7STARLAKE

MILITARY COMPUTER GUIDE

WHEN Reliability is Key **YOU NEED 7STARLAKE**

7STARLAKE is a renowned global manufacturer specializing in cutting-edge rugged solutions tailored to the unique needs of both commercial and military embedded computing.

PCIe/104 | MXM-GPU | ANTI-CORRISION | IP65 | MIL-STD 810 | MIL-STD 461

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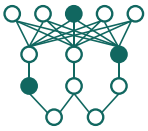
1 KEY FEATURES OF MILITARY COMPUTER

PCIe/104



MXM-GPU

ANTI-CORRISION

IP65

MIL-STD 810

MIL-STD 461

What is “military-grade” COMPUTER?

The term "military-grade" when applied to computers typically refers to ruggedized or durable computing devices designed to withstand harsh environmental conditions that are commonly encountered in military and other demanding applications. These computers are built to meet stringent specifications to ensure reliable performance in challenging situations. Here are some features commonly associated with military-grade computers:

Temperature Resistance

Military-grade computers are designed to operate in extreme temperature ranges, both high and low. They may include advanced cooling systems or insulation to withstand temperature variations without affecting performance.

Shocks and Drops Resistance

These computers are built to endure mechanical shocks and drops, which are common in military environments.
Reinforced casings, shock-absorbing materials, and ruggedized components help protect the internal components from damage.

Sun Exposure

Military-grade computers often have displays and coatings that can withstand exposure to direct sunlight without glare or damage. This is crucial for outdoor use where conventional screens might become unreadable under bright sunlight.

Water Immersion

Many military-grade computers are designed to be waterresistant or even waterproof. Sealed casings and connectors, as well as protective measures for keyboards and other input devices, help prevent water damage.

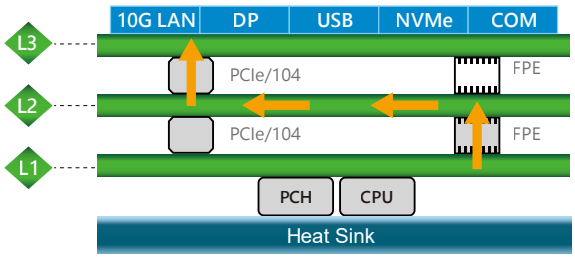
Sand and Dust Resistance

Military environments, especially in desert regions, can expose electronic equipment to sand and dust. Militarygrade computers often feature sealed enclosures and air filtration systems to prevent these particles from entering and causing damage.

Air Pressure Resistance

In applications involving air travel or changes in altitude, military-grade computers are designed to withstand variations in air pressure. This ensures their proper functioning during air transport and deployment in different geographical locations.

1-1 SFF-PCIE/104_OXY5741B



EX : SK221(PCIe/104 PCIe x4)

EX : SK502(PCIe/104 PCIe x4)

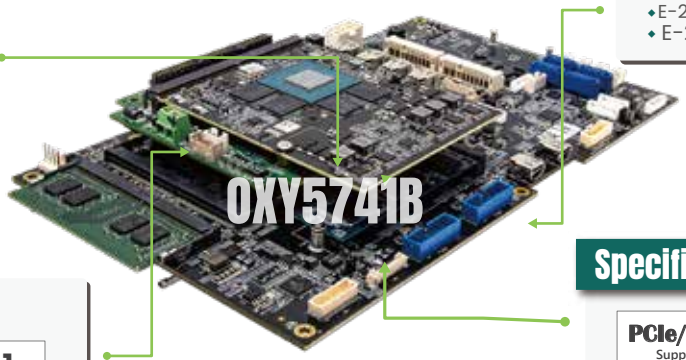
EX : OXY5741B EBX,E2276ME CPU/CM246 PCH Host

CPU

- E-2276ME
- E-2276ML
- I7-9850ML
- I7-9850ME

GPU

- Geforce -
  - RTX 3070
  - RTX 2060
  - GTX 1660S
  - GTX 1050Ti
- Quadro -
  - RTX A1000
  - RTX A2000
  - RTX A4500
  - 3500 ADA
  - 5000 ADA



NIC

10 GbE x2 — SK502

1 GbE x4 — SK506

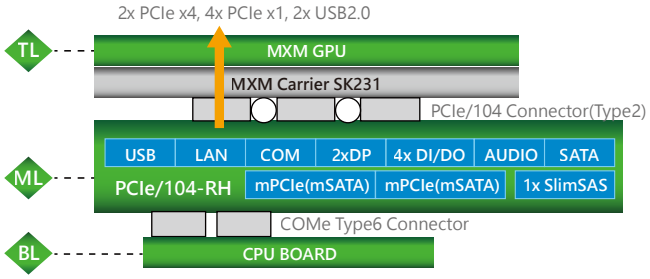
Specification

PCIe/104 Support

MXM Support

- PCIe signal By PCIe/104 & FPE
- MXM Carrier support

1-2 SFF- PCIe/104 TH, RH, MH



Specification

MXM Support

COM Express®

- PCIe signal by COMe Type6 connector
- MXM Carrier Support

GPU

- Geforce -
  - RTX 3080
  - RTX 3090
  - RTX 4080
  - RTX 4090
- Quadro -
  - RTX A1000
  - RTX A2000
  - RTX A4500
  - 3500 ADA
  - 5000 ADA

NIC

10 GbE x2 — SK502

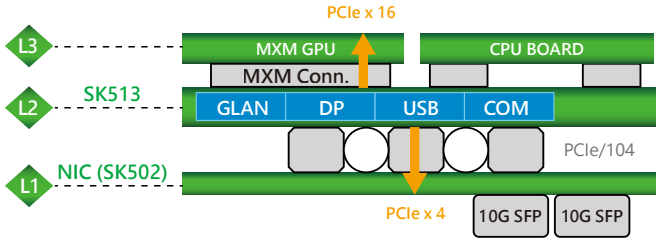
1 GbE x4 — SK506

- PCIe signal by PCIe/104

CPU

- I7-11850HE
- W-11865MRE
- W-11865MLE
- I7-13800HRE
- I7-13800HE
- I5-13600HE
- Ultra7 165H
- Ultra7 155H
- Ultra5 125H
- Ultra5 125H

1-3 SFF-COME T6_SK513



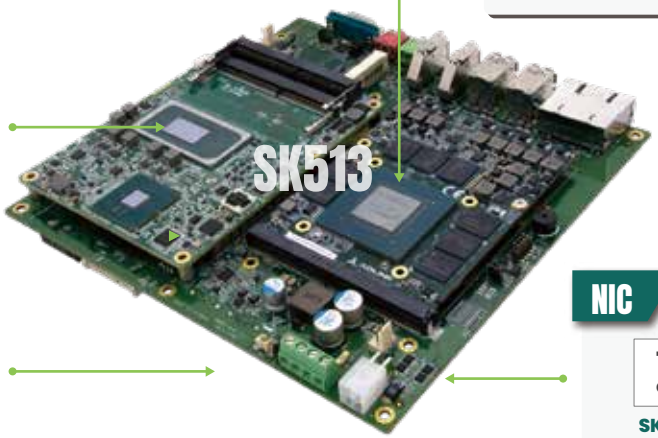
CPU

- E-2276ME
- E-2276ML
- I7-11850HE
- I7-9850HE
- I7-9850HL
- I7-13800
- W-11865MRE
- W-11865MLE

GPU

– Geforce –
- RTX 2060
- RTX 3070
- RTX 3080
- RTX 3090

– Quadro –
- RTX A1000
- RTX A2000
- RTX A4500



Specification

MXM Support | COM Express®

- PCIe signal by COMe Type6 connector
- MXM Carrier support

COMe Type6 Connector

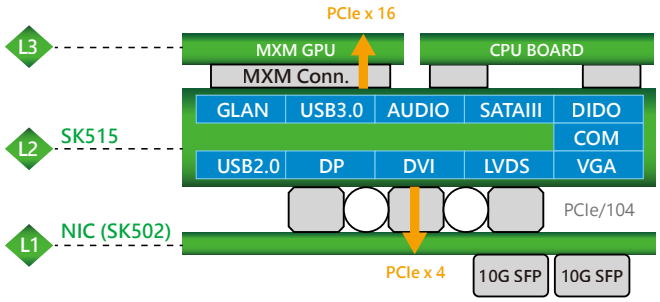
NIC

10 GbE x2 — SK502

1 GbE x4 — SK506

- PCIe signal by PCIe/104 & FPE
- 2 x LAN support

1-4 SFF-COME T6_SK515



CPU

- E-2276ME
- E-2276ML
- I7-11850HE
- I7-9850HE
- I7-9850HL
- I7-13800
- W-11865MRE
- W-11865MLE

GPU

– Geforce –
- RTX 3070
- RTX 2060
- GTX 1660S
- GTX 1050Ti

– Quadro –
- RTX A1000
- RTX A2000
- RTX A4500
- 3500 ADA
- 5000 ADA

Specification

MXM Support | COM Express®

- PCIe signal by COMe Type6 connector
- MXM Carrier support

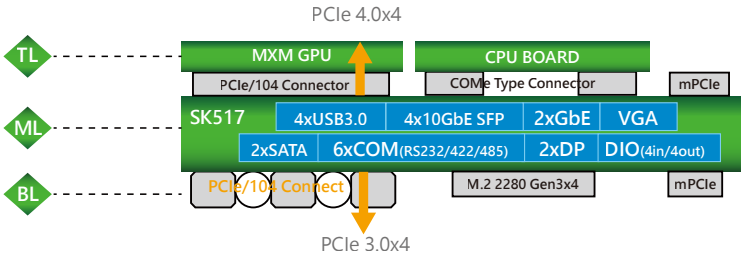
NIC

10 GbE x2 — SK502

1 GbE x4 — SK506

- PCIe signal by PCIe/104 & FPE
- 2 x LAN support

1-5 SFF-COME T7_SK517



Specification

PCIe-104 SUPPORT

COM Express

- PCIe signal by COMe Type7 connector
- PCIe/104 support

COMe Type7 Connector

PCIe/104 Connector

MXM GPU

NVIDIA GEFORCE

- Geforce -
- RTX 2060S
- GTX 1660S
- GTX 1080M

NVIDIA QUADRO

- Quadro -
- RTX A1000
- RTX A2000
- RTX A4500
- 3500 ADA
- 5000 ADA

intel ARC

- ARC -
- A730M
- A370M

CPU

intel Xeon D

- Xeon® D-1746TRE(10C)
- Xeon® D-1735TR(8C)
- Xeon® D-1732TE(8C)
- Xeon® D-1715TER(4C)
- Xeon® D-1712TR(4C)

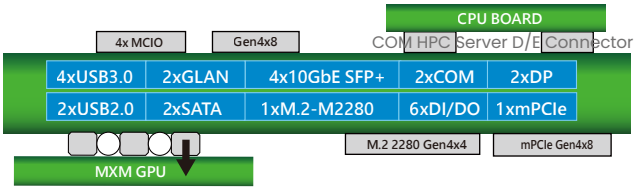
NIC

10 GbE x2 — **SK502**

1 GbE x4 — **SK506**

- PCIe signal by PCIe/104 & FPE
- 2 x LAN support

1-6 SFF-COM HPC_SK521

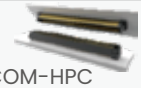


Specification

MXM Support

COM HPC

- GPU signal by COM-HPC connector
- MXM 3.1 A/B support



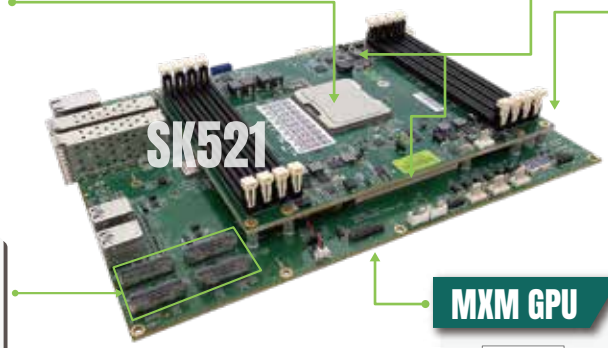
MXM 314pins Connector

COM-HPC Connector

CPU

intel Xeon D

- Xeon® D-2796TE(20C)
- Xeon® D-2775TE(16C)
- Xeon® D-2752TER(12C)
- Xeon® D-2733NT(8C)
- Xeon® D-2712T(4C)



EXPANSION

4x Gen4.0 x 8

- PCIe Gen4.0 signal by MCIO
- NVMe U.2 Gen 4.0 SSD Link
- Function Card Link

MXM GPU

NVIDIA GEFORCE

- Geforce -
- GTX 1660S
- GTX 1080M
- RTX 2060S

NVIDIA QUADRO

- Quadro -
- RTX A1000
- RTX A2000
- RTX A4500
- 3500 ADA
- 5000 ADA

intel ARC

- ARC -
- A730M
- A370M

1-7-1 3U VPX GPU
SK901 - AD5000

VPX GPGPU CARD

NVIDIA Ada Lovelace Architecture: RTX 5000Ada GPU

Interface
- 3U VPX Form Factor
- 1" Pitch (Conduction Cooled)
- PCIe Gen4 x4

Graphics Processor
- NVIDIA RTX 5000 Ada GPU DirectX 12, OpenGL 4.6, Vulkan 1.3

Graphics Memory
- 16GB GDDR6 with ECC
- 256-bit Menory Interface
- 576GB/s Memory Bandwidth

GPU Capabilities
- 9,728 CUDA Cores, 304 Tensor Cores, 76RT Cores.
- Up to 41.15 TFLOPS SFP32 Single Floating Point Performance
- Support CUDA, CUDA-X, OpenCL™ and Shader Model 6.7

HIGH-SPEED DATA TRANSFER

9,728 CUDA Core, 304 Tensor & 76RT Cores

Shock (MIL-STD-810)
40g

Vibration (MIL-STD-810)
3g rms

Power
3.3Vaux, 12V VSS (115W)

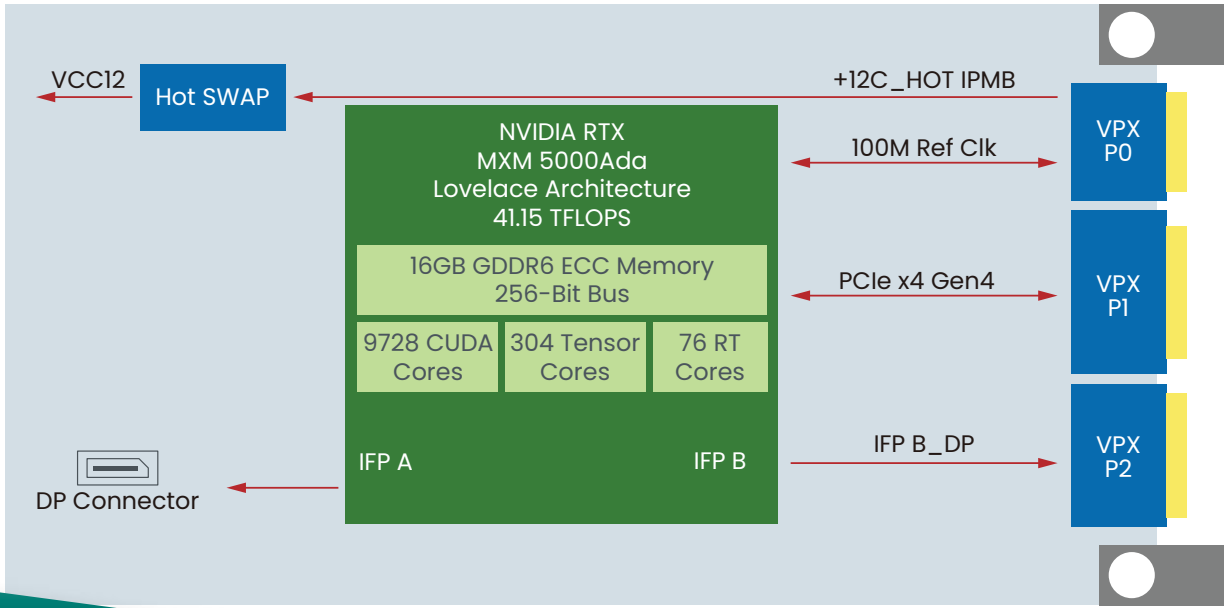
Humidity (MIL-STD-810)
95% without Condensation

SOSA ALIGNED SOLUTION

Available with SOSA™-aligned Slot profiles and vita standard

Display Outputs
- One Display Port internal
- Three Display Ports active output

Software & Platform Support
- Windows or Linux on X86



1-7-2 3U VPX GPU
SK901 - A4500

VPX GPGPU CARD

NVIDIA Ampere™ Architecture: RTX A4500 GPU

Interface
- 3U VPX Form Factor
- 1" Pitch (Conduction Cooled)
- PCIe Gen4 x4

Graphics Processor
- NVIDIA RTX A4500 GPU
- DirectX 12, OpenGL 4.5, and Vulkan 1.2

Graphics Memory
- 16GB GDDR6 with ECC
- 256-bit Menory Interface
- 512GB/s Memory Bandwidth

GPU Capabilities
- 5,888 CUDA Cores, 184 Tensor Cores, 46RT Cores.
- Up to 17.66 TFLOPS SFP32 Single Floating Point Performance
- Support CUDA, CUDA-X, OpenCL™ and Shader Model 5.1

AI & DEEP LEARNING

5,888 CUDA cores, 184 Tensor & 46RT Cores

Vibration (MIL-STD-810)
3g rms

Shock (MIL-STD-810)
40g

Power
3.3V, 5V, and 12V
(80 - 115W)

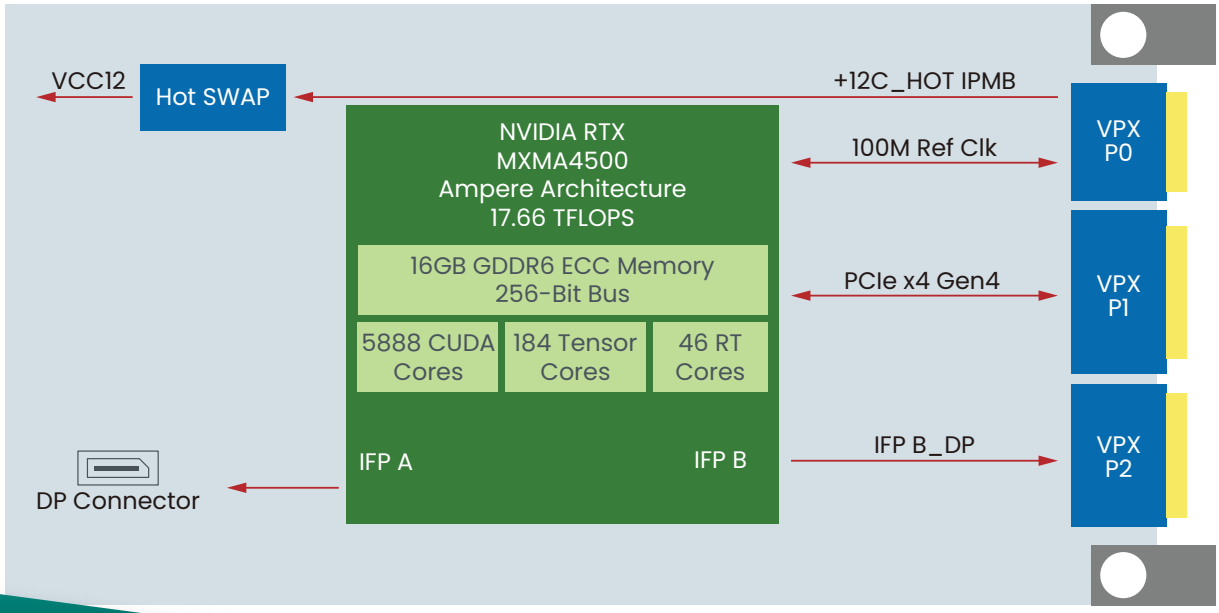
Humidity (MIL-STD-810)
95% without Condensation

HIGH PERFORMANCE EMBEDDED COMPUTING

AI inferencing, deep learning

Display Outputs
- One Display Port internal
- Three Display Ports active output

Software & Platform Support
- Windows or Linux on X86

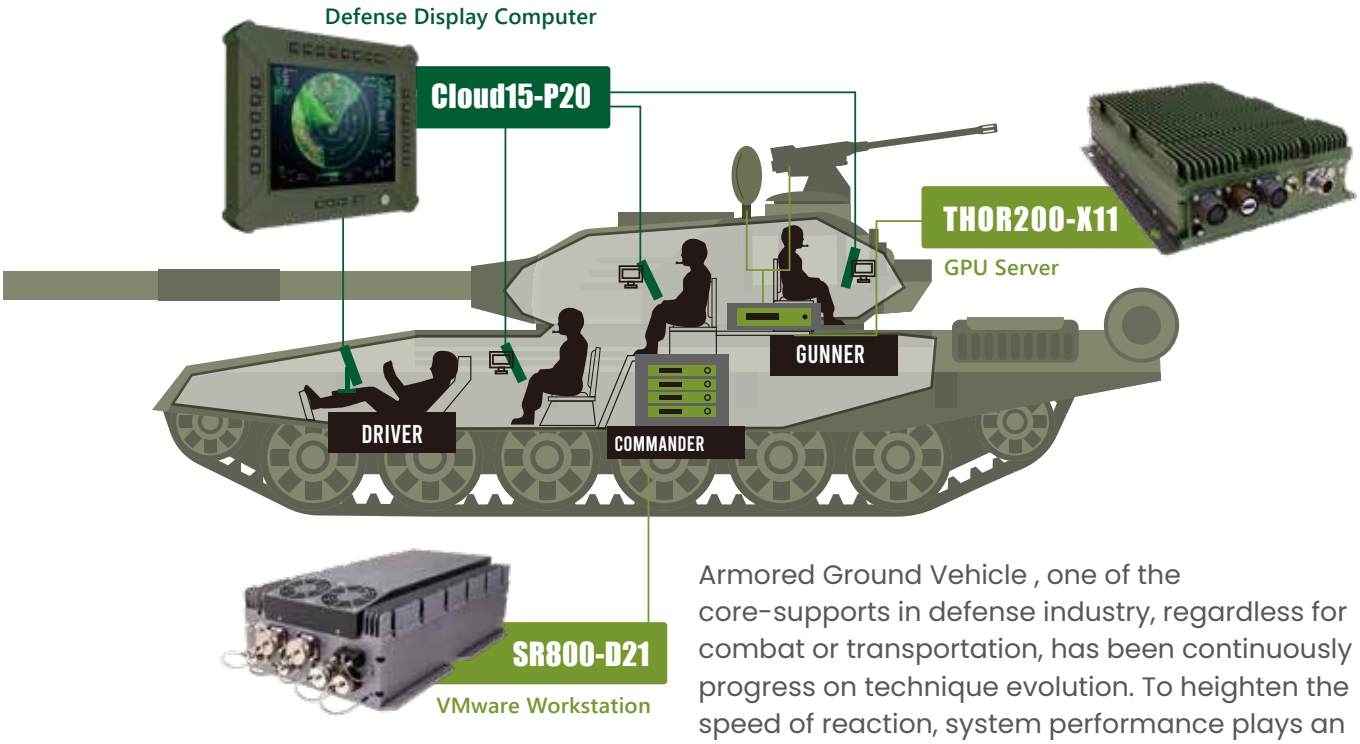


2 7STARLAKE MILITARY SOLUTIONS

The most demanding of all rugged development systems are military solutions as they are multidisciplinary tasks, demanding both experience and specialist skills.

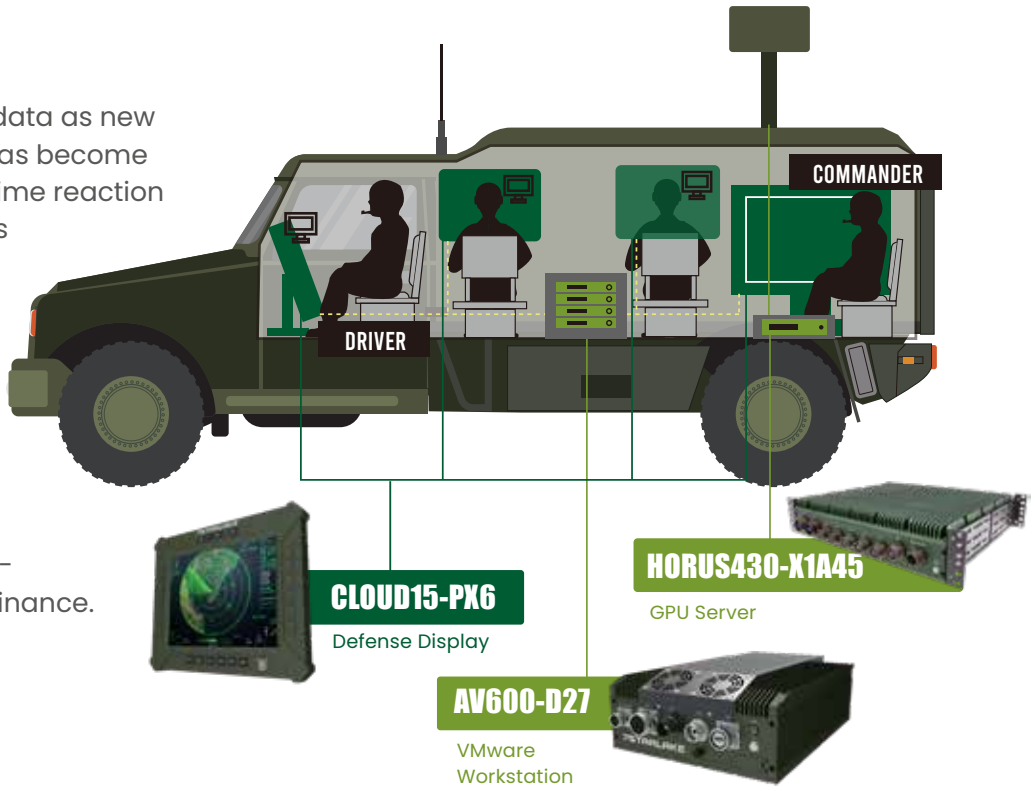
Rugged military solutions are usually developed with certification in mind . High performance embedded computing (HPEC) is transforming the military embedded computing landscape with sophisticated, powerful answers to the most demanding requirements. 7STARLAKE HPEC solutions are among the broadest in the industry.

2-1 C4ISR SYSTEM

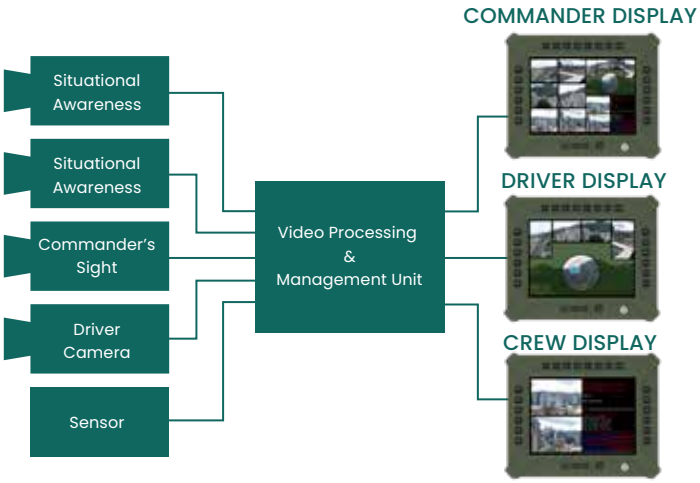


Armored Ground Vehicle , one of the core-supports in defense industry, regardless for combat or transportation, has been continuously progress on technique evolution. To heighten the speed of reaction, system performance plays an indispensable role. Facilities, computers, and displays, the components in the system, require high functionality in analysis, connection and transmission.

Harnessing information and data as new source of powerful weapon has become crucial nowadays. And real-time reaction is vital. That's why 7STARLAKE's Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) solutions emphasize on ultra-high performance system integration. We focus on the capabilities to control - because control lead to dominance.

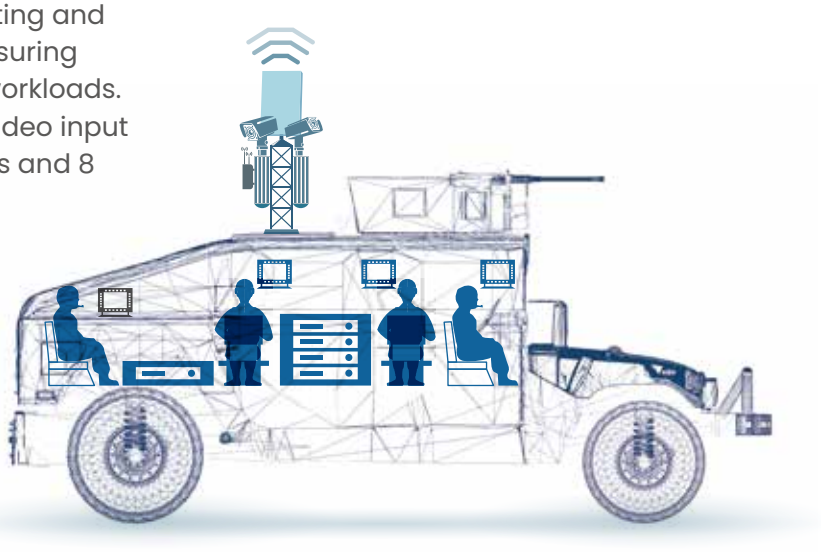


2-2 VIDEO DISTRIBUTION SYSTEM



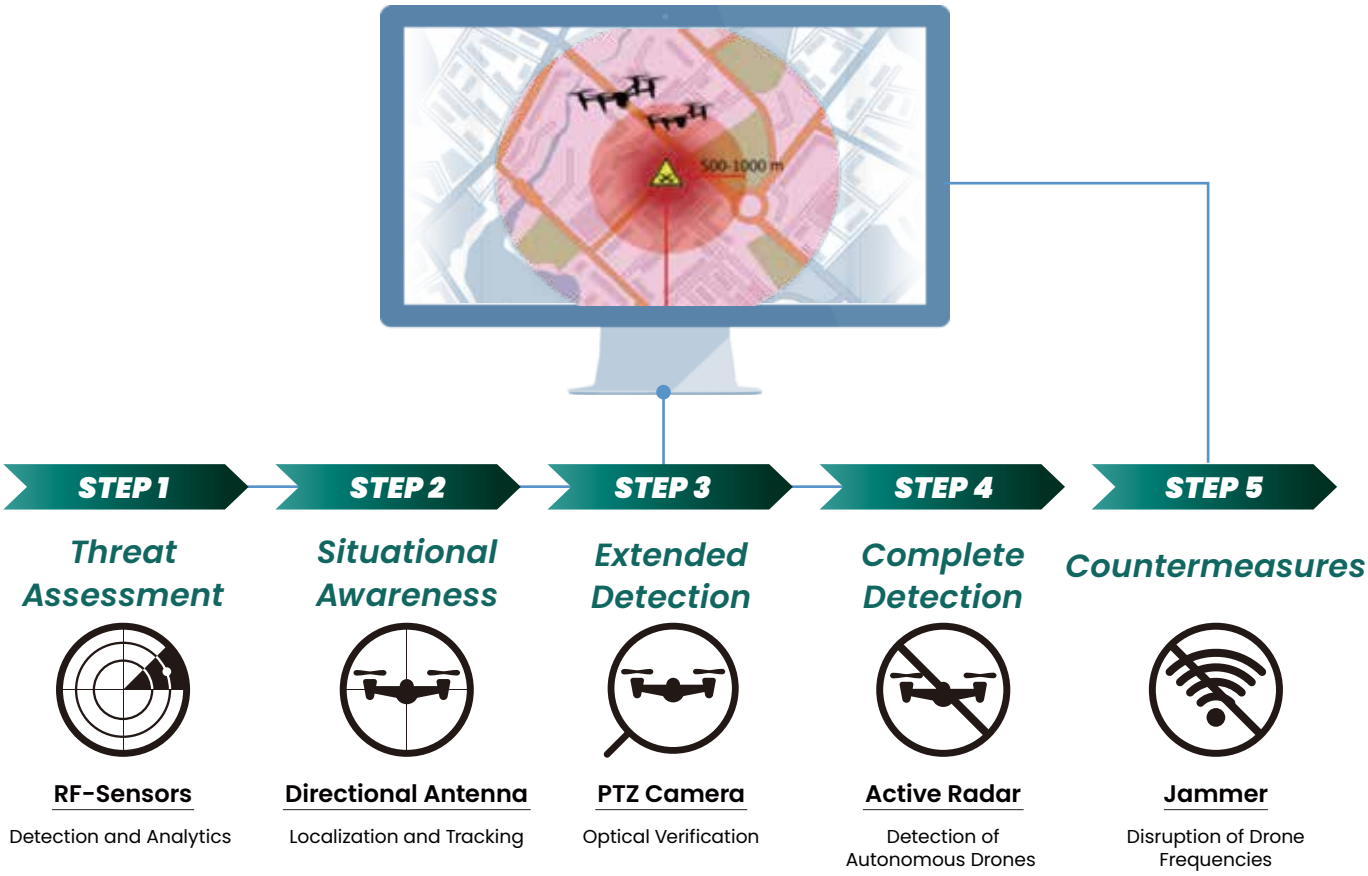
In the dynamic landscape of video distribution systems, the integration with artificial intelligence (AI) solutions is proving to be a transformative leap forward. Recognizing the pivotal role of AI in contemporary business success, 7STARLAKE is at the forefront of innovation by designing a system that seamlessly combines the power of computing platforms with the adaptability needed for challenging environments, particularly in military applications. The fusion of FPGA and NVIDIA Jetson AGX presents a formidable solution for high-throughput inference, catering to the demands of IoT edge devices that generate massive data volumes.

This advanced system is adept at accelerating and scaling AI-based products and services, ensuring optimal performance in latency-sensitive workloads. Key features, such as the connection to 12 video input channels, including 4 HD-SDI video channels and 8 composite (PAL) channels, underscore the system's versatility and capacity to handle diverse video sources. Additionally, the ability to generate up to 4 video output channels, maintain low latency, and create a Bird's-Eye-View from 4 SDI input channels, positions this AI-driven video distribution system as a cutting-edge solution for evolving industry needs.



The main features of 7STARLAKE's video distribution system not only highlight its technical prowess but also emphasize its practical utility in diverse scenarios. With the capability to select each output channel into one main channel, the system provides flexibility in managing and directing video feeds. The incorporation of Picture-In-Picture (PIP) functionality, allowing up to 2 videos to be inserted on the top screen, adds a layer of sophistication, enabling users to overlay multiple visual elements for enhanced situational awareness. As businesses and military operations increasingly rely on AI-driven insights, 7STARLAKE's innovation in seamlessly integrating AI solutions into video distribution systems marks a significant stride towards efficiency, adaptability, and enhanced decision-making capabilities in a dataintensive landscape.

2-3 COUNTER UAV SYSTEM



The synergy of High-Performance Computing (HPC) servers in detecting drones demands a comprehensive and strategic approach, encompassing five crucial steps.

1.Threat Assessment

Initiating the process, the assessment phase involves swift analysis of data from multiple sources, including radar and visual feeds. This initial step establishes a baseline understanding of the airspace, laying the foundation for potential drone threat identification.

2.Situational Awareness

Building on assessment insights, the next step focuses on dynamic situational awareness. By processing real-time data, this phase ensures security personnel have an up-to-date understanding of the airspace. Integrating artificial intelligence enhances the ability to discern routine and anomalous activities, facilitating proactive decision-making.

3.Extended Detection

Leveraging advanced algorithms and machine learning, the extended detection phase broadens the system's reach. This step processes data from various sensors, allowing for the identification of subtle drone activities and extending the surveillance range.

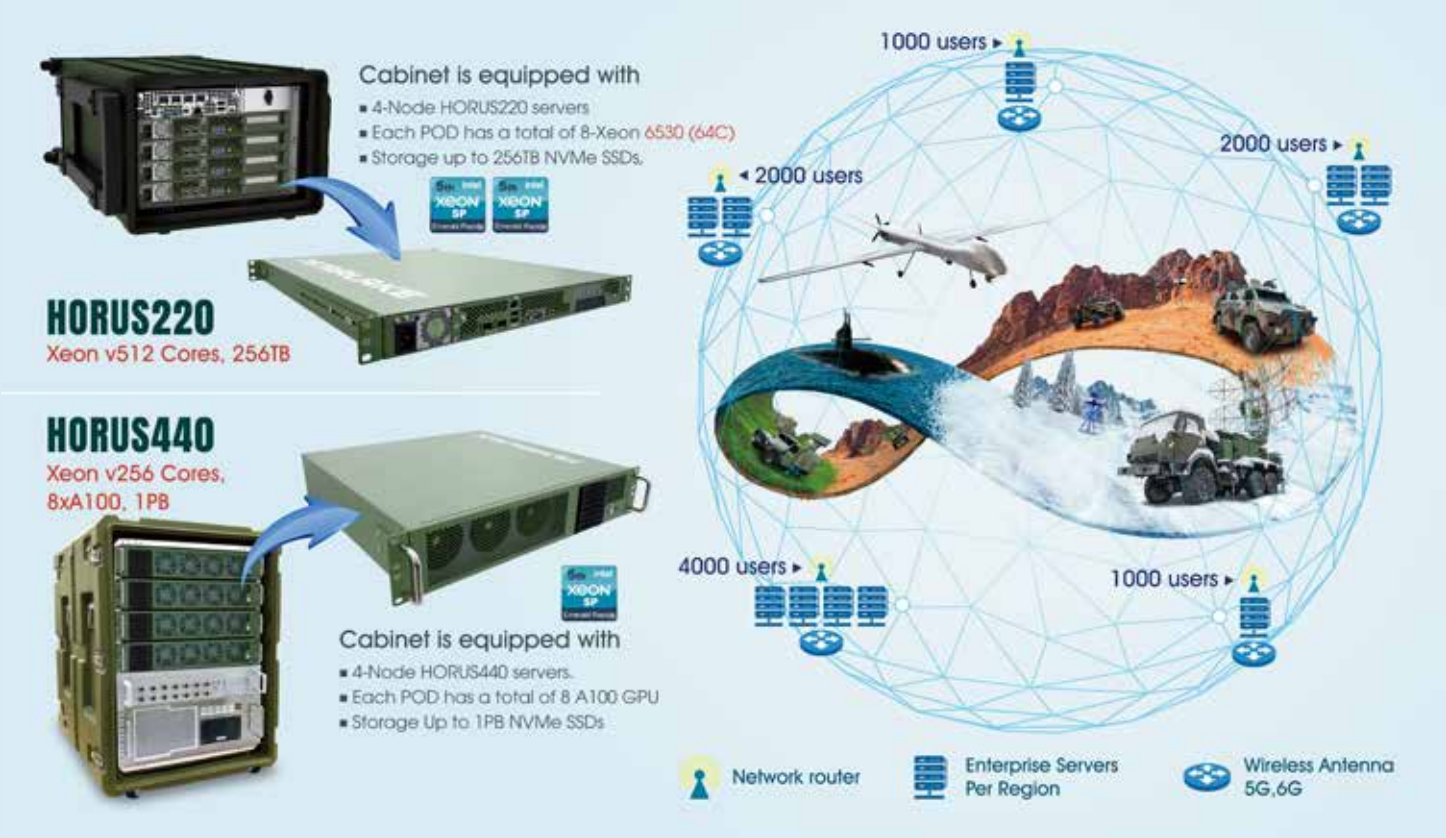
4.Complete Detection

The integration of advanced sensors, AI algorithms, and meticulous processing leads to complete detection. Correlating information across multiple channels ensures a holistic view of the airspace, leaving no potential drone threat unnoticed.

5.Countermeasures

Armed with a comprehensive understanding, the final step involves strategic countermeasures. From signal jamming to targeted interventions, this phase ensures swift and precisely targeted responses to mitigate drone threats effectively, enhancing airspace security with efficiency and precision.

2-4 MILITARY 5G NETWORK



In the realm of cutting-edge technology integration, the convergence of High-Performance Computing (HPC) with 5G video streaming is further bolstered by the advent of 5G Open Radio Access Network (ORAN) infrastructure. The synergy between HPC and 5G ORAN architecture propels the capabilities of data processing and communication to unprecedented heights. The distributed and flexible nature of ORAN complements HPC's computational prowess, enhancing the efficiency of data transmission and reception within the 5G ecosystem. This collaborative framework ensures not only rapid data processing for real-time analytics but also enables seamless and high-speed video streaming experiences.

Together, HPC and 5G ORAN construct a dynamic foundation for advanced applications, from ultra-low latency content delivery to immersive augmented reality experiences. As the symbiotic relationship between HPC and 5G ORAN advances, it reshapes the landscape of connectivity, opening up new horizons for innovation in diverse fields that rely on high-performance data processing and lightning-fast communication.

500W Payload by
All in One Liquid Cooled

2-5 VPX ATR SYSTEM

7SL-3500 3U-VPX Liquid Cooled

7SarLake scalable and customizable, rugged VPX ATR System enables compute-intensive, SWaP constrained mission-critical applications for deployment in the world's most demanding military and aerospace environments

Advantages of Liquid-Cooled Technologies

L2L_Liquid-to-Liquid Cooling

- **High Efficiency:**
  Offers superior cooling performance due to direct heat exchange with facility-chilled water.
- **Scalability:**
  Suitable for large-scale data centers and industrial setups.
- **Energy Savings:**
  Reduces the need for air conditioning, lowering operational costs.
- **Compact Design:**
  Allows for smaller equipment footprints due to efficient heat removal.

L2A_Liquid-to-Air Cooling

- **Ease of Installation:**
  Requires less complex infrastructure compared to liquid-to-liquid systems.
- **Cost-Effective**
  Lower initial investment, making it suitable for personal and small-scale systems.
- **Portability:**
  Ideal for environments where facility-level water cooling isn't available.
- **Versatility:**
  Widely used in mobile environment, consoles, and smaller electronics.

7STARLAKE MILITARY PRODUCTS

7STARLAKE military computers are based on military standard Commercial Off-The-Shelf (COTS) open, scalable, modular architecture-technologies that enable prime contractors and system integrators to deploy quickly while meeting size, weight, power and cost (SWaP-C) budgets.

3-1 XEON D VMWARE WORKSTATION

VMware software powers the world's complex digital infrastructure. The company's cloud, app modernization, networking, security, and digital workspace offerings help battlefield deliver any application on any cloud across any device. SR800 & AV800 series based on Intel Xeon D platform covering multi-core processor up to 16 Cores & 20 Cores featured by D-2183IT & D-2796NT.

3-3 MXM-GPU RACK-MOUNT SERVER

Our HORUS420 & HORUS430 series offers the high performance of various NVIDIA QUADRO MXM GPUs paired with the latest Intel Core and Xeon CPUs in a 2U fanless rugged chassis. With patented design in conduction cooled technology, this server series can survive in the harshest environments (MIL-STD 810, vibration up to 5 GRMS and shock up to 40G.

3-2 MXM-GPU EDGE COMPUTER

Traditionally, sensors on military vehicles collect massive amounts of battlefield data and store it locally before transporting it for analysis and interpretation by highly sophisticated, remote deep learning systems. Edge GPGPU systems allow extraordinary amounts of data to be collected and processed right on the battlefield in real time.

3-4 PANEL COMPUTER

7STARLAKE's Smart Display and Panel Computers are equipped with 6 to 20 programmable function keys made of rugged rubber, allowing configurability based on various mission requirements. These programmable function keys provide convenience and efficiency for users when in critical battle conditions.

3-5 1U/2 2U/2 HALF RACK-MOUNT SERVER

THOR100/200 Server epitomizes the evolution of next-generation mobile ground stations. Its compact 19" half 1U/2U chassis houses a potent combination of Intel Raptor Lake/Ice Lake XeonD processors and powerful NVIDIA GPUs, creating an agile solution for computing, storage, and networking designed specifically for mission-critical applications. THOR100/200 Server excels in processing data from LiDAR, radar, and high-resolution imaging sensors, ensuring the delivery of critical insights with unmatched reliability and precision in the most demanding operational scenarios.

3-6 HPC XEON-SP SERVER

7STARLAKE's IP65 XEON-SP SERVER is designed with high-end Intel XEON-SP Processor and NVIDIA GPUs to achieve unparalleled computing power and seamlessly converts raw data into actionable insights. With the embedded design and sophisicated thermal solution, 7STARLAKE's XEON-SP SERVER ensures professional performance even in the most challenging environments.

3-7 COUNTER UAS AI SERVER

Interfacing Software Define Radio (SDR) with NVIDIA Orin-based CPU-GPU Computer. The solution is less complex and involves low-cost software-defined radios (SDRs) and efficient embedded platforms (NVIDIA ORIN) which support multi-band sub-GHz technology recognized by NVIDIA ORIN System.

3-8 AMPERE RUGGED SERVER

Ampere's Altra® family of processors are designed to deliver on predictable performance, high scalability and power efficiency. The IP65 Rugged Edge MXM-GPU Computer by Ampere® Altra® Q64 is the perfect solution for businesses looking to optimize their edge computing infrastructure. With its powerful processing capabilities, rugged design, and exceptional connectivity options, it's the ideal choice for businesses seeking.

3-9 MILITARY JETSON

Bring your next-gen products to life with the world's most powerful AI computers for energy-efficient autonomous machines. Equipped with an NVIDIA Ampere architecture GPU, integrated with the NVIDIA Jetson AGX Orin or Orin NX module, delivers multiple concurrent AI inference pipelines, plus high-speed interface support for multiple sensors, making them the ideal solution for a new age of robotics.

3-10 VPX ATR SYSTEM

7STARLAKE scalable and customizable, rugged VPX ATR System enables compute-intensive, SWaP constrained mission-critical applications for deployment in the world's most demanding military and aerospace environments. 7SL-3500 Hybrid conduction cold plate assisted by Liquid cooling sets with aggregate power demands over 500W Internal recirculation fans ensure liquid cooling set is across conduction cooled payload modules, minimizing hot-spots and dissipating heat homogeneously.

3-11 DELL MILITARY SERVER

7STARLAKE is now an authorized Dell partner, enhancing Dell's high-performance servers for harsh conditions. With expertise in military and defense applications, 7STARLAKE integrates MIL-STD-810-certified shock and vibration resistance into Dell's XR-5610, XR-7620, and R760 models. Advanced thermal management ensures seamless operation from -30°C to +55°C, making these servers ideal for defense, aerospace, and industrial use.

3-1 XEON D VMWARE WORKSTATION

SR800-D21

IP65 Military VMware XEON D-2183IT Rugged GPU Server

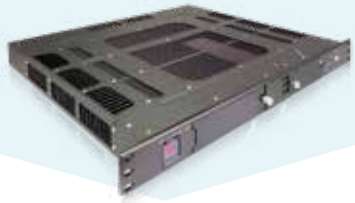
- Intel® XEON D-2183IT CPU
- MXM A2000 GPU
- 2x 2.5" SATA III SSD
- 2x 10G SFP+ + 2x 1GbE LAN
- MIL-810 Vibration 5GRMs, Shock 20G
- MIL-461 RE102/ CE102/ RS103

SR800

IP65 VMware XEON D-1587 Server

- Intel® XEON D-1587 CPU
- 2x 2.5" SATA III SSD
- 1x 1GbE + 1x 100M LAN + 1x IPMI
- MIL-810 Vibration 5GRMs, Shock 20G
- MIL-461 RE102/ CE102/ RS103

HORUS200



1U Short Depth Military XEON D-1587 Server

- Intel® XEON D-1587 CPU
- 2x 2.5" SATA III SSD
- 2x 10GbE + 4x 1GbE LAN + 1x IPMI
- MIL-810 Vibration 5GRMs, Shock 20G
- MIL-461 RE102/ CE102/ RS103

AV800

IP65 Military VMware XEON D-2183IT GPU Server

- Intel® XEON D-2183IT CPU
- TESLA T4 GPU
- 2x 2.5" SATA III SSD
- 2x 10GbE LAN
- MIL-810 Vibration 5GRMs, Shock 20G
- MIL-461 RE102/ CE102/ RS103

AV800-D27

IP65 Military VMware XEON D-2796NT 100G GPU Server

- Intel® XEON D-2796NT CPU
- MXM A4500 GPU
- 2x M.2 NVMe + 2x 2.5" SATA III SSD
- 2x 100GbE QSFP56+2x 10GbE+2x 1GbE LAN
- MIL-810 Vibration 5GRMs, Shock 20G
- MIL-461 RE102/ CE102/ RS103

AV800-D27-A45S4

IP65 Military VMware XEON D-2796NT GPU Server

- Intel® XEON D-2796NT CPU
- MXM A4500 GPU
- 1x M.2 NVMe + 2x 2.5" U.2 SSD
- 1x 10GbE SFP++1x 10GbE+2x 1GbE LAN
- MIL-810 Vibration 5GRMs, Shock 20G
- MIL-461 RE102/ CE102/ RS103

AV600-D27

IP65 Military XEON D-2796TE GPU Server

- Intel® XEON D-2796TE CPU
- MXM A2000 GPU
- 1x M.2 NVMe + 2x 2.5" U.2 SSD
- 1x 100GbE MPO SFP28 LAN
- MIL-810 Vibration 5GRMs, Shock 20G
- MIL-461 RE102/ CE102/ RS103

3-2 MXM-GPU EDGE COMPUTER

SR700-X4

IP65 Military Computer, Quadro A2000

- Intel® XEON E-2276ME CPU
- MXM A2000 GPU
- 2x 2.5" SATA III SSD
- 2x 1GbE LAN
- MIL-810 Vibration 10GRMs, Shock 75G
- MIL-461 RE102/ CE102/ RS103

SR700-X4D

IP65 Military Computer, Quadro A2000

- Intel® XEON E-2276ME CPU
- MXM A2000 GPU
- 2x 2.5" SATA III SSD
- 2x 1GbE LAN
- MIL-810 Vibration 10GRMs, Shock 75G
- MIL-461 RE102/ CE102/ RS103

AV600X-CH

IP65 Military Computer, Quadro A1000

- Intel® XEON E-2276ME CPU
- MXM A1000 GPU
- 1x M.2 2280 + 1x 2.5" SATA III SSD
- 2x 1GbE LAN
- MIL-810 Vibration 7.5GRMs, Shock 75G
- MIL-461 RE102/ CE102/ RS103

AV600-RH-A45

IP65 Military Computer, Quadro A4500

- Intel® Core i7-13800HRE CPU
- MXM A4500 GPU
- 2x M.2 NVMe +1x 2.5" SATA III SSD
- 2x 1GbE LAN
- MIL-810 Vibration 7.5GRMs, Shock 75G
- MIL-461 RE102/ CE102/ RS103

IV320-RH-KD

IP65 Military Computer, Quadro A4500, 8CH 3G-SDI

- Intel® Core i7-13800HRE CPU
- MXM A4500 GPU
- 2x 2.5" SATA III SSD
- 2x 1GbE LAN
- 8x 3G-SDI
- MIL-810 Vibration 7.5GRMs, Shock 75G
- MIL-461 RE102/ CE102/ RS103

AV600-RH-A20

IP65 Military Computer, Quadro A2000, 4CH 3G-SDI

- Intel® Core i7-13800HRE CPU
- MXM A2000 GPU
- 1x M.2 NVMe +1x 2.5" SATA III SSD
- 2x 1GbE LAN
- 4x 3G-SDI
- MIL-810 Vibration 7.5GRMs, Shock 75G
- MIL-461 RE102/ CE102/ RS103

3-3 MXM-GPU RACKMOUNT SERVER

HORUS420-R1

2U Fanless Server, MXM 1050Ti GPU

- Intel® XEON E3-1268Lv5 CPU
- MXM 1050Ti GPU
- 4x 2.5" SATA III SSD
- 2x 10GbE + 4x 1GbE LAN
- MIL-810 Vibration 5GRMs, Shock 25G
- MIL-461 RE102/ CE102/ RS103

HORUS422A

2U Fanless Server, MXM A2000 GPU

- Intel® XEON E3-1268Lv5 CPU
- MXM A2000 GPU
- 12x 2.5" SATA III SSD
- 4x 1GbE LAN
- MIL-810 Vibration 5GRMs, Shock 25G
- MIL-461 RE102/ CE102/ RS103

HORUS430-X1A45

2U Fanless Server, All-in one Liquid Cooling support

- Intel® Core i7-11850HE CPU
- MXM A4500 GPU
- 2x 2.5" SATA III SSD
- 2x 10GbE + 2x 1GbE LAN
- MIL-810 Vibration 5GRMs, Shock 25G
- MIL-461 RE102/ CE102/ RS103

3-4 PANEL COMPUTER

SKY12-P04

Sunlight Readable Military Display

- 1024 x 768 Resolution
- 1000 nits brightness
- DC 18V~36V
- MIL-810 Vibration 2.24RMs, Shock 20G
- MIL-461 RE102/ CE102/ RS103

SKY15-P20

Sunlight Readable Military Display

- 1024 x 768 Resolution
- 1000 nits brightness
- DC 9V~36V
- MIL-810 Vibration 2.24RMs, Shock 20G
- MIL-461 RE102/ CE102/ RS103

CLOUD15-PX6

Military 15" Touch Panel Computer

- Intel® Core i3-1115G4E CPU
- 1024 x 768 Resolution
- 1000 nits brightness
- 1x M.2 128GB SATA III SSD
- 1x 1GbE + 1x 2.5GbE LAN
- MIL-810 Vibration 2.24RMs, Shock 20G
- MIL-461 RE102/ CE102/ RS103

CLOUD15-P20

Military 15" Touch Panel Computer

- Intel® Core i3-1115G4E CPU
- 1024 x 768 Resolution
- 1000 nits brightness
- 1x M.2 128GB SATA III SSD
- 1x 1GbE + 1x 2.5GbE LAN
- MIL-810 Vibration 2.24RMs, Shock 20G
- MIL-461 RE102/ CE102/ RS103

3-5 1U/2 HALF RACKMOUNT SERVER

THOR100-X4-D7E

1U Half Military XEON Server

- Intel® XEON E-2276ML CPU
- 1x M.2 NVMe SSD
- 2x 1GbE LAN
- MIL-810 Vibration 7GRMs, Shock 40G
- MIL-461 RE102/ CE102/ RS103

THOR100-X11

1U Half Military Fanless Core i7 Server

- Intel® Core i7-1185G7E CPU
- 1x 2.5" SATA III SSD
- 2x 1GbE LAN
- MIL-810 Vibration 7GRMs, Shock 40G
- MIL-461 RE102/ CE102/ RS103

THOR100-X4-D10E

1U Half Military XEON Server

- Intel® XEON E-2276ML CPU
- 1x M.2 NVMe SSD
- 3x 1GbE LAN
- MIL-810 Vibration 7GRMs, Shock 40G
- MIL-461 RE102/ CE102/ RS103

THOR100S-X11

1U Half Military Core i7 Server

- Intel® Core i7-1185G7E CPU
- 1x 2.5" SATA III SSD
- 2x 1GbE LAN
- MIL-810 Vibration 7GRMs, Shock 40G
- MIL-461 RE102/ CE102/ RS103

2U/2 HALF RACK-MOUNT SERVER

THOR200-D15EG

2U Half Military GPU Server

- Intel® XEON D-1577 CPU
- MXM A2000 GPU
- 2x 2.5" SATA III SSD
- 2x 1GbE LAN
- MIL-810 Vibration 7GRMs, Shock 40G
- MIL-461 RE102/ CE102/ RS103

THOR200-X11-TX

2U Half Military GPU Server

- Intel® Core i7-11850HE CPU
- MXM A2000 GPU
- 2x 2.5" SATA III SSD
- 2x 1GbE LAN
- 1x HD-SDI
- MIL-810 Vibration 7GRMs, Shock 40G
- MIL-461 RE102/ CE102/ RS103

THOR200-X11-TX

2U Half Military GPU Server

- Intel® Core i7-11850HE CPU
- MXM A2000 GPU
- 2x 2.5" SATA III SSD
- 2x 1GbE LAN
- MIL-810 Vibration 7GRMs, Shock 40G
- MIL-461 RE102/ CE102/ RS103

THOR200-X13

2U Half Military GPU Server

- Intel® Core i7-13800HRE CPU
- MXM A2000 GPU
- 1x 2.5" SATA III SSD
- 2x 1GbE LAN
- 1x HD-SDI
- MIL-810 Vibration 7GRMs, Shock 40G
- MIL-461 RE102/ CE102/ RS103

3-6 HPC XEON-SP SERVER

HORUS220

1U2P Military XEON-SP HPC

- Dual 4th/5th Intel® Xeon-SP CPU
- 8x Swappable M.2 NVMe SSD
- 1x PCIe 5.0 x16 FHHL slot expansion
- Dual AIOM(OCP3.0) with NCSI networking LAN
- 1x dedicated IPMI LAN
- Ultra Short Depth 22” (55CM)

HORUS480

2U2P Military XEON-SP HPC, All-in one Liquid Cooling support

- Dual 4th/5th Intel® Xeon-SP CPU
- 4x hotswappable 2.5" SATA III SSD
- RAID 0, 00, 1, 5, 6, 10, 50, 60
- 4x 10GbE LAN
- 1x dedicated IPMI LAN
- Liquid Cooling All In One

HORUS440

2U2P Military XEON-SP HPC

- Dual 4th/5th Intel® Xeon-SP CPU
- 8x hotswappable 2.5" SATA III SSD
- RAID 0, 1, 5, 10
- 2x PCIe5.0 x16 + 2x PCIe5.0 x8 expansion slot
- 2x 10GbE LAN
- 1x dedicated IPMI LAN

THOR20E

IP55 Intel Xeon 6th Rugged Server

- MIL-810 Anti Vibration, Shock, IP55 Rating
- Intel® Xeon® 6710E (64Cores 2.4GHz/3.2GHz)
- 512GB DDR5-6400 RDIMM ECC
- OS Storage : 2 x 512MB NVMe with RAID 1

3-7 COUNTER UAS AI SERVER

IV320-RS

IP65 AI Optimized GPU Computer

- Intel® Core i9-13900TE CPU
- MXM 5000Ada or A4500 GPU
- 2x 2.5" hotswappable+ 2x 2.5" SATA III SSD
- 1x M.2 NVMe SSD
- 2x 10GbE + 2x 2.5GbE LAN
- MIL-810 Vibration 5GRMs, Shock 25G
- MIL-461 RE102/ CE102/ RS103

PS2

Dual Display Portable GPU Server

- Intel® Xeon-SP CPU
- DUAL 23.8" TFT-LCD, 1920X1080 - 250 Nits
- RTX A4000 GPU
- 2x 2.5" SATA III SSD + 1x M.2 NVMe SSD
- 2x 1GbE LAN
- 2x PCIE3.0 x16 + 1x PCIE3.0 x8 Expansion

HORUS430-X2-A45

2U IP65 Military Dual GPU Server

- Intel® Xeon-SP 4416+ CPU
- Dual MXM A4500 GPU
- 2x 2.5" SATA III SSD
- 2x 10GbE LAN
- MIL-810 Vibration 5GRMs, Shock 25G
- MIL-461 RE102/ CE102/ RS103

3-8 AMPERE RUGGED SERVER

AA320

Ampere® IP65 Military GPU Server

- Ampere® Altra® M128-26 CPU
- MXM A4500 GPU
- 2x 2.5" Swappable U.2 SSD
- 2x 10GbE + 2x 1GbE LAN
- MIL-810 Vibration 5GRMs, Shock 20G

AV400

Ampere® Level 5 Autonmy GPU Server

- Ampere® Altra® M128-30 CPU
- Nvidia RTX 6000 ADA GPU
- 4x 2.5" U.2 NVMe SSD(Up to 64TB)
- 2x M.2 NVMe SSD
- 2x 10GbE + 4x 1GbE LAN
- 1x dedicated IPMI LAN
- 3x FHHL Slot Available
- MIL-810 Vibration 5GRMs, Shock 20G

TEC300S

Ampere® Rugged GPU Server

- Ampere® Altra® Q64-22 CPU
- MXM A1000 GPU
- 4x 2.5" SATA III SSD
- 2x 10GbE + 4x 1GbE LAN
- 1x dedicated IPMI LAN
- MIL-810 Vibration 5GRMs, Shock 20G

3-9 MILITARY JETSON

AV710-X4

NVIDIA Jetson AGX Orin IP65

- NVIDIA® Jetson AGX Orin with 2048 CUDA and 64 Tensor Cores
- 1x 10G LAN , 2x USB 3.0, 2x GbE LAN, 1x CAN, 1x RS232/422/485
- 12 Core Arm® Cortex® , 64GB 256-Bit LPDDR5
- On board 64GB eMMC 5.1
- Options for additional 2TB SSD

NV200

NVIDIA Jetson Orin NX IP65

- MIL-STD-810 Thermal, Shock, Vibration, Humidity
- Ultra Short Depth 2U Half-Rack Military Computer
- NVIDIA Jetson Orin NX 8G/16G LPDDR5 DRAM
- 2x LAN+1x CAN+1x RS232/422/485+4x DIO

NV300

2U Half NVIDIA AGX Orin Computer

- Ultra Short Depth 2U Half Rugged Computer
- MIL-STD-810 Thermal, Shock, Vibration, Humidity
- 4CH 3G-SDI NVENC H.264 Low Latency Support
- NVIDIA Jetson AGX Orin 32G/64G DRAM
- 2x LAN+1x CAN+1x RS232/422/485

3-10 VPX ATR SYSTEM

SK830
3U VPX 3 Slots Backplane

- Compliant to VITA 46.0 baseline specification
- 3 Payload Slots VPX
- Single Star x4 configuration for Data Plane
- PCB size 167.96 mm x 128.7 mm x 5.1 mm
- 7.5 HP from slot to slot (38.1 mm)
- Operating temperature: -40°C to +85°C
- Storage temperature: -55°C to +85°C

SK901-AD5000
3U VPX GPGPU Card

- 3U VPX Form Factor, VITA 48.4 - Liquid Flow Through (LFT)
- 1.5” Pitch (Liquid FLow Through), PCIe Gen 4 (x4 or x8 support)
- Thermal Capacity : 100W~200W Per Slot
- Method : Coolant flow through internal channels within the module
- Embedded GPGPU - NVIDIA® Ada Lovelace™ Architecture 5000 Ada GPU

SK901-A4500
3U VPX GPGPU Card

- 3U VPX Form Factor, VITA 48.4 (Liquid Flow THrough (LFT)
- 1.5” Pitch (Liquid FLow Through), PCIe Gen 4 (x4 or x8 support)
- Thermal Capacity : 100W~200W Per Slot
- Method : Coolant flow through internal channels within the module
- Embedded GPGPU – NVIDIA® Ampere™ Architecture RTX A4500 GPU

3-11 DELL MILITARY SERVER

7SL-XR5610
1U Military Rugged HPC

- Intel® 4/5th XEON® SP Bronze, Silver, Gold
- Up to 2x PCIe Gen5 low profile
- 4x 2.5” Swappable SATA SSD
- 4x 25G GbE SFP+, 1x iDRAC Direct (Micro-AB USB 2.0), 1x iDRAC dedicated
- 1x USB 3.0, 1x Serial (Micro-AB USB2.0) port, 1x Mini-Display Port

7SL-R760
2U Military Rugged HPC

- Intel® 4/5th XEON® SP, Silver, Gold, Platinum
- Up to 8 PCIe slots
  - ◎ 4x 16 Gen4/Gen5 Full-Height/Full Length
  - ◎ 2 x8/x16 Gen4/Gen5 Full-Height/Full-Length
  - ◎ 2x 16 LP Gen4 Low profile, Half Length
- 1 x USB 2.0, 1 x iDRAC Direct (Micro-AB USB 2.0), 1 x iDRAC dedicated, 1x USB 3.0, 1 x Serial port(optional), 1x VGA

7SL-XR7620
2U Military Rugged HPC

- Dual Intel® 4/5th XEON® SP Silver, Gold
- Up to 7 PCIe slots - Full - Height, Half-Lenth and low profile
  - ◎ 4x Single-width ull-Height/ Half-Length (PCIe x 16) 75W
  - ◎ 2x Double-width Full-Height/ Full-Length (PCIe x 16) 350W
  - ◎ 1x Low Profile 75W
- 4 x 2.5" Swappable SATA SSD up to (RAID 0,1,5,10)

7STARLAKE MILITARY PRODUCT GUIDE

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