AIE510-ONX NEW

Fanless Edge AI System with NVIDIA® Jetson Orin™ NX 16GB, 1 HDMI, 1 GbE PoE, 1 2.5 GbE PoE, 2 USB, 1 COM/CAN, Isolated DIO (4-in/4-out), and 4-CH GMSL for AMR & Robotics

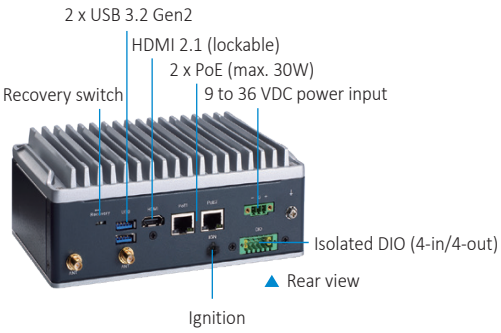
NVIDIA Preferred Partner

▲ Front view

Features

- NVIDIA® Jetson Orin™ NX (100 TOPS)
- Seamless speed: 5G, Wi-Fi 6E, and 2.5 GbE combined
- Easy management: USB and PoE device power control
- Supports dual PoE for camera & sensor connectivity
- Wide operating temperature from -25°C to +60°C
- Supports NVIDIA Isaac™ Robot Operating System (ROS) SDK for AI-enabled robots development
- Supports 24/7 secure remote monitoring, control, and OTA deployment empowered by Allxon

NVIDIA® Jetson Orin™ NX available through to 2030*
The official end of life notice will be sent for at least 8 months before the last shipment.



▲ Rear view

▲ Front view

4 x Fakra-Z connector for GMSL1/2 automotive camera

▲ Rear view

Specifications

Standard Color	Silver
Construction	Aluminum extrusion and heavy-duty steel, IP40
AI Accelerator	NVIDIA® Jetson Orin™ NX 16GB (100 TOPS) *By project: NVIDIA® Jetson Orin™ NX 8GB (70 TOPS), Orin™ Nano 8GB (40 TOPS) or Orin™ Nano 4GB (20 TOPS)
CPU	8-core NVIDIA Arm® Cortex A78AE v8.2 64-bit CPU 2MB L2 + 4MB L3
GPU	1024-core NVIDIA Ampere GPU with 32 Tensor Cores
System Memory	16GB 128-bit LPDDR5 onboard
Carrier Board	PSB907
System I/O Outlet	1 x HDMI 2.1 with 4K2K supported 1 x 10/100/1000 Mbps PoE (via Orin™ NX) 1 x 10/100/1000/2500 Mbps PoE (Intel® I226-IT) *IEEE 802.3at, up to 30 watts of power 2 x USB 3.2 Gen2 4 x Fakra-Z connector for GMSL1/2 automotive camera (only for AIE510-ONX-GMSL) 1 x Isolated DIO (4-in/4-out) 1 x DB9 for debug port 1 x DB9 for COM & CAN 1 x Recovery switch (for image update) 1 x Remote power switch 1 x AT/ATX switch 1 x Reset button 1 x Power button 1 x 9 to 36VDC power input connector 1 x Ignition connector 1 x Grounding screw 5 x SMA-type antenna connector

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Specifications

Watchdog Timer	Built-in Orin NX
Storage	1 x M.2 Key M 2280 with PCIe x4 NVMe SSD slot *The Orin NX no longer features built-in eMMC and exclusively supports SSD as the bootable device. *The AIE510-ONX requires an SSD for image installation. Please place an order for the SSD if you require image installation services.
Expansion Interface	1 x M.2 Key E 2230 slot for Wi-Fi 6E 1 x Full-size PCI Express Mini Card slot (USB + PCI Express signal) for Wi-Fi/LTE *Please avoid using both the PCI Express Mini Card slot and the M.2 E-Key slot simultaneously. 1 x M.2 Key B 3042/3052 slot for 5G/LTE 1 x Nano SIM slot
System Indicator	1 x Green LED for system power-on 1 x Yellow LED for M.2 SSD storage
Power Supply	Input: 9 to 36 VDC (typical 12/24 VDC) with ignition power control Inrush current: 0.69A/3.08A
Operating Temperature	25W power mode:-25°C to +60°C (-13°F to +140°F)
Humidity	10% to 95%, non-condensing
Vibration Endurance	3 Grms with M.2 (5 to 500Hz, X, Y, Z directions)
Dimensions	AIE510-ONX-16GB: 180 x 124 x 71.7 mm (7.08" x 4.88" x 2.82") AIE510-ONX-GMSL: 180 x 124 x 80.7 mm (7.08" x 4.88" x 3.17")
Weight (net/gross)	AIE510-ONX-16GB: 1.3 kg (2.86 lbs)/2 kg (4.4 lbs) AIE510-ONX-GMSL: 1.5 kg (3.3 lbs)/2.2 kg (4.85 lbs)
Certifications	CE, FCC Class A, UKCA, and E-Mark
OS Support	Linux Ubuntu 20.04 or later

Remote Management Enrollment

Allxon Portal – Enroll in 24/7 secure service to get the full feature of remote device management on one centralized cloud portal
*Enrollment Page: https://allxon.com/jetson/device_enroll/

Packing List

1 x 12-pin terminal block connector for Isolated DIO
1 x 3-pin terminal block connector for power
1 x Screw pack
4 x Foot pad
2 x 2-pin cable for remote power switch & ignition connector
1 x M.2 SSD thermal kit
1 x 5G module thermal kit

Power Protection

DC Adapter
OVP (over voltage protection)
OCP (over current protection)
SCP (short circuit protection)

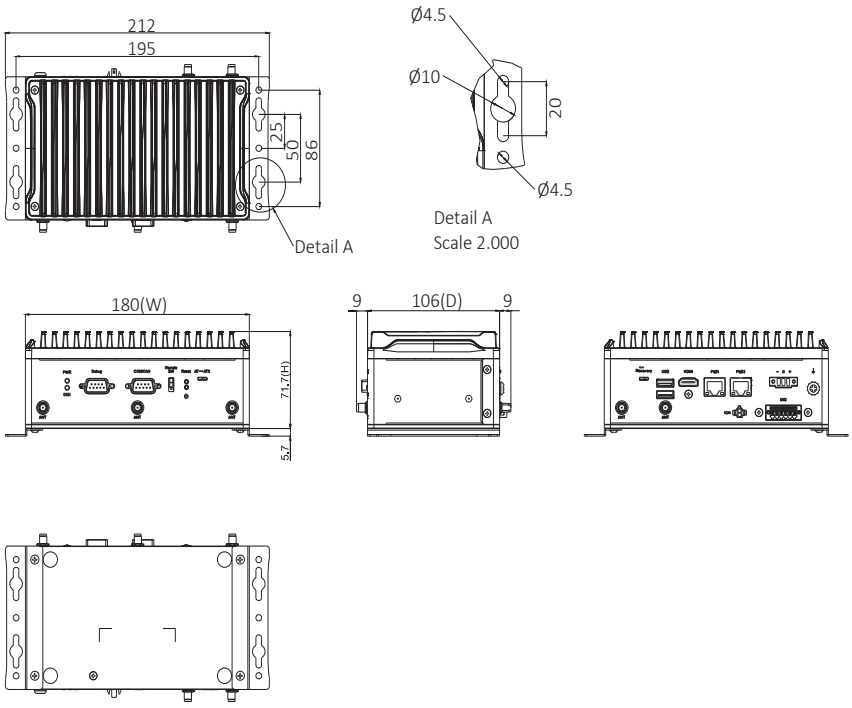
Ordering Information

Standard	
AIE510-ONX-16GB (P/N: E27H510100)	Fanless edge AI system with NVIDIA® Jetson Orin™ NX 16GB, 1 HDMI, 1 GbE PoE, 1 2.5 GbE PoE, 2 USB, 1 COM/CAN, and isolated DIO (4-in/4-out)
AIE510-ONX-GMSL (P/N: E27H510105)	Fanless edge AI system with NVIDIA® Jetson Orin™ NX 16GB, 1 HDMI, 1 GbE PoE, 1 2.5 GbE PoE, 2 USB, 1 COM/CAN, isolated DIO (4-in/4-out) and 4-CH GMSL
Optional	
	Wall mount kit
	DIN-rail mount kit
	VESA mount kit
M.2 NVMe SSD 128GB or above *The AIE510-ONX requires an SSD for image installation. Please place an order for the SSD if you require image installation services.	
LTE module kit *Please avoid using both the PCI Express Mini Card slot and the M.2 Key E slot simultaneously.	
Wi-Fi module kit *Please avoid using both the PCI Express Mini Card slot and the M.2 Key E slot simultaneously.	
5G module kit	
Power cord	
509000001500	24V/120W adapter

* Specifications and certifications may vary based on different requirements.

Dimensions

AIE510-ONX-16GB



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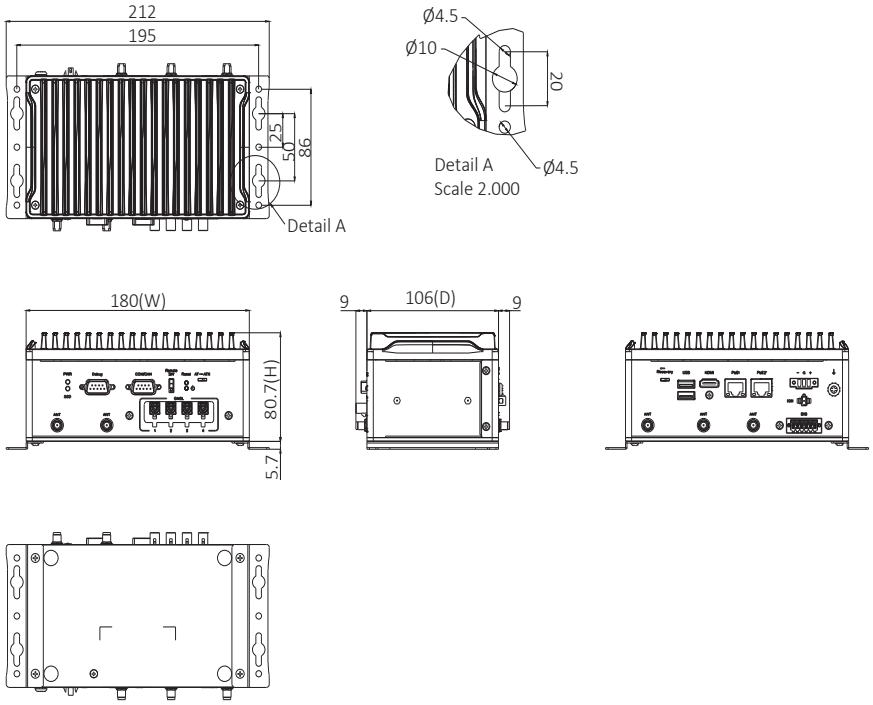
AIE510-ONX-GMSL



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