# MPC5500 Family

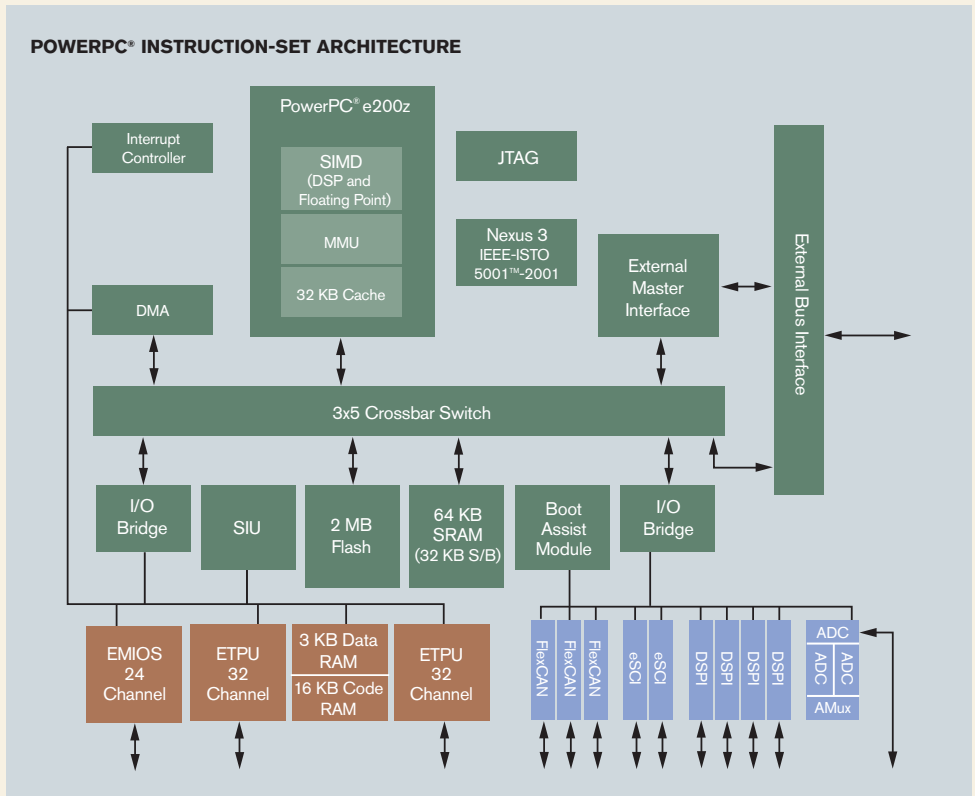## MPC5500 Family of 32-bit Microcontrollers

The MPC5500 advanced 32-bit microcontrollers family extends the MPC500 Family tradition of performance and integration that has become a standard in advanced automotive applications. The MPC5500 Family is expected to add the functionality and flexibility necessary for a wide range of automotive applications. All family members have a clear migration path between products, so customers can cost-effectively adopt or upgrade products as their needs change.

The MPC5500 Family offers system solutions that include application software, development tools, training, documentation and technical support. A simulation environment toolset is available now that is designed to enable migration to the MPC5500. The full production-ready tool suite will be available with silicon.

## MPC5500 Family Features

### Freescale e200 Core

> Up to 600 MHz 32-bit Book E PowerPC® e200 core

> Scalable caches 0 KB–64 KB for both Instruction (I) and Data (D) with cache line lockability

> Memory management unit (MMU) provides support for page sizes from 4 KB–256 MB

**POWERPC® INSTRUCTION-SET ARCHITECTURE**



Flash memory and memory protection and mapping facilities

> (SPE APU) Signal Processing Extension Auxiliary Processing Unit for high-performance DSP and floating point functionality
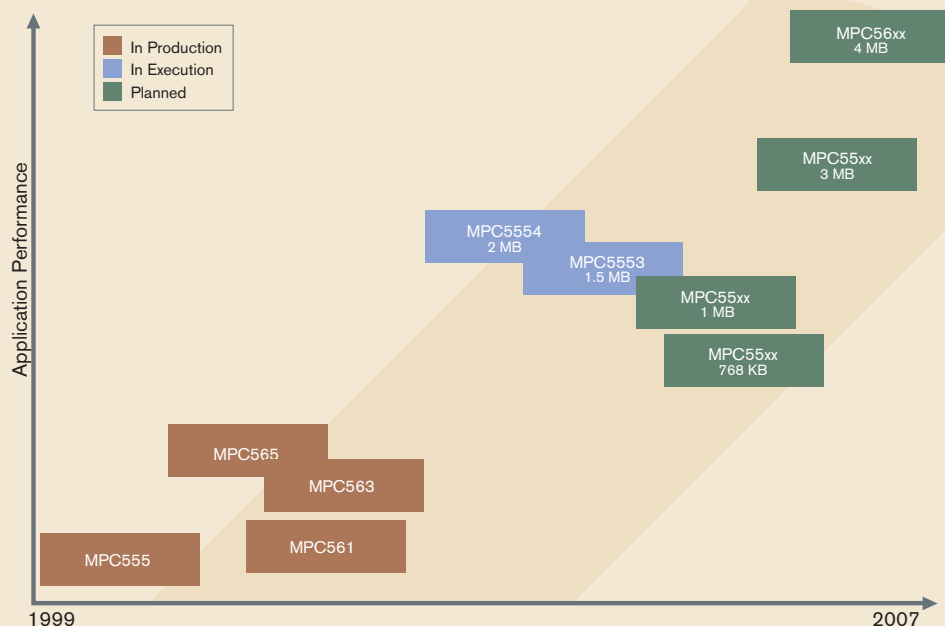
### Memory

> Up to 4 MB onboard Flash memory

> Up to 256 KB SRAM I/O

> Up to 100 timed I/O channels

> C-compiler support for eTPU

> CAN 2.0b-compliant FlexCANs (64 message buffers)

> (eSCIs) enhanced asynchronous serial communications interfaces

> (DSPIs) synchronous serial communications with mulitplexing function

> Dual enhanced queued analog-to-digital converter (eQADC) with 12-bit resolution (1.25uS conversion time)

> High-speed serial link for external ADC

**freescale**™
*semiconductor*

**AUTOMOTIVE HIGH-PERFORMANCE MCUs**



Legend:
- In Production
- In Execution
- Planned

Chart (Application Performance vs. Year, 1999–2007):
- MPC555 (In Production)
- MPC561 (In Production)
- MPC565 (In Production)
- MPC563 (In Production)
- MPC5554 — 2 MB (In Execution)
- MPC5553 — 1.5 MB (In Execution)
- MPC55xx — 768 KB (Planned)
- MPC55xx — 1 MB (Planned)
- MPC55xx — 3 MB (Planned)
- MPC56xx — 4 MB (Planned)

## System

> Frequency modulated phase lock loop (FM-PLL) to minimize Electromagnetic Interference (EMI)

> Up to 64-channel enhanced direct memory access (eDMA) controller

> Interrupt controller supporting up to 512 interrupt sources

> Nexus IEEE-ISTO 5001™ Class 3+ debug (e200 core, eTPU and eDMA)

> High-speed external bus interface supporting MPC5xx-compatible Flash and RAM memories

> 5V ADC

> 5V I/O

> Range of PBGA package offerings

## MPC5500 Family Benefits

> Maximum upward compatibility with MPC5xx Family

> Excellent functionality and performance

> High level of flexibility

> Commitment to automotive-grade embedded Flash

> Code compatibility and scalability among family members to help eliminate migration worries and offer software reuse

> Package compatibility across family members

## Committed to You for the Long Run

With 30 years of experience, Freescale* understands your priorities—design higher performance products in less time and at a reduced total cost. To that end, the MPC5500 Family of products enables you to buy as much or as little performance as you need to help meet your product development goals.

*The Semiconductor Products Sector of Motorola, Inc. became Freescale Semiconductor, Inc. in 2004.

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

*Launched by Motorola*

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