

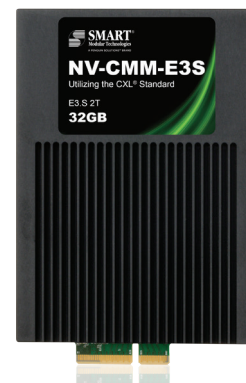
NV-CMM-E3S Memory Module

For the CXL[®] Standard

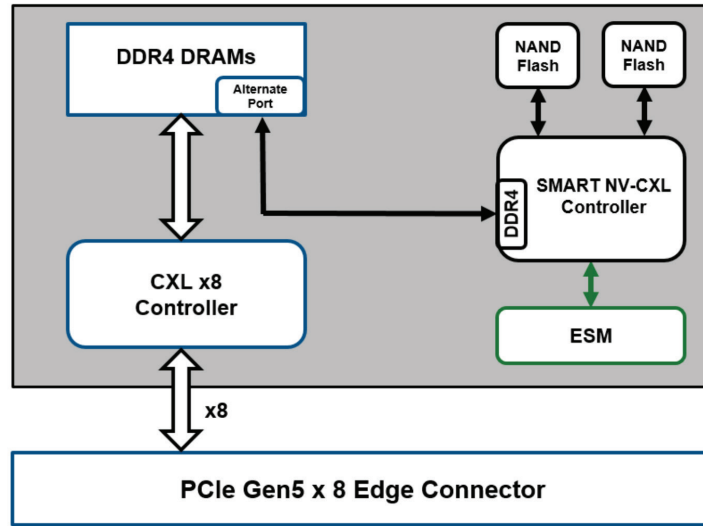
SMART's NV-CMM-E3S is an E3.S 2T form factor non-volatile memory module utilizing the CXL standard with a built in backup power source. It uses a x8 CXL controller as well as a SMART NV-CXL Controller and 2Rx4 Buffered DDR4 DRAM. The host accesses the DRAM via the CXL x8 interface during runtime. In the event of a catastrophic failure, the NV-CMM will back up the DRAM data into the NAND devices using power from the onboard Energy Source Module (ESM). Then, when power is restored, the NV-CMM will copy data back from the NAND to the DRAM to enable persistent operation.

Key Features

- Form Factor: E3.S 2T
 - Height: 76mm
 - Length: 112.75mm
 - Width: 15.0mm
- Density
 - 32GB w/16Gb DRAM
- Performance
 - Round Trip Latency: ~200ns
 - Throughput: 32GB/s
- Host CXL Interface using Microchip Controller
 - CXL Type 3 memory
 - Supports CXL 1.1/2.0
 - Configured for CXL x8 Gen 5
 - OOB Interfaces: SMBus (I2C), SPI, and UART
 - Enterprise Class RAS features
 - End-to-end data path integrity with overlapping parity/ECC
 - SECDED ECC support to DDR
 - Reed-Solomon ECC support to DDR
 - Programmable patrol scrub
 - Secure boot
 - Secure firmware update
 - Device personalization/certificates
- Attestation
 - Key management
 - Firmware encryption
 - CXL IDE
- Persistent Memory Features
 - ASIC and FPGA based Controllers
 - Non-Volatile storage via Backup to NAND
 - Onboard Energy Source Module (ESM) for backup power
 - AES-256 data encryption for data at rest
- Power Consumption
 - Active: TBD
 - Backup: ~11 watts (estimate)
- Ambient Operating Temperature: 40°C max
- Applications
 - System acceleration – check pointing, caching, etc.
 - Large in-memory databases
 - Quick data recovery following power loss or system hang/crash



System Block Diagram



Pinout

This module is compliant to EDSFF Electrical specification as defined in SFF-TA-1009 (Rev-3.0) for E3.S x4 interface.

Ordering Information

NV-CMM		
SMART Part Number	Density	Description
STXBB32GNM44S18MF	32GB	CXL 2.0, E3.S 2T, DDR4-3200

Contact: Arthur Sainio at Arthur.Sainio@smartm.com for any sales and sampling queries.



For more information, please visit: www.smartm.com

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