CAN FD news

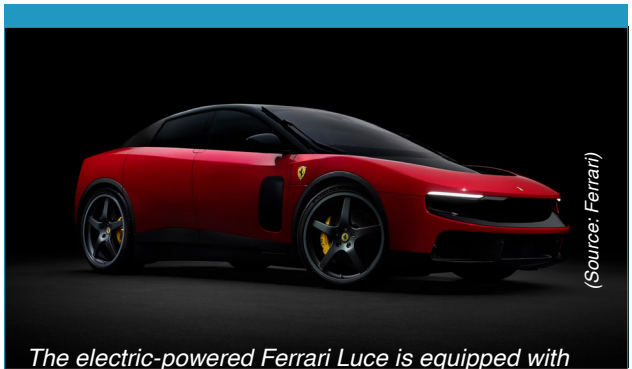
(Source: Adobe Stock)

AI board for humanoid robots

(Source: Advantech)

Advantech (Taiwan) has developed the MIB-742 board, coming with up to four CAN FD interfaces. The Physical AI (artificial intelligence) product is powered by Nvidia's (U.S.A.) Jetson T5000 processor. It is intended for sensor fusion applications in humanoid robots. Besides the CAN FD ports, the board features one 5-Gbit/s and up to four 25-Gbit/s Ethernet interfaces as well as an 8-channel video port. The AI processor comes with a JTAG (Joint Test Action Group) and a debug UART (universal asynchronous receiver/transmitter) interface.

For safety-critical robotics environments, the galvanic-isolated CAN FD interfaces protect the AI compute domain from actuator-induced noise and faults. The CAN interfaces feature TTCAN (time-triggered CAN) functionality (level 0, 1, and 2). This means, they can be synchronized with external events. Each CAN FD frame buffer has its own CAN-ID mask, supporting a programmable FIFO (first-in, first-out mode). A programmable loop-back mode for self-test is supported, too. *hz*



(Source: Ferrari)

The electric-powered Ferrari Luce is equipped with sub-layered CAN FD networks connected to the Ethernet-based backbone network. The CAN-linked e-Box, located behind the second level of modules, houses the power electronics, which include the BMS (battery management system), fuses, relays, and various sensors (current, gas, etc.). It manages power flows and communication via CAN interrupts within 3 ms, in the event of a short circuit exceeding 2000 A.

Digital counter device

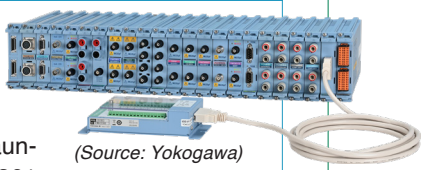
The Supercounter device comes with a CAN FD interface (Source: Dewesoft)

The 8-channel counter input device by Dewesoft (Slowenija) is intended for the Sirius XHS system. The module supports event counting, waveform timing as well as encoder, tachometer, or gear-tooth counting. It provides CAN FD connectivity, allowing bit rates up to 8 Mbit/s. The counters attached to the Sirius XHS system boast a time base of 150 MHz, a maximum bandwidth of 15 MHz, and a 32-bit resolution. They feature advanced input filtering to address glitching issues. Counter inputs are compatible with 3,3-V TTL/CMOS logic levels.

The counter channels can also be used as a digital output. Digital outputs utilize 5-V push-pull logic with a fast-triggering option. The triggers out module enables digital outputs based on custom conditions. Either from the analog input channel or the digital input channel. This trigger option operates in real-time on the hardware itself. Users have the flexibility to customize the shape of the output pulse in terms of delay and duration. The total response time can go below 500 ns, proving beneficial in time-critical applications such as emergency shutdowns or alarms.

The counter device is suitable for electric motor testing, where in addition to the voltage and current inputs the user can connect the frequency output of the torque sensor and rotational speed sensor to the counter inputs. The company also supplies a power analyzer and motor analysis software solution. *hz*

Power measurement module with CAN FD



(Source: Yokogawa)

Yokokawa (Japan) has launched the updated 720301 power measurement module for the company's data acquisition systems. It features CAN FD connectivity.

The energy storage infrastructure, from EV (electric vehicle) batteries to UPS (uninterruptible power supply) in data centers, is expanding, driven by the accelerating electrification process and the AI (artificial intelligence) race. The updated module has been developed to meet the demand for AC (alternating current) accuracy assurance of voltage, current, and power in high-speed data acquisition applications, from EVs to UPS.

The all-in-one module simplifies the synchronized measurement of guaranteed-accuracy power, voltage, and current, combined with signals such as sound, vibration, and acceleration. In addition, the product's high-speed cycle-by-cycle power calculation, with a computation interval of 0,1 ms, enables precise capture of power fluctuations during backup operations of UPSs and emergency power generators. *of*

CAN-FD repeater and CAN-FD-to-Ethernet gateway

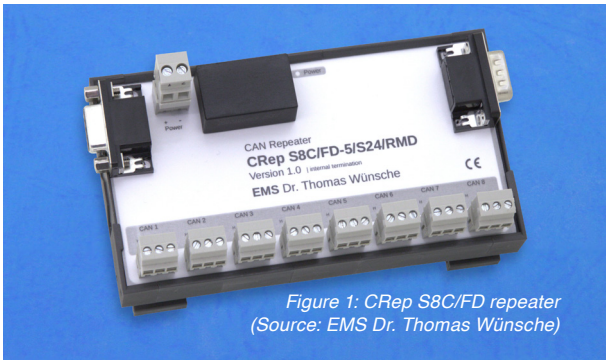


Figure 1: CRep S8C/FD repeater (Source: EMS Dr. Thomas Wünsche)

Figure 2: EtherCAN/FD-S gateway (Source: EMS Dr. Thomas Wünsche)

EMS Dr. Thomas Wünsche (Germany) launched the CRep S8C/FD repeater for CAN FD and CAN CC (classic) networks. The device provides eight CAN (FD) channels, a latency of 160 ns, and the ability to implement star-shaped network topologies. It features the TCAN1462 transceiver From Texas Instruments (TI) implementing the signal improvement capability (SIC). A key feature is the ability to reduce installation costs by cascading up to three devices. The repeater can permanently isolate dominant bus segments and features split termination (2 x 60 Ω) or, optionally, a high-impedance termination. The galvanic isolation of the supply voltage from the CAN system provides additional safety.

The company has also expanded its product portfolio by the EtherCAN/FD-S gateway that enables connection of CAN-CC and CAN-FD systems to Ethernet networks. The compact, DIN-rail-mountable device deploys a galvanically isolated TCAN1462 CAN SIC transceiver from TI. Supporting the FreeRTOS operating system, the gateway is suited for industrial applications. The device is equipped with a USB-C interface for maintenance (e.g., for factory settings or network information) and an integrated web server for configuration. The device not only enables remote control of CAN systems in LAN (local area network) environments but also allows multiple CAN networks to be connected via Ethernet, for example, through back-to-back operation of two devices. *of*

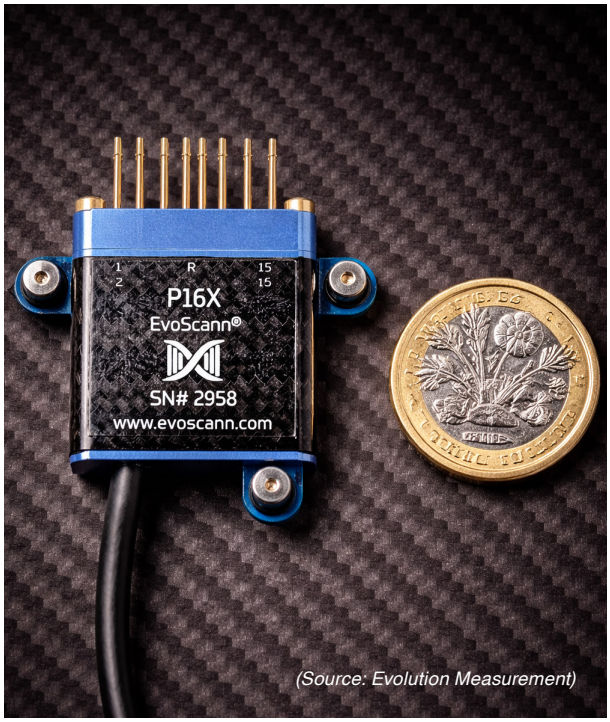
Multi-channel pressure scanner

Evolution Measurement (UK) has launched the Evoscann P16X-A device designed for aerodynamic testing. The product features plug-and-play CAN FD connectivity, allowing power and data distribution through a single cable. It weighs 17 g, enabling installation directly within aero-foils, ducts, and model surfaces, capturing data, where it matters most.

The device is supported by an optional anti-vibration mounting frame and a removable manifold. This enables faster setup, improved durability, and easier integration across a range of test environments, stated the supplier. At its core, the product integrates 16 piezo-resistive sensors with individual 24-bit A/D (analog/digital) converters. Integrated temperature compensation ensures reliable data in changing environments.

The University of Southampton Formula Student team has used the Evoscann product. By deploying the scanner during wind tunnel and on-track testing, the students captured in real-time pressure data across the vehicle's surfaces. This enabled them to validate and iteratively improve their CFD (computational fluid dynamics) simulations, refining their aerodynamic package for minimal drag and maximum efficiency, critical factors in endurance and overall energy performance.

"As the lead aerodynamics sponsor for the Southampton team, we're thrilled to see our technology directly contributing to such a significant engineering



(Source: Evolution Measurement)

achievement," said Paul Crowhurst, CEO and founder of Evolution Measurement. "Their perfect efficiency score is a powerful validation of data-driven design and a shining example of how accessible, high-quality instrumentation can accelerate student innovation." *of*

Interface tests for CAN FD and LIN

Göpel Electronic (Germany) has introduced an extension for the Scanflex Multi Port Bus I/O Module 9305. With the new BAC (bus access cable) module CAN FD and LIN systems can be tested for functionality during production. The module can be connected to the Scanflex system, which enables access to test functions of the Scanflex JTAG/boundary scan controller. The controller then simultaneously generates and dynamically distributes the vectors and control sequences to the interfaces. The Scanflex controller is based on multi-core processors and FPGAs, which allows users to execute test and programming technologies from embedded JTAG solutions. Scanflex II has eight parallel test access ports for up to 100 MHz. This enables synchronized execution of embedded test, debug, and programming operations via boundary scan, processor emulation, chip integrated instruments, or the embedded diagnostics methods. *of*

Scalable test platform for ECUs

The Magiccar Compact Plus is a compact and scalable desktop test platform launched by Göpel Electronic (Germany). It covers key areas of ECU (electronic control unit) development and validation. The test platform supports, network tests, infotainment tests, quality, functional, and endurance tests for ECUs. The system features an integrated, programmable power supply. It provides residual bus simulations, including diagnostics and SecOC (Secure onboard communication) across CAN FD, LIN, Flexray, and Automotive Ethernet networks. Combined with expandable fault modules, targeted interface and robustness tests can be carried out. Critical communication states can be simulated and analyzed in a reproducible manner to verify the behavior of ECUs. For extended tests, external devices such as loggers, multimeters, oscilloscopes, or signal generators can be integrated. In addition, the platform has been enhanced with an on-board logging function to an internal SSD. *of*

Expanded PCIe board

Kvaser (Sweden) introduced the M.2 PCIe xCAN main board with a higher level of flexibility for compact CAN (FD) system design. Replacing the fixed-configuration M.2 PCIe 4xCAN, this cableless main board pairs with the new Kvaser Flex DB9 CAN (FD) cables, sold separately, to deliver up to four distributed CAN (FD) channels to a system.

Designed for space-constrained and embedded environments, the xCAN board comes in a 22-mm × 80-mm format with a break-away section that enables to adapt it to either 80-mm or 60-mm M.2 slots. Each Flex DB9 cable connects the board to a single CAN channel, allowing developers to configure up to four channels depending on the application. *of*

Force and humidity measurement module

With the CMM9, MRS Electronic (Germany) is expanding its portfolio of CAN-FD-based measurement modules for mobile machinery. The module combining force and moisture measurement in a compact device (95 mm x 60 mm x 36 mm) is developed for use in off-highway machinery from agricultural balers to harvesting and forage equipment, etc. Through direct signal processing within the module, analog sensor signals (e.g., from strain gauge load cells) are amplified, digitized, and transmitted to the vehicle control system.

Its robust design, featuring an IP6K8 protection rating and a temperature range from -40 °C to +85 °C enables operation under demanding operating conditions. Device's configuration and adaptation to different applications is possible using the MRS Applics Studio programming tool. *of*

Rugged AI computers

(Source: Syslogic)

Syslogic (Germany) launched the RSL A5AGX and RML A5AGX rugged computers with up to six CAN CC/CAN FD interfaces. The devices are based on Nvidia Jetson Thor modules with AI computing performance of up to 2070 FP4 Tera-Flops (floating point operations per second), which is 7,5 times the performance of the Nvidia AGX Orin. Power consumption can be configured between 40 W and 130 W. Typical applications include real-time AI reasoning, autonomous navigation, and multimodal AI agents for humanoid robots, autonomous transport vehicles, and AMRs (autonomous mobile robots). Image processing, sensor fusion from lidar, radar, and camera data, as well as decision-making, are performed with near-zero latency, informs the company. The dual-deck RML A5AGX is available with four 1-Gbit/s Single Pair Ethernet (SPE) interfaces and supports typical automotive sensors for use in vehicles. Additionally, the devices provide cellular 5G, RTK GNSS, and Wi-Fi 7 connectivity as well as NVMe SSD storage capacity of up to 2 TiB. The computers are designed for an operating temperature range of -25 °C to +60 °C and comply with IP67 and IP69 protection ratings. *of*