

# Freescale introduces 64-bit quad-core QorIQ P5040 processor for power-sensitive control plane applications

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Freescale Semiconductor introduces two 64-bit, multicore QorIQ P5 family control plane processors delivering 2.4 GHz of single threaded performance per core. The new quad-core QorIQ P5040 and dual-core P5021 products feature a robust mix of accelerators, high-speed interfaces and security features, resulting in advanced embedded solutions ideally suited for power-conscious control plane applications.

The new products complement Freescale's previously announced QorIQ P5020 and P5010 devices based on 2 GHz cores, and round out one of the industry's most comprehensive portfolios of embedded control plane [processors](#). With the new products, Freescale will soon offer a range of single-, dual- and quad-core 64-bit devices for a broad array of applications, from single-core solutions for products requiring a sub-15W profile, to quad-core processors for compute-intensive applications.

Built on Freescale's 64-bit Power Architecture e5500 core, all four QorIQ P5 family products are pin- and software- compatible. Software reuse is further enhanced with hybrid 32-bit mode capabilities, which support legacy software and help ensure a seamless transition to 64-bit computing.

“Freescale continues to expand its broad range of highly successful QorIQ multicore processors with the new P5040 and P5021 devices,”

said Bernd Lienhard, vice president and general manager of Freescale's Networking Processor Division. "These products are engineered to help our customers maintain best-in-class power efficiency while handling the tremendous control plane processing demands associated with the rapid global growth of wired and wireless data."

Both products provide optimal performance per watt and are designed for industrial, storage, military/aerospace and networking applications including core routers and data centers. They feature advanced security capabilities including secure boot of application code, tamper detect circuitry and secure debug, as well as hardware-assisted acceleration of cryptography protocols. Key to establishing highly secure systems, Freescale's embedded trust architecture prevents cloning and unauthorized cores from running on a system.

Integration of application-specific accelerators and advanced I/O on a single embedded device means customers of both new products benefit from reduced system development cycles and thermal management costs. Processing efficiency is optimized in part via CoreNet on-chip fabric that is designed to feed [accelerators](#) and cores while eliminating bus contention. A RAID 5/6 engine offloads the processors' cores from parity calculations for storage applications. The devices integrate high-speed connectivity support for PCIe, SGMII, XAUI, SATA, Aurora and multiple 1GigE and 10GigE. Double precision floating point support is included to address key industrial market requirements.

Freescale maintains a broad ecosystem of internal and third-party software to simplify product development and speed time to market. 32-bit and 64-bit software solutions are planned from Freescale and third party ecosystem partners.

Freescale plans to offer initial samples and a P5040 development board in June 2012, with full qualification for both products expected in the

first quarter of 2013.

**More information:** For more information please visit [www.freescale.com/QorIQ](http://www.freescale.com/QorIQ) .

Provided by Freescale Semiconductor

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