

Macrolink, Inc.

Customer Success Story

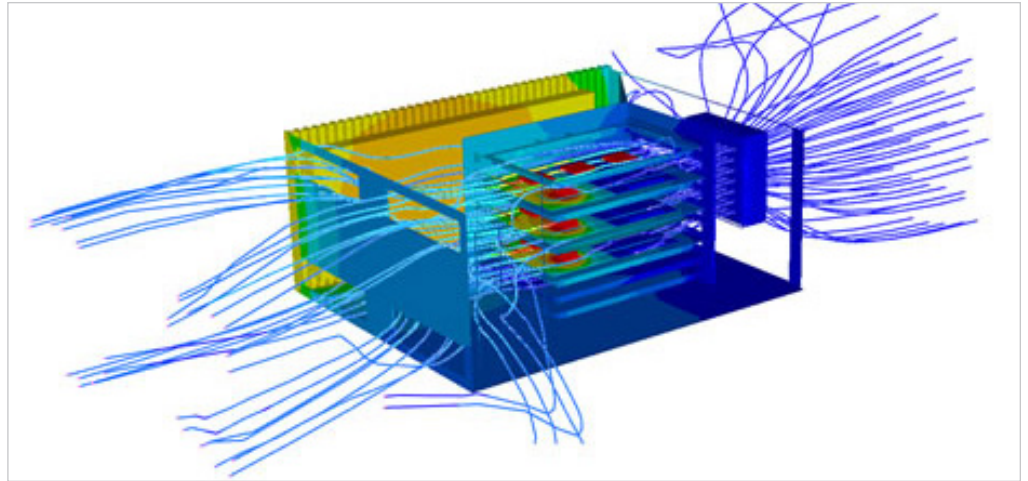
Autodesk® Simulation CFD

Autodesk Simulation CFD is integral to our process for partnering with customers. Even in the proposal stage, we're doing things like sizing up fans and looking for power supplies. Autodesk Simulation CFD is a phenomenal asset for us.

—George Hendershot
Vice President of Business
Development
Macrolink

Finding the flow.

Autodesk Simulation CFD helps Macrolink, Inc. optimize thermal characteristics early in the design process.



Simulating airflow and its effect on temperature helps Macrolink optimize rugged airplane computer chassis. Image courtesy of Macrolink, Inc. – A B/E Aerospace Company.

The product development team at Macrolink, Inc. – A B/E Aerospace Company relies on Autodesk® Simulation CFD to conduct early-stage flow and thermal analyses on ruggedized electronics enclosures for avionic, mobile, and fixed applications. They engineer rugged air transport rack (ATR) chassis, commercial off-the-shelf (COTS) chassis, portable rugged workstations, and small SCSI and Fibre Channel (FC) storage systems to meet the most demanding environmental requirements.

“What the tool does for us is really key,” says George Hendershot, vice president of business development at Macrolink. “It helps us determine the placement of the fans, the type of fans, the location of the card cage, the density of the air filter, and EMI ventilation panels. We get to do all that sizing up front in the process.”

A recent project for the U.S. Navy involved the creation of an ATR that would house a radar system for Navy ships. As the unit developed, Sam Suh, senior mechanical engineer at Macrolink, optimized the thermal characteristics of the system by using Autodesk Simulation CFD to rapidly assess numerous design modifications within the MCAD environment. The simulation provided Suh interactive 3D visualization of airflow as it enters the box, flows through the card cage, and circulates through the system, including the effects of cables and other system components.

Next, Suh ran a number of simulations on the individual slots to determine the proper opening size of the card cage. When Autodesk Simulation CFD results revealed a few hot spots, he made adjustments to his MCAD assembly. Suh used Autodesk Simulation CFD to prove the airflow had been effectively increased and operating temperatures reduced. “With Autodesk Simulation CFD, I can manipulate the airflow and optimize the design long before I cut any metal,” explains Suh. “Knowing how many watts per slot, I can control the airflow distribution much better.”

Suh believes one of Autodesk Simulation CFD's strongest benefits is its tight integration with Autodesk® Inventor®. He says he had previous experience using a traditional CFD package that required him to employ file translation methods on his solid models to get geometry into the analysis environment—but it was an error-prone process.

Autodesk Simulation CFD not only has improved Macrolink's product development process, but it is also having a significant impact on how business is done. “Autodesk Simulation CFD is integral to our process for partnering with customers,” says Hendershot. “Even in the proposal stage, we're doing things like sizing up fans and looking for power supplies. Autodesk Simulation CFD is a phenomenal asset for us.”

To learn more about Autodesk Simulation CFD, visit www.autodesk.com/simulationcfd.