



XC2300D - Series

16/32-bit μ C for Low-End Automotive Safety

The XC2300D series, with the XC233xD (LQFP-64) and XC232xD (VQFN-48) derivatives, further enlarges the XC2300 microcontroller family in the low-end. With a maximum memory size of 160kB Flash and up to 12kB RAM, the microcontrollers of this series are well suited for low-end cost-sensitive safety applications like low-end Airbag or Belt Pretensioner applications.

Targeted Automotive Safety Applications

Low-end Airbag
Belt-Pretensioner

Highlights:

High performance 16-/32-bit C166SV2 CPU with 5-stage pipeline
Single clock cycle instruction execution with 10ns instruction time
Up to 60 MIPS peak performance @ 66MHz CPU clock
Up to 160kB Flash with EEPROM emulation
Single voltage supply (core supply over embedded voltage regulator)

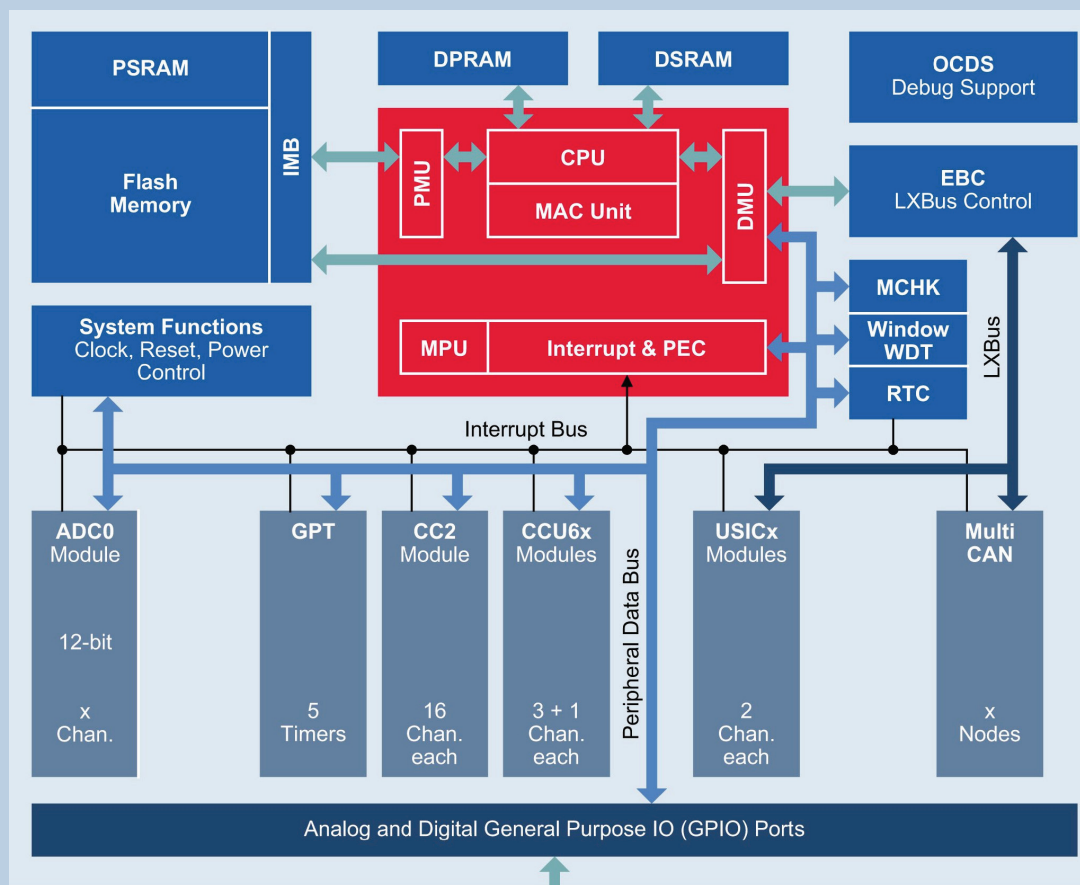
- 48pin and 64pin packages

Features:

- High-performance CPU with five-stage pipeline and MPU
- 16 priority levels providing 96 interrupt nodes
- 8-channel interrupt-driven data transfer facilities via peripheral event controller (PEC)
- Hardware CRC-Checker with programmable polynomial to supervise on-chip memory areas
- Up to 160kB Flash (incl. up to 32kB data Flash for EEPROM emulation), up to 12kB SRAM
- Memory content protection through Error Correction Code (ECC)
- Up to 9-channel dual A/D converter, optional data preprocessing (data reduction, range check), open wire detection, conversion time $\sim 0.675\mu$ s
- One 16-channel general purpose capture/compare units (CCU2)
- Up to 2 capture/compare units (CCU6) for flexible PWM signal generation for any kind of motor control
- Multi-functional general purpose timer unit with 5 timers
- 4 serial interface channels to be used as UART, LIN, SPI, I2C, I2S
- On-chip CAN interface (Rev. 2.0B active), 1 node with 32 message objects
- On-chip system timer and on-chip real time clock
- Programmable watchdog timer and oscillator watchdog
- Window WDT with clock source separate from fsys
- Up to 40 general purpose I/O lines with flexible pin assignment
- On-chip bootstrap loader
- On-chip debug support via Device Access Port (DAP) or JTAG interface
- Single voltage supply of 3.3 to 5V
- 48-pin green VQFN, 64-pin green LQFP package
- Temperature range: -40 to $+125^{\circ}\text{C}$
- Supported by a large range of development tools

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Type	Frequency [MHz]	eFlash [KByte]	RAM [KByte]	USI* Channels	CAN Nodes	CCU** Modules	ADC Channels	FlexRay Channels	Package
SAK-XC2320D-12F66L	66	96	8	4	-	3	9	-	VQFN-48
SAK-XC2320D-20F66L	66	160	12	4	-	3	9	-	VQFN-48
SAK-XC2321D-12F66L	66	96	8	4	1	3	9	-	VQFN-48
SAK-XC2321D-20F66L	66	160	12	4	1	3	9	-	VQFN-48
SAK-XC2330D-12F66L	66	96	8	4	-	3	9	-	LQFP-64
SAK-XC2330D-20F66L	66	160	12	4	-	3	9	-	LQFP-64
SAK-XC2331D-12F66L	66	96	8	4	1	3	9	-	LQFP-64
SAK-XC2331D-20F66L	66	160	12	4	1	3	9	-	LQFP-64

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

**Capture Compare Units: CCU6/CCU2

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