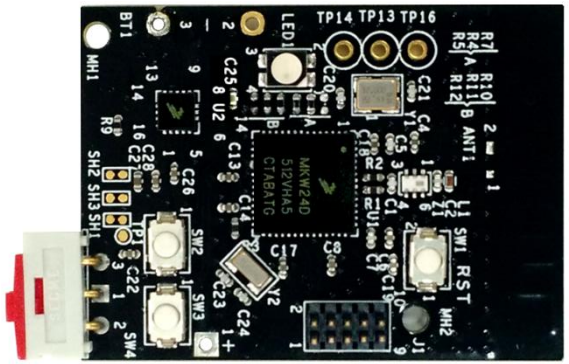
IOT LOW POWER SENSOR NODE QUICK START GUIDE



REFERENCE DESIGN FOR KINETIS KW2XD FAMILY

FEB, 2017

PUBLIC

SECURE CONNECTIONS FOR A SMARTER WORLD

Get to Know the IoT Low Power Sensor node

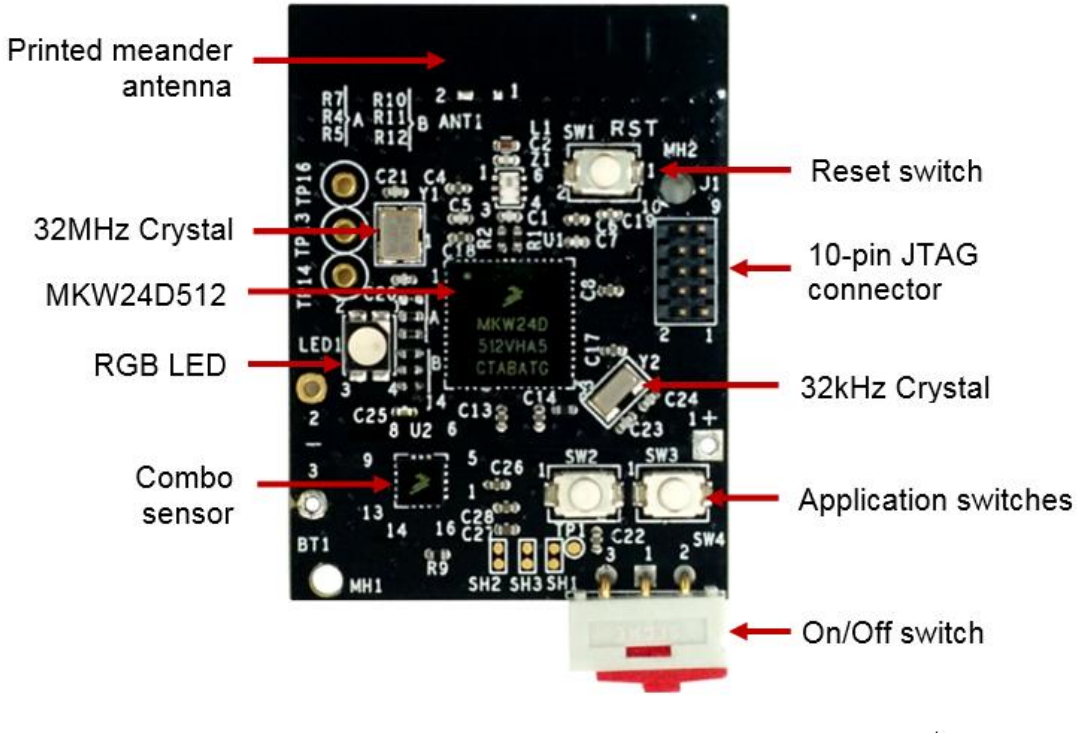


Figure 1. Front side of the IoT Low Power Sensor node

Introduction to IoT Low Power Sensor node

The IoT Low Power Sensor node Reference Design demonstrates one of the many applications for the Kinetis MKW2xD family using the NXP Thread Stack for IPv6 communication.

This Quick Start Guide will teach you to:

- Run the application in the board
  - ✓Join a Thread Network
  - ✓Send CoAP data Over-The-Air (OTA) when pushing a button
  - ✓Send CoAP data OTA when the board is tilted/moved

Introduction to IoT Low Power Sensor node

IoT Low Power Sensor node System Features

- The MKW24D512 incorporates a complete low power 2.4 GHz radio frequency transceiver and a Kinetis family low power, mixed-signal ARM Cortex™- M4 MCU
- 10 pin SWD connector
- Two push buttons for application
- RGB LED
- On/Off switch
- Printed meander antenna
- 6-axis Sensor with integrated Linear Accelerometer and Magnetometer

Application Demo Setup

1 Required Hardware

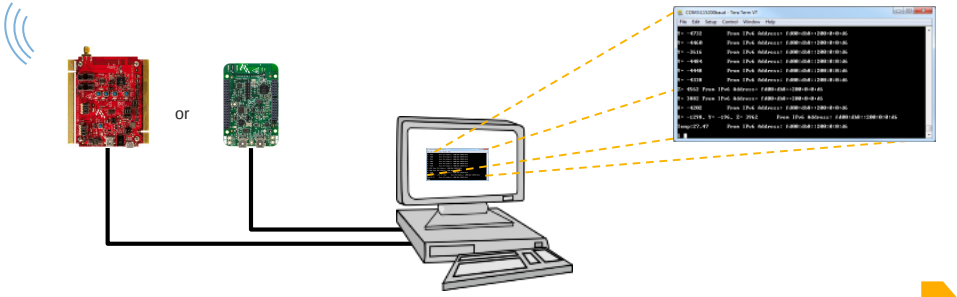
or

- TWR-KW24D512 or FRDM-KW24D512
  - •Loaded with the IoT Low Power Sensor node “Thread Router” firmware

- IoT Low Power Sensor node
  - •Thread Low Power End Device that will attach to an existent Thread Network
- USB cable for the Router board and a battery for the Sensor Board

2 Demo Hardware setup

IoT Low Power Sensor node
(Battery-Operated)



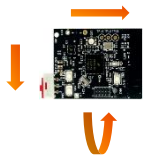
Application Demo

3 Start the demo

- Connect the Router device to a PC via USB cable.
- Open a Terminal Emulator and establish a connection to the Router port
  Terminal settings: 115200 baud rate, No parity, 8 data bits, 1 stop bit.
- Start the Thread Network:
  - Double press any switch on the router device and wait for the LEDs to stop flashing.
- Join the IoT Low Power Sensor node to the Thread Network:
  - Press any switch on the IoT Low Power Sensor node.

4 Run the demo

LED Blink on movement

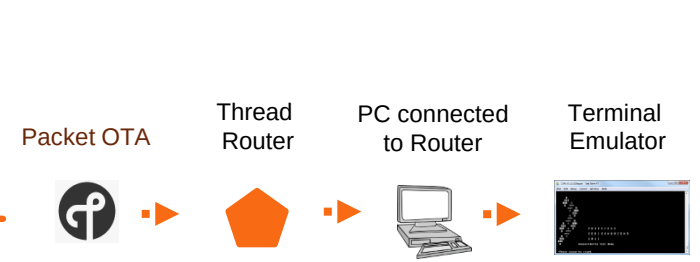


Red – X movement
Green – Y movement
Blue – Z movement

LED Blink on switch press

SW2
SW3

Cyan – Temperature
Magenta – All Axis read



Application Demo

5 LED status

LED state	Board status
White Blink 	Board just turned on. Not in network
Blue Blinking 	Attaching to a network
Cyan Blink 	Successfully joined the network
Red Blink 	Failed to join the network

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