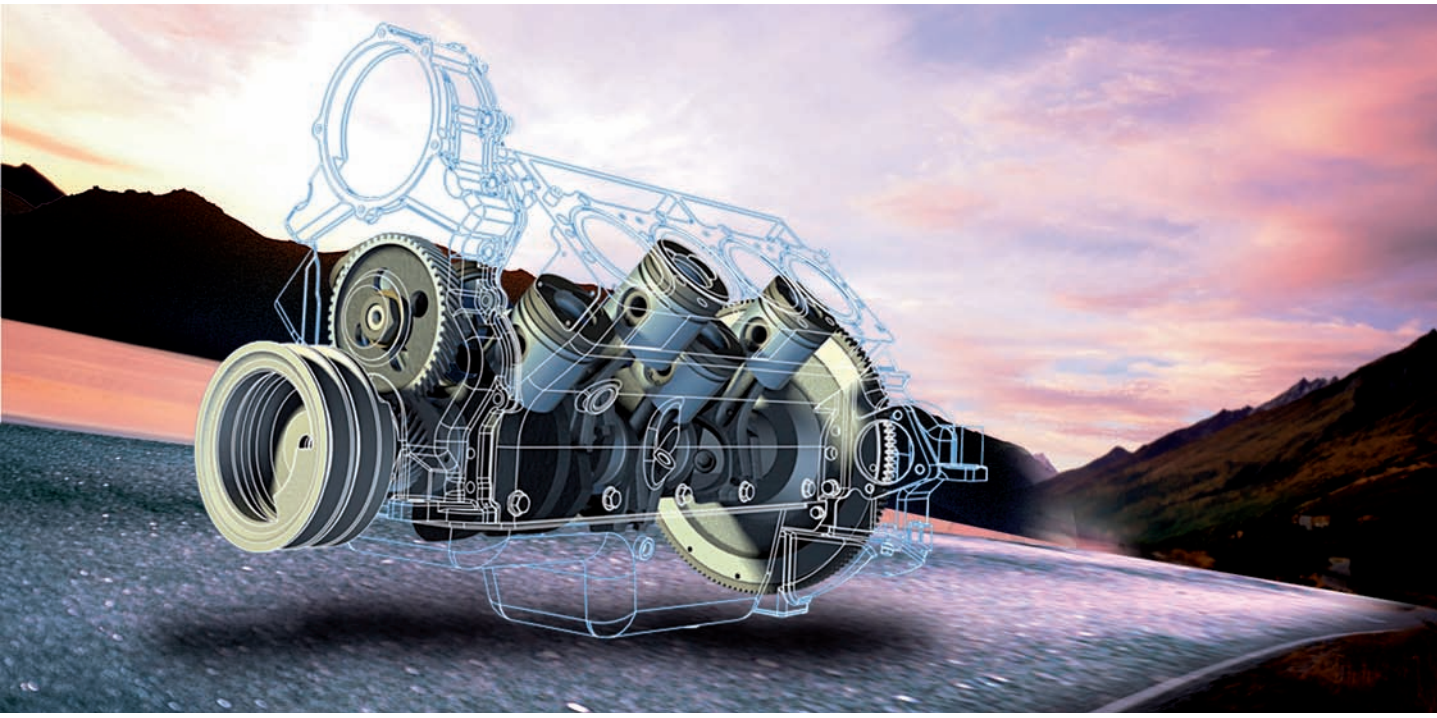
SPC563M

Automotive 32-bit microcontrollers for powertrain applications



September 2008

www.st.com/SPC56

STMicroelectronics introduces the SPC563M family, new product lines of 32-bit Flash microcontrollers tailored to the specific needs of four-cylinder gasoline engines and robotized transmission applications.

The SPC563M family is the first member of ST's 32-bit powertrain microcontroller offering, aimed to cover the full range of applications with dedicated solutions providing the best cost/performance ratio.

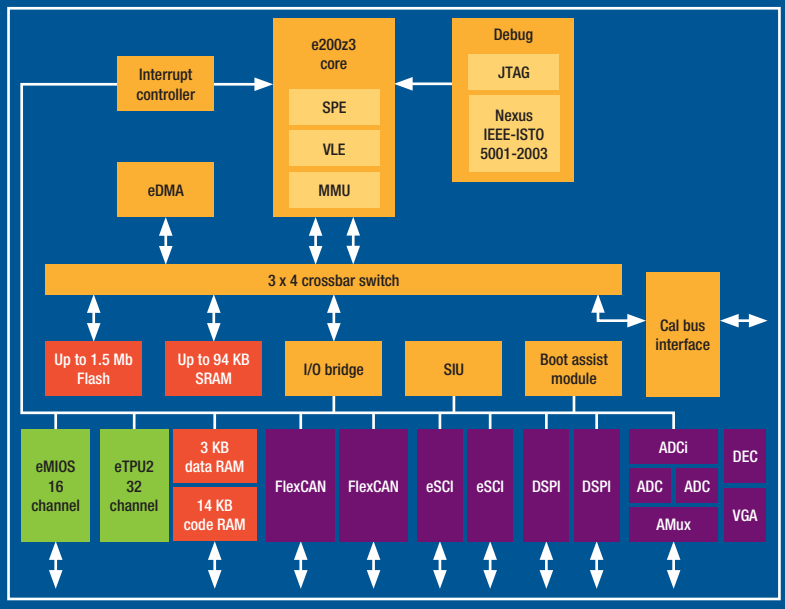
From product specification, through design and manufacturing, ST's focus is on reliability, application robustness and added value.

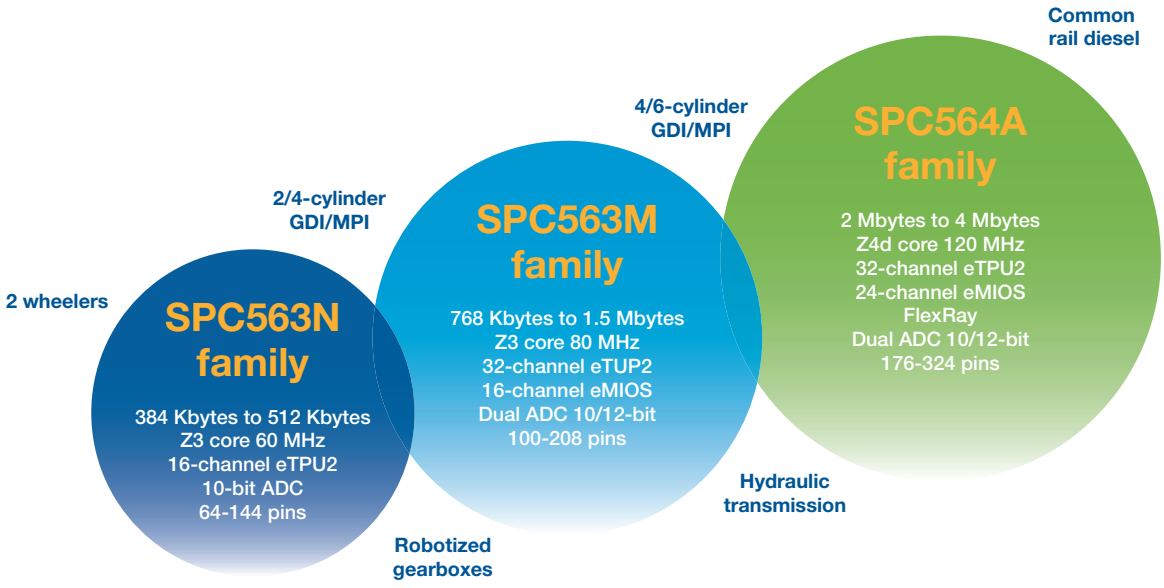
Use of an industry standard PowerPC® core, sharing standard peripherals with similar products across all application fields, increases integration, maximizes design reuse and shortens time to market.

Applications

- 2/4-cylinder GDI/MPI
- Low-end diesel engines
- Robotized gearboxes
- Suspension

SPC563M family block diagram

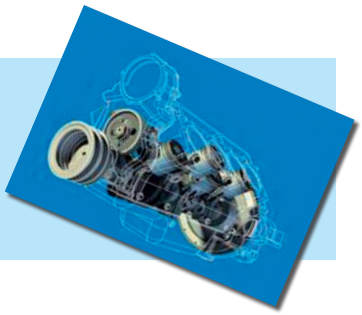




SPC56 for powertrain applications

Innovative concepts - Powering green innovations

With a dedicated eTPU2 coprocessor to offload the CPU, integrated DSP capability, and a wide range of enhancements, SPC563M devices enable tight emission control to meet new and upcoming automotive requirements, while decreasing overall system cost.



SPC563M family benefits

Tight emission control

- High-performance e200z3 core integrating digital signal processing and vector floating point computation
- Enhanced timer sets (eTPU2, eMIOS)
- Dual ADCs with input variable gain amplifier and decimation filter allowing knock detection integration

Improved time to market

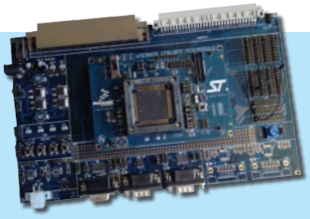
- Compatibility across the families through a modular peripheral set
- AUTOSAR compliant maximizing SW and tools reuse
- Memory/pin-out/performance scalability

Reduced system cost

- Very high I/O availability in QFP packages
- Innovative calibration concept and tools support
- Requires only one linear voltage regulator (5 V)

Reduced cost of non-quality

- Unique dual source set-up
- Latest 90 nm automotive focused technology
- Co-development of technology and state-of-the-art design methodology for zero defects



An extensive development tools offering

The SPC56 product family is supported by a wide range of development tools using a vast network of 3rd parties. These include classical C compilers, debuggers and emulators, as well as advanced tools such as configuration tools or auto-code generators. Evaluation boards are available from ST.

Designed for AUTOSAR

All products are designed to fulfill AUTomotive Open System Architecture requirements. Available AUTOSAR packages include MCAL, basic software, OS, configuration tools and on-site support.

SPC563M powertrain and transmission family overview

Part number[1]	Package	System				Memory		A/D		Timer functions		Serial interface CAN/SCI/SPI	Others
		Core	Freq. Max.	DMA Ch.	Core Ext.	Flash (Kbyte)	RAM (Kbyte)	Units	Ch	eTPU2 (code+data RAM)	eMIOS ch		
SPC563M54	LQFP100	e200z3	64	32	FPU SIMD VLE MMU	768	48	2 x 12-bit	23	32[2] (14+3 KB RAM)	16[2]	2 / 1 / 2	VGA Dec. filter Temp. sensor
	LQFP144								32	32 (14+3 KB RAM)	16[2]	2 / 2 / 2	
SPC563M60	LQFP100	e200z3	80	32	FPU SIMD VLE MMU	1024	64	2 x 12-bit	23	32[2] (14+3 KB RAM)	16[2]	2 / 1 / 2	Cal. bus VGA Dec. filter Temp. sensor
	LQFP144								32	32[2] (14+3 KB RAM)	16[2]	2 / 2 / 2	
	LQFP176								34	32 (14+3 KB RAM)	16[2]	2 / 2 / 2	
	LBGA208								34	32 (14+3 KB RAM)	16[2]	2 / 2 / 2	
SPC563M64	LQFP144	e200z3	80	32	FPU SIMD VLE MMU	1536	94	2 x 12-bit	32	32 (14+3 KB RAM)	16[2]	2 / 2 / 2	Cal. bus VGA Dec. filter Temp sensor
	LQFP176								34	32 (14+3 KB RAM)	16[2]	2 / 2 / 2	
	LBGA208								34	32 (14+3 KB RAM)	16[2]	2 / 2 / 2	

1. Operating temperature range from -40 °C to 125 °C
2. All eMIOS and eTPU channels available through the 32-bit timed serial bus supporting Microsecond Bus frame format

For more information on ST products and solutions,
visit **www.st.com**

Order code: BRSPC563M0908