

BOX-PC

For rugged AI Edge applications

The Boxer-8240AI embedded controller from Aaeon is designed to combine AI (artificial intelligence), control, and communication (also CAN) into a single platform.



The Boxer-8240AI is able to run multiple AI inferences to provide security and crowd monitoring while the ongoing coronavirus pandemic (Source: Aaeon)

The heart of the device is the Nvidia Jetson AGX Xavier SoC (system on chip). It features the Volta GPU (graphics processing unit), which includes 512 Cuda cores and 64 Tensor cores, offering AI processing speeds up to 32 Tera operations per second (TOPS). The SoC features several power modes, allowing to utilize it for power-efficient operations or for maximal performance. The fanless PC is able to operate at temperatures from -10 °C to +55 °C and can be powered with 12 V_{DC} to 24 V_{DC}.

Beside CAN, the controller features four 1-Gbit/s PoE (power over Ethernet) ports powering connected cameras for real-time video processing. The platform also offers a 40-pin I/O connector, dual EIA-485 ports, several USB (3.2 and 2.0) ports, as well as audio line-in (mic) and audio line-out ports. Expandability is provided with the M.2 2230 E-key slot, suitable for wireless communication such as Wi-Fi, allowing to deploy the PC as an Edge network gateway. The device also provides storage with the M.2 2280 NVMe slot and SATA III (6 Gbit/s) storage, which can be installed with access panels on the bottom of the platform. ACLinux 4.9 (or above) compatible with Ubuntu 18.04 is the supported operating system.

Example applications include AGV (automated guiding vehicle) pathfinding or collision avoidance for factory robots. The device can also be used for running multiple AI inferences to provide security and crowd monitoring for compliance with health requirements during the ongoing coronavirus pandemic.

[of](#)