

# MK UWB Kit RTLS

Featuring **NXP Trimention™**  
**SR150 / SR040**

Learn how to implement your indoor  
RTLS solution based on UWB TDoA





**UWB technology enables accurate and scalable real-time indoor position tracking.**

Thanks to **Time Difference of Arrival (TDoA)** multilateration, UWB can be used to reliably compute the location of assets and people in indoor environments, in real-time and with centimetre-level accuracy using an infrastructure of fixed anchors.

infrastructure of fixed anchors

Learn how **NXP's UWB Trimension™** technology can be used to implement **UWB TDoA Real Time Location Systems (RTLS)**

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Learn how to implement your Indoor RTLS solution based on UWB TDoA



# What is TDoA-based RTLS?



Backend RTLS Engine  
(e.g., a cloud service)

Uplink **TDoA (Time Difference of Arrival)** is a multilateration technique. It can be used to determine a device position by measuring the time it takes for a UWB signal to be received at several fixed anchor devices placed in the monitored environment.

A backend **RTLS engine** controls and configures the anchor infrastructure, collects the TDoA data and runs the multilateration algorithm that computes the position of tracked devices in real time.

The broadcasting nature of TDoA-based positioning makes it power-efficient and easily scalable to track tens of devices simultaneously.

## MK UWB Kit RTLS

What it offers

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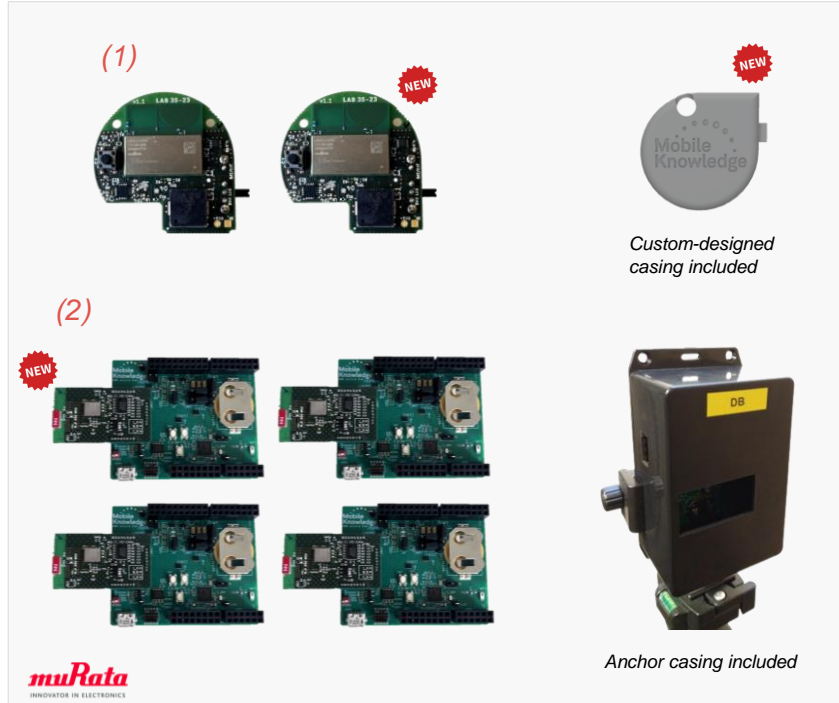
The **MK UWB Kit RTLS** is the **reference design** and **development platform** for **indoor UWB RTLS solutions based on TDoA** and **NXP's Trimention™ UWB IoT ICs**

Experience how to track one or more UWB-enabled tags using fixed anchor devices leveraging on TDoA-based real-time positioning. The MK UWB RTLS demo software allows you to experience first-hand the capabilities of the technology.

**Kick-start** the **design** of your own UWB RTLS solutions by leveraging on the hardware and software examples provided with the kit.

# MK UWB Kit RTLS

## Box content



- **(1) 2 x MK UWB Tags** including Murata Type 2DK UWB Module  
*A custom-designed casing for both tags is included*
- **(2) 4 x MK UWB Anchors RTLS for easy wall or tripod\* mounting** featuring new MK UWB SR150 Antenna board including Murata Type 2BP UWB Module  
*A casing for the 4 anchors is included*  
*\*Tripods are not included in the kit*
- **MK UWB Anchor RTLS** reference software source code and binaries required to run the UWB RTLS demo.
- **MK UWB Tag** reference software source code and binaries required to run the UWB RTLS demo.
- **MK UWB RTLS** Android application to setup the UWB RTLS demo and visualize tags position in real-time on your smartphone.
- **Support documentation**
  - *MK UWB RTLS Kit User Manual*
  - *MK UWB RTLS Kit Quick Installation Guide*
  - *MK UWB Shield 2 User Guide*
  - *MK UWB Tag User Guide*
  - *MK UWB Tag Hardware Design Files*
  - *MK UWB Tag Casing Design files*
  - *Murata Type 2BP/2DK datasheets, footprints, test reports, design guides*
  - *TDoA Architecture and Configurations*

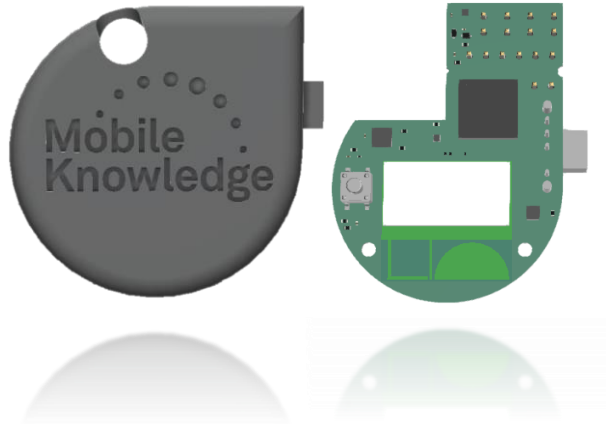
# MK UWB Kit RTLS

MK UWB Tag: In detail

## MK UWB Tag

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 Trimention™ SR040 UWB Chipset**.

**NEW**



- **Integrating Murata Type 2DK UWB Module**
- Fully integrated solution based on **Trimention SR040™** supporting **low power operation**
- **Extra small form factor \***, ideally suited for portable UWB devices:
  - 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)
- **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**
  - Casing dimensions: 4,2 x 4,2 x 1,68 mm

Check out [MK UWB Tag product brief](#) for more detailed information

# MK UWB Kit RTLS

MK UWB Anchor RTLS: In detail

## MK UWB Anchor RTLS

Flexible platform to develop customized UWB systems featuring **Murata Type 2BP UWB Module**. It can be used as an **RTLS anchor to track UWB devices**. The ABS casing is ideal for tripod or wall mounting. Velcro strips on the side of the anchor casing allows easy mounting of external power banks.

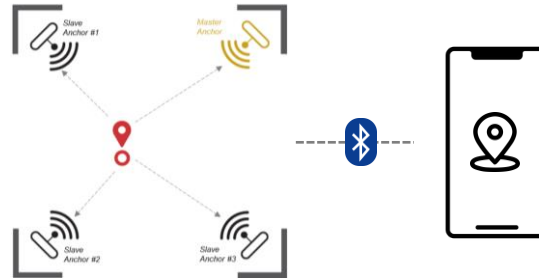


- MK UWB Anchor RTLS consisting of:
  - **MK UWB Shield 2** Arduino-compatible development board
  - **New MK UWB SR150 Antenna board** including **Murata Type 2BP UWB Module**
- **FiRa certified** product
- Support for UWB channel 5 (6.5 GHz) & 9 (8 GHz), 500 MHz per channel
- LED to provide visual indications to users
- Ideally suited for deployment in larger infrastructures
- Includes a casing for a better setup mounting\*\*

\*\* Power banks are not included in the kit.

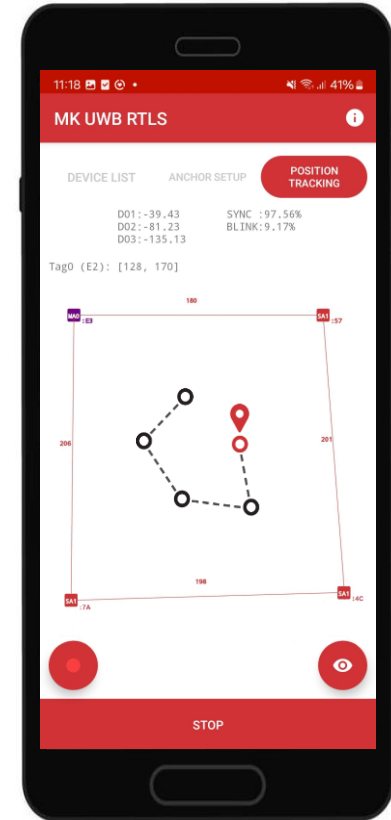
# MK UWB Kit RTLS

## MK UWB RTLS Demo



The **MK UWB RTLS Demo** showcases how UWB technology can be used to implement an uplink TDoA-based RTLS solution:

- Track up to 4 UWB-enabled tags using an infrastructure of 4 fixed anchors
- Automatic setup of anchors and Real-time 2D tracking of tags position through the MK UWB RTLS Android application
- Several configurations and personalization options
- Step-by-step documentation and quick installation guide to position the hardware setup and run the demo.
- Source code of both firmware applications and Android application so you can kick-start the design of your own RTLS solution.





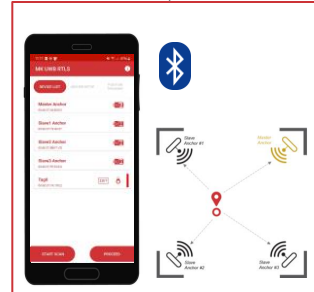
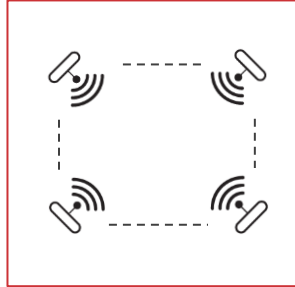
# MK UWB Kit RTLS

Out-of-the-box experience



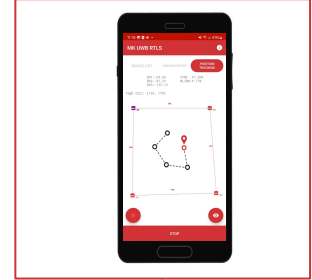
Install the MK UWB RTLS Android application in your smartphone

Position the 4 anchors in the room using tripods or wall mounting supports\*



Power up anchors\*\* and tags and setup the system through the MK UWB RTLS application

Track tags in real-time through the MK UWB RTLS Android application



Approximately 1h to setup the demo

\* Tripods / wall mount supports are not included in the kit

\*\* Using either power banks or external power supply. Power banks are not included in the kit

# MK UWB Kit RTLS

Ordering details

# MK UWB Kit RTLS

Featuring **NXP Trimension™**  
**SR150 / SR040**

Learn how to Implement your Indoor  
RTLS solution based on UWB TDoA

Evaluate how NXP's UWB  
Trimension™ technology  
can be used to implement  
**UWB TDoA Real Time  
Location Systems (RTLS)**

**2.600€**

## Additional Components

*Contact us to purchase  
any additional component*

Additional MK UWB Anchor RTLS with casing.....	430€
Additional MK UWB Anchor RTLS without casing.....	335€
Additional MK UWB Tag with casing.....	140€

Order the **MK UWB RTLS Kit** at  
MobileKnowledge's website :

<https://www.themobileknowledge.com/product/mk-uwb-kit-rtls/>

## Want to do more?

The **MK UWB Kit SR150/SR040** is the most comprehensive **reference design** and **development platform** for UWB-based IoT solutions.

Leverage on UWB technology advanced functionalities and benefit from **NXP Trimention™ SR150 and Trimention™ SR040 UWB IC** capabilities.

Take your UWB development experience to the next level with the **most complete and powerful UWB development kit** in the market.

With MK UWB Kit SR150/SR040 you will:

- Obtain access to all possible UWB use cases (device-to-device DSTWR, unicast/multicast, data transfer), mobile-to-device use cases, indoor positioning based on TDoA
- Support for multiple host platforms (off-the-shelf reference software for NXP QN9090, Nordic nRF52840 and Linux-based hosts)
- The kit includes MK UWB Kit Mobile Edition 2.0 software and documentation
- Best-in-class distance & AoA accuracy
- Powered by Murata world's smallest UWB module

Visit our website for further information:

<https://www.themobileknowledge.com/product/mk-uwb-kit-sr150-sr040/>



## Want to do more?

Long-standing expertise in UWB technology to help you reduce your time to market and focus on your own UWB solution development

- **Development of customized UWB use cases:** Embedded software development, mobile application software development, back-end integration, system integration,...
- **UWB technology consulting and support services:** Guidance on use case definition and system integration, system architecture, software requirements, Q&A resolution, FIRA related process and use cases,...
- **Design and development of customized antenna board** based on customer requirements and constraints in order to optimize ranging and AoA measurements
- **Porting of MK UWB SDK** into a customer platform, enabling MK UWB SDK software tools and functionalities on any customer platform that meets the SDK requirements
- **Licensing of MK UWB Library**, for an easy integration of UWB technology while accelerating the time to market



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