

Leo Memory Connectivity Platform for CXL 1.1 and 2.0

1 Benefits and Features

Leo CXL Smart Memory Controllers

- Purpose-built for cloud-scale deployment targeting workloads such as AI and Machine Learning
- Memory expansion, pooling and sharing for heterogeneous CPU/GPU topologies
- CXL Type-3 device supporting CXL 1.1 and 2.0 memory expansion
- CXL interface up to 32 GT/s per lane, up to 16 lanes
- Multiple DDRx channels to increase memory capacity up to 2TB
- Up to 5600 MT/s per memory channel to fully utilize available bandwidth of the CXL 1.1 and 2.0 interface
- Server-grade customizable RAS and software APIs to integrate with fleet management services
- Seamless interoperation with all major CPU, GPU, and memory vendors
- Flexible and scalable memory interface with a low-latency data path
- Best-in-class security features to ensure end-to-end data integrity and protection

Aurora A-Series CXL Smart Memory Hardware Solutions

- All the benefits and features of Leo CXL Smart Memory Controllers
- PCIe x16 CEM add-in card form factor
- Lower TCO via more granular serviceability—can replace a single failing DIMM
- Configurable memory capacity with plug-and-play DIMM slots
- Up to 4x DDR5 RDIMMs supporting up to 2TB
- On-board debug connectors for fleet management on Cloud Servers
- Temperature and health monitoring of Leo Memory Controllers and memory
- RDIMM fault isolation and error correction
- High-volume, production-qualified solutions with robust supply chain

2 Applications

- Cloud servers with compute-intensive workloads such as Artificial Intelligence and Machine Learning
- Heterogeneous CPU, GPU, and accelerator servers
- General-purpose compute servers

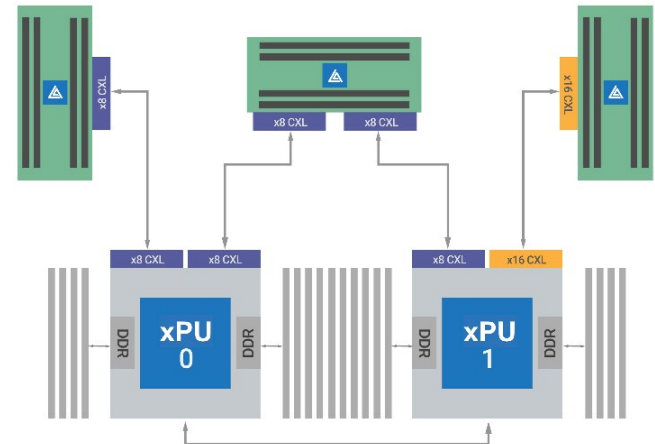
3 Description

Asteralabs' Leo Memory Connectivity Platform for CXL 1.1 and 2.0 is the industry's leading purpose-built SoC and hardware solution to eliminate memory bandwidth and capacity bottlenecks and reduce stranded memory in cloud servers.

Leo CXL Smart Memory Controllers enable robust memory expansion and disaggregated memory pooling and sharing for processors, workload accelerators, and smart I/O devices. Leo eliminates the need to overprovision memory thereby reducing overall TCO and optimizing CPU efficiency and application performance for computational workloads.

Aurora A-Series CXL Smart Memory Hardware Solutions offer all the benefits of Leo Controllers and enable quick plug-and-play CXL deployment with faster time-to-market for system OEMs and data centers.

Typical Application Block Diagram



Leo CXL Memory Connectivity Platform Portfolio

Product	Part #	CXL	Memory	Expansion	Pooling/Sharing
Leo E-Series CXL 2.0 x8 Smart Memory Controller	CM5082E-*	CXL 1.1/2.0 x8	2ch DDRx up to 5600MT/s, 2TB	Yes	No
Leo E-Series CXL 2.0 x16 Smart Memory Controller	CM5162E-*	CXL 1.1/2.0 x16	2ch DDRx up to 5600MT/s, 2TB	Yes	No
Leo P-Series CXL 2.0 x16 Smart Memory Controller	CM5162P-*	CXL 1.1/2.0 x16	2ch DDRx up to 5600MT/s, 2TB	Yes	Yes
Leo System Validation Board	Leo-SVB-RevA	CXL 1.1/2.0 x16	4x DDR5-5600 RDIMM slots, 2TB	Yes	Yes
Aurora A-Series CXL Smart Memory Add-in Card	A1000-1P4AA	CXL 1.1/2.0 x16	4x DDR5-5600 RDIMM slots, 2TB	Yes	Yes