

JETKIT-3010

NVIDIA® JETSON AGX XAVIER™ FOR COMPACTPCI SERIAL

ELMA BRINGS ARTIFICIAL INTELLIGENCE TO COMPACTPCI SERIAL PLATFORMS

NVIDIA® Jetson AGX Xavier™ sets a new bar for compute density, energy efficiency, and AI inferencing capabilities on edge devices. It is a quantum jump in intelligent machine processing, marrying the flexibility of an 8-core ARM processor with the sheer number-crunching performance of 512 NVIDIA CUDA cores and 64 Tensor cores. Elma Electronic brings this compute power to CompactPCI Serial platforms.

Our JetKit-3010 CompactPCI Serial Xavier board fits perfectly into your existing CompactPCI Serial environment and provides a boost of computing power for your AI applications. With its industry leading performance, power efficiency, integrated deep learning capabilities and rich I/O, the NVIDIA® Jetson AGX Xavier™ enables emerging technologies with compute-intensive requirements. Designed for applications converging on artificial intelligence (AI), computer vision (CV) and advanced graphics, the AGX Xavier is ideal for (but not limited to): Intelligent Video Analytics (IVA), Robotics, Virtual Reality (VR), Augmented Reality (AR), Portable Medical Devices, and Autonomous Driving.



BOARD INTERFACES

Interfaces of the front panel

- USB Type C (2x)
- USB 2.0
- Gigabit Ethernet
- Mini HDMI
- MicroUSB (Client)
- SD/UFS-Slot

Backplane Interfaces

- PCIe x8 (Root- Complex or End Point)
- Gigabit Ethernet
- USB 3.1

Storage

- On-board M.2 (2242) Type M NVMe socket

FEATURES

Volta GPU

Tensor Cores | End-to-end lossless compression | Tile Caching | OpenGL® 4.6 | OpenGL ES 3.2 | Vulkan™ 1.0 | CUDA® 10

Carmel CPU Complex

ARMv8.2 (64-bit) heterogeneous multi-processing (HMP) CPU architecture | dual-core CPU clusters connected by a high-performance system coherency interconnect fabric | L3 Cache: 4MB (shared across all clusters)

NVIDIA Carmel (Dual-Core) Processor: L1
Cache: 128KB L1 instruction cache (I-cache) per core;
64KB L1 data cache (D-cache) per core | L2 Unified
Cache: 2MB per cluster

Audio Subsystem

Dedicated programmable audio processor | ARM Cortex A9 with NEON | 4 x I2S | 2 x I and Q baseband data channels | PDM in/out | Industry-standard High Definition Audio (HDA) controller provides a multi-channel audio path to the HDMI interface.

Memory

256-bit DRAM interface | Secure External Memory Access Using TrustZone Technology | System MMU | Memory Type: LPDDR4x | Memory Size: 32GB

Storage

eMMC 5.1 Flash Storage | Bus Width: 8-bit | Maximum Bus Frequency: 200MHz (HS400) | Storage Capacity: 32GB
M.2 socket for NVMe module 2242 (PCIe x4)

Networking

2x 10/100/1000 BASE-T Ethernet | Media Access Controller (MAC) (1x integrated in SoC, 1x Intel i210)
1x 10/100/1000 BASE-T via BP
1x 10/100/1000 BASE-T on Front panel

Display Controller Subsystem

Mini HDMI Serial Output Resources (SOR) | HDMI 2.0a/b (up to 6 Gbps)
Maximum Resolution:
(up to) 3840 x 2160 at 60 Hz (up to 36 bpp)

Multi-Stream HD Video & JPEG

Video Encode
Standards Supported: H.265 (HEVC), H.264, VP9

Video Decode
Standards Supported: H.265 (HEVC), H.264, VP9, VP8, MPEG-4, MPEG-2, VC-1

JPEG (Decode & Encode)

Peripheral Interfaces

xHCI host controller with integrated PHY (up to)
3 x USB 3.1, 4 x USB 2.0; USB 3.0 device controller with integrated PHY

USB:
2x USB 3.1 (Front Type C), 1x USB 2.0 (Front),
1x USB 3.1 (BP)

PCIe:
PCIe x8 Root Complex or End Point via BP

SD/MMC controller (supporting eMMC 5.1, SD 4.0, SDHOST 4.0 and SDIO 3.0)

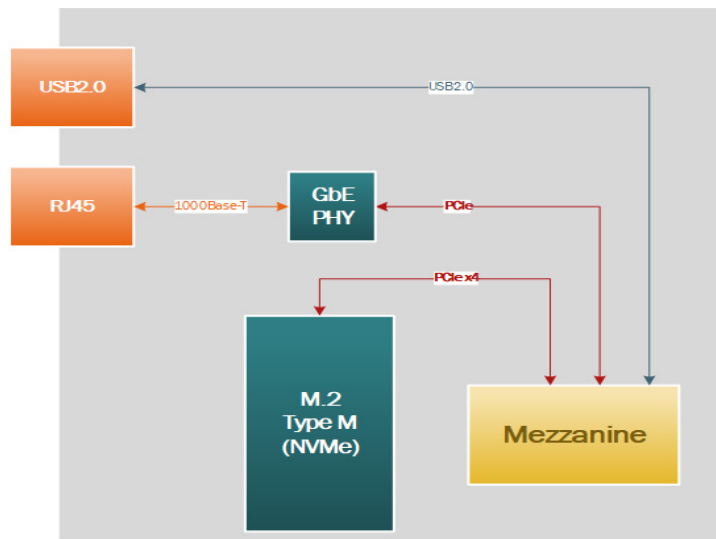
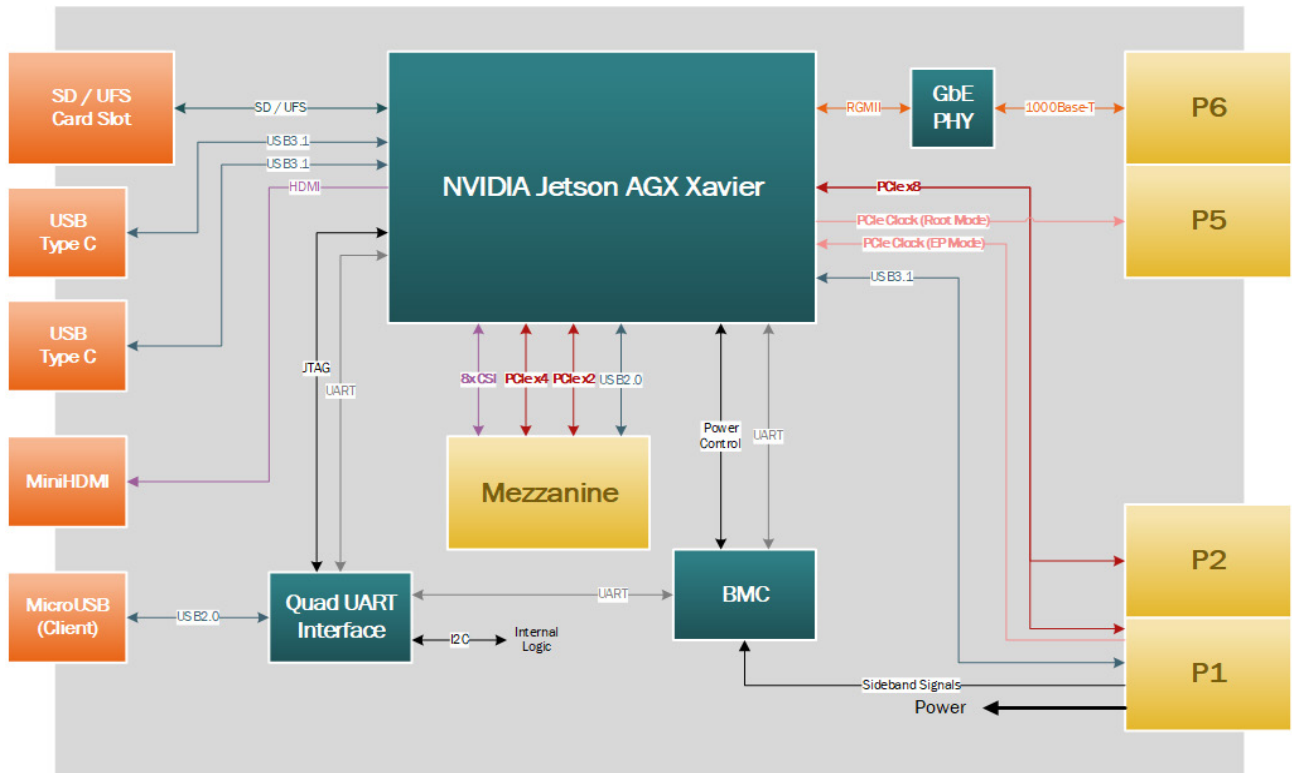
Mechanical

Board Size: 160 mm x 100 mm x 8 HP
Heat sink: high-performance heat sink for advanced cooling

Power

Power Input: 12 V Main Power, 5 V Standby (optional)

BLOCK DIAGRAM



ORDERING INFORMATION

ELMA PN	Description
066-594	JetKit-3010 for CompactPCI Serial NVIDIA® Jetson AGX Xavier™ 32GB, Front : 2x USB-Type C, USB 2.0, 1000Base-T, Mini HDMI, MicroUSB, SD/UFS, Reset + Recovery, Power LED, 3x User-LEDs, BP: 1000Base-T, PCIe x8, USB 3.1