



## XC27x4X Series

### 32/16 bit PowerTrain Microcontroller

The XC27x4X 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 XC27x4X microcontroller is the perfect fit for value driven PowerTrain applications.

External component integration such as an embedded voltage regulator, e-PROM 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 todays, as well as the future application needs.

#### Applications

- XC27x4X for Automotive PowerTrain, like Small-Engine Management (Motorcycle), Energy Efficient PowerTrain Peripherals (e-motors for pumps and ventilation)

#### Features

##### High Performance 16-bit CPU with Five-Stage Pipeline and MAC Unit

- 80 MHz CPU clock
  - Single clock cycle instruction execution for most instructions
  - Single cycle multiply and accumulate instruction (MAC) execution
  - 32-bit addition and 32-bit subtraction (MAC unit)
  - Zero-cycle jump execution

##### Integrated On-Chip Memories

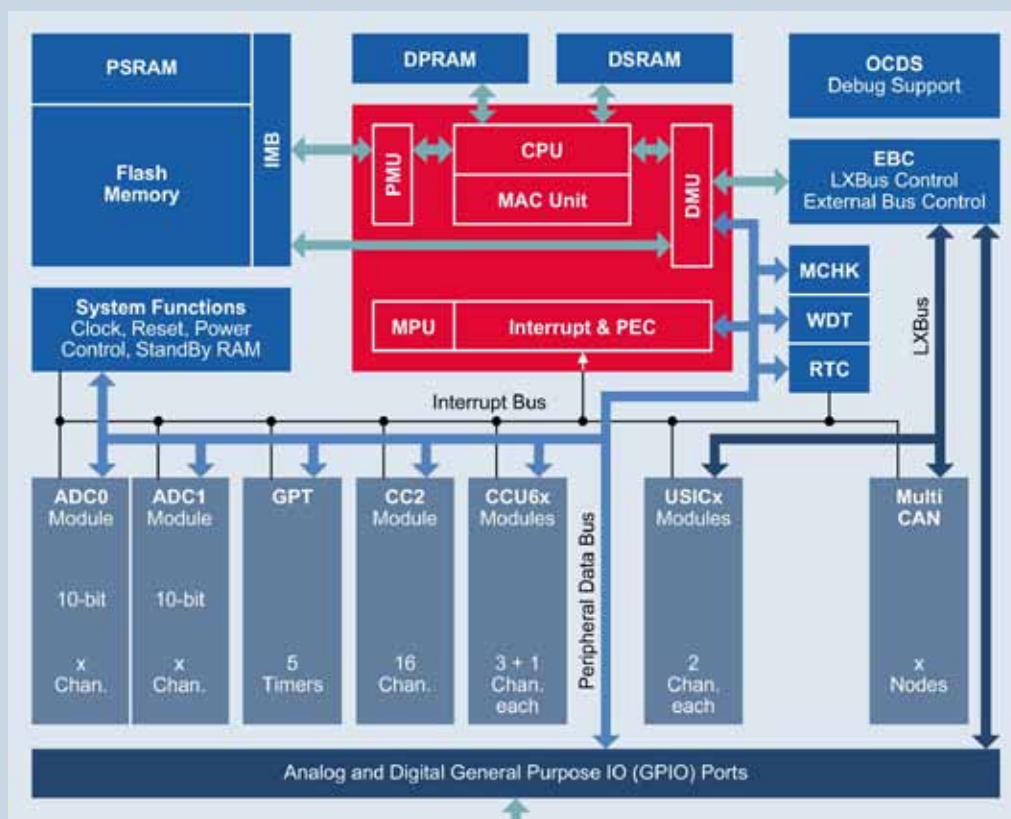
- 320 Kbytes on-chip Flash Program Memory for instruction code or constant data
- 8 Kbytes on-chip Stand-By RAM (SBRAM) to preserve data during power-saving
  - 2 Kbytes Dual-Port RAM (DPRAM) for variables, register banks, and stacks
  - 16 Kbytes on-chip high-speed Data SRAM (DSRAM) for variables and stacks
  - 16 Kbytes on-chip high-speed Program SRAM (PSRAM) for code and data

#### Features

- Intelligent On-Chip Peripheral Sub-systems
  - Two synch. ADC, 10/8-bit, conversion time <1  $\mu$ s
  - One Capture/Compare Unit (CC) with 2 independent time bases
  - Two Capture/Compare Units (CCU6) for flexible PWM
  - Two Multifunctional General Purpose Timer Units
  - Six Universal Serial Interface Channels (USIC), usable as UART, SPI-like, IIC, IIS, and LIN interface
  - MultiCAN Module with up to 2 nodes
- Safety Support Features
  - Memory Protection Unit (MPU)
  - Memory Checker Module (MCHK) for CRC generation
- Power Management Features
  - Two IO power domains fulfill system requirements from 3V to 5V
  - Embedded voltage regulator (core supply voltage 1.5V)
- 8-Channel Peripheral Event Controller (PEC)
- On-Chip Debug Support
  - Communication through DAP interface (2-wire) or JTAG interface (5-wire) Input/Output Lines With Individual Bit Addressability
- Temperature Range
  - -40 to +125  $^{\circ}$ C
- Package
  - 64- / 100-pin Green LQFP package, 0.5mm (19.7mil) pitch
- Supported by a full range of development tools including C compilers, macro assembler packages, emulators, evaluation boards, HLL debuggers, simulators, logic analyzer, programming boards.

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schematic of block diagram, please refer to Data Sheet for details

Type	Frequ. [MHz]	eFlash [KByte]	RAM [KByte]	Serial Interf. [ch]	ADC [ch.]	Temp. Range [°C]	Pacakge
SAK-XC2734X-40F80L	80	320	32	6xUSIC 2xCAN	9	-40 / +125	PG-LQFP-64
SAK-XC2764X-40F80L	80	320	32	6xUSIC 2xCAN	16	-40 / +125	PG-LQFP-100



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