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Computer-on-modules with two CAN FD interfaces

Congatec presents its Smarc 2.1 computer-on-modules with NXP i.MX 8M Plus processor for industrial edge analytics, embedded vision, and artificial intelligence (AI) at Embedded World 2021 digital. The SMX8-Plus provides two CAN FD interfaces.

Peripheral interfaces include 2x CAN FD, 1x PCIe Gen 3, 2x USB 3.0, 3x USB 2.0, 4x UART as well as 14x GPIO (Source: Congatec)

The SMX8-Plus module allows industrial embedded systems to see and analyze their surroundings. This includes situational awareness, visual inspection, identification, surveillance, and tracking as well as gesture-based contactless machine operation and augmented reality, explained the company.

The 2-W to 6-W quad-core processor platform is Arm Cortex-A53 based. It includes an integrated neural processing unit (NPU) for AI computational power, and an image signal processor (ISP) for parallel real-time processing of images and video streams (3 frames x 60 frames) from the two integrated Mipi-CSI camera interfaces. The modules also come with 3,5-inch carrier boards as well as Basler camera and AI software stack support. Application areas of the products range from smart farming and industrial manufacturing to retail, and from transportation to so-called smart cities and smart buildings.

The modules feature an industrial temperature range of 0 °C to +60 °C and an extended temperature range of -40 °C to +85 °C as well as in-line ECC for up to 6 GiB LPDDR4 memory. For data storage, engineers will find onboard up to 128 GiB eMMC, which can also operate in pSLC mode. Besides others, peripheral interfaces include two CAN FD interfaces. For real-time networking, the module offers 1x Gbit with TSN support plus conventional Ethernet. An optional M.2 Wifi and Bluetooth LE card soldered on the module adds wireless connectivity. The supported operating systems include Linux, Yocto 2.0, and Android.

The Arm Trustzone integrates the resource domain controller (RDC) for isolated execution of critical software, and the secure high assurance boot mode to prevent the execution of unauthorized software during boot.

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