

MEC175xB Embedded Controller Family

Quantum-Resistant Security for the Next Generation of Computing

The MEC175xB family is designed to help system architects meet the security demands of tomorrow. Built with powerful Arm® Cortex®-M4F processors that run at 96 MHz, these embedded controllers deliver high performance for real-time applications while maintaining low power consumption, making them an excellent choice for modern notebook and storage enclosure platforms.

Post-Quantum Ready With CNSA 2.0 Compliance

Driven by the National Security Agency's Commercial National Security Algorithm Suite 2.0 (CNSA 2.0), the MEC175xB family supports quantum-resistant cryptographic algorithms to ensure long-term data protection. These include:

- **ML-KEM** (modular lattice-based key encapsulation mechanism)
- **ML-DSA** (modular lattice-based mechanism for digital signatures)
- **LMS** (hash-based, stateful signature scheme)

These standards are approved by NIST and support secure design practices well into the quantum era.

Comprehensive Embedded Security Features

- Embedded post-quantum cryptography accelerators
- Secure boot with configurable root of trust
- Signature-based firmware update support
- Attestation capabilities using ML-DSA for signing and key generation
- Memory Protection Unit (MPU) for runtime isolation and security

High-Performance Architecture

- 96 MHz Arm Cortex-M4F processor
- 480 KB SRAM for smooth multitasking and buffer management
- Optimized for real-time and complex security workloads

Versatile Connectivity

- Intel® Enhanced Serial Peripheral Interface (eSPI)
- I3C® host and client interfaces
- Optional USB 2.0 Full-Speed interface

Power-Efficient Design

- Built for low-power operation
- Supports efficient power management strategies across various sleep states

Development Tools

- MEC1753-240 MECC Card (EV48H83A)
- Compatible with Microchip's MPLAB® development ecosystem

Availability

The MEC175xB controllers are available through Microchip's **Early Adoption Program**. Visit www.microchipDIRECT.com or contact your Microchip sales representative for more information.

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