Freescale QorIQ T4240 communications processor leverages Green Hills optimizing compiler to top its own CoreMark® record

12-core, 64-bit QorIQ T4240 SoC registers highest EEMBC® performance score ever recorded for an embedded processor

LAS VEGAS (Interop 2013) – May 6, 2013 – The QorIQ T4240 multicore communications processor from Freescale Semiconductor (NYSE: FSL) has surpassed the record it previously set with the highest CoreMark® benchmark score ever recorded for an embedded system-on-chip processor. Using advanced compiler technology from Green Hills Software, the QorIQ T4240 processor improved its industry-leading CoreMark score from 179,763 to 187,873.

"Freescale is breaking new ground again with the industry-leading performance of the QorIQ T4240 SoC," said Nikolay Guenov, QorIQ marketing director with Freescale's Digital Networking business. "Demand for the processor has been exceptional, and we have already doubled our design win goals for the QorIQ T Series. Green Hills technology is unleashing the full potential of this technology."

CoreMark is an industry-standard benchmark designed by EEMBC®, the Embedded Microprocessor Benchmark Consortium, specifically to test the functionality of a processor core and compare overall core processing capabilities across devices. By successfully approximating real-world performance of embedded devices, the CoreMark score validates leadership performance and allows users to quickly compare processors. See www.coremark.org.

"Green Hills is proud to provide an essential key that unlocks the highest core performance of Freescale's processors," said David Kleidermacher, chief technology officer, Green Hills Software. "We've refined and optimized our compilers for over 30 years, and with close collaboration with Freescale, we provide our mutual QorIQ processor customers the highest performance levels in networking, industrial and avionics."

Featuring 24 virtual cores, the 28-nm QorIQ T4240 delivers a compelling combination of hardware acceleration, fabric-based interconnect technology, high speed I/O, hardware-assisted virtualization and 64-bit Power Architecture® cores. Key features include:

- Dual threaded, 64-bit e6500 Power Architecture cores with 40-bit real address memory, the AltiVec vector engine, and one terabyte of physical address memory
- Second-generation, hardware-based hypervisor designed to simplify development and enable the safe and autonomous operation of multiple individual operating systems
- 50 Gbps of packet parse, classify and distribute acceleration

- Support for up to four 10G, and up to 12 1G Ethernet simultaneously
- A crypto acceleration engine (SEC) with 40 Gbps of throughput
- A 20 Gbps data compression engine (DCE) for WAN optimization controllers and a 10Gb/s regular expression pattern matching engine (PME) for intrusion detection and prevention applications
- Data center bridging (DCB) and egress traffic shaping, designed to eliminate loss due to queue overflow and accommodate efficient allocation of bandwidth on link
- System interconnect technologies including PCIe rev 3.0 with SR-IOV to facilitate high-speed peripheral expansion

"Achieving the highest EEMBC® performance score ever recorded for an embedded processor is an impressive accomplishment for the QorIQ T4240 device using Green Hills' compiler technology," said Markus Levy, president of EEMBC. "This milestone demonstrates yet again how collaboration between semiconductor vendors and their ecosystem partners delivers exceptional performance for their shared customers."

Green Hills Software's optimizing C, C++ and Ada compilers are known for producing the highest EEMBC certified performance, smallest code size and the highest code quality. Moreover, they were the first commercially available tool chain certified to the highest levels of tool qualification for functional safety in IEC 61508:2010 (Industrial), EN 50128:2011 (Railway) and ISO 26262:2011 (Automotive).

All optimizations – whether invented in the Green Hills R&D labs over the past 30 years or adopted from industry standards – are meticulously implemented and tested on the T4240 device. The Green Hills compilers provide excellent default settings, but developers also have fine-tune control over compiler and linker output. Different combinations of optimizations can be selected on a per-project or per-file basis.

To help development teams avoid common programming mistakes, the Green Hills Compilers provide automated enforcement of clean coding conventions. Developers can enforce industry standards like the MISRA 2004 guidelines, or can enforce their own set of guidelines. Green Hills Compilers are part of a complete embedded development solution that includes the MULTI Integrated Development Environment, TimeMachine, real-time operating systems and hypervisor family, and hardware probes. More information regarding the QorIQ T4240 is available at www.freescale.com/T4240. More information regarding Green Hills optimizing compilers is available at www.ghs.com/products/compiler.html.

About Freescale
Freescale Semiconductor (NYSE:FSL) is a global leader in embedded processing solutions, providing industry leading products that are advancing the automotive, consumer, industrial and networking markets. From microprocessors and microcontrollers to sensors, analog integrated circuits and connectivity – our technologies are the foundation for the innovations that make our world greener, safer, healthier and more connected. Some of our key applications and end-markets include automotive safety, hybrid and all-electric vehicles, next generation wireless

infrastructure, smart energy management, portable medical devices, consumer appliances and smart mobile devices. The company is based in Austin, Texas, and has design, research and development, manufacturing and sales operations around the world. www.freescale.com

About Green Hills Software
Founded in 1982, Green Hills Software is the largest independent vendor of embedded development solutions. In 2008, the Green Hills INTEGRITY-178B RTOS was the first and only operating system to be certified by NIAP (National Information Assurance Partnership comprised of NSA & NIST) to EAL 6+, High Robustness, the highest level of security ever achieved for any software product. Our open architecture integrated development solutions address deeply embedded, absolute security and high-reliability applications for the military/avionics, medical, industrial, automotive, networking, consumer and other markets that demand industry-certified solutions. Green Hills Software is headquartered in Santa Barbara, CA, with European headquarters in the United Kingdom. Visit Green Hills Software at www.ghs.com.

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