Hermes

3D Full-Wave Electromagnetic Simulation of Package and Board

Highlights

1

Hermes 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 formats such as brd, mcm, sip, odb++, gds, and dxf.

3

The tool has efficient model processing capabilities such as automatically adding solderball, bonding wire, port, air box, etc
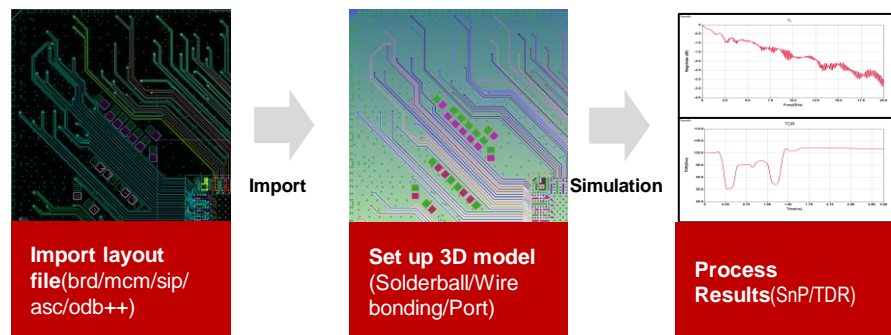
4

With built-in 3D view feature, the tool makes model check much easier and more intuitive.

5

Hermes incorporates 3D finite-element-method (FEM) based solver engine and adaptive mesh technology to ensure accurate results with fast convergence.

Hermes Simulation Flow

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

Import →

Set up 3D model (Solderball/Wire bonding/Port)

Simulation →

Process Results(SnP/TDR)

- Hermes is an electromagnetic simulation tool for package and PCB signal integrity analysis. It can quickly import layout file and accurately simulate the resulting structure to check signal integrity indicators such as insertion loss, return loss, crosstalk, etc.
- To meet different requirements for precision and performance, Hermes provides two mesh and solver engines
    - Hermes Layered for multilayered structures such as package and board
    - Hermes 3D for arbitrarily 3D structures
- Hermes FEM solver engine achieves more efficiency with multi-core parallel technology. The distributed processing technology further improves the efficiency.
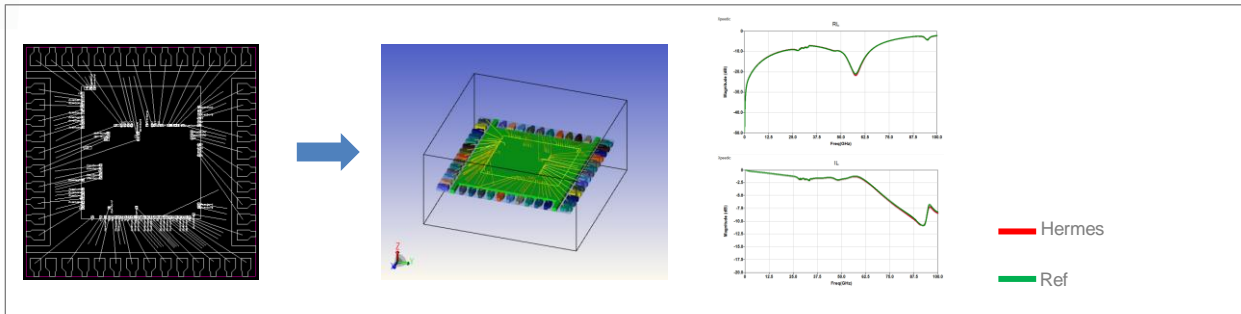
Package and PCB Co-Simulation

Hermes supports Package-PCB co-simulation to include coupling between package and PCB.
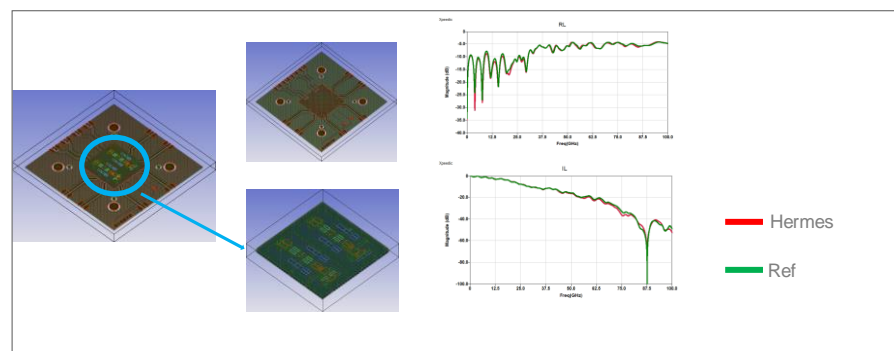
QFN Package Modeling

- Hermes imports dxf file
- QFN packages are mainly designed with AutoCAD. So, the layout file format is dxf.

FCBGA Package Modeling

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.
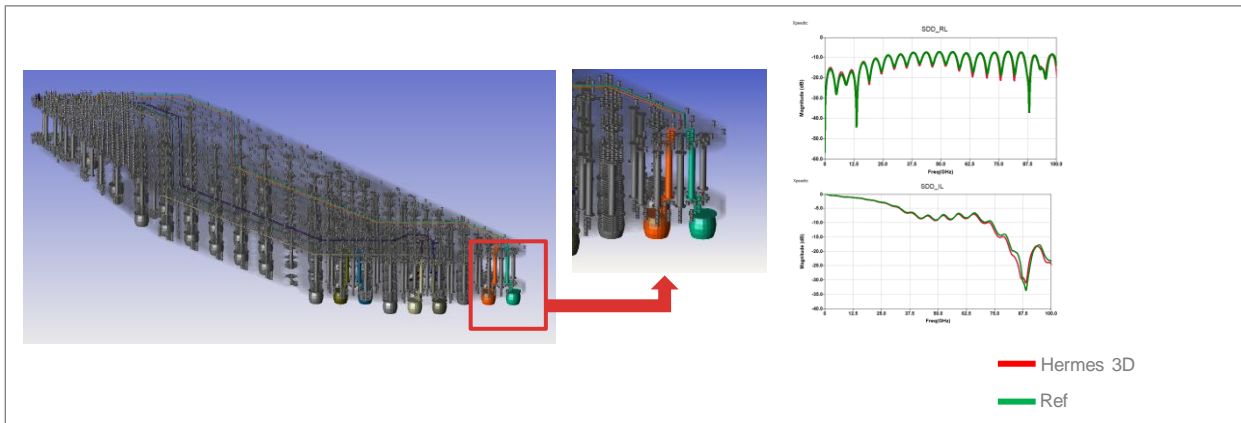
Rigid-Flex PCB Modeling

- Import of .brd file
- Display of the stack-up of Rigid and Flex parts of a mixed board