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EDGE AI COMPUTER

Based on Nvidia Jetson processors

Advantech launched the AIR-020 series of AI (artificial intelligence) PCs for edge AI applications such as traffic monitoring, defect inspection, AGV (automated guided vehicles), people counting, medical imaging, etc.

Depending on the requirements, the three AI PCs offer different interfaces (Source: Advantech)

The three variants are powered by the Nvidia Xavier NX, Jetson TX2 NX, or Jetson Nano SoM (system on module). The design with 139 mm x 110 mm x 44,5 mm simplifies integration into applications. The AIR-020X supports up to 21 Tera operations per second (TOPS) and 1058 frames per second (FPS) targeting high-resolution imaging processes. AIR-020T and AIR-020N support 1,33 / 0,5 TOPS and up to 109 / 48 FPS. The devices require a voltage input of 12 VDC to 24 VDC, operate at temperatures from -10 °C to +55 °C, and provide vibration and humidity resistance.

The I/O ports of the devices vary depending on the type and include CAN, two USB 3.2 A, USB 3.2 C, 1, two Gbit/s Ethernet ports, EIA-232, EIA-422, EIA-485 interfaces, and 8-bit digital I/Os for data acquisition and communication. The boxes are pre-installed with a 4-GiB / 8-GiB LPDDR4 memory and a 16-GiB eMMC 5.1 card. Moreover, the PCs provide 128 GiB of M.2 data storage as the default setting for AI usage.

The PC series bundles with Ubuntu 18.04 LTS operating system environment, Advantech Edge AI Suite, and Jetpack SDK 4.5.1 (software development kit). These enable the designers to develop AI models and to deploy them in their applications. For data security, the devices adopt the TPM 2.0 trusted platform module and secure boot, as required for compute-intensive industrial applications and better system security on the edge.

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