



OTP Version available

C513AO

Low Cost Microcontroller for Low Power Designs

The C513AO is a low cost member of the Siemens C500 family of 8-bit microcontrollers which is compatible to the standard 80C51/C52 architecture. Based on improved technology, it is an enhancement of its predecessors in the C511 and C513 families, with added versatile failsafe and power saving mechanism.

This device extends the functionality of C501 family to include Oscillator Watchdog, Watchdog Timer and Synchronous Serial

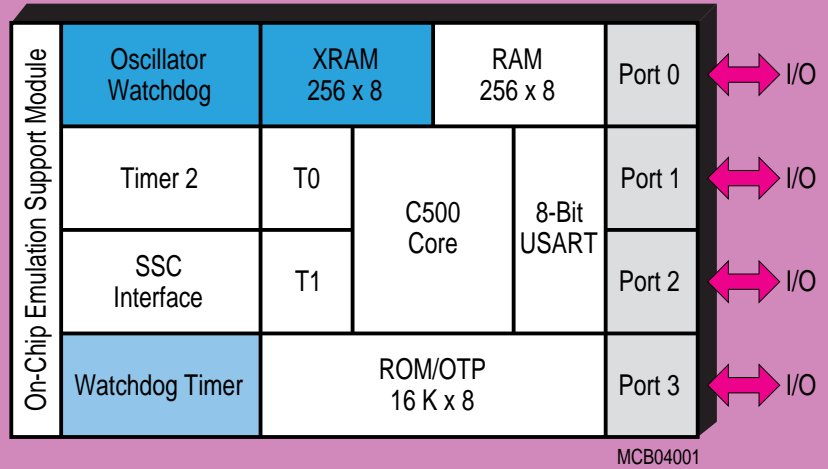
Channel (SSC). The Synchronous Serial Channel is SPI compatible and can also be used as a second USART, making this generic microcontroller a very versatile performer.

With the enhancement of power saving modes, low power consumption and improved EMC behaviour, the C513AO is particularly well suited for telecom and consumer applications, as well as many industrial applications.

Features

- Enhanced 8-bit C500 CPU – fully software/toolset compatible to standard 80C51/80C52 microcontrollers
- 750ns instruction cycle time at 16MHz oscillator frequency
- 256 Byte on-chip RAM
- 256 Byte on-chip extended RAM (XRAM)
- Up to 16K Byte On-chip ROM/OTP. ROM protection available:
C513AO-L: ROM-less version
C513AO-R: 12KB ROM version
C513AO-2R: 16KB ROM version
C513AO-2E: 16KB OTP version
- Supports external address range of up to 64K Byte of program and data memory
- Seven interrupt vectors with two selectable priority levels
- 32 multifunctional input/output pins
- Three 16-bit Timers/Counters (Timer 2 with Up/Down and 16-bit auto-reload features)
- Enhanced fail safe mechanisms with programmable watchdog timer and oscillator watchdog
- Full duplex serial interface (USART)
- Synchronous Serial Channel (SSC) – SPI Compatible, can also be used as a second USART
- EMC optimized
- Fast Power ON Reset
- Power Saving Modes
 - Slow down mode
 - Idle mode
 - Software power down with optional wakeup capability
- Available in P-DIP40, P-LCC-44 and P-MQFP-44 packages
- Functionally compatible with all derivatives of C511 and C513
- Pin-compatible to C501, C504, C505C, C505CA and C511/513 family
- Starter Kits are readily available for use as low cost programming tools
- On-chip Emulation Support logic (Enhanced Hooks Emulation Technology™)
- Temperature ranges:
Standard: 0 to 70°C
Extended: –40 to 85°C

C513AO Block Diagram



C513AO Pin Configuration

