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
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