

XC886/888CLM

High Performance 8-bit Microcontroller
with On-Chip Flash Memory and CAN



THE XC886/888CLM enhances the XC800 family of 8-bit μ Cs with a new member providing advanced networking capabilities by integrating both a CAN controller (V2.0B active) and LIN support on a single chip.

THE ON-CHIP CAN module reduces the CPU load by performing most of the functions required by the networking protocol (masking, filtering and buffering of CAN frames).

ADDITIONAL KEY FEATURES include up to 32 KByte of embedded Flash memory, an intelligent PWM unit, a highly accurate 10-bit ADC with fast conversion speed, a CORDIC and a Multiplication Division Unit (MDU) for fast mathematical computations.

THE FLEXIBILITY offered by the XC886/888CLM embedded Flash products is also expanded to include a family of compatible ROM versions for further cost saving potential in high volume production.

THE XC886/888CLM offers an optimized fit to a wide range of CAN networking applications including automotive body, control for industrial and agricultural equipments, building control for lifts/escalators, intelligent sensors, distributed I/O modules and industrial automation.

Key Features

- High performance XC800 core, based on industry standard 8051 architecture
- 83–166 ns instruction cycle time @ 24 MHz CPU clock
- 24 KByte or 32 KByte of Flash memory
 - Built-in error correction (ECC)
 - Increased Flash performance through caching
 - Up to 8 KByte of the 24/32 KByte Flash ideal for data Flash and EEPROM emulation
- 256 Byte RAM, 1536 Byte XRAM
- MultiCAN with 2 nodes
 - 32 message objects shared between both nodes
 - 8 interrupt nodes
 - Automatic FIFO and gateway mode support
- 2 UART (one for LIN support)
- High speed SPI compatible synchronous serial interface (SSC)
- Capture/Compare Unit (CCU6) with two independent 16-bit timers dedicated for PWM generation for AC and DC motor control
 - 4 compare channels with 7 outputs and 6 capture inputs
 - Support for dead time generation
- 10-bit ADC with high accuracy (8 channels)
 - Fast conversion time of less than 1.5 μ s
 - TUE less than ± 2 LSB
 - Auto scan, injection and comparator modes to reduce CPU load
- LIN bootstrap loader (BSL) support (Flash programming through LIN possible)
- Multiplication/Division Unit (MDU) for high-speed 16- and 32-bit multiplication, division and shift operations
- CORDIC (COordinate Rotation DIgital Computer) unit for high-speed computation of trigonometric, linear or hyperbolic functions
- Brown-out detection for core logic supply
- On-chip OSC (9.6 MHz) and PLL for clock generation
- 4 general purpose 16-bit timers
- Programmable 16-bit watchdog timer (WDT)
- Interrupts
 - 14 interrupt vectors with 4 priority levels
 - Non-maskable interrupt (NMI)
- On-chip debug support (JTAG)
- Port- and core-voltage watchdog circuit with RESET generation
- Power saving modes
 - Slow-down mode
 - Idle mode
 - Power-down mode with fast wake-up capability via RxD (LIN) or EXINT0
 - Clock gating control to each peripheral
- Flexible single voltage supply of 3.3 V or 5.0 V
- 34/48 general purpose I/O ports (incl. 8 analog ports)
- Packages:
 - PG-TQFP-48 (green)
 - PG-TQFP-64 (green)
- Temperature range:
 - SAF (-40°C to 85°C)
 - SAK (-40°C to 125°C)

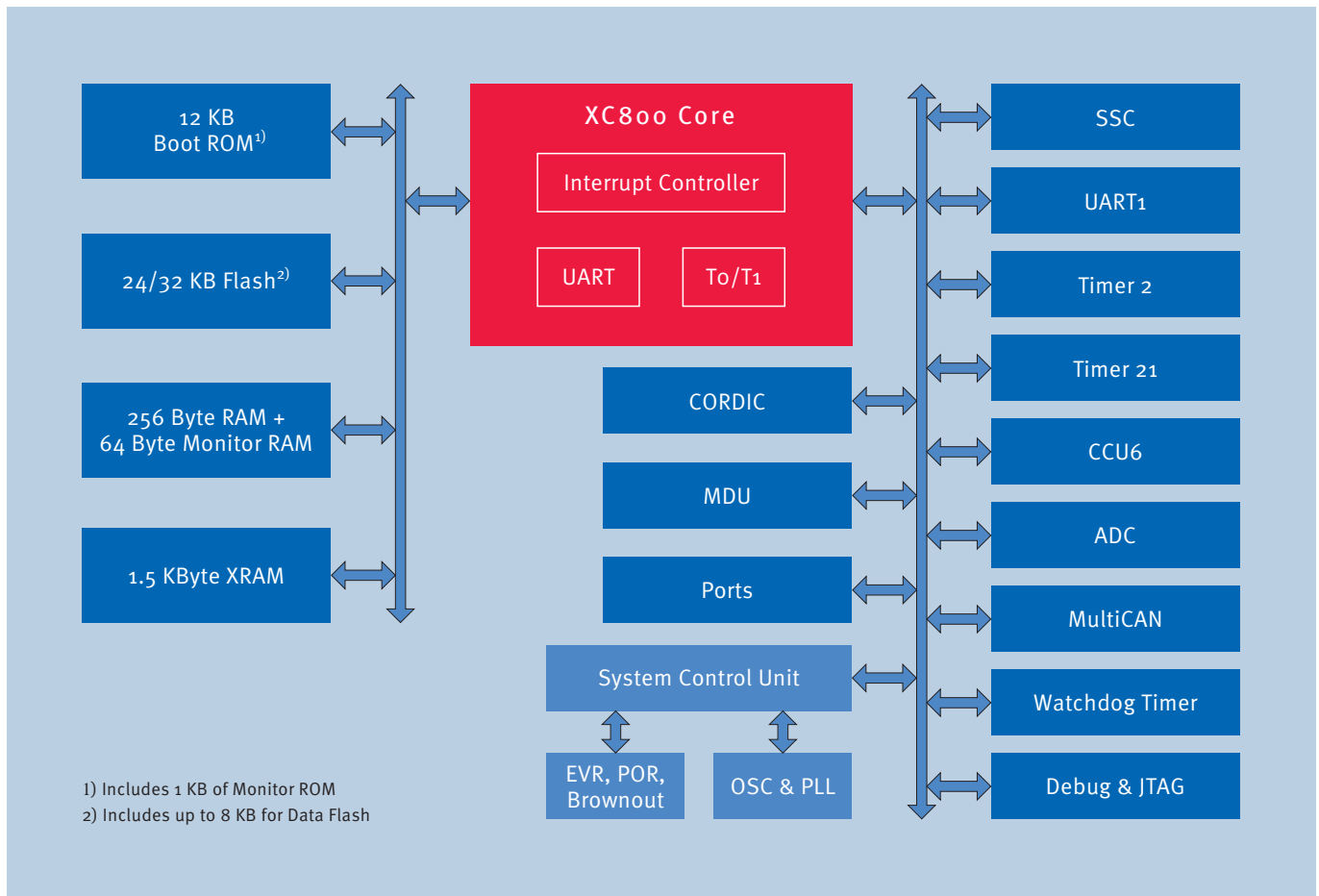
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Never stop thinking

XC886/888CLM Block Diagram



Derivatives

Type	eFlash [KByte]	RAM [Byte]	MultiCAN	MDU	LIN BSL Support	Package
XC886C-6FF	24	1792	✓	–	–	PG-TQFP-48
XC886C-8FF	32	1792	✓	–	–	PG-TQFP-48
XC888C-6FF	24	1792	✓	–	–	PG-TQFP-64
XC888C-8FF	32	1792	✓	–	–	PG-TQFP-64
XC886CM-6FF	24	1792	✓	✓	–	PG-TQFP-48
XC886CM-8FF	32	1792	✓	✓	–	PG-TQFP-48
XC888CM-6FF	24	1792	✓	✓	–	PG-TQFP-64
XC888CM-8FF	32	1792	✓	✓	–	PG-TQFP-64
XC886CLM-6FF	24	1792	✓	✓	✓	PG-TQFP-48
XC886CLM-8FF	32	1792	✓	✓	✓	PG-TQFP-48
XC888CLM-6FF	24	1792	✓	✓	✓	PG-TQFP-64
XC888CLM-8FF	32	1792	✓	✓	✓	PG-TQFP-64

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