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Microchip Extends maXTouch® M1 Generation Family to Support Large, Curved and Shaped Automotive Displays

ATMXT3072M1 and ATMXT2496M1 single-chip touchscreen controllers bring reliable and secure touch detection to automotive displays including emerging OLED and microLED technologies

CHANDLER, Ariz., Feb. 20, 2025 (GLOBE NEWSWIRE) -- Automakers are revolutionizing the driving experience with innovative smart cockpit designs that feature large displays and emerging technologies like Organic Light Emitting Diodes (OLEDs) and microLEDs, seamlessly blending functionality with brand identity. However, these advancements pose significant challenges for the integration of capacitive touch sensing, especially with the thinner stack-up and an increasing number of touch electrodes. To address these challenges, **Microchip Technology (Nasdaq: MCHP)** has launched the ATMXT3072M1 and ATMXT2496M1 touchscreen controller families to help provide automotive HMI designers with reliable touch solutions. The single-chip touchscreen controllers feature up to 112 reconfigurable touch channels—or 162 equivalent touch channels in ultra-wide mode—enabling the support of large, curved and free-form touch displays up to 20 inches in 16:9 format and 34 inches in 7:1 format.

Large thin displays, such as on-cell OLED, embed touch electrodes with higher capacitive loads and stronger coupling of display noise, increasing the risk of false or missed touch detections. As part of the maXTouch® touchscreen controller family, the new devices employ Microchip’s proprietary Smart Mutual touch acquisition method and algorithms to increase the touch Signal-to-Noise Ratio (SNR) by up to +15 dB compared to the previous generation.

“The size and appearance of automotive cockpit displays can significantly influence a buyer’s perception of the vehicle's technological sophistication. However, integrating reliable touch functionality into advanced displays can present significant challenges,” said Patrick Johnson, senior corporate vice president overseeing Microchip’s human machine interface division. “Our ATMXT3072M1 and ATMXT2496M1 touchscreen controllers address these challenges with innovative sensing algorithms for fast and reliable touch performance. This enables automakers to design cutting-edge, visually stunning and user-friendly interfaces that enhance both the driving experience and vehicle safety.”

ATMXT3072M1 and ATMXT2496M1 controllers are designed to be compliant with ASIL-A and B standards and are developed according to Microchip's ISO26262 Functional Safety Management System, which is certified by TÜV Rheinland. Failure Modes, Effects and Diagnostic Analysis (FMEDA) and safety manuals are also available to help customers achieve certification for their systems' touch functionality more efficiently and cost-effectively. The touch controllers’ firmware is upgradable by the automobile’s main computer system and can be verified using the integrated firmware authentication feature, which implements

the SHA-512 cryptographic hash function. This cybersecurity function enables reliable Over-the-Air (OTA) updates in compliance with ISO 21434:2021 standards.

To limit eyes-off-road time and promote safer driving, the Euro NCAP tests in 2026 will likely encourage manufacturers to use separate physical controls for basic functions. Microchip's Knob-on-Display™ (KoD™) technology allows for the addition of intuitive physical knobs on the touchscreen, improving safety while preserving the sleek look of modern vehicle displays. Additionally, implementing haptic feedback on the touchscreen is a recognized method for reducing driver distraction. The new maXTouch M1 Generation touchscreen controller features dedicated functions, such as the Shape Event Trigger combined with automated pattern Pulse Width Modulation (PWM), to achieve ultra-low-latency haptic control. This innovation transfers the decision-making and generation of haptic waveforms from the main application host processor to the touchscreen controller.

Visit the maXTouch M1 Generation family webpage to learn more about the key features of Microchip's touchscreen controller solutions.

Development Tools
The comprehensive EV01S50A development printed circuit board (PCB) was designed for the ATMXT3072M1 touchscreen controller family to enable customers to more easily evaluate and test the devices in their applications. The EV13B92A evaluation kit includes a 15.6" ITO touch sensor.

Availability
For additional information and to purchase, contact a Microchip sales representative or authorized worldwide distributor.

Resources
High-res images available through Flickr or editorial contact (feel free to publish):

- Application image: **https://www.flickr.com/photos/microchiptechnology/54308208432/sizes/l/**

About Microchip Technology:
Microchip Technology Inc. is a leading provider of smart, connected and secure embedded control and processing solutions. Its easy-to-use development tools and comprehensive product portfolio enable customers to create optimal designs which reduce risk while lowering total system cost and time to market. The company's solutions serve over 100,000 customers across the industrial, automotive, consumer, aerospace and defense, communications and computing markets. Headquartered in Chandler, Arizona, Microchip offers outstanding technical support along with dependable delivery and quality. For more information, visit the Microchip website at **www.microchip.com**.

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