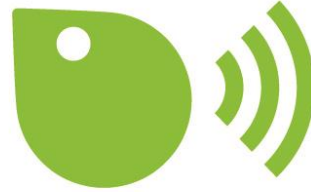




MK UWB Tag



Featuring **NXP Trimension™ SR040**

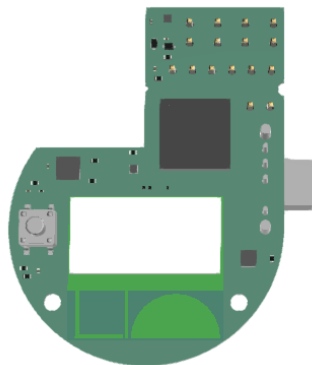
Small and compact, the ideal UWB Tag for accurate UWB positioning



MK UWB Tag

Featuring NXP Trimension™ SR040

Elevate your projects with the MK UWB Tag—where precision meets innovation.



The **MK UWB Tag** provides position accuracy in an **ultra-compact design**, perfect for your most demanding low-power applications. Powered by **Murata's innovative Type 2DK module**, an **all-in-one UWB + Bluetooth® LE combo module** that integrates **NXP Trimension™ SR040 UWB Chipset**.

Key features

- Features the state-of-the-art **Murata Type 2DK UWB Module**
- **Efficient operation:** fully integrated with **NXP Trimension™ SR040** ensuring **low power consumption**
- **Ultra-compact design:** extra small form factor *, ideal for portable UWB devices
- **Customizable peripherals:** tailor your solution with and accelerometer, secure element, buzzer, LED, and button
- **Long-lasting power:** Coin-cell battery operation providing **over 9 months battery lifetime****
- **Seamless compatibility:** works with all SR040 software, including MK UWB Kit software and NXP UWB IoT middleware
- **Accelerate development:** access reference hardware design files to speed up your design and development process
- **Compact casing design available**

* Compared to UWB Tag SR040 (our previous version of the UWB Tag) and Murata Type2DK EVK (30% area reduction). More details in [slide 13](#).

** 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

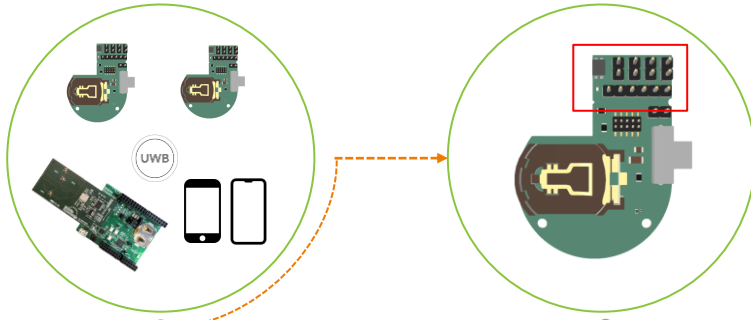


Flash the software in the tag and evaluate your preferred UWB use cases. **Tag is compatible with all MK UWB Kits and NXP UWB middleware.**

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.**

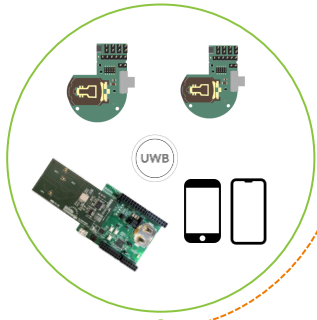
Use the **debug interfaces** of the removable debug connector to speed up your development.

MK UWB Tag

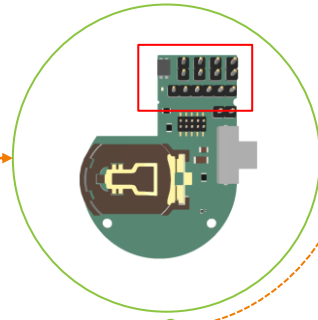
User experience

Size: 3.5 cm x 4.6 cm x 1.1 cm

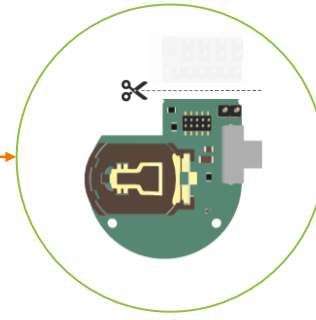
Size: 3.5 cm x 3.5 cm x 1.1 cm



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

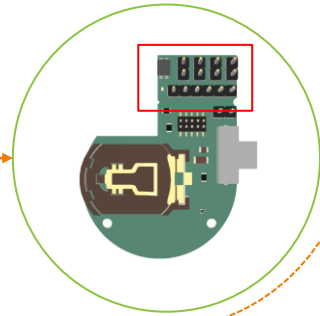
User experience

Size: 3.5 cm x 4.6 cm x 1.1 cm

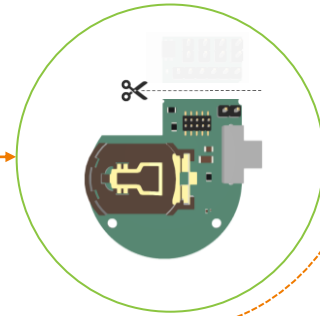
Size: 3.5 cm x 3.5 cm x 1.1 cm



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.



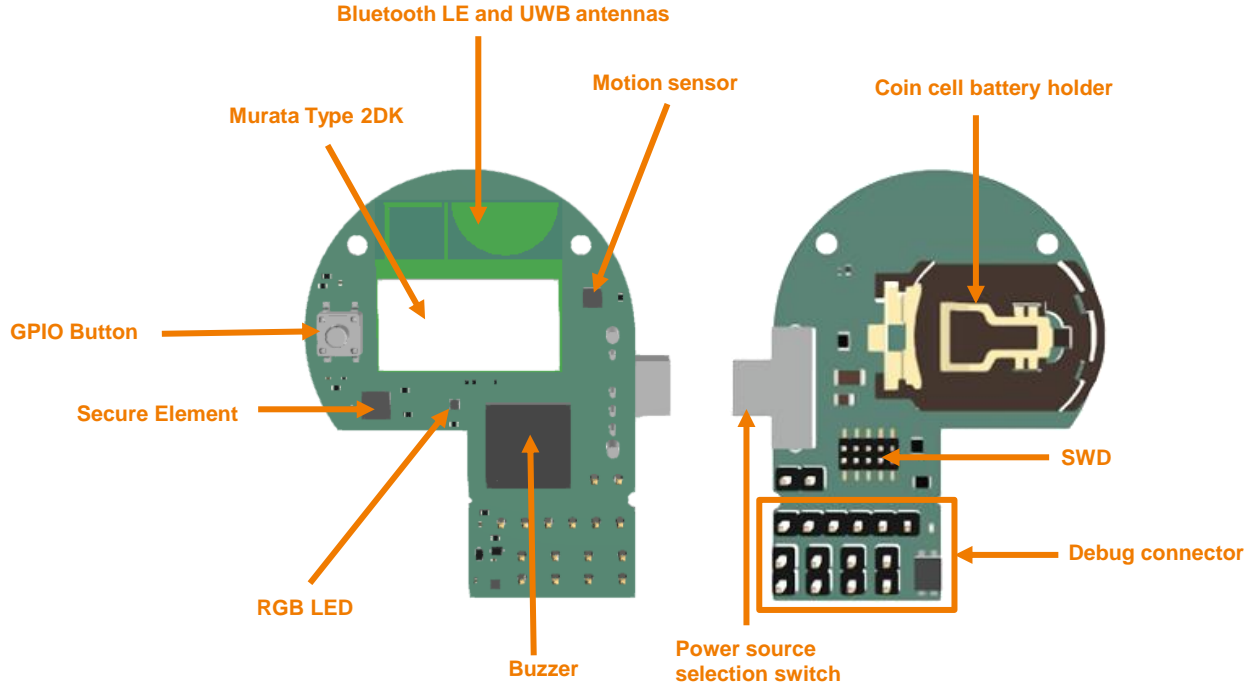
When you are ready for production, **remove the debug connector** to make the tag even smaller!



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

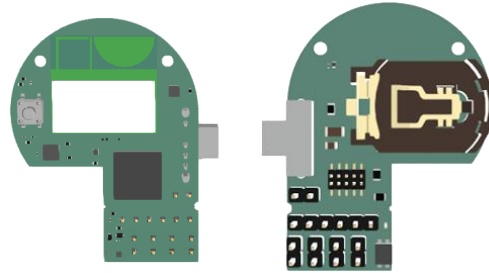
MK UWB Tag

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

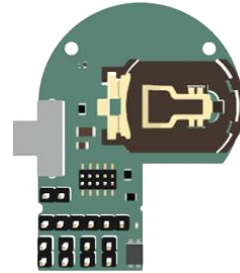
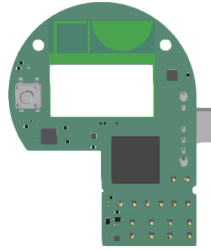
- Wakeup from low power consumption mode using movement as detected by accelerometer.
- 4 x connections per day with a duration of 60 seconds
- Each connection consists of 40 % Bluetooth LE scanning and 60 % UWB ranging

MK UWB Tag

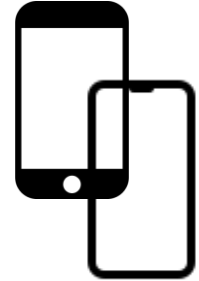
In detail: UWB ranging



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



← vs. →
**MK UWB Tag
to Mobile**



Accuracy: +-10 cm

Max ranging distance: 50 m
(LOS) for both indoor and
outdoor



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
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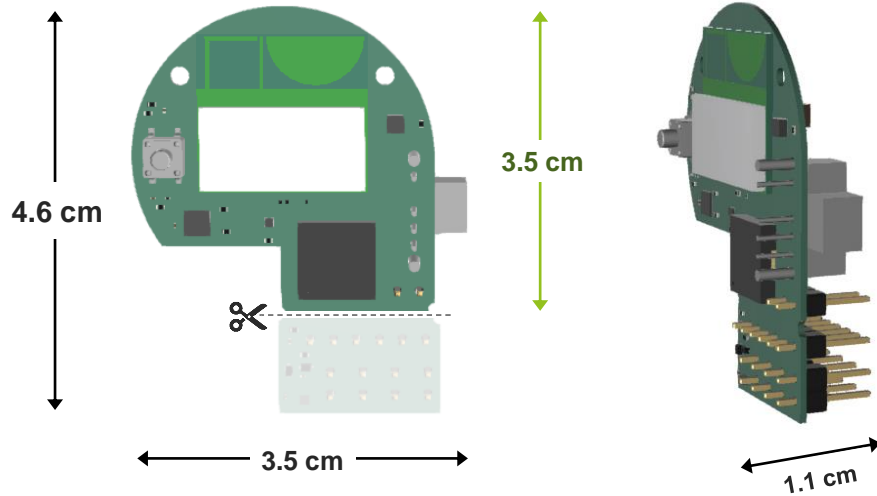
Accuracy: +-10 cm

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, with its **extra small form factor**, is perfect for portable UWB devices

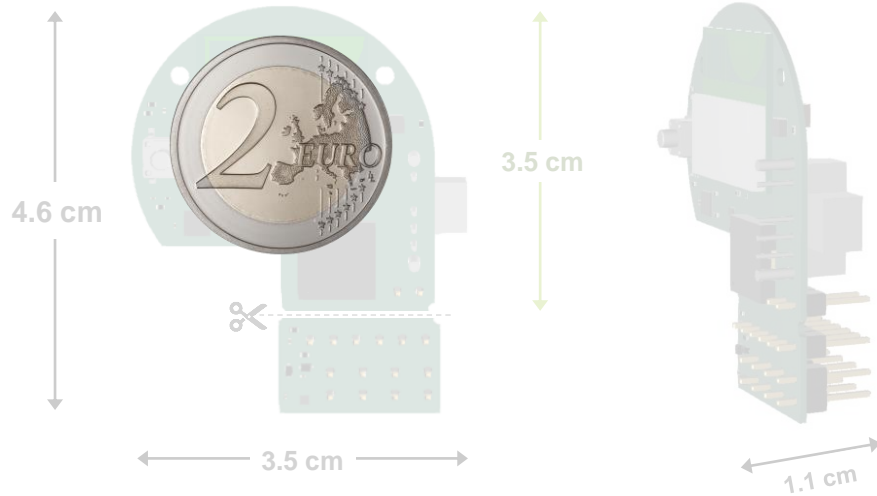
Dimensions:

- 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



Enhance both style and functionality with our **custom-designed casing*** for the MK UWB Tag!

Casing dimensions:

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

** casing included with the Tag*

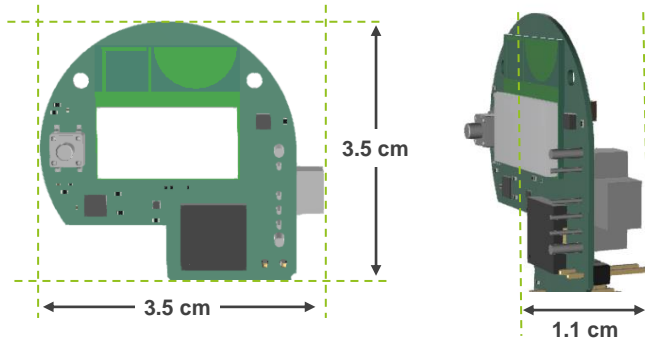
MK UWB Tag

MK UWB Tag vs UWB Tag SR040

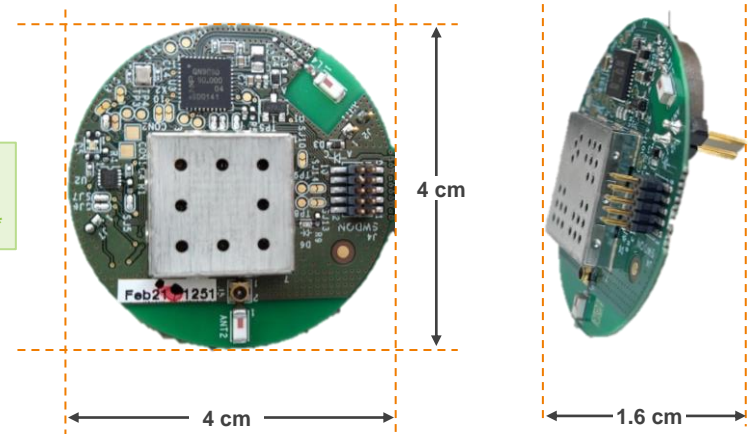
MK UWB Tag

vs

UWB Tag SR040*



Area reduced by 30%**



** MK UWB Tag area: 9,08 cm²
UWB Tag SR040 area: 12,57 cm²

* The UWB Tag SR040 was the previous version of Tag included in our UWB solutions

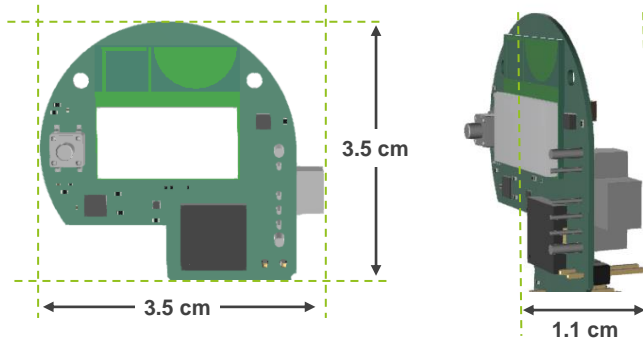
MK UWB Tag

MK UWB Tag vs Murata Type 2DK EVK

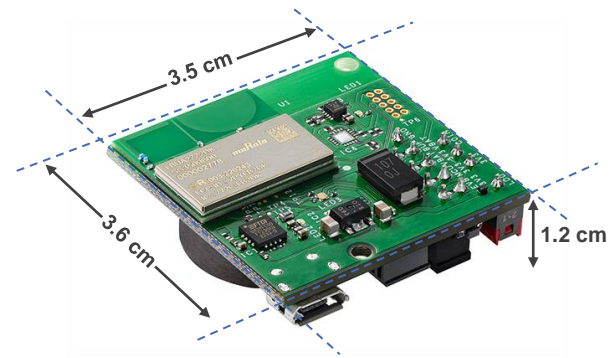
MK UWB Tag

vs

Murata Type 2DK EVK*



Area
reduced
by 30%**



** MK UWB Tag area: 9,08 cm²
Murata Type 2DK EVK area: 12,60 cm²

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

Type 2DK Module

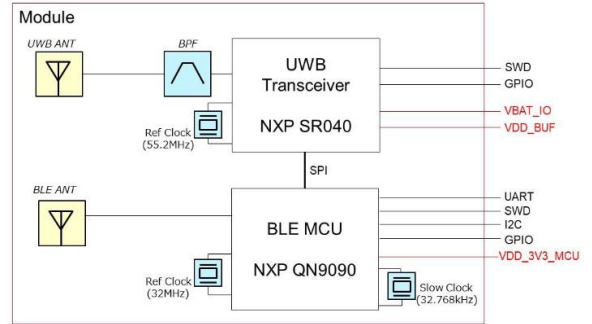
In detail



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**

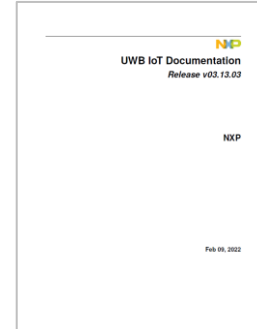
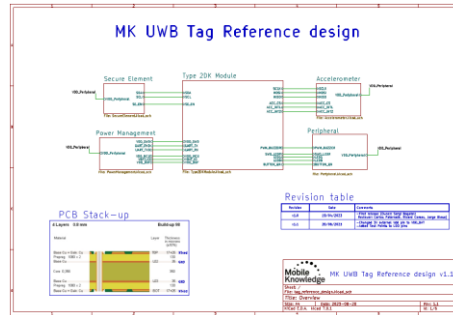


Murata Type 2DK Module architecture

- **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



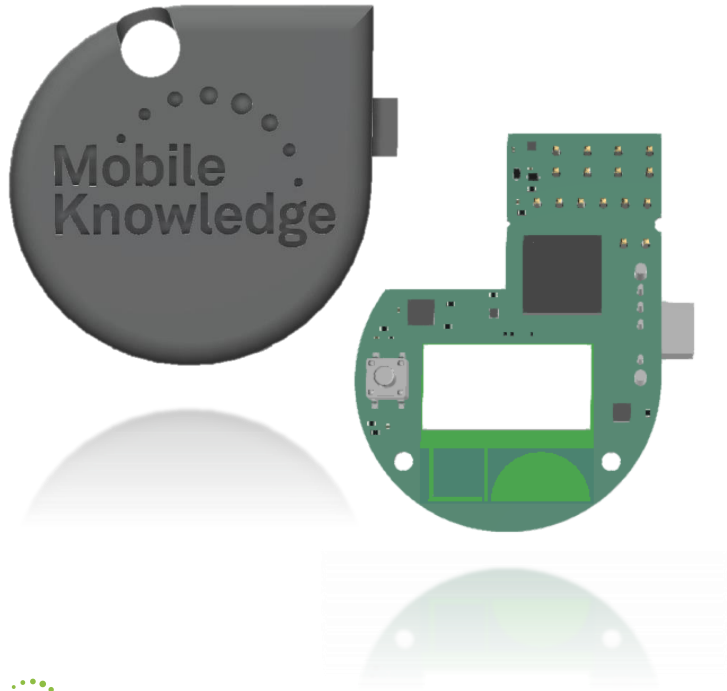
Production ready software, reference hardware design files, and up-to-date documentation to enable you to focus on your own application and use case leveraging on UWB technology.

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-uwbt-tag/>

MK UWB Tag
with *custom-designed casing*

140 €

Shipping costs not included

MK Services

Contact us for further information
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

4

What does production-ready NXP UWB IoT software mean?

- The software package released with this product (UWBIOT_SR040_v04.03.18_MCUx) has been qualified by NXP as production ready, supporting various devices and platforms. Full details can be found in the supporting documentation.

5

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

6

Is there any difference in the power consumption?

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

7

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.

8

Which UWB channels are supported?

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

9

How can I purchase the MK UWB Tag? Is support included with the purchase?

- The MK UWB Tag can be purchased through the product [website](#) or through the order form. Please contact us at contact@themobileknowledge.com and we will share the contact form with you.
- Please be aware that technical support is not included. For additional assistance, our team is ready to provide support services separately to ensure you have the help you need.

10

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.



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SECRETARÍA DE ESTADO
DE DIGITALIZACIÓN
E INTELIGENCIA ARTIFICIAL

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