

MEET MCX: BOLD NEW MCUS FOR THE INTELLIGENT EDGE

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Product Manager, BL EP
SEPTEMBER 2022



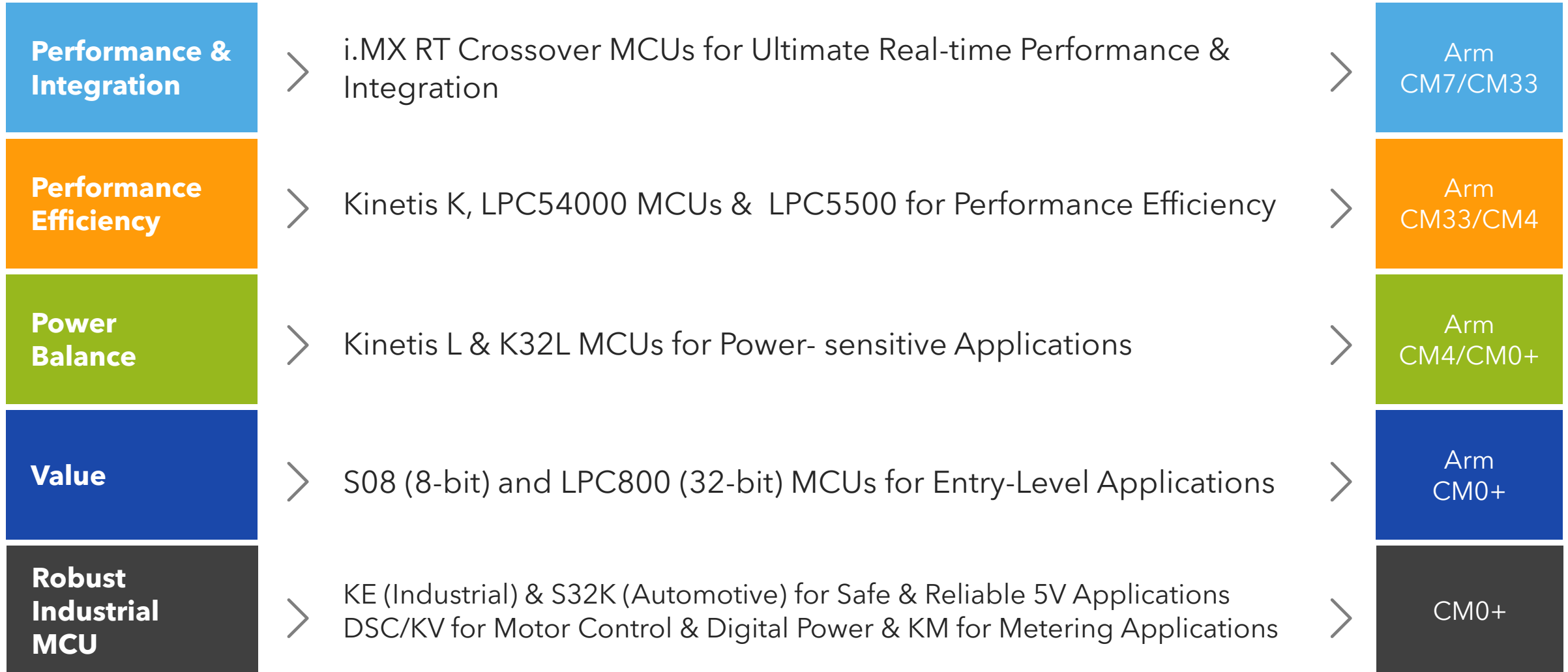
SECURE CONNECTIONS
FOR A SMARTER WORLD

PUBLIC

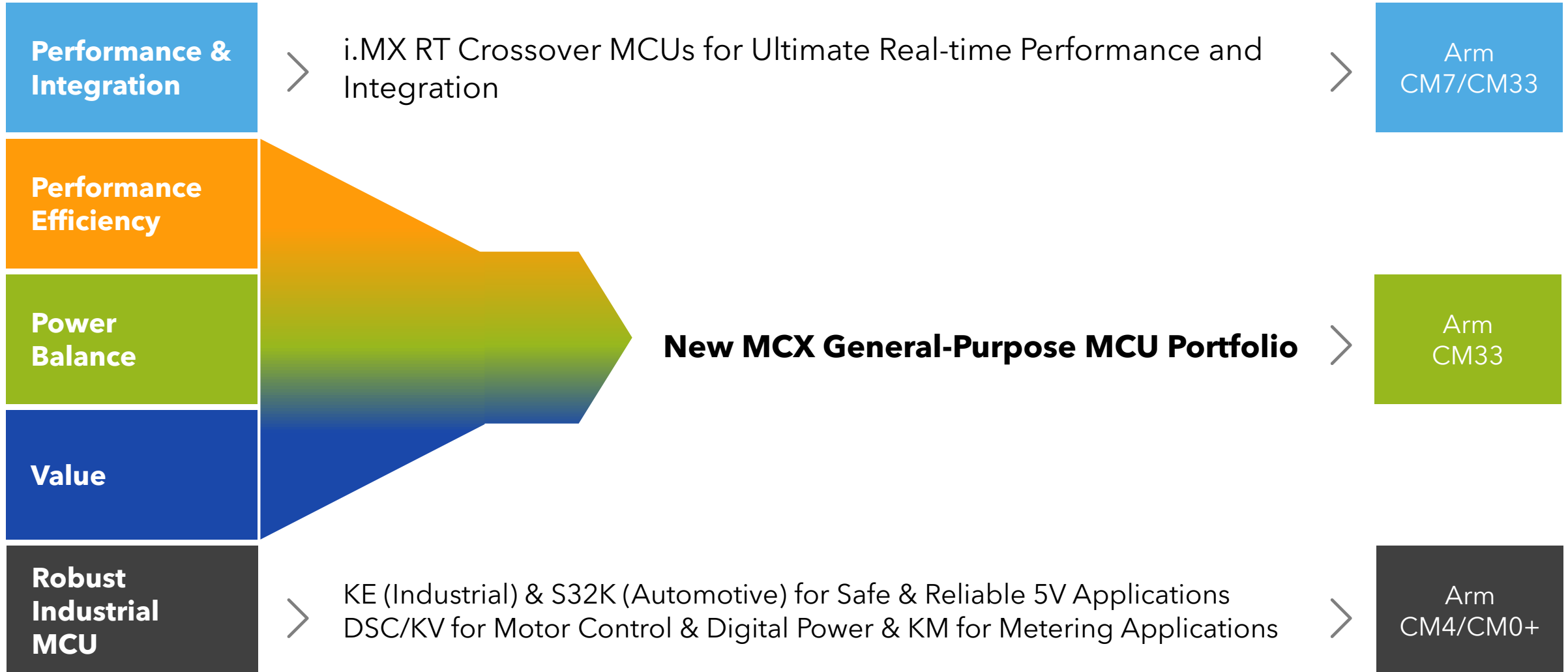
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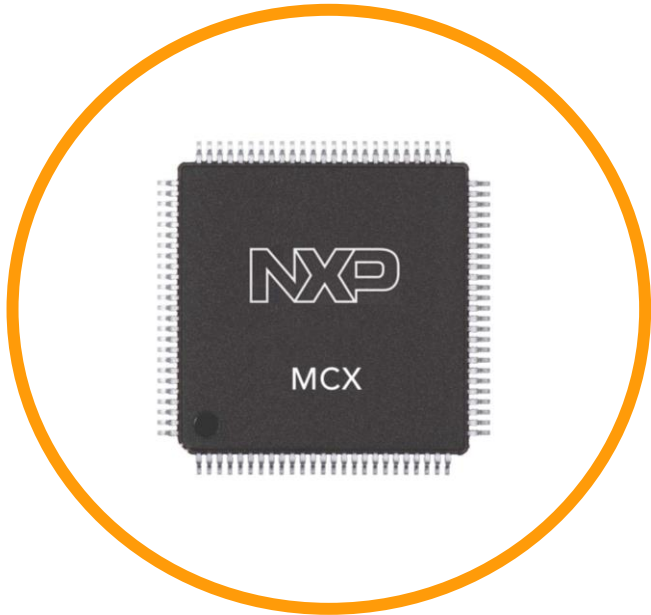
NXP'S ARM® CORTEX®-M AND FOCUS MCU PORTFOLIO



NXP'S ARM® CORTEX®-M AND FOCUS MCU PORTFOLIO



MEET MCX: BOLD NEW MCUS FOR THE INTELLIGENT EDGE



The MCX portfolio offers a comprehensive selection of Arm® Cortex®-M based MCUs, offering **expanded scalability** with **breakthrough product capabilities**, **simplified system design**, and a **developer-focused** experience through the widely adopted MCUXpresso suite of software and tools.

THE MCX PORTFOLIO EXPERIENCE

EXPANDED SCALABILITY

New Unified MCU Portfolio including Four Series

Scalable up to 4MB Flash and 1MB SRAM

High Performance

Low Power Made Easy

SIMPLIFIED SYSTEM DESIGN

Integrated Neural Processing Unit

Optimal Enablement for Key Applications:

Wireless, Motor Control, Analog, Multimedia, Voice

**Intelligent Peripherals
Secure Entire System**

DEVELOPER FOCUSED SOFTWARE

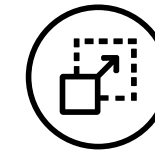
Supported by the Widely Adopted MCUXpresso Suite of Software and Development Tools

Preserve Engineering Investments

Expansive RTOS options

Extensive Middleware Options

THE MCX EXPERIENCE



Common Platform and Easy Migration

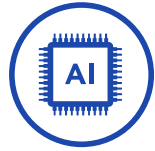


Expedite Development



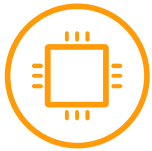
Advanced On-chip Security

THE MCX PORTFOLIO



MCX N Advanced

- 150 to 250 MHz
- Broad range of peripherals, including NPU and DSP
- EdgeLock® secure subsystem



MCX A Essential

- 48 to 96 MHz
- Timers, Analog, low pin count, min power supply pins
- Optimized for cost-constrained applications



MCX W Wireless

- 32 to 100 MHz
- Efficient Bluetooth LE radio
- On-chip integration reduces external BOM



MCX L Ultra-Low Power

- 50 to 100 MHz with boost option
- Lowest active power and leakage
- Optimized for power-critical applications



Backed By MCUXpresso | Unified Developer Experience



SCALABILITY
EASY MIGRATION

**ADVANCED
ON-CHIP
SECURITY**



**UNIFIED SOFTWARE
AND TOOLS**
SUPPORTED BY MCUXpresso



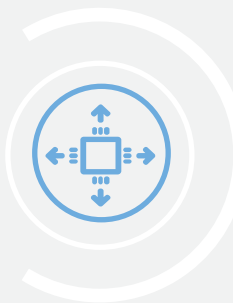
**ON-CHIP
MEMORY**

NON-VOLATILE
RAM WITH FULL ECC
AND SELF-TEST

MCX
Arm Cortex-M33



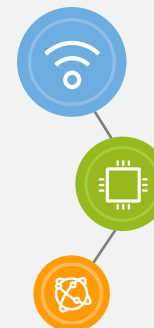
**NEURAL
PROCESSING
UNIT**



**FLEXIBLE
INTERFACES**
INTELLIGENT
PERIPHERALS



**ULTRA-LOW
POWER**



CONNECTIVITY
BLE 5.2 RADIO ETHERNET
BEST IN CLASS SERIAL
COMMUNICATIONS



MCX N Series Advanced



SCALABILITY
EASY MIGRATION

**ADVANCED
ON-CHIP
SECURITY**



**UNIFIED SOFTWARE
AND TOOLS**
SUPPORTED BY MCUXpresso



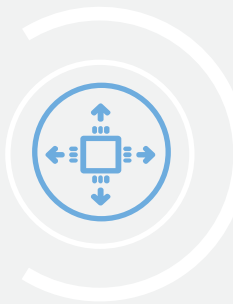
**ON-CHIP
MEMORY**

NON-VOLATILE
RAM WITH FULL ECC
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MCX
Arm Cortex-M33



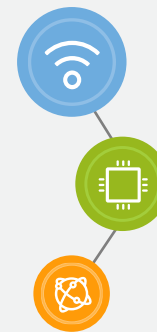
**NEURAL
PROCESSING
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**FLEXIBLE
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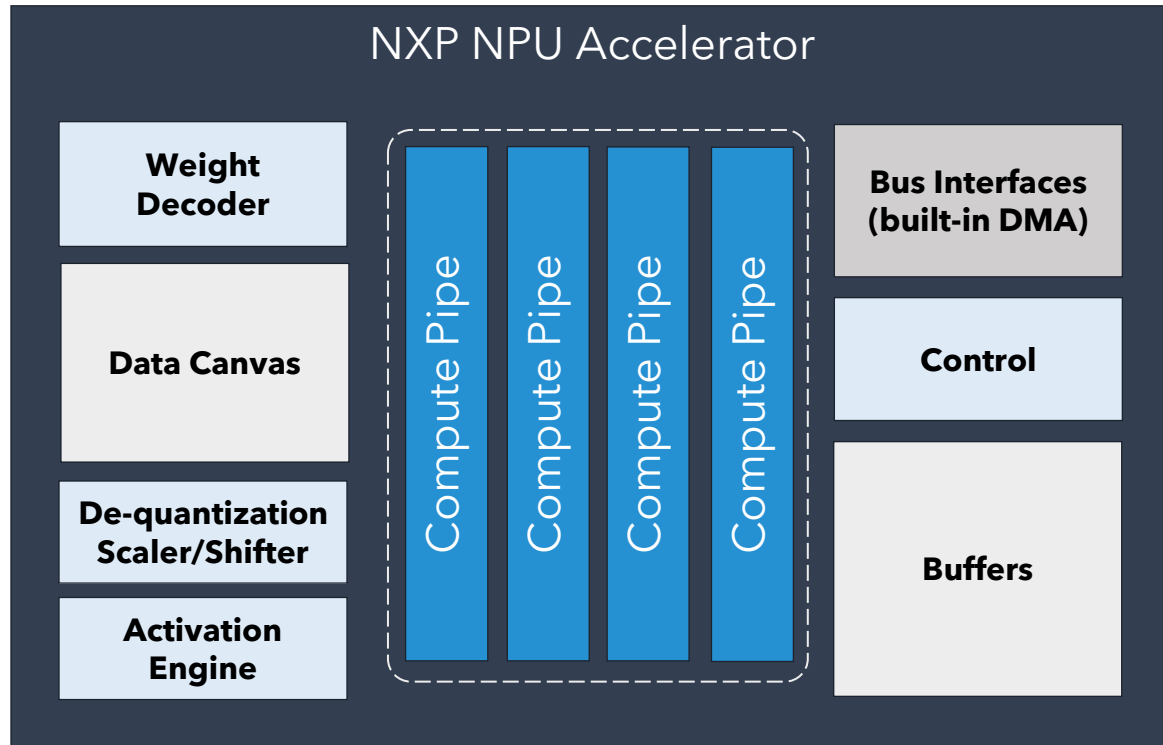
**ULTRA-LOW
POWER**



CONNECTIVITY

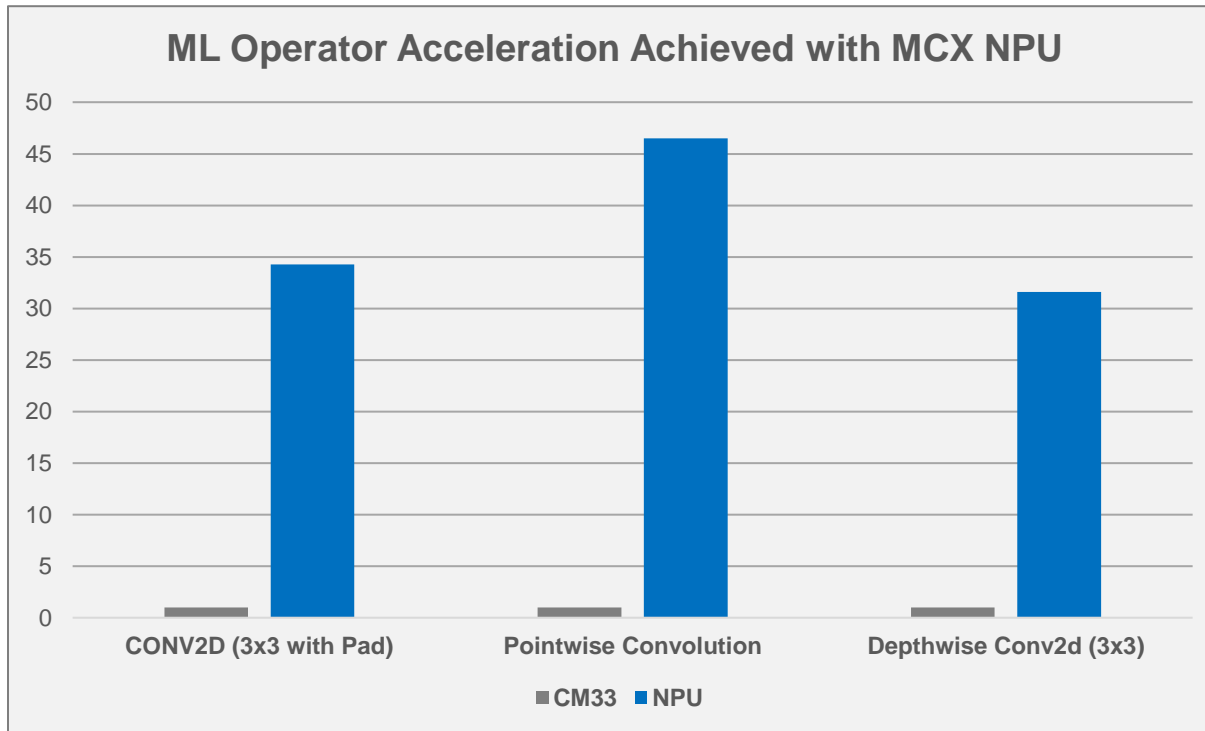
BLE 5.2 RADIO ETHERNET
BEST IN CLASS SERIAL
COMMUNICATIONS

MCX: NEURAL PROCESSING UNIT



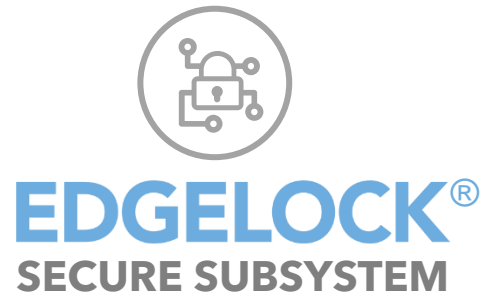
- Best in class performance and power efficiency
- ML solution development support with eIQ ML SW Development Environment
- Internal development provides flexibility to tune solution to better meet our customer needs and the ability to provide ongoing support and generational improvements for changing applications and operator support needs
- Hardware scales from performance efficient 32 Ops/cycle to >2k Ops/cycle for portfolio coverage with a single architecture, and potential to provide future expansion
- Software support is unified over multiple generations and device portfolio, creating consistent enablement and support solutions for our customers

MCX: NEURAL PROCESSING UNIT RELATIVE ACCELERATION



- Over 30x relative acceleration is observed for basic ML operations provided by the MCX NPU when compared to the Cortex-M33 core.
- Allows much higher ML inference throughput without drawing down on processor resources.

MCX: EDGELOCK SECURE SUBSYSTEM



- Advanced Cryptography Services
- Silicon Root of Trust
- Key Management
- Trust Provisioning
- Device Attestation
- Simplified Path to Certifications

BEYOND CRYPTO

Evolved on-die security with device attestation, silicon root of trust, trust provisioning, advanced key management augmented by crypto services and simpler path to security certifications

IMMUTABLE SECURITY

Key management policies and cryptographic acceleration enabled by ROM and hardware protected against side channel attacks.

READY TO GO

Preconfigured security policies reduce the complexity and help avoid costly errors for faster time to market

MCX MCU RESOURCES



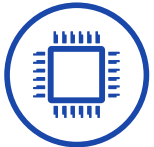
Overview

www.nxp.com/mcx



Video

[MCX MCUs for the Intelligent Edge](#)



Samples

Upon request



Blog

[Meet MCX: A Bold New MCU Experience for Intelligent Edge Developers](#)



Support

[NXP Community](#)



Factsheet

[MCX MCUs for the Next Era of Industrial and IoT Edge Computing](#)



SECURE CONNECTIONS
FOR A SMARTER WORLD