

SBC3901

3U VPX High-Performance Compute with Jetson AGX Orin, SOSA Aligned

The SBC3901 is a 3U VPX Compute Intensive Single Board Computer, designed for both autonomous and embedded edge computing systems that require real-time GPU processing, instantaneous data transfer, dedicated encode/decode capabilities, and deep learning (DL) algorithms.

Based off the NVIDIA Ampere architecture, this card uses the NVIDIA® Jetson AGX Orin (Industrial) GPU which has 2048 NVIDIA CUDA® cores and 64 Tensor Cores, along with DL and vision accelerators.

The NVIDIA Jetson AGX Orin is the most powerful AI edge computer, delivering up to 248 TOPS of AI performance for powering autonomous systems.

The high bandwidth Ethernet Data Planes (1x 100GBE and 1 x 25GbE) complement 205 GB/s of memory bandwidth, 64 GB of DRAM, and 64GB eMMC internal storage, enabling the module to feed multiple concurrent AI application pipelines.

An eight lane PCIe Gen 4 expansion plane and further 25GbE control plane are offered in alignment with the Compute Intensive slot profile in the Sensor Open System Architecture (SOSA) technical standard.

FEATURES:

- High performance embedded computing
  - NVIDIA Jetson AGX Orin GPU supporting NVIDIA Ampere architecture with 2048 NVIDIA CUDA cores and 64 Tensor Cores
- Small Form Factor Computer
  - Designed with GPU & CPU compute capabilities with AI inferencing, deep learning, and dedicated Codec engines
- SOSA Aligned
  - Supports Compute Intensive slot profile

Abaco SYSTEMS / AMETEK®

SBC3901 *3U VPX High-Performance Compute with Jetson AGX Orin, SOSA Aligned*

Specifications

Interface
- 3U VPX Form Factor 1” Pitch

Graphics Processor
- NVIDIA® Jetson AGX Orin™ (Industrial)
- NVIDIA Ampere Architecture
- 2048 NVIDIA CUDA® cores and 64 Tensor Cores

AI Performance
- 248 TOPs (INT8)

Memory
- 64GB 256-bit LPDDR5 205 GB/s
- 12-core Arm® Cortex®-A78AE v8.2 64-bit CPU
- 3MB L2 + 6MB L3
- Max CPU freq: 2.2 GHZ

Storage
- 64GB eMMC 5.1
- Optional 2TB NVMe (1x PCIe Gen 4)

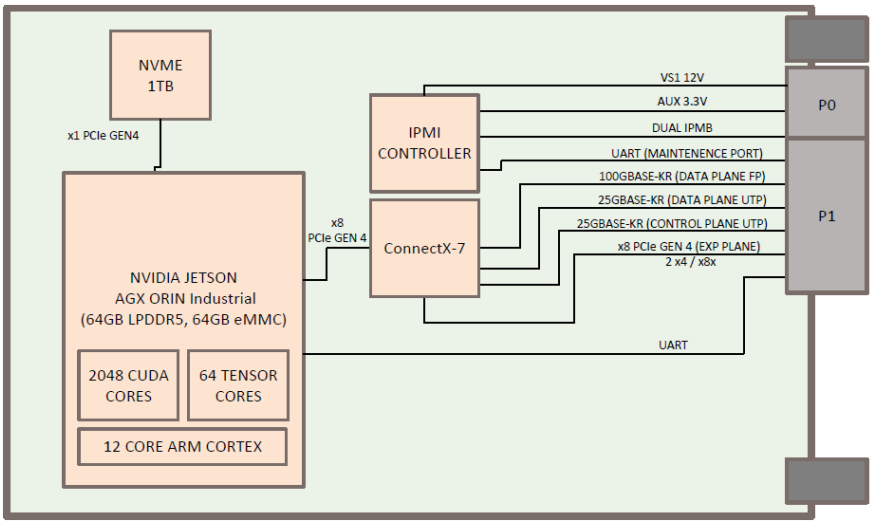
SOSA-aligned Payload
- SLT3-PAY-1F1U1S1S1U1U2F1H-14.6.11-n

PCIe
- 8x PCIe Gen4 expansion plane (configurable as x8 or 2 x4)

Networking
- 1 x 100GbE Data Plane (100GBASE-KR-4)
- 1 x 25GbE Data Plane (25GBASE-KR
- 1 x 10GbE Control Plane (10GBASE-KR)

Other I/O
- 2 x RS232 serial

Block diagram



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 / 1x8K30

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

IPMI
- Dual IMPB
- Tier 1 and Tier 2 supported
- Multiple temperature and voltage sensors

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

Vibration (MIL-STD-810)
- Random vibration: 0.1g2/Hz

Shock (MIL-STD-810)
- 40 g

Humidity (MIL-STD-810)
- 95% without condensation

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Abaco Systems is a business unit of AMETEK, Inc., a leading global provider of industrial technology solutions serving a diverse set of attractive niche markets.