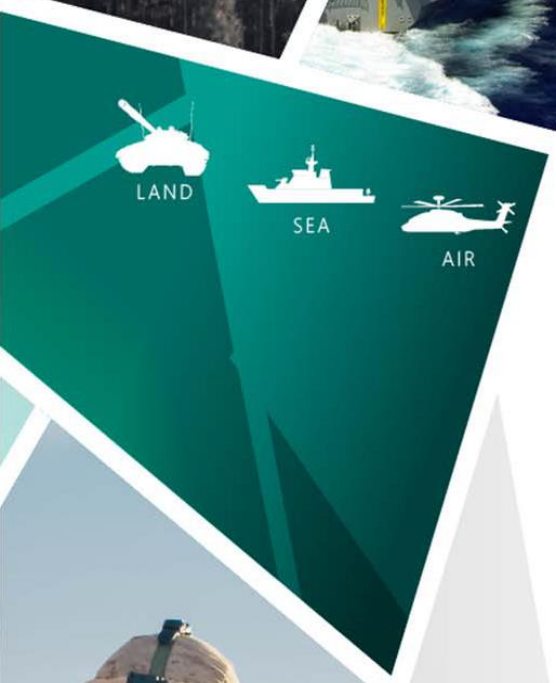
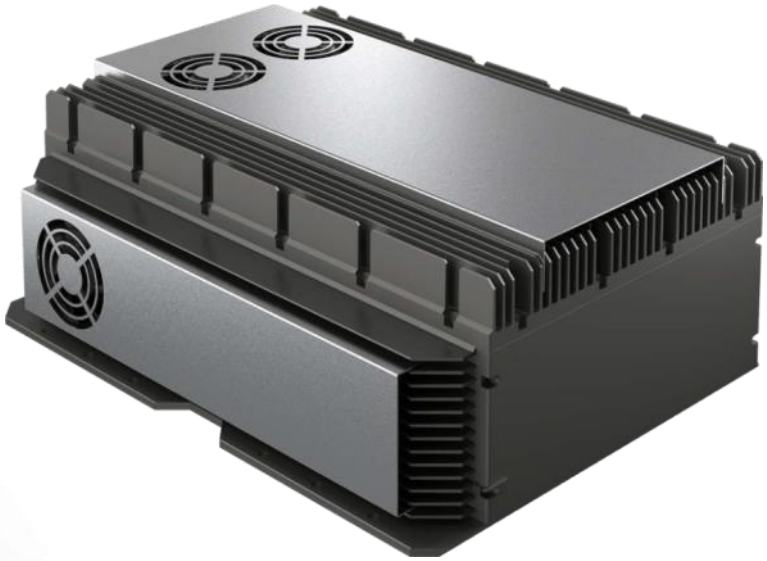


AV800-X1L

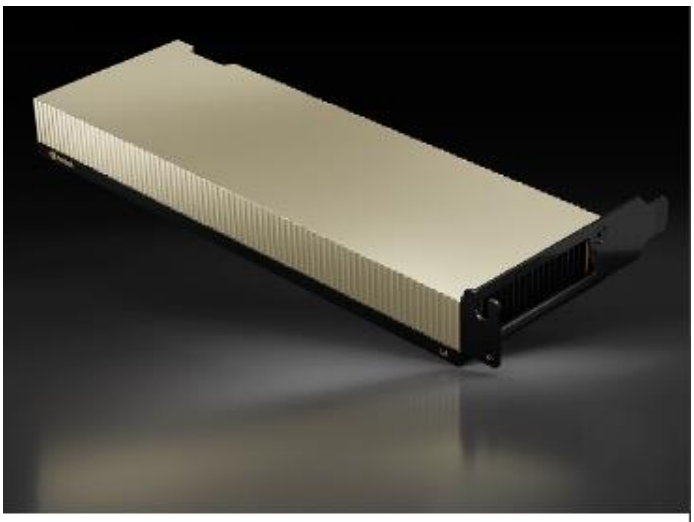
Edge AI Inference
NVIDIA Ada Lovelace L4
& Xeon®D-2183IT



- **Ultra-High-Performance Intel® Xeon® D-2183IT (3.0GHz, 16 cores, 32 threads)**
- **NVIDIA Ada Lovelace L4 Tensor Core GPU Integrated (7424 CUDA and 30.3 TFLOPS, 24GB GDDR6)**
- **512GB LRDIMM ECC DDR4-3200 MHz**
- **1 x 8TB U.2 NVMe for Fast & Mass Storage and 2 x 2.5" 1TB SATAIII SSD**
- **Certification MIL-STD-810 Temperature, Shock, Vibration, MIL-STD-810 Salt Fog**
- **Certification MIL-STD 461 EMI/EMC**

Features

Edge AI Inference, NVIDIA Ada Lovelace L4 Tensor Core GPU & INTEL XEON D-2183IT



The AV800-X1L is a ruggedized AI inference platform designed specifically for advanced inference acceleration applications such as voice, video, image, and recommendation services. This platform is powered by the NVIDIA Ada Lovelace L4 Tensor Core GPU, which features 30.3 TFLOPS in FP32 and 485 TOPs in INT8 PCIe Gen 4 x 16 high speed bus for real-time inference based on trained neural network models.

In addition to the powerful GPU, the AV800-X1L is equipped with an Intel® XEON Sky LAKE DE processor and two U.2 NVMe slots for fast storage access. This combination of stunning inference performance, a powerful CPU, and expansion capability makes the AV800-X1L the perfect ruggedized platform for versatile edge AI applications.

The AV800-X1L utilizes 7STARLAKE's Open Modular, Scalable Architecture and provides an optimized cooling solution for the NVIDIA Ada Lovelace L4 Tensor Core GPU, ensuring stable system operation in harsh environments. Whether it's for outdoor use, manufacturing plants, or other challenging environments, the AV800-X1L can withstand tough conditions while delivering top-notch AI performance.

Overall, the AV800-X1L is an ideal solution for customers looking for a ruggedized AI inference platform that can handle a variety of edge computing applications with ease.

Specifications	
FP32	30.3 teraFLOPs
TF32 Tensor Core	120 teraFLOPS*
FP16 Tensor Core	242 teraFLOPS*
BFLOAT16 Tensor Core	242 teraFLOPS*
FP8 Tensor Core	485 teraFLOPs*
INT8 Tensor Core	485 TOPs*
GPU memory	24GB
GPU memory bandwidth	300 GB/s
NVENC | NVDEC | JPEG decoders	2 | 4 | 4
Max thermal design power (TDP)	72W
Form factor	1-slot low-profile, PCIe
Interconnect	PCIe Gen4 x16 64GB/s
Server options	Partner and NVIDIA-Certified Systems with 1–8 GPUs

Features

Ultra-High Performance Intel Xeon Performance with VMware Support

SKYLAKE D HCC: The Intel Xeon SKYLAKE D D-2183IT Technology is a 64-bit system on a chip (SOC) based on Intel 10 nm silicon technology. delivers exceptional performance for demanding workloads, such as database management, virtualization, and cloud computing. The processor also supports DDR4 memory with ECC for enhanced reliability, and Intel Hyper-Threading Technology for increased processing efficiency.

For applications where space is at a premium, the Intel Xeon SKYLAKE D D-2183IT Technology offers an integrated Platform Controller Hub (PCH) technology and Intel Ethernet in a ball grid array (BGA) package, offering an inspiring level of design simplicity. The Intel Xeon SKYLAKE D D-2183IT Technology also offers a seven-year extended supply life and 10-year reliability for Internet of Things designs.

Certification MIL-STD 810, MIL-STD 461

AV800-X1L is designed to meet strict size, weight, and power (SWaP) requirements and to withstand harsh environments, including temperature extremes, shock/vibe, sand/dust, and salt/fog.

AV800-X1L is MIL-461 EMI/EMC compliant rugged Edge AI Inference server. It passes numerous environmental tests including Temperature, Altitude, Shock, Vibration, Voltage Spikes, Electrostatic Discharge and more. The sealed compact chassis shields circuit cards from external environmental conditions such as sand, dust, and humidity.

Specifications

System

Processor	Intel® Xeon® Processor D-2183IT (Frequency 2.2GHz, Turbo Boost Frequency up to 3.0GHz), 16 Core, 32 Thread Support, 22MB Smart Cache
Memory type	512GB LRDIMM ECC DDR4 3200MHz
Chipset	SoC, integrated with CPU

GPU

NVIDIA	TESLA Ada Lovelace L4 Tensor Core GPU
TFLOPS	30.3
CUDA Cores	7424
Memory	24 GB GDDR6, 300 GB/sec

Graphics Output

1x VGA	ASPEED AST2500
Resolution	Up to 1920x1200@60Hz 32bpp

Storage

HDD/SSD	1 x 8TB U.2 NVMe SSD and 2 x 2.5" 1TB SATAIII SSD (Easy Swappable)

Side I/O

X1(4 x 10GbE LAN)	1x Amphenol TV07RW-15-37SB (37PIN)
X2(VGA)	1 x Amphenol TV07RW-13-98S(10PIN)
X3(USB2.0x2)	1 x Amphenol TV07RW-13-35SB(22PIN)
X4 (DC-IN)	1 x Amphenol TV07RW-13-04P (4PIN)
Button	1 x Power Switch with Dedicated LED
SSD Tray	2 x 2.5" HDD/SSD Easy Swap Tray Dedicated LED
Dedicated LED	2 x Red/Green LEDs (SSD)

Power Requirement

Power Input	DC-DC 18 to 36V (300W max) MIL-STD 461

Applications, Operating System

Applications	C4ISR, Commercial and Military Platforms Requiring Compliance to MIL-STD-810 Process Control, where Harsh Temperature, Shock, Vibration, Altitude, Dust and EMI Conditions
Operating System	Windows 10 64Bit, Windows Server 2019 64bit, Windows 2016 64bit, Hyper-V Server 2016 R2, Ubuntu16.04.3 LTS/17.10/18.04.1LTS, Fedora 25/26, RedHat Linux EL 6.8/6.9/7.3/7.4/7.6, VMware ESXi 6.5u1 ,Vmware ESXi 6.7U2

Physical

Dimension	455x 154 x316 mm (W x H x D)
Weight	15Kg (33.06lbs)
Chassis	Aluminum Alloy, Corrosion Resistant
Finish	Anodic aluminum oxide
Cooling	Natural Passive Convection/Conduction Cooling. No Moving Parts Ingress Protection
Ingress Protection	IP65

Environmental

Operating Test MIL-STD-810

Low air pressure	Method 500.5 Procedure 2	Operation/Air Carriage 4572m (15.000 ft)
Low Temperature	Method 502.5 Procedure 2	-20°C, 4 hours, ±3°C
High Temperature	Method 501.5 Procedure 2	+55°C, 4 hours, ±3°C
Humidity	Method 507.5	85%-95% RH without condensation, 24 hours/ cycle, conduct 10 cycle
Vibration	Method514.6 Category 24	5-500Hz, Vertical 7.7Grms, 40mins x 3axis
Shock	Method 516.6	20 Grms, 11ms, 3 axes

Non-Operating Test MIL-STD-810

Low Temperature	Method 502.5	-33°C, 4 hours, change rate: ≦ 20°C/ Hour -15°C, 72hours (By request)
High Temperature	Method 501.5	+71°C, 4 hours, change rate: ≦ 20°C/ Hour
	Procedure 1	+68°C, 240 hours (By request)
Vibration	Method514.6	5-500Hz, Vertical 7.7Grms, 40mins x 3axis

Shock	Method 516.6	20 Grms, 11ms, 3 axes
Salt Fog	Method 509.7	Salt Spray (50±5)g/L
MIL-STD 461		
Conducted Emissions Power Leads	CE102 basic curve	10kHz – 30MHz
Conducted Emissions Electric Field	RE102-4	1.5HMz - 30MHz – 5GHz
Radiated Susceptibility Electric Field	RS103	1.5 MHz – 3GHz, 50 V/m equal for all frequencies
		2MHz – 80MHz, 50 V/m equal for all frequencies
		80MHz – 3GHz, 50 V/m equal for all frequencies
		3GHz – 5GHz, 50 V/m equal for all frequencies
Electrostatic Discharge	EN 61000-4-2	Air DISCHARGE: 8 Kv, Contact discharge : 6kV
Electromagnetic compatibility	EN61000-4-4	Signal and DC Net: 1 kV
Electromagnetic compatibility	EN61000-4-5	Lead vs. ground potential 1Kv, ignal und DC Net: 1 kV
Radio disturbance	EN55022	Class A
Electromagnetic compatibility	EN61000-4-3	10V/m
Electromagnetic compatibility	EN 61000-4-5	Lead vs. ground potential 1Kv, ignal und DC Net: 0.5 kV
MIL-STD-1275 Specifications		
Steady State	20V~33V	
Surge Low	20V~33V	
Surge High	18V/500ms	

Appearance & Dimension