XMC4500 - a Novelty in Microcontroller Design

Tackling the daunting challenges of industrial applications – this was the inspiration for microcontroller veteran Infineon to debut an ARM® Cortex™-M4 based 32-bit family – the Infineon XMC4000 microcontroller family.

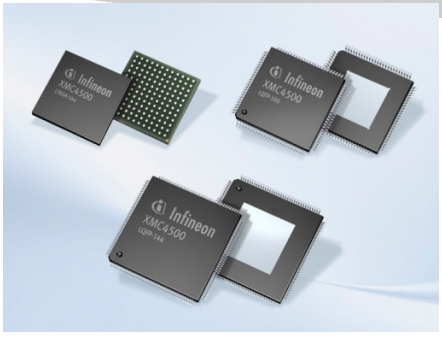
With XMC4000 Infineon combines its leading-edge peripheral set with an industry-standard ARM® Cortex™-M4 core, resulting in a power pack for energy-efficient industrial applications

XMC4500, the first product generation of this novel microcontroller family, delivers the brainpower for a variety of industrial applications facing high innovation pressure at decreasing development cycle times. It is dedicated to enable highly energy-efficient products with industrial interconnection capabilities. Infineon's in-depth microcontroller know-how, demonstrated over the past decades in a number of well-recognized CPU kernels and peripherals, guarantees the best real-time performance in the industry, now coupled with all benefits of an industry standard CPU core.

The configurable peripheral set inside the XMC4500 allows to set-up the controller according to the specific use cases in the various corners of the customers' application. In order to fully benefit from this flexibility Infineon is now offering the third generation of DAVE™, Infineon's industry-proven development environment. Eclipse-based DAVE™3 incorporates free development tools and an autocode generation engine that allows to benefit from a pool of pre-developed, pre-tested SW components. These so-called DAVE™Apps range from low-level drivers up to application-level algorithms and allow the SW developer to concentrate on the truly innovative algorithms in his application, being greatly released from standard work and positioned to save on precious development time.

Features XMC4500

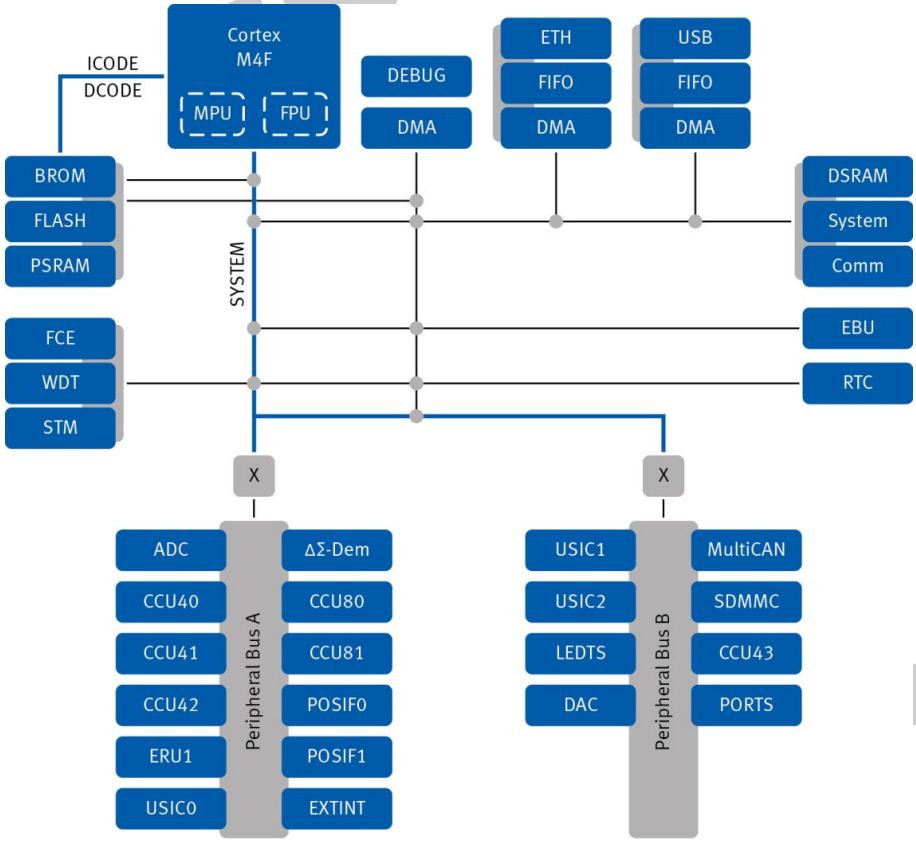
- ARM® Cortex™-M4, 120 MHz, incl. single cycle DSP MAC and floating point unit (FPU)
- 1 MB eFlash including hardware ECC
- 160 kB RAM
- 12-channel DMA
- IEEE 1588 compliant Ethernet MAC
- USB 2.0 full-speed on-the-go
- Comprehensive set of timers and PWM, Delta-sigma Demodulator, Position Interface



- 4x12-bit ADC, 2x12-bit DAC
- 6x multi-function serial interface modules configurable to SPI, I2C, I2S, UART
- 3x CAN nodes
- External bus interface supporting SDRAM, SRAM, NOR-/NAND-Flash and memory-mapped IO devices (e.g. LCD)
- SD/MMC interface
- Touch interface & LED Matrix
- Battery-backed real-time clock with calendar function and timebased or external wake-up capabilities
- Extended temp range up to 125°C

Packages XMC4500

- LQFP-144 (-40 °C to +125 °C)
- LQFP-100 (-40 °C to +125 °C)
- LFBGA-144 (-40 °C to +85 °C)



Block diagram - XMC4500 (mid range family)

Target Markets XMC4000 Family

- Renewable Energy
- Logistics
- Factory Automation
- Building Automation
- Transportation
- Medical equipment
- Etc.

Target Applications XMC4000 Family

- Motor Control
- Position Detection
- IO Devices
- HMI
- Solar Inverters
- SMPS
- Sense & Control
- PLC
- UPS
- Etc.