

# CAN Newsletter Online

1-GHZ SINGLE-CORE MPU

## For low-power artificial intelligence applications

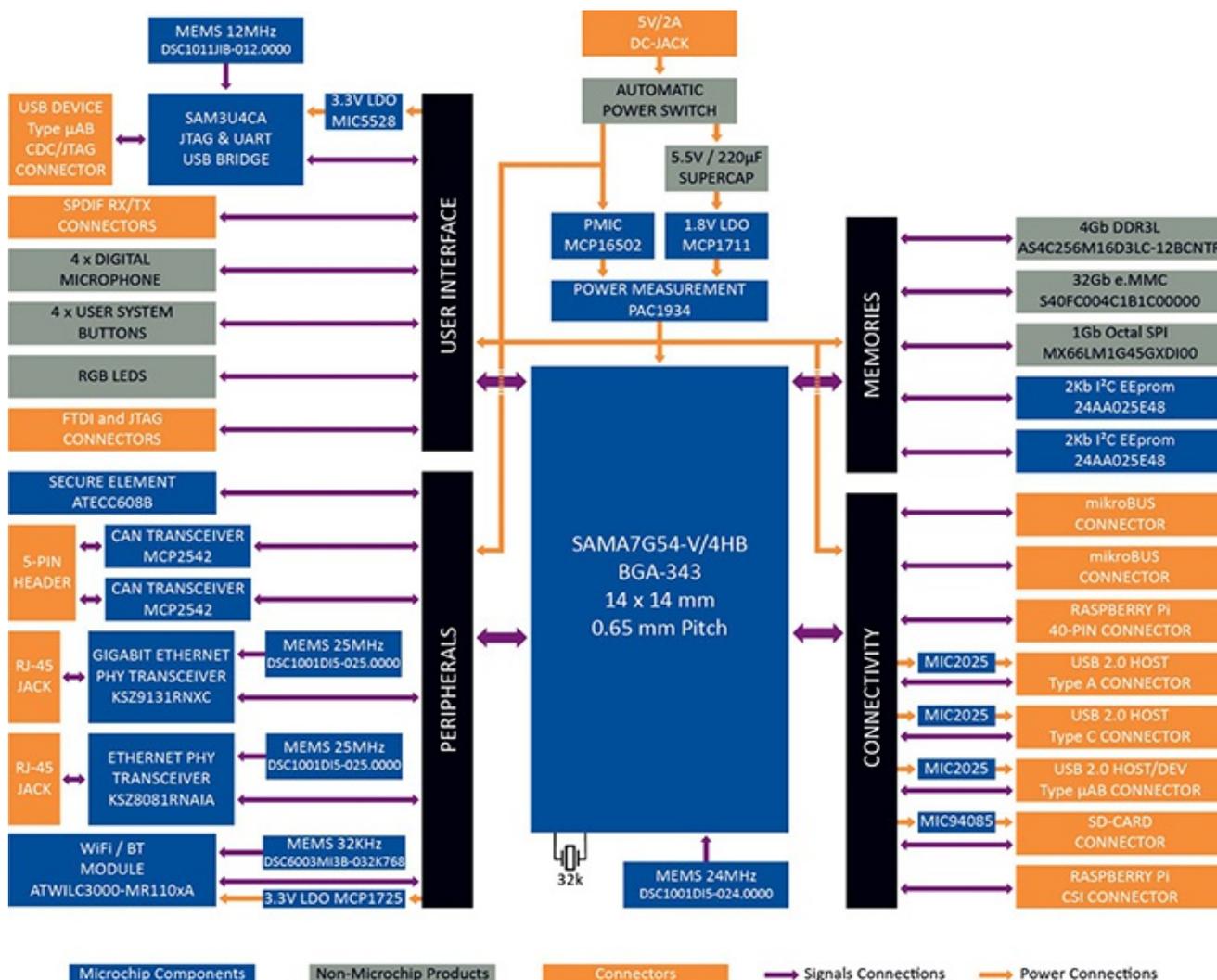
The micro-processor unit (MPU) by Microchip combining low-power with advanced video and audio features, offers six CAN FD interfaces.



For example, the MPU can be used in visual identity recognition applications (Source: Microchip)

The embedded market has a need for higher performing, yet lower power artificial intelligence (AI) solutions that can be deployed at the edge, where power consumption is often at a premium. AI solutions often require advanced imaging and audio capabilities which are typically found only on higher performing multi-core micro-processors that, unfortunately, also consume much more power. To offer developers access to those higher performing peripherals without sacrificing power consumption, Microchip provides the SAMA7G54 Arm Cortex A7-based MPU running up to 1 GHz. It includes both a MIPI CSI-2 camera interface and a traditional parallel camera interface enabling developers to design low-power stereo vision applications. The six flexible data rate CAN-FD controllers feature SRAM-based mailboxes with time- and event-triggered transmission. Ethernet, USB and further interfaces are available as well.

For audio applications, the device integrates four I<sup>2</sup>S digital audio ports, an 8-microphone array interface, an S/PDIF transmitter and receiver, as well as a four-stereo-channel audio sample rate converter. It is equipped with multiple microphone inputs for improved source localization to enhance smart speaker or video-conferencing system performance. The MPU also integrates the Arm TrustZone technology with secure boot, secure key storage, and cryptography with acceleration and more.



SAMA7G54-EK evaluation kit features connectors and expansion headers for easy customization and quick access to the embedded features (Source: Microchip)

Microchip is claiming to maintain the lowest-power MPU portfolio in the market. The introduced chip extends this low-power trend into the 1-GHz performance class of Linux-capable MPUs. It provides flexible low-power modes, as well as voltage and frequency scaling. When coupled with manufacturer's recent MCP16502 Power Management IC (PMIC), the MPU enables embedded designers to fine-tune their end application for the overall best power consumption vs. performance, while also optimizing the

overall system cost. The company provides hardware and software development support for the MPU. The SAMA7G54-EK evaluation kit features connectors and expansion headers for easy customization and quick access to the embedded features, informs the manufacturer.

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