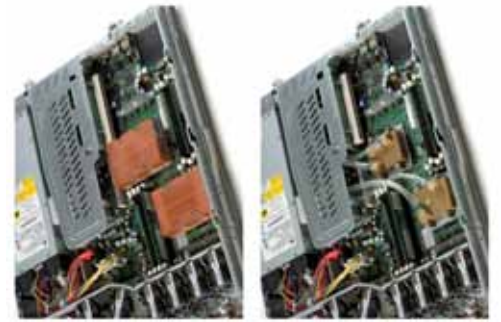


Modular Solutions



Description

SprayCool™ Modular Solutions deliver localized cooling of hot spots with low development costs by using standard components specifically designed and tested for harsh military environments. SprayCool modular components are readily configured in retrofit applications where electronics technology has outgrown existing cooling solutions. Modular Solutions are well suited for Radar, Power Electronics and High Performance Computing applications where local heat loads range up to 1.5kW and system loads reach 135kW. With superior localized cooling, customers can remove bulky, heavy, expensive and inefficient air cooling and air handling systems.

SprayCool Modular Solutions perform three primary functions in cooling: Acquire heat from source, transport the heat away from source and reject the heat.

Heat acquisition is accomplished by spraying a fine mist of non-conductive and noncorrosive coolant indirectly onto electronic packages. The coolant vaporizes carrying heat away from the packages.

Transport occurs when the coolant vapor exits and is carried by manifolds and tubing to a heat exchanger. SprayCool components are connected by drip-less “quick disconnect” fluid connectors for ease of maintenance or reconfiguration.

Heat rejection is accomplished via a heat exchanger that rejects the thermal load to ambient air or platform fluid. Fluid options range from PAO, fuel, EGW, and engine bleed air. Air-to-air heat exchangers are also available.

With optimized standard components performing the essential functions of cooling

SprayCool Modular Solutions achieve reductions in lifecycle costs, size and weight.

Capabilities

- Reduces size and weight of electronics package and associated systems (ECS)
- Decreases ownership costs by increasing reliability and enabling COTS operation in elevated temperature environments
- Modular SprayCool components are tailor made for retrofit of existing cooling systems resulting in low non-recurring engineering costs
- All components designed for harsh military applications on land, sea and air
- Improved EMI shielding
- Enables remote heat rejection options away from electronics

Product Features

- Localized cooling of hot components up to 1.5kW
- Remote heat exchanger
- Highly scalable and configurable for unique applications
- Small, compact, self-contained system for local or remote schemes
- Ethernet monitoring and control of cooling system
- Tailored for retrofit
- Heaters available for cold weather applications

Contact Information

Parker Hannifin Corporation
Parker Aerospace
Gas Turbine Fuel Systems Division
2218 N. Molter Road
Liberty Lake, WA 99019
509-232-2600

www.parker.com



ENGINEERING YOUR SUCCESS.

Modular Solutions

Applications

Computing	Radar/SATCOM	Power
1U/2U Servers	Radar Module	IGBT/SiC
Blades	Uplink Converter	MosFET
Networking	Power Amplifier	Power Module LRU
Communications	RF Circulator	

System Building Blocks

	SprayModules and Line Replaceable Modules (LRMs)
Heat Acquisition	<ul style="list-style-type: none"> • SprayModules typically have the ability to cool components in the range of 100 to 200W • LRMs typically have the ability to cool assemblies in the range of 600 to 700W
	Fluid Routing Components
Fluid Transport	<ul style="list-style-type: none"> • Rigid and flexible tubing • Fluid manifolds • Quick disconnects • Clamps, fittings, heaters and filters
	Thermal Management Units
Heat Rejection	<ul style="list-style-type: none"> • Pump, Reservoir and Heat Exchanger components and assemblies • Heat Rejection capacities ranging from 1-2kW, 10+KW and 100+kW • Ability to reject heat to air or liquid (i.e. PAO, Ethylene, Glycol, Water, EGW, Fuel, etc)

System Solution Examples

