

## C505CA/C505A

### C505CA Microcontroller with Complete CAN Capability and OTP memory

### C505A Microcontroller without CAN

The C505CA enhances the C500 family of 8-bit microcontrollers by a new member which provides full CAN version 2.0B integrated on-chip.

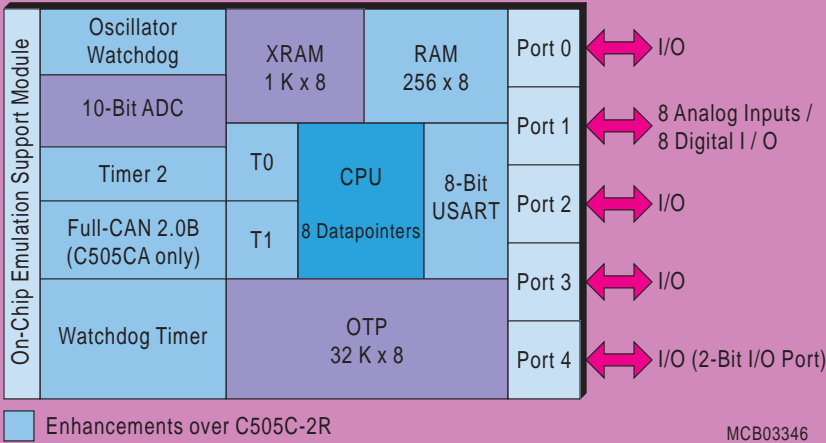
The C505CA meets the current requirements for increasingly small controllers with high performance, optimized EMC behavior and fast communication between decentralized sensors, actuators and the host. The C505CA is a superset of the already available C505C.

The device provides 32Kbyte of OTP, 256 byte of RAM, 1Kbyte of XRAM, CAN Version 2.0B, an asynchronous/synchronous serial interface and highly accurate 10-bit ADC integrated on the chip.

With an external clock rate of 20 MHz, the C505CA has an instruction time of 300ns. Typical applications for the C505CA are automotive body and industrial control.

- Fully compatible to standard 8051 microcontroller
- Superset of the 8051 architecture with 8 datapointers
- Up to 20 Mhz operating frequency (without clock prescaler)  
375 ns instruction cycle time @ 16 Mhz  
300 ns instruction cycle time @ 20 Mhz (50 % duty cycle)
- 256 byte On-Chip RAM
- 32K byte On-Chip OTP memory
- 1K byte on-chip XRAM
- 32 + 2 digital I/O lines
- Three 16-bit timers/counters
- Full duplex serial interface with programmable baudrate generator
- Full CAN Module Version 2.0B active with 15 Message Objects and Basic CAN Feature (C505CA-4EM only)
- 10-bit A/D Converter with 8 multiplexed inputs with built-in self calibration
- Twelve interrupt sources with four priority levels
- On-chip emulation support logic (Enhanced Hooks)
- Enhanced Fail Safe Mechanisms with Programmable 15-bit Watchdog Timer and Oscillator Watchdog
- Fast Power On Reset
- Power Saving Modes
- Wake-up from power-down via external interrupt or incoming CAN message (C505CA only) possible
- P-MQFP-44-2 package
- Pin configuration is compatible to C501, C504, C505, C505C, C511/C513-family.
- Temperature ranges:  
Standard 0 to 70°C  
Extended - 40°C to 85°C  
                  - 40°C to 125°C

C505CA  
Block Diagram  
C505A  
without Full-CAN



C505CA/C505A  
Pin Configuration

