

VPX3U-THOR-SBC

NVIDIA® IGX Thor™, SBC

PRELIMINARY

OVERVIEW

The VPX3U-THOR-SBC module meets the needs of demanding C5ISR applications, providing a safety certifiable compute node with advanced AI and HPC processing capabilities, high data transfer rates, and the cyber security features required to ensure data is being protected. This SOSA aligned module includes an NVIDIA® IGX Thor™, a PCIe switch with functional safety, and a XFY-PHY with TSN support for high bandwidth applications.

Accelerated by the Blackwell GPU, with 128GB of ECC memory and delivering 2070 FP4 TFLOPS of AI compute makes this a superior platform for data processing, deep learning inference, machine vision, sensor fusion and robotics. The 4 port PCIe switch provides expanded system capability, while the high-bandwidth SerDes Phy, and two BASE-T ports, provide TSN capable network data transfer for easy integration into any system.

Unlocking the best performance requires the best cooling methods. WOLF's unique architecture and advanced cooling technology can efficiently move over 100W of heat to the chassis rails, better than any solid metal can perform. **Contact WOLF for any additional questions (ex. PCIe Gen 5, Safety, Security, Custom options, etc.)**

KEY FEATURES

- 2070 FP4 TFLOPs AI Compute
- Embedded Blackwell GPU, with 2560 CUDA cores and 96 Gen 5 Tensor cores
- Multi-Instance GPU (MIG) support, two instances.
- 14-core Arm® Neoverse®-V3AE CPU, 2.6GHz
- 128 GB ECC LPDDR5X 256-bit memory at 273 GB/s
- 4-port PCIe Gen4 switch with ISO 26262 Functional Safety
- Up to three DisplayPort MST/HDMI output
- Module power: configurable from 70W - 150W
- High level of ruggedization (and custom options):
 - Operating temperature: -40° to +85°C
 - Vibration (sine wave): 10G peak, 5 - 2000Hz
 - Shock: 40G peak
- Dimensions: 160mm x 100mm x 25.4mm
- Weight (approx.): 1.5kg
- ANSI/VITA 48, 65 (VPX REDI, OpenVPX)
- SOSA® Aligned SBC slot profile 14.2.16



ADDITIONAL IGX THOR FEATURES

- Industrial Grade (extended temp, shock, and vibration)
- Functional Safety (ISO-26262, DO-178C/254 capable)
- Supports wide range of generative AI models
- Runs NVIDIA Isaac™ GR00T, Metropolis, and Holoscan
- Up to 6× 4Kp60 (H.265) encode
- Up to 10× 4Kp60 (H.265) decode
- IGX OS (Enterprise SW)
- CUDA® 13, OpenGL® 4.6, OpenGL ES 3.2, Vulkan™ 1.2
- 10 year lifecycle to 2035

CONNECTIVITY / SYSTEM MANAGEMENT

- 1TB NVMe storage
- PCIe Switch
 - Up to three x4 ports to backplane
- Backplane Ethernet with two 10/25GBASE-KR
- 2.5GBASE-T Ethernet with TSN support to P2A
- USB 3.2 and USB 2.0 to P2A
- CAN bus (x2) to P2A
- One DisplayPort to P2A
- Two DisplayPort to P2B
- 2.5GBASE-T Ethernet with TSN support to P2B
- Front panel USB-C for setup/debug
- Advanced IPMC and security management features

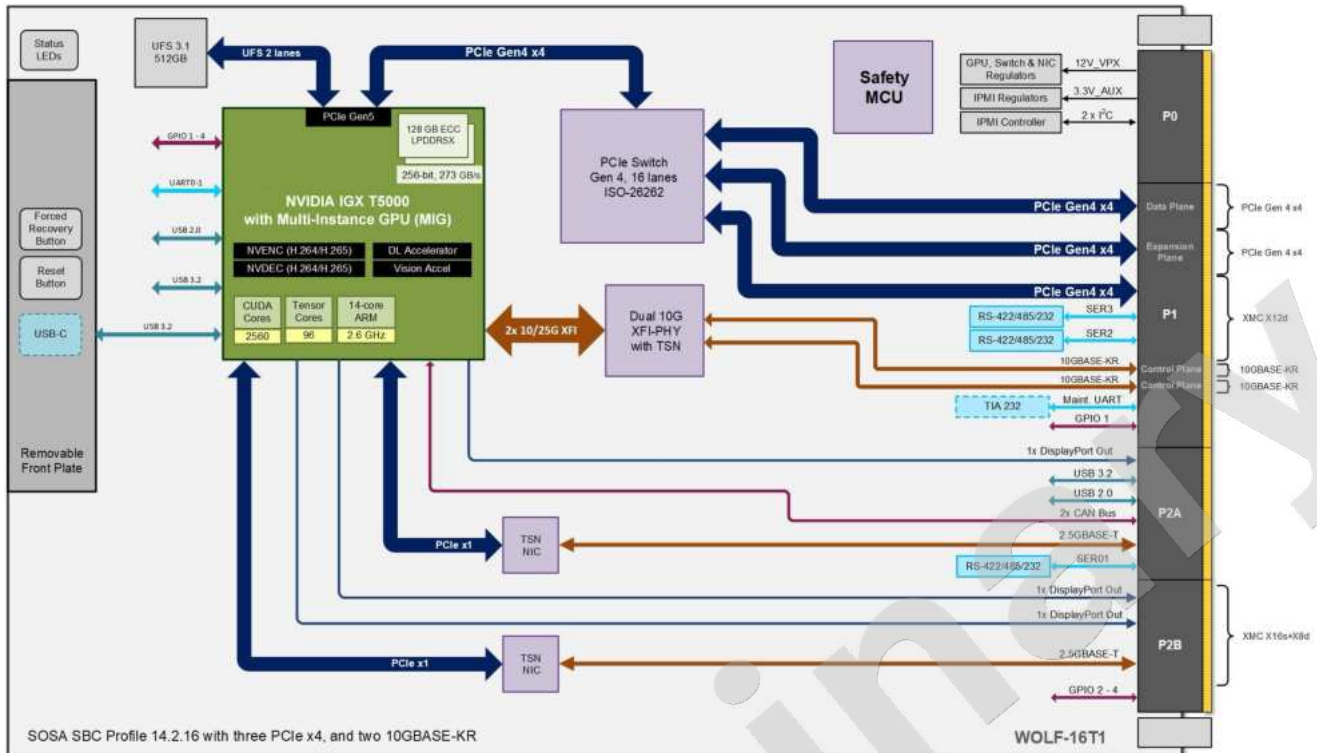
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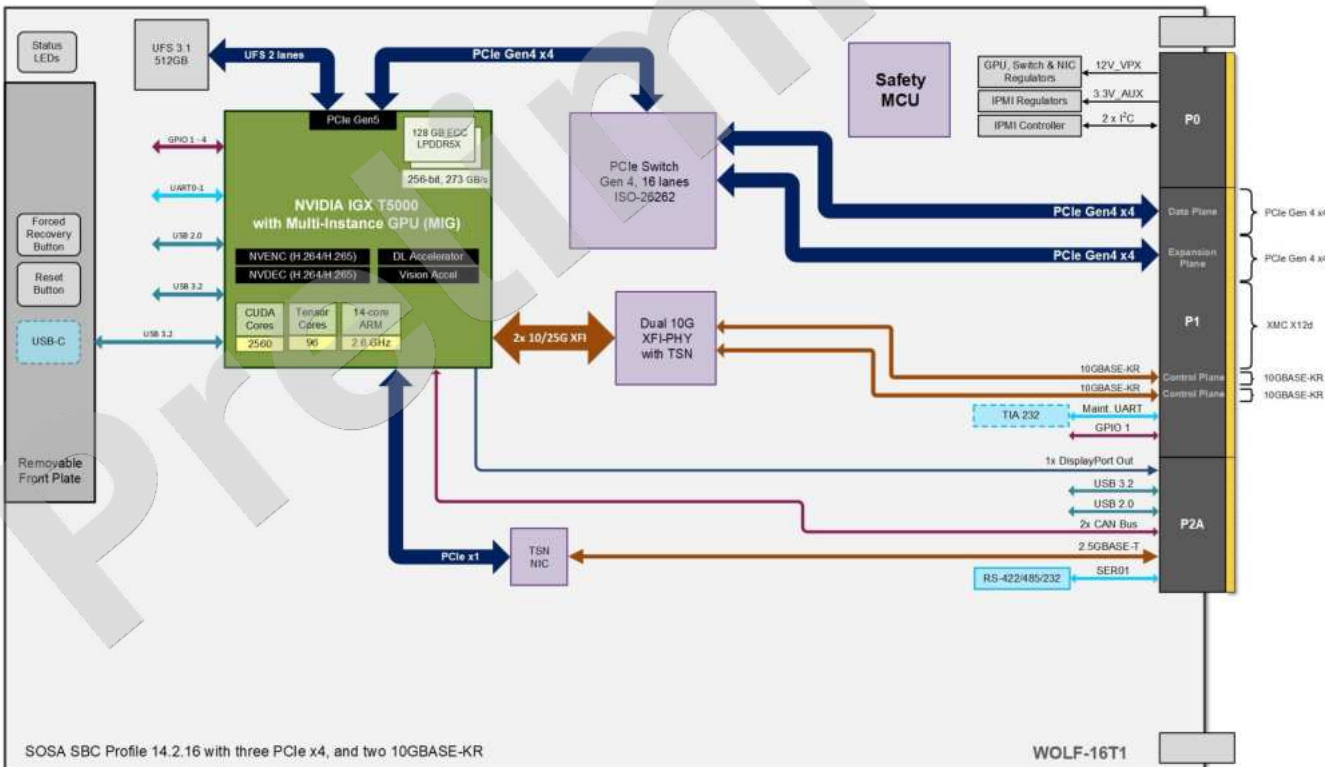
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This configuration provides three PCIe Gen4 x4, two 10GBASE-KR, two 2.5GBASE-T, and additional DisplayPort.



This configuration does not connect XMC I/O, and provides two PCIe Gen4 x4, two 10GBASE-KR, and one 2.5GBASE-T.



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