

XC2286

Next Generation Microcontroller with 32-Bit Performance



THE XC2286 is a new derivative of the new 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 MultiCAN 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 XC2286 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

Features

- High performance 16-bit C166SV2 CPU with 5-stage pipeline
- Single clock cycle instruction execution with 12.5 ns instruction time at 80 MHz CPU clock
- 12.5 ns 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 12.5 ns
- 8-channel interrupt-driven single-cycle data transfer facilities via peripheral event controller (PEC)
- Clock generation via on-chip PLL or via Prescaler
- 1 Kbyte on-chip stand-by RAM (SBRAM)
- 2 Kbytes on-chip dual-port RAM (DPRAM)

- 16 Kbytes on-chip data SRAM (DSRAM)
- Up to 64 Kbytes on-chip program/ data SRAM (PSRAM)
- Up to 768 Kbytes on-chip program memory (Flash memory)
- Two synchronizable A/D converters with 24 channels, optional data pre-processing, and a conversion time down to 1.2 μ s
- 16-Channel general purpose capture/compare unit
- Two 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
- Six serial interface channels to be used
 - 3 SPI channels
 - 3 LIN channels
- On-Chip MultiCAN Interface (Rev. 2.0B active) with 128 message objects on 3 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 118 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 3.0 V to 5.5 V

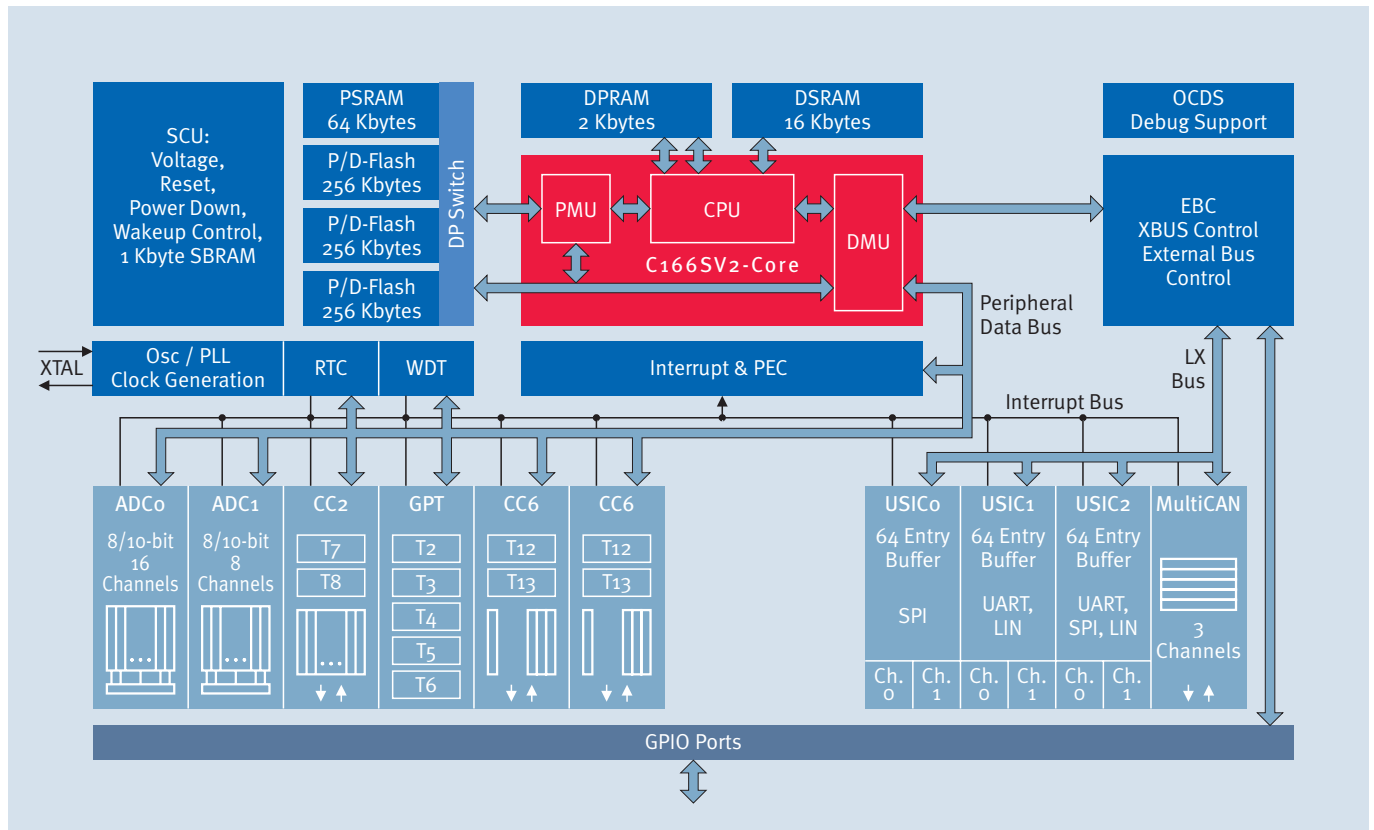
www.infineon.com/microcontrollers

Microcontrollers



Never stop thinking

Block Diagram XC2286



Product Summary

Type	eFlash [Kbytes]	RAM [Kbytes]	Frequency [MHz]	Serial Interface	Temperature Range [°C]	Package
SAF-XC2286-56F66L	448	34	66	3 x SPI, 3 x LIN, 3 CAN	-40 ... 85	PG-LQFP-144
SAK-XC2286-56F66L	448	34	66	3 x SPI, 3 x LIN, 3 CAN	-40 ... 125	PG-LQFP-144
SAF-XC2286-56F80L	448	34	80	3 x SPI, 3 x LIN, 3 CAN	-40 ... 85	PG-LQFP-144
SAK-XC2286-56F80L	448	34	80	3 x SPI, 3 x LIN, 3 CAN	-40 ... 125	PG-LQFP-144
SAF-XC2286-72F66L	576	50	66	3 x SPI, 3 x LIN, 3 CAN	-40 ... 85	PG-LQFP-144
SAK-XC2286-72F66L	576	50	66	3 x SPI, 3 x LIN, 3 CAN	-40 ... 125	PG-LQFP-144
SAF-XC2286-72F80L	576	50	80	3 x SPI, 3 x LIN, 3 CAN	-40 ... 85	PG-LQFP-144
SAK-XC2286-72F80L	576	50	80	3 x SPI, 3 x LIN, 3 CAN	-40 ... 125	PG-LQFP-144
SAF-XC2286-96F66L	768	82	66	3 x SPI, 3 x LIN, 3 CAN	-40 ... 85	PG-LQFP-144
SAK-XC2286-96F66L	768	82	66	3 x SPI, 3 x LIN, 3 CAN	-40 ... 125	PG-LQFP-144
SAF-XC2286-96F80L	768	82	80	3 x SPI, 3 x LIN, 3 CAN	-40 ... 85	PG-LQFP-144
SAK-XC2286-96F80L	768	82	80	3 x SPI, 3 x LIN, 3 CAN	-40 ... 125	PG-LQFP-144

How to reach us:
<http://www.infineon.com>

Published by
 Infineon Technologies AG
 81726 Munich, Germany

© Infineon Technologies AG 2007.
 All Rights Reserved.

Legal Disclaimer

The information given in this Product Brief shall in no event be regarded as a guarantee of conditions or characteristics ("Beschaffenheitsgarantie"). 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 your 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 your nearest Infineon Technologies Office.

Infineon Technologies Components may only be used in life-support devices or systems 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 sustain and/or protect human life. If they fail, it is reasonable to assume that the health of the user or other persons may be endangered.

Ordering No. B158-H8986-G1-X-7600
 Printed in Germany
 PS 0307 nb