CAN *Newsletter Online*

ARTIFICIAL INTELLIGENCE

Nvidia-based embedded systems

Syslogic is presenting two embedded systems for AI (artificial intelligence) inference applications. The two embedded box PCs are based on Nvidia's Jetson TX2 platform and are suited for use in vehicles.

AI meets mobile computing, the RM A2 embedded computer (Source: Syslogic)

Syslogic is a member of the Nvidia Jetson partner program and is manufacturer of AIâ€'capable industrial computers based on Nvidia's Jetson platform. With the RS A2 vehicle computer and the RM A2 vehicle computer Syslogic completes its portfolio for AI applications. For vehicle use, they also feature an integrated ignition controller and a disturbance-free CAN interface. Depending on the application, Syslogic supplements I/Os or wireless connections.

The recently launched vehicle computers were specially developed for mobile use. They are used for AI applications in vehicles such as AGVs (automated guided vehicles), special or railway vehicles, and in agricultural machinery.

The RS A2 and RM A2 vehicle computers differ in terms of height and interfaces. Compared to the RS A2, the RM A2 features four additional LAN interfaces that can be configured as PoE (Power over Ethernet). Both computers feature the same Nvidia TX2 SoM (system on module) from the Jetson series, which is combined with a motherboard developed and manufactured by Syslogic. The platform was specially developed for AI inference applications such as object or person recognition, autonomous driving, predictive maintenance, or condition monitoring of mobile machines or vehicles. The Jetson TX2 platform combines serial and parallel processor technology, i.e. CPU and GPU. With 256 Nvidia CUDA computing units, the TX2 module also handles demanding inference applications, thus offering AI at the edge.

The RS A2 embedded computer (Source Syslogic)

In addition to the SoMs, the company Nvidia offers a software package. The Jetpack software development kit (SDK) includes the board support package, the parallel computing platform Cuda, support for real-time operating systems, and Linux4Tegra. The Jetpack SDK also has libraries for deep learning and computer vision and supports drivers for various sensors. The company also provides a range of developer tools. After all, software is by far the biggest cost driver in AI projects, explained the company. The Jetpack SDK reduces development efforts and expenses for companies by providing a range of tools and libraries, the company added.

Hardware for industrial AI applications

Syslogic integrates the SoMs into embedded systems. The RS A2 and RM A2 vehicle computers are designed for long-term reliable operation under difficult conditions, said the company.

The devices come with an electronic design which provides absence of moving parts, screw-on plug connectors, and a housing that meets the IP40 protection class. The AI vehicle computers are also suitable for the temperature range from –40 °C to +80 °C at component level. In addition to vehicle computers, Syslogic offers Nvidia-based embedded systems specifically for railway applications, for smart city, or for industrial automation.

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