

# AV800-027-A45


IP65 MILITARY ICELAKE D-2733NT, TOTAL 50GBE, DUAL 25GSFP, DUAL GPU SERVER



- Design to meet MIL-810, MIL-461 EMC/EMI.
- Intel® Xeon D-2733NT 8 cores 2.1GHz Max Turbo 3.2GHz.
- Dual Nvidia RTX A4500 5888 CUDA cores PCIe Gen 4.0x16.
- 2x 25GbE SFP28 LAN Port + 2x RJ45 10 GbE base-T ports.
- M.2 NVMe 2TB (R/W, 7150/5250 MB/sec)
- U.3 NVMe 64TB x 2.
- Hardware Secure Erase(AES) button, Swappable CMOS battery
- Extreme Temperature -20~60C
- Size: 405 x 316 x 195 mm.
- IP65 Sealed with External Cooling Blade
- MIL-STD-810G Thermal, Shock, Vibration, Humidity
- Power 18V~36V DC Input

# INDEX

---

- 1. INTRODUCTION**
  - 2. MAIN FEATURE**
  - 3. MIL-STD-810**
  - 4. SYSTEM SPEC.**
  - 5. DIMENSION**
  - 6. ORDERING INFORMATION**
- 
- 

# 1. INTRODUCTION

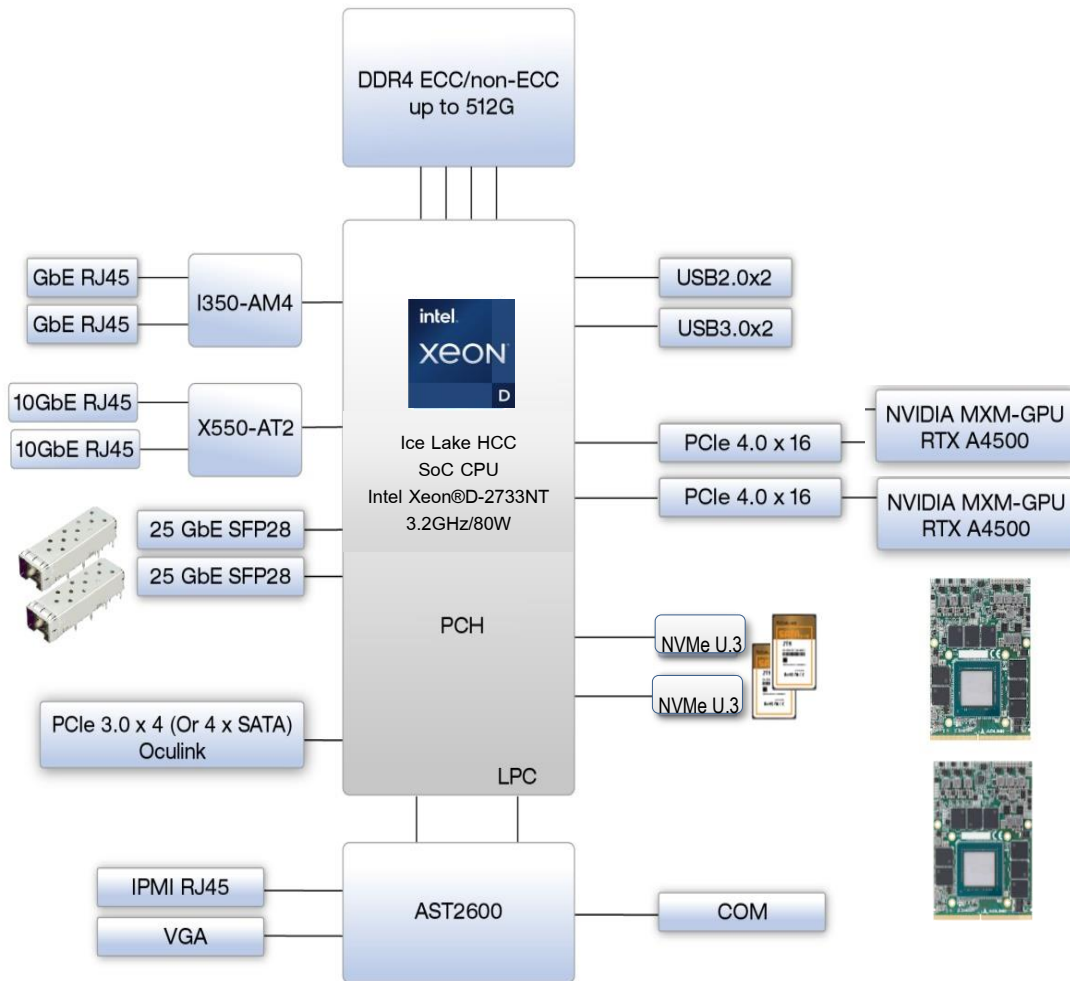
Artificial intelligence (AI) is quickly becoming one of the most crucial elements of business success. Today, deploying powerful computing platforms that can accelerate and scale their AI-based products and services while adapting them to harsh environments has become vital for many successful military applications.

7Starlake is innovating to address the emerging high-throughput inference market driven by IoT devices which are generating huge amounts of data. The combination of NVIDIA CUDA parallel Processor cores and the new architecture-based GeForce Accelerator is an ideal combination for demanding and latency-sensitive workloads.



# 2. MAIN FEATURE

- Ultra High Performance Intel® Xeon Ice Lake-D, D-2733NT (8xCores)
- NVIDIA MXM-GPU Quadro RTX A4500 5888 CUDA x2
- MIL-STD 810 Thermal, Vibration, Shock, Humidity
- 2 x 25GbE SFP28, 2x10GbE RJ45, 4 x1GbE RJ45
- Up to 512GB LRDIMM/256GB RDIMM,
- 2 x NVMe PCIe Gen 4.0 U.3, 1 x NVMe PCIe Gen4 M.2.
- Dual Removable Anti-Drop Solid-State Disk
- Hardware Secure Erase (AES) by option
- IP65 Sealed with External Cooling Blade
- MIL-STD-810G Thermal, Shock, Vibration, Humidity
- MIL-STD 461 EMI/EMC
- Power 18V~36V DC-IN
- Extreme Temperature Support -20~+60°C



### 3.MIL-STD Environment

- Operating Temperature High: 50°C, MIL-STD-810G, Method 501.5, Procedure I.
- Operating Temp Low: 0°C, MIL-STD-810G, Method 502.5, Procedure I.
- Non-Operating Temperature High: 70°C, MIL-STD-810G, Method 501.5, Procedure II.
- Non-Operating Temperature Low: -40°C, MIL-STD-810G, Method 502.5, Procedure II.
- Operating Altitude: Up to 15,000ft., MIL-STD-810G, Method 500.5.
- Non-Operating Altitude: Up to 45,000ft., MIL-STD-810G, Method 500.5.
- Humidity: MIL-STD-810G, Method 507.5., Procedure Ib (Natural Cycle B3)
- Shock: MIL-STD-810G, Method 516.6, 30g's, Saw-tooth, 11ms & MIL-DTL-901E Grade A., Class II., Type B.
- Vibration: MIL-STD-167, Type I, Deck Mounted Equipment.
- EMI/EMC: MIL-STD-461F, RE101, RE102, (Shipboard Level 1), RS103, CE101, CE102, CS101, CS114, CS116.
- Airborne Noise: MIL-STD-740-1 compliance: 43.7dBA (Idle), 52.5dBA(50%), 54.6dBA(80%)

# 4.SYSTEM SPEC

## System

|                     |   |
|---------------------|---|
| CPU                 | Intel® Xeon® D-2733NT, 8 core, 16 thread, 15MB Cache, 2.1GHz Max Turbo up to 3.2GHz. Single socket FCBGA-2579 , up to 80W TDP ° |
| Memory type         | 256GB RDIMM ECC DDR4-2666/2400 MHz,<br>512G LRDIMM DDR4-2666/2400MHz in 4 DIMM Slot   |
| Chipset             | Intel® SoC Integrated   |
| GPU                 | 2 x NVidia® RTX A4500, 5888 CUDA Cores, PCIe Gen4.0 x16   |
| Display             | VGA, Resolution up to 1920x1200@60Hz 32bpp  |
| Chipset             | Aspeed AST2600 BMC  |
| Ethernet Controller | Dual LAN with 25G SFP28 LAN via SoC<br>Dual LAN with 10G LAN via Intel® X550<br>Quad LAN with Gigabit LAN via Intel®i350        |
| LAN                 | 4 x 1GBase-T , 2 x 10GBase-T LAN, 2 x 25GBase SFP-  |
| Storage             | 2 x 2TB, 2.5" SSD hot-swap, with AES function<br>1 x 256GB, NVMe M.2 2280 by PCIe   |
| Power Type          | 18V~36V DC Input  |
| Dimension           | 405mm x 316mm x 195mm (W x L x H)   |

## Front I/O

|     |   |
|-----|---|
| X0  | 1 x USB3.0 Amphenol USB3FTV7AZNF312 connector   |
| X1  | 1 x 1GBase-T TV07RW-13-98S connector            |
| X2  | 1 x 1GBase-T TV07RW-13-98S connector            |
| X3  | 1 x 1GBase-T TV07RW-13-98S connector            |
| X4  | 1 x 1GBase-T TV07RW-13-98S connector            |
| X5  | DC In connector                                 |
| X6  | 1 x 10GBase-T M20 RJ45 CAT6A connector          |
| X7  | 1 x 10GBase-T M20 RJ45 CAT6A connector          |
| X8  | 1 x 25G Fiber Ethernet Amphenol FSI MPOFTV70ZNN |
| X9  | 1 x 25G Fiber Ethernet Amphenol FSI MPOFTV70ZNN |
| VGA | D-sub 15 connector with waterproof cap          |

## Environmental

|                  |  |
|------------------|--|
| MIL-STD-810 Test | <p>Method 500.5, Procedures I and II (Altitude, Operation):<br/>12,192M, (40,000 ft) for the initial cabin altitude (18.8Kpa or 2.73 Psia)</p> <p>Method 500.5, Procedures III and IV (Altitude, Non-Operation):<br/>15,240, (50,000 ft) for the initial cabin altitude (14.9Kpa or 2.16 Psia)</p> <p>Method 501.5, Procedure I (Storage/High Temperature)</p> <p>Method 501.5, Procedure II (Operation/High Temperature)</p> <p>Method 502.5, Procedure I (Storage/Low Temperature)</p> <p>Method 502.5, Procedure II (Operation/Low Temperature)</p> <p>Method 503.5, Procedure I (Temperature shock)</p> <p>Method 507.5, Procedure II (Temperature &amp; Humidity)</p> <p>Method 509.7 Salt Spray (50±5)g/L</p> <p>Method 514.6, Vibration Category 24/Non-Operating (Category 20 &amp; 4,Vibration)</p> <p>Method 514.6, Vibration Category 20/Operating (Category 20 &amp; 24,Vibration)</p> <p>Method 516.6, Shock-Procedure V Non-Operating (Mechanical Shock)</p> <p>Method 516.6, Shock-Procedure I Operating (Mechanical Shock)</p> |
|------------------|--|

|             |   |
|-------------|---|
| Reliability | <p>Conduction Cooling.</p> <p>Designed &amp; Manufactured using ISO 9001 Certified Quality Program.</p> |
|-------------|---|

|             |  |
|-------------|--|
| MIL-STD-461 | <p>CE102 basic curve, 10kHz - 30 MHz</p> <p>RE102-4, (1.5 MHz) -30 MHz - 5 GHz</p> <p>RS103, 200 MHz - 3.2 GHz, 50 V/m equal for all frequencies</p> <p>EN 61000-4-2: Air discharge: 8 kV, Contact discharge: 6kV</p> <p>EN 61000-4-3: 10V/m, EN 61000-4-4: Signal and DC-Net: 1 kV</p> <p>EN 61000-4-5: Leads vs. ground potential 1kV, Signal und DC-Net: 0.5 kV</p> <p>CE and FCC</p> |
|-------------|--|

|              |   |
|--------------|---|
| MIL-STD-1275 | <p>Steady State – 20V~33V,</p> <p>Surge Low – 18V/500ms,</p> <p>Surge High – 100V/500ms</p> <p>Emitted spikes</p> <p>Injected Voltage surges</p> <p>Emitted voltage surges</p> <p>Voltage ripple (2V)</p> <p>Voltage spikes</p> <p>Starting Operation</p> <p>Reverse polarity</p> |
|--------------|---|

|                 |              |
|-----------------|--------------|
| Operating Temp. | -20 to +60°C |
|-----------------|--------------|

|               |              |
|---------------|--------------|
| Storage Temp. | -40 to +85°C |
|---------------|--------------|

|                   |                            |
|-------------------|----------------------------|
| Relative Humidity | 5% to 95%, non-condensing. |
|-------------------|----------------------------|

## Operating System

|                  |                                   |
|------------------|-----------------------------------|
| Operating System | Windows 10 64Bit, Linux by option |
|------------------|-----------------------------------|

|      |                |
|------|----------------|
| RoHS | RoHS compliant |
|------|----------------|

## 5.DIMENSION



## 6.Ordering Information

|                  |  |                               |
|------------------|--|-------------------------------|
| <b>Model</b>     | AV800-D27-A45                              | PER800-D27                    |
| <b>Type</b>      | Rugged                                     | Industrial                    |
| <b>CPU</b>       | Intel Xeon D-2733NT                        |                               |
| <b>Memory</b>    | 256GB RDIMM ECC DDR4-2666/2400 MHz         |                               |
| <b>GPU</b>       | 2 x MXM embedded NVIDIA RTX™ A4500         |                               |
| <b>RAM</b>       | Up to 256G DDR4 RDIMM 2666/2400MHz         |                               |
| <b>Storage</b>   | M.2 (2TB) and 2 x SATA III (16TB) U.3      |                               |
| <b>NIC</b>       | 2 x 25GbE SPF + 2 x 10GbE + 4 x GbE + IPMI |                               |
| <b>Power</b>     | 18V~36V DC Input                           |                               |
| <b>Dimension</b> | 405 x 316 x 195mm (W x D x H)              | 416 x 301 x 106 mm(W x D x H) |