



K32W061/41:
IEEE® 802.15.4
and Bluetooth®
LE 5 intelligent
connectivity

K32W061/41 Ultra-Low-Power MCUs With Built-In NFC Option

K32W061/41 advanced ultra-low-power wireless MCUs for Zigbee®, Thread™ and Bluetooth LE 5.0 applications integrate a comprehensive mix of analog and digital peripherals. These highly integrated devices help developers create products with rich features and contactless NFC commissioning.

TARGET APPLICATIONS

- ▶ Home and Building Automation
- ▶ Home Security & Access
- ▶ Home Gateways/Hubs
- ▶ Smart Thermostats
- ▶ Smart Locks
- ▶ Smart Lighting
- ▶ Sensor networks

The K32W061/41 portfolio is designed to power the next generation of ultra-low-current multiprotocol wireless devices, supporting Zigbee 3.0/Thread/IEEE 802.15.4 and Bluetooth Low Energy 5.0. It includes several low-power modes and ultra-low TX and RX power consumption, which enables devices powered by K32W061/41 to have extended battery life. With high RX sensitivity and configurable TX output power, K32W061/41 offers reliable and robust communications performance.

K32W061/41 is powered by an Arm® Cortex®-M4 MCU and with 640 KB on-board flash and 152 KB SRAM, has enough room and flexibility for complex applications and over-the-air (OTA) upgrade capability without external memory. It has a rich set of MCU peripherals and multiple

serial communication interfaces for embedded connected applications and a quad serial flash memory controller, SPIFI, that can be used to extend non-volatile memory.

PRODUCT FEATURES

- ▶ Multi-protocol radio for Bluetooth 5 and IEEE 802.15.4
- ▶ Industry leading low-power solution
 - 4.3 mA Rx
 - 7.4 mA at +0 dBm TX, 20.5 mA Tx at 10 dBm
 - Numerous and flexible low-power modes
- ▶ Optional NFC NTAG® support for tap-to-pair commissioning
- ▶ Rich set of MCU peripherals and multiple serial communication interfaces
- ▶ Wide temperature range (-40 °C - ~125 °C) for various environments
- ▶ Hardware compatible with QN9090 and JN5189 families



NFC OPTION

K32W061 has an integrated NFC NTAG IC to implement contactless NFC commissioning, simplifying the network build-out while saving energy and increasing safety for the designer and end consumer.

MATURE SOLUTION

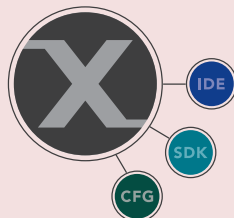
The K32W061/41 development platform includes Zigbee 3.0, OpenThread, and Bluetooth LE 5.0 certified stacks assuring interoperability. These mature network stacks provide robust performance for wireless networks.

NXP has developed a suite of application examples in a complete software development kit (SDK) as well as several reference designs to assist developers with faster product creation.

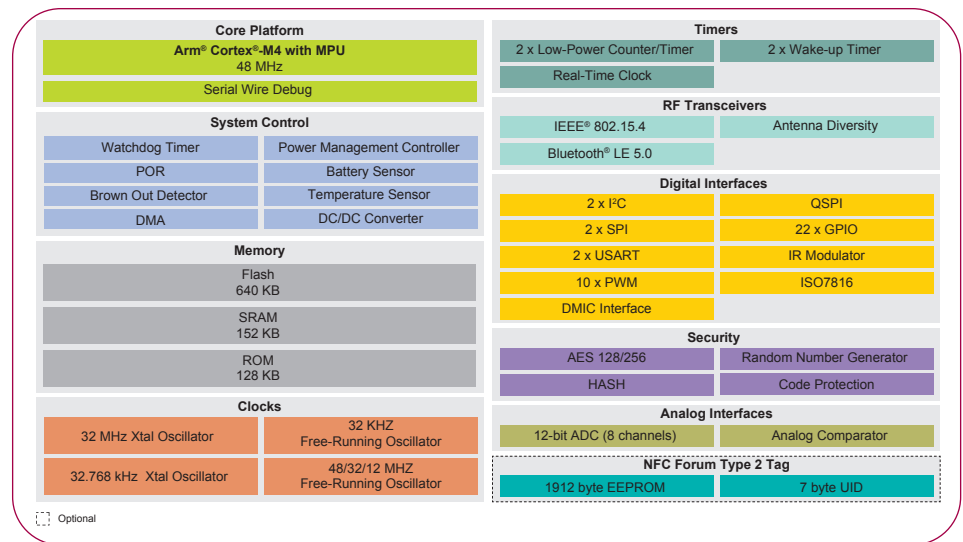
The SDK for K32W061/41 is compatible with the latest toolchains from IAR® and NXP's MCUXpresso IDE. The full MCUXpresso suite of software and tools provides a seamless software experience across all NXP devices as well as a fast path to add Zigbee/Thread/Bluetooth LE capability to an existing design on other NXP devices. The IoT Toolbox and Connectivity Test Tool are also provided to help developers evaluate RF performance and test more efficiently.

SOFTWARE AND TOOLS

NXP's **MCUXpresso software and tools** offer comprehensive development solutions designed to optimize, ease and accelerate embedded system development of applications based on Cortex-M core devices, including Kinetis, LPC microcontrollers, QN and i.MX RT crossover MCUs.



K32W061/41 BLOCK DIAGRAM



Part Number	Flash/RAM (KB)	NTAG	Package (mm)
K32W061	640/152	Y	6 x 6 QFN
K32W041	640/152	N	6 x 6 QFN

GETTING STARTED

The IOTZTB Development Kit's rich components include a control bridge/generic router with an NFC reader, generic switch node, light/sensor node and USB dongle that make quick prototyping possible for a small wireless network.

In addition to the development kit, a dual-mode USB dongle and a K32W module with mezzanine are available separately as shown in the last table.

Part Number	Description
IOTZTB-DK006	Development Kit for Zigbee 3.0, Open Thread and Bluetooth LE 5.0 Connectivity/ Enablement
OM15080-K32W	USB dongle pre-programmed with Zigbee and Bluetooth LE sniffer applications
K32W-001-T10	Upgrade board that is a module with mezzanine to attach to the base board, can be switched to use a QN9090 or JN5189 module.

www.nxp.com/K32W061

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