MCU Enables Multiple Applications to Run from a Single-cell Battery

Driving smaller, lower cost products that run from a single-cell battery, Texas Instruments Incorporated (TI) today announced the industry's first true 0.9V microcontroller (MCU) as the newest addition to the ultra-low-power MSP430™ MCU portfolio.

Unlike existing MCUs that claim 0.9V technology, TI's MSP430L092 MCU inherently operates at 0.9V, including the entire analog and digital logic. Because it operates at 0.9V, the MSP430 MCU does not require an on-board boost converter, lowering the entire system's power consumption and reduces the need for external circuitry required by traditional solutions. This allows developers to run applications such as electric toothbrushes, razors, toys and security devices off of a single-cell battery, ranging from AAA to coin cell.

MSP430L092 also offers programmable analog building blocks that can be configured as five different peripherals. In addition to free software, comprehensive application notes, code libraries and community support, new tool kits are available to help developers fully leverage the benefits of this industry-first device. For more information, please visit www.ti.com/lowvoltagewiki-pr

Key features and benefits of the MSP430L092 include:

* Three 0.9V MCU variations – MSP430L092 (RAM), MSP430C091 (ROM) and MSP430C092 (ROM) – with up to 2KB RAM and 2KB ROM provide multiple choices for a path to production

* Integrated Analog Functions Pool (A-POOL) can serve as an analog-to-digital converter (ADC), digital-to-analog converter (DAC), system voltage supervisor (SVS), temperature sensor or comparator, eliminating the need for external components to reduce overall bill of materials

* Programmable A-POOL enables the various analog peripheral configurations to run sequentially without user interaction, providing increased flexibility

* Tool kits, including external EEPROM, and ROM-flow process guide help rapidly move from development to final production

* Ultra-low-power consumption of 45 microamps (active) and wake-up time of less than 5 microseconds combined with true 0.9V operation, enable optimized battery usage.