Philips unveils ultra-small 8-bit microcontroller family

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Tiny new devices in 3 x 3 x 0.85mm package offer double the functionality of competing solutions

Royal Philips Electronics today introduced two new members of the LPC900 8-bit microcontroller (MCU) family. These new devices are tiny, yet are packed with functionality and performance. The new devices are available in a 10-pin HVSON package, with dimensions mirroring the world's smallest 8-bit microcontrollers at 3.0 x 3.0 x 0.85mm^3. The LPC9102 and the LPC9103 are designed with space-constrained applications in mind, incorporating many system-level functions on-chip, such as a high-accuracy internal RC oscillator, brown-out detect, power-on reset and peripherals such as 8-bit ADC, comparator and UART, reducing the total component count in the system.

The combination of price, performance and functionality make the new LPC910x devices ideal for applications ranging from white goods to environmental or security sensors and toys, as well as for industrial or medical instrument probes where space is extremely limited. The highly-integrated devices feature byte-erasable flash which can eliminate the need for a separate EEPROM. Having an accurate internal RC oscillator (7.3728MHz, 1 percent accuracy) and an integrated UART enables an elegant RS-232 implementation. With eight of the 10 I/O pins on the package easily configurable by the user, the LPC9102 and LPC9103 double the functionality and I/O pins of those MCUs of similar physical size.

"Smaller than the top of a pushpin, the LP910x family packs a big punch. This is all about integrating external functions on-chip, thus saving space and power," said Joe Yu, strategic marketing director, Standard ICs Business Line, Microcontrollers Product Line, Philips Semiconductors. "As a result, our customers are able to make smaller, thinner and more intelligent products at the price point suitable for high-volume consumer products or even disposable electronics."

A high-performance 80C51 CPU can execute instructions as fast as 111ns. The new LPC910x products offer many on-chip functions typically found in devices more than twice their size. Furthermore, the leadless HVSON package has a built-in heat sink on the bottom side that provides outstanding power dissipation.

Key features of the LPC910x family

-- 1KB byte-erasable flash code memory for easy firmware modification
-- 8-bit ADC with window comparator to sample signals without generating unnecessary interrupts, offloading work from the CPU; 8-bit ADC can also be configured as a DAC
-- 20mA LED sink capability
-- 128 bytes of RAM - two times more than many competing solutions
-- Two counter timers and a real time clock - displacing an external RTC