

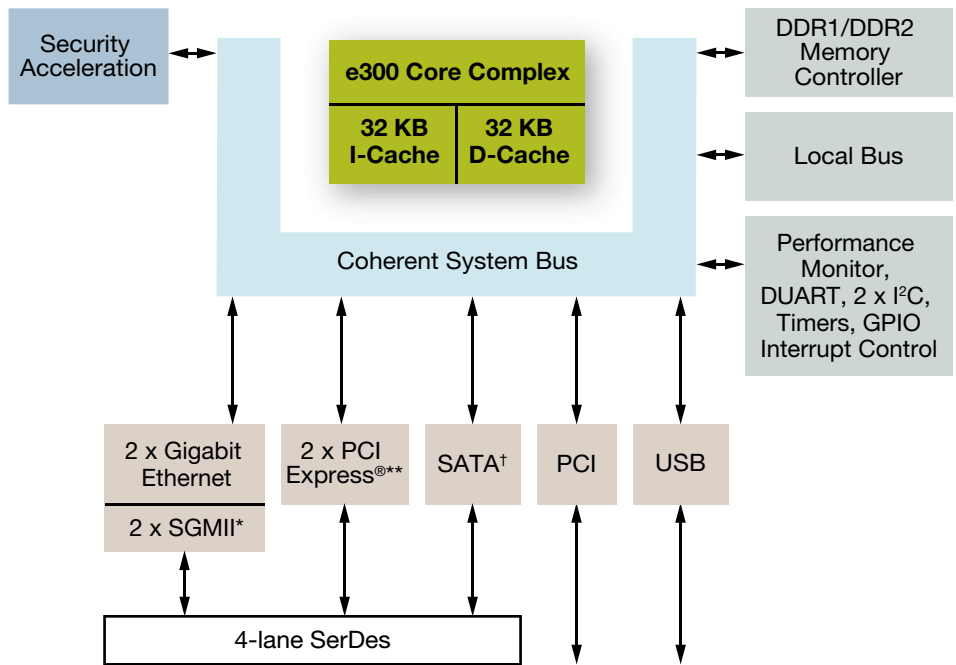
# Integrated Communications Processors MPC837x Modular Development System (MDS)

The MPC837x Modular Development System (MDS) assists designers by providing a platform for system development based on the MPC837x family. This platform enables designers to bring up silicon, develop new software applications and do performance benchmarking. It can also be used for customer evaluation and demonstration purposes in a wide variety of applications, such as networking, printing and storage.

The MPC837x MDS is built on Power Architecture™ technology and supports the MPC8377, MPC8378 and MPC8379. The MPC837x family has an e300 core that ranges from 400-667 MHz with 32K data and instruction cache, and supports two Gigabit Ethernets, USB 2.0, PCI, 64-/32-bit DDR1/2 and a Security Engine. The MPC8377 also supports x2 PCI Express® and 2 SATA controllers, while the MPC8378 supports x2 PCI Express and 2 SGMII, and the MPC8379 supports 4 SATA controllers. The MPC837x MDS provides a flexible modular development system that allows system designers to take advantage of the highly integrated, high-performance MPC837x family.

The MPC837x MDS comes complete with a processor board and high-speed serial interface (HSSI) cards that support PCI Express, SATA and/or SGMII. The MPC837x MDS also has the ability to be connected to a PowerQUICC® platform I/O board (PIB) or a PCI extender board that allows it to act as either a PCI host or device.

MPC837x Family Block Diagram



**Note**

\*SGMII only available on MPC8378

\*\*PCI-Express only available on MPC8378, MPC8377

†SATA only available on MPC8377 (2 x SATA), MPC8379 (4 x SATA)

■ Core ■ Accelerators ■ I/O

Along with hardware support, the MPC837x MDS comes with a software board support package (BSP) that includes both the u-boot and Linux kernel 2.6 support. The BSP also supports the Linux Target Image Builder

(LTIB), a suite of tools that leverages existing open source configuration scripts and source code packages and bundles them all into a single BSP generation bundle.

**MPC**  
Product Code  
PPC=Samples  
KMPC=2 Piece Sample Pack  
MPC=Full Qual

**8379**  
8379 Family Device  
Number Device  
8379 – X4 SATA  
8378 – 2X1 PCI Express, SGMII  
8377 – 2x1 PCI Express, X2 SATA

**E**  
Encryption Acceleration  
Blank=Not Included  
E=Included

**C**  
Temp. Range (Junction)  
Blank = 0° to +105°C  
C = -40° to +105°C

**VR**  
Package  
VR = 689 PB Free TePBGA

**AL**  
e300 Frequency

**G**  
Platform Frequency

**Die Revision**  
Blank=Production Rev 0

CPU/Platform  
ALG=667/400  
AJF=533/333  
AGD=400/266

\*TBD

MPC837x PowerQUICC® II Pro Family	MPC8379E	MPC8378E	MPC8377E
Core	e300	e300	e300
CPU Speed	Up to 667 MHz	Up to 667 MHz	Up to 667 MHz
L1 I/D Cache	32KI/ 32KD	32KI/32KD	32KI/32KD
Memory Controller	32-/64-bit DDR/2 up to 400 MHz	32-/64-bit DDR/2 up to 400 MHz	32-/64-bit DDR/2 up to 400 MHz
Local bus	32-bit w/NAND boot support	32-bit w/NAND boot support	32-bit w/NAND boot support
PCI	1 32-bit up to 66 MHz (2.3)	1 32-bit up to 66 MHz (2.3)	1 32-bit up to 66 MHz (2.3)
PCI Express®	–	2-x1 or 1-x2	2-x1 or 1-x2
SATA	4x1 SATA 2.0 w/PHY	–	2x1 SATA 2.0 w/PHY
Ethernet	2-10/100/1000 (RGMII, RTBI, RMII, MII)	2-10/100/1000 (SGMII, RGMII, RTBI, RMII, MII)	2-10/100/1000 (RGMII, RTBI, RMII, MII)
USB	1- 2.0 Host or Device	1-2.0 Host or Device	1- 2.0 Host or Device
Security	E version only	E version only	E version only
UART	Dual	Dual	Dual
I <sup>2</sup> C	Dual	Dual	Dual
SPI	Yes	Yes	Yes
Interrupt Controller	Yes	Yes	Yes
Package	Te PBGA	Te PBGA	Te PBGA
General Samples	Oct 2007	Oct 2007	Oct 2007
Production	Jun 2008	Jun 2008	Jun 2008

## Features

- Memory
  - 512 MB DDR2 up to 400 MHz data rate
- Local Bus Flash Memory
  - 32 MB NOR Flash
  - 32 MB NAND Flash
  - 4 Mb SPI Flash
  - SD Card Connector
- PCI
  - PCI edge connector carried for 32-bit for agent
  - High-Speed Riser Connectors that allow the board to connect the PowerQUICC platform I/O board (PIB) or PCI extender to act as a PCI host.
- Ethernet
  - Dual 10/100/1000 Gigabit Ethernet transceivers supporting RGMII, RTBI, MII and SGMII

- USB 2.0
    - USB 2.0 transceiver ULPI for high speed (480 MB/s) and full speed (12 Mb/s)
    - Serial USB transceiver for low speed (1.5 Mb/s) and full speed (12 Mb/s)
  - RS232
    - Dual RS232 transceiver connected to DUART
  - I<sup>2</sup>C Buses
    - Supports 256K EEPROM, real time clock, 1Kb BRD EEPROM
  - High-Speed Serial Interfaces (HSSI)
    - 2 SATA HSSI (MPC8379)
    - 1 SATA and 1 PCI Express HSSI (MPC8377)
    - 1 PCI Express and 1 SGMII HSSI (MPC8378)
  - Power Options
    - Can be powered by 5V external power supply
    - Can be powered from PCI edge connector as a PCI add-in card
    - Can be powered from PIB when IO and processor boards are combined
- The MPC837x MDS is available with the following documentation:
- HW Getting Started Guide
  - MPC837x-MDS-PB Spec
- For additional information regarding documentation or board availability, please contact your local Freescale sales office.

Part Number	Description
MPC8377E-MDS-PB	Includes 1 processor board, 1 SATA card, 1 PCI Express card
MPC8378E-MDS-PB	Includes 1 processor board, 1 PCI Express card, 1 SGMII card
MPC8379E-MDS-PB	Includes 1 processor board, 2 SATA cards

## Learn More:

For current information about Freescale products and documentation, please visit [www.freescale.com](http://www.freescale.com).



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