



# Telecomm

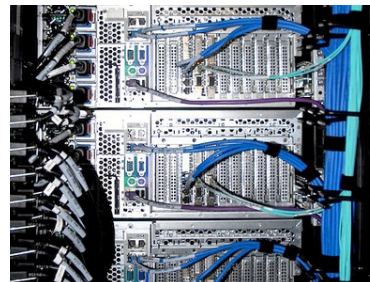
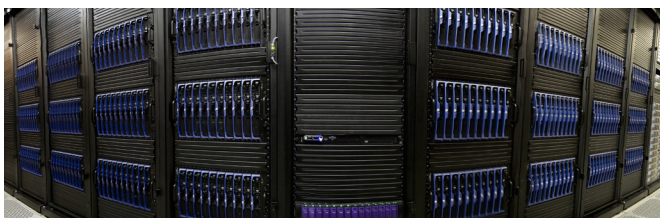
## THERMAL ANALYSIS & DESIGN SERVICES FOR THE TELECOMMUNICATIONS INDUSTRY

As technology continues to rapidly advance, there is a growing worldwide concern about the increasing energy consumption of telecommunications systems and the data centers or central offices where such equipment reside. The need for effective thermal management solutions are at an all-time high when the central office or data center ambient temperature exceeds 35°C.

ATS is uniquely experienced in telecomm and datacomm mechanical packaging and thermal design. ATS is considered the premier resource in this market sector based on its experience and diverse products offering that are specifically designed for telecomm and datacomm equipment. As leaders in this market, ATS has resolved many thermal issues in the telecommunications industry. ATS's thermal analysis and design services' team is capable of analyzing the full packaging domain, including components, circuit boards (PCBs), shelves, chassis and system packaging to ensure optimal thermal performance.

ATS has equipped itself with the latest thermal and mechanical simulation tools and has a highly trained staff to utilize such tools for a variety of applications commonly confronting this market sector. In addition to its computational capabilities, ATS has two state-of-the-art laboratories for experimental testing and validation of components to full systems. ATS' rapid prototyping facility enables our engineers to take the design from concept to prototype and provide testing to validate simulation results. These unique capabilities and a highly trained engineering team, make ATS uniquely qualified to be the ultimate resource for the thermal and mechanical requirements of telecomm and datacomm companies. ATS solutions will get your product to the market quickly and right the first time.

*"ATS has been a strong and expert partner, developing innovative electronics thermal management solutions for customers using Cavium processors. They are an industry-leader in developing cooling products which will enable our customers to accelerate the design and development of their specific applications." - Cavium Networks*



### CASE STUDY

ATS was contacted by a major telecommunications OEM to help solve a persistent thermal challenge on their new high thru-put optical PCB. The client discovered, during testing, that regardless of the number of heat sinks they deployed on their new PCB, even with fans running at their maximum allowable RPM, it was still overheating and going into thermal shutdown. ATS was called in to help identify the board's hot spots and determine a permanent solution.

ATS engineers analyzed CAD models and actual boards and pinpointed a number of air blockages on the PCB that stem from thermally-insensitive component layout. In addition, the heat sink models used on the board's hottest components were not optimized for the board layout and available airflow at the location of these components. In performing their thermal investigation, ATS carefully collected physical data using the ATVS-2020™ scanner and a series of candlestick sensors judiciously placed at different locations on the systems and PCB to measure the airflow rate and its temperature. ATS thermal experts also carried out physical experiments using a laboratory wind tunnel and performed flow visualization experiment to identify the airflow patterns on the PCB and at the vicinity of the critical components.

The resulting ATS solution allowed the removal of 16 heat sinks from the client's PCB. The new cooling approach was to replace the aluminum heat sinks with low cost plastic turbulators and eight high efficiency heat sinks. The new board layout met the client's specifications and was ready for mass production. The new thermal solution also cost 40% less than the board's original cooling design.

For more information, call 781.769.2800, email [ats-hq@qats.com](mailto:ats-hq@qats.com) or visit [qats.com](http://qats.com)