BOXER-8640AI

Fanless Embedded Box PC for AI@Edge with NVIDIA®
Jetson™ AGX Orin AI Accelerator

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Features

- NVIDIA® Jetson™ AGX Orin 32GB or 64GB
- LPDDR5 32GB (up to 64GB)
- 1792-core-Ampere GPU with tensor cores
- 4x RJ-45 for Power-over-Ethernet
- 1x M.2 2230 E-key + M.2 2280 M-key and 2.5″ SATA drive bay
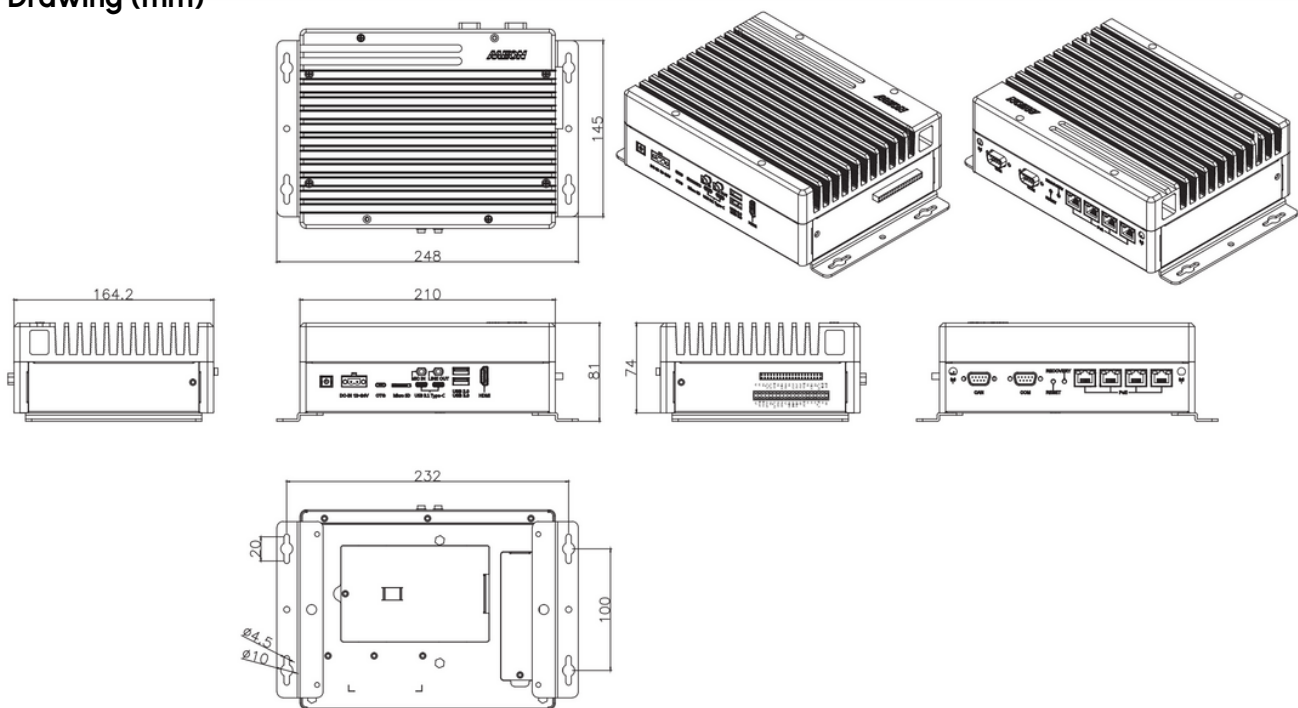
BOXER-8640AI – Powerful Embedded Box PC for AI@Edge Applications

Powered by the NVIDIA® Jetson AGX Orin™ platform, the fanless BOXER-8640AI brings exceptional AI capabilities to the edge for a broader range of applications than ever before. The Ampere Architecture of the NVIDIA® Jetson AGX Orin™ features 1792 CUDA® cores and 56 Tensor cores, delivering a performance of up to 200 TOPS. This empowers the BOXER-8640AI to harness groundbreaking inference performance simultaneously across multiple video streams. AAEON's expertly designed hardware extends the application potential by supporting the latest NVIDIA JetPack™ SDK, providing developers with a comprehensive framework for leveraging top-notch AI acceleration, multimedia, graphics, and computer vision tools for any application.

The versatility of the BOXER-8640AI in deployment is a key aspect of its utility, with an impressive temperature range of -4°F ~ 131°F (-20°C ~ 55°C), making it suitable for use in any environment. The density and sophistication of its design are represented by its four PoE LAN ports, combining power with versatile functionality.

The I/O configuration of the BOXER-8640AI is precisely tailored to channel the AI performance of the NVIDIA® Jetson AGX Orin™ and fully utilize the tools provided by the NVIDIA JetPack SDK. With a variety of ports, including HDMI, four PoE LAN, and four USB 3.2 ports, users have a comprehensive interface to customize solutions for their projects. Furthermore, the BOXER-8640AI offers extensive and expandable storage options, with 64GB eMMC onboard complemented by a MicroSD Card slot, a 2.5″ SATA drive bay, and NVMe via an M.2 2280 M-Key. The combination of these features provides customers with both the means and microarchitecture to bring their ideas to fruition.

Drawing (mm)

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Specifications	Product: BOXER-8640AI
SYSTEM	
CPU	AGX Orin 32GB: 8-core ARM® Cortex®-A78AE CPU or AGX Orin 64GB: 12-core ARM® Cortex®-A78AE CPU
AI Accelerator	NVIDIA® Jetson™ AGX Orin
RAM	LPDDR5 32GB or LPDDR5 64GB
Storage	64GB eMMC 5.1 1x Micro SD card slot 1x 2.5" SATA drive bay 1x M.2 Key M 2280
Expansion	1x USB 2.0 header (optional, circuit reserved) 1x M.2 Key E 2230 for WiFi/Bluetooth 1x M.2 Key M 2280 (NVMe) 1x 2.5" SATA drive bay 1x RS-232/422/485 pin header
Operating System	Linux (NVIDIA Jetpack™ 5.0 or above)
INTERFACE	
Ethernet	4x RJ– 45 for PoE LAN
USB	1x USB 3.2 Gen 1 (USB type A) 2x USB 3.2 Gen 1 (USB type C) 1x USB 2.0 (USB type A) 1x microUSB for OS flash
COM	1x RS-232/422/485
Video	1x HDMI
Audio	1x Mic-in and Line-out
Power	1x 2-pin terminal (DC input)
Other	1x CAN bus 1x microSD slot 1x Recovery switch 1x Power switch 1x 40-pin header compliant with NVIDIA Jetson Orin Nano Developer Kit (without CAN bus)
ENVIRONMENTAL	
Cooling	Fanless
Power Supply	12V ~24V DC
Remote Control & LED	1x Power LED
Operating Temperature	-20°C ~ 55°C, according to IEC60068-2 with 0.5 m/s AirFlow
Storage Temperature	-40° ~ 70°C
Vibration / Shock Resistance	Vibration: Random, 3.5 Grms, 5 ~ 500Hz Shock: 50G Peak Acceleration
Humidity	95% @ 40°C, non-condensing
Dimensions	210 (W) x 164,2 (D) x 74 (H) mm
Weight	3.76kg kg (gross) 2.9 kg (net)
Mounting	Wallmount
Certifications	CE/FCC Class A

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Scope of delivery

- 2x Wall mount brackets
- 1x Power connector
- 1x Screw package
- 1x BOXER-8640AI

Optional accessories

SKU	Accessories
1255X00066	120W Power Adapter
1702031802	Power Cord (US type)
1702031803	Power Cord (European Type)
170203180E	Power Cord (Japanese Type)