



AV800

EDGE AI INFERENCE

TESLA T4 & XEON® D-1587



- Ultra-High Performance Intel® Xeon® D-1587 (2.3GHz, 16 cores, 32 threads)
- NVIDIA TESLA T4 GPU Integrated (2560 CUDA, 16GB GDDR6)
- 128GB DDR4 ECC RDIMM
- NVMe for Fast & Mass Storage
- Design for reliability under demanding MIL-STD-810 Temperature, Shock, Vibration, MIL-STD 461 EMI/EMC
- Extended Temperature -20 to +55 Degree



LAND



SEA



AIR

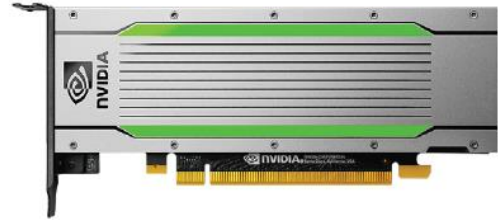


Features

Edge AI Inference, NVIDIA Tesla T4 & INTEL XEON D-1587

AV800 is 7STARLAKE ruggedized AI inference platform specifically designed for NVIDIA® Tesla T4 and supports Intel® XEON Broadwell DE Core™ processor. Utilizing 7STARLAKE' Open, Modular, Scalable Architecture, AV800 provide optimized cooling solution for Tesla T4, ensure the stable system operation in harsh environments. In addition to Tesla T4, AV800 provides one M.2 NVMe slot for fast storage access. Combining stunning inference performance, powerful CPU and expansion capability, it is the perfect ruggedized platform for versatile edge AI applications.

AV800 ruggedized AI inference platforms designed for advanced inference acceleration applications such as voice, video, image and recommendation services. It supports NVIDIA® Tesla T4 GPU, featuring 8.1 TFLOPS in FP32 and 130 TOPs in INT8 for real-time inference based on trained neural network model.



SPECIFICATIONS

GPU Architecture	NVIDIA Turing
NVIDIA Turing Tensor Cores	320
NVIDIA CUDA® Cores	2,560
Single-Precision	8.1 TFLOPS
Mixed-Precision (FP16/FP32)	65 TFLOPS
INT8	130 TOPS
INT4	260 TOPS
GPU Memory	16 GB GDDR6 300 GB/sec
ECC	Yes
Interconnect Bandwidth	32 GB/sec
System Interface	x16 PCIe Gen3
Form Factor	Low-Profile PCIe
Thermal Solution	Passive
Compute APIs	CUDA, NVIDIA TensorRT™, ONNX

Features

Ultra-High Performance Intel® Xeon® Performance with VMware Support



Broadwell DE: The Intel® Xeon® processor D-1500 product family is Intel's third-generation 64-bit system on a chip (SOC) and the first Intel® Xeon® SoC based on Intel® 14 nm silicon technology. This lineup offers hardware and software scalability from two up to sixteen cores, making it the perfect choice for a broad range of high-performing, low-power solutions that will bring intelligence and Intel® Xeon® reliability, availability, and serviceability (RAS) to the edge. For applications where space is a premium, an integrated Platform Controller Hub (PCH) technology and Intel® Ethernet in a ball grid array (BGA) package offer an inspiring level of design simplicity. The Intel® Xeon® processor D-1500 product family is offered with a seven-year extended supply life and 10-year reliability for Internet of Things designs.

Design to Meet MIL-STD 810, MIL-STD461

AV800 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 is MIL-461/1275 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-1587 (Frequency 1.7GHz, Turbo Boost Frequency up to 2.3GHz), 16-Core, 32 Thread Support, 24MB SmartCache. Build-in Turbo Boost Technology 2.0, VPro and Hyper-Threading support.
Memory type	4 x DIMMs Up to 128GB ECC RDIMM DDR4 2133MHz
Chipset	SoC, integrated with CPU

GPU

NVIDIA	TESLA T4
Turning Tensor Cores	320
CUDA Cores	2560
Memory	16 GB GDDR6, 300 GB/sec

GRAPHICS OUTPUT

1xVGA	ASPEED AST2400
Resolution	Up to 1920x1200@60Hz 32bpp

STORAGE

HDD/SSD	1x M.2 2280 M key NVMe socket (PCIe Gen3 x4) for NVMe SSD installation 2 x 2.5" SSD (Easy Swappable)
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SIDE I/O

VGA	1 x Amphenol TV07RW-13-98S(10Pin)
IPMI	1 x Amphenol TV07RW-13-98s (10Pin)
(DC-IN)	1 x Amphenol TV07RW-11-54P (4PIN)
(10GbE Ethernet)	2 x Souriau 8ST7-10G35SA (13Pin)
Button	1 x Power Switch with Dedicated LED
SSD Tray	2 x Dual 2.5" HDD/SSD Easy Swap Tray
Dedicated LED	1 x Red LED (OVHT) ,1 x Green LEDs (SSD)

POWER REQUIREMENT

Power Input	DC-DC 18 to 36V (300W max) Mil-STD 461
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APPLICATIONS, OPERATING SYSTEM

Applications	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 2008 R2, Windows Server 2012 R2, Windows Server 2016, Ubuntu14.04, Fedora 20/23, RedHat Linux EL 7.1/7.2, VMware ESXi 6.0, ESXi 6.5

PHYSICAL

Dimension (W x D x H)	350 x 284 x 120mm (13.77" x 11.18" x 4.72")
Weight	9.6 Kg (21.16lbs)
Chassis	Aluminum Alloy, Corrosion Resistant
Finish	Anodic aluminum oxide
Cooling	Natural Passive Convection/Conduction. No Moving Parts
Ingress Protection	IP65

ENVIRONMENTAL

OPERATING TEST- MIL-STD-810G Test

Low Temperature	Method 502.5 Procedure 2	-20°C, 4 hours, $\pm 3^\circ\text{C}$
High Temperature	Method 501.5 Procedure 2	+55°C, 4 hours, , $\pm 3^\circ\text{C}$
Humidity	Method 507.5	85%-95% RH without condensation, 24 hours/ cycle, conduct 10 cycle.
Vibration	Method 514.6	5-500Hz, Vertical 2.20Grms, 40mins x 3axis.
Shock	Method 516.6	20 Grms, 11ms, 3 axes.

NON-OPERATING TESTS

Low Temperature Storage	Method 502.5	-33°C, 4 hours, change rate: $\leq 20^\circ\text{C}/\text{Hour}$
High Temperature Storage	Method 501.5 Procedure 1	+71°C, 4 hours, change rate: $\leq 20^\circ\text{C}/\text{Hour}$
Vibration	Method 514.6	5-500Hz, Vertical 2.20Grms, 40mins x 3axis.
Shock	Method 516.6	20 Grms, 11ms, 3 axes.

EMC compliance

MIL-STD-461E :

CE102 basic curve, 10kHz - 30 MHz

RE102-4, (1.5 MHz) -30 MHz - 5 GHz

RS103, 1.5 MHz - 3 GHz, 50 V/m equal for all frequencies

RS103, 3 GHz - 5 GHz, 50 V/m equal for all frequencies

EN 61000-4-2: Air discharge: 8 kV, Contact discharge: 6kV

EN 61000-4-4: Signal and DC-Net: 1 kV

EN 61000-4-5: Leads vs. ground potential 1kV, Signal und DC-Net: 0.5

kV EN 61000-4-2: Air discharge: 8 kV, Contact discharge: 6kV

EN 61000-4-4: Signal and DC-Net: 1 kV EN 61000-4-5: Leads vs. ground

potential 1kV, Signal und DC-Net: 0.5 kV

EN 61000-4-2: Air discharge: 8 kV, Contact discharge: 6kV

EN 61000-4-4: Signal and DC-Net: 1 kV

EN 61000-4-5: Leads vs. ground potential 1kV, Signal und DC-Net: 0.5

kV EN 55022, class A

EN 61000-4-3: 10V/m

Operating Temperature -20°C to 55°C

Storage Temperature -40°C to 85°C

Appearance & Dimension

