



Boreas

3D Multiscale Fluid Flow and Heat Transfer Numerical Simulation Platform

Highlights

1

Boreas is a professional simulation platform dedicated to CFD and heat transfer analysis. It delivers high-precision, high-efficiency and highly reliable digital simulation solutions to resolve thermal dissipation and fluid dynamics challenges.

2

Boreas provides comprehensive thermal simulation capabilities, encompassing steady-state and transient analysis, pure heat conduction, thermal radiation, and laminar & turbulence modeling.

3

Boreas incorporates optimized FEM and FVM solvers integrated into a unified platform. Users can select appropriate solvers for diverse physical scenarios without switching software.

4

Boreas is equipped with model import modules. It supports the import of mainstream CAD files, such as STEP and SAT, as well as ECAD files in multiple formats including BRD, MCM, ODB++, etc.

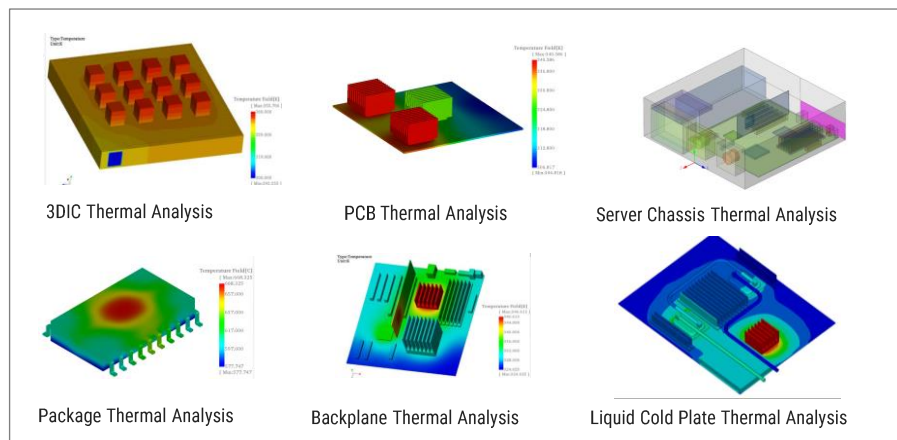
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Boreas supports distributed parallel computing to improve the simulation efficiency. It can also use Xpeedic's JobQueue to manage the simulation tasks automatically.



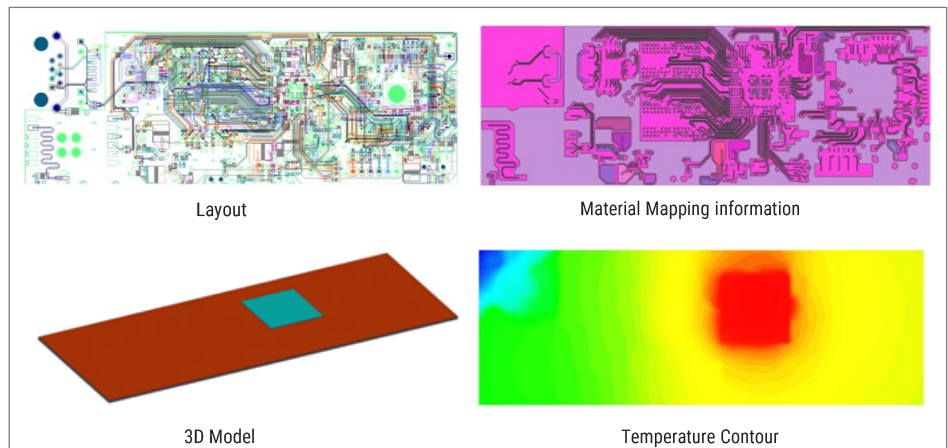
Overview

- Boreas is a 3D system-level fluid analysis software equipped with a highly efficient, stable computing engine and superior meshing technology.
- Boreas supports thermal and heat transfer analysis of individual electronic components, as well as natural and forced convection simulations for full electronic systems.
- Boreas is widely adopted in consumer electronics, power equipment, and semiconductor industries. Designed for complex system-level simulations, its key applications encompass chip cooling, PCB heat dissipation, power device thermal management, server chassis cooling, and electronic control system thermal evaluations.



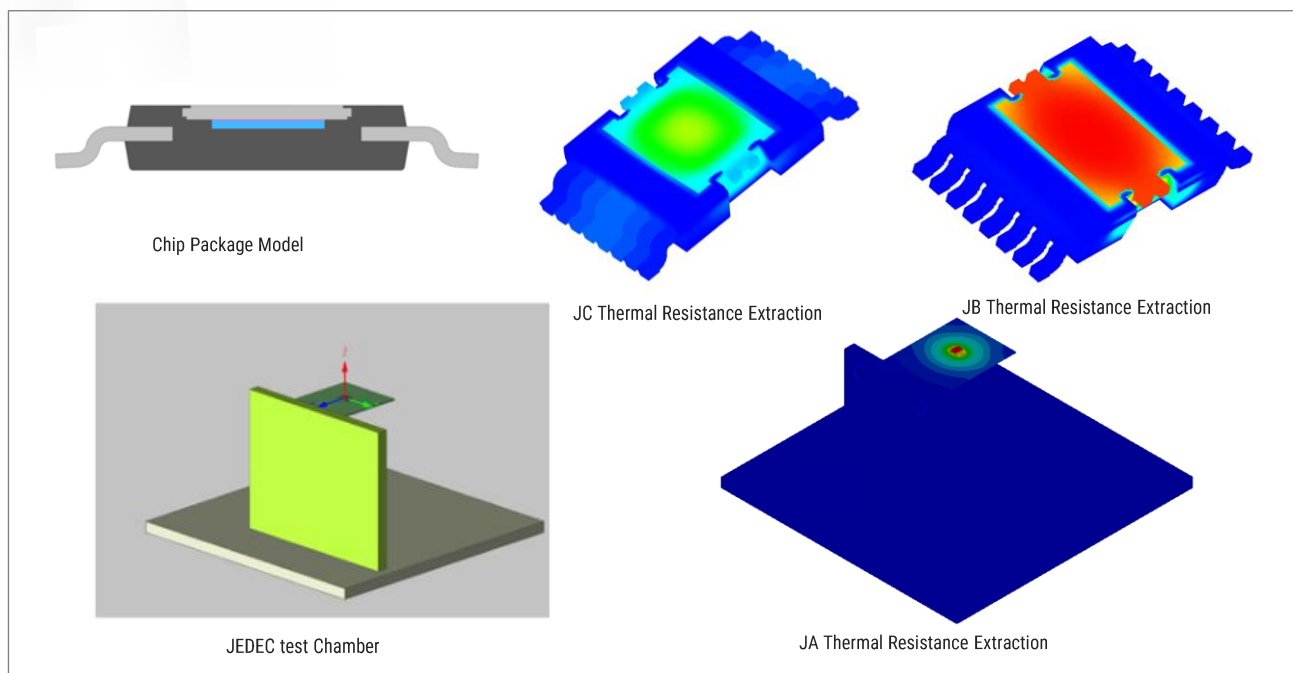
Boreas PCB-level Thermal Analysis

- Supports multiple ECAD formats, fully preserving layout and routing information.
- Automatically maps the material properties of routing traces and vias to calculate the anisotropic thermal conductivity distribution across each layer.
- Empowers users to easily handle complex scenarios such as high-density PCBs and advanced packaging.



» Boreas Package Thermal Resistance Extraction

- Boreas supports package thermal resistance extraction, utilizing parametric technology to quickly create JEDEC standard test chambers..
- Calculates thermal resistance data under natural or forced convection, extracting Rja, Rjb, and Rjc for IC packages.



» Boreas Liquid Cooling Plate Thermal Analysis

- Enables arbitrary 3D liquid plate modeling for thermal analysis, with full support for SAT, STP, IGES, XT, and DXF design files.
- Manual creation, edition and assembly of arbitrary 3D models.
- Provides different options for heat source definition, covering surface heat sources, volumetric heat sources and PowerMap-based heat sources.
- Helps customers accelerate the commercialization of their products through design innovation, structural optimization, and test verification

