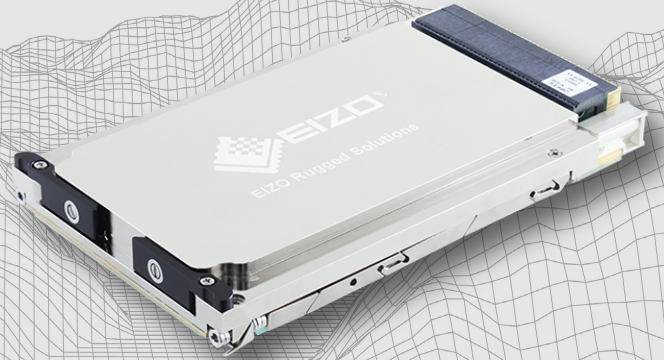


3U VPX high-performance computing card designed for both autonomous and embedded edge systems. Designed with GPU & CPU compute capabilities supporting machine vision, AI inferencing, deep learning, and dedicated encode/decode engines



HIGH PERFORMANCE EMBEDDED COMPUTING

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

RUGGED SINGLE BOARD COMPUTER

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

I/O & STORAGE SUPPORT

Supports SOSA slot profile, USB 3.2, DisplayPort™, RS-232 Serial, and optional NVMe storage

High-Performance 3U VPX SBC with NVIDIA Jetson AGX Orin 64GB

The Condor AGX-IOX is a rugged 3U VPX high-performance single board computer (SBC) designed for both autonomous and embedded edge computing systems completing instantaneous data analysis and transfer, multi-sensor processing, encode/-decode, and AI Inferencing. The Condor AGX-IOX is designed with the NVIDIA® Jetson AGX Orin™ SoM supporting an NVIDIA Ampere GPU and the Arm® Cortex®-A78AE CPU. This product supports 64GB LPDDR5 system memory allowing up to 205 GB/s memory bandwidth shared between the ARM Cortex CPUs, NVIDIA Ampere GPU, and Accelerator Engines.

The Condor AGX-IOX 3U VPX SBC supports advanced storage and networking capabilities, including 64GB eMMC internal storage and 10GbE (Gigabit Ethernet), and high-speed I/O such as USB 3.2, DisplayPort™, and RS-232 Serial. The card also includes dedicated HEVC (H.265)/AVC (H.264) NVENC and NVDEC engines with support for up to 4K-UHD encode resolution. The Condor AGX-IOX is designed to support both VITA 46/65 and the Sensor Open System Architecture (SOSA™) technical standards slot profile 14.2.16.



MIL-STD 810
Shock



MIL-STD 810
Temperature



MIL-STD 810
Vibration



SWaP

Condor AGX-IOX 3U VPX Specifications

Processor

NVIDIA® Jetson AGX Orin™

Interface

3U VPX
14.2.16 IO Intensive Slot Profile Support
1.0" Pitch (Conduction Cooled)

CPU

12-core Arm® Cortex®-A78AE v8.2 64-bit CPU 3MB L2 + 6MB L3
2.2GHz

Memory

64 GB LPDDR5
256-bit Memory Interface up to 205 GB/s Memory Bandwidth

Video Outputs

1x DisplayPort™ 1.4

Storage

64GB eMMC 5.1 Internal Storage
Optional NVMe Storage (up to 2TB)

PCIe

4x PCIe Gen4 to P1A[1-4] Data Plane for Legacy Support
4x PCIe Gen4 to P1A[5-8] Expansion Plane
*Connections are Mutually exclusive and can't be used simultaneously
**Can be combined as an 8x PCIe connection.

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.

Shock (MIL-STD-810)

40 g

Power Consumption

Module: 15-60W
Board Total: < 80W

IPM

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

GPU

2048-core NVIDIA Ampere architecture GPU
64 Tensor Cores

Networking

1x 10GbE Control Plane (10GBASE-KR)
1x 1GbE Control Plane (1GBASE-T)

Video Inputs

Can interface with external PCIe DMA video capture cards

I/O

1x USB3.2
1x USB2.0
2x RS-232 Serial

Other Features

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

Vibration (MIL-STD-810)

0.1 g²/Hz

Humidity (MIL-STD-810)

95% Without Condensation

Condor AGX-IOX 3U VPX Block Diagram

