



## XC2200L - Series

### 16/32 bit $\mu$ C for Automotive Body Applications

The XC2200L series, with the XC223xL (LQFP-64) and XC222xL (VQFN-48) derivatives, further enlarges the XC2200 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 body applications.

#### Targeted Automotive Body Applications

- Low-end BCM
- Low-end HVAC
- Low-end Door
- Roof module
- Seat module

#### Highlights:

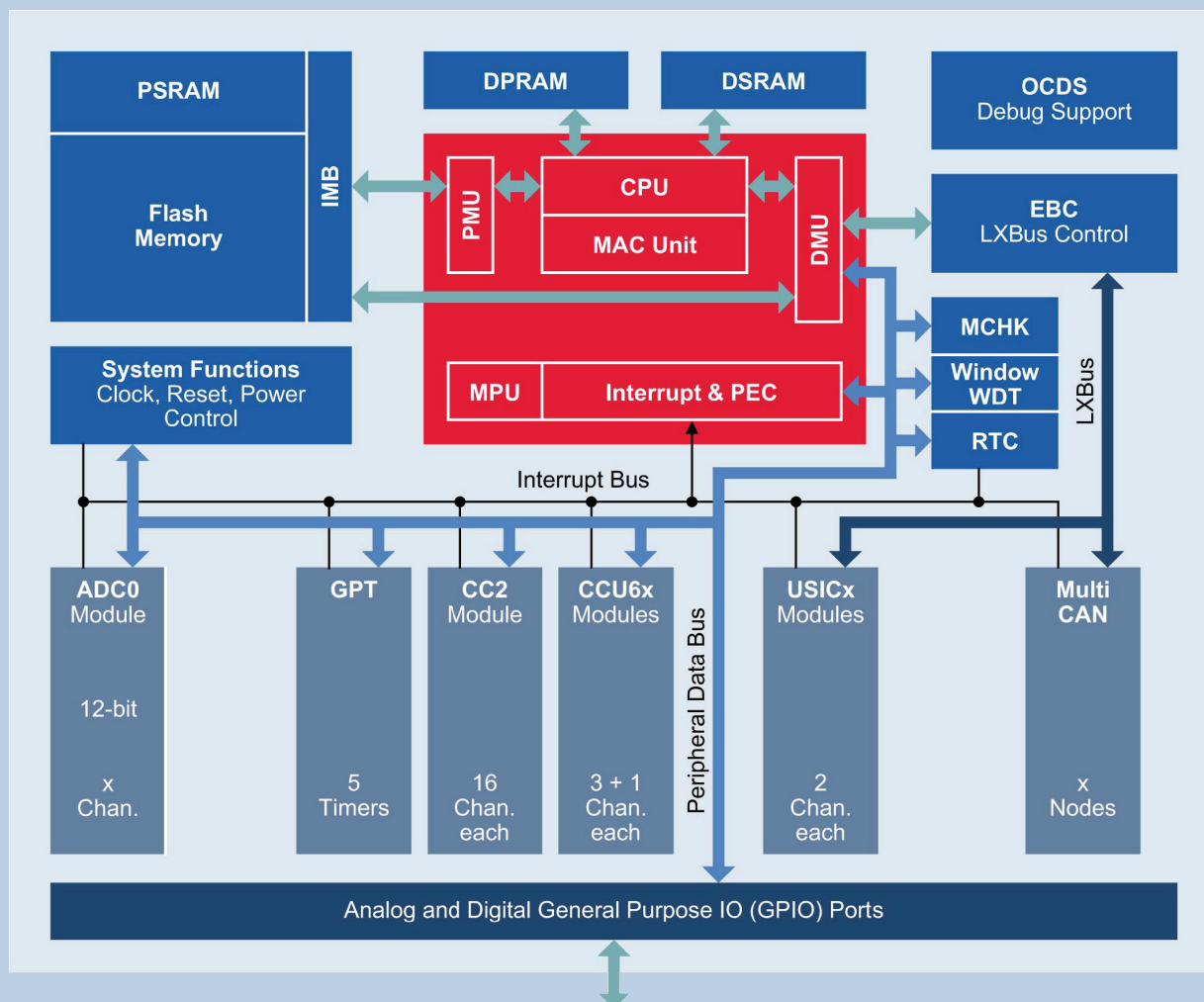
- High performance 16-/32-bit C166SV2 CPU with 5-stage pipeline
- Up to 60 MIPS peak performance @ 66MHz CPU clock
- 64kB to 160kB Flash with EEPROM emulation
- Single voltage supply (core supply over embedded voltage regulator)
- On-chip window watchdog
- High speed 12-bit ADC with upto 19 channels
- Small packages for space critical application/saving of PCB space
- Low power consumption
- DAP - Device Access Port (2 wire JTAG, replaces 5 wire JTAG)

#### Features:

- High-performance CPU with five-stage pipeline and MPU
- 16 priority levels providing 96 interrupt nodes
- 64 to 160kB Flash (incl. up to 32kB data Flash for EEPROM emulation), up to 12kB SRAM
- Memory content protection through Error Correction Code (ECC)
- 12bit AD-converter with upto 19-channels, optional data preprocessing (data reduction, range check), open wire detection, conversion time  $\sim 0.675\mu\text{s}$
- One 16-channel general purpose capture/compare units (CCU2)
- Up to two 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 flexible interface channels (UART, LIN, SPI, I2C, I2S)
- On-chip CAN interface (Rev. 2.0B active), upto 2 nodes with 32 message objects
- On-chip system timer and on-chip real time clock
- Programmable watchdog timer and oscillator watchdog
- On-chip window watch dog with clock source separate from fsys
- Up to 49 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 5V64-pin green LQFP, 48 pin green VQFN package for space critical applications
- Temperature range:  $-40$  to  $+125^\circ\text{C}$
- Supported by a large range of development tools
- Free of charge low level driver CAN, LIN, UART(USIC)

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| Type                  | Frequency [MHz] | eFlash [kByte] | RAM [kByte] | USIC Channels* | CAN nodes | CCU** modules | ADC channels | Package    |
|-----------------------|-----------------|----------------|-------------|----------------|-----------|---------------|--------------|------------|
| SAK-XC2224L-12F66V AA | 66              | 96             | 12          | 4              | 2         | 3             | 10           | PG-VQFN-48 |
| SAK-XC2224L-20F66V AA | 66              | 160            | 12          | 4              | 2         | 3             | 10           | PG-VQFN-48 |
| SAK-XC2230L-12F66L AA | 66              | 96             | 12          | 4              | 0         | 3             | 19           | PG-LQFP-64 |
| SAK-XC2230L-20F66L AA | 66              | 160            | 12          | 4              | 0         | 3             | 19           | PG-LQFP-64 |
| SAK-XC2234L-12F66L AA | 66              | 96             | 12          | 4              | 2         | 3             | 19           | PG-LQFP-64 |
| SAK-XC2234L-20F66L AA | 66              | 160            | 12          | 4              | 2         | 3             | 19           | PG-LQFP-64 |

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