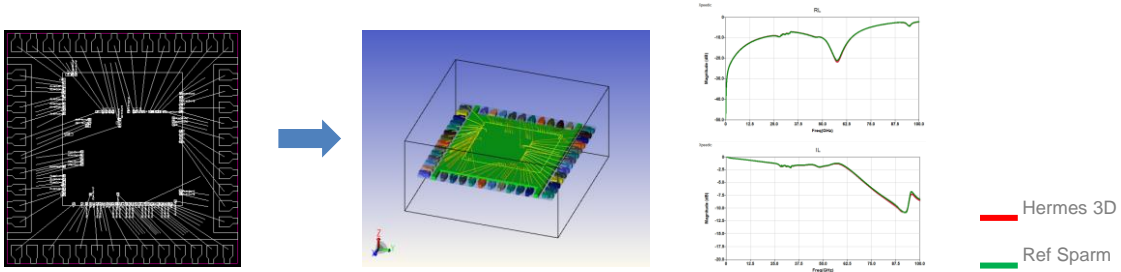
Package and PCB Co-Simulation Case

• Hermes 3D supports Package-PCB co-simulation to analyze coupling effect and signal integrity performance between package and PCB.


Hermes 3D

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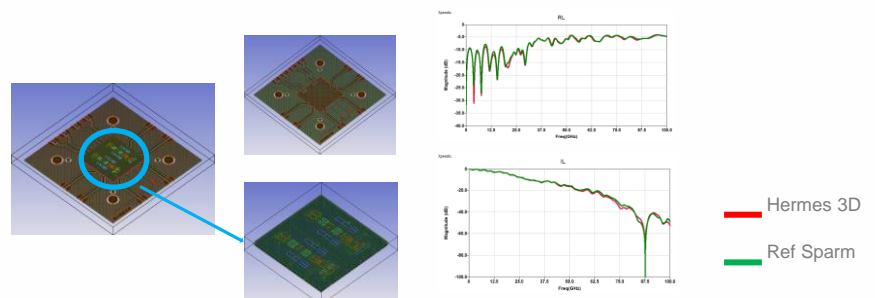
QFN Package Modeling Simulation Case

- Hermes 3D supports importing dxf files to create models
- QFN packages are mainly designed in AutoCAD, and the layout file format is dxf.

Hermes 3D
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FCBGA Package Modeling Simulation Case

- FCBGA package needs to describe the physical characteristics and optimization results of bumps, package traces, and package pads quickly and completely . A tight integration with third‑party tools also enhances the flexibility of FEM analysis.

Hermes 3D
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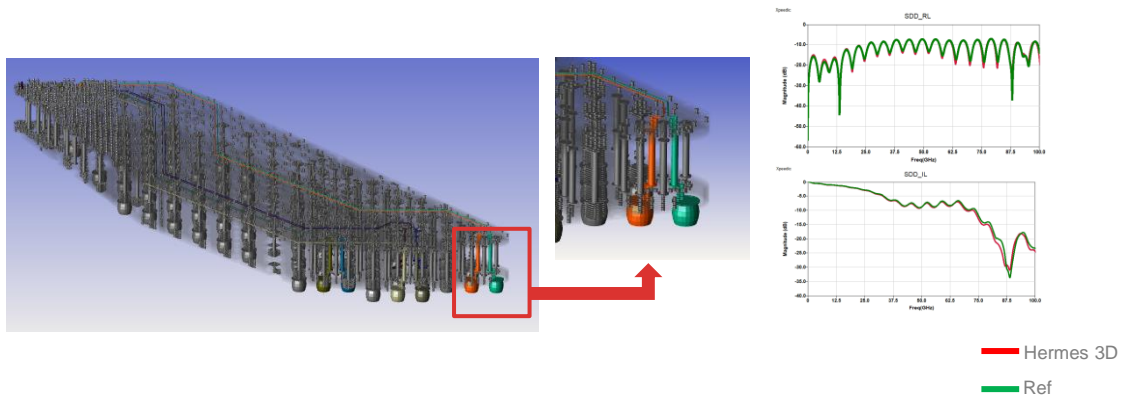
Rigid‑flex PCB Modeling Simulation Case

- Import of .brd file
- Display of the stack of Rigid and Flex boards in different areas

Rigid area
Flex area