

# Performance Record for Most Powerful Cortex-M Microcontroller

STMicroelectronics has announced that independent processor-performance tests using the latest software tools from Green Hills Software have confirmed the STM32 F4 series, as the world's highest performing ARM Cortex-M microcontroller.

The Green Hills Software compiler version 2012 has unleashed 29% extra performance from the STM32 F4 series in industry-standard CoreMark tests. CoreMark tests produce a single-number score that helps developers compare processors from various manufacturers. This new elevated CoreMark score reassures customers using the STM32 F4 series that they have chosen the highest performance Cortex-M microcontroller available on the market, suited to fit even the most creative application requirements.

In executing from Flash memory, which is the most meaningful and challenging condition to measure the performance of an architecture, the CoreMark tests compiled using the Green Hills compiler version 2012, ST's STM32 F4 series produced the highest ever score of 469, operating at its maximum frequency of 168MHz. This score is equivalent to 2.79 CoreMark/MHz, another record among embedded processors. When executing from RAM, performance is even higher at 481 CoreMark or 2.86 CoreMark/MHz.

Helping establish the STM32 F4 series' advantage over other Cortex-M processors is the device's unique architecture that includes ST's Adaptive Real-Time (ART) accelerator. The ART accelerator speeds up code and data retrieval from Flash memory to increase the performance of the standard Cortex-M4 processing engine, which comprises a 32-bit microcontroller, floating-point unit and enhancements that enable the efficient execution of digital-signal-processor single-cycle instructions.

"In combination with the enhanced Green Hills compiler, the ART accelerator is a key feature enabling the STM32 F4 series to extend its world-beating performance," said ST's Michel Buffa, General Manager, Microcontroller Division. "The advanced architecture of the STM32 F4 series allows customers to draw maximum benefit from the market-leading performance improvements of the latest Green Hills compiler. It is already the world's most powerful Cortex-M processor based microcontroller available in the market, and compiler version 2012 demonstrates even more performance from the unique ART accelerator and other outstanding features of the family."

Christopher Smith, Vice President of Marketing, Green Hills Software said, "With the new compiler version 2012, Green Hills Software has achieved a milestone by boosting the Cortex-M based STM32 F4 series to new performance records."

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The STM32 F4 series is available now in four variants. All variations are in volume production, with prices beginning from \$5.74 for the STM32F407VET6 with 512 Kbytes of Flash and 192 Kbytes RAM in the LQFP100 package, for orders of more than 1,000 units.

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Further information on ST can be found at [www.st.com](http://www.st.com) [1].

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