

# AV701

**GPGPU SERVER  
INTEL XEON 2276ME CPU  
WITH NVIDIA RTX2060S GPU**



## **AI ACCELERATED GPU SERVER**

- INTEL 9th Gen. XEON 2276ME (6 cores, 4.5GHz) / i7-9850HE (6 cores, 4.4GHz)
- High Memory Capacity DDR4- 128GB
- NVIDIA RTX2060S (8GB-GDDR6, CUDA 2176)
- MIL-461 18V~36V DC-DC 300W
- Support NVMe / mSATA
- MIL-STD 810 resistance

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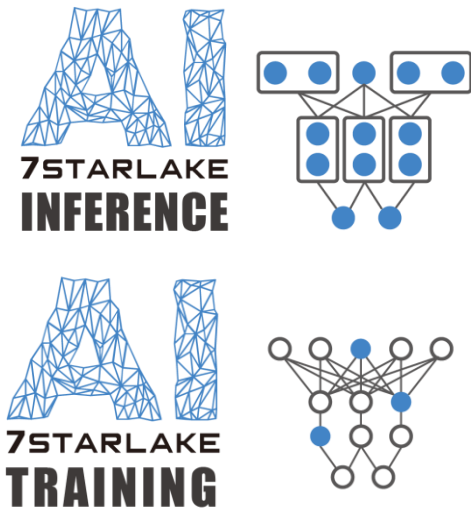
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# 1. Features

## 1-1 CPU GPU Platform – AI Training / Inference



Artificial Intelligence (AI) is accelerating the tactical capability of the military more than ever before. Many new combat and weapons systems utilize embedded AI, making them more efficient and less dependent on human operation.

Furthermore, SWaP (Reduced Size, Weight, and Power) requirements are also impacting artificial intelligence design. Now and in the future, many military systems will be susceptible to SWaP-constraints, which challenge the assumptions of today's AI solutions.

7Starlake excels in designing unparalleled military computers for harsh environments. From polar regions to

the desert, from jungle environments to high altitude, 7Starlake's rugged computers have the capability to withstand the operational environment. Tested to MIL-STD standards exacting levels of conformity, 7Starlake products can operate at full capacity in extreme conditions. 7Starlake believes in meeting 100% of our customers' expectations for the design, quality of build, and customer service levels in the supply of rugged and custom-built computer systems.

## 1-2 MIL-STD 810G & Full IP65 protection

AV701 is designed to meet strict SWaP requirements and to withstand harsh environments, including extreme temperature, shock/vibration, sand/dust, and salt/fog. With ruggedized design and high functionality, the IP65 and MIL-STD resistance AV701 is the ideal tactical vehicle on the battlefield.



### 1-3 Why does MIL-STD 461 matter



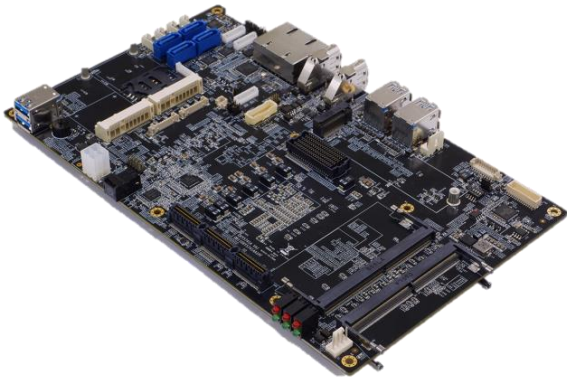
On the battlefield, where every second counts, a rugged HPEC connected to multiple sensors should be capable of tackling all affairs simultaneously in regard to processing a great amount of data identity, sorting data, and passing along the correct path. In this frame, EMC ability is undoubtedly indispensable. MIL-STD-461 testing offers an added layer of EMI protection for military systems and reassurance to military personnel that their systems won't be disrupted by EMI.

No matter what kind of robust CPU/GPU configuration a client requests, such as Intel XEON plus NVIDIA Quadro, or Intel Xeon Scalable paired with NVIDIA Tesla T4, TDW might become 500W even up to 1000W. That may present a big challenge for both power and thermal system design. Despite such challenges, the 7Starlake team continues to produce high-spec and unrivalled MIL-STD-461 computing systems by using the full range of EMI filter power modules. These include both the SK710 (10V-40V 150W) and SK711 (18V-36V 300W) which succumb to and pass the strictest and most rigorous EMI/EMS tests.





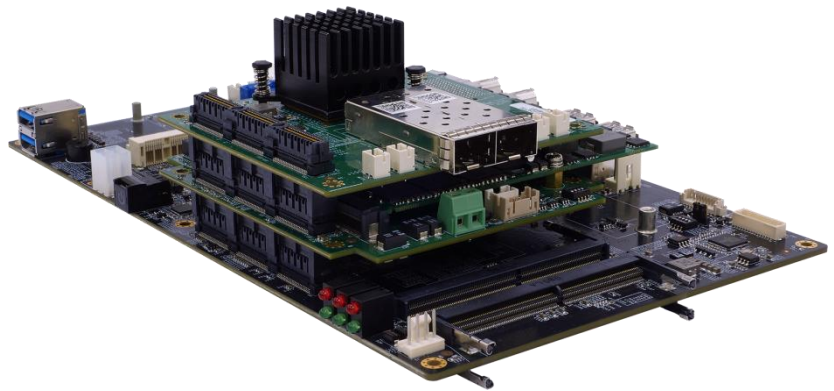
## 1-4 System main board : EBX SBC-OXY5741A



The 3.5 EBX SBC OXY5741A provides extraordinary computing performance under extreme environment. It is powered by 9th / 8th Gen Intel® Xeon® / Core™. Featuring Intel's Xeon E-2276ME and ruggedised open-standard EBX architecture, PERFECTRON EBX series is built tentatively and triumphs on environmental testing. It still operates effectively under harsh environments ranging from -40 to 85°C so that it is a perfect solution for defence, transportation, and automation applications. More key functions such as

stackable PCIe/104 expansion ability, flexible I/O, and NVMe Gen 3.0 PCIe4 for fast and large capacity storage, all contribute to this versatile architecture that can meet clients' needs.

Choosing an embedded architecture for computer systems can be a formidable task. This kind of stackable and mezzanine architecture often results in tradeoffs that include off-the-shelf or custom design requirements. PCIe/104 compact, ruggedised, easily expandable traits support a lot of expansion flexibility in systems. This architecture evolved to address these resulting issues by keeping the common background while eliminating limitations. OXY5741 employs PCIe/104 technology to reduce constraints and create flexibility of expansion. Its M.2 extension offers M-key (M-Key 2280 optional), and PCIe 3.0 x 4 NVMe. Additionally, OXY5741 provides 3.0 ports for data redundancy by supporting RAID 0/1.



## 1-5 NVIDIA GeForce RTX 2060 Super

AV701 supports NVIDIA® GeForce® RTX 2060 SUPER™ which is powered by the NVIDIA Turing™ architecture, bringing superfast all-around performance and graphics to every gamer and creator. It's time to gear up and get super powers.

SPECIFICATION	
GPU	RTX 2060 Super (TU106)
Processor Technology	12nm
GPU Clock	1470MHz / 1650MHz (Boost)
Graphics Memory	256-bit, 8GB, GDDR6
Memory Clock	1750 MHz / 14.0Gbps
MXM Type	MXM 3.1, Type B
CUDA cores	2176 CUDA
Display Features	TBD
DirectX® Capability	DirectX® 12 (Feature Level 12.1)
OpenGL™	OpenGL 4.6
OpenCL™	OpenCL 1.2
VULKAN™	VULKAN™ Support
Power Consumption	<175W
Operating Temperature	0°C~50°C
Dimensions	82 x 70mm



## 2. Specification

### SYSTEM

CPU	INTEL 9th Gen. XEON 2276ME (6 cores, 4.5GHz) INTEL 9th Gen. i7-9850HE (6 cores, 4.4GHz)
Memory type	4 x SO-DIMM DDR4 2666 MHz up to 128GB
GPU	NVIDIA RTX2060S (8GB-GDDR6, CUDA 2176)

### STORAGE

Storage 1	1 x NVMe (M.2), up to 2TB
Storage 2	1 x mSATA, up to 1TB

### ETHERNET

LAN	Intel® I210iT & I219LM GbE LAN (10/100/1000 Mbps supported )
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### FRONT I/O

USB	2 x USB, Rugged M12 connector
Ethernet	2 x LAN, Rugged M12 connectors
Series port	2 x COM, Rugged M12 connector
DVI	3 x DVI, Rugged M12 connector
DC-IN	1 x DC-IN 18V~36V, Rugged M12 connector

### POWER REQUIREMENT

Power Input	18V~36V DC-DC 300W
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### APPLICATIONS & OPERATING SYSTEM

OS	WIN10 ,WINDOWS SERVER2016, UBUNTU 18.04,UBUNTU20.04
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### PHYSICAL

Dimension (W x D x H)	250 X 125 X 280 mm
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# 3. Dimension

