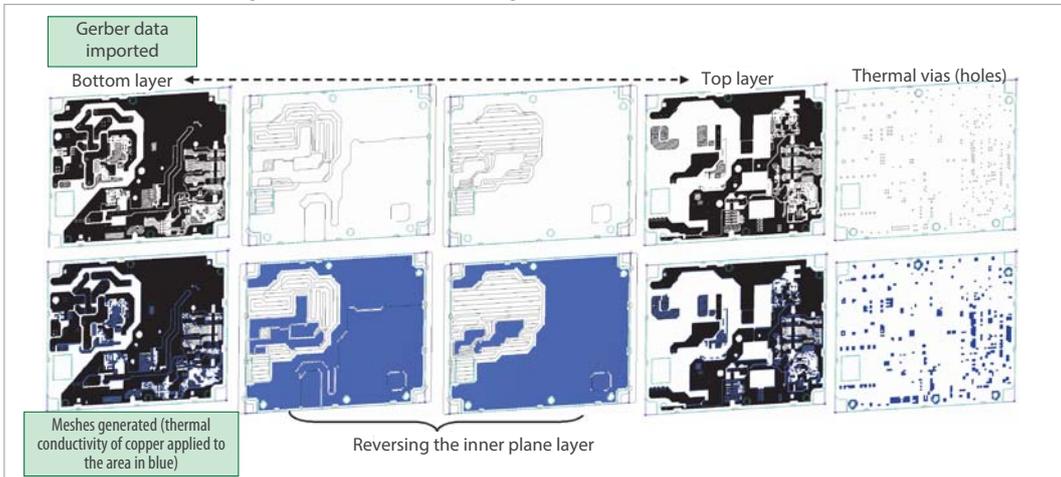


Gerber Data Import and Other Functions

scSTREAM and HeatDesigner Features

Estimating the Heat Dissipation from a Circuit Board (by Importing Data in Gerber)

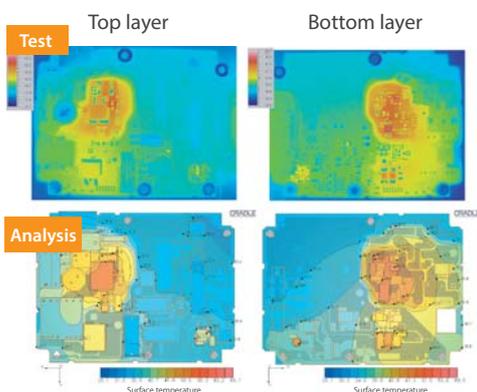
Import data in the standardized Gerber format (RS-2740, a type of board circuit format) to estimate the heat dissipation from the board while including the effects of the wiring distribution.



Accounts for:

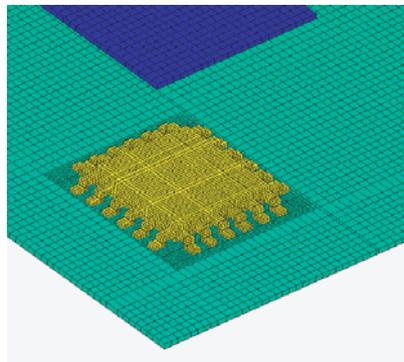
- Heat dissipation distribution of circuit pattern
- Heat transfer through thermal vias (holes)

Simulate more accurate board temperature distribution



Multi-Block Meshing (Partially Detailed Meshing)

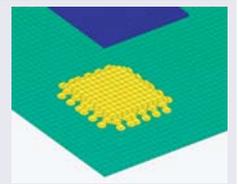
Structured meshes can be refined in specific areas.



Generates detailed meshes for the intricate parts to ensure the model quality

Without multi-blocks

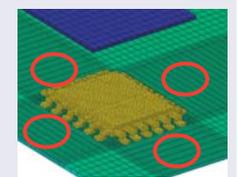
Meshes are coarsely generated. Intricate parts are not precisely represented.



Helps to generate meshes efficiently and improves representation accuracy of specific area

Without multi-blocks

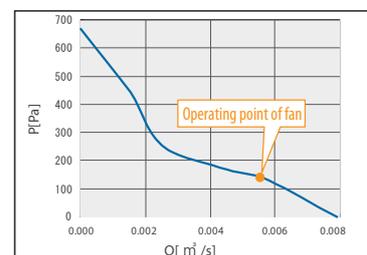
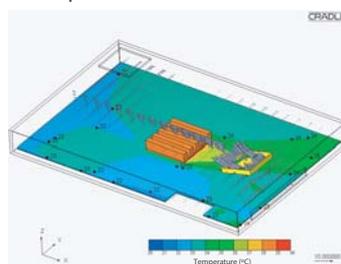
Due to fragmentation, meshes are unnecessarily generated, and can be overly assembled in some places.



- Controls calculation time and memory share
- Improves calculation accuracy

Effect of a Diagonally Allocated Fan

A fan can be placed diagonally, which allows analysis of a more complicated heat dissipation mechanism.



PQ characteristics can also be considered

Comparison between standard procedure and Gerber data application		
	Standard procedure	Gerber application
Number of mesh elements	14.2 million	7.6 million
Time taken when calculated using 4 cores (Convergence)	18 hours (780 cycles)	13.5 hours (290 cycles)
Memory	7.6 GB	4.8 GB
Model generation	Allocate the pattern, deform it, and generate parts onto circuit	Import Gerber data

By applying Gerber data, model generation workload is reduced to less than a tenth of its original amount