Power Architecture® 32-bit Microcontroller Fact Sheet
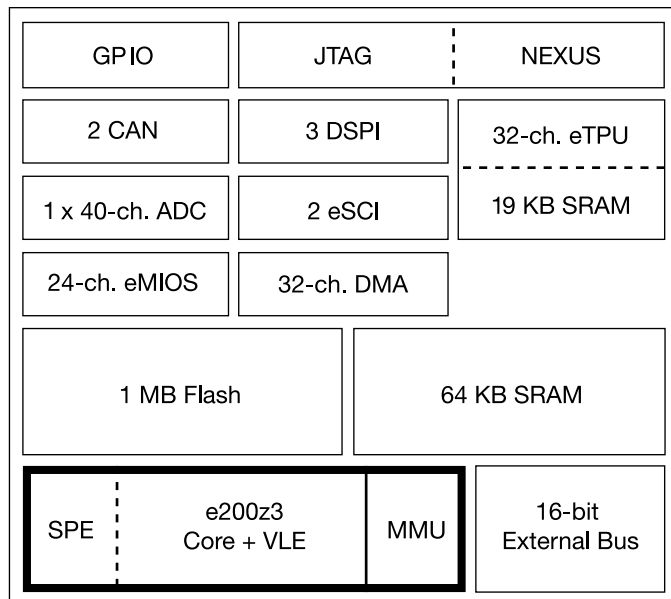
Qorivva MPC5534 Family

Entry-point into 32-bit microcontrollers built
on Power Architecture® technology

Overview

Designed for low-end engine management
applications as well as industrial uses
requiring complex real-time control, the
Qorivva MPC5534 is a 32-bit microcontroller
with 1 MB of flash, 64 KB of SRAM and
up to 80 MHz of performance. The Qorivva
MPC5534 uses variable length encoding (VLE)
to improve code density up to 30 percent over
the classic PowerPC® technology.

Qorivva MPC5554 Block Diagram

GPIO	JTAG	NEXUS
2 CAN	3 DSPI	32-ch. eTPU
1 x 40-ch. ADC	2 eSCI	19 KB SRAM
24-ch. eMIOS	32-ch. DMA	
1 MB Flash		64 KB SRAM
SPE e200z3 Core + VLE MMU		16-bit External Bus

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Applications

- Multi-point fuel injection control
- Electronically controlled transmissions
- Direct diesel injection
- Gasoline direct injection
- Avionics
- High-end motion control
- Military
- Heavy industries

Features

Freescale's e200z3 + VLE Core

- High-performance 80 MHz 32-bit Book E-compliant core with VLE
- Memory management unit with 16-entry fully associative translation lookaside buffer
- Signal processing extension: DSP, SIMD and floating point capabilities

Memory

- 1 MB of embedded flash memory with error correction coding (ECC) and read while write capability
- 64 KB on-chip static RAM with ECC

System

- One enhanced time processor unit with 64 I/O channels and 19 KB of designated SRAM
- eTPU is 32-channel with 14.5 KB RAM
- Interrupt controller capable of handling 210 selectable-priority interrupt sources
- Frequency modulated phase-locked loop to assist in electromagnetic interference management
- MPC500-compatible external bus interface
- Nexus IEEE-ISTO 5001™ Class 3+ multicore debug capabilities
- 5/3.3V IO, 5V ADC, 3.3V/1.8V bus, 1.5V core
- 324-pin PBGA and 208 MAPBGA packaging
- Temperature range: -40ºC to +125ºC

I/O

- 40-ch. dual enhanced queued analog-to-digital converter—up to 12-bit resolution and up to 1.25 ms conversions, six queues with triggering and DMA support
- Three deserial serial peripheral interface (DSPI) modules—16 bits wide up to six chip selects each
- Two controller area network (CAN) modules with 64 buffers each
- Two enhanced serial communication interface (eSCI) modules
- 24-ch. enhanced multiple I/O system with unified channels

Benefits

Excellent System Performance:
Book E core includes integrated DSP features and upgraded interrupt control

Cost Effectiveness:
Integrates more functionality on chip. Functions previously performed in external analog hardware have been moved into software

Flexibility
Supports multiple protocols and customer requirements through intelligent subsystems

Scalability and Compatibility:
Core- and platform-based architecture enables simple derivative development. Leverages past engineering investments and existing Power Architecture knowledge to create a solid migration path from MPC500 to Qorivva MPC55xx MCUs

Ease of Use:
5V interfaces to allow use of legacy sensor and I/O systems

Development Support

A comprehensive suite of hardware and software development tools for the Qorivva MPC5534 is available to help simplify and speed system design. Development support is available through leading independent tools vendors providing compilers, debuggers, simulation environments, as well as other more advanced or specific development tools.

In addition to the standard evaluation kit that comes with the CodeWarrior™ compiler offering, Green Hills Software and iSYSTEM both provide individual evaluation kits to offer a uniquely catered out-of-box experience.

Committed to You for the Long Run

Freescale understands your top priority: Design higher performance products in less time and at a reduced total cost. The Qorivva MPC55xx family enables you to buy as much or as little performance as you need to help meet your product development goals. Its migration path from the MPC500 Family means time and resources already invested in Power Architecture technology won't be wasted.

For more information, please contact your local Freescale sales office.