

Telco Chassis Repackaging

Objective

To improve rack packaging efficiency, a telecommunications company needed to repackage an existing product to fit within a 38-inch tall envelope. This was a 22% reduction from the existing product, and posed severe constraints on the design of the new air system. ECS was asked to design an air system for the repackaged product.

Simulation and Results

A CFD model of the product was developed so that several concepts could be evaluated rapidly. The concepts spanned a wide range of fan size, performance, and configurations. Fan performance curves were obtained by measurements made in the ECS lab. These curves were scaled to address performance issues at high altitudes.

Conclusions

Of the many concepts that were evaluated, a push-pull arrangement of fans located above the card cage provided the best overall system airflow and distribution. When compared to the flow field of the existing product, the flow results of the repackaged product indicated that proper cooling of critical components would be achieved.

