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Introducing Automotive-Qualified System-in-Package Hybrid MCU for Automotive and E-Mobility Human-Machine Interface Applications

Microchip's SAM9X75 hybrid MCU System-in-Package (SiP) enables MPU processing power with the familiar development environment of MCU-based designs

CHANDLER, Ariz., March 24, 2026 (GLOBE NEWSWIRE) -- Automotive and E-Mobility designers are incorporating more Human-Machine Interfaces (HMIs) with sophisticated graphics to enhance the user experience. To address the growing demand for HMI solutions, Microchip Technology **(Nasdaq: MCHP)** today announces the AEC-Q100 Grade 2-qualified, **SAM9X75D5M System-in-Package (SiP)** with an Arm926EJ-S™ processor and 512 Mbit DDR2 SDRAM. The SAM9X75D5M supports large display sizes up to 10 inches and XGA resolution of 1024 × 768 pixels.

The SAM9X75D5M is part of Microchip's hybrid MCU family that enables users to capitalize on the advanced processing capabilities of a microprocessor (MPU) with access to embedded, higher memory densities while maintaining the familiar development environment of MCU-based designs, and the option to develop using Real-Time Operating Systems (RTOS). Tailored for automotive applications such as digital cockpit clusters, smart clusters for two- and three-wheelers, HVAC control, EV chargers and more, the SAM9X75D5M hybrid MCU SiP streamlines the development process by combining the MPU and memory into a single package. The device provides ample buffer space for automotive displays and offers flexible display interface options, including MIPI® Display Serial Interface (DSI®), Low Voltage Differential Signaling (LVDS) and RGB data in parallel.

With a simplified PCB layout, the SAM9X75D5M can reduce routing complexity and minimize discrete DRAM procurement risk and is built to support long-term availability and reliability. As a hybrid MCU, its architecture is designed to balance cost, performance and power efficiency, offering a migration path for applications transitioning from traditional microcontrollers (MCUs) to MPUs to meet higher performance and memory demands.

By integrating DDR2 memory directly into the package, the SAM9X75D5M helps protect designers from the volatility and supply constraints that have historically affected the discrete DDR memory market. This single-chip solution offers more predictable supply availability than discrete DDR memory and helps eliminate the procurement challenges associated with sourcing separate memory components.

"Microchip's SAM9X75D5M product redefines the standard for automotive-grade solutions, combining a high-performance processor with memory in a single package and bringing benefits of a SiP to the automotive market," said Rod Drake, corporate vice president of

Microchip Technology's MPU business unit. "One of the advantages of a SiP is that it provides significantly more RAM buffer space than a traditional MCU implementation and on a much more compact PCB than can be done with discrete memory—giving designers options to fit complex designs into a small space."

The SAM9X75D5M features a comprehensive range of advanced connectivity options, including CAN FD, USB and Gigabit Ethernet (GbE). It also supports the Time-Sensitive Networking (TSN) protocol and comes with integrated 2D graphics and audio capabilities.

In addition to these devices, Microchip offers a full array of devices to support HMI systems including maXTouch® technology, which provides reliable touch sensing, even in harsh environments or with water on the LCD screen, as well as power management and connectivity solutions.

Microchip offers a comprehensive portfolio of 32-bit hybrid MCUs and MPUs, plus 64-bit MPUs based on Arm® and RISC-V® architectures to provide powerful and flexible options for applications that span from consumer products to deep space missions. The company's MPU portfolio includes single- and multi-core options, System-on-Module (SOM) and SiP solutions that can help reduce design complexity, speed time to market and simplify the supply chain. To learn more about our MPU products, visit the **web page**.

Development Tools
The SAM9X75D5M is supported by our MPLAB® X Integrated Development Environment (IDE) and MPLAB Harmony Software Framework to enable development for multiple Real-Time Operating Systems (RTOS) including FreeRTOS® and Eclipse ThreadX®, and bare-metal software. Use **Microchip Graphics Suite** (MGS) or other third-party graphics software tools such as Crank, LVGL, Altia® and Embedded Wizard to develop compelling graphics. The **SAM9X75 Curiosity LAN Kit (EV31H43A)** is available to help designers evaluate the SAM9X75 SiP devices.

Pricing and Availability
The SAM9X75D5M SiP (part number SAM9X75D5M-V/4TBVAO) is available now for $9.12 each in 5,000 unit quantities. Larger 1 Gbit and 2 Gbit memory devices for automotive are available for sampling now. These devices support both RTOS and Linux® environments. You can **purchase directly** from Microchip or contact a Microchip **sales representative or authorized worldwide distributor** to purchase or request samples of the larger memory devices.

Resources

High-res image available through Flickr or editorial contact (feel free to publish):
·Application image: **www.flickr.com/photos/microchiptechnology/54689439660/sizes/l**

About Microchip Technology:
Microchip Technology Inc. is a broadline supplier of semiconductors committed to making innovative design easier through total system solutions that address critical challenges at the intersection of emerging technologies and durable end markets. Its easy-to-use development tools and comprehensive product portfolio support customers throughout the design process, from concept to completion. Headquartered in Chandler, Arizona, Microchip offers outstanding technical support and delivers solutions across the industrial, automotive, consumer, aerospace and defense, communications and computing markets. For more information, visit the Microchip website at **www.microchip.com**.

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