



Design Services

THE TRUE COMPLETE SOLUTIONS PROVIDER

Advanced Thermal Solutions, Inc. offers comprehensive thermal management analysis and design services for telecommunications, networking, medical equipment, military defense, embedded computing and other high performance electronic products. Our clients get their products to market faster, safer, and at a lower cost.

Thermal Design & Analysis

ATS' thermal management analysis and design services encompass both experimental and computational simulations using proprietary tools and computation fluid dynamics software packages such as FLOTHERM and CFdesign. ATS studies the full packaging domain, including components, circuit boards (PCBs), shelves, chassis, and system packaging. The company's design services include heat sink, board and fan characterization; heat sink and fan tray design and optimization; liquid cooling design; prototyping of heat sinks and complete cooling systems; and wind tunnel testing of components, PCBs, chassis and enclosures.

Prototyping Services

ATS offers rapid prototyping of machined parts and cooling systems from its US facilities. Sheet metal fabrication and cut heat sink prototypes are quickly provided from our Chinese partners.

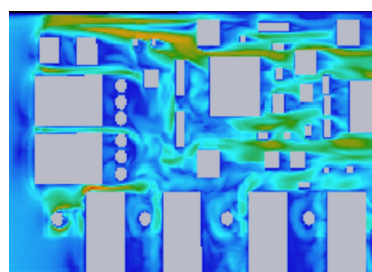
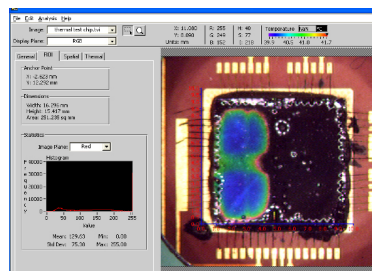
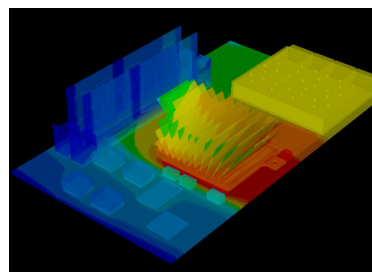
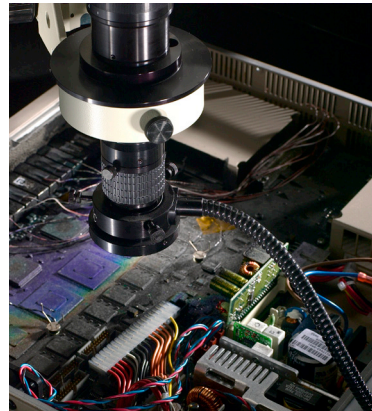
Customized Solutions

We believe customers who wish to remain competitive should consider a design-to-suit opportunity solution first. Contrary to common perception, this proves to be less expensive to the customer in the long run, because of the ensuing gain in product efficiency and compatibility.

The ATS Difference

Working side-by-side with customers worldwide, ATS design teams provide tailored solutions to thermal and mechanical packaging challenges on real projects with real schedules. Our goal is to deliver the right solution the first time, on time, every time.

**For more information, call 781.769.2800,
email ats-hq@qats.com. or visit qats.com**



» Flow Simulation

High and low speed wind tunnels for component, heat sink and PCB level characterization at different operating ambient

» Thermography (Die Level)

Liquid crystal imaging system for temperature measurement and mapping of ICs and components. The measurement resolutions span from small scale (1 micron) to large PCBs

» Thermography (PCB and System)

IR thermography system for board and system thermal mapping

» Velocity Measurement

Hot wire anemometry for mapping velocity and temperature distributions in PCBs and systems

» Thermal Conductivity

Material thermal conductivity measurement facility

» Heat Transfer Coefficient

Measurement facility

» Liquid Cooling Facility

For thermal characterization of heat sinks and boards, 3kW cooling capacity

» Water Tunnel

Flow visualization of heat sink, component and PCBs

» Elevated Temperature

Testing facility for components and boards

» Sensor Calibration Services

For temperature, velocity, pressure and heat flux sensors

» Fan Characterization Facility

Pressure drop versus volumetric flow rate measurement