

## EnsembleSeries™ SCM6010 & CAN6000

6U OpenVPX™ SSD Carrier with PCIe Switching and Removable Canister



- Up to 24TB of high-speed storage
- 48 x PCIe Gen3 low-latency, high-bandwidth read/write lanes
- Removable storage canister (CAN6000) for mission refreshes
- Embedded VITA 46.11 system management and monitoring
- Optional MOTS+ rugged packaging for extreme environmental protection

EnsembleSeries™ SCM6010 are rugged, 6U OpenVPX™ storage modules that utilize a low-latency PCIe architecture accessed via the system backplane's expansion plane. When integrated with other EnsembleSeries OpenVPX modules, including Intel® Xeon® scalable powered blades and high-speed I/O interfaces, SCM6010 modules supply the storage required for intense AI, EO/IR image/video and radar processing applications.

Designed for aerospace and defense applications, SCM6010 modules use the latest commercially developed M.2 NVME technology that is packaged into rugged, removable canisters (CAN6000) for rapid mission updates without the removal of the OpenVPX storage module itself. Out-of-the-box software, drivers and manageability enable easy adoption and storage interoperability.

CAN6000 storage canisters are easy removable with a flat-blade screwdriver when they become full, when new missions are required, or to remove sensitive IP. One canister fits per OpenVPX carrier module.

### Storage Carrier Module

Each EnsembleSeries SCM6010 6U carrier module utilizes a Microsemi Switchtec™ PM8536 switch delivering 48 PCIe Gen3 read/write lanes to the OpenVPX backplane. M.2's native PCIe

wideband, low-latency interconnect has significantly less device software overhead than other approaches for greater performance.

Each CAN6000 canister holds up to six M.2 SSDs (4TB ea.) for up to 24TB of total module storage capability and are rated up to 10,000 insertion/removal cycles.

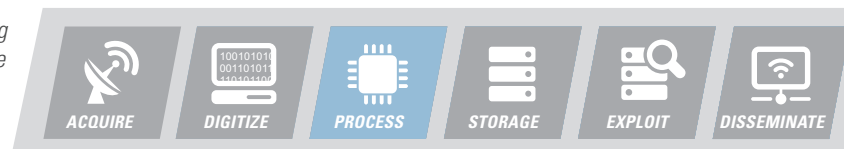
### System Management

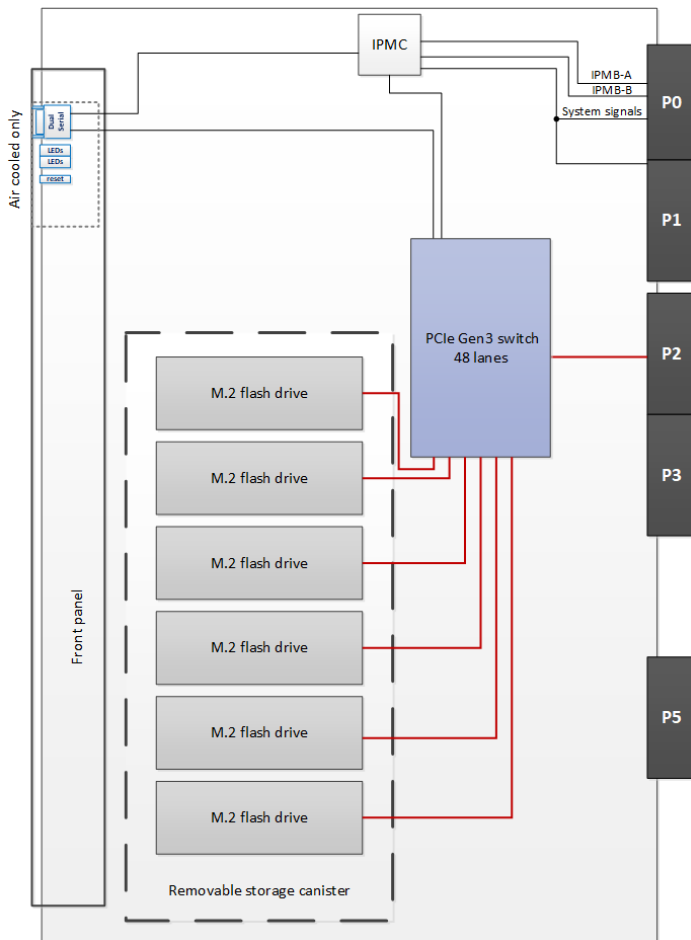
EnsembleSeries SCM6010 storage modules implement the VITA 46.11 advanced system management functionality to remotely monitor system health, manage alarms and validate hardware revision.

Using the standard IPMI-A and IPMI-B bus, SCM6010 storage modules implement full IPMC on-board system management. This IPMC enables each module to:

- Read sensor values
- Read and write sensor thresholds, allowing an application to react to thermal, voltage, or current variations that exceed those thresholds
- Reset the entire module
- Power up/down the entire module
- Retrieve module field replaceable unit (FRU) information
- Interface with and be managed remotely by a VITA 46.11-compliant chassis manager

*Mercury Systems is the better alternative for affordable, secure processing subsystems designed and made in the USA. These capabilities make us the first commercially based defense electronics company built to meet rapidly evolving next-generation defense challenges.*





SCM6010 functional block diagram

## Optional MOTS+

EnsembleSeries SCM6010 storage modules are OpenVPX compliant and are available with modified off-the-shelf plus (MOTS+) packaging technology for extreme environmental protection. MOTS+ configurations leverage enhanced commercial components, board fabrication rules, and subsystem design techniques for extra durability and withstand extreme temperature cycles better than other rugged designs.

## VPX-REDI

The VPX (VITA 46) standard defines 6U and 3U board formats with a modern high-performance connector set, capable of supporting today's high-speed fabric interfaces. OpenVPX delivers greater environmental protection when paired with the ruggedized enhanced design implementation standard – REDI (VITA 48). SCM6010 storage modules are available packaged as air-cooled and rugged conduction-cooled, Air Flow-By™ and Liquid Flow-By™ options.

VPX-REDI offers extended mechanical configurations supporting higher functional density, including two-level maintenance (2LM). 2LM allows maintenance personnel to replace a failed module and restore the system to an operational state in a limited time period, minimizing potential damage to the module.

## Specifications

### OpenVPX Slot Profile

VITA 65 Slot Profile: SLT6-PER-10-10.3.5

VITA 65 Module Profile: MOD6-PER-10-12.3.5-n

### Module

Supports dual x16 Gen3 PCIe interfaces to the backplane

Each link configurable to Gen2 or Gen1 data rates

Supports six M.2 SSDs at x4 PCIe

Supports OpenVPX management plane

Dual IPMB interfaces per VITA 65

Front-panel serial interface to on-board VITA 46.11 IPMC

Designed for installation into VITA 46/VITA 65-compliant chassis

### Packaging

Commercial air cooling

Rugged conduction cooling, Air Flow-By, Liquid Flow-By

Optional MOTS+ extreme environmental packaging

See separate publication "Rugged Embedded Packaging & Next Generation Cooling" for environmental performance

### Dimensions

Standard 6U OpenVPX (standard 1.0" pitch)

Power Requirements

Input voltages

12V payload power

3.3V\_AUX management power

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