



# MK Tag

# UWB

Featuring **NXP Trimension™ SR040**

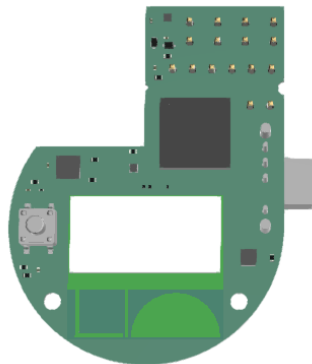
Small and compact, the ideal UWB Tag for accurate UWB positioning



# MK UWB Tag

Featuring NXP Trimension™ SR040

*The smallest UWB tag in the market\*!*



The **MK UWB Tag** provides accurate positioning capabilities in an **extra small form factor**. It is ideally suited for low-power applications thanks to **Murata's Type 2DK**, an **all-in-one UWB + Bluetooth® LE** combo module which integrates **NXP Trimension™ SR040 UWB Chipset**.

- **Integrating Murata Type 2DK UWB Module**
- Fully integrated solution based on **Trimension SR040™** supporting **low power operation**
- **Extra small form factor \***, ideally suited for portable UWB devices
- **Peripherals to customize your use case:** accelerometer, secure element, buzzer, LED, button.
- **Coin-cell battery** operation, providing **more than 9 months battery lifetime\*\***
- **Compatible with all SR040 software** (MK UWB Kit software and NXP UWB IoT middleware)
- **Reference hardware design files** available for the acceleration of your design and development activities
- **Compact casing design** available

\* Compared to UWB Tag SR040 and Murata Type2DK EVK (30% area reduction)

\*\* Battery duration may vary depending on use case conditions. The lifetime provided is based on a software which is power-optimized (not provided).

# MK UWB Tag

User experience

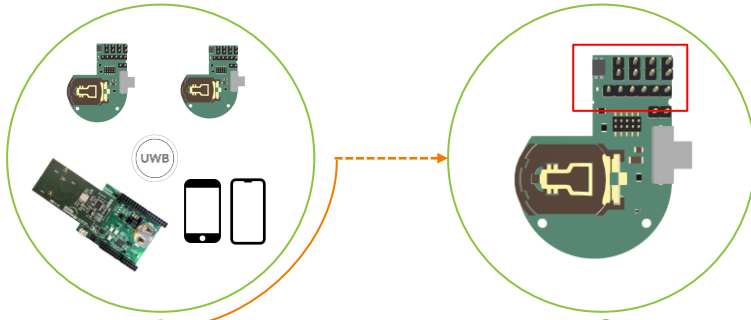


Flash the software in the tag and evaluate your preferred UWB use cases.  
**Tag is compatible with all MK UWB Kits and NXP UWB middleware.**

# MK UWB Tag

User experience

Size: 3.5 cm x 4.6 cm x 1.1 cm



Flash the software in the tag and evaluate your preferred UWB use cases. **Tag is compatible with all MK UWB Kits and NXP UWB middleware.**

Use the **debug interfaces** of the removable debug connector to speed up your development.

# MK UWB Tag

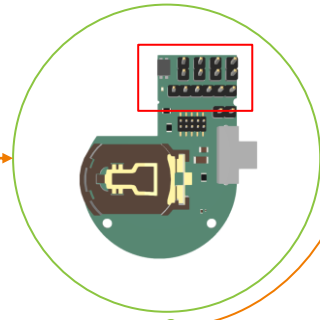
User experience

Size: 3.5 cm x 4.6 cm x 1.1 cm

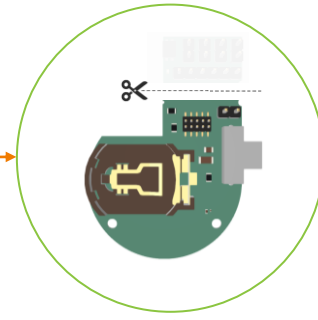
Size: 3.5 cm x 3.5 cm x 1.1 cm



Flash the software in the tag and evaluate your preferred UWB use cases. Tag is compatible with all MK UWB Kits and NXP UWB middleware.



Use the **debug interfaces** of the removable debug connector to speed up your development.



When you are ready for production, **remove the debug connector** to make the tag even smaller!

# MK UWB Tag

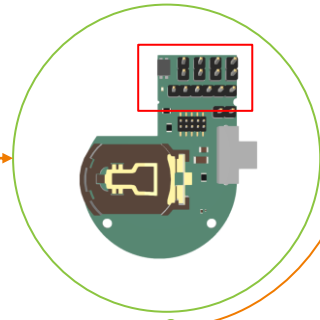
User experience

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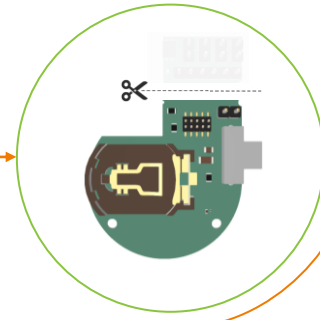
Size: 3.5 cm x 3.5 cm x 1.1 cm



Flash the software in the tag and evaluate your preferred UWB use cases. Tag is compatible with all MK UWB Kits and NXP UWB middleware.



Use the **debug interfaces** of the removable debug connector to speed up your development.



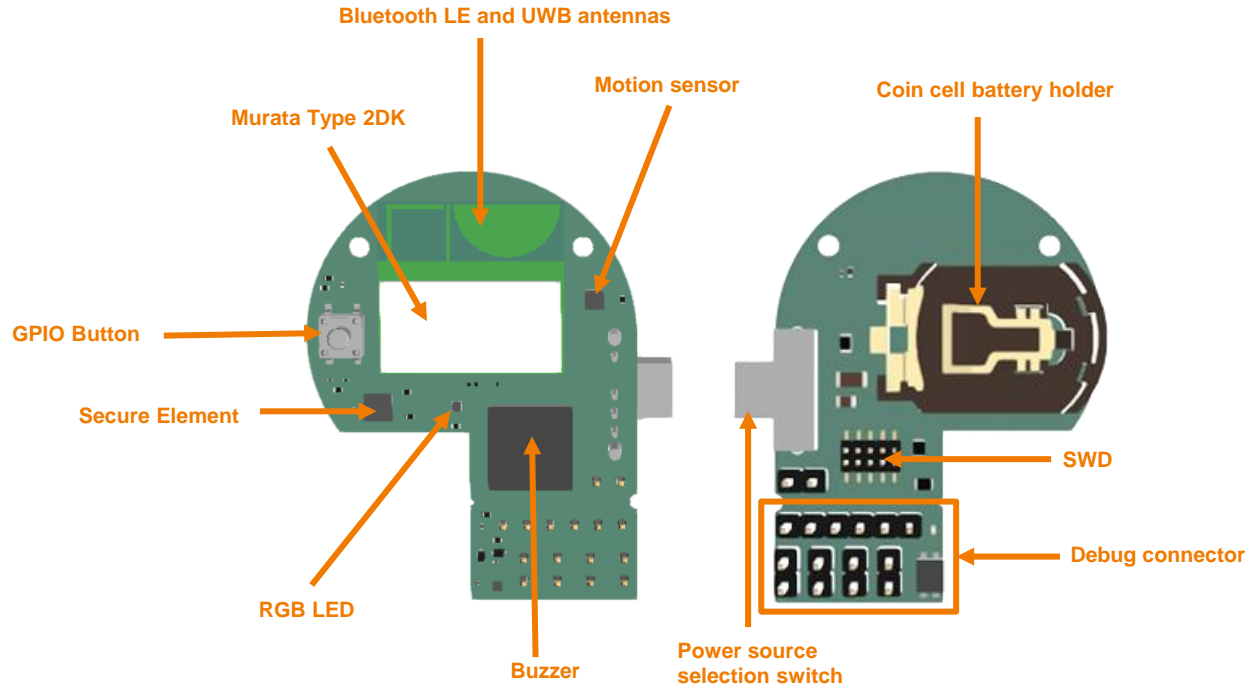
When you are ready for production, **remove the debug connector** to make the tag even smaller!



**Pre-designed casing** for fast prototyping is also available to improve even more your design!

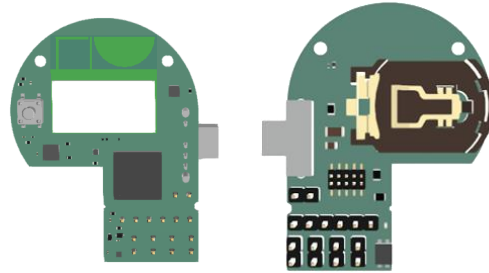
# MK UWB Tag

In detail: architecture



# MK UWB Tag

In detail: battery lifetime



**Battery lifetime**  
**9 months**

The battery lifetime reported can be achieved using a power optimized software

- Wakeup from low power consumption mode using movement as detected by accelerometer.
- 4 x connections per day with a duration of 60 seconds
- Each connection consists of 40 % Bluetooth LE scanning and 60 % UWB ranging

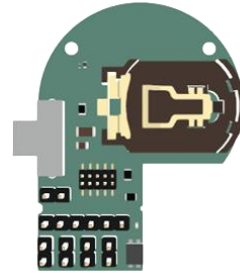
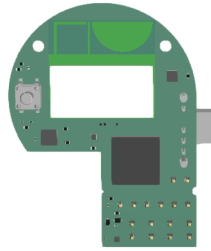


# MK UWB Tag

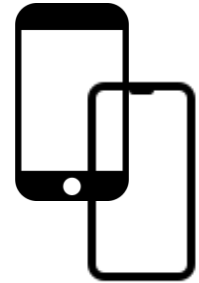
In detail: UWB ranging



← vs. →  
**MK UWB Tag to MK  
UWB SR150 Anchor 3D**



← vs. →  
**MK UWB Tag  
to Mobile**



**Accuracy:** +-10 cm

**Max ranging distance  
indoor/outdoor:** 50 m (LOS)



**Battery lifetime**  
**9 months**

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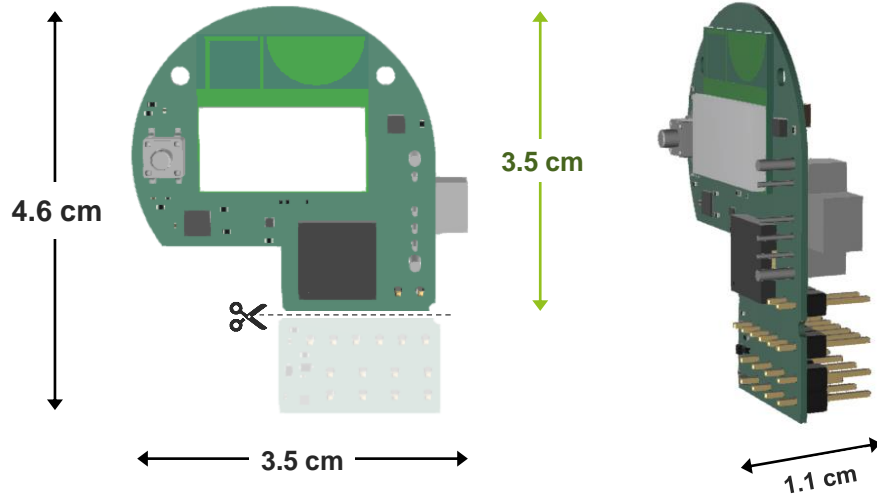
**Accuracy:** +-10 cm

**Max ranging distance indoor:**  
50 m (LOS)

**Max ranging distance outdoor:**  
40 m (LOS)

# MK UWB Tag

In detail: Tag dimensions



The **MK UWB tag** has an **extra small form factor** , ideally suited for portable UWB devices

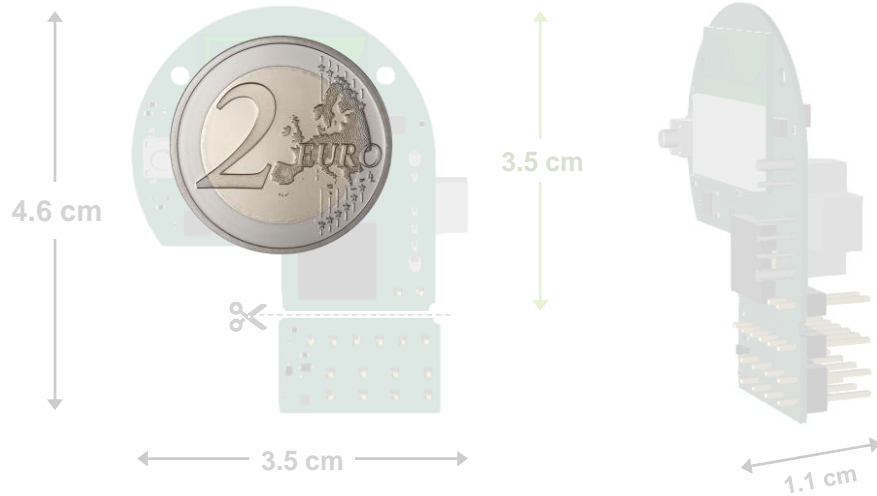
Dimensions:

- 3.5 cm x **4.6 cm** x 1.1 cm (with debug connector)
- 3.5 cm x **3.5 cm** x 1.1 cm (without debug connector\*)

\*you can remove the debug connector to make it even smaller

# MK UWB Tag

In detail: Tag dimensions



Compact and efficient, the **MK UWB Tag** boasts a footprint almost as sleek as a 2€ coin, maximizing convenience without compromising on performance!

## MK UWB Tag

In detail: casing



Unlock the full potential of the MK UWB Tag with our **custom-designed casing\***, enhancing both style and functionality!

Casing dimensions:

- 4,2 x 4,2 x 1,68 cm

*\* casing included with the Tag*

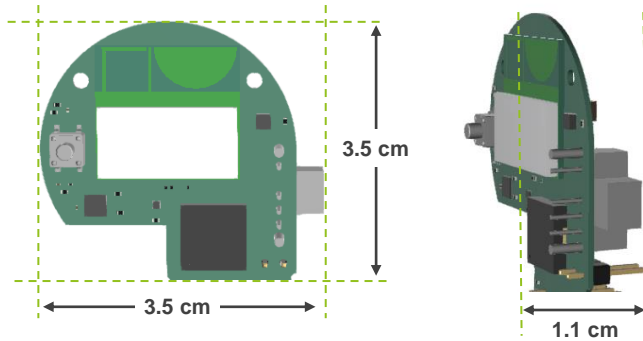
# MK UWB Tag

MK UWB Tag vs UWB Tag SR040

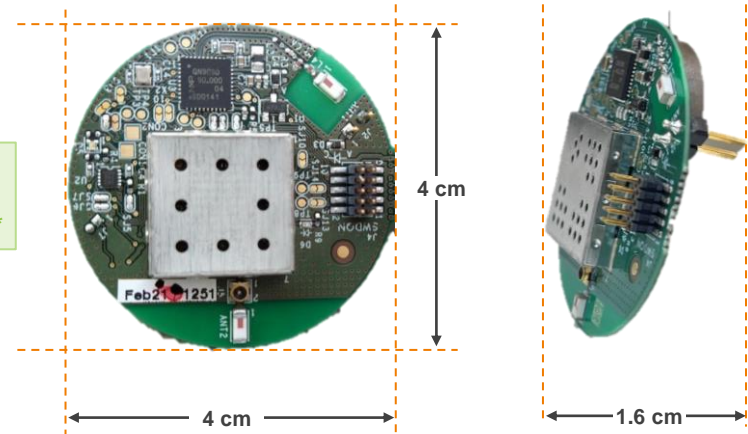
MK UWB Tag

vs

UWB Tag SR040\*



Area  
reduced  
by 30%\*\*



\*\* MK UWB Tag area: 9,08 cm<sup>2</sup>  
UWB Tag SR040 area: 12,57 cm<sup>2</sup>

\* The UWB Tag SR040 was the previous version  
of Tag included in our MK UWB Kits

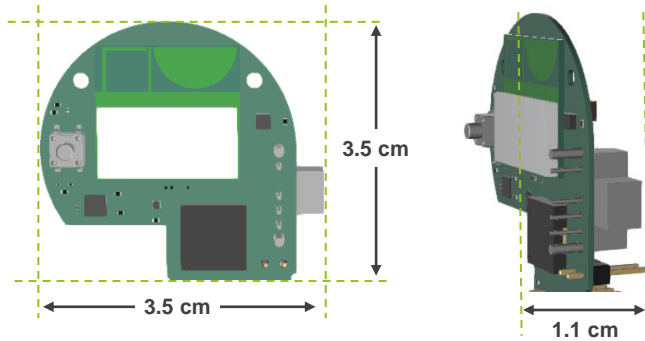
# MK UWB Tag

MK UWB Tag vs Murata Type 2DK EVK

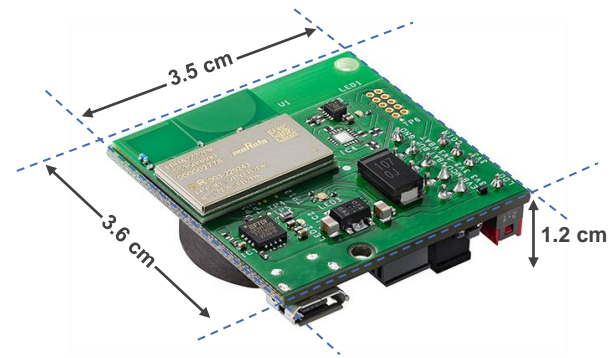
MK UWB Tag

vs

Murata Type 2DK EVK\*



Area  
reduced  
by 30%\*\*



\*\* MK UWB Tag area: 9,08 cm<sup>2</sup>  
Murata Type 2DK EVK area: 12,60 cm<sup>2</sup>

\* The Murata Type 2DK EVK is the starter kit from Murata to start UWB development with Type2DK module

# Type 2DK Module

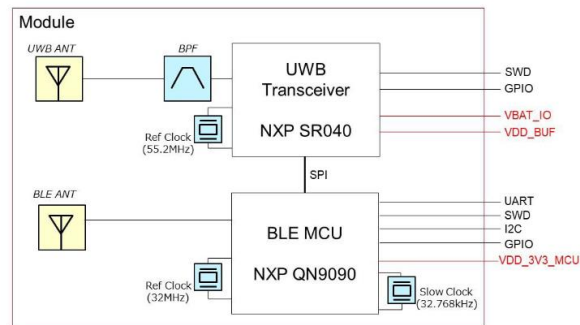
In detail



## Murata Type 2DK Module:

Murata Type 2DK is an all-in-one UWB + Bluetooth® LE combo module which integrates NXP Trimention™ SR040 UWB Chipset, NXP QN9090 Bluetooth® LE MCU, on board antenna and peripheral components. Ideally suited for UWB Tag/Tracker which operates by coin-cell battery, and general IoT devices.

Powered by **muRata**

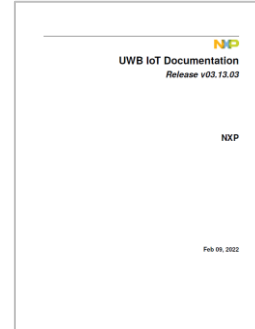
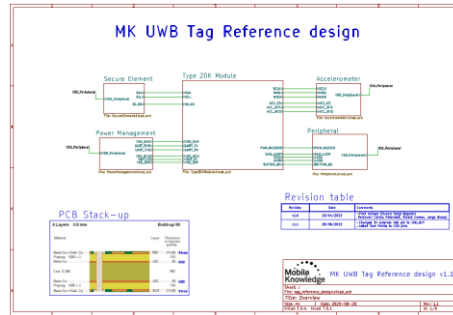


Murata Type 2DK Module architecture

- **P/N: LBUA2ZZ2DK-007**
- UWB + BLE + MCU + antennas functionality in a small form factor (19.6 mm x 18.2 mm x 2.3 mm)
- Worldwide RF bands capability with support of CH5 and CH9
- UWB ranging support (distance only, no AoA)
- Tx Power & XTAL calibration support
- Embedded PHY & MAC FW compatible with FiRa
- **FCC/IC/MIC Certified**

# MK UWB Tag

## Support Material



Production ready software, reference hardware design files, and up-to-date documentation to enable you to focus on your own application and use case leveraging on UWB technology.

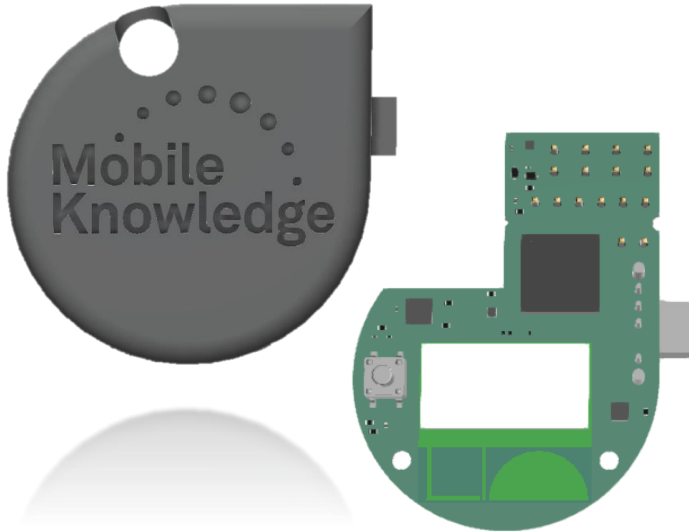
### Material included:

- MK UWB Tag schematic, Gerber, and eBOM files
- NXP UWB SR040 production-ready SW
- MK UWB Tag User Guide
- Murata Type 2DK datasheet
- Murata Type 2DK footprint
- Murata Type 2DK FCC, CE, UKCA certificates



# MK UWB Tag

Ordering details



Visit <https://www.themobileknowledge.com/product/mk-uwb-tag/>

**MK UWB Tag**  
*with custom-designed casing*

**140 €**

*Shipping costs not included*

## Additional Components

Additional UWB Module Type 2DK  
Additional MK UWB Tag

## MK Services

Contact us for further information  
[contact@themobileknowledge.com](mailto:contact@themobileknowledge.com)

# MK UWB Tag

## FAQ

1

### Does the MK UWB Tag work with the existing MK UWB Kit SR150/SR040, MK UWB Kit Mobile Edition and MK UWB Kit RTLS?

- Yes, just replace the tag and load the firmware: the same use cases and software code will work out of the box.

2

### What are the MK UWB Tag dimensions compared to the previous UWB Tag SR040?

- MK UWB Tag: 3.5 cm x 3.5 cm x 1.1 cm (without removable debug connector)
- UWB Tag SR040: 4.0 cm x 4.0 cm x 1.6 cm (without removable debug connector)

3

### What are the MK UWB Tag casing measurements?

- MK UWB Tag casing: 4,2 x 4,2 x 1,68 mm

3

### What does production-ready NXP UWB IoT software mean?

- The software package released with this product (UWBIOT\_SR150\_v04.03.14\_MCUx) has been qualified by NXP as production ready, supporting various devices and platforms. Full details can be found in the supporting documentation.

4

### Does it use a different UWB module?

- Yes, the MK UWB Tag is based on Type 2DK Module from Murata, which contains QN9090 and SR040.

# MK UWB Tag

## FAQ

5

### Is there any difference in the power consumption?

- No difference is expected as the system architecture remains equal.

6

### Is the MK UWB Tag certified?

- Only the integrated SR040 module (Type 2DK) is certified under FCC/IC/MIC.
- MobileKnowledge may consider the certification of the MK UWB Tag depending on the market interest.

7

### Which UWB channels are supported?

- Murata Type 2DK module supports CH5, CH6, CH8 and CH9 (optimized for CH5 and CH9).

8

### How can I purchase the MK UWB Tag?

- The MK UWB Tag can be purchased through the product [website](#) or through the order form. Please contact us at [contact@themobileknowledge.com](mailto:contact@themobileknowledge.com) and we will share the contact form with you.

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### Will the MK UWB Kit SR150/SR040, MK UWB Kit Mobile Edition 2.0 and MK UWB Kit RTLS include this new tag?

- Yes, the MK UWB Tag will be included as part of the MK UWB Kits.

# Mobile Knowledge

[www.themobileknowledge.com](http://www.themobileknowledge.com)

[contact@themobileknowledge.com](mailto:contact@themobileknowledge.com)



Accredited Training Partner



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DE DIGITALIZACIÓN  
E INTELIGENCIA ARTIFICIAL

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