VPX3U-THOR-CX7-FGX2-SBC

PRELIMINARY

NVIDIA® IGX Thor™ ConnectX®-7, FGX2 Video I/O, SBC

OVERVIEW

The VPX3U-THOR-CX7-FGX2-SBC module meets the needs of demanding C5ISR applications, providing a secure 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™, an NVIDIA® ConnectX®-7 SmartNIC, and the WOLF FGX2 FPGA which provides support for video formats that are not native to the THOR SoC.

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 NVIDIA ConnectX-7 SmartNIC provides secure, high-speed network data transfer and a configurable PCIe switch. Support for RDMA over Converged Ethernet (RoCE) and NVIDIA GPUDirect, enables the fastest method to transfer data across a network to the GPU.

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
- ConnectX-7, provides up to 100GbE, PCIe Gen5
- SDI input/output, DP MST/HDMI output, CVBS
- 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
- ConnectX-7 PCIe Switch
  - one x8 port, may bifurcate down to x4 + x4
  - or one x4 and 40/100GBASE-KR4
- Backplane Ethernet with two 10/25GBASE-KR
- ConnectX-7 with NVIDIA ASAP², GPUDirect Storage, and RoCE support
- 2.5GBASE-T Ethernet with TSN support to P2A
- USB 3.2 and USB 2.0 to P2A
- Optional CAN bus (x2) to P2A
- Front panel USB-C for setup/debug
- Advanced IPMC and security management features
- SDI input/output, CVBS, USB to XMC I/O interface

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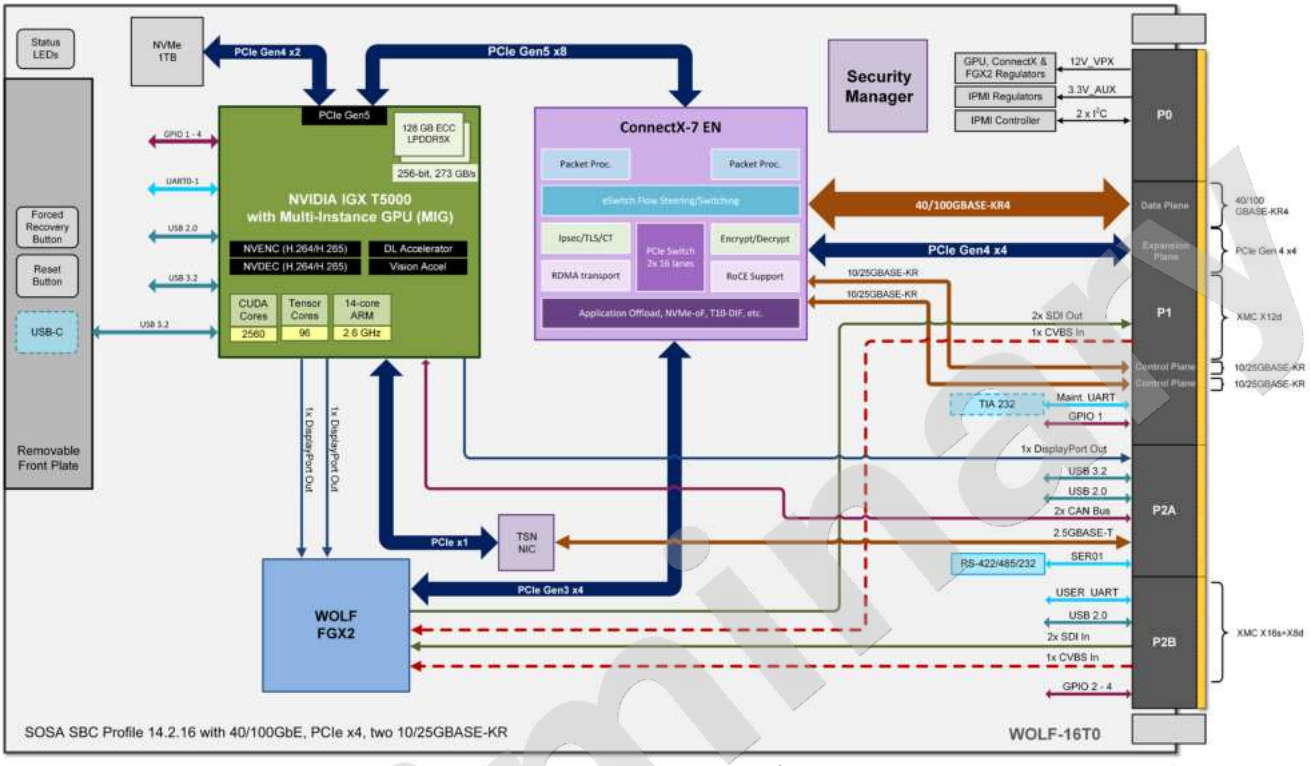
This configuration provides PCIe Gen4 x4, 40/100GBASE-KR4, two 10/25GBASE-KR, and one 2.5GBASE-T.



The configuration provides PCIe Gen4 x8 (configurable to two x4), two 10/25GBASE-KR, and one 2.5GBASE-T.