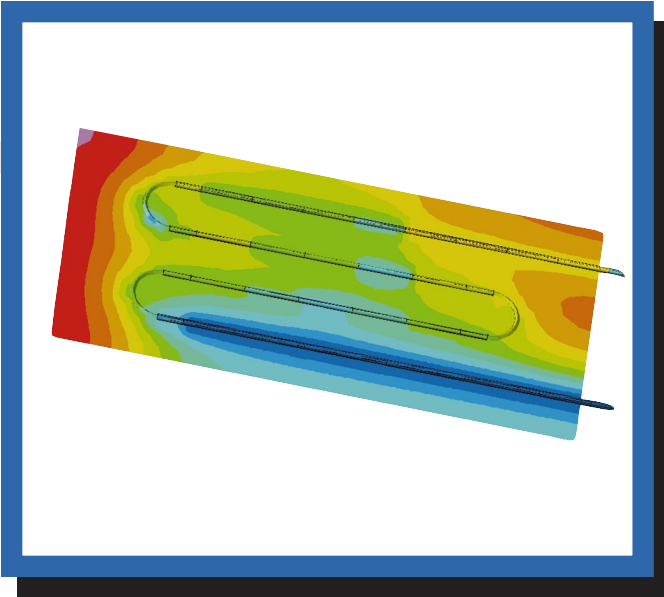
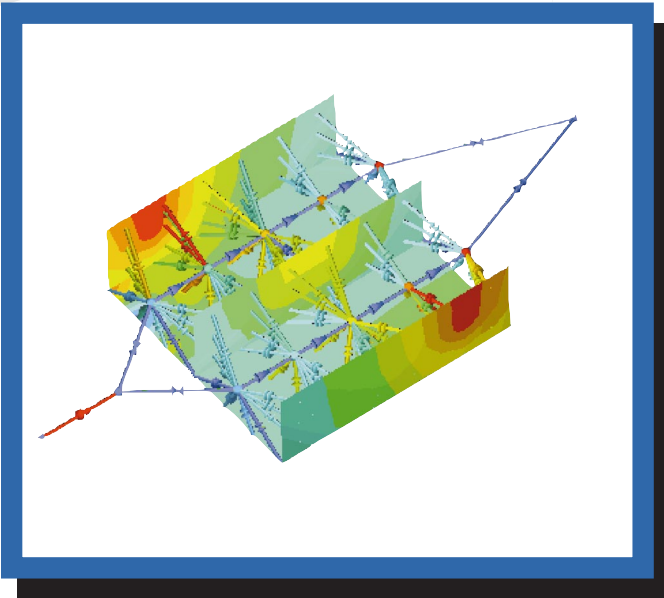




C&R TECHNOLOGIES



Attach fluid loops to thermal surfaces to model serpentine cold plates



Route flow passages past thermal surfaces to model air-cooled electronics

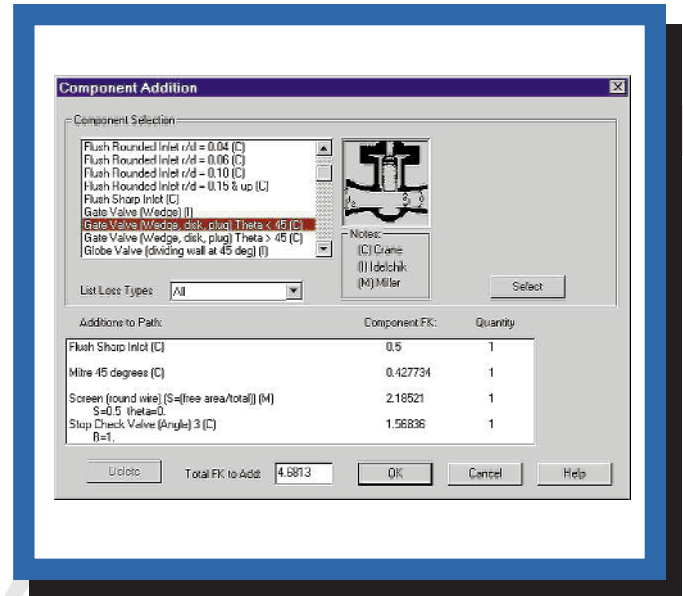
FloCAD is an optional module of C&R's CAD-based Thermal Desktop®. Thermal Desktop® handles conduction and capacitance in surfaces and solids, features arbitrary (nongeometric) nodes, and supports FEM models including innovative automatic network simplification techniques, and mapping to codes such as NASTRAN and SDRC's FEMAP™, IDEAS/FEA™, and IDEAS/TMG™.

FEATURES

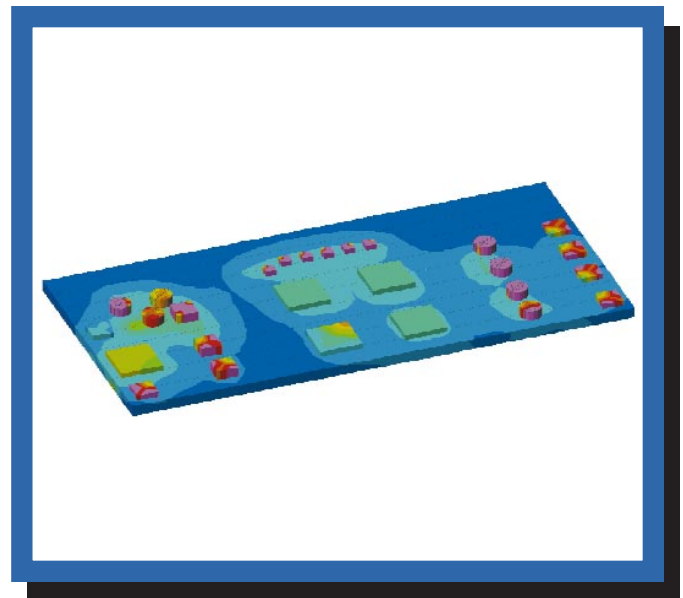
- Generates flow networks and calculates convective heat transfer factors for C&R's SINDA/FLUINT.
- Postprocesses temperatures, pressures, and flow rates for fast interpretation and impressive presentations.
- Faster model building and faster calculations than CFD means more alternatives investigated, sizing and sensitivities performed, and models calibrated to tests.
- Access to 2D/3D thermal modeling unlike nongeometric fluid network modeling (FNM).
- Automatic connection and apportionment of convection links (FLUINT ties) to thermal surfaces.
- Full access to FLUINT fluid network modeling capabilities, with abbreviated inputs for common components: • fans and pumps • flow passages and ducts • filters and loss elements.
- Arbitrary fluids including dry air, moist air (psychrometrics), water, water glycol, ammonia, and PAO. Accepts user-defined fluids as well.
- Imports and exports IGES and STEP CAD geometry.



- Enables concurrent engineering for thermal analysts by providing full access to CAD-based geometry and CAD model building methods without compromising good modeling practices.
- Uses CAD geometry directly, or accepts snap-on thermal surfaces, i.e., cones and spheres, avoiding thousands of tiny facets.
- Stretch and reshape surfaces directly on the screen in addition to traditional form based inputs.
- Offers true curved geometric surfaces. Imports TRASYS, TSS, STEP-TAS, and Nevada™ geometry models.
- User-defined symbols and expressions add spreadsheet-like parametric modeling.
- Dynamic link to SINDA/FLUINT for on-the-fly recalculations and access to logic, parametrics, optimization, statistical design.
- K-factor resistance utility for common fittings.
- Helper utilities for calculating flow lengths and flow areas.
- Easy to use tool bars provide quick access to FloCAD commands.
- Extensive CAD functions make model building fast and effective:
 - Boolean, revolved, extruded surfaces
 - Layer management
 - Multiple port views with store/recall
 - Snap-on entity building
 - Drag and Drop model editing
 - User-defined light sources
 - Wireframe, hidden, and rendered views.
- Multiple undo command.
- Exploits inexpensive PC platforms.
- Incredibly easy to learn and use with the assistance of step-by-step tutorials.
- Also available: RadCAD® for thermal radiation analysis.



Build fluid models quickly using built-in component libraries



Quickly generate parametric models of printed circuit boards, chassis, boxes, and racks

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