

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



C4ISR applications for Global Hawk and Predator include:

- EW Enablement
- Signals Processing
- Radar Processing
- Image Processing

Overview

The SprayCool Multi-Platform “direct spray” Enclosure (MPE) provides unparalleled flexibility and cost savings by enabling a wide range of electronics in UAV and Airborne applications, without the need for a dedicated ECS system. Using common commercial grade electronics, integrators can quickly field common applications across a broad range of aircraft platforms without redesign or re-qualification. All MPE solutions offer a new standard of scalable thermal performance, environmental isolation and flexible designs that simplifies integration while meeting customer needs.



The enclosure of Choice for UAV's

The MPE has already been selected as the enclosure of choice for key UAV programs like ASIP, ASIP-1C and TRACER, to fly on Global Hawk, Predator and the Sky Warrior.

Product highlights

The SprayCool MPE is a high performance, rugged 6U environmental enclosure developed to meet the requirements of both 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 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.

Summary of highlights:

- Enables highest electronics density available for UAV environments
- Does not require additional ECS capacity
- Functions in unpressurized environments
- Enables highest electronics reliability available today
- Lowest **system cost** compared to conduction or other liquid alternatives
- Commercial cards can coexist with custom/proprietary electronics without any modifications, while significantly reducing integration risk, time and costs
- Scalable – meets various electronics payload requirements
- Minimizes size, weight and power consumption ... especially at system level
- High altitude (up to 55,000 feet – *optional 75,000 ft)
- Sealed to provide maximum protection against contamination

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 (-65° C optional)
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.