CAN *Newsletter Online*

EMBEDDED WORLD 2020

Covid-19 influenced trade fair

The trade show in Nuremberg (Germany) is an early indicator of the annual trends in embedded electronics. This year, the coronavirus, also known as Sars-CoV-2/Covid-19 influenced the Embedded World 2020.

(Source: CAN in Automation)

About 900 exhibitors and around 13 800 visitors attended the trade show. In the last year 1 117 companies and 31 000 visitors were part of it. The exhibitors were mostly small- and middle-sized companies and the halls were smaller than expected one month ago. One benefit of this situation was that one had the possibility to speak to a needed person without delays. Although the number of exhibition visitors was significantly lower than in the years before (we already reported), we managed to find CAN-related products at the fair.

Most companies offering CAN-relevant products were provider of industrial PCs (IPCs) or diverse board variants, which can be embedded in IPCs or HMIs (e.g. displays). Aaeon (Taiwan) produces the VPC-5600S fan-less in-vehicle network PC with video recorder function. The unit supports the CAN-based J1939 protocol. Acromac (USA) presented I/O board modules using the mPCIe interface formats. The AP560 communication module offers four isolated CAN channels.

C & T Solutions (Taiwan) is a manufacturer of ACO-3000, ACO-6000, and RCO-3000 IPCs, which optionally feature a CAN interface. Compmall (Germany) produces embedded boards, single board computers, embedded and panel PCs, touch HMIs and offers designs of complete systems. Connect Tech (Canada) exhibited the CAN-connectible Rudi embedded system with integrated Nvidia Jetson computer-on-module system. EKF Elektronik (Germany) provides PCI boards with CAN FD interface(s). If required by customers, the company realizes devices with CANopen connectivity. Also, Inonet Computer (Germany) can equip its condition monitoring IIoT (Industrial Internet of Things) solutions with CAN according to customer needs.

The VEX-6225 industrial embedded computer and the iBPC-75CE/FE box PC are CAN-enabled products from ICOP Technology (Taiwan). The CAN-capable Beaglecore BCM1.ETR embedded board by Iesy (Germany) is based on the Beaglebone Black open-source single-board computer from Texas

(Source: CAN in Automation)

Instruments. Unfortunately, Texas Instruments wasn't part of the fair. Iesy makes the board-competitor of Raspberry PI suitable for industrial applications. LCD Mikroelektronik (Germany) optionally integrates CAN-connectivity in its touch displays using the company's interface boards. Micormax Computer Intelligence (USA) designs rugged M-Max computer systems for mission critical (e.g. military) applications. The embedded CAN interface is provided by Kvaser (Sweden). The MS-98H5 single board computer from MSI Industrial Platform Solution (China) supports two CAN ports.

CAN in Automation (CiA) was also part of the fair and promoted the availability of CAN FD building blocks (Source: CAN Newsletter)

Seco (Italy) offers a variety of CAN-connectible HMIs, box PCs, IIoT platforms, single board computers as well as Qseven and Smarc modules. For the modules, development and starter kits are available. Shenzhen Geshem Technology (China) providess the TPC-GS0881 rugged tablet PC with an optional CAN port. Sintrones Technology (Taiwan) is a manufacturer of CAN-capable in-vehicle on-board computers used e.g. in trains and cars.

Pico and EDM system-on-module series comprise CAN-connectible boards and evaluation kits from Technexion (Taiwan). UP Xtreme edge compute enabling kit by Up Board features a CAN interface and is used in markets of IoT (Internet of Things), automation, retail, and robotics. Rugged industrial and in-vehicle telematics tablets are offered by Waysion Technology (China). For example, the 7-inch Q7S HMI supports J1939 or proprietary higher-layer protocols. Another provider of a 7-inch rugged tablet PC (PC-7146) with J1939-connectivity is Zhangzhou Lilliput Electronic Technology (China).

From Melexis (Belgium) users can get automotive semiconductor sensors as well as integrated circuits for motor driving, car networking, and wireless communication. The company also provides the TH8056 single-wire CAN transceiver. CAN FD transceiver modules (TD301/501MCANFD and TD331/531MCANH/FD) with a

built-in isolated DC/DC converter are available from Mornsun Power (China). Classical CAN transceivers are also included in the manufacturer's product portfolio.

The Germany company Microcontrol offers a range of CAN-related products, including CANopen, CANopen FD, J1939, and J1939 FD protocol stacks and controllers. Embedded Office (also Germany) provides an open source CANopen stack. The stack is compliant to CiA 301, CiA 305, and CiA 304. CAN in Automation was present with the availability of CAN FD building blocks.

Keysight and Rhode and Schwarz (USA and Germany) both demonstrated their CAN FD oscilloscopes. Owasys/M2M again presented its IoT gateway with four CAN interfaces while Deutschmann (Germany) once more showed its Unigate IC bus node for industry protocols including Devicenet and CANopen.

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The CAN FD oscilloscope from Keysight in action (Source: CAN in Automation)