Welcome to E-XFL.COM

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	e200z4
Core Size	32-Bit Dual-Core
Speed	180MHz
Connectivity	CANbus, Ethernet, FlexRay, LINbus, SPI, UART/USART
Peripherals	DMA, LVD, POR, WDT
Number of I/O	-
Program Memory Size	1.5MB (1.5M x 8)
Program Memory Type	FLASH
EEPROM Size	-
RAM Size	192K x 8
Voltage - Supply (Vcc/Vdd)	3.15V ~ 5.5V
Data Converters	A/D 64x12b
Oscillator Type	Internal
Operating Temperature	-40°C ~ 125°C (TA)
Mounting Type	Surface Mount
Package / Case	144-LQFP
Supplier Device Package	144-LQFP (20x20)
Purchase URL	https://www.e-xfl.com/product-detail/nxp-semiconductors/spc5742pk1amlq8r

MPC574xP Microcontroller

Power Architecture®-based MCU for Automotive and Industrial Applications

Product One-Sheet

Data Sheet **Tools** **Buy**

Performance—2 x e200z4 cores in delayed lockstep operating up to 200 MHz, embedded floating point unit, 32-channel eDMA in delayed lockstep

High Reliability—AEC-Q100, automotive quality, up to 135°C ambient temperature

Abundant Features—FlexCAN, LINFlexD, DSPI, SENT, LFAST SIPI support, Dual-channel FlexRay™, Ethernet

Functional Safety—Built to support functional safety (ISO 26262/ASIL D and IEC 61508 SIL3), end-to-end ECC

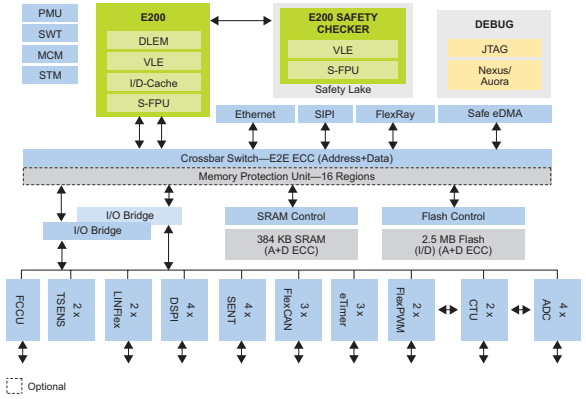
MPC574xP Specifications

Flash	Up to 2.5 MB	Timer/PWM	2 x FlexPWM w/ 4 x (2+1) ch.
RAM	Up to 384 KB	Other Timer	2 x eTimer w/ 6-ch., 1 x PIT / STM w/ 4-ch., SWT
Core	2 x e200z4 lockstep	Analog	4 x 12 bit ADC w/ 16-ch.
Speed	Up to 200 MHz	Comm	SENT, ADC, FlexCAN, FlexRay, LinFlex, DSPI, FlexPWM and SIPI/LFAST 3G IF
Package	144 LQFP/257 BGA		
Op Range	3.15 V to 5.5 V	Safety	Core/DMA lockstep, e2eECC, duplicate periphery, LBIST/ MBIST, ADC self-test, FCCU
Temp	-40°C to up to 135°C		

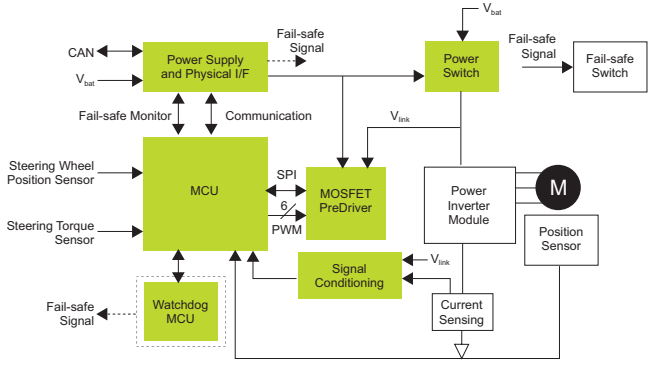
Orderable Samples

Part Number	Temp. Range	Flash	SRAM	Package
SPC5744P	-40°C to 125°C	2.5 MB	384 KB	144 LQFP/257 BGA
SPC5743P	-40°C to 125°C	2 MB	256 KB	144 LQFP/257 BGA
SPC5742P	-40°C to 125°C	1.5 MB	192 KB	144 LQFP/257 BGA
SPC5741P	-40°C to 125°C	1 MB	128 KB	144 LQFP/257 BGA

MPC574xP Block Diagram



Motor Control Application



Success Stories

- Electronic power steering
- Wireless charging
- Shock controller
- DC-DC converter

Target Applications

- Electric power steering (EPS)
- Airbag system
- Safety domain control
- Safety motor controller
- Active driver assistance system
- Adaptive cruise control
- Braking and stability control
- Active suspension

Enablement Tools

- Development hardware:
  - Mother evaluation board
  - Daughter adapter boards
- Runtime software:
  - Flash and EEPROM driver
- Compiler: Green Hills, Wind River
- Debugger: Lauterbach, iSystem, PLS

Product Longevity

Energy Efficient Solutions by Freescale

SAFE ASSURE by Freescale

www.nxp.com/MPC574xP

Document Number: MPC574xPFS REV 3