

## **STMicroelectronics Leverages STM32 “DNA,” Targeting Budget Applications**

*Development of home and industrial electronic applications is simplified using new feature-rich, value-packed family of ARM® Cortex™ –M0 microcontrollers*

**Geneva, February 29, 2012** – STMicroelectronics (NYSE: STM), a global semiconductor leader serving customers across the spectrum of electronics applications and a world leader in microcontrollers, has expanded its most successful and well proven STM32® portfolio of more than 300 micros. The STM32 F0 is an entirely new family of devices combining enhanced features with the ultra low-power ARM® Cortex™-M0 embedded processor for extremely cost-sensitive applications. The new microcontroller family bridges the gap for applications using 8- and 16-bit devices, enabling sophisticated high-end features in economical end products.

The ARM Cortex-M processor series has already revolutionized electronic product design by redefining familiar design tradeoffs such as performance, cost, power consumption, ease of use and scalability. By creating the STM32 and defining its DNA to include outstanding real-time performance, leading low-power efficiency, an amazingly diverse set of advanced peripherals, and a valuable ecosystem of development tools, ST has established the industry’s broadest and most successful family of Cortex-M processor-series-based-microcontrollers, which includes the world’s highest-performance Cortex-M4 processor-based microcontroller range available. The new STM32 F0 family, announced today, builds on this DNA by using the well proven Cortex-M0 core, running at 48MHz version, and adding high-value features not available in competing devices.

“The STM32 F0 family extends the platform advantages of our Cortex-M processor-series portfolio, and enables customers to leverage STM32 DNA at a budget price,” explained Michel Buffa, General Manager for ST’s Microcontroller Division. “By combining best-in-class communication and control peripherals with the M0 core, the STM32 F0 series enables developers to deliver new solutions offering functions and capabilities traditionally associated with significantly higher price points.”

“ST was one of ARM’s lead partners for the Cortex-M3 processor, the first Cortex-M series processor, and has subsequently enhanced the ARM ecosystem with high-value products that leverage the intellectual property of ARM, ST, and numerous development-tool suppliers,” said Keith Clarke, Vice President, Embedded Processors, ARM. “The Cortex-M0 processor offers a perfect opportunity for 8- and 16-bit MCU developers to achieve the performance benefits of 32-bit, without sacrificing power or area, while adding the ability to seamlessly migrate to higher-performance Cortex processors in the future.”

The STM32 F0 further extends the STM32 portfolio, addressing applications previously served by 8-bit MCUs, while taking advantage of the STM32 DNA with a complete portfolio, full manufacturing commitment and budgetary price. The enhanced features of the STM32 F0 family include up to seven timers suited for controlling items such as heaters or motors, enabling a single device to control multiple elements in an induction cooker, for example.

The STM32 F0 series also integrates hardware support for Consumer Electronics Control (CEC) included in the HDMI interface. This simplifies design into numerous home multimedia devices, allowing connections based on the latest industry-standard protocols while leaving the microcontroller’s CPU, memory and peripherals free to perform other tasks. The CEC kernel can be independently clocked by a low-speed 32kHz external clock or internal 8MHz clock further reducing system cost. In addition, the STM32 F0’s 12MHz I/O toggle speed allows developers to build sophisticated control applications at lower cost and lower power consumption.

STM32 F0 microcontrollers are sampling now at the resale price of \$0.95 for quantities of 1000 pcs to lead customers. Full production is scheduled for the beginning of Q2 2012, and the devices will be available in 32-pin UFQFPN32, 48-pin LQFP48 and 64-pin LQFP64 package options with 20-pin and 100-pin extensions soon to follow.

**Further information about STM32 F0 microcontrollers:**

Additional on-chip features include an analog block comprising a 12-bit 1Msample/s Analog/Digital Converter (ADC), a 12-bit Digital/Analog Converter (DAC), and two programmable input/output analog comparators tightly coupled with the DAC. This results in higher analog capabilities than other M0-based devices from competing manufacturers, enabling developers to use a low-cost processor for applications requiring precision high-speed sensing and control across multiple channels.

With four low-power modes, including a 5.3µA STOP mode and a 2.8µA STANDBY mode with the real-time clock running, the energy-conscious STM32 F0 family simplifies deployment and extends battery life in applications such as remote controls, sensor networks and smart meters. The devices will also be ideal for use in industrial controls, building automation, computer printers and white goods, game consoles, DVD/Blu-ray players and audio/video receivers.

The PWM 16-bit and 32-bit timers integrated on-chip have capabilities including 17 capture/compare input/outputs mapped on up to 28 pins, making them ideal for motor-control applications. There are also two timers with infrared transmission control, which simplify implementation of infrared communication protocols.

High-performance communication features include a Serial Peripheral Interface (SPI) with support for programmable data frame up to 16 bits and baud rate up to 18Mbit/s, as well as an I<sup>2</sup>C port supporting Fast mode+ communication at up to 1Mbit/s. Also, activity on the I<sup>2</sup>C port can wake the microcontroller from STOP mode on address match and reduced constraints for easy communication clock setting. Programmable analog and digital noise filtering ensure robust communication. There is also a 6Mbit/s USART with support for multiple clock input options, capable of operating independently from the main processor clock frequency.

**Note about the ARM Cortex-M processor-series philosophy and advantages:**

By providing a selection of industry-standard processor cores, licensable by microcontroller manufacturers, the ARM Cortex-M processor-series family frees designers from proprietary processor architectures and the constraints these impose. The family currently comprises the ultra low-power, low-cost 32-bit M0 processor, the full-featured 32-bit M3 processor capable of supporting applications from cost sensitive to very high performance, and the M4 processor combining the standard 32-bit processor with a Digital Signal Processing (DSP) core.

System companies formerly locked into using older 8-bit or 16-bit families, through familiarity and investment in tools and software, can switch to ARM Cortex-M series processor-based microcontrollers and benefit from higher-performing 32-bit architectures capable of supporting extra functionality and more sophisticated applications.

The advantages of switching to ARM Cortex processor-based microcontrollers include pricing competitive with older 8-bit and 16-bit families thanks to the more modern Cortex design, and enhanced flexibility and scalability thanks to compatibility between pins, software and peripherals throughout large microcontroller families such as ST's STM32 family. ARM Cortex-M series processor-based microcontrollers are also characterized by low power consumption, high on-chip Flash and RAM densities, and a broad choice of packages from low-cost low pin-count styles to fine-pitch and BGA packages providing large numbers of I/Os.

**About STMicroelectronics**

ST is a global leader in the semiconductor market serving customers across the spectrum of sense and power technologies and multimedia convergence applications. From energy management and savings to trust and data security, from healthcare and wellness to smart consumer devices, in the home, car and office, at work and at play, ST is found everywhere microelectronics make a positive and innovative contribution to people's life. By getting more from technology to get more from life, ST stands for [life.augmented](#). In 2011, the Company's net revenues were \$9.73 billion. Further information on ST can be found at [www.st.com](http://www.st.com).

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