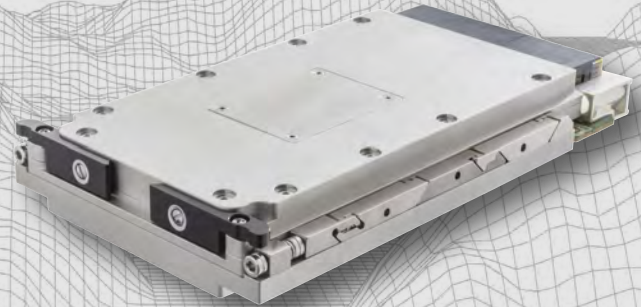3U VPX small form factor single board computer powered by the NVIDIA Jetson AGX Orin SoM with NVIDIA Ampere Architecture.

HIGH PERFORMANCE COMPUTING

NVIDIA® Jetson AGX Orin™ supporting NVIDIA Ampere Architecture with 2048 NVIDIA CUDA® cores and 64 Tensor Cores

SINGLE BOARD COMPUTER

Designed with GPU & CPU compute capabilities with AI inferencing, deep learning, and dedicated Codec engines

VARIOUS I/O SUPPORT

Supports SOSA™ slot profiles, Ethernet DataPlane interface, and USB 2.0

Compute-Intensive 3U VPX SBC with NVIDIA Jetson AGX Orin 64GB

The Condor™ AGX-ORIN64-HPC is a rugged 3U VPX high-performance single board computer (SBC) designed for both autonomous and embedded edge computing systems. The Condor AGX-ORIN64-HPC uses the NVIDIA Jetson AGX Orin 64GB (Industrial) SoM that hosts an NVIDIA Ampere architecture GPU and a 12-core Arm® Cortex®-A78AE CPU. The module's 64GB of LPDDR5 system memory allows up to 205 GB/s memory bandwidth shared between the internal CPU, GPU, and accelerator engines.

The Condor AGX-ORIN64-HPC incorporates the NVIDIA ConnectX®-7 NIC, enabling high-speed data transfer of up to 100Gb/s and 25Gb/s using Gigabit Ethernet. This, along with NVIDIA GPUDirect® RDMA over converged Ethernet (RoCE), enables high-speed communication between distributed sensors, RF transceivers, and platforms. In addition, the card supports 64 GB eMMC internal storage, an M.2 2230 site for expandable storage, and features high-speed I/O such as USB 3.2, DisplayPort™, and RS-232 Serial. The NVIDIA® Jetson AGX Orin™ SoM features HEVC (H.265)/AVC (H.264) NVENC and NVDEC engines with support for up to 4K-UHD encode resolution. The Condor AGX-ORIN64-HPC is designed to support both VITA 46/65 and the Sensor Open System Architecture (SOSA™) technical standards slot profile 14.6.11.

MIL-STD 810 Shock

MIL-STD 810 Temperature

MIL-STD 810 Vibration

SWaP

Condor AGX-ORIN64-HPC 3U VPX Specifications

Processor
NVIDIA® Jetson AGX Orin™ Industrial

Interface
3U VPX
14.6.11 Compute-Intensive Slot Profile Support
1.0" Pitch (Conduction Cooled)

IPMI
Dual IPMB
Tier 1 and Tier 2 Supported
Multiple temperature and voltage sensors

CPU
12-core Arm® Cortex®-A78AE v8.2 64-bit CPU
3MB L2 + 6MB L3 2.0GHz

GPU
2048-core NVIDIA Ampere architecture GPU
64 Tensor Cores

Memory
64 GB LPDDR5 (+ECC) DRAM
256-bit Memory Interface
up to 205 GB/s Memory Bandwidth

Networking
NVIDIA® ConnectX®-7 SmartNIC
1x 100GbE Data Plane FP
1x 25GbE Data Plane UTP
1x 25GbE Control Plane UTP

Video Outputs
1x DisplayPort™ (Optional Front Panel)

PCIe
PCIe Gen 4 x8 | x4x4 Interface to P1B Expansion Plane

Storage
64GB eMMC 5.1 Flash Storage. 8-bit
Up to 1TB NVMe (x1 PCIe Gen 4)

I/O
1x USB2.0 (Optional Front Panel)
1x UART to Orin
1x UART to IPMI Controller

Other Features
2x NVDLA v2 Deep Learning Accelerators (1.6GHz)
NVENC Video Encoder (Up to 2x 4K60)
NVDEC Video Decoder (Up to 3x 4K60 / 1x 8K30)
Secure Boot

Profiles
SLT3-PAY-1F1U1S1S1U1U2F1H-14.6.11-0

Operating Temperature (MIL-STD-810)
-40°C to 85°C (Rugged Conduction Cooled)
Please refer to the Hardware User Guide for details on
temperature/ performance characterization.

Vibration (MIL-STD-810)
0.1 g²/Hz

Shock (MIL-STD-810)
40 g

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

Power Consumption
Module: 40-80W
Board Total: < 110W

Weight
2.696 lbs (1223.1 g)

Condor AGX-ORIN64-HPC 3U VPX Block Diagram

EIZO Rugged Solutions