ap and Overview

PowerQUICC™ II Pro and PowerQUICC III Families

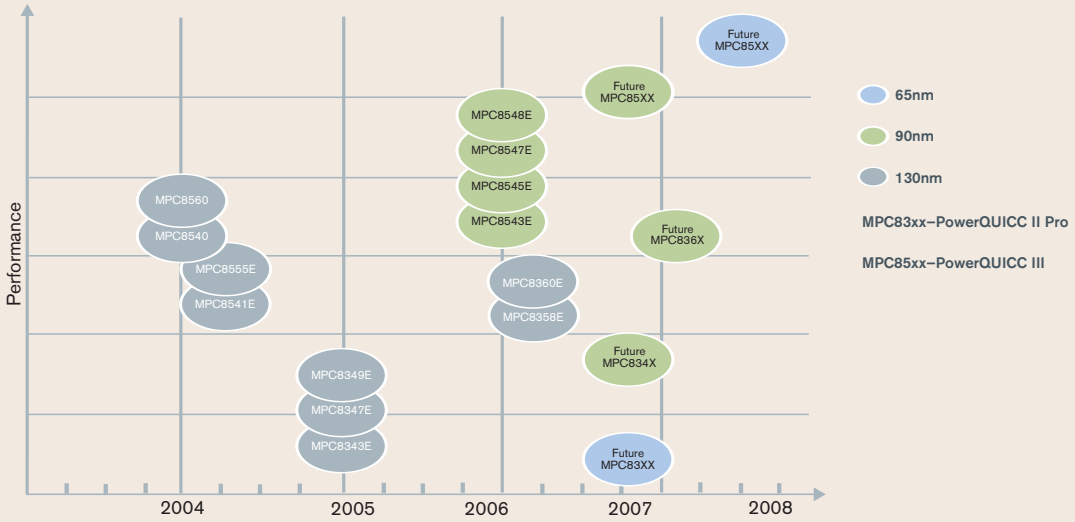
PowerQUICC processors containing PowerPC® cores have been chosen by more than 500 manufacturers for more than 5,000 designs, making Freescale the number one supplier of integrated communications processors. The latest generations of PowerQUICC III and PowerQUICC II Pro processors deliver incredible advances in performance and scalability, with the PowerQUICC III offering PowerPC cores scaling beyond 1.33 GHz. The PowerQUICC II Pro family features a new generation of communications processor module, the QUICC Engine™, with two optimized RISC processors supporting a wide range of protocols with data throughput at up to 1.2 Gbps.

New Process Technology for the Next Evolution of PowerQUICC III

PowerQUICC III communications processors are the most highly-integrated PowerQUICC devices currently available, delivering a choice of highspeed interconnects for today's most demanding applications. Based on the scalable system-on-chip (SoC) platform and e500 PowerPC core, new next-generation PowerQUICC III devices offer the advanced features and high-speed connectivity required by enterprise networking, telecom transmission and switching, 3G wireless infrastructure, storage and high-end imaging markets.

The processor is designed to offer clock speeds scaling up to 1.33 GHz with headroom for 1.5 GHz, combining the powerful PowerPC processor core, enhanced peripherals and high-speed interconnect technology to balance processor performance with I/O system throughput. Next generation PowerQUICC III processors are based on Freescale's 90 nanometer (nm) silicon-on-insulator (SOI) copper interconnect process technology, which enables processors to deliver higher performance with lower power dissipation. At 1.5 GHz, these new processors deliver an upgrade in performance over current 130 nm PowerQUICC III devices, providing yet another level of best-in-class performance and uncompromising integration to the PowerQUICC Family. The MPC8548E, MPC8547E, MPC8545E and MP8543E processors offer a wide range of high-speed connectivity options, including enhanced Triple Speed Ethernet (eTSEC), serial RapidIO® interconnect technology and PCI Express. These processors also feature next-generation double data rate (DDRII) memory controllers, double precision floating point, integrated security engines that support the Kasumi algorithm needed for 3G wireless security and exclusive OR (XOR) acceleration for parity in storage applications.

POWERQUICC II PRO AND POWERQUICC III PRODUCT ROADMAP



Except for historical information, all of the expectations and assumptions contained in the foregoing are forward-looking statements involving risk and uncertainties. Important factors that could cause actual results to differ materially from such forward-looking statements, include but are not limited to, the competitive environment for our products, changes of rates of all related services and legislation that may affect the industry. For additional information regarding these and other risks associated with the Company's business, refer to the Company's reports with the SEC.

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PowerQUICC II Pro: Extending the Power of PowerQUICC II

Freescale's PowerQUICC II Pro family is a next generation extension of the popular PowerQUICC II line. It leverages a system-on-chip (SoC) platform, integrating the advanced e300 PowerPC® core—an enhanced version of the PowerPC 603e core used in previous-generation PowerQUICC II processors—as well as high-speed interconnects, robust processing performance, and leading-edge integration, resulting in low system-level cost, compact board space and low power usage.

The PowerQUICC II Pro family is designed for networking, communications and pervasive computing applications, including a wide range of embedded control applications, such as Ethernet routers and switches, wireless LAN (WLAN) equipment, embedded security devices, home and media gateways, network-attached storage, industrial control, line cards, printers, copiers and other imaging equipment.

The newest addition to the PowerQUICC™ II Pro family, the MPC8360E is the first to feature QUICC Engine technology. The enhancements of the PowerQUICC II Pro family with QUICC Engine make it ideal for target applications ranging from IP DSLAMs, voice over IP (VoIP) systems, 3G wireless infrastructure, passive optical networking (PON) equipment, multi-service access nodes (MSAN), and Small-to-Medium Enterprise (SME) routers.

An integrated security engine is available across the PowerQUICC II Pro family as well as the entire PowerQUICC line. It supports DES, 3DES, MD-5, SHA-1, AES and ARC-4 encryption algorithms, public key accelerator and an on-chip random number generator. The integrated security engine is capable of single-pass encryption and authentication, as required by IPsec, the IEEE® 802.11i standard and other security protocols.

MPC83XX PowerQUICC II Pro Family–Technical Specifications

> e300 PowerPC core

> Up to 667 MHz performance

> Up to 1260 MIPS (million instructions per second)

> 32 KB instruction cache/32 KB data cache

> Up to 2 PCI interfaces

> Dual 10/100/1000 Ethernet controllers

> Up to 2 high-speed USB controllers

> Dual I^2C

> Integrated security engine

> 620-pin PBGA or 672-pin TBGA packaging (MPC8343E/8347E/8349E)

> 740-pin TBGA packaging (MPC8358E/8360E)

QUICC Engine Core Technical Specifications (MPC8358E and MPC8360E only)

> Up to 500 MHz performance

> Up to two 10/100/1000 Ethernet controllers

> Up to eight 10/100 Ethernet controllers

> Two UTOPIA/POS PHY Level 2 ports with up to 128 logical PHYs

> Multichannel communication controller (MCC)

> 2 serial peripheral interface (SPI) ports

Applications

> Wireless base station controllers

> DSLAMs

> Routers/Switches

> Printing/Imaging

> Network-Attached Storage (NAS)

MPC85XX PowerQUICC III Family– Technical Specifications

> Embedded e500 core

> Up to 1.5GHz performance

> Up to 3065 MIPS (million instructions per second)

> Up to 512 KB L2 cache

> 32 KB instruction cache/32 KB data cache

> DDR or DDR1/DDR2 SDRAM memory controllers

> Multiple PCI interface support, including PCI, PCI-X and PCI Express

> RapidIO® fabric technology (MPC8540, MPC8560, MPC8543E and MPC8548E only)

> Up to 2 I^2C interfaces

> Up to 4 Gigabit Ethernet controllers

> UTOPIA II ATM support (MPC8555E and MPC8560 only)

> Integrated security engine

> 783-pin FCBGA packaging

Applications

> Enterprise networking

> Telecom transmission

> 3G wireless infrastructure

> Storage subsystems and high-end print and imaging

Features

> MPC8548E
- 90nm
- 833-1.5GHz
- DDR2
- Dual PCI
- sRIO/PCI-Express
- 4x GE
- TCP assist
- Security

> MPC8560
- 130nm
- 667-1GHz
- DDR
- CPM
- PCI/PCI-X
- RapidIO
- Dual GE

> MPC8555E
- 130nm
- 533-1GHz
- DDR
- CPM-Lite
- Dual PCI
- Dual GE
- USB
- Security

> MPC8360E
- 130nm
- 266-667 MHz e300
- 200-500 MHz QUICC Engine
- DDR
- Dual GigE
- TDM
- OC-12 ATM
- PCI
- USB
- Security

> MPC8349E
- 130nm
- 266-667 MHz e300
- DDR
- Dual GigE
- Dual PCI
- High-Speed USB
- Security

Learn More: For more information about Freescale products, please visit **www.freescale.com**.

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