STMicroelectronics Unveils 26 Ultra-Low-Power, 8-bit MCUs

Three product lines feature less than 400nA static power and industry-leading 150A/MHz dynamic power consumption

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Let me first applaud STMicro for continuing to evolve its 8-bit MCUs for low power applications while competing suppliers see only migration to 16- and 32-bitdevices.

Ground zero in the war to win the hearts and minds of developers today is low power consumption, as market demand focuses on energy-efficient portable products that maximize battery life. To better serve this customer base--and to comply with low-power product-design guidelines such as Energy Star, the IEA 1-Watt Plan, and the EU's EuP directive--ST has combined its 8-bit architecture with a dedicated, proprietary 130 nm process optimized for low leakage to reduce the microcontroller's current draw in normal operation as well as in power-saving modes.

The STM8L product family comprises 26 devices in three 8-bit product lines; pin and software compatibility is maintained between all devices. Common to all parts is the STM8 core with up to 16 CISC MIPS at 16MHz; ST claims full CPU performance is available up to the maximum operating frequency throughout the entire supply voltage (Vdd) range, from 1.65V to 3.6V.

Developers will also welcome the fact that all devices use a generic set of peripherals found in different ST microcontroller families (including 32-bit families), as well as a common set of development tools.

The STM8L101 line is the entry point of the portfolio, with flash density up to 8Kbyte and 20-, 28- and 32-pin package options. The STM8L15x line, now sampling to customers, adds extra features including up to 32Kbytes on-chip flash and up to 2Kbytes SRAM, external crystal/clock capability, enhanced reset features, and support for Direct Memory Access (DMA).

The third line, the STM8L152, features an integrated LCD controller. The STM8L151 and STM8L152 lines are scheduled for production availability in early 2010.

Four power-management modes are offered on all STM8L MCUs: a 5.4 µA Low-Power Run mode, 3.3 µA Low-Power Wait mode (CPU clock stopped, selected peripherals at full clock speed), 1 µA Active Halt (CPU and peripheral clocks are stopped), and 350 nA Halt mode (CPU and peripheral clocks are stopped, the device remains powered on). Wake up from the low power states can occur in just 4-microseconds.

Overall dynamic power consumption of the new STM8L 8-bit parts is as low as 150µA/MHz from flash, and Halt-mode power consumption is as low as 350nA while maintaining SRAM content and registers.

Family pricing starts with the STM8L101 4 Kbyte flash version in a QFN20 3x3mm package: 10K unit resale price is $0.68.