C164CI/CL/SI

Consumer Class 16-bit Microcontroller
Microcontroller with OTP or ROM

C 1 6 4 C I / C L / S I is a member of the Infineon C166 family of 16-bit microcontrollers. It was designed to meet the requirements of realtime embedded-control applications like automotive electronics or industrial control. A 32 or 64 KByte OTP or ROM program memory and up to 4 KByte data memory are implemented on chip. It combines a wide variety of on chip features like CAN interface (version 2.0B active), a module for generation of PWM signals, a real time clock as well as flexible power management characteristics for battery powered applications.

Key Features

- High Performance 16-bit CPU with 4-stage pipeline
- 100 ns Instruction Cycle Time at 20 MHz CPU Clock (ROM/ROMless 80 ns at 25 MHz)
- 500 ns Multiplication (16 x 16 bit), 1 µs division (32/16 bit)
- Enhanced Boolean Bit Manipulation Facilities
- Additional Instructions to support HLL and Operating Systems
- Register-Based Design with Multiple Variable Register Banks
- Single-Cycle Context Switching Support
- Up to 4 MByte Linear Address Space for Code and Data
- 2 KByte On-Chip RAM (ROM/ROM-less 4 KByte RAM)
- 32/64 KByte On-Chip OTP or ROM
- Clock Generation via On-Chip PLL or via direct of prescaled Clock Input
- Programmable External Bus Characteristics for Different Address Ranges
- 8-bit or 16-bit External Data Bus
- Multiplexed or Demultiplexed External Address/Data Bus
- Four Programmable Chip-Select Signals
- 1024 Byte On-Chip Special Function Register Area
- Extended Power Saving Modes with Wake-up via External/ Internal Interrupt
- 8-Channel Interrupt-Driven Single-Cycle Data Transfer Facilities via Peripheral Event Controller (PEC)

- 16-Priority-Level Interrupt System with 32 Interrupt Sources, Sample Rate down to 50 ns
- 8-Channel 10-bit A/D Converter with 9.7 µs Conversion Time
- One 8-Channel Capture/Compare Unit
- 3/6-Channel 16-bit Capture/Compare Unit Dedicated for AC/DC Motor Control Applications
- Multi-Functional General Purpose Timer Unit with three 16-bit Timers
- On-Chip CAN Interface (V2.0B active)
- Two Serial Channels (Synchronous/Asynchronous and High-Speed-Synchronous)
- On-Chip Real Time Clock
- Programmable Watchdog Timer
- Oscillator Watchdog
- On-Chip Bootstrap Loader
- Up to 59 General Purpose I/O Lines
- Supported by a Large Range of Development Tools
- P/PG-MQFP-80 Package
- Temperature Range: -40°C to +125°C and -40°C to +85°C

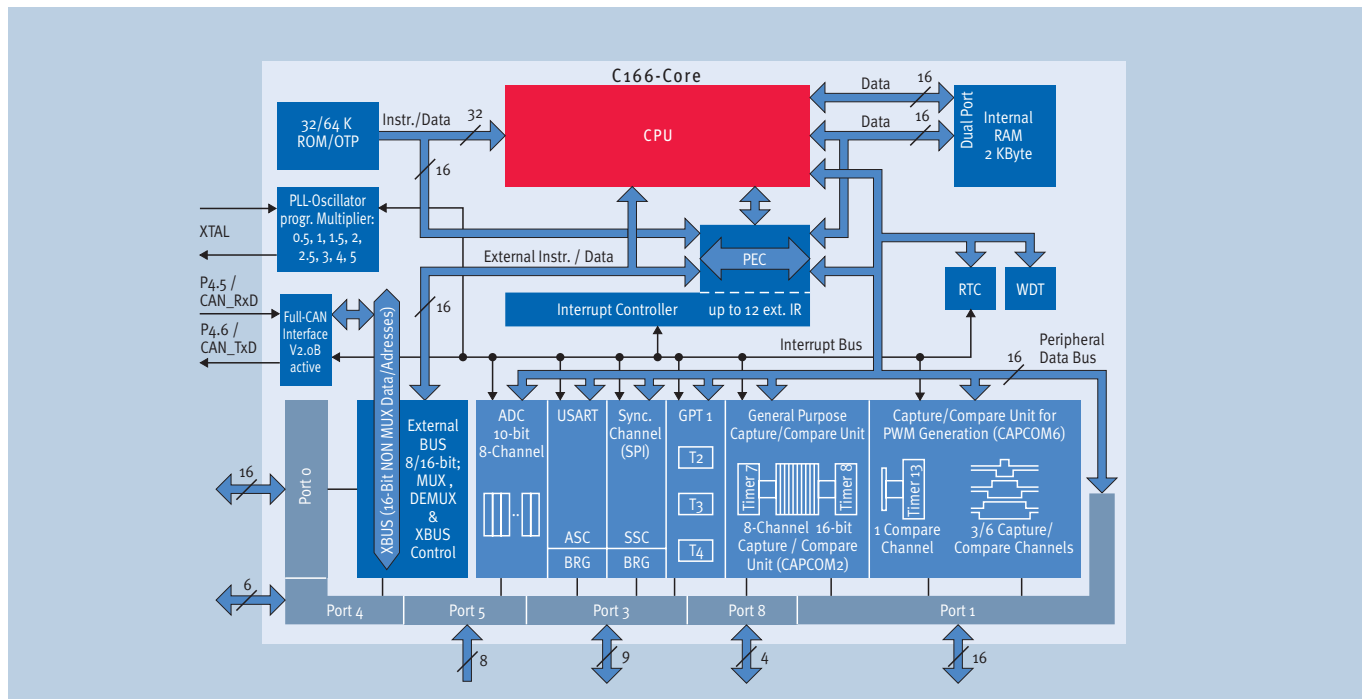Controller Area Network (CAN): License of Robert Bosch GmbH
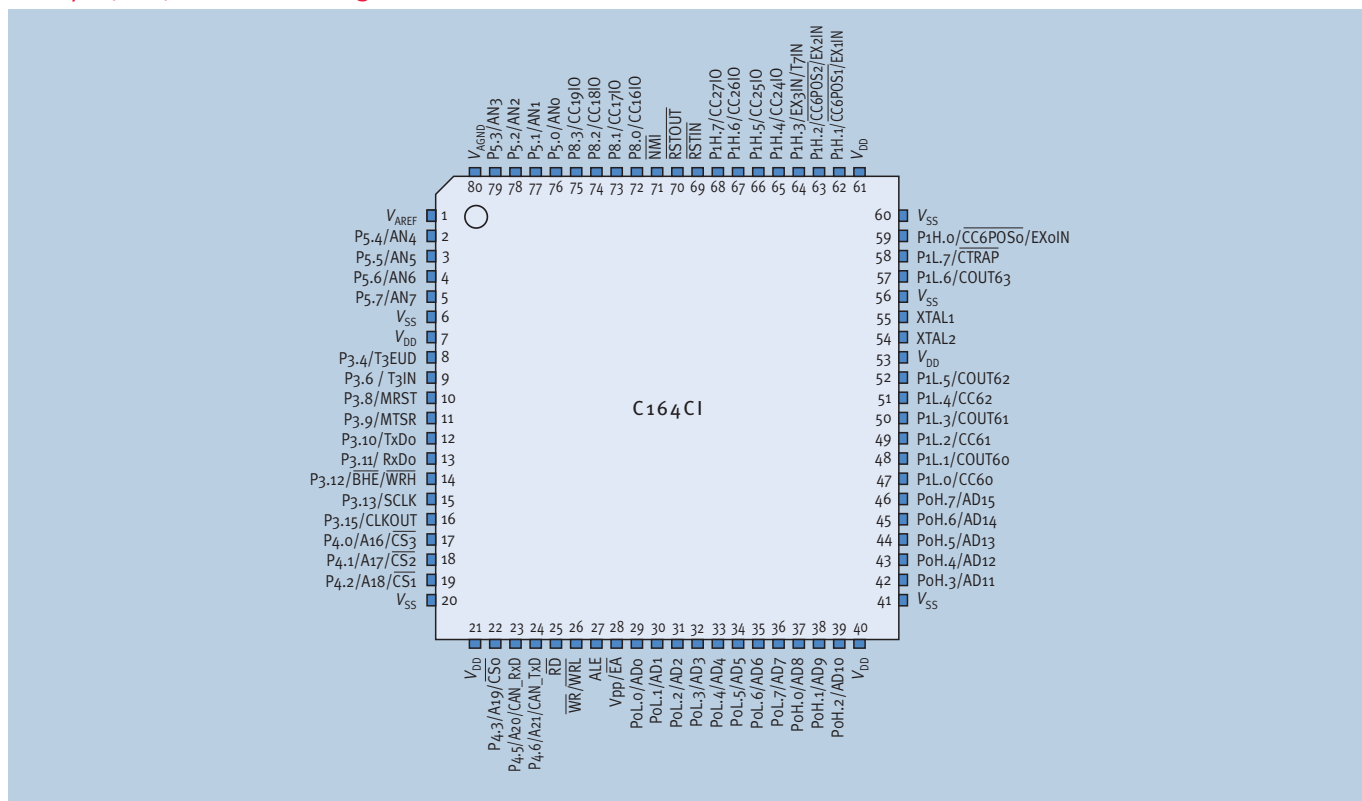
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Never stop thinking

C164CI/CL/SI Block Diagram

C164CI/CL/SI Pin Configuration

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