

MCX W7x connected microcontrollers



The MCX W7x 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 (LE) with channel sounding.

The MCX [W72](#), [W70](#) and [W71](#) maximize flexibility with a software-upgradeable independent radio subsystem. With scalable memory sizes the MCX W7x series allows devices to be upgraded over time as user needs change and connectivity protocols like Matter continue to evolve.

The MCX W72 is NXP'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 W7x evolves ambient computing into a broad range applications.

Note: For the latest Bluetooth LE 6.x features please refer to [MCX W72](#) and [MCX W70](#).

MCX W70: precision ranging and secure wireless connectivity for industrial IoT

The MCX W70 features a 96 MHz Arm® Cortex®-M33 core coupled with a multiprotocol radio subsystem supporting Matter, Thread, Zigbee and Bluetooth LE. It is a Bluetooth 6.x-enabled wireless MCU designed for industrial and IoT applications. It supports Bluetooth channel sounding for precise and secure distance measurement, achieving 20–50 cm accuracy ideal for smart entry systems. The MCX W70 delivers robust security with advanced encryption and secure pairing, next generation Bluetooth LE capabilities, optimized system performance through multi-core architecture, superior user experience and cost-effective innovation.

The MCX W70 is channel sounding certified and uses phase-based ranging (PBR) for accuracy combined with round trip time (RTT) for end-to-end security. In addition, its on-chip localization compute engine (LCE) offers support for advanced ranging algorithms with low power consumption, ensuring maximum best in class user experience. In addition, the MCX W70 has advanced security (PSA and SESIP Level 3) and optimized power consumption.

Key features

- 96 MHz Arm Cortex-M33—
localization compute engine
(MCX W72 and MCX W70)
- Radio subsystem with
dedicated core, flash and RAM
 - Support for Matter, Thread,
Zigbee and Bluetooth LE with
channel sounding (MCX W72
and MCX W70)
- 2 MB flash and 264 KB RAM
(MCX W72)
 - Additional 512 KB flash and
171 KB RAM for radio subsystem
- Synchronized single memory
bank with 1.5 MB flash with ECC
and 256 KB SRAM with ECC
and parity (MCX W70)
- 1 MB flash and 128 KB RAM
(MCX W71)
 - Additional 256 KB flash
and 88 KB RAM for radio
subsystem
- Ultra-low power architecture
- [EdgeLock® secure enclave
core profile with EdgeLock 2GO
support \(MCX W72\)](#)
- EdgeLock secure accelerators
with EdgeLock 2GO support
(MCX W70)
- Support for EdgeLock 2GO
cloud-based certificate
deployment and
management (MCX W70)
- Secure boot and debug
- CRA ready and RED certified
(MCX W70 and MCX W72)
- Optional CAN FD interface
- -40 to 125 °C operating
temperature

MCX W7x: optimized for IoT, industrial and Matter

Ambient computing
channel sounding
(W70 and W72 only)

Bluetooth[®] [↑] H R E A D

matter 



Designed for the EDGE

-40 °C
to 125 °C

Low cost
RBOM

Near-zero power
shelf state

CAN
connectivity

Rich
analog



96 MHz Arm Cortex-M33
multiprotocol MCU

Powerful
radio subsystem

Dedicated

Energy efficient

Upgradable

Coexistence

Future-proof
scalability

Pin compatible

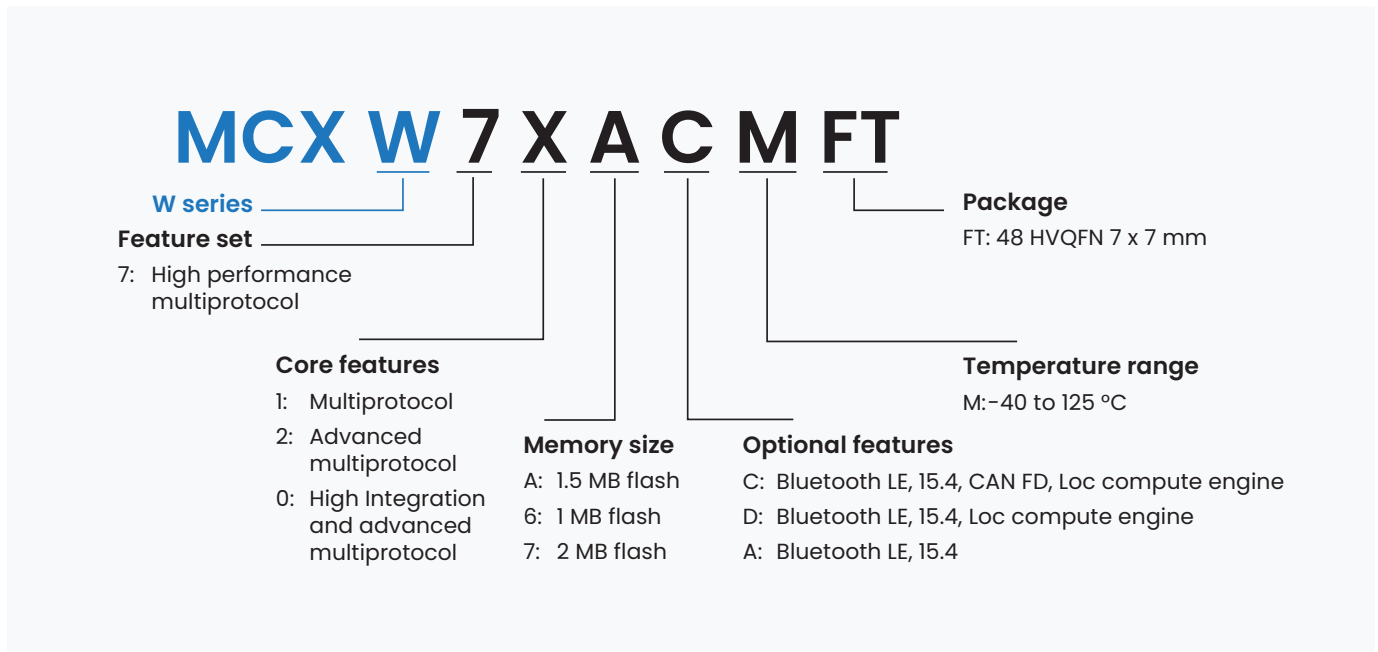
Large memory

15-year product longevity

MCUXpresso
Developer Experience

Part number	Arm Cortex -M33 (MHz)	Package		Embedded memory		Optional features
		Pin count	Type	Flash app/radio	SRAM app/radio	
MCXW72AMFTB	96	48	HVQFN	2 MB/512 KB	264 KB/171 KB	Bluetooth LE, 15.4
MCXW72DMFTB	96	48	HVQFN	2 MB/512 KB	264 KB/171 KB	Bluetooth LE, 15.4, localization compute engine
MCXW72CMFTB	96	48	HVQFN	2 MB/512 KB	264 KB/171 KB	Bluetooth LE, 15.4, localization compute engine, CAN FD
MCXW70ADMFTB	96	48	HVQFN	1.5 MB (shared)	256 KB (shared)	Bluetooth LE, 15.4, localization compute engine
MCXW70ACMFTB	96	48	HVQFN	1.5 MB (shared)	256 KB (shared)	Bluetooth LE, 15.4, localization compute engine, CAN FD
MCXW716AMFT/FP	96	48/40	HVQFN	1 MB/256 KB	128 KB/88 KB	Bluetooth LE, 15.4
MCXW716CMFT/FP	96	48/40	HVQFN	1 MB/256 KB	128 KB/88 KB	Bluetooth LE, 15.4, CAN FD
FRDM-MCXW72 FRDM-MCXW70 FRDM-MCXW71	MCX W72, W70, W71 FRDM development boards					
MCXW72-LOC MCXW70-LOC	Localization board for MCX W72 and MCX W70 Bluetooth channel Sounding MCU					
MCX-W72-EVK MCX-W71-EVK	MCX W72 and W71 full evaluation kits					

MCX W part number structure and options



Target applications

- Smart door locks
- 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.

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