

EDGE AI SYSTEM

For AI solutions in robotics and vision applications

Advantech (Taiwan) announced the launch of CAN-connectable AIR-030 edge AI (artificial intelligence) system powered by Nvidia Jetson AGX Orin module.



AIR-030 system is powered by Nvidia Jetson AGX Orin module (Source: Advantech)

The Jetson AGX Orin module offers up to 275 Tera operations per second (TOPS) and the 8-times higher performance over the prior generation. The system comes with Deviceon for Edge AI software, which should facilitate the AI (artificial intelligence) development lifecycle management from AI container deployment and AI model over-the-air updates to retraining and performance optimization. The software also provides real-time monitoring and management from edge AI devices to cloud-based AI. The device series is suited for use in automated guided vehicles (AGV), autonomous mobile robots (AMR) as well as further robotics and vision AI applications.

The device dimensioning 200 mm x 220 mm x 74 mm is equipped with diverse I/O options including CAN for motion and direction control, LAN and optional PoE for camera input, and digital I/Os for sensor control. It also provides global safety and EMC certifications, including CE/FCC, CB, UL, BSMI, CCC, IEC 61000-6-2, and IEC 61000-6-4. This enables to deploy the system in heavy-duty industries. Multiple expansions allow to accommodate wireless modules and advanced edge AI applications. These include an M.2 B key 2280/3052 for NVME storage and 5G connectivity, an M.2 2230 E key for Wi-Fi connectivity, and a PCIe x16 slot for additional function cards support. Adding of a 10-GiB Ethernet card for high-speed data transmission or a GPU (graphics processing unit) for high-performance graphics computing is possible. The series bundles with the Linux Ubuntu 20.04 operating system environment and supports the Nvidia Jetpack 5.0 software development kit as well as the Isaac platform. AIR-030 early samples will be available in November.

Exhibited at event for IoT, AI, and robotics

Advantech also demonstrated its latest CAN-capable solutions for AI, wireless (also 5G) connectivity, and Edge computing at [Sido Lyon \(France\)](#). The [AIR-020X](#) is a edge AI system powered by the Nvidia Jetson Xavier. It is integrated with the company's Wise-Deviceon IoT (Internet of Things) device operation management software to support remote connectivity, device and data management along with over-the-air (OTA) updates. This allows to deploy production-ready AI inference models and remote desktops. Dashboards and situation rooms, on top of AI statistics and inference results using Grafana, can be created.

The MIC-733-AO computing solution, which can be extended by a CAN port via a Mini PCIe interface, is used for AI and video analytics. It incorporates two 10-GiB Ethernet ports and a Jetson AGX Orin module from Nvidia. The MIC-715-NXA1 inference system with two CAN interfaces provides 384 Cuda parallel computing cores and 21 TOPS processing performance. Manufacturer's ICR-4453 5G cellular router/gateway with a CAN interface incorporates a quad-core Arm Cortex-A72 processor with a 1-GiB RAM, which runs at 1200 MHz.

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