XC27x7X Series
16/32 bit PowerTrain Microcontroller

The XC27x7X 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 XC27x7X microcontroller is the perfect fit for perforamance driven Power-Train applications.

External component integration such as an embedded voltage regulator, ee-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
- XC27x7X: Automotive PowerTrain: Advanced Engine Management, Basic Transmission Management, Basic Hybrid Management

Features
- High Performance 16-bit CPU with Five-Stage Pipeline and MAC Unit
  – 100 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)

### Integrated On-Chip Memories
- Up to 1,600 Kbytes on-chip program memory (Flash memory)
- Up to 138 Kbytes on-chip program/data SRAM
  – 112 Kbytes on-chip program/data (PSRAM)
  – 2 Kbytes on-chip dual-port RAM (DPRAM)
  – 24 Kbytes on-chip data SRAM (DSRAM)
  – 8 Kbytes on-chip stand-by RAM (SBRAM)

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Key Features

- Intelligent On-Chip Peripheral Sub-systems
  – Two synch. ADC, 10/8-bit, conversion time <1 µs
  – One Capture/Compare Unit (CC) with 2 independent time bases
  – Four Capture/Compare Units (CCU6) for flexible PW
  – Two Multifunctional General Purpose Timer Unit
  – Eight 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 fulfil system requirements from 3V to 5V
  – Embedded voltage regulator (core supply voltage 1.5V)
- Eight Channel Peripheral Event Controller (PEC)
- On-Chip Debug Support
  – Communication through DAP interface (2-wire) or JTAG interface (5-wire)
- On-chip bootstrap loaders
- Input/Output Lines With Individual Bit Addressability
- Power reduction and wake-up modes
- Temperature Range
  – -40 to +125 °C
- Package
  – 144 / 176-pin Green LQFP 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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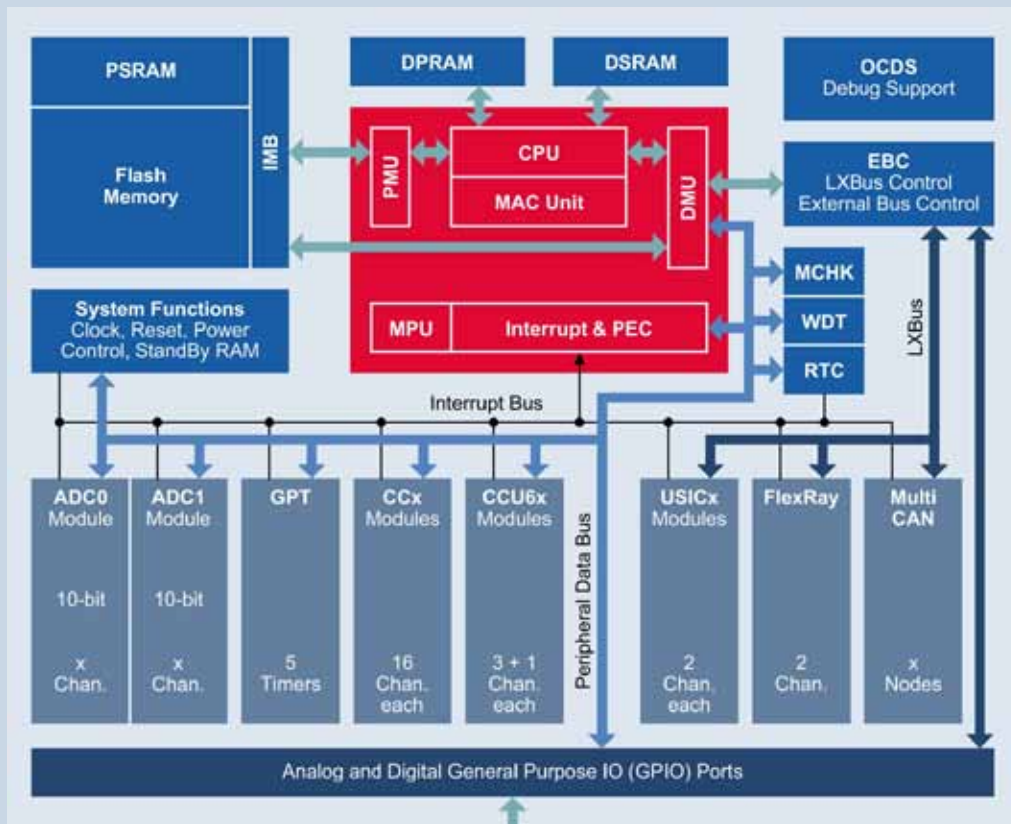
schematic block diagram, please refer to data sheet for details

Type	MHz	eFlash [kByte]	RAM [KByte]	Serial Interf. [ch]	ADC [ch]	Temp. Range [°C]	Package
SAK-XC2787X-200F100L	100	1600	138	8 x USIC 2 x CAN	24	-40 / +125	PG-LQFP-144
SAK-XC2797X-200F100L	100	1600	138	8 x USIC 2 x CAN	30	-40 / +125	PG-LQFP-176