MCX W71x and W72x connected microcontrollers

The MCX W series brings rich connectivity to the MCX portfolio enabling innovative edge devices with secure multiprotocol wireless MCUs for Matter™, Thread®, Zigbee®, and Bluetooth® Low Energy.

The first two families in the MCX W series, the MCX W71x and W72x, maximize flexibility with a software-upgradeable independent radio subsystem. With scalable memory sizes the MCX W series allows devices to be upgraded over time as user needs change and connectivity protocols like Matter continue to evolve.

The MCX W series includes the MCX W72x, the industry's first wireless MCU to support the new Bluetooth® Channel Sounding standard, which improves the accuracy and security of distance measurement compared to traditional Bluetooth technology. This is supported by NXP's Localization Compute Engine (LCE) to reduce latency. Along with NXP's Trimension® portfolio of ultra-wideband (UWB) secure radar and fine ranging products, the MCX W evolves ambient computing into a broad range applications.

Key features

- 96 MHz Arm® Cortex®-M33
  - Localization Compute Engine
- Radio subsystem with dedicated core, flash, and RAM
  - Support for Matter, Thread, Zigbee, and Bluetooth® Low Energy with channel sounding
- 1 MB flash and 128 KB RAM (MCX W71x)
  - Additional 256 KB flash and 88 KB RAM for radio subsystem
- 2 MB flash and 256 KB RAM (MCX W72x)
  - Additional 512 KB flash and 170 KB RAM for radio subsystem
- Ultra-low power architecture
- Edgelock® Secure Enclave Core Profile with Edgelock 2GO support
- Optional CAN FD interface
- -40 to 125º C operating temperature

Target applications

- Smart sensors
- Connected window coverings
- Smart thermostats
- Connected small appliances
- Home and building control devices
- Security panels
- Power and energy
- E-bikes

Comprehensive 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, or IAR.

NXP provides wireless stacks, drivers and middleware with extensive examples via the MCUXpresso SDK and open-source github repos, further complemented by a wide range of compatible middleware from NXP's partner ecosystem, allowing rapid development of a broad range of end applications.
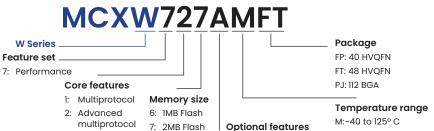
Flexible hardware platforms

For quick prototyping platforms, NXP offers low-cost, compact and scalable FRDM development boards and full-featured EVKs. 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.

Visit nxp.com/MCXW

MCX W7x: optimized for IoT, industrial and Matter

Part Number	Arm Cortex-M33 (MHz)	Package		Embedded Memory		
		Pin Count	Type	Flash App/Radio	SRAM App/Radio	Optional Features
MCXW716AMFT/FP	96	48/40	HVQFN	1 MB / 128 KB	128 KB / 88 KB	Bluetooth LE, 15.4
MCXW716CMFT/FP	96	48/40	HVQFN	1 MB / 128 KB	128 KB / 88 KB	Bluetooth LE, 15.4, CAN FD
MCXW727AMFT/PJ	96	48/112	HVQFN/BGA	2 MB / 512 KB	256 KB / 170 KB	Bluetooth LE, 15.4
MCXW727DMFT/PJ	96	48/112	HVQFN/BGA	2 MB / 512 KB	256 KB / 170 KB	Bluetooth LE, 15.4, Localization compute engine
MCXW727CMFT/PJ	96	48/112	HVQFN/BGA	2 MB / 512 KB	256 KB / 170 KB	Bluetooth LE, 15.4, Localization compute engine, CAN FD
MCX-W71xx-EVK, MCX-W72xx-EVK	MCX W71xx and W72xx full evaluation kits					
FRDM-MCXW71, FRDM-MCXW72	MCX W71, W72 FRDM development boards					

Preproduction: This document contains information on preproduction products. For additional information contact support or your sales representative.

MCXW727AMFT

- **W Series**
- **Feature set**
  - 7: Performance
- **Core features**
  - 1: Multiprotocol
  - 2: Advanced multiprotocol
- **Memory size**
  - 6: 1MB Flash
  - 7: 2MB Flash
- **Optional features**
  - A: Bluetooth LE, 15.4
  - C: Bluetooth LE, 15.4, Loc Compute Engine (W72x only), CAN-FD
  - D: Bluetooth LE, 15.4, Loc Compute Engine (W72x only)
- **Package**
  - FP: 40 HVQFN
  - FT: 48 HVQFN
  - PJ: 112 BGA
- **Temperature range**
  - M: -40 to 125° C