Product Brief

Never stop thinking

XC2287M

Next Generation Microcontroller with 32 - Bit Performance

The XC2287M is a further family member of the XC2200 microcontroller family. Based on the enhanced C166SV2 architecture, it outperforms existing 16-bit solutions. The XC2200 family is an improved and next generation representation of the full featured 16-bit single-chip CMOS microcontrollers with 32-bit performance.

High CPU performance combined with enhanced IO capabilities, flexible power management and new impressive peripherals such as the Universal Serial Interface Channel (USIC) make XC2200 the instrument of choice for demanding automotive applications such as Central Body Unit, Climate Control or Gateway. Integration of external components such as embedded voltage regulator, EEPROM emulation with additional flash modules and various on chip oscillators optimize system cost.

The XC2287M is part of a family with 4 different PG-LQFP packages enabling high levels of system integration and scalability with a rich choice of devices.

Applications:

- Automotive Body Applications
  - Gateway
  - Body Control Module (BCM)
  - Heating Ventilation Airconditioning (HVAC)
  - Seat Module

Features

- High performance 16-bit C166S V2 CPU with 5-stage pipeline
- Single clock cycle instruction execution with 12.5 ns instruction time at 80MHz CPU clock
- 12.5ns multiplication (16 x 16 bit), background division (32/16 bit) and multiply-and-accumulate (MAC) instructions
- Zero cycle jump execution
- Register-based design with Multiple Variable Register Banks
- Fast context switching support with two additional local register banks
- 16 Mbytes total linear address space for code and data
- 1024 Bytes on-chip SFR area (C166 family compatible)
- 16-priority-level interrupts system with up to 87 sources, sample-rate down to 12.5ns
- 8-channel interrupt-driven single-cycle data transfer facilities via peripheral event controller (PEC)
- Clock generation via on-chip PLL or via Prescaler
- 8 Kbyte on-chip stand-by RAM (SBRAM)
- 2 Kbytes on-chip dual-port RAM (DPRAM)
- 16 Kbytes on-chip data SRAM (DSRAM)
- 32 Kbytes on-chip program/data SRAM (PSRAM)
- 832 Kbytes on-chip program memory (Flash memory)

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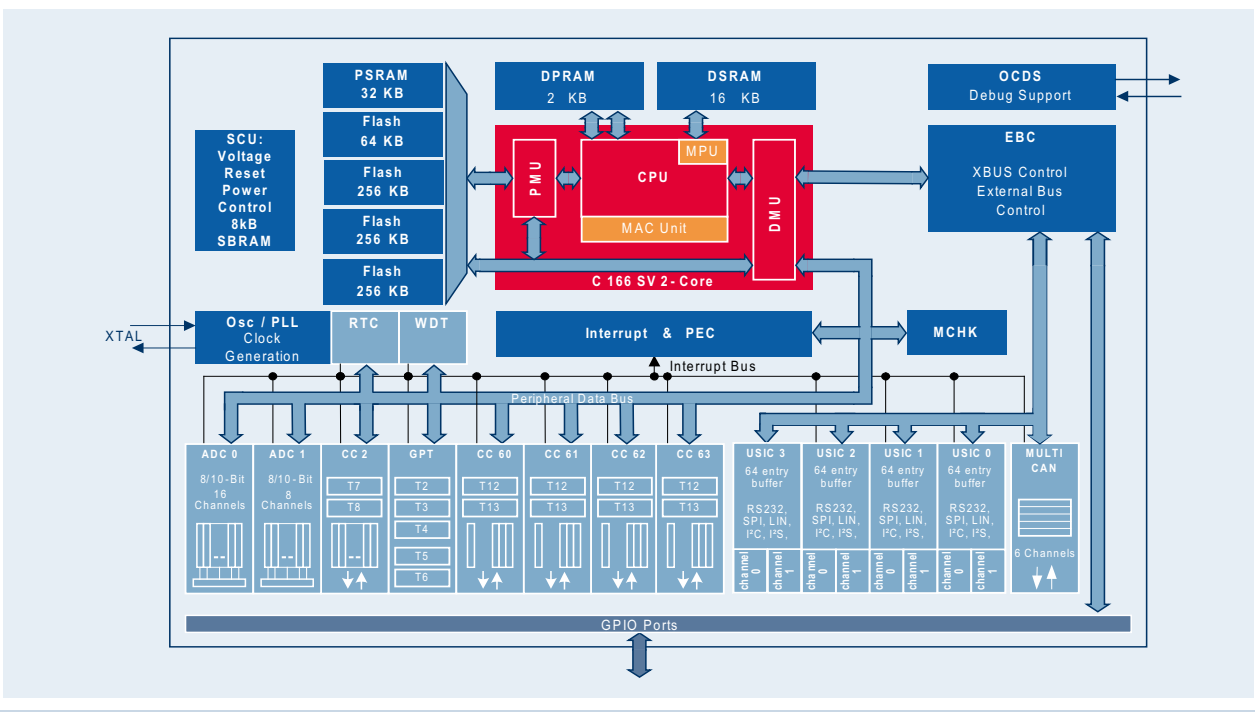
Block Diagram XC2287M



Further Features

- Two synchronizable A/D converters with 24 channels, optional data pre-processing, and a conversion time down to 1.2µs
- 16-Channel general purpose capture/compare unit
- Four capture/compare units for flexible PWM signal generation (3 capture/compare channels and 1 compare channel)
- Multi-functional general purpose timer unit with 5 timers
- Eight serial interface channels to be used as UART, LIN, buffered SPI, IIC Bus Interface, IIS Interface
- On-Chip MultiCAN Interface (Rev. 2.0B active) with 256 message objects on 6 CAN nodes and gateway functionality
- On-chip real time clock
- Enhanced power saving modes with flexible power management
- Programmable watchdog timer and oscillator watchdog
- Up to 119 general purpose I/O lines
- On-chip bootstrap loader
- Supported by a large range of development tools
- On-chip debug support via JTAG interface
- 144-pin green LQFP package, 0.5 mm (19.7 mil) pitch
- Temperature range: -40° to +125°C
- Single Power Supply from 3.0V to 5.5V
- Hardware CRC-Checker with Programmable Polynomial to supervise On-Chip Memory Areas

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