The MPC5200 High Performance
Embedded Microprocessor
with High Integration and Throughput

MPC5200

Six Pack

Revised 10/04

C5200 Processor Simplified Block Diagram

PowerPC 603e with FPU @400 MHz

- 272 Pins
- ~ 1 Watt
- Low Cost
- 760 MIPs w/FPU
- Long Term Avail.

USB
Master 1.1
(two)

PCI ATA

DDR/SDR SDRAM Ctl.

BestComm/DMA I/O Controller

| PSC (six) | 10/100 BaseT | CAN (two) | SPI | AC97 (PSC) | I^{2}C (two) | I^{2}S (3 on PSC) | J1850 |

MPC5200 Block Diagram

Features

- 603e series PowerPC® Core
  - 16K Instruction and 16K Data Caches
  - Dual 32 Entry MMUs
- High Speed DDR SDRAM interface
  - 256Mbyte addressing range, 32-bit wide
- Flexible multi-function external bus
  - PCI master v2.2, ATA v4 compatibility
- BestComm I/O subsystem
  - Support for PSC, Ethernet, USB 1.1, PCI, ATA, I²C, AC97 & CODEC Interfaces, SPI, CAN
  - 16kB internal SDRAM
- 6 Peripheral Serial Controllers Configurable as
  - UART, AC97 & CODEC Interfaces, I²S
  - 8 Counter/Timers
- BDLC-D J1850
- Superior I/O for Industrial Automation and Automotive Applications
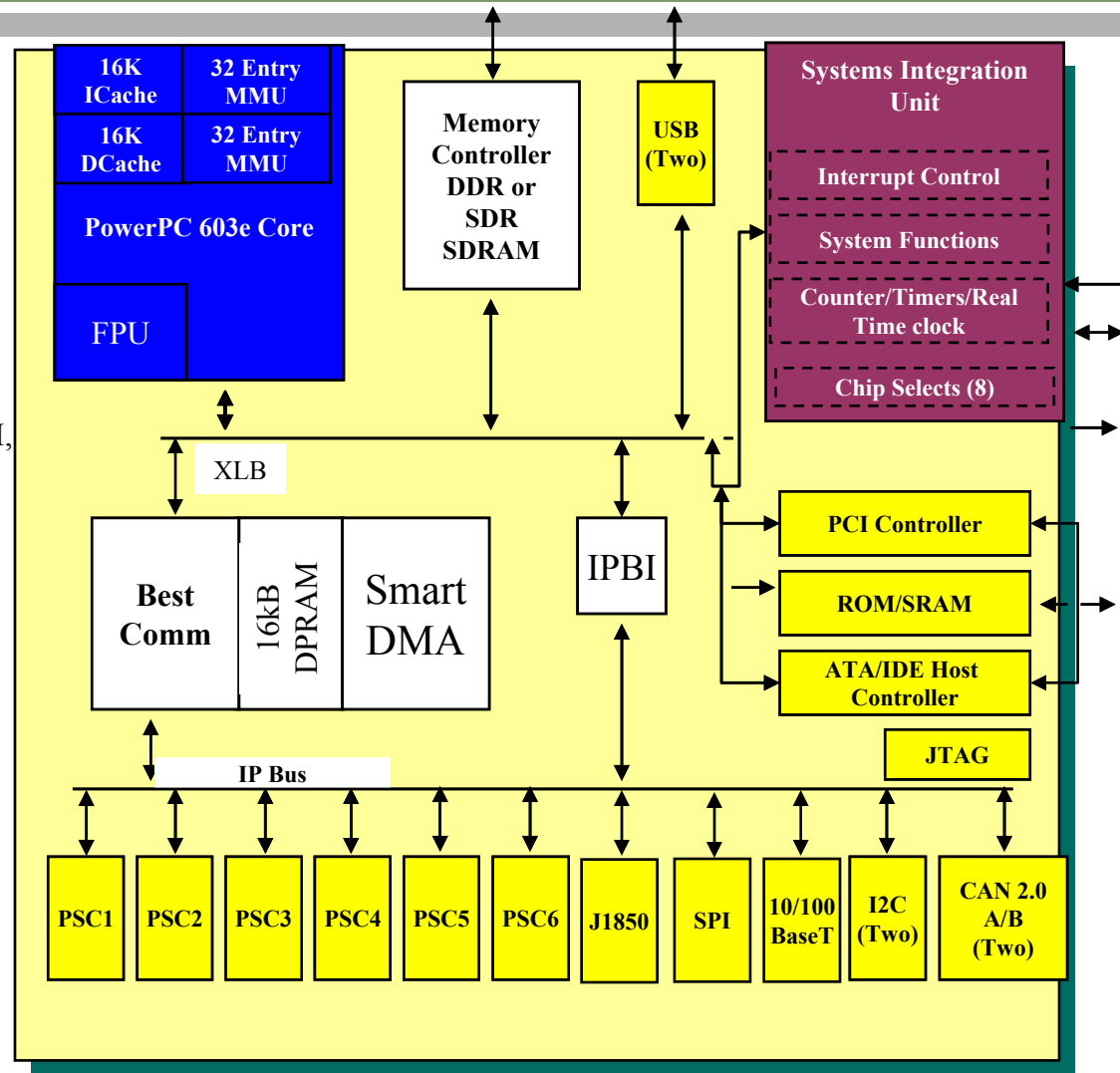 - CAN, Serial, USB, J1850 (MOST® on Total5200 Development Board)

Power Management

- Sleep and deep sleep modes. ~ 1W @ 400 MHz

Performance:

- 500 MIPS (266 MHz) at -40 to 85C
- 760 MIPS (400 MHz) at -40° C to 85 C

Package

- 272 pin PBGA, 1.27mm pitch

Block diagram elements: 16K ICache, 16K DCache, 32 Entry MMU, 32 Entry MMU, PowerPC 603e Core, FPU; Memory Controller DDR or SDR SDRAM; USB (Two); Systems Integration Unit — Interrupt Control, System Functions, Counter/Timers/Real Time clock, Chip Selects (8); XLB; Best Comm, 16kB DPRAM, Smart DMA; IPBI; PCI Controller; ROM/SRAM; ATA/IDE Host Controller; JTAG; IP Bus; PSC1, PSC2, PSC3, PSC4, PSC5, PSC6, J1850, SPI, 10/100 BaseT, I2C (Two), CAN 2.0 A/B (Two)

MPC5200 Market Opportunities

Suitable for a wide range of general purpose embedded applications,
Including upgrades from existing MPC821/823 designs who need
the MIPS, FPU and/or new I/O

Industrial Control
Robotics
Instrumentation
Vision system control
Speech interfaces
Hot-swap of portables
Wireless data transfers
Medical equipment
Traffic control system
Room control system
Manufacturing equipment control
Factory automation smart nodes

Networked Appliances
Gateways with USB & Ethernet
Residential gateway controller
Digital Set-top box
Room control system
Web-based control interfaces

Avionics/Telematics
Fleet management
Instrumentation
Navigation, speech enabled
Autonomous or server based
Complex, real-time algorithms
Systems control
Telematics Control Units

Security
Wireless/fixed access control
Fingerprint verification
Video capture systems
Monitoring systems
Vision systems
Internet services

Other
Portable or fixed medical appliances
Asset tracking systems

MPC5200 Benefits

- **The right I/O mix at the right price in one small package for the long haul!**

- **Competitive production silicon solution**
    - Best performance/price/footprint/power (760 MIPS/$22.50/272 pins/1 watt)
    - Incredible array of integrated I/O including Ethernet, PCI, USB and CAN.
    - 500-1000 MIPS MPC5200 with Floating Point Unit (FPU)
    - Great data throughput with Double Data Rate (DDR) and
    - BestComm DMA support

Lite5200 EVB

- **Robust Development Platforms, BSP's with choice of RTOS's**
    - Metrowerks® CodeWarrior® & Linux PCS support on Lite5200
    - ARC Precise/MQX, Green Hills Software INTEGRITY®, Metrowerks Linux & OSEKturbo, MontaVista® Linux, QNX®, Wind River VxWorks
    - Abatron®, Green Hills® Probe, Lauterbach®, PowerTAP®, Slingshot®, WireTAP® probe support

- **Complete Total5200 and mobileGT Std. Development Platforms**
    - QNX Momentics, QNX BSP & Java® for application development
    - Green Hills MULTI and INTEGRITY BSP
    - Metrowerks CodeWarrior and Linux BSP
    - Speech solutions available from Clarity®, Fonix®, IBM®, ScanSoft® and Wavemakers®.

Total5200 Dev. Platform