

GXA-1

AI edge computer for autonomy

FEATURES

NVIDIA® Jetson AGX Orin™ SoM

AI Performance 248 TFLOPS

1 × DVI Output

1 × 10 Gigabit Ethernet port

1 × 1 Gigabit Ethernet port

3 × USB 3.2 Gen2 (10 Gbps)

2 × CAN Bus ports

4 × RS232/RS422

4 × DVE Inputs PAL/NTSC

GPIO

PWM

Dual M.2 M Key for SSD (optional)

NVIDIA JetPack™ SDK

MediaX for DEF-STAN 00-082

VivoeX for DEF-STAN 23-009

Built In Test (External LED)

Low SWaP

-40°C to +71°C (Baseplate Cooled)

The **GXA-1** is a high-performance AI computer built around the NVIDIA® Jetson AGX Orin™ SoM, which is enabled for Deep Learning. The GXA-1, with its 2048-core NVIDIA Ampere architecture GPU with 64 Tensor Cores, and dual Deep Learning Accelerators (DLA), delivers up to 248 TFLOPS performance. This makes the GXA-1 an ideal solution for low size, weight, and power (SWaP) graphics, vision, AI, and sensory computing applications.

Primarily designed for SWaP-sensitive platforms in the defence and aerospace markets, the **GXA-1** can be used in a variety of applications. These include 360° situational awareness, autonomous vehicles, EO/IR processing, non-Cert Degraded Visual Environment (DVE), display processing, moving map, wide-area persistent surveillance, hyperspectral sensor fusion, IED detection, synthetic aperture radar processing, and more.

The **GXA-1** is based on the NVIDIA® Jetson AGX Orin™ SoM, which features

2048-core NVIDIA Ampere architecture GPU with 64 Tensor Cores and a 12-core Arm® Cortex®-A78AE v8.2 64-bit CPU 3MB L2 + 6MB L3, CPU Max Frequency 2.2 GHz. In total, the Jetson Orin can provide up to 248 TFLOPS performance.

The **GXA-1** is equipped with 64GB 256-bit LPDDR5 (+ ECC) capable of 204.8GB/s, allowing for very high bandwidth movement of data in and out of the GPU, and 32GB eMMC 5.1. The **GXA-1** combines the NVIDIA® Jetson AGX Orin™ SoM's functionality and performance with an I/O-rich host card and packages it in a low SWaP form factor. The **GXA-1** features 10 Gigabit Ethernet data plane port (e.g. for multiple GVA / GigE camera aggregation), 1 Gigabit Ethernet control/data plane port, single SL-DVI output, dual CAN bus ports, and triple USB 3.2 Gen2 (10 Gbps).

The **GXA-1** also provides bulk storage with its onboard dual M.2 M key SSD ports, allowing it to accommodate very large data sets.



MADE IN AUSTRALIA

RUGGED AI FOR EXTREME ENVIRONMENTS



FIND OUT MORE

Commercial Off The Shelf (COTS) and Modified Off The Shelf (MOTS) solutions.
Astute Systems is a global leader in rugged AI computing and software for autonomous military systems and deployment in harsh environments.

SPECIFICATIONS

GPU NODE

- NVIDIA® Jetson AGX Orin™ SoM:
- Up to 248 TFLOPS
- 2048-core NVIDIA Ampere architecture GPU
- 64 Tensor Cores
- 12-core Arm® Cortex®-A78AE v8.2 64-bit CPU
- 3MB L2 + 6MB L3
- 64GB 256-bit LPDDR5 (+ ECC) Memory
- 64 GB eMMC 5.1 Flash Storage
- (2x) NVDLA DL Accelerator Engines max 1.4GHz
- 1 × PVA v2

- 1 × 4K60 (H.265) Video Encoder
- 3 × 4K30 (H.265) Video Encoder
- 7 × 1080p60 (H.265) Video Encoder
- 15 × 1080p30 (H.265) Video Encoder
- 1 × 8K30 (H.265) Video Decoder
- 3 × 4K60 (H.265) Video Decoder
- 7 × 4K30 (H.265) Video Decoder
- 11 × 1080p60 (H.265) Video Decoder
- 23 × 1080p30 (H.265) Video Decoder

I/O – VITA 76.0 STANDARD

- 1 × SL-DVI / HDMI 4k
- 1 × 10 Gigabit Ethernet port Base-T – Data Plane
- 1 × 1 Gigabit Ethernet port Base-T – Control Plane
- 2 × CAN bus ports
- 3 × USB 3.2 Gen2 (10 Gbps)
- 4 × RS232 / RS422 (Full Duplex)
- 4 × DVE inputs PAL/NTSC video (option)
- Dual M.2 M Key SSD (optional)

DIMENSIONS

- Width: 8.5 inches (216 mm)
- Height: 2.76 inches (70 mm)
- Depth: 7.48 inches (190 mm)
- Weight: 6.3 lbs (2.9 Kg)

POWER

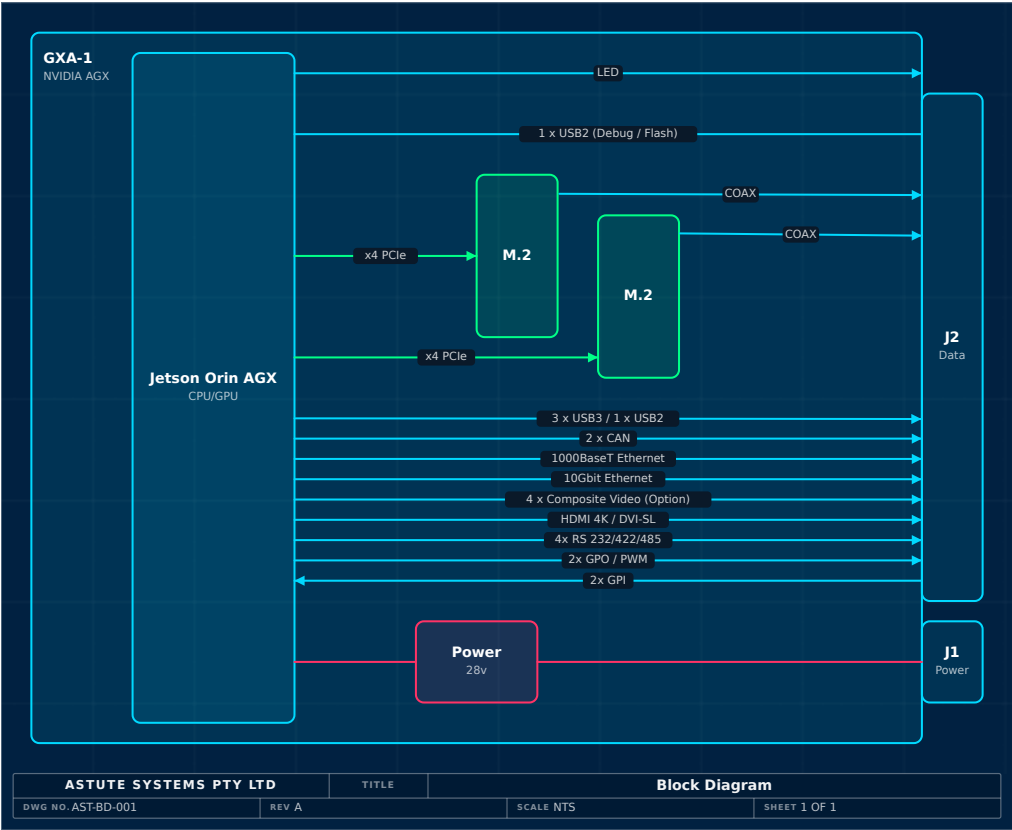
- Voltage: 28V DC (MIL-STD 1275)
- Wattage: ~75 Watts

ENVIRONMENTAL

- Rating: IP 65
- 40°C to +71°C (baseplate cooled)
- Standards: MIL-STD-810H / MIL-STD-1275

SOFTWARE

- Linux for Tegra (L4T) OS support – NVIDIA JetPack™ SDK
- ATLAS Digital Crew for DEF-STAN 23-009 (GVA HMI)
- TALOS Land Operating System
- HERMES Digital Voice



** Preliminary Datasheet
Specifications are subject to change

CONTACT YOUR LOCAL REPRESENTATIVE
FOR MORE INFORMATION ON HOW WE CAN ADAPT OUR SOLUTIONS TO MEET YOUR IO REQUIREMENTS
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