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, 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
- 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 μs
  - 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 °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.

www.infineon.com/xc2700

XC27x4X Series
32/16 bit PowerTrain Microcontroller
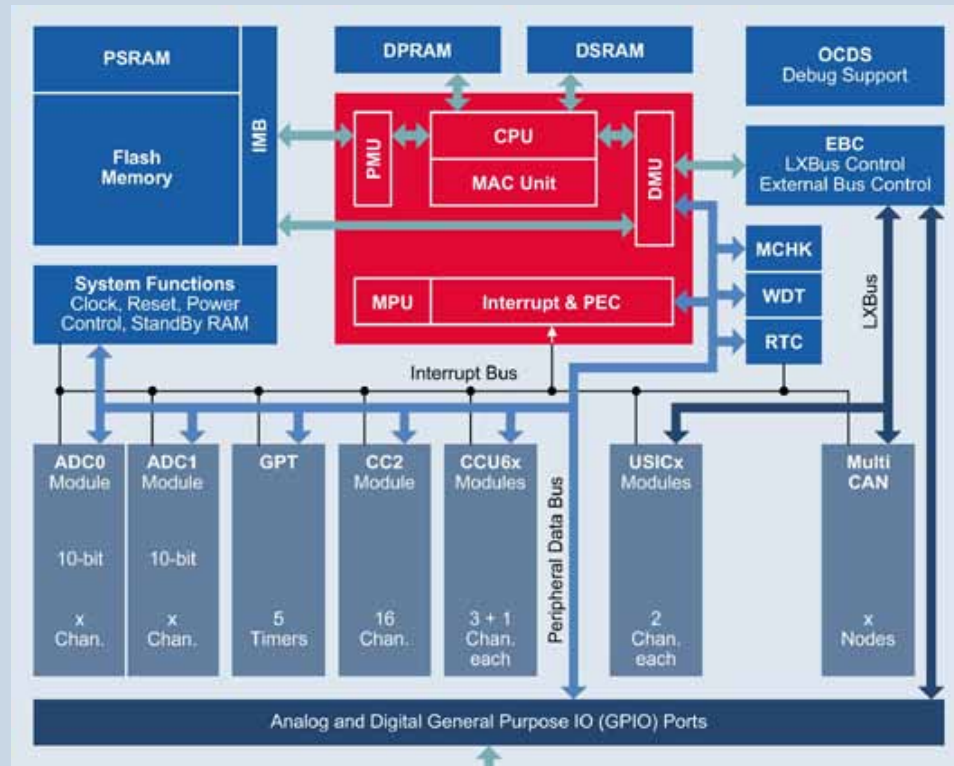
schematic of block diagram, please refer to Data Sheet for details

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

Legal Disclaimer The information given in this Product Brief shall in no event be regarded as a guarantee of conditions or characteristics. With respect to any examples or hints given herein, any typical values stated herein and/or any information regarding the application of the device, Infineon Technologies hereby disclaims any and all warranties and liabilities of any kind, including without limitation, warranties of non-infringement of intellectual property rights of any third party.

Information For further information on technology, delivery terms and conditions and prices, please contact the nearest Infineon Technologies Office (www.infineon.com).

Warnings Due to technical requirements, components may contain dangerous substances. For information on the types in question, please contact the nearest Infineon Technologies Office. Infineon Technologies components may be used in life-support devices or systems only with the express written approval of Infineon Technologies, if a failure of such components can reasonably be expected to cause the failure of that life-support device or system or to affect the safety or effectiveness of that device or system. Life support devices or systems are intended to be implanted in the human body or to support and/or maintain and/or protect human life. If they fail, it is reasonable to assume that health of the user or other persons may be endangered.