MK
UWB
Kit
RTLS

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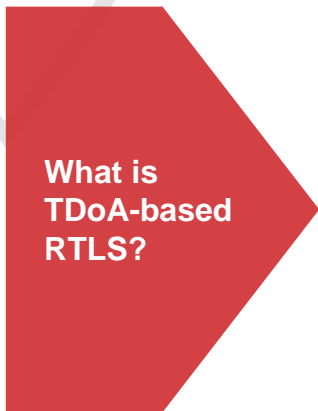
Learn how **NXP's UWB Trimension™ technology can be used to implement UWB TDoA Real Time Location Systems (RTLS)**

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Featuring **NXP Trimension™ SR150 / SR040**

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

What is TDoA-based RTLS?

Slave Anchor #1

Master Anchor

Slave Anchor #2

Slave Anchor #3

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.
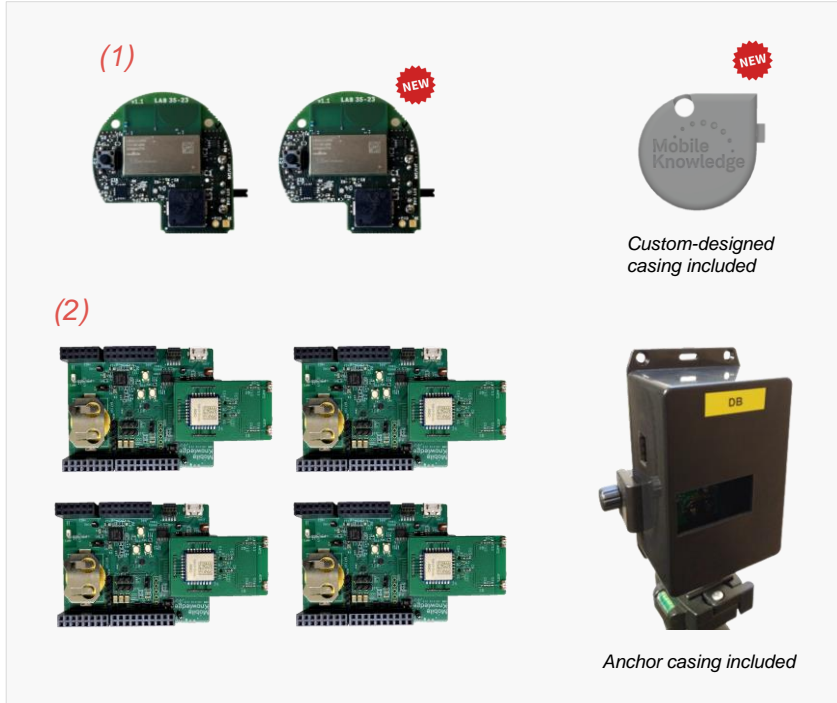
MK UWB Kit RTLS
What it offers

The **MK UWB Kit RTLS** is the **reference design** and **development platform** for **indoor UWB RTLS solutions based on TDoA** and **NXP's Trimension™ 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 Mobile edition 2.0
Box content

(1)

NEW

NEW

Custom-designed casing included

(2)

DB

Anchor casing included

- **(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 **NXP Trimension™ SR150**
  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*
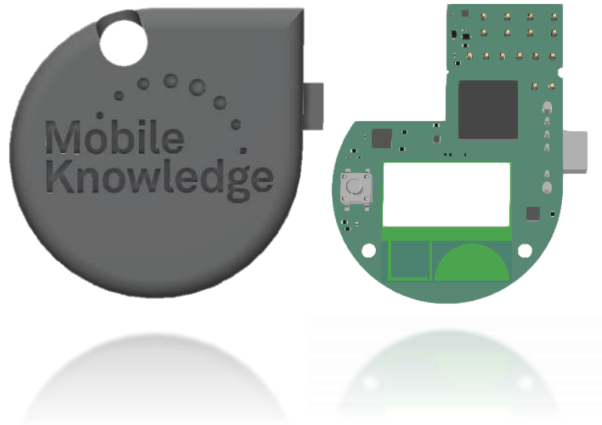 - *Murata Type 2BP/2DK datasheets, footprints, test reports, design guides*

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MK UWB Kit RTLS

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 Trimension™ SR040 UWB Chipset.**

NEW

- **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:
  - 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

*

Flexible platform to develop customized UWB systems featuring **NXP's UWB chipset Trimension™ SR150**.
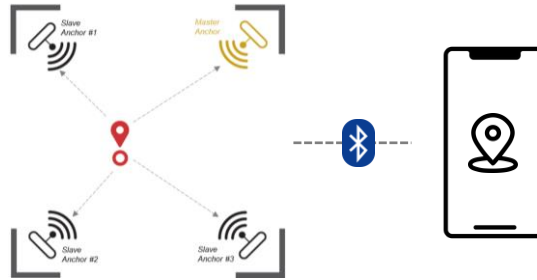
It can be used as an RTLS anchor to track UWB devices. The ABS casing is ideal for tripod or wall mounting. Velcro strips on the side of the anchor allows for easy mounting of external power banks**.

* MK UWB Anchor RTLS include a casing
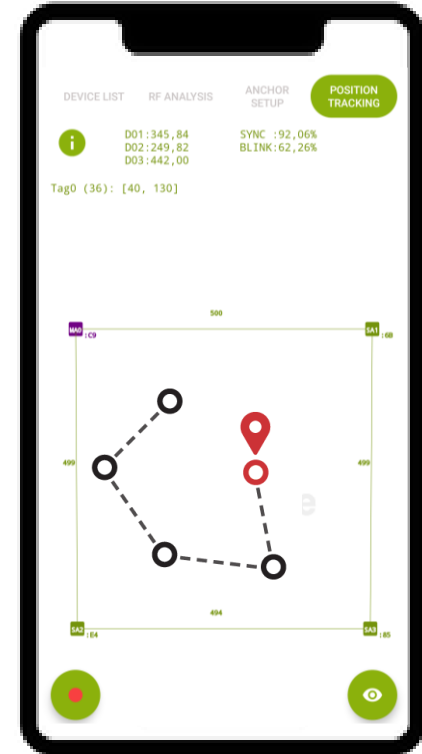*** Power banks are not included in the kit.*
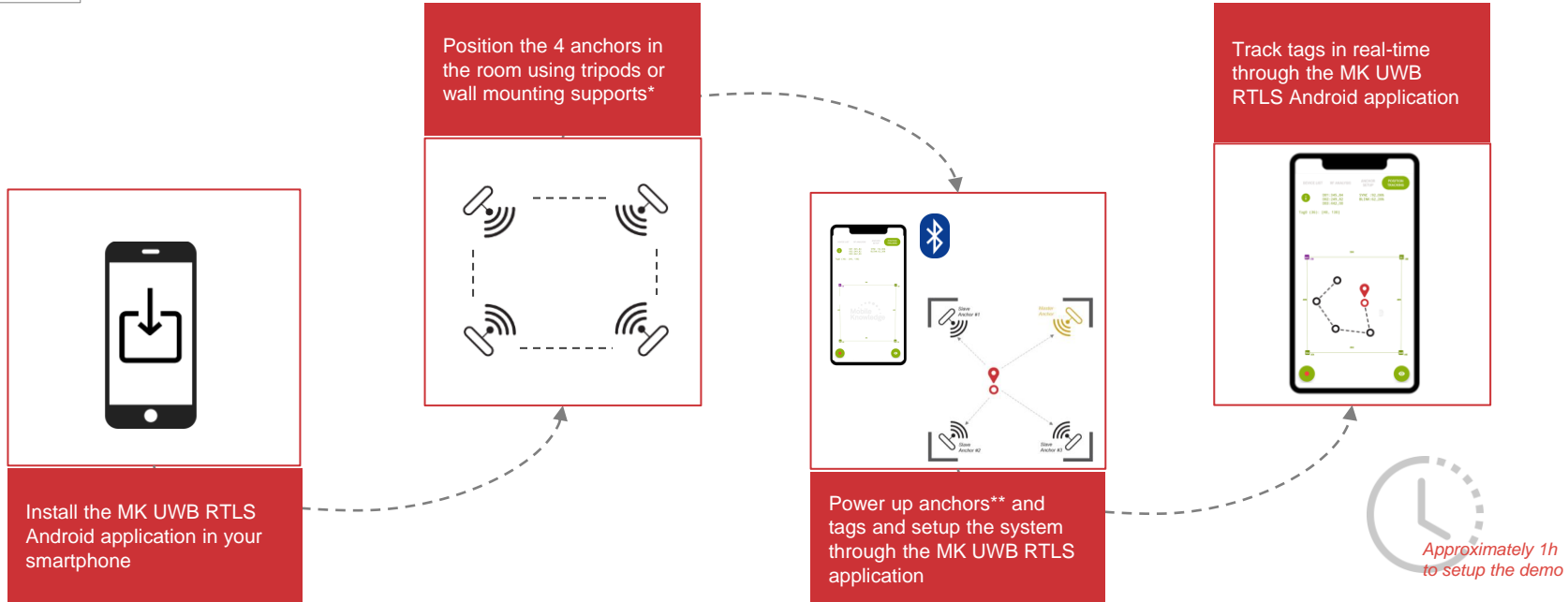
MK UWB Kit RTLS
MK UWB RTLS Demo

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

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

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

Install the MK UWB RTLS Android application in your smartphone

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

Mobile Knowledge

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MK UWB Kit RTLS

Ordering details

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€
Additional **Murata Type 2DK UWB Module**…..	50€
Additional **UWB Module SR150**………………..…	50€

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 Trimension™ SR150 and Trimension™ 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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Mobile Knowledge

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