

IN-VEHICLE COMPUTER

For fleet management and video surveillance

Advantech offers the Trek-60 modular in-vehicle AI platform with dual CAN supporting diverse in-vehicle protocols.



The platform is extensible due to its design (Source: Advantech)

The embedded CAN interfaces support proprietary CAN-based higher-layer protocols, J1939, and OBD-II for vehicle monitoring and diagnostics. The integrated power management system supports ignition on/off/delay and wake-up event control via CAN. The device embeds the Intel Core i7/i5/Atom E3900 quad-core processor. To enable hybrid video surveillance, it supports up to eight camera input channels. GNSS (global navigation satellite system), WLAN (wireless local area network), Bluetooth, and WWAN (wireless wide area network) technologies are used for real-time communication, vehicle tracking, and data collection.

Supporting a power input range of 9-V_{DC} to 32-V_{DC}, and certified according to MIL-STD-810G and 5M3 for shock and vibration tolerance, the device can withstand operation in extreme in-vehicle environments. An optional IP65-rated I/O cover can be included. The design allows to extend the system by additional I/O modules. An optional Edge AI module, 5G mobile radio communication, DSRC (dedicated short range communication), and V2X (vehicle-to-any communication) modules can be added. For enhanced vehicle management, a built-in G-sensor and gyroscope are available. Intel's Openvino TM toolkit is integrated in the platform.



MIO-5375 SBC features the 11th Gen Intel Celeron processor, which is up to 25 % faster than its predecessor (Source: Advantech)

Another product from Advantech is the CAN-enabled MIO-5375 single board computer (SBC) featuring the 11th Gen. Intel Celeron processor. The processor with two or four cores includes a CPU (central processing unit), which is up to 25 % faster than previous models from the company. The SBC embeds a maximal 64-GiB dual-channel DDR4-3200 memory, an M.2 slot for PCIe Gen.4 extensions, and four SSDs (solid state drives). Further interfaces include HDMI, DP, LVDS, eDP, two Gbit/s-Ethernet, USB Type-C, USB 3.2, I²C, and TPM. The SBC is able to use the company's Wise-Deviceon software solution for operation, monitoring, predictive maintenance, and remote management of IoT (Internet of Things) devices. The solution is dedicated for machine vision, medical, defense, and AI (artificial intelligence) applications.

In 2020, the company has been ranked fourth place on the Best Global Taiwan Brands list. This is Advantech's best ranking since Interbrand started to announce Taiwan's international brands in

2003.

[of](#)