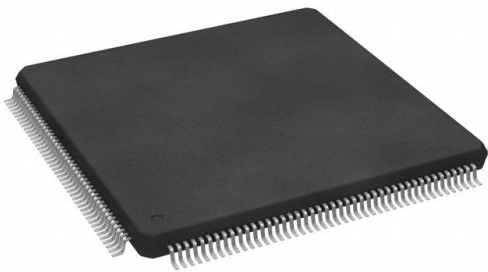


SPC5605BK0MLU6 Datasheet

www.digi-electronics.com



<https://www.DiGi-Electronics.com>

| | |
|------------------------------|-------------------------------------------------------------------------------------------------------------|
| DiGi Electronics Part Number | SPC5605BK0MLU6-DG |
| Manufacturer | NXP USA Inc. |
| Manufacturer Product Number | SPC5605BK0MLU6 |
| Description | IC MCU 32BIT 768KB FLASH 176LQFP |
| Detailed Description | e200z0h MPC56xx Qorivva Microcontroller IC 32-Bit Single-Core 64MHz 768KB (768K x 8) FLASH 176-LQFP (24x24) |

This model SPC5605BK0MLU6 is available at DiGi.Electronics.

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Purchase and inquiry

Manufacturer Product Number:

SPC5605BK0MLU6

Series:

MPC56xx Qorivva

DiGi-Electronics Programmable:

Not Verified

Core Size:

32-Bit Single-Core

Connectivity:

CANbus, I2C, LINbus, SCI, SPI

Number of I/O:

149

Program Memory Type:

FLASH

RAM Size:

64K x 8

Data Converters:

A/D 29x10b, 5x12b

Operating Temperature:

-40°C ~ 125°C (TA)

Supplier Device Package:

176-LQFP (24x24)

Base Product Number:

SPC5605

Manufacturer:

NXP USA Inc.

Product Status:

Active

Core Processor:

e200z0h

Speed:

64MHz

Peripherals:

DMA, POR, PWM, WDT

Program Memory Size:

768KB (768K x 8)

EEPROM Size:

64K x 8

Voltage - Supply (Vcc/Vdd):

3V ~ 5.5V

Oscillator Type:

Internal

Mounting Type:

Surface Mount

Package / Case:

176-LQFP

Environmental & Export classification

RoHS Status:

ROHS3 Compliant

REACH Status:

REACH Unaffected

HTSUS:

8542.31.0001

Moisture Sensitivity Level (MSL):

3 (168 Hours)

ECCN:

3A991A2



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

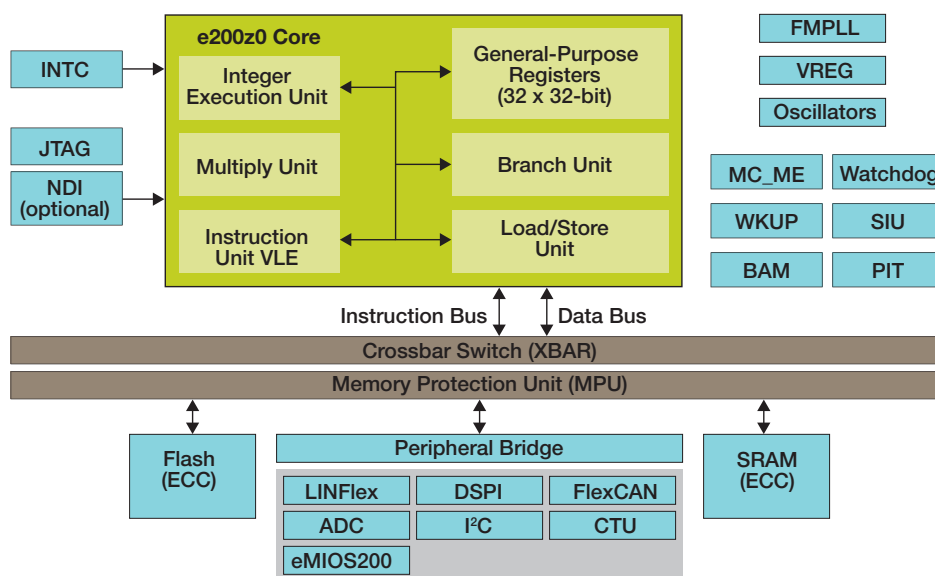
- Central body controllers
- Gateway controllers
- Body electronics
- Comfort controls

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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