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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.

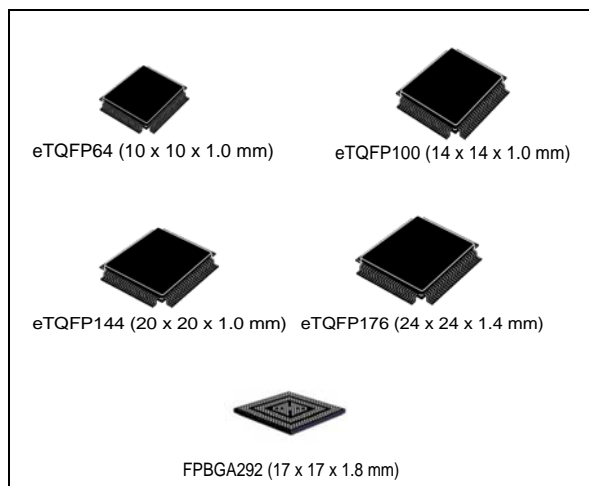
### Applications of "[Embedded - Microcontrollers](#)"

#### Details

Product Status	Obsolete
Core Processor	e200z420
Core Size	32-Bit Dual-Core
Speed	180MHz
Connectivity	CANbus, Ethernet, FlexRay, I <sup>2</sup> C, LINbus, SPI
Peripherals	DMA
Number of I/O	64
Program Memory Size	4MB (4M x 8)
Program Memory Type	FLASH
EEPROM Size	128K x 8
RAM Size	512K x 8
Voltage - Supply (Vcc/Vdd)	3.3V, 5V
Data Converters	-
Oscillator Type	Internal
Operating Temperature	-40°C ~ 125°C
Mounting Type	Surface Mount
Package / Case	292-BGA
Supplier Device Package	292-LFBGA (17x17)
Purchase URL	<a href="https://www.e-xfl.com/product-detail/stmicroelectronics/spc58ec80c3qmc0y">https://www.e-xfl.com/product-detail/stmicroelectronics/spc58ec80c3qmc0y</a>

## 32-bit Power Architecture<sup>®</sup> microcontroller for automotive ASIL-B applications

Data brief



### Features

- AEC-Q100 qualified
- High performance e200z420n3 dual core:
  - 32-bit Power Architecture technology CPU
  - Core frequency as high as 180 MHz
  - Variable Length Encoding (VLE)
- 4224 KB (4096 KB code flash + 128 KB data flash) on-chip flash memory: supports read during program and erases operations, and multiple blocks allowing EEPROM emulation
- 176 KB HSM dedicated flash memory (144 KB code + 32 KB data)
- 384 KB on-chip general-purpose SRAM (in addition to 128 KB core local data RAM: 64 KB included in each CPU)
- Multi-channel direct memory access controller (eDMA) with 64 channels
- 1 interrupt controller (INTC)
- Comprehensive new generation ASIL-B safety concept:
  - ASIL-B of ISO 26262
  - FCCU for collection and reaction to failure notifications
  - Memory Error Management Unit (MEMU) for collection and reporting of error events in memories
  - Cyclic redundancy check (CRC) unit
- Crossbar switch architecture for concurrent access to peripherals, Flash, or RAM from multiple bus masters with end-to-end ECC
- Body cross triggering unit (BCTU):
  - Triggers ADC conversions from any eMIOS channel
  - Triggers ADC conversions from up to 2 dedicated PIT\_RTIs
- Enhanced modular IO subsystem (eMIOS): up to 64 timed I/O channels with 16-bit counter resolution
- Enhanced analog-to-digital converter system with:
  - 3 independent fast 12-bit SAR analog converters
  - 1 supervisor 12-bit SAR analog converter
  - 1 10-bit SAR analog converter with STDBY mode support:
- Communication interfaces:
  - 18 LINFlexD modules
  - 8 deserial serial peripheral interface (DSPI) modules
  - 8 MCAN interfaces with advanced shared memory scheme and ISO CAN-FD support
  - Dual channel FlexRay controller
  - 1 Ethernet controller 10/100 Mbps, compliant IEEE 802.3-2008

- Low power capabilities:
  - Versatile low power modes
  - Ultra low power standby with RTC
  - Smart wake-up Unit for contact monitoring
  - Fast wakeup schemes
- Dual phase-locked loops with stable clock domain for peripherals and FM modulation domain for computational shell
- Nexus development interface (NDI) per IEEE-ISTO 5001-2003 standard, with some support for 2010 standard
- Boot assist Flash (BAF) supports factory programming using a serial bootloader through the asynchronous CAN or LIN/UART
- Junction temperature range: -40°C to 150°C

**Table 1. Device summary**

Package	Part number					
	2 MB		3MB		4MB	
	Single core	Dual core	Single core	Dual core	Single core	Dual core
eTQFP64	SPC584C70E1	SPC58EC70E1	SPC584C74E1	SPC58EC74E1	SPC584C80E1	SPC58EC80E1
eTQFP100	SPC584C70E3	SPC58EC70E3	SPC584C74E3	SPC58EC74E3	SPC584C80E3	SPC58EC80E3
eTQFP144	SPC584C70E5	SPC58EC70E5	SPC584C74E5	SPC58EC74E5	SPC584C80E5	SPC58EC80E5
eLQFP176	SPC584C70E7	SPC58EC70E7	SPC584C74E7	SPC58EC74E7	SPC584C80E7	SPC58EC80E7
FPBGA292	SPC584C70C3	SPC58EC70C3	SPC584C74C3	SPC58EC74C3	SPC584C80C3	SPC58EC80C3

# 1 Description

The SPC584Cx and SPC58ECx microcontroller are the first in a new family of devices superseding the SPC564Cx and SPC56ECx family. SPC584Cx and SPC58ECx build on the legacy of the SPC564Cx and SPC56ECx, while introducing new features coupled with higher throughput to provide substantial reduction of cost per feature and significant power and performance improvement (MIPS per mW). On the SPC584Cx and SPC58ECx devices, there are two processor cores e200z420 and one e200z0 core embedded in the Hardware Security Module.

For further info, or full datasheet request, please contact your local ST office.

# 1 Revision history

**Table 1. Document revision history**

Date	Revision	Changes
3-sep-2018	1	Initial release.
10-sep-2018	2	Change wrong root part number in <a href="#">Table 1: Device summary</a> .

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