



# XC27x5X™

## Next Generation PowerTrain Microcontroller with 32/16bit Performance

The XC27x5X is a member of the new XC2700X microcontroller family, a subset of the XC2000 family, with focus on power train applications.

High-performance CPU features, memory scalability and powerful Dual-A/D converters are some of the major benefits of the XC2700 family. Equipped with advanced peripherals like multiple PWM-units, flexible serial interfaces (Universal Serial Interfaces (USICs)), as well as a MultiCAN unit with up to 2 CAN nodes, the microcontroller is the perfect fit for value driven PowerTrain applications. External component integration such as an embedded voltage regulator, eePROM emulation with additional flash modules and various on chip oscillators additionally optimizes total system costs. Compatibility, scalability and a maximum re-use within the XC2700 family provides the customer with an extensive range of products and functions, covering today's, as well as the future application needs. The close link to the 32bit microcontroller enables later upgrades.

### Applications

- Automotive PowerTrain: Engine Management, Transmission Controls, Intelligent Peripherals Hybrid management (Start-Stop Systems and Battery Management)

### Features

- High performance C166S V2 CPU with 5-stage pipeline
- 80MHz CPU clock, single clock cycle instruction execution with 15ns instruction cycle time
- Built-in error correction (eCC)
- Up to 832Byte on-chip Flash memory
- Including 64KByte data flash modul, ideal for eePROM emulation
- Up to 50 KByte on Chip RAM
  - 32 Kbyte on-chip program/data SRAM (PSRAM)
  - 16 Kbyte on-chip data SRAM (DSRAM)
  - 2 Kbyte on-chip dual-port RAM (DPRAM)

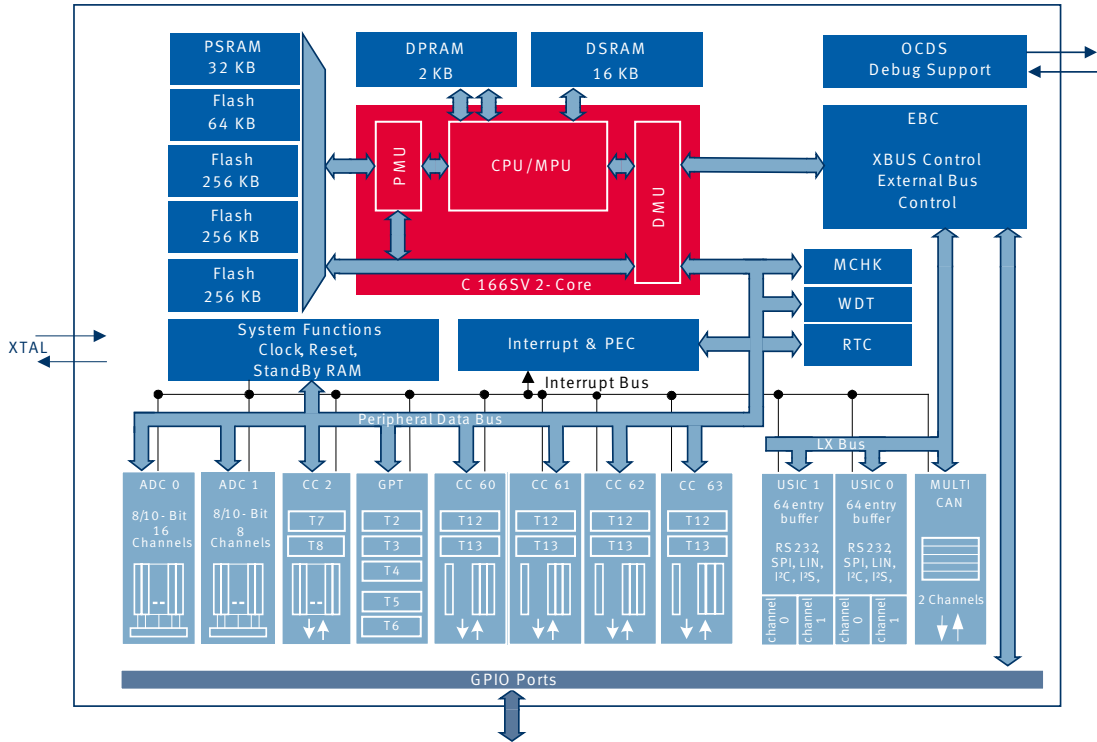
### Features

- 15ns multiplication (16 x 16bit), background division (32/16bit) and multiply-and-accumulate (MAC) instructions
- 8-channel peripheral event controller (PEC) - single-cycle data transfer
- Synchronous A/D converters supporting up to 24 A/D channels with a conversion time of 1 - 2µs
- 16-Channel general purpose capture/compare unit
- 4 capture/compare units, with up to 7 channels each, for flexible PWM signal generation
- Multi-functional general purpose timer unit with 5 timers
- 2 universal serial interface channels (USIC) to be used as UART, LIN, buffered SPI, IIC Bus Interface & IIS Interface
- On-Chip MultiCAN Interface (Rev. 2.0B active) with 64 message objects on 2 CAN nodes
- Up to 116 general purpose I/O lines (for 144 pin XC2785X device)
- Up to 75 general purpose I/O lines (for 100 pins XC2785X device)
- On-chip debug support via JTAG interface, calibration support
- Supported by a large range of development tools
- C166 family compatible
- 100/144-pin green LQFP package, 0.5 mm (19.7 mil) pitch
- Single Power Supply from 3.0V to 5.5V
- Temperature range: -40° to +125°C

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Block Diagram



### Product Summary

Type	Frequency [MHz]	eFlash [KByte]	RAM [KByte]	Serial Interface	ADC Channels	Temperature Range [°C]	Package
SAK-XC2765X-104F80L	80	832	51	2 x USIC 2 x CAN	16	-40 ... +125	PG-LQFP-100
SAK-XC2785X-104F80L	80	832	51	2 x USIC 2 x CAN	24	-40 ... +125	PG-LQFP-144



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