CAN Newsletter Online

EMBEDDED PC

Expansion board with CANopen options

HMS' Econ 100 already comes with two CAN interfaces. It can now be extended with an expansion board. The board offers more serial network options via Compact-Com modules.

The Econ 100 with a Compact Com module for Profinet (Photo: Ixxat)

WITH THE IXXAT ECON 100, THE SWEDISH COMPANY offers a stand-alone embedded PC for real-time Industrial Ethernet. It is an ARM-based embedded PC platform for top-hat rail mounting incorporating a Linux operating system and multi-protocol support. Customer-specific gateway and control solutions can be implemented for a variety of different fieldbus and industrial Ethernet standards.

Expansion board for multi-protocol approach

In addition to the on-board interfaces (two Ethernet, two CAN, and two USB interfaces), the embedded PC can be expanded by means of a recently launched expansion board: Alongside analog and digital I/Os, the expansion card offers a slot for HMS Anybus Compact-Com modules, a serial interface, and 512 MiB NVRAM.

The Compact-Com modules are available for a variety of fieldbus and Industrial Ethernet networks including CANopen and can be interfaced from the application software by means of the Anybus programming interface. Together with the Ethercat and CANopen master solutions that are already available, this multi-protocol approach makes the embedded PC a platform for customer-specific control solutions with communication included.

The expansion card also provides 24 inputs and outputs, e.g. for direct connection to sensors and actuators. It comes with a digital output current of up to 2 A and a 12-bit resolution for the analog channels. The EIA-232/485 interface makes it a link between real-time Industrial Ethernet or CAN-based networks and serial applications.

With the NVRAM available on the expansion card, the embedded PC covers data security for the user. Using this feature, the embedded PC is suitable for critical applications such as automated handling technology, where the last operating state with all process variables must be retained in case of power failures.

Simplified programming with Soft-PLC

In addition to supporting programming in C/C++, HMS offers a Soft-PLC programming environment in collaboration with Copalp (France). The programming environment is consistent with IEC 61131-3 for simple programming and configuration of control applications. The software package supports CANopen, Ethercat, Powerlink, and Ethernet/IP.

In order to support implementation of complex applications, various application development kits for the PC are available. The kits include a board support package incorporating interface drivers, sample applications, the respective protocol software package pre-installed on an SD card, and the Linux operating system.

The PC offers up to 1 GiB RAM, a rugged metal casing, as well as a fan-less design with an extended temperature range of -40 °C to +60 °C. In addition to the standard version, it is also available as a board-level product. OEM versions with specific hardware adaptations and adapted application variants are available on request.