

Type2DK EVK

Product Brief

October 24, 2023, RevA

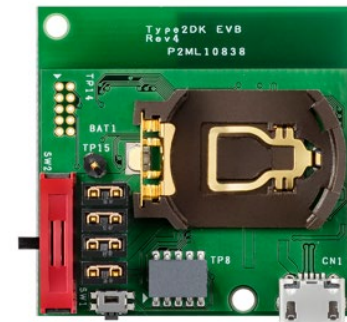


Type2DK EVK

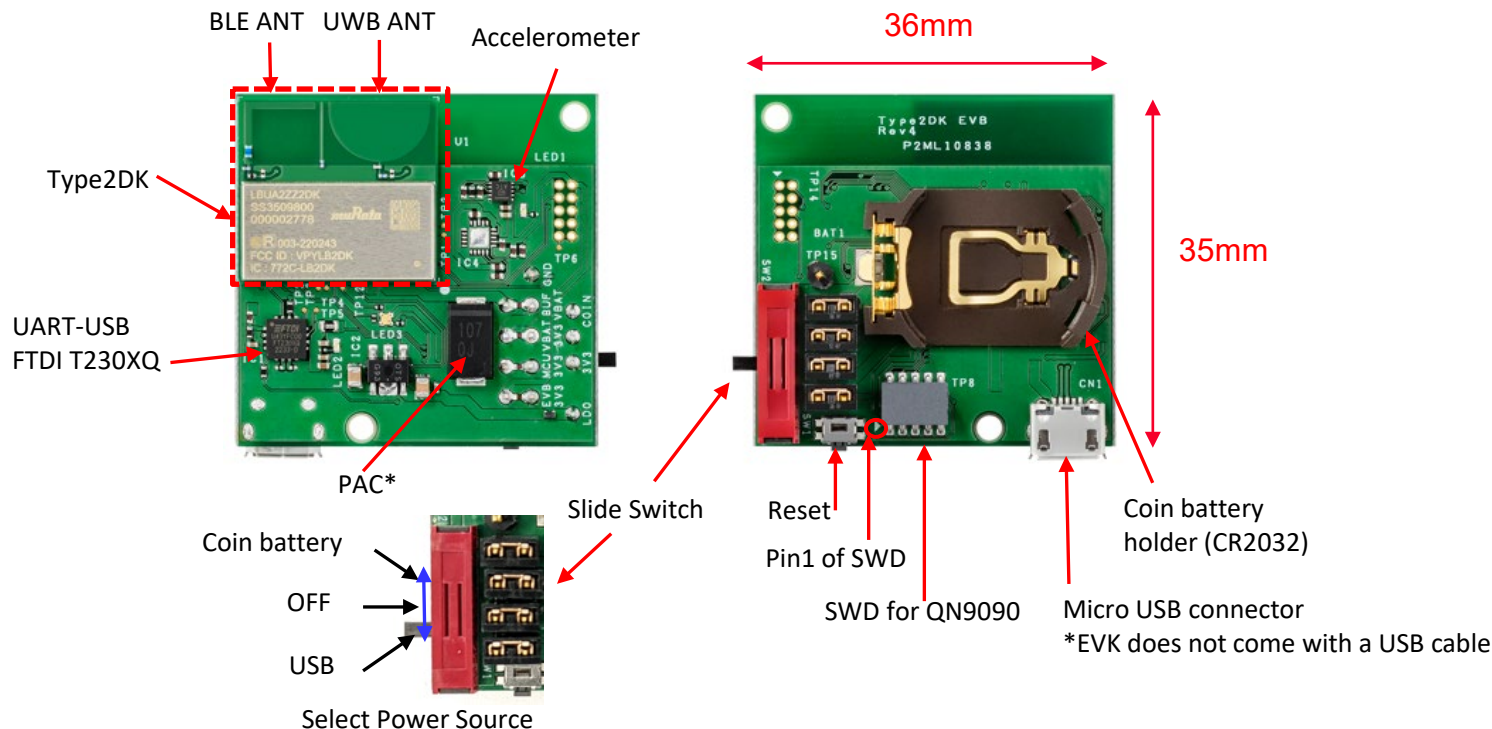
Type2DK-EVK(Evaluation Kit) is Starter Kit to start UWB development with Type2DK UWB module.

Features

- Type2DK(NXP Trimension SR040 and QN9090) integrated evaluation board
- Interface: USB / SWD
- Accelerometer on board
- Coin battery / USB bus power can be switched
- USB/UART conversion IC
- Can be immediately evaluation as a Tag device



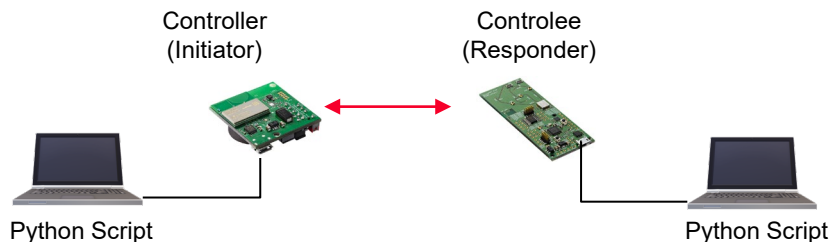
Appearance of EVK



*PAC: Polymer Aluminum Electrolytic Capacitors

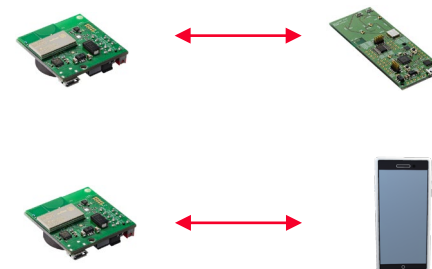
Ranging Performance check

Plug and Play mode



Easily check operation using FW pre-installed in EVK.
Run the python script file on the PC to control EVK.
It can check the performance of ToF.
(Also 2BP-EVK required).

Standalone mode



It is possible to verify the operation in the following modes by writing the pre-build binary file.
Pre-built binary files are available from each SDK download site.
Standalone mode:
It can check the performance of ToF.
(Also 2BP-EVK required).
Ranging with Mobile Phone:
It can check the performance with smart phone(iPhone and Android).

Performance information

Ranging Distance

iPhone12	Type2DK EVK
Display →	① BLE Ant UWB Ant
Display →	② UWB Ant BLE Ant
Display →	③ UWB Ant BLE Ant

Condition

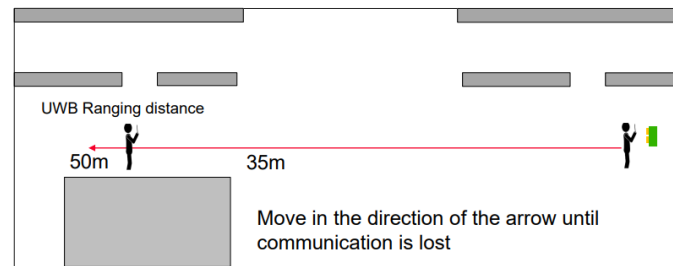
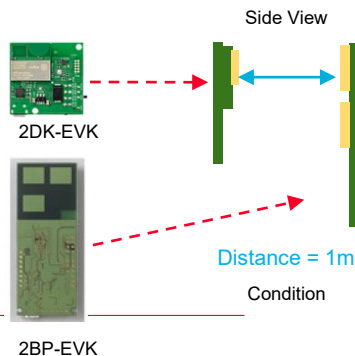


Image of measurement location

2DK-EVK(Initiator)	Max ranging distance	Max BLE connection distance
①	49m	More than 60m
②	33m	More than 60m
③	42.7m	More than 60m
①(Current limiter on)	49m	More than 60m
①(Coin Battery)	49m	More than 60m

Result

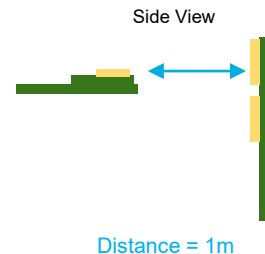
Ranging Accuracy



Condition

	5ch	9ch
Sample-A	98	101
Sample-B	99	100
Sample-C	99	97
Average	98.6	99.3

Result



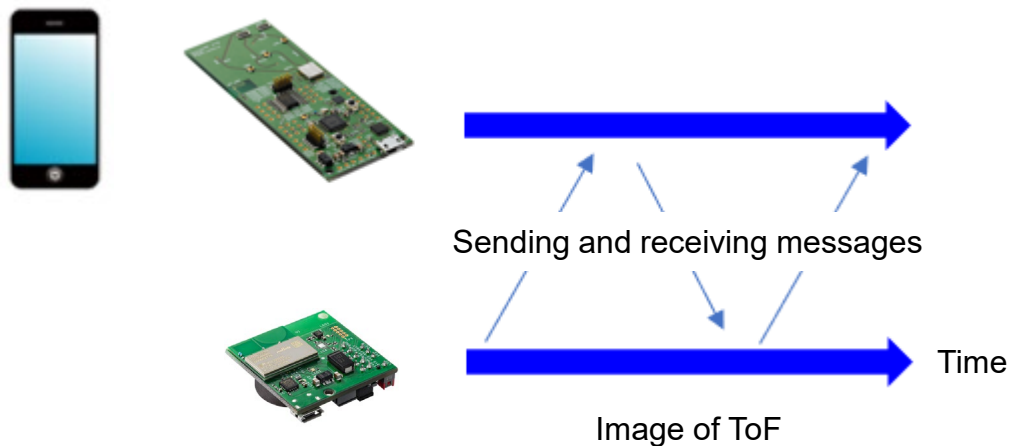
Condition

	5ch	9ch
Sample-A	99	112
Sample-B	100	105
Sample-C	99	109
Average	99.3	108.6

Result

Usage of EVK[1/2]

1. Ranging (Distance and Angle) between EVKs and/or smartphone
Relative positioning detection by using ToF
2. Data communication while Ranging



3.RTLS(system using location algorithm) Absolute positioning detection by Anchor(TDoA)

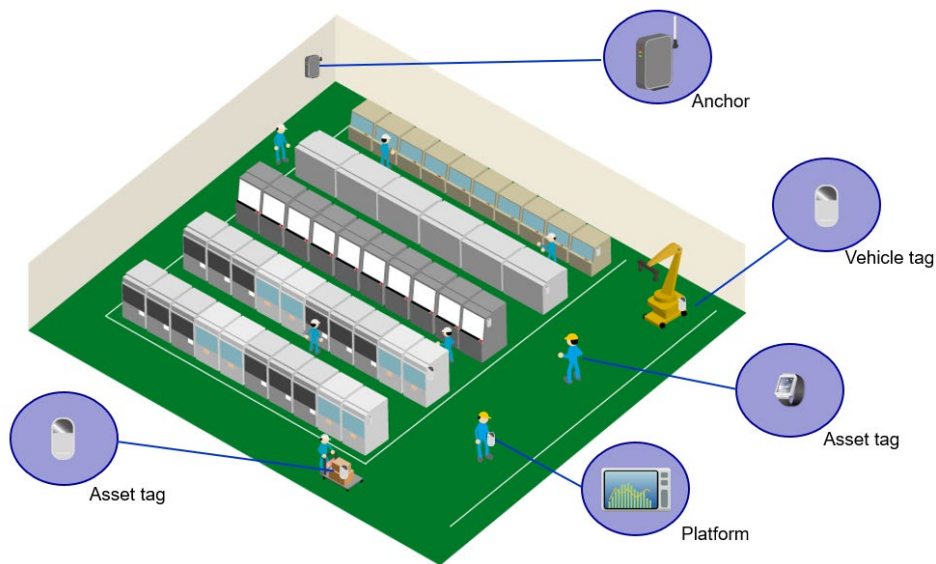


Image of RTLS

The RTLS system receives the signal originating from the TAG at each Anchor and needs an algorithm to estimate the location of the TAG based on the time information obtained at the Anchor. Algorithms for estimating time synchronization and TAG location information need to be considered by the customer. Type2DK can be used as a TAG device.

Technical Document Site(my Murata 2DK site)

EVK purchasers will have access to the Type2DK Document Site. Document Site provides a wide range of technical information to support your product development.

Category	Category name in document site	Contents
Overview	Datasheet / Development overview	Type2DK summary information
Hardware	Reference Schematic Design	HW summary information for the module. Design Guide, EVK Information (schematic, BOM, layout), Antenna measurement Information
Software	SW Guide	Information about SW development. Setting up the QN9090 development environment and operating procedures. Accelerometer demo guide.
Other	Test Guide	Summary of evaluation results such as ToF/Multisession
	Certification Guide	Radio Certification report and Test Tool Operating Procedures

SDK Site(my Murata 2DK site)

We have published the SDK required to run Type2DK.
We publish SDKs provided by NXP, patch files to optimize modules, and prebuild binaries.

Title	Update Date	
UWBIOT SR040 v03.07.01 MCUx Site	2022/1/18	Link
UWBIOT SR040 v03.13.07 MCUx Site	2022/7/21	Link
UWBIOT SR040 v04.03.09 MCUx Site	2023/3/17	Link
UWBIOT SR040 v04.03.14 MCUx Site	2023/6/19	Link

SDK Site list

Type2DK SDK UWBIOT SR040 v04.03.14 MCUx

Title	Date	File name
UWBIOT_SR040_v04.03.14_MCUx	2023/6/16	UWBIOT_SR040_v04.03.14_MCUx.zip
PnP binary for Type2DK EVK (v04.03.14)	2023/6/16	Please use the binary file included in the SDK for v04.03.14. UWBIOT_SR040_v04.03.14_MCUx#uwbiot-top#binaries#FinderV3#pnp_FinderV3_SR040-v04.03.14.bin
Standalone binary for Type2DK EVK(v04.03.14)	2023/6/30	Standalone binary for Type2DK EVK(v04.03.14)_updated.zip This Zip file contains a patch file that applies Murata's settings. See document(MCM-22F-0101_Type2DK-How_to_build_pre-built-binary) for more details. This document is available on Type2DK Document site. 2dk_NearbyInteraction_v04.03.14_bonding.bin : The passkey used for pairing is "9999999" 2023/6/30 Update Patch file and NearbyInteraction bin files.

SDK Site

Revision history



Rev	Date	Description
A	October 24, 2022	Initial release