

Features

- Meets demanding environmental requirements of MIL-STD-810F
- EMI per MIL-STD-461,462
- Sealed construction prevents moisture and dust contamination
- Open system architecture for 6U x 160mm VME-64X, VPX, VXS, cPCI and CPCIE(EXP.0)
- Configurable I/O, backplane and power supply
- Supports MIL-STD-704, 1275B power input
- No air filters or other frequent maintenance items
- Flexible heat exchanger up to 2kW
- Scalable enclosure from 4 to 21 6U slots
- Supports self-diagnostics & BIT
- Optional mounting features including shock isolation



Overview

The SprayCool Multi-Platform Enclosure (MPE) provides unparalleled flexibility and cost savings by enabling any electronics non-rugged for a variety of military applications, ranging from tracked vehicles to high altitude aircraft. Leveraging open industry standards and common commercial grade electronics, SprayCool customers can quickly field common applications across a broad range of vehicle types without redesign or re-qualification. This enables the same high performance technology that is available in the command center to be fielded in the most demanding mobile ground and airborne conditions. All MPE solutions offer a new standard of scalable thermal performance, environmental isolation and flexible designs that simplifies integration while meeting customer needs.



The MPE is a SprayCool 6U enclosure developed to meet the requirements of manned and unmanned platforms. Further, SprayCool's MPE assures broad flexibility in that it can be scaled to the customers exact specifications at an affordable cost. Designed to provide from 4 to 21 VME/cPCI User slots, the enclosure can accommodate a range of proprietary, commercial and rugged electronics.

The MPE is designed to operate in a harsh battlefield environment over extended temperature of -55°C to 71°C (-65°C optional) and altitude ranges of up to 55,000+ feet. To accomplish this, electronics are housed in an evaporative cooled sealed enclosure creating a safe, environment for electronics inside the MPE. Architected to reduce the high cost of non-recurring engineering (NRE), the MPE can be delivered in any payload configuration without mission-specific development.

The SprayCool MPE is a high performance, small, lightweight and rugged enclosure.

Capabilities

- Enables highest electronics density available at extreme environments
- Enables highest electronics reliability available today
- Lowest system cost compared to conduction or other liquid alternatives
- Commercial cards coexist with custom/proprietary electronics without any modifications, significantly reducing integration risk, time and costs
- Does not require additional ECS capacity
- Scalable – meets various electronics payload requirements
- Minimizes size, weight and power (SWaP) consumption
- High altitude (up to 55,000 ft - 75,000ft optional)
- Sealed enclosure providing maximum protection against contamination
- Under water applications requiring a sealed electronics vessel (submerged)

MULTI-PLATFORM ENCLOSURE (MPE)

MILITARY APPLICATION

General Specifications

Configurations:	4 to 21 user slots, 6U x 160mm x 0.8"
Size:	12.45"L x 12"W x 12"H (8 user slot unit)
Cooling Capacity:	up to 2kW (w/ heat exchanger)
Storage Temperature:	-65° to 85°C
Operating Temperature:	-55° to 71°C ((Optional: -65°C)
Reliability:	14,000 hours MTBF
Power Consumption:	80W maximum (for cooling system)
Input Power:	MIL-STD-704 and 1275B
Weight:	30 lbs (8-slot enclosure with cooling sys)
Backplanes:	VME-64X, VPX, VXS, cPCI and CPCIe(EXP0)
Environmental:	Exceeds humidity, salt fog, fungus, thermal shock, sand, and dust requirements of VITA 47



Optional Accessories

- Custom backplane can accommodate any configuration of power supply or system slots
- Attitude Independent (AI) valves adhere to mobility requirements of platform (*the need for inverted operation*)
- Custom I/O panel
- Fluid fill and drain system
- Fluid heaters (extreme cold operation)
- Operational redundancy (n+1) electronics

Optional Services

- Design for Support (Acquisition Logistics/Logistics Engineering)
- DoD Logistics Service
- SprayCool Education and Training Services
- Technical Assistance Center (TAC)
- Depot repair and Reverse Logistics capabilities

SprayCool® Technology



SprayCool's patented 2-phase "direct spray" liquid cooling technology deploys a fine mist of non-corrosive, non-conductive liquid, sprayed in a thin layer, which evaporates and cools electronics. The process continuously cycles within a sealed, closed loop system. In doing so, SprayCool products isolate the electronics from dirty, corrosive environments found in military and industrial applications resulting in temperature optimized, higher performance, and more durable electronic devices, often without the need of dedicated environmental control systems. SprayCool technology enables customers to deploy both commercial grade and custom electronics in harsh environments more quickly, and at significantly lower costs.



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