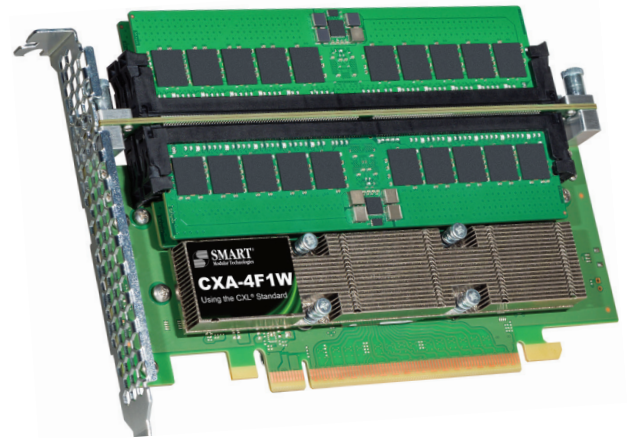![SMART Modular Technologies logo]

4-DIMM Add-in Card (CXA-4F1W)
For the CXL® Standard

SMART's CXA-4F1W is a 4-DIMM AIC, a Type 3 PCIe Gen5 Add-In Card (AIC) utilizing the CXL standard consisting of four DDR5 RDIMMs mounted on a Full Height, Half Length PCIe form factor module. It uses one x16 CXL controller to implement a single x16 CXL port capable of a total bandwidth of 64GB/s.

Each RDIMM socket supports up to 512GB RDIMMs for a maximum memory capacity of 2TB. The CXL Controllers implement "Reliability, Availability, and Serviceability" (RAS) features, advanced analytics, as well as enhanced security features with in-band or side band (SMBus) monitoring capability.
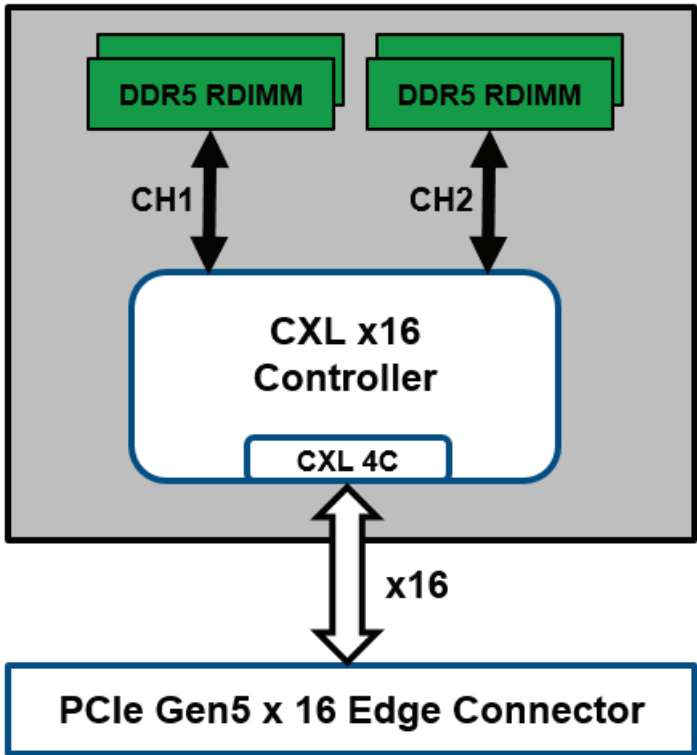
SMART develops CXL Type 3 (CXL.mem) memory products to address the industry's need for more memory per processor core. The CXL interconnect specification allows for a significant expansion of memory form factor options in PCIe or EDSFF form factors.

Key Features

- Host Interface
  - CXL 2.0
  - One x16 ASIC
  - Up to 64GB/s throughput

- Memory Interface
  - 4 x 512GB DDR5 RDIMMs (2TB max)
  - CXL controller supports two channels up to DDR5-4800
  - Each Channel supports 2DPC

- Security Features
  - CXL Link-Level Integrity and Encryption (IDE)
  - AES-256 Encrypted DDR Memory Interface
  - Firmware Authentication, Integrity Check

- 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

- Post-Package Repair (PPR) and on-die Error Check and Scrub (ECS)

- Memory Expansion Applications
  - Accelerated AI and ML Workloads
  - Large In-memory databases
  - Banking, Finance, OLTP
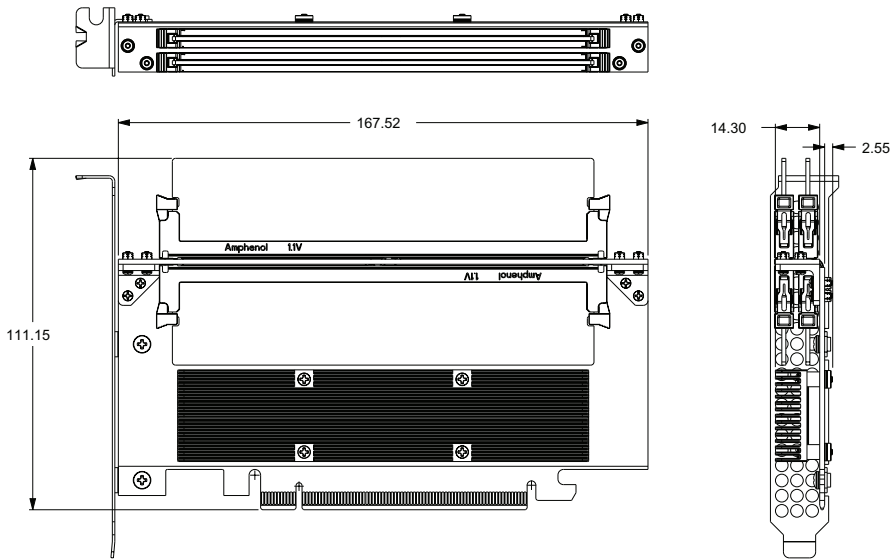 - Tiered cache for general purpose storage

System Block Diagram

Dimensions

The 4-slot AIC uses Full Height Half Length PCIe form factor.

- Height: 111.15mm
- Length: 167.52mm
- Width: 33.90mm

Preliminary Schedule

- ES available in February '24

Ordering Information

4-Socket CXL AIC		
SMART Part Number	Description	Configuration
STXPLXXXGMC4RD5	PCIe x8, FHHL	Single-width AIC without DDR5 RDIMMs
STXPL128GMC4RD5	CXL, PCIe x8, 128GB, FHHL	Single-width AIC with four 32GB DDR5 RDIMMs
STXPL256GMC4RD5	CXL, PCIe x8, 256GB, FHHL	Single-width AIC with four 64GB DDR5 RDIMMs
STXPL512GMC4RD5	CXL, PCIe x8, 512GB, FHHL	Single-width AIC with four 128GB DDR5 RDIMMs

Contact: Torry Steed at torry.steed@smartm.com for any sales and sampling queries.

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

Product images are for promotional purposes only. Labels may not be representative of the actual product.