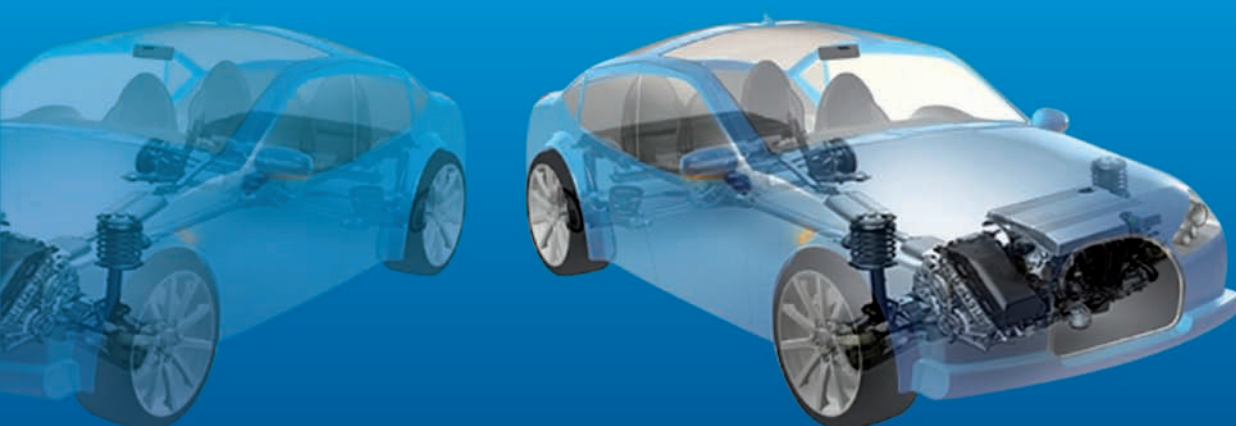


SPC560P

32-bit automotive microcontrollers for
chassis and safety applications



September 2008

STMicroelectronics' SPC560P family is the first member of a set of 32-bit Flash microcontrollers dedicated to the specific needs of chassis and safety applications. This new family offers devices optimized for applications ranging from electric pumps to electric power steering, and from baseline airbag modules to integrated safety controllers.

The modularity and compatibility of the product family portfolio is set to an unmatched level. A new state-of-the-art technology, combined with a high-performance core and tailor-made peripherals, make this family of products the perfect platform solution, achieving the best trade-off between system cost and performance.

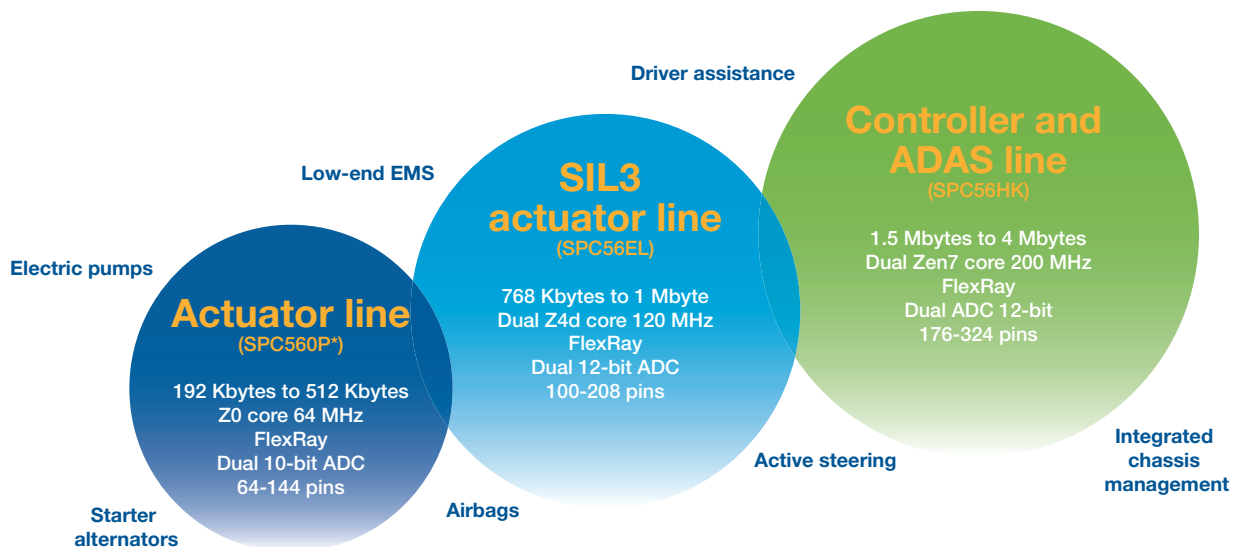
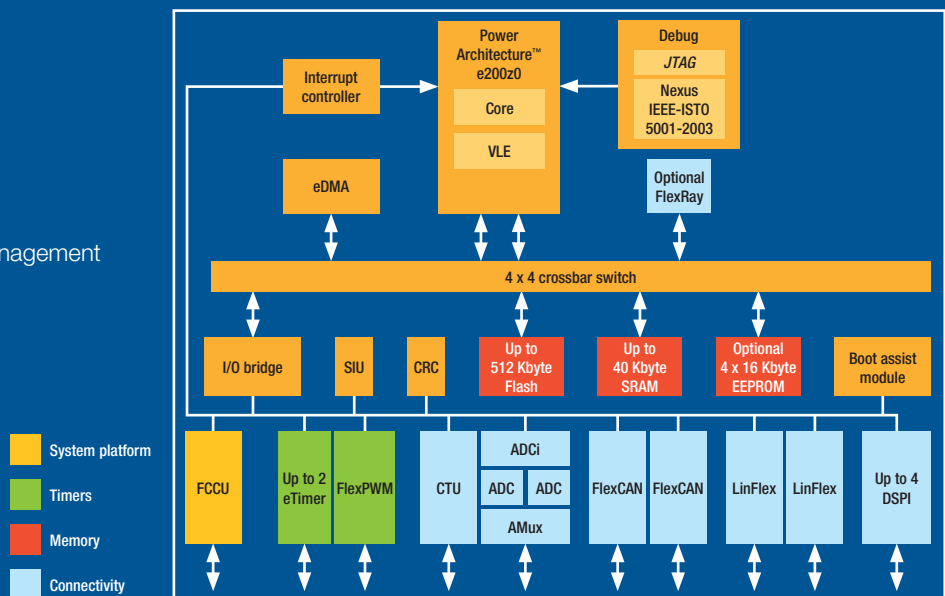
From product specification, through design and manufacturing, focus is on reliability, application robustness and added value.

The 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

- Airbags
- Low-end braking
- Starter alternators – electric pumps
- Steering
- Low-end engine management

SPC560P block diagram



*Sampling

Innovative concepts

The SPC560P family is a unique scalable platform addressing safety and three-phase motor control needs. The scalable implementation throughout the SPC56 chassis- and safety families allows you to best meet the exact needs of each application over the wide range of the chassis and safety systems.



SPC560P family benefits

Efficient and safe processing of application data

- High-performance e200z0 32-bit core with VLE instruction set for best code efficiency
- Integrated safety features and centralized fault collection unit
- Enhanced DMA and CRC unit for data flow

System cost saving for three-phase motor control

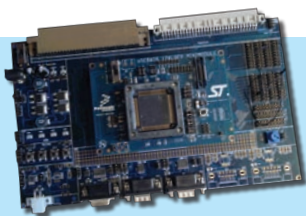
- Fully autonomous motor-control unit with programmable cross-triggering unit
- Field-oriented three-phase control for best efficiency and EMI performance
- Sensorless implementation supported with dedicated library and 32-bit processing performance

Improved time to market

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

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 tool offer

The SPC56 product family is supported by a wide range of development tools using a vast network of 3rd parties. This includes classic 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.

SPC560P chassis and safety family overview

Part number	Package	System				Memory		A/D		Timer functions		Serial interface	Others
		Core	Frequency max (MHz)	Core ext.	DMA channels	Flash (Kbyte)	RAM (Kbyte)	Units	Channels	FlexPWM channels	eTimer channels	SPI/LIN/CAN/FlexRay	
SPC560P34	LQFP64	Z0	32	VLE	8	192	12	1x10bit	1 x 6	–	6	1/1/2/-	CRC unit, fault collection unit
SPC560P34	LQFP80	Z0	32	VLE	8	192	12	1x10bit	1 x 6	–	6	1/1/2/-	CRC unit, fault collection unit
SPC560P34	LQFP100	Z0	32	VLE	8	192	12	1x10bit	1 x 6	–	6	1/1/2/-	CRC unit, fault collection unit
SPC560P40	LQFP64	Z0	64	VLE	16	256	20	1x10bit	1 x 16	6	6	3/2/2/-	CRC unit, fault collection unit
SPC560P40	LQFP80	Z0	64	VLE	16	256	20	1x10bit	1 x 16	6	6	3/2/2/-	CRC unit, fault collection unit
SPC560P40	LQFP100	Z0	64	VLE	16	256	20	1x10bit	1 x 16	6	6	3/2/2/-	CRC unit, fault collection unit
SPC560P44	LQFP100	Z0	64	VLE	16	384	36	2x10bit	2 x 13	8	2 x 6	4/2/2/1	CRC unit, fault collection unit
SPC560P44	LQFP144	Z0	64	VLE	16	384	36	2x10bit	2 x 13	8	2 x 6	4/2/2/1	CRC unit, fault collection unit
SPC560P50	LQFP100	Z0	64	VLE	16	512	40	2x10bit	2 x 13	8	2 x 6	4/2/2/1	CRC unit, fault collection unit
SPC560P50	LQFP144	Z0	64	VLE	16	512	40	2x10bit	2x13	8	2x6	4/2/2/1	CRC unit, fault collection unit



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