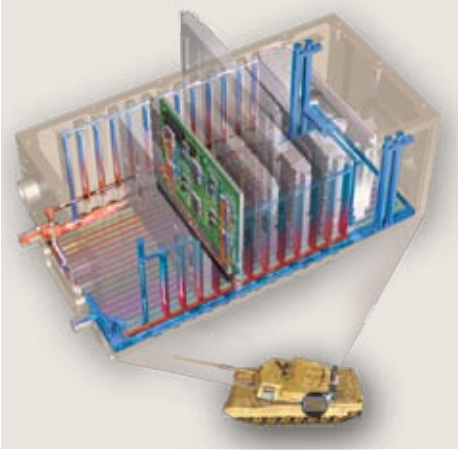
Parker Advanced Cooling Systems

Liquid-cooled modules, enclosures, cold plates, and heat rejection units for electronics cooling



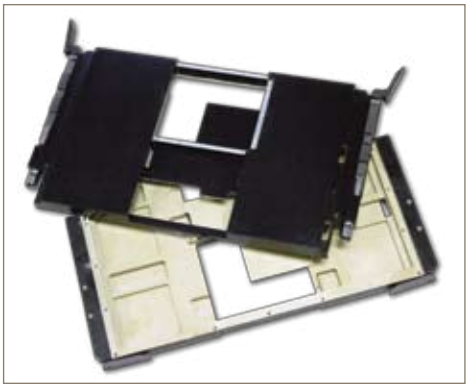
Advanced cooling systems and components that enable higher-powered, compact electronics in ruggedized military, aerospace, industrial, and commercial applications.

Board-Level Cooling Modules
(VME boards per VITA 48.3. Additional form factors also available.)
- Liquid flow-thru modules (LFT modules utilize board-level cold plates)
- Conformal cold plate liquid flow-thru modules
- Liquid spray modules
- Liquid two-phase spray modules

Liquid-Cooled Enclosures
- Ruggedized electronics chassis
- FADEC enclosures

Custom Liquid Cold Plates and Housings
- Pump-and-system controller device cooling
- Embedded electronics and IGBT device cooling

Heat Rejection Units (HRUs)
- Fluid management and heat rejection to ambient air



Our Advanced Cooling Systems and Components Offer You:

- Thermal management of high power density embedded electronics through board-level cooling components, or complete, integrated cooling systems
- Highly adaptable spiral upgrades, cost-effective tech refresh, and simple field maintenance
- The ability to use dielectric (e.g. PAO/fluorocarbon) or non-dielectric (e.g. EGW/PGW) fluids as required
- Easy system upgrades with VITA 48 modules offering three cooling types
- An optional smart pump module
- Liquid flow-thru modules enable hot-component-placement design flexibility

Parker

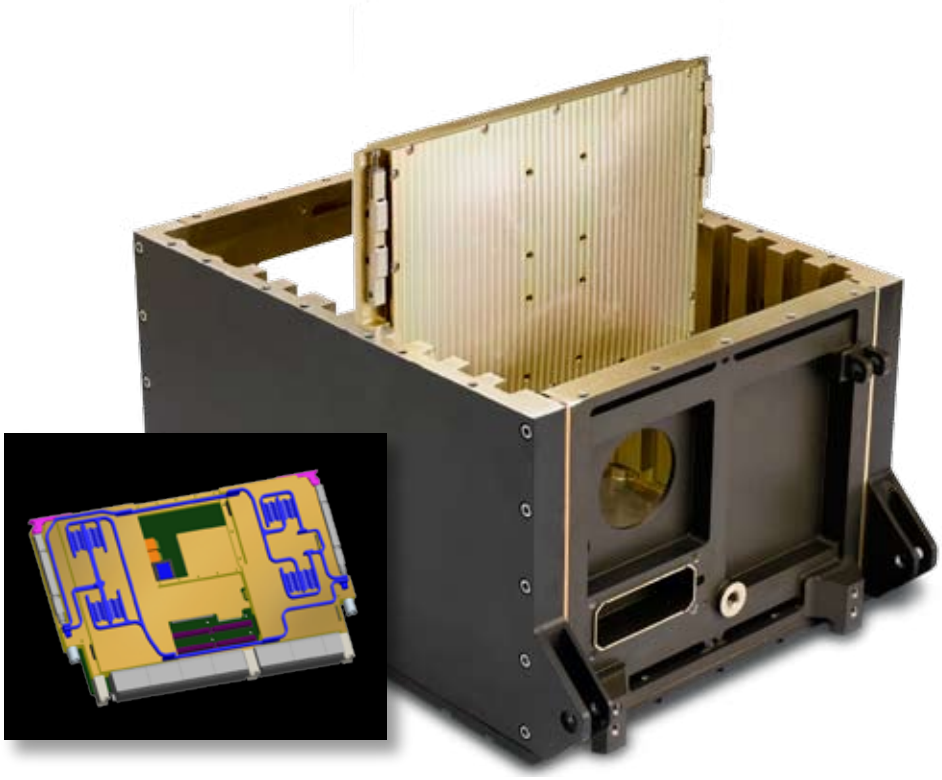
ENGINEERING YOUR SUCCESS.

Cooling rates up to 100 times greater than other systems

With significant advantages for Avionics, Vetronics, and Navtronics C⁴ISR, Parker's advanced cooling systems bring fluid cooling to the chassis, module, board, and component levels, providing cooling rates up to 100 times greater than those of other existing cooling systems.

Integrating a wealth of Parker technology — including smart pumps, electronic controllers, health monitoring, quick disconnects, seals, and our proprietary and revolutionary Macrospray® technology — our innovative fluid cooling system enables electronics designers to work with lower-flowing systems. Creating more **computing throughput**. Or **higher-powered electronics in smaller packages.**

Ruggedized enclosure and liquid flow-thru board, line replaceable modules (LRMs) compatible with VITA 48.3, IEEE 1101.2 standards provide cooling of heat loads as high as **4000 W for a 1-ATR chassis** (approximately 8" H x 10" W x 20" L) and board-level direct heat fluxes **as high as 25W/cm²** (thermal resistivity less than 0.3 (°C •cm²/W) for high heat components without the use of heat spreaders).



TECHNICAL SPECS

- Conduction-cooled (CC) modules with liquid sidewalls up to 200 watts per 6U x 160 mm board
- Liquid flow-thru (LFT) modules up to 1000 watts per 6U x 160 mm board
- Spray-cooled modules (direct component impingement) 3500 watts (more with two-phase evaporation spray) per 6U x 160 mm board
- Designed for dynamic environment of MIL_STD-810F (20g shock and 12grms vib.); humidity, salt fog, fungus resistance, thermal cycling, and sand/dust requirements per VITA 47; and EMI per MIL-STD-461E
- Operational for -40° to 85°C, storage to 125°C and -1500 to 70,000 feet altitude conditions

AVAILABILITY

12-16 weeks

APPLICATIONS

- Ruggedized electronics cooling of components and systems for military, ground, air, and sea vehicles
- High-reliability commercial and industrial applications

Contact Information:

Parker Hannifin Corporation
Advanced Cooling Systems
Gas Turbine Fuel Systems Division
9200 Tyler Blvd.
Mentor, Ohio 44060

phone (440) 954-8100
fax (440) 954-8199
e-mail: ACS_Coolinginfo@parker.com

www.parker.com

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