

MCX A Series Microcontrollers

Addressing challenges engineers face while designing for the edge

MCX A1xx Series all-purpose microcontrollers (MCUs) address a wide range of applications with scalable device options, low power and intelligent peripherals.

The [MCX A1xx Series](#) Arm® Cortex®-M33 general purpose MCUs operate at up to 96 MHz with high levels of integration and analog. The low power cache enhances the system performance with built-in RAM self-test hardware and supporting safety applications.

They offer a wide range of low power and intelligent peripherals including Timers that generate three complementary PWM pairs with deadband insertion, 3.2 Msps 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. Designed to support more GPIO pins for additional external connections, the MCX A allows designers to utilize a smaller package, simpler board design and lower system BOM costs.

Target Applications

- Sensing & metering
- Building control & automation
- Smart circuit breaker
- Home appliances
- USB accessories
- Compressor drive
- Smart lighting
- Hand-held devices
- Power tools
- IoT nodes



Developer experience

The MCX MCU portfolio is supported by the [MCUXpresso Developer Experience](#) to optimize, ease and help accelerate embedded system development.

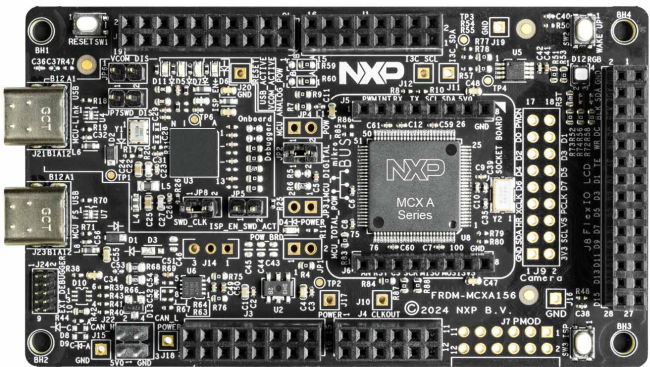
The MCUXpresso suite includes tools for simple device configuration and secure programming. Developers can choose to work with multiple IDEs including MCUXpresso for VS Code, MCUXpresso IDE, IAR, or Keil.

NXP provides drivers and middleware with extensive examples and support for a range of RTOS choices, further complemented by a wide range of compatible middleware from NXP’s partner ecosystem, allowing rapid development of a broad range of end applications.

Hardware platforms

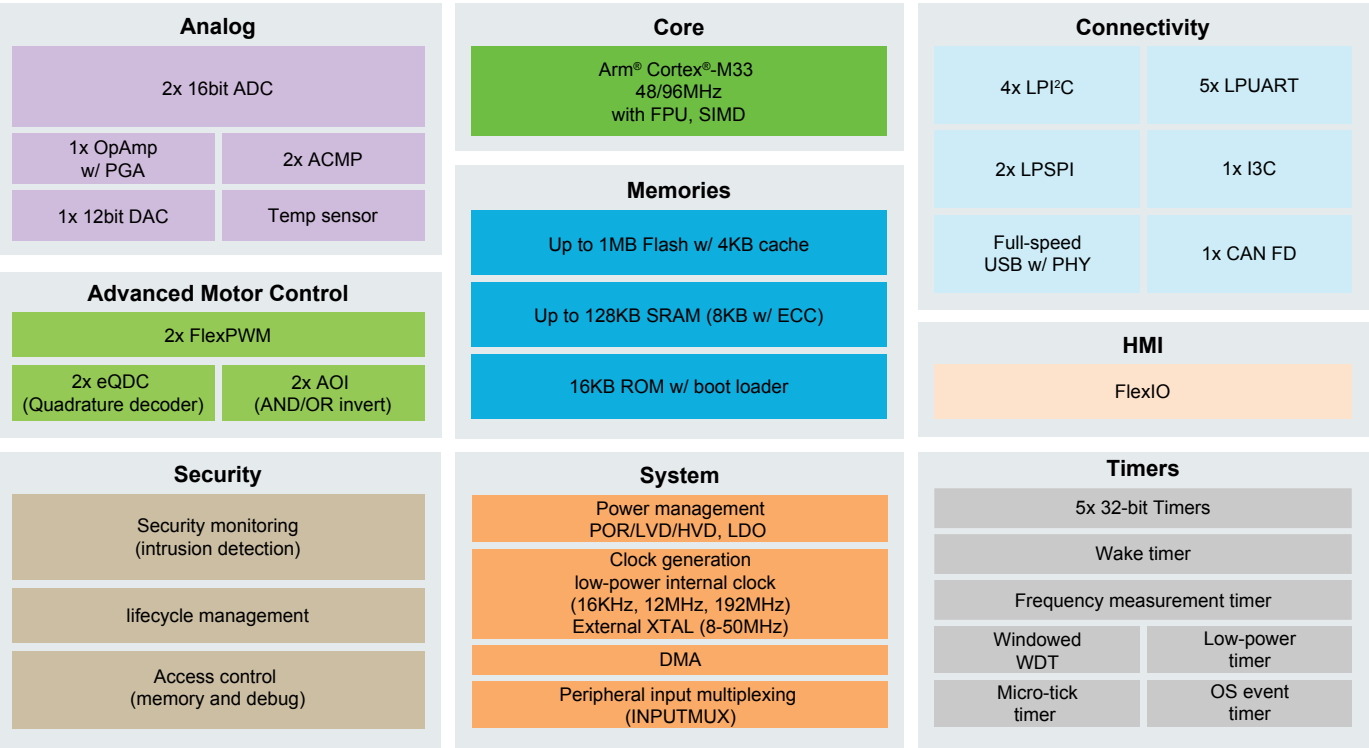
For quick prototyping, we offer our low-cost, compact and scalable FRDM development boards.

Developers have easy access to additional tools like our [Expansion Board Hub](#) for add-on boards and the [Application Code Hub](#) for software examples through the MCUXpresso Developer Experience.



FRDM-MCXA156 FRDM board

MCX A1xx block diagram



MCX A1xx MCU Options

Part Number	Frequency	Flash	SRAM	LP12C	LPUART	LPSPi	I3C	USB FS	FlexIO	CAN	16b SE ADC	12b DAC	OpAmp	FlexPWM	Comparator	GPIOs	Package
MCXA156VPJ	96 MHz	1024 KB	128 KB	4	5	2	1	1	1	1x CAN FD	2	1	1	2	2	82	VFBGA112
MCXA156VMP	96 MHz	1024 KB	128 KB	4	5	2	1	1	1	1x CAN FD	2	1	1	2	2	50	LFBGA64
MCXA156VLL	96 MHz	1024 KB	128 KB	4	5	2	1	1	1	1x CAN FD	2	1	1	2	2	81	LQFP100
MCXA155VPJ	96 MHz	512 KB	96 KB	4	5	2	1	1	1	1x CAN FD	2	1	1	2	2	82	VFBGA112
MCXA155VMP	96 MHz	512 KB	96 KB	4	5	2	1	1	1	1x CAN FD	2	1	1	2	2	50	LFBGA64
MCXA155VLL	96 MHz	512 KB	96 KB	4	5	2	1	1	1	1x CAN FD	2	1	1	2	2	81	LQFP100
MCXA154VPJ	96 MHz	256 KB	64 KB	4	5	2	1	1	1	1x CAN FD	2	1	1	2	2	82	VFBGA112
MCXA154VMP	96 MHz	256 KB	64 KB	4	5	2	1	1	1	1x CAN FD	2	1	1	2	2	50	LFBGA64
MCXA154VLL	96 MHz	256 KB	64 KB	4	5	2	1	1	1	1x CAN FD	2	1	1	2	2	81	LQFP100
MCXA153VLH	96 MHz	128 kB	32 kB	1	3	2	1	1	-	-	1	-	-	-	2	52	LQFP64
MCXA153VFT	96 MHz	128 kB	32 kB	1	3	2	1	1	-	-	1	-	-	-	2	41	QFN48
MCXA153VFM	96 MHz	128 kB	32 kB	1	3	2	1	1	-	-	1	-	-	-	2	26	QFN32
MCXA152VLH	96 MHz	64 kB	16 kB	1	3	2	1	1	-	-	1	-	-	-	2	52	LQFP64
MCXA152VFT	96 MHz	64 kB	16 kB	1	3	2	1	1	-	-	1	-	-	-	2	41	QFN48
MCXA152VFM	96 MHz	64 kB	16 kB	1	3	2	1	1	-	-	1	-	-	-	2	26	QFN32
MCXA146VPJ	48 MHz	1024KB	128KB	4	5	2	1	1	1	1xFlexCAN	2	-	-	1	2	82	VFBGA112
MCXA146VMP	48MHz	1024KB	128KB	4	5	2	1	1	1	1xFlexCAN	2	-	-	1	2	50	LFBGA64
MCXA146VLL	48MHz	1024KB	128KB	4	5	2	1	1	1	1xFlexCAN	2	-	-	1	2	81	LQFP100
MCXA145VPJ	48MHz	512KB	96KB	4	5	2	1	1	1	1xFlexCAN	2	-	-	1	2	82	VFBGA112
MCXA145VMP	48MHz	512KB	96KB	4	5	2	1	1	1	1xFlexCAN	2	-	-	1	2	50	LFBGA64
MCXA145VLL	48MHz	512KB	96KB	4	5	2	1	1	1	1xFlexCAN	2	-	-	1	2	81	LQFP100
MCXA144VPJ	48MHz	256KB	64KB	4	5	2	1	1	1	1xFlexCAN	2	-	-	1	2	82	VFBGA112
MCXA144VMP	48MHz	256KB	64KB	4	5	2	1	1	1	1xFlexCAN	2	-	-	1	2	50	LFBGA64
MCXA144VLL	48MHz	256KB	64KB	4	5	2	1	1	1	1xFlexCAN	2	-	-	1	2	81	LQFP100
MCXA143VLH	48MHz	128 kB	32 kB	1	3	2	1	1	-	-	1	-	-	-	2	52	LQFP64
MCXA143VFT	48MHz	128 kB	32 kB	1	3	2	1	1	-	-	1	-	-	-	2	41	QFN48
MCXA143VFM	48MHz	128 kB	32 kB	1	3	2	1	1	-	-	1	-	-	-	2	26	QFN32
MCXA142VLH	48MHz	64 kB	16 kB	1	3	2	1	1	-	-	1	-	-	-	2	52	LQFP64
MCXA142VFT	48MHz	64 kB	16 kB	1	3	2	1	1	-	-	1	-	-	-	2	41	QFN48
MCXA142VFM	48MHz	64 kB	16 kB	1	3	2	1	1	-	-	1	-	-	-	2	26	QFN32
MCXA133VFM	96MHz	128 kB	32 kB	1	3	2	1	-	-	-	1	-	-	-	2	44	QFN48
MCXA133VFT	96MHz	128 kB	32 kB	1	3	2	1	-	-	-	1	-	-	-	2	29	QFN32
MCXA132VFM	96MHz	64 kB	16 kB	1	3	2	1	-	-	-	1	-	-	-	2	44	QFN48
MCXA132VFT	96MHz	64 kB	16 kB	1	3	2	1	-	-	-	1	-	-	-	2	29	QFN32
FRDM-MCXA156	MCX A156 FRDM Development Board																LQFP100
FRDM-MCXA153	MCX A153 FRDM Development Board																LQFP64

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