



XC27x8X Series

16/32 bit Powertrain Microcontroller

The XC27x8X series is the high performance extension of the XC2700 microcontroller family focusing on Powertrain applications.

The integrated instruction cache (iCache) offers a strong performance boost of up to 30 %. An additional frequency increase to 128 MHz improves performance even more.

The new family member comes with 1MB embedded Flash memory and is targeted for automotive Powertrain applications like x-by wire and engine management systems for standard four cylinder motors with direct injection fulfilling the latest EURO emission standards and their international equivalents.

Target Automotive Powertrain Applications

Standard four cylinder engines

- Direct Injection
- EURO emission standards and their international equivalents

X-by wire applications

Low end transmission systems

Highlights:

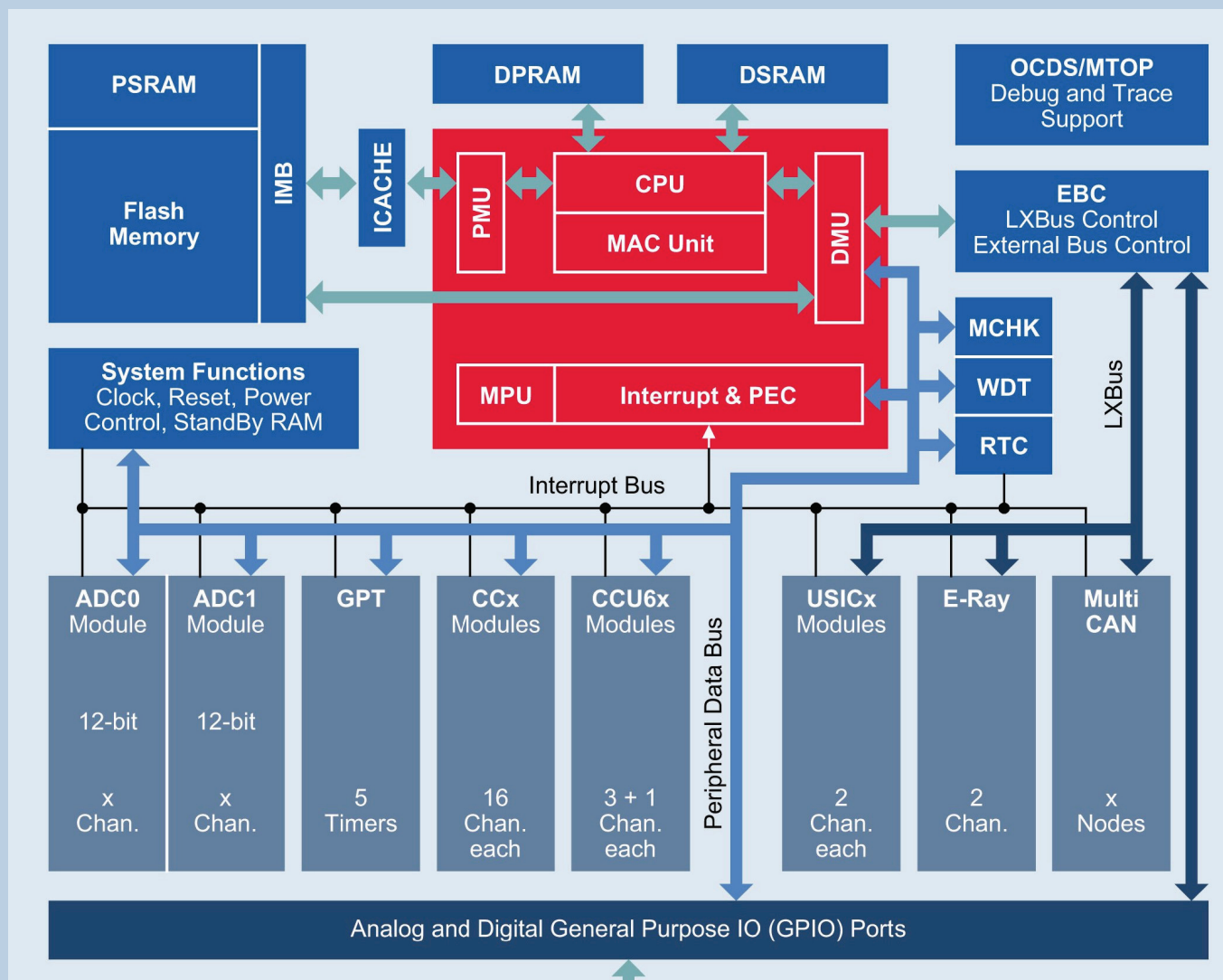
- High Performance 16-bit CPU with Five-Stage Pipeline and MAC Unit
- Up to 30% performance boost through instruction cache
- 128 MIPS peak performance @ 128MHz clock speed
- 1.0MB embedded Flash with EEPROM emulation
- Single voltage supply (featuring embedded voltage regulator)
- Available in 100pin and 144pin package

Features:

- High-performance CPU with five-stage pipeline and MPU
- 16-channel interrupt-driven data transfer facilities via peripheral event controller (PEC)
- 1088kB Flash (incl. up to 64kB data Flash for EEPROM emulation), 90kB SRAM
- Memory content protection through Error Correction Code (ECC)
- 16kB of instruction cache (iCache)
- Up to 24-channel dual 12-bit A/D converter, optional data preprocessing (data reduction, range check), open wire detection, conversion time ~0.675µs
- One 16-channel general purpose capture/compare units (CC2)
- Four capture/compare units (CCU6) for flexible PWM signal generation for any kind of motor control
- Multi-functional general purpose timer unit with 5 timers
- 2 serial interface channels configurable as UART, LIN, SPI, I2C, I2S
- On-chip MultiCAN interface (Rev. 2.0B active) with 128 message objects, up to 2 CAN nodes
- On-chip system timer and on-chip real time clock
- Programmable watchdog timer and oscillator watchdog
- Up to 118 general purpose I/O lines with flexible pin assignment
- On-chip debug support via Device Access Port (DAP) or JTAG interface
- Single voltage supply of 3.3 to 5V
- 100-pin and 144-pin green LQFP package, 0.5mm pitch
- Temperature range: -40 to +125°C
- Supported by a vast range of development tools

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Type	Frequency [MHz]	eFlash [kByte]	RAM [kByte]	USIC Channels*	CAN nodes	CCU** modules	ADC channels	Package
SAK-XC2768X-136F128L	128	1088	90	6	2	5	16	LQFP-100
SAK-XC2788X-136F128L	128	1088	90	6	2	5	24	LQFP-144

* Configurable module: LIN, UART, SSC/SPI, I²C, I²S

** Capture Compare Units: CCU6 / CC2

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