Notus

Multi-physics Analysis Platform for PI/SI/Thermal of Chip, Package and PCB

Highlights

1

Notus is a simulation platform for signal integrity, power integrity and thermal analysis of chip, package and board. Notus uses a variety of electromagnetic technologies to provide complete simulation process of different applications.

2

Notus DC provides the comprehensive DC power analysis to ensure the end-to-end voltage drop margin of each device and the stable supply of the power distribution network.

3

With Notus AC simulation, the frequency domain impedance of the power supply network is extracted, and is analyzed to improve the performance of the system.

4

Decoupling capacitor optimization analysis helps designers quickly obtain the best capacitor decoupling and layout scheme

5

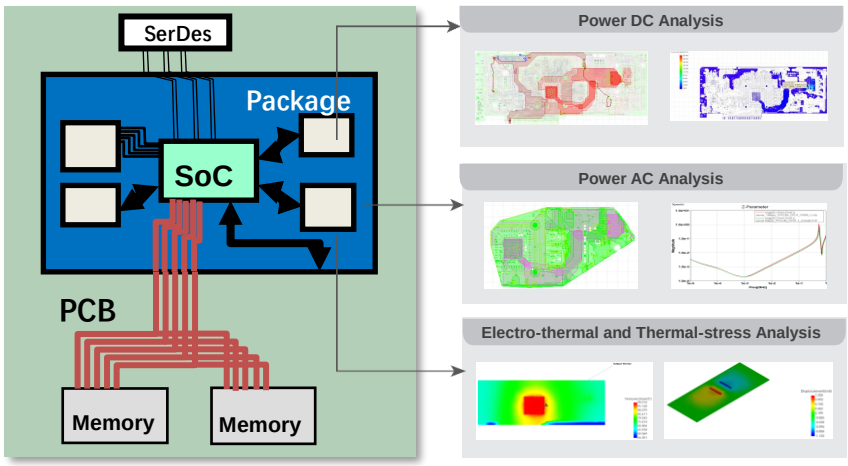
Electro-thermal co-simulation can simultaneously consider the effects of device and Joule heat to accurately evaluate the temperature changes of the system, and obtains the thermal stress analysis results.

6

Notus provides a fast and accurate electromagnetic field modeling solution for signal buses. Circuit topology extraction and simulation provides a solution to quickly check the quality of signal waveforms.

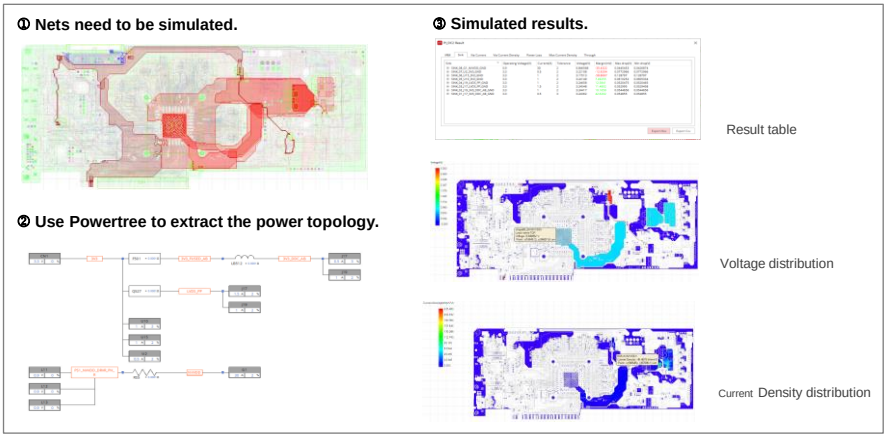
Overview

- Notus is a comprehensive platform to help resolve power integrity, thermal and thermal-stress related issues of the electronic product design. It integrates different workflows, including DC analysis, AC analysis(OPI supported), electro-thermal analysis and thermal-stress analysis which can help users conduct the simulation easily.
- Notus is based on different multiple electromagnetic engines and AI-based meshing technology. It can meet the efficiency and accuracy requirements of the complex system-level power, signal integrity and thermal simulation.



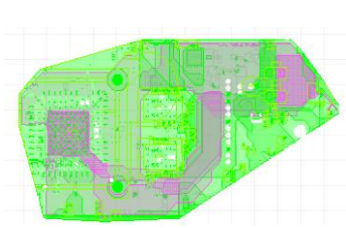
Power DC Analysis

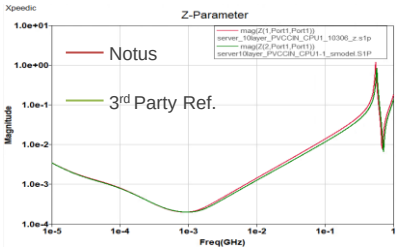
- Notus DC provides comprehensive DC power analysis for low-voltage, high-current PCB and package products.
- Notus DC can analyze the end-to-end voltage drop, the current density and the current of Vias, Bump/Ball and Wirebond.
- Powertree helps to set up the VRM/Sink/Component Model easily based on extracted power topology.

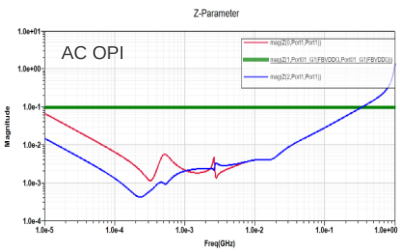


Power AC Analysis

- AC analysis for frequency domain impedance and decoupling capacitor optimization.
- OPI can optimize the values and locations of decoupling capacitors to ensure the optimal performance of PDN and reduce the cost of redundant decoupling capacitors.

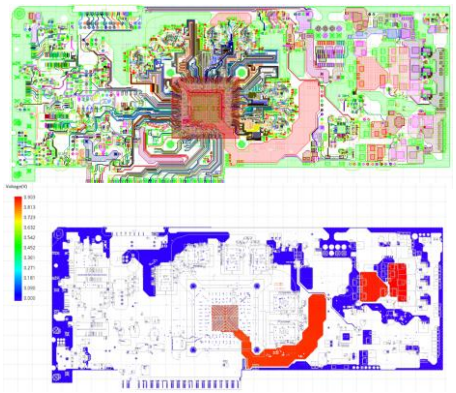




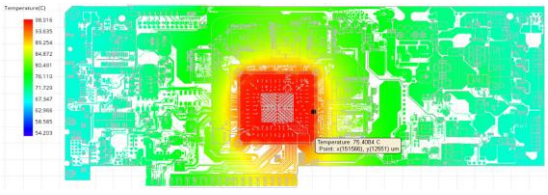


Electro-thermal and Thermal-stress Simulation

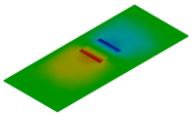
- Electro-thermal co-simulation can simultaneously consider the effects of device heat and Joule heat to accurately evaluate the temperature changes of the system.
- Temperature change may cause thermal-stress issues which may bring PKG/PCB deformation risks, Notus can help conduct thermal-stress evaluation.



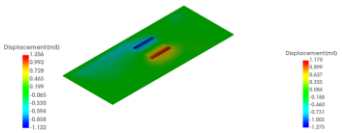
Voltage Distribution



Thermal 2D View



Displacenment Delta X



Displacenment Delta Y

Signal Topology Extraction and Simulation

- This feature provides a solution to quickly check the quality of signal waveforms.
- Notus can automatically extract the interconnect models to create the circuit topology for time-domain simulation.