Ultra-Reliable MPC574xB/C/G MCUs for Automotive and Industrial Control and Gateway
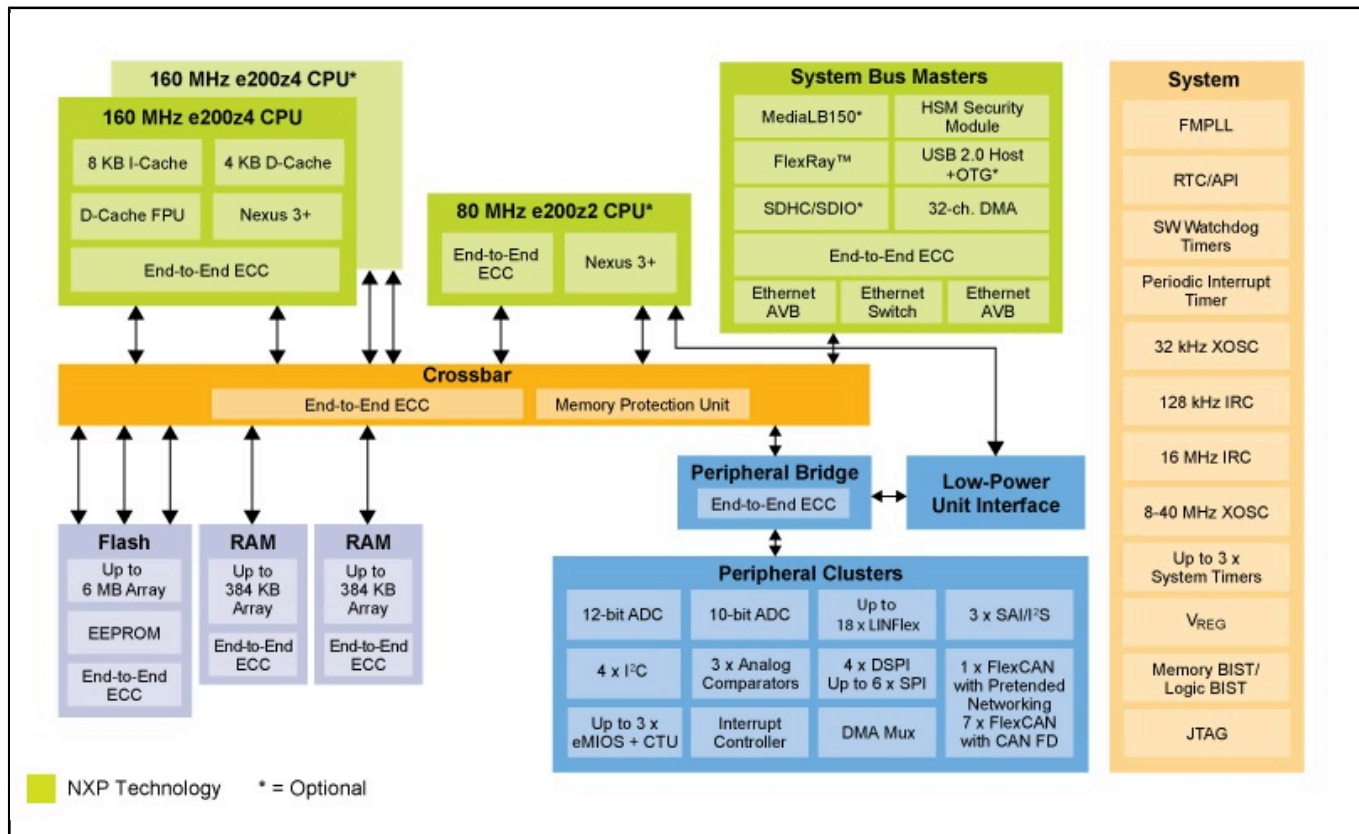
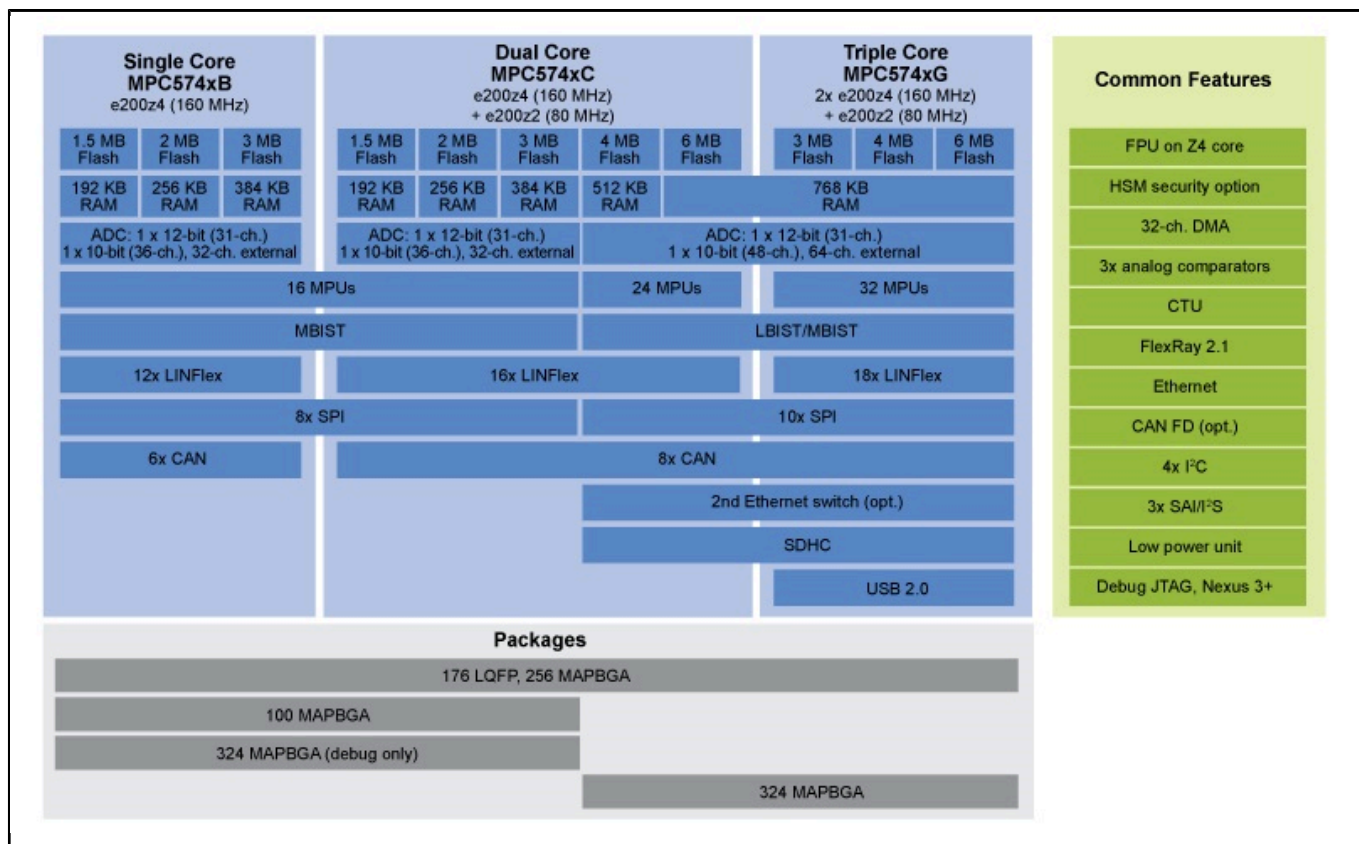## MPC574xB-C-G

Last Updated: Feb 10, 2025

The MPC574xB/C/G family of MCUs (eg. MPC5746C, MPC5748G) provides a highly integrated, safe and secure single-chip solution for next-generation central body control, gateway and industrial applications.

- Enhanced low-power capabilities provide Increased functionality with more efficient operation
- Hardware security module protects ECUs against various attack scenarios
- Functional safety support simplifies compliance for automotive safety systems targeting ISO 26262 and higher-end ASIL levels
- Comprehensive development tools simplify and accelerate system design
    - Complimentary S32 Design studio IDE with automotive-grade Software Development Kit (SDK)
    - AUTOSAR® MCAL and OS in a 3rd party ecosystem
    - Various Evaluation boards available to get started

NXP MPC5748G Family Block diagram Block Diagram

160 MHz e200z4 CPU*

160 MHz e200z4 CPU
- 8 KB I-Cache
- 4 KB D-Cache
- D-Cache FPU
- Nexus 3+
- End-to-End ECC

80 MHz e200z2 CPU*
- End-to-End ECC
- Nexus 3+

System Bus Masters
- MediaLB150*
- HSM Security Module
- FlexRay™
- USB 2.0 Host +OTG*
- SDHC/SDIO*
- 32-ch. DMA
- End-to-End ECC
- Ethernet AVB
- Ethernet Switch
- Ethernet AVB

System
- FMPLL
- RTC/API
- SW Watchdog Timers
- Periodic Interrupt Timer
- 32 kHz XOSC
- 128 kHz IRC
- 16 MHz IRC
- 8-40 MHz XOSC
- Up to 3 x System Timers
- V_{REG}
- Memory BIST/ Logic BIST
- JTAG

Crossbar
- End-to-End ECC
- Memory Protection Unit

Peripheral Bridge
- End-to-End ECC

Low-Power Unit Interface

Flash
- Up to 6 MB Array
- EEPROM
- End-to-End ECC

RAM
- Up to 384 KB Array
- End-to-End ECC

RAM
- Up to 384 KB Array
- End-to-End ECC

Peripheral Clusters
- 12-bit ADC
- 10-bit ADC
- Up to 18 x LINFlex
- 3 x SAI/I²S
- 4 x I²C
- 3 x Analog Comparators
- 4 x DSPI Up to 6 x SPI
- 1 x FlexCAN with Pretended Networking
- Up to 3 x eMIOS + CTU
- Interrupt Controller
- DMA Mux
- 7 x FlexCAN with CAN FD

■ NXP Technology   * = Optional

MPC574xB/C/G MCU BLOCK DIAGRAM Block Diagram

Single Core MPC574xB
e200z4 (160 MHz)

Dual Core MPC574xC
e200z4 (160 MHz) + e200z2 (80 MHz)

Triple Core MPC574xG
2x e200z4 (160 MHz) + e200z2 (80 MHz)

Common Features
- FPU on Z4 core
- HSM security option
- 32-ch. DMA
- 3x analog comparators
- CTU
- FlexRay 2.1
- Ethernet
- CAN FD (opt.)
- 4x I²C
- 3x SAI/I²S
- Low power unit
- Debug JTAG, Nexus 3+

MPC574xB			MPC574xC					MPC574xG		
1.5 MB Flash	2 MB Flash	3 MB Flash	1.5 MB Flash	2 MB Flash	3 MB Flash	4 MB Flash	6 MB Flash	3 MB Flash	4 MB Flash	6 MB Flash
192 KB RAM	256 KB RAM	384 KB RAM	192 KB RAM	256 KB RAM	384 KB RAM	512 KB RAM		768 KB RAM		

ADC: 1 x 12-bit (31-ch.)
1 x 10-bit (36-ch.), 32-ch. external

ADC: 1 x 12-bit (31-ch.)
1 x 10-bit (36-ch.), 32-ch. external

ADC: 1 x 12-bit (31-ch.)
1 x 10-bit (48-ch.), 64-ch. external

16 MPUs	24 MPUs	32 MPUs

MBIST | LBIST/MBIST

12x LINFlex	16x LINFlex	18x LINFlex

8x SPI | 10x SPI

6x CAN | 8x CAN

2nd Ethernet switch (opt.)

SDHC

USB 2.0

Packages
- 176 LQFP, 256 MAPBGA
- 100 MAPBGA
- 324 MAPBGA (debug only)
- 324 MAPBGA

View additional information for Ultra-Reliable MPC574xB/C/G MCUs for Automotive and Industrial Control and Gateway.

Note: The information on this document is subject to change without notice.

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