MPC8280 PowerQUICC™ II Processor Family

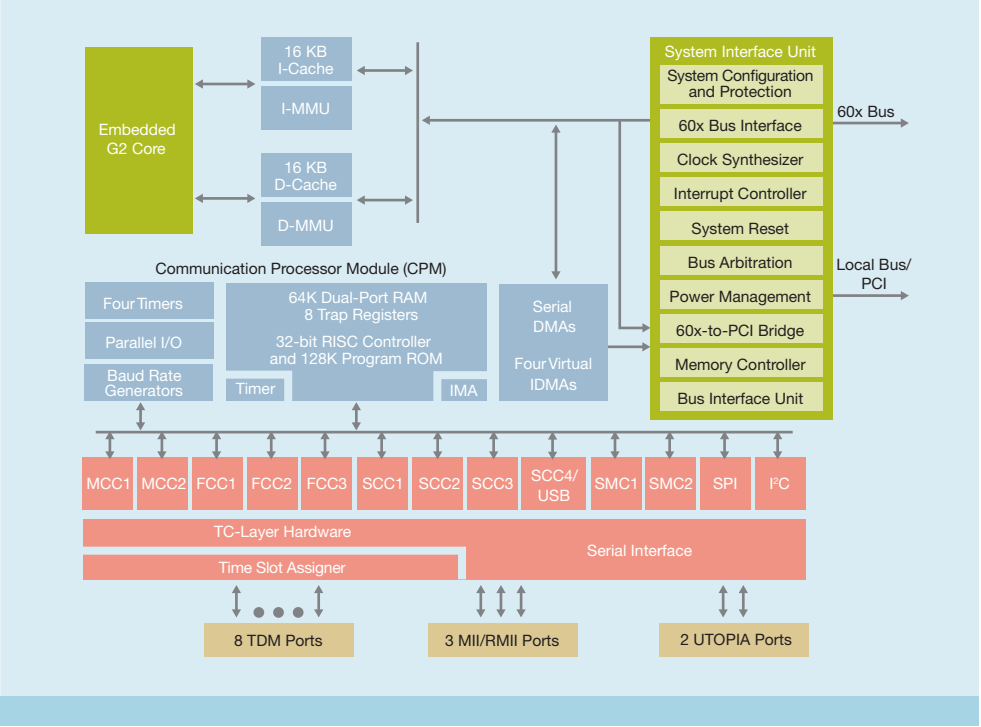
Join the Revolution

Demand for greater performance and higher integration in telecommunications equipment is driving a revolution in communications processors. In this time to market race, networking equipment makers know to turn to Freescale's family of PowerQUICC™ integrated communications processors which are built on Power Architecture™ technology

Utilizing Freescale's HiPerMOS7 0.13-micron process technology, the MPC8280 PowerQUICC II family offers a range of performance, feature enhancements and package options with lower power consumption. Ideal for wired and wireless infrastructure communications processing tasks, enhancements to the PowerQUICC II family offer system designers a high degree of integrated features and functionality and a compelling, proven architecture. The MPC8280 PowerQUICC II processor family is an optimum solution for integrated control and data path processing in high-end communications and networking equipment—such as routers, DSLAMs, remote access concentrators, telecom switching equipment and cellular base stations.

Combining extensive Layer 2 functionality with control plane processing, Freescale's PowerQUICC II processors combine a high-performance embedded 603e™ core, built on Power Architecture technology, and a powerful RISC-based core to provide support for multiple communications protocols, including 10/100 Mbps Ethernet, 155 Mbps ATM and 256 HDLC channels. The MPC8280 PowerQUICC II devices retain full software compatibility with other members of the PowerQUICC II family.

MPC8280 Block Diagram



A Range of Performance and Package Options

Taking advantage of the 0.13-micron process, the next-generation of PowerQUICC II devices offers significant performance increases and power efficiencies over previous generation PowerQUICC II devices, with speeds of up to 450 MHz and 300 MHz in the core and CPM respectively operating at less than 2 watts. These processors continue to enhance the PowerQUICC architecture's industry-leading ATM support, offering up to two UTOPIA ports with support for up to 31 PHYs per interface–ideal for high-density DSLAM line cards. The next generation of PowerQUICC II solutions also delivers support for USB (full/low speed), targeting high performance small office/home office (SOHO) and customer premise networking equipment.

Unlike other integrated communications processors in the market, the PowerQUICC architecture integrates two processing cores to handle specific tasks: the Power Architecture core and the RISC-based CPM—enabling a balanced approach for systems by handling both high-level tasks and low-level communications all in one integrated device.

freescale semiconductor

PowerQUICC™ II Derivative Features—0.13 micron	8270	8270	8275	8280
Performance				
CPU	266	333/450	266	333/450
CPM	166	250/300	166	250/300
60x/Memory Bus	66	83/100	66	83/100
Local Bus	–	83/100	–	83/100
I/D Cache	16/16	16/16	16/16	16/16
CPM Interfaces				
PCI	Yes	Yes	Yes	Yes
FCCs	3	3	3	3
• MII/RMII (Fast Ethernet)	3	3	3	3
• UTOPIA (ATM)	0	0	2	2
Multi-Channel HDLC	128	128	128	256
SCCs	4	4	4	4
USB 1.1	1	1	1	1
SMCs	2	2	2	2
I²C/SPI	1	1	1	1
IMA/TC Functionality	No	No	No	Yes
• Package	516 PBGA	480 TBGA	516 PBGA	480 TBGA

Freescale's Design Alliance Program delivers innovative software and hardware solutions that speed time to market and free network equipment providers to focus on value-added functionality.

Freescale works closely with members of the Design Alliance program to ensure that PowerQUICC developers are supported by a wide range of industry-standard operating systems, development tools, instrumentation support and software. These tools enable developers to get the most out of Freescale processors in all phases of the design process.

PowerQUICC II Processor Family

With more than 5,000 design wins, Freescale's PowerQUICC family of integrated communications processors is the ideal choice for your embedded networking and communications systems needs.

Explore Freescale's networking and communications embedded solutions on the web at **www.freescale.com/powerquicc**.

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

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