MCX A36 Mixed-Signal MCU Arm® Cortex®-M33 240 MHz with Security and Rich Analog Peripherals
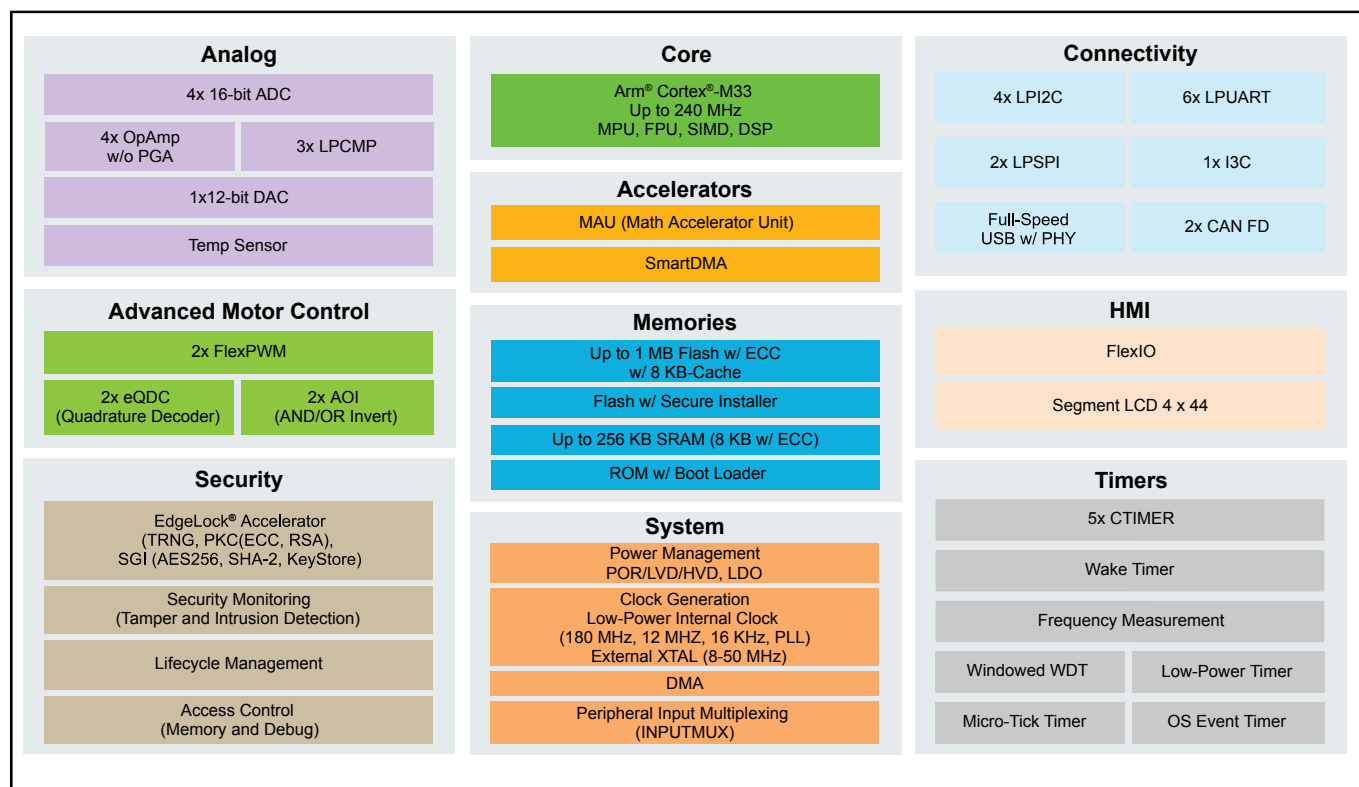
MCX-A36   NEW

Preproduction

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The MCX A36 family of microcontrollers is optimized for motor control applications and includes a Math Accelerate Unit (MAU) for enhanced performance. It features two flexible pulse width modulators (FlexPWM) submodules—including AND/OR invert (AOI)— supporting up to four 16-bit analog-to-digital-converters (ADCs) and a rich set of serial interfaces. Additionally, smart direct memory access (SmartDMA) and flexible input/output (FlexIO) provide versatile peripheral integration for advanced designs.

The MCX A365 and A366 devices deliver high-performance motor control capabilities, operating at speeds up to 240 MHz with up to 1 MB of Flash memory, 256 kB of RAM and integrated security features.

These devices are supported by the MCUXpresso Developer Experience to simplify development, optimize workflows and accelerate embedded system design.

MCX A365 and A366 MCUs Block Diagram

Analog
4x 16-bit ADC

4x OpAmp w/o PGA | 3x LPCMP

1x12-bit DAC

Temp Sensor

Advanced Motor Control
2x FlexPWM

2x eQDC (Quadrature Decoder) | 2x AOI (AND/OR Invert)

Security
EdgeLock® Accelerator (TRNG, PKC(ECC, RSA), SGI (AES256, SHA-2, KeyStore)

Security Monitoring (Tamper and Intrusion Detection)

Lifecycle Management

Access Control (Memory and Debug)

Core
Arm® Cortex®-M33
Up to 240 MHz
MPU, FPU, SIMD, DSP

Accelerators
MAU (Math Accelerator Unit)

SmartDMA

Memories
Up to 1 MB Flash w/ ECC w/ 8 KB-Cache

Flash w/ Secure Installer

Up to 256 KB SRAM (8 KB w/ ECC)

ROM w/ Boot Loader

System
Power Management
POR/LVD/HVD, LDO

Clock Generation
Low-Power Internal Clock
(180 MHz, 12 MHZ, 16 KHz, PLL)
External XTAL (8-50 MHz)

DMA

Peripheral Input Multiplexing (INPUTMUX)

Connectivity
4x LPI2C | 6x LPUART

2x LPSPI | 1x I3C

Full-Speed USB w/ PHY | 2x CAN FD

HMI
FlexIO

Segment LCD 4 x 44

Timers
5x CTIMER

Wake Timer

Frequency Measurement

Windowed WDT | Low-Power Timer

Micro-Tick Timer | OS Event Timer

View additional information for MCX A36 Mixed-Signal MCU Arm® Cortex®-M33 240 MHz with Security and Rich Analog Peripherals.

Note: The information on this document is subject to change without notice.