

Product Features

Direct ECAD Interface

- ▶ Import ECAD data from Mentor® Board Station® and Expedition™, Cadence Allegro®, Accel, Innoveda (PADS®), Altium™, Zuken, VeriBest and more
- ▶ Data includes traces, vias, components and true board shape
- ▶ Data is used for accurate 3-D representation of multi-layer, single- and double-sided boards
- ▶ Component library includes JEDEC-based 3-D geometry
- ▶ Compatible with compact thermal models
- ▶ SmartMapping learns your components' nomenclature to automatically map components in the ECAD data base to the ANSYS Iceboard internal library
- ▶ Import power dissipation
- ▶ No limits on the number of components

Integrated CFD Solution

- ▶ Predicts actual air flow over the board
- ▶ Air and board are meshed automatically and independently for optimum solution for each domain and solution speed
- ▶ User-defined inlets and outlets
- ▶ Identifies over-temperature components
- ▶ Several options to account for adjacent boards
- ▶ Edge clamping devices (such as wedgelocks) can be added for conduction to sidewalls
- ▶ Export the board to Icepak® for system-level simulation

Trace Heating

- ▶ Define the current in traces and planes and automatically account for Joule heating
- ▶ Trace temperature automatically accounts for temperature dependencies of copper
- ▶ Automatically calculates the voltage drop of power and ground planes

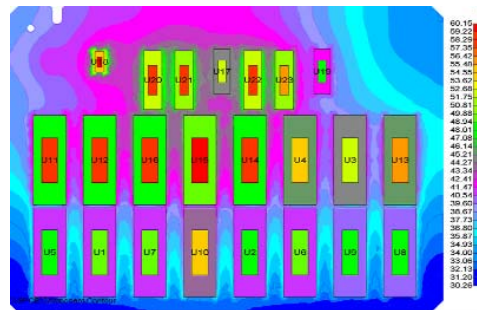
The Most Complete PCB Thermal Simulation Solution

Designers are creating PC boards (PCBs) that are higher density, higher power and smaller than ever before. Do you have the thermal analysis tools necessary to keep up with these advances?

Realize and solve potential problems in the design phase and avoid costly over-design or failure in the field with ANSYS Iceboard software.

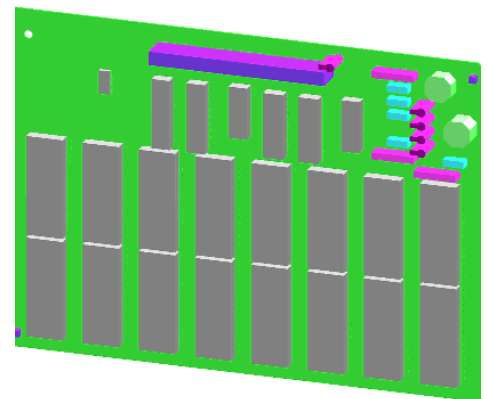
ANSYS Iceboard provides all the advanced thermal capabilities you need to:

- ▶ Identify and solve thermal problems early in design — when failures are least costly to fix
- ▶ Improve overall thermal management of your PCBs for better reliability
- ▶ Slash development time without risks of over-design or failure in the field
- ▶ Increase overall product reliability and speed time to market



Quick Start: Import Design Data

Even if you're not a thermal expert, ANSYS Iceboard software allows you to quickly predict and solve thermal problems early in the design. You can automatically import all the relevant design data from your ECAD tool, including component data, traces, power and ground planes, and vias. A built-in component library provides 3-D geometry and thermal data to automatically create a 3-D board model. In less than one hour, you can accurately define a complete board.



Product Features

ANSYS Iceboard Can Be Used to Predict:

- ▶ Component junction temperatures
- ▶ Trace temperatures
- ▶ Voltage-induced power dissipation
- ▶ Effects of embedded resistors
- ▶ Effects via count and placement
- ▶ Effective board-level properties for use in system-level models
- ▶ Effectiveness of heat sink variations
- ▶ Effects of component placement
- ▶ Impact one component has on another in a real system
- ▶ Effect of changes in PCB copper thickness
- ▶ Effect of bonding or soldering a component to the board

Easy to Use

With ANSYS Iceboard software, you can work quickly and easily

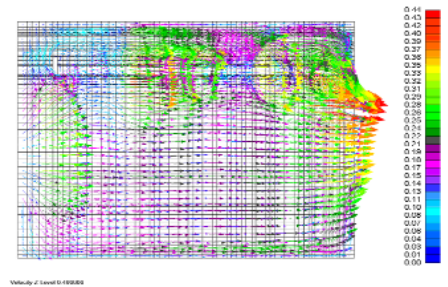
- ▶ Smart defaults provide for quick analysis during design
- ▶ Overrides allow you to customize analysis capabilities
- ▶ Web-based training videos offer easy access to step-by-step instructions

Predict Airflow Using CFD

Three-dimensional computational fluid dynamics (CFD) analysis predicts the motion of air over the board as well as the heat transfer from the board and components to the air. With ANSYS Iceboard software, you have an integrated CFD solution with user-defined inlets and outlets.

Predict Trace Temperatures with Accuracy

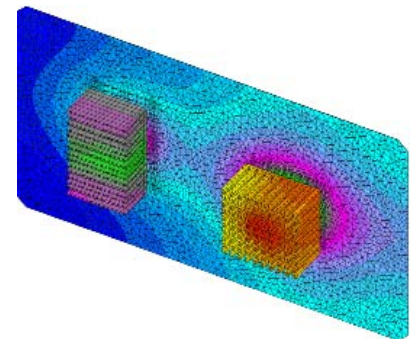
- ▶ Predict board temperatures accounting for Joule heating of internal traces, planes and vias
- ▶ Define the current in traces, locations of current sources, and sinks on filled planes or locations of voltage sources
- ▶ ANSYS Iceboard automatically solves for filled planes voltages then calculates temperature-dependent power dissipation



Solve Problems

ANSYS Iceboard software not only finds problem areas, it helps you solve them. The software allows you to quickly try different solutions then re-run your analysis. For example:

- ▶ Add a heat sink from the library
- ▶ Bond or solder a component to the board
- ▶ Add a conduction frame
- ▶ Increase the air flow
- ▶ Add thermal vias under the component



Meaningful Output

ANSYS Iceboard allows you to select complete graphical output or customize tabular output. Models can be exported to ANSYS®, ANSYS® TAS™, NASTRAN®, FEMAP® or SINDA.

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