

MARS400 A10-04-C

AI Robotic Control Platform: Powering Edge
Intelligence, AMR, and Robotics with 8 LAN & 8 GMSL



Main Features

- NVIDIA® Jetson AGX Orin™
- 12-core Arm® Cortex® -A78AE v8.2 64-bit
- On board 64GB EMMC
- Single Display : HDMI
- 8 GPIO : 8GPI/8GPO with Insolated
- 2 x CAN FD / 5Mb
- 3 x USB 3.2 Gen1 Type A, 1x USB 3.2. Gen2 Type A
- 5 x RJ45 port.
- 2 x RS232, 2 x RS232/422/485 with Insolated
- 3 x M.2 Slot
- DC 24V to 48V input.
- Support -5~50 °C operating temperature.

Product Overview

The MARS400 A10-04-C is an advanced control system—integrating motion control, robotic control, and AI computing—powered by the NVIDIA® Jetson AGX Orin™. Purpose-built for high-performance robotics and AI-driven automation, it combines embedded motion control with edge AI acceleration to streamline the development of humanoid and quadruped robots.

Equipped with the NVIDIA® Jetson AGX Orin™ 64GB system-on-module (SOM), the MARS400 A10-04-C features an Ampere GPU with up to 2048 CUDA cores, 64 Tensor Cores, and dual NVDLA 2.0 engines, delivering up to 275 sparse INT8 TOPS for real-time AI inference and multi-stream video processing.

For connectivity and expansion, the system supports a comprehensive suite of validated interfaces, including 5x GbE, 4x COM, 4x USB 3.2, 2x CAN, 8x GMSL, and 8x GPIO, enabling precise high-speed control and seamless integration with a wide range of sensors and actuators.

Its rugged, industrial-grade design ensures long-term reliability in challenging research and industrial environments, making the MARS400 A10-04-C an ideal platform for next-generation robotic innovation.

Specifications

CPU / GPU Support

- 12-core Arm® Cortex® -A78AE v8.2 64-bit
- Integrated cache: 3MB L2 + 6MB L3 Equipped
- 2048-core NVIDIA Ampere GPU with 64 Tensor Cores

Memory

- 64 GB LPDDR5 (256-bit)
- Memory bandwidth: 2048.8 GB/s

Storage

- M.2 Key M 2280 slot support NVMe up to 512GB(optional)
- 64GB eMMC 5.1 on Jetson AGX Orin board(default)

I/O Interface-Front

- 1 x HDMI
- 5 x RJ45 LAN.
- 3 x USB 3.2 Gen1, 1 x USB 3.2 Gen2
- 4 x COM (2 x RS232, 2 x RS-232/485/422)
- 1 x HD Audio Jack (MIC-In, Line-Out)

- 8GPIO (8GPI & 8GPO)
- 3 PIN Power connector

Expansion Slot

- M.2 Key M slot : 2280 form factor(PCIe*4 GEN4) for NVMe SSD
- 1 x M.2 Key B 3042/3052 (USB2.0 , USB3.1).
 - Support 4G/5G module.
- 1 x M.2 Key E 2230 (PCIe x 1 Gen1, USB2.0)
 - Support WiFi/BT module.

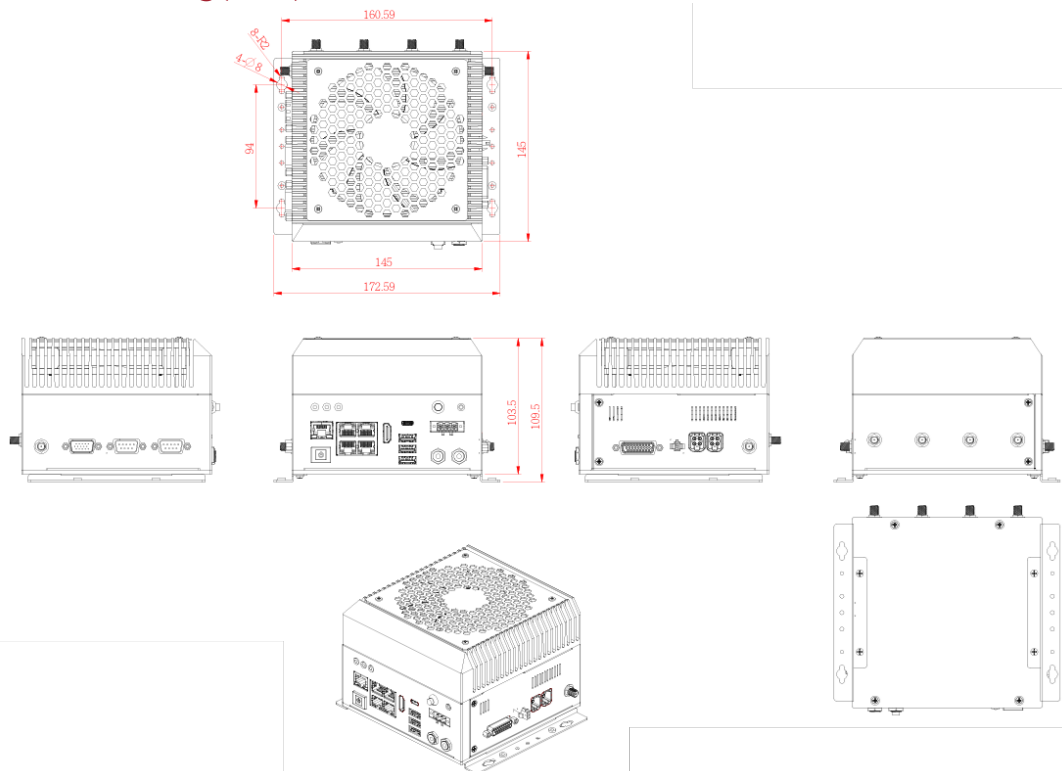
Power Requirement

- DC 24V to 48V input

Dimensions(TBD)

- 204(W) x 190(D) x 105(H) mm
- 204(W) x 190(D) x 127(H) mm (with PCIe x8 slot)(Optional)

Dimension Drawing(TBD)



Construction

- Aluminum and metal chassis with cooling design
- Installation: wall-mounting

Environment

- Operating temperature: Ambient with air flow: -20°C to 50°C (according to IEC60068-2-1, IEC60068-2-2, IEC60068-2-14)
- Storage temperature: -20°C to 85°C
- Relative humidity: 25~50°C, 90% (non-condensing)

Certifications

- CE
- EN61000-6-2, EN61000-6-4
- FCC Class A

Ordering Information

MARS 400 A10-04-C (P/N: TBD)

Nvidia Jetson AGX Orin with 64GB memory