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What is "[Embedded - Microcontrollers](#)"?

"[Embedded - Microcontrollers](#)" refer to small, integrated circuits designed to perform specific tasks within larger systems. These microcontrollers are essentially compact computers on a single chip, containing a processor core, memory, and programmable input/output peripherals. They are called "embedded" because they are embedded within electronic devices to control various functions, rather than serving as standalone computers. Microcontrollers are crucial in modern electronics, providing the intelligence and control needed for a wide range of applications.

Applications of "[Embedded - Microcontrollers](#)"

Details

| | |
|----------------------------|---|
| Product Status | Active |
| Core Processor | e200z0h |
| Core Size | 32-Bit Single-Core |
| Speed | 64MHz |
| Connectivity | CANbus, I ² C, LINbus, SCI, SPI |
| Peripherals | DMA, POR, PWM, WDT |
| Number of I/O | 77 |
| Program Memory Size | 1.5MB (1.5M x 8) |
| Program Memory Type | FLASH |
| EEPROM Size | 64K x 8 |
| RAM Size | 96K x 8 |
| Voltage - Supply (Vcc/Vdd) | 3V ~ 5.5V |
| Data Converters | A/D 7x10b, 5x12b |
| Oscillator Type | Internal |
| Operating Temperature | -40°C ~ 125°C (TA) |
| Mounting Type | Surface Mount |
| Package / Case | 100-LQFP |
| Supplier Device Package | 100-LQFP (14x14) |
| Purchase URL | https://www.e-xfl.com/product-detail/nxp-semiconductors/spc5607bk0mll6r |

Qorivva MPC560xB/C/D Family



Automotive body and gateway applications

Overview

The Qorivva MPC560xB/C/D family of 32-bit MCU includes the latest Freescale integrated devices for automotive body electronics applications. The advanced cost-efficient host processor core leverages the many strengths of Power Architecture® technology, such as processing capability, on-chip memory, analog capabilities, timing systems and other features required to handle complex control and diagnostic systems. In addition, these scalable devices are supported by an enablement ecosystem that includes software drivers, operating systems and configuration code to help you quickly implement your designs.

Applications

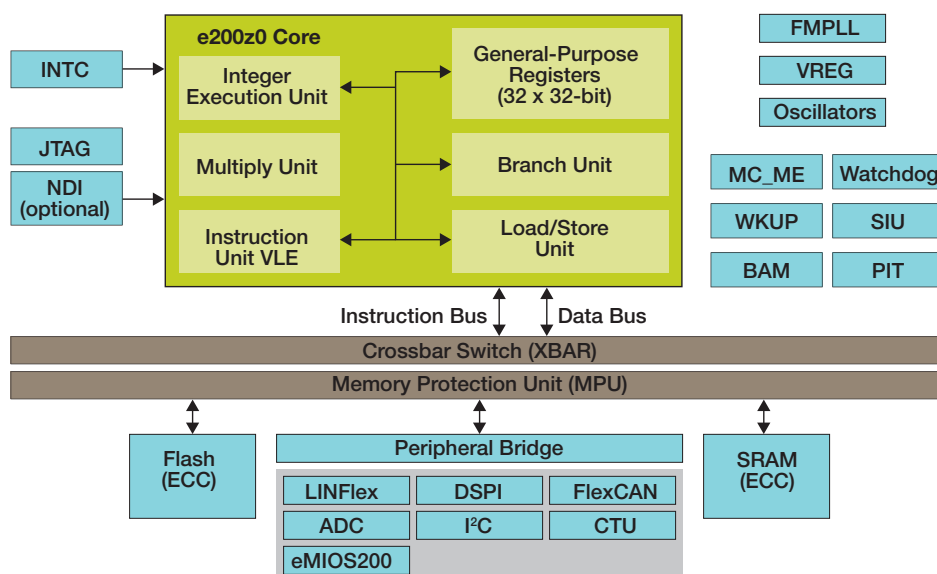
- Central body controllers
- Gateway controllers
- Body electronics
- Comfort controls

Qorivva MPC560xB/C/D Key Features

Includes controller area network (CAN), local interconnect network (LIN) and other peripherals necessary to implement a range of functionality in the automotive body network.

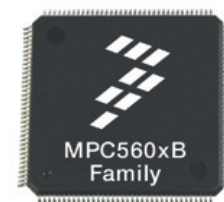
- FlexCAN module supporting both FIFO and mailbox data storage, ideal for CAN gateways to manage event-driven vs. periodic bus traffic.
- LINFlex module provides fully automated LIN message management, reducing CPU load intervention and message latencies.
- eMIOS timer combines multiple counter sources, including input capture, output compare and pulse width modulation (PWM) capabilities into one very flexible module. PWM function supports shifted signal output to improve electromagnetic compatibility.
- Cross triggering unit synchronizes PWM output signals with analog-to-digital conversion to enable accurate diagnostic and control capabilities.

Qorivva MPC560xB/C Block Diagram



- Scalable e200z0 core enables migration toward higher performance solutions.
- Compatible family of products ensures reuse of software and tools infrastructures.

In addition, the Qorivva MPC5601D, MPC5602D, MPC5605B, MPC5606B and MPC5607B are available with direct memory access.



Selector Guide

| Product Number | Temp. Ranges | Features | Package | Speed |
|----------------|-------------------|---|------------------------------|--------------|
| MPC5607B | -40 °C to +125 °C | 1.5 MB Flash, 6 CAN, 6 SPI, 10 LINFlex, 64 KB Data Flash, 96 KB RAM, 16-bit Timer (64 channels), 12-bit ADC (16 channels) and 10-bit ADC (32 channels) | 176 LQFP | Up to 64 MHz |
| MPC5606B | -40 °C to +125 °C | 1 MB Flash, 6 CAN, up to 6 SPI, up to 8 LINFlex, 64 KB Data Flash, 80 KB RAM, 16-bit Timer (64 channels), 12-bit ADC (16 channels) and 10-bit ADC (up to 32 channels) | 144 LQFP, 176 LQFP | Up to 64 MHz |
| MPC5605B | -40 °C to +125 °C | 768 KB Flash, 6 CAN, up to 6 SPI, up to 8 LINFlex, 64 KB Data Flash, 64 KB RAM, 16-bit Timer (up to 64 channels), 12-bit ADC (16 channels) and 10-bit ADC (up to 32 channels) | 100 LQFP, 144 LQFP, 176 LQFP | Up to 64 MHz |
| MPC5604C | -40 °C to +125 °C | 512 KB Flash, 6 CAN, 3 SPI, 4 LINFlex, 64 KB Data Flash EEPROM, 48 KB RAM, 16-bit Timer (up to 28 channels), 10-bit ADC (up to 28 channels) | 64 LQFP, 100 LQFP | Up to 64 MHz |
| MPC5604B | -40 °C to +125 °C | 512 KB Flash, 3 CAN, 3 SPI, 4 LINFlex, 64 KB Data Flash EEPROM, 32 KB RAM, 16-bit Timer (up to 56 channels), 10-bit ADC (up to 36 channels) | 64 LQFP, 100 LQFP, 144 LQFP | Up to 64 MHz |
| MPC5603C | -40 °C to +125 °C | 384 KB Flash, 6 CAN, 3 SPI, 4 LINFlex, 64 KB Data Flash EEPROM, 40 KB RAM, 16-bit Timer (up to 28 channels), 10-bit ADC (up to 28 channels) | 64 LQFP, 100 LQFP | Up to 64 MHz |
| MPC5603B | -40 °C to +125 °C | 384 KB Flash, 2 CAN, 3 SPI, 4 LINFlex, 64 KB Data Flash EEPROM, 28 KB RAM, 16-bit Timer (up to 56 channels), 10-bit ADC (up to 36 channels) | 64 LQFP, 100 LQFP, 144 LQFP | Up to 64 MHz |
| MPC5602D | -40 °C to +125 °C | 256 KB Flash, 1 CAN, 2 SPI, 3 LINFlex, 64 KB Data Flash EEPROM, 16 KB RAM, 16-bit Timer (up to 28 channels), 12-bit ADC (up to 33 channels) | 64 LQFP, 100 LQFP | Up to 48 MHz |
| MPC5602C | -40 °C to +125 °C | 256 KB Flash, 6 CAN, 3 SPI, 4 LINFlex, 64 KB Data Flash EEPROM, 32 KB RAM, 16-bit Timer (up to 28 channels), 10-bit ADC (up to 28 channels) | 64 LQFP, 100 LQFP | Up to 64 MHz |
| MPC5602B | -40 °C to +125 °C | 256 KB Flash, 2 CAN, 2 SPI, 3 LINFlex, 64 KB Data Flash EEPROM, 24 KB RAM, 16-bit Timer (up to 56 channels), 10-bit ADC (up to 36 channels) | 64 LQFP, 100 LQFP, 144 LQFP | Up to 64 MHz |
| MPC5601D | -40 °C to +125 °C | 128 KB Flash, 1 CAN, 2 SPI, 3 LINFlex, 64 KB Data Flash EEPROM, 12 KB RAM, 16-bit Timer (up to 28 channels), 12-bit ADC (up to 33 channels) | 64 LQFP, 100 LQFP | Up to 48 MHz |

Development Tools

| Part Number | Description | Pricing* |
|--|---|----------|
| For MPC5605B, MPC5606B and MPC5607B | | |
| XKT560B176SB15M | Kit Includes JDP Motherboard (XPC56XXMB2), Daughter Card (XDC560B176SB15M) and P&E Wiggler | \$497 |
| XKT560B144SB15M | Kit Includes JDP Motherboard (XPC56XXMB2), Daughter Card (XDC560B144SB15M) and P&E Wiggler | \$497 |
| XKT560B100SB15M | Kit Includes JDP Motherboard (XPC56XXMB2), Daughter Card (XDC560B100SB15M) and P&E Wiggler | \$497 |
| XKT560B208SB15M | Kit Includes JDP Motherboard (XPC56XXMB2), Daughter Card (XDC560B208SB15M) and P&E Wiggler | \$497 |
| XDC560B176SB15M | 176 LQFP Daughter Card | \$120 |
| XDC560B144SB15M | 144 LQFP Daughter Card | \$120 |
| XDC560B100SB15M | 100 LQFP Daughter Card | \$120 |
| XDC560B208SB15M | 208 MAPBGA Daughter Card | \$120 |
| TRK-MPC5606B | 144 LQFP StarterTRAK Board | \$99 |
| For MPC5602B, MPC5602C, MPC5603B, MPC5603C, MPC5604B and MPC5604C | | |
| XKT560B144SC512K | Kit Includes JDP Motherboard (XPC56XXMB2), Daughter Card (XDC560B144SC512K) and P&E Wiggler | \$497 |
| XKT560B100SC512K | Kit Includes JDP Motherboard (XPC56XXMB2), Daughter Card (XDC560B100SC512K) and P&E Wiggler | \$497 |
| XKT560B208SC512K | Kit Includes JDP Motherboard (XPC56XXMB2), Daughter Card (XDC560B208SC512K) and P&E Wiggler | \$497 |
| XDC560B144SC512K | 144 LQFP Daughter Card | \$120 |
| XDC560B100SC512K | 100 LQFP Daughter Card | \$120 |
| XDC560B208SC512K | 208 MAPBGA Daughter Card | \$120 |
| TRK-USB-MPC5604B | 100 LQFP StarterTRAK Mini | \$25 |
| MPC5602D and MPC5601D | | |
| XDC560B100SC256K | 100 LQFP Daughter Card | \$120 |
| XDC560B64SC256K | 64 LQFP Daughter Card | \$120 |
| For all MPC560xB/C/D | | |
| XPC56XXMB2 | JDP Motherboard | \$375 |

*Manufacturer Suggested Resale Price

For more information about Qorivva MPC560xB/C/D family solutions, please visit freescale.com/Qorivva

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