The Condor AGX-IOX is a rugged 3U VPX high-performance single board computer (SBC) 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.

The Condor AGX-IOX 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.
Condor AGX-IOX 3U VPX Specifications

Processor
NVIDIA® Jetson AGX Orin™

Interface
3U VPX
1x 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.

Networking
1x 10GbE Control Plane (10GBASE-KR)
1x 1GbE Control Plane (10BASE-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)

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

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

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

Condor AGX-IOX 3U VPX Block Diagram

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