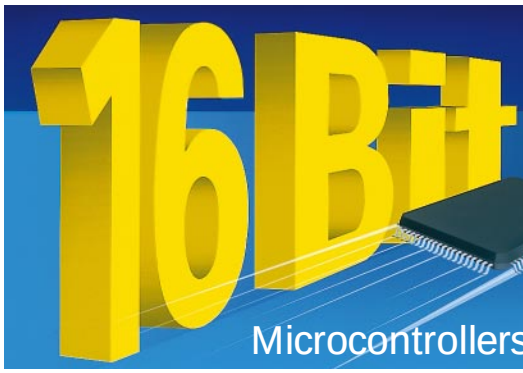
SIEMENS

C167CR
Highly Integrated Microcontroller with On-chip CAN-Module



The C167CR* is a new derivative of the Siemens C166 family of full featured single-chip CMOS microcontrollers. It combines high CPU performance with high peripheral functionality and enhanced IO-capabilities.

The C167CR features a CAN module which meets version 2.0 B active of the Controller Area Network specification and was designed to fulfill the requirements of coming generations of automotive and industrial control applications.

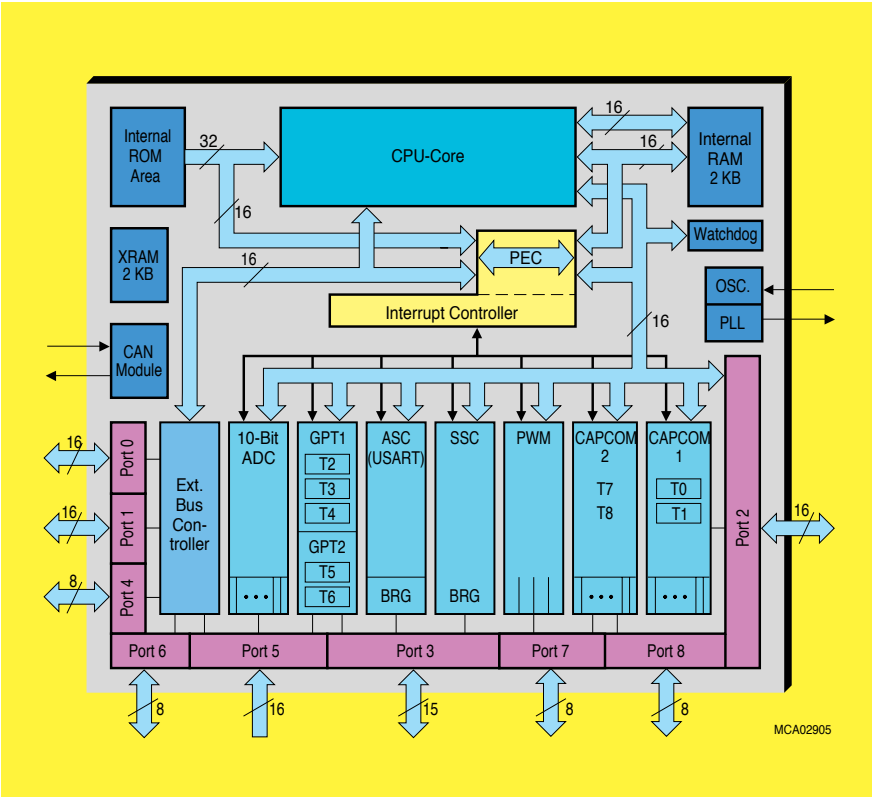
Device	ROM
C167CR-LM	–
C167CR-4RM	32 KB
C167CR-16RM	128 KB

- High Performance 16-bit CPU with 4-Stage Pipeline
- Versions with 25 MHz available
- 80 ns Instruction Cycle Time at 25 MHz CPU Clock
- 400 ns Multiplication (16 x 16 bit), 800 ns Division (32/16 bit) at 25 MHz CPU Clock
- 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
- Clock Generation via on-chip PLL or via direct clock-input
- Up to 16 MBytes Linear Address Space for Code and Data
- 4 KBytes On-Chip SRAM (2 KB Internal RAM, 2 KBytes Extension RAM)
- Programmable External Bus Characteristics for Different Address Ranges
- 8-bit or 16-bit External Data Bus
- Multiplexed or Demutiplexed External Address/Data Buses
- Five Programmable Chip-Select Signals
- Hold- and Hold-Acknowledge Bus Arbitration Support
- 1024 Bytes On-Chip Special Function Register Area
- Idle and Power Down Modes
- 8-Channel Interrupt-Driven Single-Cycle Data Transfer Facilities via Peripheral Event Controller (PEC)
- 16-Priority-Level Interrupt System with 56 Sources, Sample-Rate down to 40 ns
- 16-Channel 10-bit A/D Converter with 9.7 µs Conversion Time
- Two 16-Channel Capture/Compare Units
- 4-Channel PWM Unit
- Two Multi-Functional General Purpose Timer Units with five 16-bit Timers
- Two Serial Channels (Synchronous/Asynchronous and High-Speed-Synchronous, 6 MBit/s at 25 MHz)
- On-Chip CAN Interface 2.0 B active with 15 Message Objects (Full-CAN/Basic-CAN)
- Programmable Watchdog Timer
- Up to 111 General Purpose IO Lines, partly with Selectable Input Thresholds and Hysteresis
- Supported by a Wealth of Development Tools like C-Compilers, Macro-Assembler Packages, Realtime Operating Systems, Emulators, Evaluation Boards, HLL-Debuggers, Simulators, Logic Analyzer Disassemblers, Programming Boards
- On-Chip Bootstrap Loader
- 144-Pin MQFP Package
- Full Automotive Temperature Range –40 °C to 125 °C

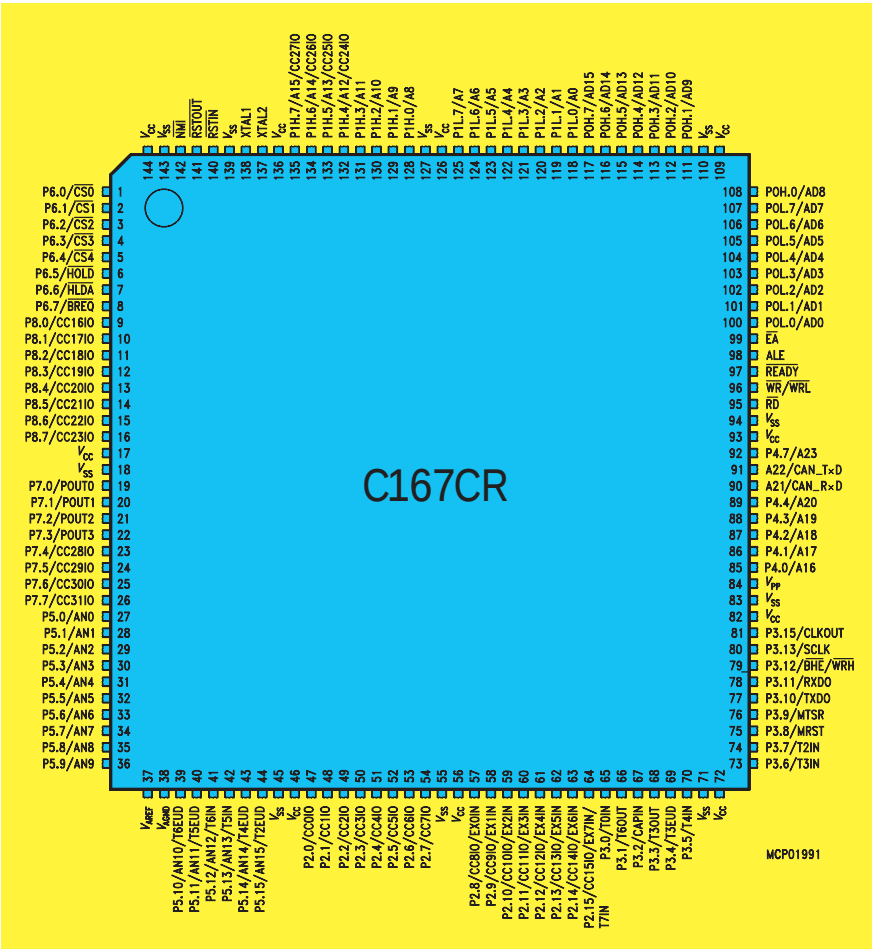
Controller Area Network (CAN): License of Robert Bosch GmbH

* For complete device designations (corresponding to PRO ELECTRO please refer to the data sheet..

C167CR
Block Diagram



C167CR
Pin Configuration



Published by Semiconductor Group

Siemens Aktiengesellschaft

Global PartnerChip
for Systems on Silicon

Ordering No. B158-H6845-G3-X-7600
Printed in Germany
PS 08975. 21-936