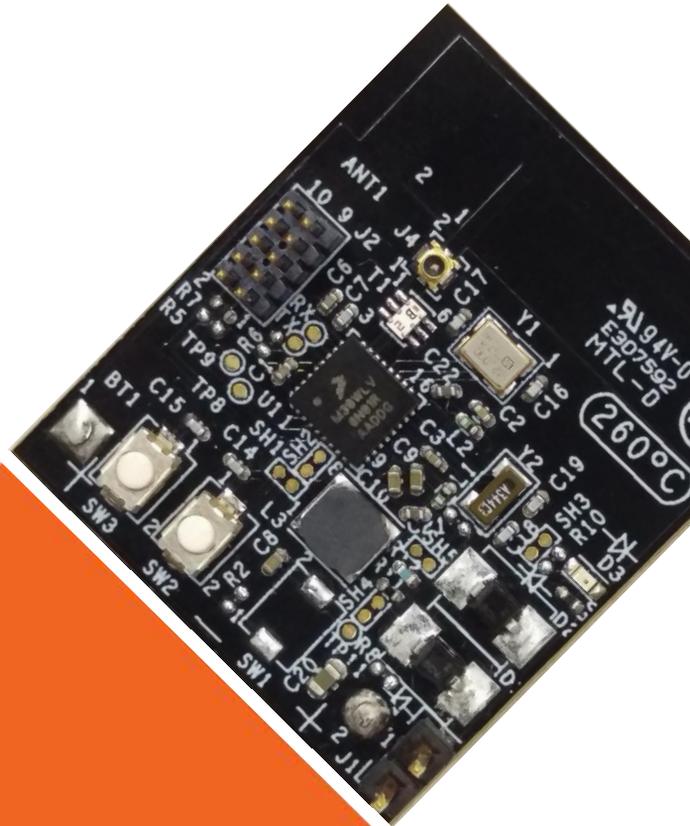




# KW30 BLE Beacon Quick Start Guide

Reference Design for  
Kinetis KW40/30 SoC



## Get to Know the KW30-BCN-RD board

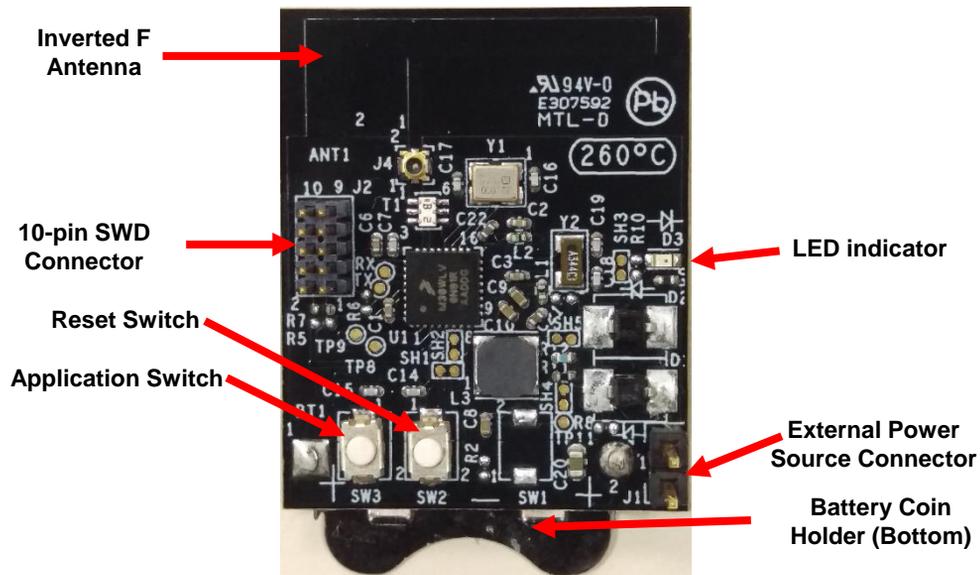


Figure 1. Front side of KW30-BCN-RD board



# Introduction to KW30 BLE Beacon Reference Design

The KW30 BLE Beacon reference design demonstrates the implementation of a low power Beacon using the NXP Beacon protocol, which can be easily modified to use any other Beacon protocol. It features the NXP MKW30Z, it includes an ARM® Cortex™ M0+ processor with a 2.4 GHz radio fully compliant with Bluetooth® v4.1 Low Energy.

## **This Quick Start Guide will teach you to:**

- Make use of the pre-loaded demo application.
- Use Kinetis BLE Toolbox Beacons application.

## **KW30 BLE Beacon Features**

- MKW30Z160 MCU (48MHz ARM® Cortex-M0+ core, 160KB Flash memory, 20KB SRAM) SoC + 2.4 GHz radio for Bluetooth® Low Energy.
- NXP BLE software stack for Bluetooth® Low Energy application development.
- NXP Beacon protocol.
- Ultra Low Power mode.

## **Tools Required**

- KW30 BLE Beacon reference design board.
- Android® or iOS® Smartphone enable with a Bluetooth® Smart Ready.
- Kinetis BLE Toolbox application installed.

## Application setup instructions

### 1 Download Software and Documentation

Download installation software and documentation under "**Kinetis W Series MCUs**" at: [nxp.com/kinetisdesigns](http://nxp.com/kinetisdesigns)



### 2 Download Smartphone Application

- Access to Google Play or Apple App Store.
- Download and install the Kinetis BLE Toolbox application distributed by NXP.

- Turn on the Bluetooth® module on your Smartphone.

### 3 Battery Placement

- Make sure that the battery is properly placed on the board.



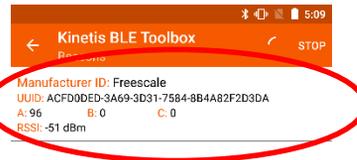
## How to use the Application

### 4 KW30 Beacon Board

- The LED indicator is disabled in order to achieve the lowest power consumption.
- After inserting the battery, the application will start advertising automatically.

### 5 Kinetis BLE Toolbox

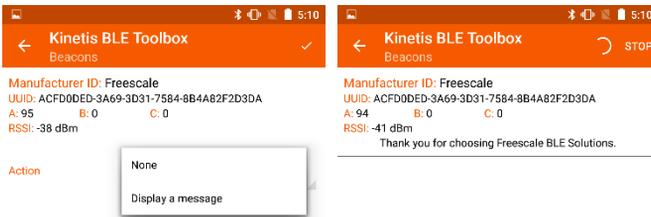
- Launch Kinetis BLE Toolbox.
- Tap over Beacons Application.
- Advertising NXP Beacons will appear listed in Kinetis BLE Toolbox



## How to use the Application (cont.)

### 6 Interacting with the Beacon

- Tapping over a detected Beacon, will allow you to display and customize a message when that Beacon is detected by the application.



### 7 Troubleshooting

- If you are not able to see any Beacon listed, press SW3 to wake up the board or press SW2 to perform a reset.
- If after performing the earlier step, you are not able to see a Beacon listed, make sure that the Battery is correctly inserted.



## Get Started

Download installation software and documentation under "**Kinetis W Series MCUs**" at: [nxp.com/kinetisdesigns](http://nxp.com/kinetisdesigns).

## Support

Visit [nxp.com/support](http://nxp.com/support) for a list of phone numbers within your region.

## Warranty

Visit [nxp.com/warranty](http://nxp.com/warranty) for complete warranty information.

For more information, visit  
[nxp.com/Kinetisdesigns](http://nxp.com/Kinetisdesigns),  
[nxp.com/Kinetis](http://nxp.com/Kinetis)

Join the online community at  
[community.freescale.com](http://community.freescale.com)

NXP, the NXP logo, Kinetis, and Tower are trademarks of NXP B.V. All other product or service names are the property of their respective owners. ARM and Cortex are registered trademarks of ARM Limited (or its subsidiaries) in the EU and/or elsewhere. All rights reserved. © 2014–2016 NXP B.V.

