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» **News**[2009](#)[2008](#)[2007](#)[2006](#)[2005](#)[2004](#)[2003](#)[2002](#)» [Partner News](#)» [ARM In The News](#)» [Downloads](#)» [Press Contacts](#)**ARM Launches its Smallest, Lowest Power, Most Energy Efficient Processor*****Cortex-M0 processor provides 32-bit performance at an 8-bit price point and is compatible with feature-rich processors such as the Cortex-M3 product***

CAMBRIDGE, UK – Feb. 23, 2009 – ARM [(LSE: ARM); (Nasdaq: ARMH)] today announced the ARM® [Cortex™-M0](#) processor, the smallest, lowest power and most energy-efficient ARM processor available. The exceptional low power, small gate count and code footprint of the processor enables MCU developers to achieve 32-bit performance at an 8-bit price point. The ultra low gate count also enables it to be deployed in analog and mixed signal devices as well as MCU applications, and promises substantial savings in system cost while retaining tool and binary compatibility with the feature-rich Cortex-M3 processor.

The Cortex-M0 processor, which consumes as little as 85 microwatts/MHz (0.085 milliwatts) in an area of under 12K gates when using the ARM 180ULL (Ultra Low Leakage) physical IP, builds on the unrivalled expertise of ARM as a leader in low-power technology and a key enabler for the creation of ultra low-power devices. The new processor extends the company's MCU roadmap into ultra low-power MCU and SoC applications such as medical devices, e-metering, lighting, smart control, gaming accessories, compact power supply, power and motor control, precision analog and IEEE 802.15.4 (ZigBee) and Z-Wave systems. The Cortex-M0 processor is also suitable for the programmable mixed signal market with applications such as intelligent sensors and actuators which have traditionally required separate analog and digital devices.

The low-power operation of the Cortex-M0 processor is enhanced by the ARM Ultra High Density Standard Cell Library for the 180ULL process, the ARM Power Management Kit (PMK), low power memory instances built specially for Cortex-M0, and the Keil™ Microcontroller Development Kit. The ARM low power libraries are optimized to enable low dynamic and static power consumption and minimize chip area. The PMK features dynamic and leakage power management functions and the low power memory instances support external power gating for extreme leakage reduction.

Early licensees of the Cortex-M0 processor include NXP Semiconductors and mixed signal ASIC provider, Triad Semiconductor.

"We are excited about deploying the smallest ever ARM processor in our product development process," said Geoff Lees, vice president and general manager, Microcontroller Division, NXP Semiconductors. "By providing 32-bit performance in a 16-bit footprint, the ARM Cortex-M0 processor, enables us to reduce silicon and energy costs without compromising product enhancements or upward code compatibility, making it an ideal complement to the Cortex-M3 architecture that we use across our products."

"Smart sensors are an ever growing requirement in a wide range of next-generation applications from industrial, to medical and automotive," said Jim Kemerling, VP and CTO of Triad Semiconductor. "Combining the ARM Cortex-M0 processor with our silicon-proven configurable analog and digital technology will provide Triad Semiconductor customers with the fastest, safest and most cost-effective way to design, prototype and produce advanced mixed signal ASICs."

"The boundaries between traditional MCU classifications have begun to blur as advancements in technology see the emergence of smaller, more powerful processor families," said Tony Massimini, Chief of Technology, Semico. "The ultra low-power ARM Cortex-M0 processor brings this evolution to a whole new level with its 32-bit performance at an 8-bit price point, enabling manufacturers to offer rich and enhanced product features at a significantly lower cost."

"The Cortex-M0 processor is yet another demonstration of ARM's low power leadership and its commitment to drive the industry forward towards higher performance with ever lower power consumption," said Mike Inglis, executive vice president and general manager, Processor Division, ARM. "With its expertise in low-

power technology, ARM has worked closely with its Partners and their customers to ensure that our processor architectures enable the cost and energy-efficient creation of tomorrow's electronic devices and systems."

Tools

The Cortex-M0 processor is fully supported by the Keil™ Microcontroller Development Kit, which integrates the ARM RealView® Compilation Tools with the new Keil µVision4 IDE and Debugger.

"The new µVision4 IDE builds on the success of what is widely acknowledged as the world's most popular development environment for microcontrollers," said Reinhard Keil, director of MCU Tools, ARM. "By utilizing these tools, ARM Partners can take advantage of a tightly coupled application development environment to rapidly realize the performance and ultra low-power features of the Cortex-M0 processor."

The processor is also supported by third-party tool and RTOS vendors including CodeSourcery, Code Red, Express Logic, IAR Systems, Mentor Graphics, Micrium and SEGGER.

CMSIS Software Standard

The Cortex-M0 processor is fully compatible with the recently-launched [Cortex Microcontroller Software Interface Standard \(CMSIS\)](#), the vendor-independent hardware abstraction layer for the Cortex-M processor series (Nov 12 - [ARM Introduces Software Interface Standard for Cortex Processor-based Microcontrollers](#)). The CMSIS enables consistent and simple software interfaces to the processor for silicon vendors and middleware providers, simplifying software re-use, reducing the learning curve for new microcontroller developers and reducing the time-to-market for new devices.

ARM Fabric IP

ARM offers a comprehensive range of peripheral, debug and interconnect fabric IP, optimized for ARM processor IP, enabling Partners to reduce risk, improve system performance and accelerate time to market for their ARM processor-based devices.

ARM Services & Support

Rapid deployment of the ARM Cortex-M0 processor into embedded design teams is supported through training courses for hardware systems integration and software programming, as well as through the ARM Active Assist project-based advisory service.

Availability

The ARM Cortex-M0 is available for licensing today. More information about the [Cortex-M series of processors](#).

About ARM

ARM designs the technology that lies at the heart of advanced digital products, from wireless, networking and consumer entertainment solutions to imaging, automotive, security and storage devices. ARM's comprehensive product offering includes 32-bit RISC microprocessors, graphics processors, enabling software, cell libraries, embedded memories, high-speed connectivity products, peripherals and development tools. Combined with comprehensive design services, training, support and maintenance, and the company's broad Partner community, they provide a total system solution that offers a fast, reliable path to market for leading electronics companies. More information on ARM is available at <http://www.arm.com>.

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ARM Cortex Logo
Cortex-M Roadmap
Cortex-M0 Block Diagram
Mike Inglis Picture
Geoff Lees Picture
Reinhard Keil Picture

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CODE RED

"Our support of the Cortex-M3 processor in our Red Suite IDE has provided us with a wealth of experience of supporting ARM processor-based microcontrollers," said John Rayfield, CEO of Code Red. "Red Suite will fully support the new Cortex-M0 processor enabling the rapid deployment of designs using the new parts".

CODESOURCERY

"CodeSourcery is proud to have been chosen by ARM to develop GNU toolchain support for the Cortex-M0 processor," said Mark Mitchell, Chief Sourcerer, CodeSourcery. "The combination of an ultra low power ARM processor and Sourcery G++ – CodeSourcery's high-quality, affordable Eclipse-based development environment – provide a compelling combination for system designers."

EXPRESS LOGIC

"The arrival of the Cortex-M0 processor will extend the ARM architecture to ultra low power MCU and mixed signal ASIC developers," said William Lamie, CEO, Express Logic. "Our ThreadX® RTOS powers more than 600 million units worldwide and we have worked closely with ARM during development of the Cortex-M0 processor to ensure that ThreadX users, and those looking to use an RTOS for the first time, have a smooth migration path to this exciting new processor technology."

IAR SYSTEMS

"The Cortex-M0 processor marks a significant step in the evolution of the MCU market by providing a bridge from 8- to 32-bit processors, enabling engineers to get access to the high performance Cortex processor architecture faster" said Mike Skrtic, ARM Strategic Account Manager, IAR Systems. "As the world's leading independent software tools vendor for deeply embedded systems, IAR Systems has a tradition of enthusiastically supporting ARM MCU processors and will continue to do so in the future."

MENTOR GRAPHICS

"The ARM Cortex-M0 processor addresses the need for ultra low power, low gate count MCU and analog mixed signal devices operating at ever-increasing performance levels," said Glenn Perry, General Manager, Embedded Systems Division, Mentor Graphics. "Mentor is continuing to work with ARM to ensure that the licensees of Nucleus Real Time OS - the most widely deployed commercial real-time OS in portable applications today - can fully exploit the advantages of the ARM Cortex-M0, and help them bring their products to market quickly."

MICRIUM

"ARM has, for many years, been at the forefront of low-power processor technology and its leadership is reinforced by this latest addition to the Cortex-M processor portfolio," said Jean Labrosse, Micrium CEO. "Micrium's leading RTOS product family will rapidly support and enhance the ultra low power features of the Cortex-M0 processor."

SEGGER

"We have worked closely with ARM for many years, most recently on the development of the Cortex Microcontroller Software Interface Standard (CMSIS)," said Rolf Segger, founder and CEO of SEGGER Microcontroller. "We will fully support the Cortex-M0 processor, with both, our leading J-Link emulator family as well as our middleware line of products. The middleware support will be based on CMSIS, enabling fast and risk free software development and reuse".

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