



# AVR800-S4L4

EDGE AI INFERENCE  
NVIDIA ADA LOVELACE L4  
& XEON® SP GOLD 5411N



- Ultra-High-Performance Intel® Xeon® SP Gold 5411N (1.9GHz, Max 3.9GHz 24 cores, 48 threads)
- NVIDIA Ada Lovelace L4 Tensor Core GPU Integrated (7424 CUDA and 30.3 TFLOPS, 24GB GDDR6)
- 512GB RDIMM ECC DDR5-5600 MHz
- 2 x 8TB U.2 NVMe for Fast & Mass Storage with SED
- Certification MIL-STD-810
- Certification MIL-STD 461
- Trusted Platform Module (TPM) 2.0 support

## Features

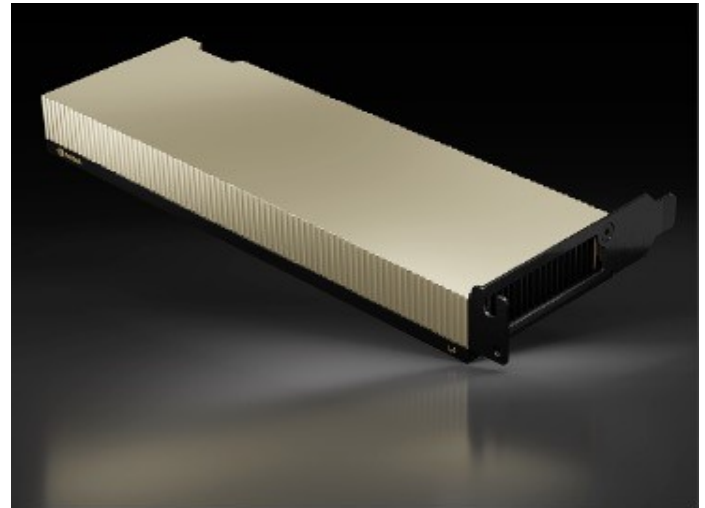
### Edge AI Inference, NVIDIA Ada Lovelace L4 Tensor Core GPU & INTEL XEON SP 5411N

The AVR800-S4L4 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 AVR800-S4L4 is equipped with an Intel® XEON Sapphire Rapids 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 AVR800-S4L4 the perfect ruggedized platform for versatile edge AI applications.

The AVR800-S4L4 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 AVR800-S4L4 can withstand tough conditions while delivering top-notch AI performance.

Overall, the AVR800-S4L4 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 SP Performance with VMware8.x Support



Intel XEON® Sapphire Rapids: The Intel Xeon Sapphire Rapids Technology is a fully support based on Intel® Boot Guard, Intel® Trusted Execution Technology, Intel® AES New Instructions, Intel® Software Guard Extensions (Intel® SGX), Supports virtualization (VMware v8 and upwards), Intel® Virtualization Technology (VT-x), Intel® Virtualization Technology for Directed I/O (VT-d), Intel® VT-x with Extended Page Tables (EPT) technology. delivers exceptional performance for demanding workloads, such as database management, virtualization, and cloud computing. The processor also supports DDR5-5600 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 Sapphire Rapids Technology offers an integrated Platform Controller Hub C741 chipset technology, offering an inspiring level of design simplicity. The Intel Xeon Sapphire Rapids Gold 5411N Technology also offers a seven-year extended supply life for Internet of Things designs.

### Certification MIL-STD 810, MIL-STD 461



AVR800-S4L4 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.

AVR800-S4L4 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® Sapphire Rapids Processor Gold 5411N(Frequency 1.9GHz, Turbo Boost Frequency up to 3.9GHz), 24 Core, 48 Thread Support, 45MB Smart Cache TDP 165W
Memory type	512GB RDIMM ECC DDR5 5600MHz
Chipset	Intel C741

## GPU

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

## GRAPHICS OUTPUT

1xVGA	ASPEEDAST2600
Resolution	Up to 1920x1200@60Hz 32bpp

## STORAGE

HDD/SSD	2 x 8TB U.2 NVMeSSD with SED
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## SIDE I/O

X1(2 x 10GbE)	1x AmphenolTV07RW13-35SN (22PIN)
X2(VGA)	1 xAmphenolTV07RW-13-98S (10PIN)
X3(4 x USB2.0)	1 xAmphenolTV07RW13-35SB (22PIN)
X4(DC-IN)	1 xAmphenolTV07RW-13-04P (4PIN)
X5(1GbE+ IPMI)	1x AmphenolTV07RW13-35SN (22PIN)
Dedicated LED	2 x Red/Green LEDs ( SSD)
Hardware	Trusted Platform Module (TPM) 2.0 , Silicon Root Trust (RoT) -NIST 800-193 Compliant
Features	UEFI Secure Boot/ Secure Firmware Updates

## POWER REQUIREMENT

Power Input	DC-DC 18 to 36V (300W max) MIL-STD 461
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## 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
OS Support List A	Windows 10 64bit Enterprise, Windows 10 64bit Pro Workstations, Windows 10 IoT 64bit Enterprise, Windows 11 64bit Enterprise (OR001), Windows 11 64bit Pro Workstations (OR001), Windows 11 IoT 64bit Enterprise (OR001), Windows Server 2019 64bit, Windows Server 2022 64bit
OS Support List B	RHEL 8.5 64bit, RHEL 8.6 64bit, RHEL 9.0 64bit, RHEL 9.2 64bit, CentOS 8.5. 64bit, Oracle 8.5 64bit, Oracle 8.6 64bit, Rocky Linux 8.5 64bit, openSUSE Leap 15.4 64bit, SLES 15 SP3 64bit, Ubuntu 22.04 64bit Server, Ubuntu 21.10 64bit Server.
VMware	VMWare ESXi 7.0u3d x64, VMWare ESXi 8.0x64

## PHYSICAL

Dimension	450x 154 x316 mm (D x H x W)
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Estimated Weight	18Kg (39.68lbs) final weights is dependent on specific configuration
Chassis	Aluminum Alloy, Corrosion Resistant
Finish	Anodic aluminum oxide
Cooling	Conduction Cooling with Air Force smart fan Ingress Protection
Ingress Protection	IP65

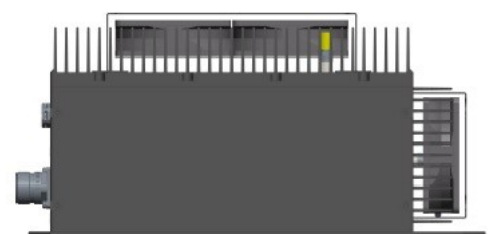
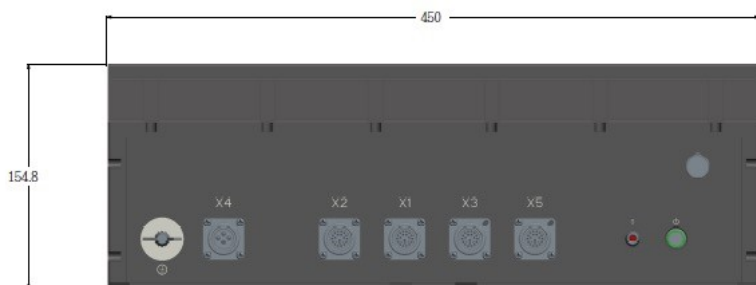
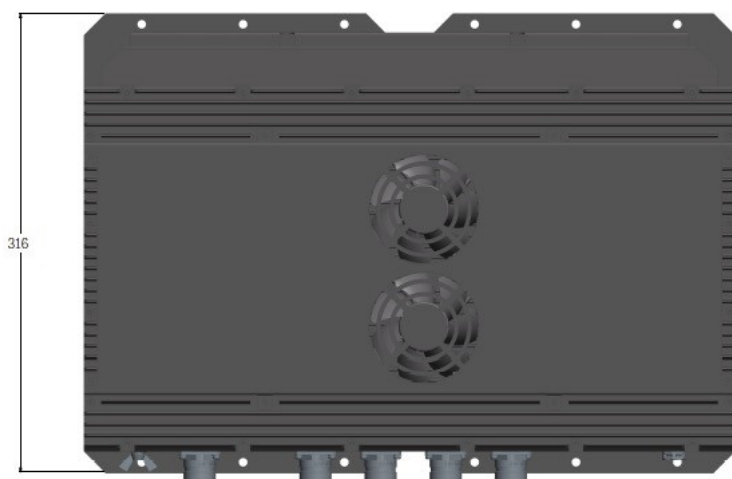
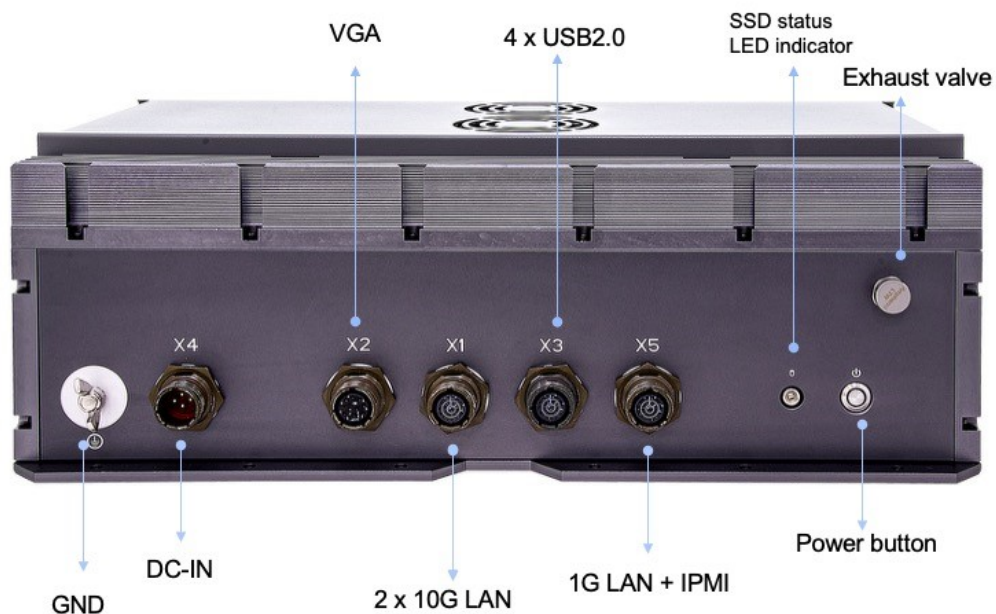
## MIL-STD 810

High Temperature	High Storage	Temperature	+74°C per MIL-STD-810G/501.5/I for 7 cycles
High Temperature	High Operation	Temperature	55°C per MIL-STD-810G/501.5/II for 3 cycles
Low Temperature	Low Storage	Temperature	-46°C for 72 hours per MIL-STD-810G/502.5/I
Low Temperature	Low Operation	Temperature	-33°C per MIL-STD-810G/502.5/II
Vibration	C-130(J/K) aircraft		Test duration 400 minutes per axis (x,y,z), simulating 120 flight hours including 20 landings and takeoffs
	Functional Vibration		vibration experienced on Ford F-550 in neutral gear
	Tactical Transportation test Not Operational		Test duration: 120 minutes per axis to simulate 500,000 km driving distance.
Shock	Road Transportation		10 Grms, 11ms, 3 (X, Y, Z) axes, Sawtooth Pulse
Immersion	Method 502.5		Test according to IEC 60529/ IP65

## MIL-STD 461

Conducted Emissions	CE102	10KHz to 10MHz (Figure CE102-1)
Power Leads		
Conducted Susceptibility	CS101	30Hz to 150KHz (Figure CS101-1: Curve #2)
Power Leads		
Conducted Susceptibility, bulk cable injection	CS114	10KHz to 200MHz, curves 3&4 (10 kHz to 2 MHz: Curve #3 2MHz to 200MHz: Curve #4)
Conducted Susceptibility, bulk cable injection	CS115	impulse excitation (5A)
Conducted Susceptibility Damped sinusoidal transients, cables and power leads	CS116	10KHz to 100MHz (10A)
Radiated Emissions electric filed	RE102	2MHz to 18GHz (Figure RE102-4)
Radiated Susceptibility electric filed	RS103	2Mhz to 18GHz, 50V/m (2MHz to 100MHz: 50V/m 100MHz to 18GHz: 50V/m)
Personnel borne electrostatic discharge	CS118	Personnel borne electrostatic discharge

## Appearance & Dimension



This datasheet is for marketing purposes only and does not constitute a warranty. All specifications, dimensions, and data are subject to change without notice. For the latest specifications and updates, please contact your 7STARLAKE representative.