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LIN MCU with Touch Sense Technology for Automotive Applications

Integrated command and control with Gen 3 Touch Controller
featuring Shield enable simplified and cost-effective LIN Subsystem's Connectivity

MILPITAS, Calif., Mar 31, 2025 -- Lumissil Microsystems expanded its automotive MCU portfolio with the introduction of the IS32CS8976 and IS32CS8978 family of AEC-Q100 general purpose 8-bit MCU featuring an integrated LIN Controller and Physical Layer and Gen 3 touch key controller.

For flexibility, the IS32CS8976 and IS32CS8978 integrate 64KB ECC (Error Correction Code) flash memory that can be used to customize GPIO pins and features up to 20 Gen 3 touch sensors with auto wake and sleep modes. The IS32CS8976 and IS32CS8978 also feature onboard touch sensors that are reconfigurable from self-capacitance to mutual-capacitance mode. In mutual-capacitance mode, Shield is offered as a feature which provides dust and water immunity and offers proximity detection. Further, the integrated LIN protocol handler is compliant with SAE J2602 LIN 2.0A, LIN 2.1A and LIN 2.2A standards, ensuring seamless communication and interoperability with electrical sub-systems within vehicle's LIN networks.

To support this claim, Lumissil submitted an MCU with LIN stack to iHR Automotive®, a third-party LIN test house for LIN 2.2 OSI Layer 2 data link layer certification. LIN conformity ensures that a LIN master can transmit 19.2kbps LDF (LIN Definition Frames) to the IS32CS8976 and IS32CS8978 and makes certain that the devices process LDF commands as a protocol handler.

To address EMI concerns, the IS32CS8976 and IS32CS8978 incorporate oscillators with spread-spectrum modulation which effectively disperses energy at the operating frequency thereby reducing EMI-related radiated noise. To further ease the design, the IS32CS8976 and IS32CS8978 were designed to utilize an easy-to-use software calibration GUI which eliminates touch calibration issues and are designed around VS Code, a popular off-the-shelf IDE.

The new IS32CS8976 and IS32CS8978 MCU's enable command-control GPIO applications while simultaneously processing touch key functions. "Automotive engineers can achieve LIN command-control operation while processing touch sensor operations with the IS32CS8976 and IS32CS8978," said Ven Shan, VP of Lumissil Marketing. "Both the IS32CS8976 and IS32CS8978 will facilitate the development of complex MCU applications by providing LIN command-control initiated by user interaction."

The IS32CS8976 and IS32CS8978 feature a built-in LIN Physical Layer LDO capable of 100mA and are available in 3.3V or 5V options. For cost sensitive applications, the IS32CS8976 is available in a TSSOP-24 package offering 16kB flash ECC and 10 GPIO pins while the IS32CS8978 is available in a compact wettable flank WQFN-40 package and features large 64kB flash ECC and 20 GPIO pins. Both devices are RoHS compliant and Pb-Free available with a 2,500 unit per reel MOQ.

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About Lumissil Microsystems

Lumissil Microsystems specializes in analog/mixed-signal products for automotive, Communications, industrial, and consumer markets. Lumissil's primary products are LED drivers for low to mid-power RGB color mixing and high-power lighting applications. Other products include audio, sensors, high-speed wire communications, optical networking, and application specific microcontrollers. Lumissil Microsystems has worldwide offices in the US, Taiwan, Japan, Singapore, mainland China, Europe, Hong Kong, India, Israel, and Korea. Website: https://www.lumissil.com

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