MCX A13x, 14x, 15x MCUs with Arm® Cortex® M33, Scalable Device Options, Low Power and Intelligent Peripherals
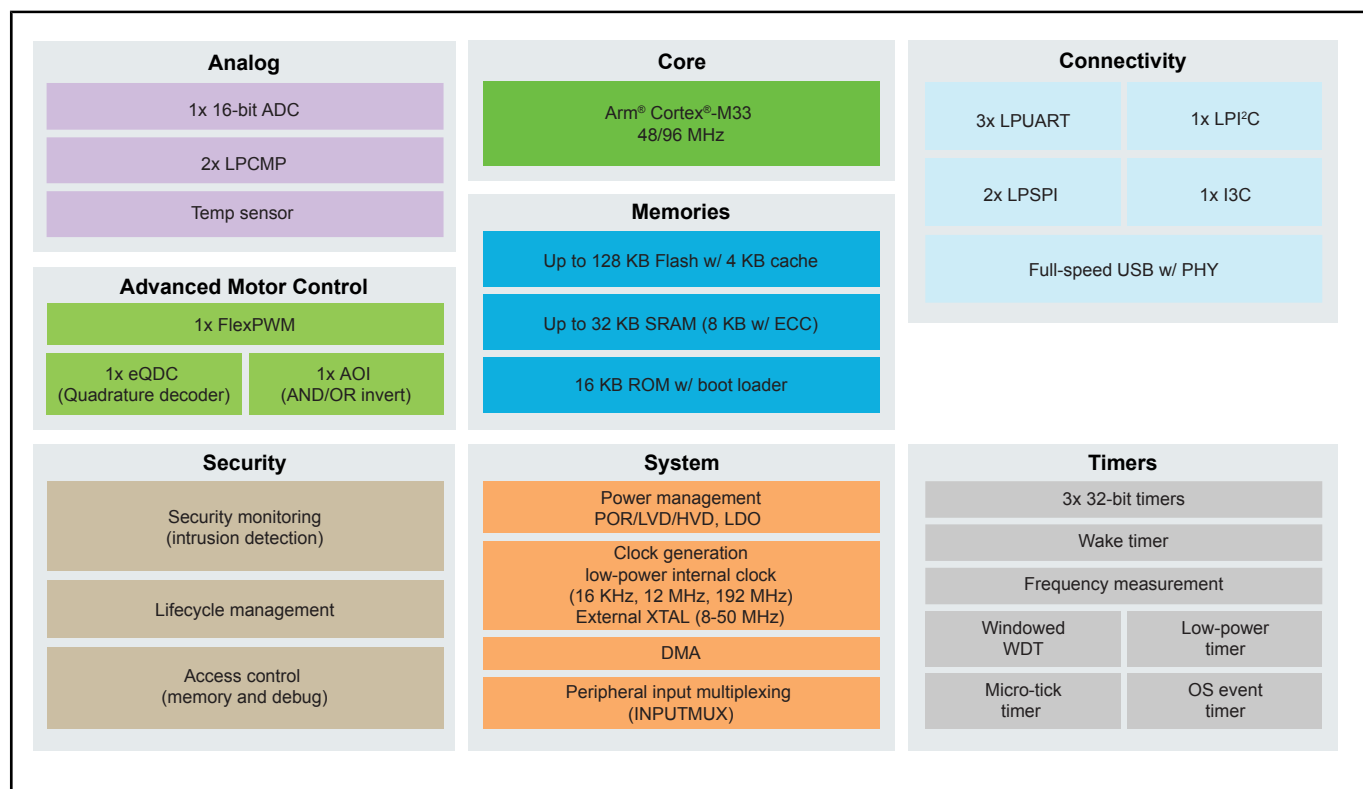
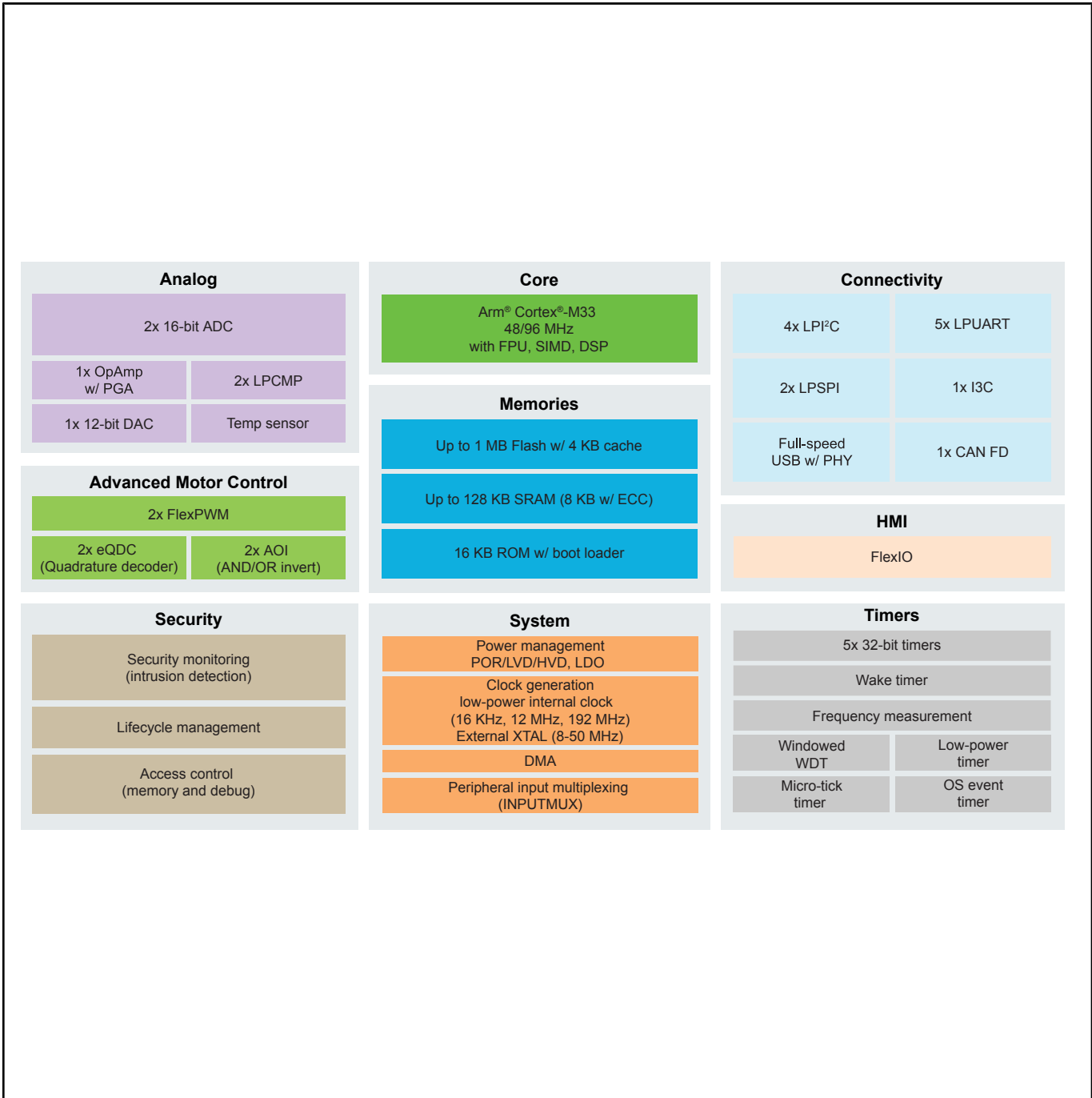## MCX-A13X-A14X-A15X

Last Updated: Feb 26, 2025

MCX A13x, A14x, A15x microcontrollers featuring an Arm® Cortex®-M33 core operate at up to 96MHz with high levels of integration and analog. They address a wide range of applications with scalable device options. The low-power and intelligent peripherals include timers that generate three complementary PWM pairs with deadband insertion, 4Msps 16b ADC with hardware windowing and averaging features. The innovative power architecture is designed to support high utilization of I/Os and power efficiency with a simple supply circuit in a smaller footprint.

The devices are supported by the MCUXpresso Developer Experience to accelerate embedded system development.

MCX A132/3, A142/3, A152/3 Block Diagram Block Diagram

Analog
1x 16-bit ADC

2x LPCMP

Temp sensor

Advanced Motor Control
1x FlexPWM

1x eQDC
(Quadrature decoder)

1x AOI
(AND/OR invert)

Security
Security monitoring
(intrusion detection)

Lifecycle management

Access control
(memory and debug)

Core
Arm® Cortex®-M33
48/96 MHz

Memories
Up to 128 KB Flash w/ 4 KB cache

Up to 32 KB SRAM (8 KB w/ ECC)

16 KB ROM w/ boot loader

System
Power management
POR/LVD/HVD, LDO

Clock generation
low-power internal clock
(16 KHz, 12 MHz, 192 MHz)
External XTAL (8-50 MHz)

DMA

Peripheral input multiplexing
(INPUTMUX)

Connectivity
3x LPUART

1x LPI²C

2x LPSPI

1x I3C

Full-speed USB w/ PHY

Timers
3x 32-bit timers

Wake timer

Frequency measurement

Windowed
WDT

Low-power
timer

Micro-tick
timer

OS event
timer

MCX A144/5/6, A154/5/6 Block Diagram Block Diagram

Analog

2x 16-bit ADC

1x OpAmp w/ PGA	2x LPCMP
1x 12-bit DAC	Temp sensor

Advanced Motor Control

2x FlexPWM

2x eQDC (Quadrature decoder)	2x AOI (AND/OR invert)

Security

Security monitoring (intrusion detection)

Lifecycle management

Access control (memory and debug)

Core

Arm® Cortex®-M33
48/96 MHz
with FPU, SIMD, DSP

Memories

Up to 1 MB Flash w/ 4 KB cache

Up to 128 KB SRAM (8 KB w/ ECC)

16 KB ROM w/ boot loader

System

Power management
POR/LVD/HVD, LDO

Clock generation
low-power internal clock
(16 KHz, 12 MHz, 192 MHz)
External XTAL (8-50 MHz)

DMA

Peripheral input multiplexing
(INPUTMUX)

Connectivity

4x LPI²C	5x LPUART
2x LPSPI	1x I3C
Full-speed USB w/ PHY	1x CAN FD

HMI

FlexIO

Timers

5x 32-bit timers

Wake timer

Frequency measurement

Windowed WDT	Low-power timer
Micro-tick timer	OS event timer

View additional information for MCX A13x, 14x, 15x MCUs with Arm® Cortex® M33, Scalable Device Options, Low Power and Intelligent Peripherals.

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