

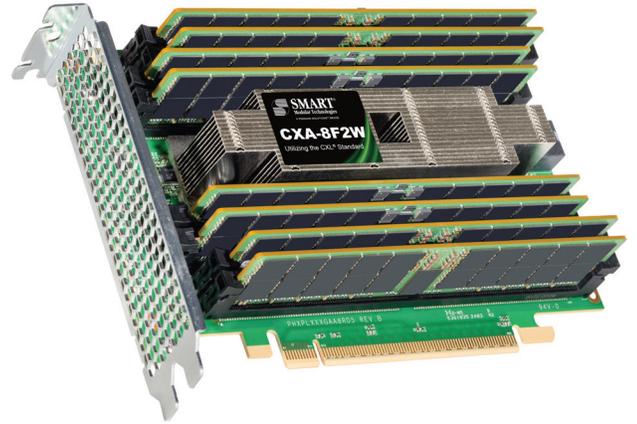
## 8-DIMM Add-In Card (CXA-8F2W)

### For the CXL<sup>®</sup> Standard

SMART's CXA-8F2W is an 8-DIMM AIC utilizing the CXL standard. It's a Type 3 PCIe Gen5 Add-In Card (AIC) consisting of eight DDR5 RDIMMs mounted on a Full Height, Half Length PCIe form factor module. It uses two x16 CXL controllers to implement two x8 CXL ports capable of a total bandwidth of 64GB/s.

Each RDIMM socket supports up to 512GB RDIMMs for a maximum memory capacity of 4TB. 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.

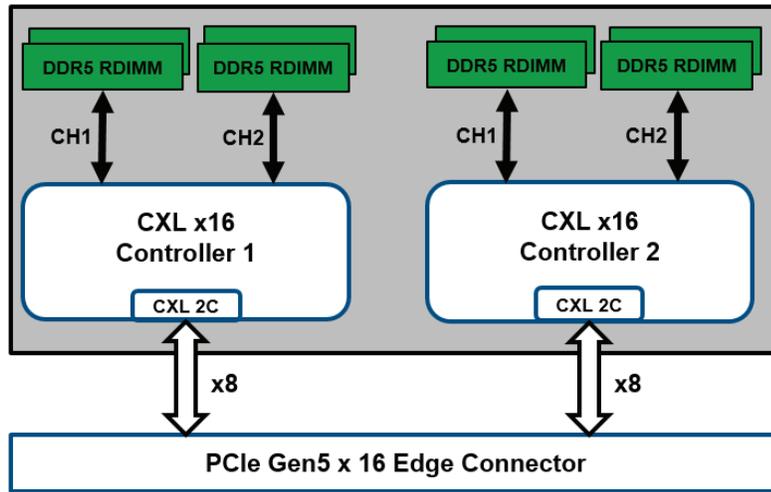
SMART develops Type 3 (CXL.mem) memory products utilizing the CXL standard to address the industry's need for more memory per processor core. The CXL interconnect specification allows for a significant expansion of memory form factor options in PCIe or EDSFF form factors.



### Key Features

- Host Interface
  - CXL 2.0
  - Two x16 ASICs
  - Up to 64GB/s throughput
- Memory Interface
  - 8 x 128GB DDR5 RDIMMs (1TB max)
  - Each of the two controllers 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
  - Single Error Correction and Double Error Detection
  - Advance EDC
  - Memory Mirroring
  - Rank Sparring
- - Scrubbing
  - On-Demand Memory Migration
  - Temperature Monitoring and DRAM Throttling
  - Fault Isolation, Error logging and Reporting
- Advanced Analytics
  - Write and Read Latency Monitoring
  - CXL Quality of Service (QoS) Telemetry
  - Transaction Counter and logs
- Post-Package Repair (PPR) and on-die Error Check and Scrub (ECS)
- Auxiliary power connection
  - Power envelope exceeds 75W so an aux 12V power connection is needed
- Memory Expansion Applications
  - Accelerated AI and ML Workloads
  - Large In-memory databases
  - Banking, Finance, OLTP
  - Tiered cache for general purpose storage

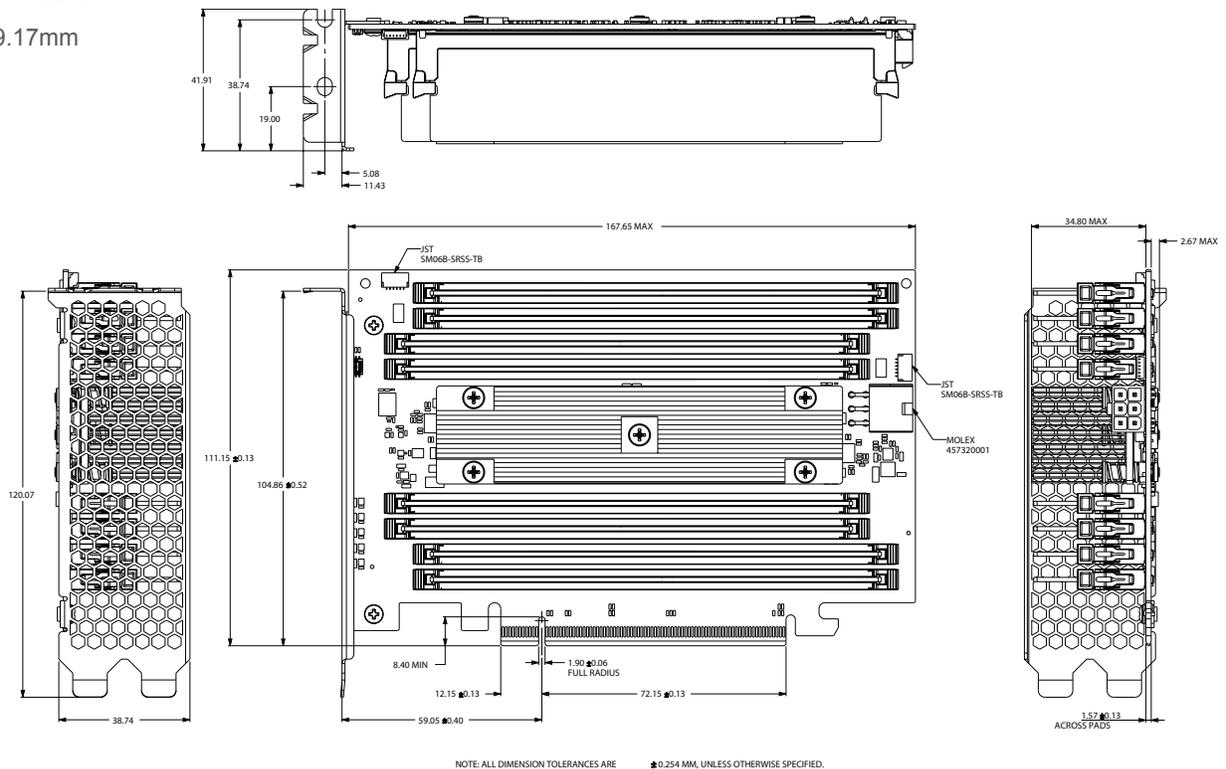
# System Block Diagram



## Dimensions

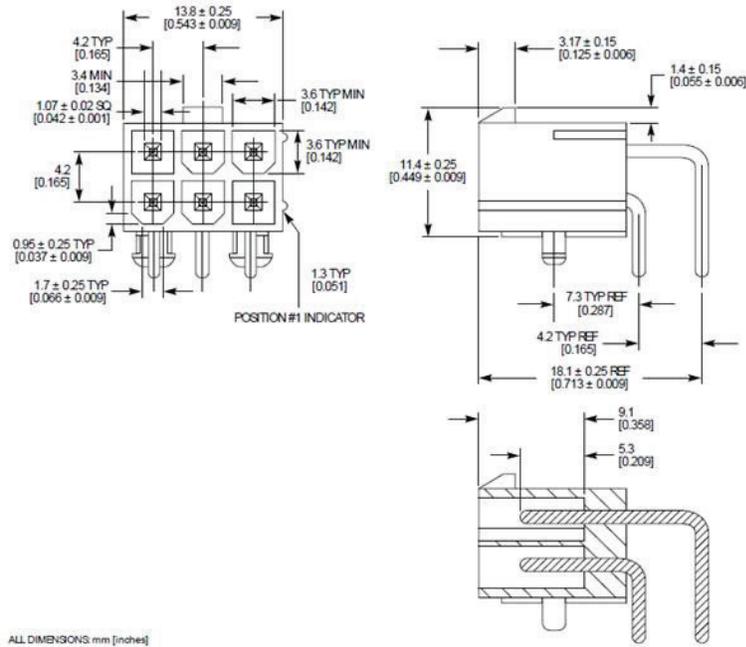
The 8-slot AIC uses Full Height Half Length PCIe form factor.

- Height: 111.15mm
- Length: 167.52mm
- Width: 39.17mm



The AIC uses a standard 12V PCIe 6-pin RA through hole aux power connector. This connector will support standard ATX Power Supply cables.

PCI Express 2x3 Auxiliary Power Connector Definition



## Ordering Information

8-Socket AIC		
SMART Part Number	Description	Configuration
STXPLXXXGAB8RD5	CXL, PCIe x16, DDR5, AIC FHHL	Card PN without RDIMM
STXPL256GAB8RD5	CXL, PCIe x16, 256GB, DDR5, FHHL	Card PN with 8 of 32GB RDIMM
STXPL512GAB8RD5	CXL, PCIe x16, 512GB, DDR5, FHHL	Card PN with 8 of 64GB RDIMM
STXPL001TAB8RD5	CXL, PCIe x16, 1TB, DDR5, FHHL	Card PN with 8 of 128GB RDIMM

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