

ARTIFICIAL INTELLIGENCE COMPUTER

## IP67-rated controller with Nvidia processor

At the SPS 2019 exhibition, Syslogic presents its AI (artificial intelligence) Rugged Computer. It provides CANopen or J1939 connectivity.



*The AI computer is based on Nvidia's Jetson-TX2 processor platform (Source: Syslogic)*

The so-called artificial intelligence (AI) is increasingly required locally due to latency and bandwidth limitations. This is a trend that Syslogic recognized. Accordingly, the Swiss company now offers a product range that is suitable for AI applications such as machine vision or machine learning. The newest item in this product range is the AI Rugged Computer. It uses Nvidia's TX2i SoM (System on Module) from the Jetson series, which forms the core of the AI Rugged Computer. Typical applications include object or person recognition, autonomous driving, predictive maintenance, optical authentication, and condition monitoring of machines or vehicles.

Syslogic maintains a close partnership with Nvidia within the Jetson Ecosystem. The Swiss supplier combines the AI-enabled processor technology from Nvidia with more than thirty years of

experience in the development and production of robust industrial computers. Florian Egger from Syslogic explained: "The AI Rugged Computer is first-of-its-kind on the market."

The product's robustness was accomplished by consistent component selection, omission of moving parts, screw-on connectors, and an ultra-rugged housing that is resistant to dust, water, and chemicals. A Gore-Tex ventilation module ensures pressure equalization in the housing, thus extending product life and increasing reliability. The unit is also suitable for a temperature range from -40 °C to +85 °C at component level. For vehicle use, the computer has an integrated ignition controller and a disturbance-free CAN interface running CANopen or J1939.

Accordingly, the devices are used wherever the requirements for robustness and durability are particularly important, for example, in railway vehicles, construction, and agricultural machinery, or in mining vehicles. However, Syslogic is not only targeting vehicle applications, but also markets like smart city, industrial automation, and traffic engineering.

Currently, Syslogic is implementing an AI project with Cortexia. A customer-specific version of the AI Rugged Computer is used in this project to measure the cleanliness of cities. AI algorithms will show how cleanliness can be improved and how cleaning efforts can be reduced. Effective cleaning also reduces environmental pollution. A typical smart city application that shows how AI can be used to improve economic efficiency and environmental compatibility.

Syslogic wants to make integration of AI as easy as possible for its customers. Therefore, all AI embedded systems are delivered with a pre-installed Ubuntu board support package (L4T - Linux for Tegra). Additionally, a developer environment (JetPack) including CUDA libraries is installed. The Nvidia software development kit (SDK) and a deep learning framework for implementation of applications are available.

With regard to the upcoming SPS tradeshow, Florian Egger said: "We are looking forward to the response at SPS 2019." The demand for AI-enabled embedded systems is already strong, according to Egger.

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