BOX PC

Artificial intelligence vehicle computer with CAN interface

Syslogic's AI-assisted (artificial intelligence) vehicle computer RS A3N combines the features of a Nvidia Jetson Xavier NX module with the features of an industrial computer. It comes with one CAN interfaces.

Syslogic, member of the Nvidia Partner Network, presented the fanless embedded computer based on the Jetson Xavier NX module (Source: Syslogic)

The box PC is suitable for computer vision, inferencing, or sensor fusion under challenging conditions. As a member of the Nvidia Partner Network, Syslogic has early access to these modules. The company began developing a platform based on Jetson Xavier NX in the middle of last year. According to Syslogic, the AI box PC is the first embedded system based on this module and is available now.

The company, supplements the Xavier NX module with a carrier board developed and manufactured in-house. It is designed for increased requirements such as shock, vibration, and extreme temperatures. Furthermore, the electronic components come in a housing with protection class IP65. The CAN and Ethernet interfaces are designed with screw-on connectors.

For AI-assisted vehicle applications

The AI vehicle computer was primarily developed for mobile use. However, it can generally be used wherever the environmental conditions are particularly demanding. For example, it is suitable for use in agricultural vehicles, construction machinery, buses, autonomous mobile robots (AMRs), as well as in so-called smart city applications.

The computer features one CAN, two Ethernet, one USB 3.1, and one HDMI interfaces. Two USB interfaces and a Displayport interface are also available behind the service cover. The product uses an M.2 interface (PCIe) to expand the flash memory from 125 GiB to 2 TiB. End-to-end connectivity can be implemented using optional LTE, GNSS, and Wi-Fi capabilities. The company, will soon launch additional Xavier NX based embedded systems with an expanded interface layout. Among other things, it will feature integrated PoE (Power over Ethernet) and digital I/Os.

With GPU-accelerated Nvidia technology, the vehicle computers are suitable for AI applications such as sensor fusion, computer vision, perception, machine learning, or intelligent video analytics (IVA). Incoming sensor data is processed in parallel, which makes it possible for autonomous decisions to practically be derived in real time. Typical applications include driver assistance systems, autonomous driving, monitoring tasks, as well as object and pattern recognition.

Nvidia provides for all Jetson modules a complete developer environment with numerous libraries. The time-to-market for future AI applications is thus reduced, explained the company. The Nvidia Jetpack software development kit (SDK) includes the Linux4Tegra operating system, the parallel computing platform Cuda, and support for real-time operating systems. The Jetpack SDK also has libraries for deep learning and computer vision and supports drivers for various sensors. Nvidia also provides developer tools. All Syslogic AI computers also come with a pre-installed board support package.

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