

# Quick Start Guide

## MIOTY® Demo Software



### ABSTRACT

The MIOTY® Demo Software is a MIOTY sensor application image that demonstrates MIOTY connectivity with the CC1352R LaunchPad™ SensorTag kit. This quick start guide shows you step by step how to get started with the MIOTY Demo Software. For more information about the application image, refer to the README in the installed MIOTY Demo Software.

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### Trademarks

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### 1 Prerequisites

Hardware:

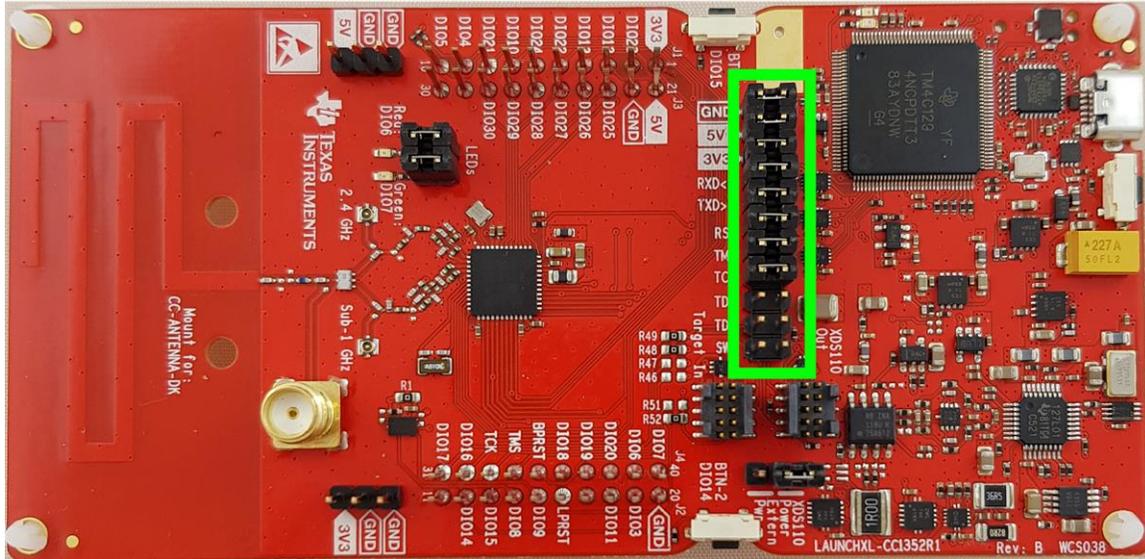
- One [CC1352R LaunchPad SensorTag](#) kit as the MIOTY end-point device
- One LaunchPad Development Kit with an XDS110 debugger, such as the [CC1352R LaunchPad kit](#)
- One MIOTY gateway from a 3rd party manufacturer, see the [MIOTY store](#)

Software:

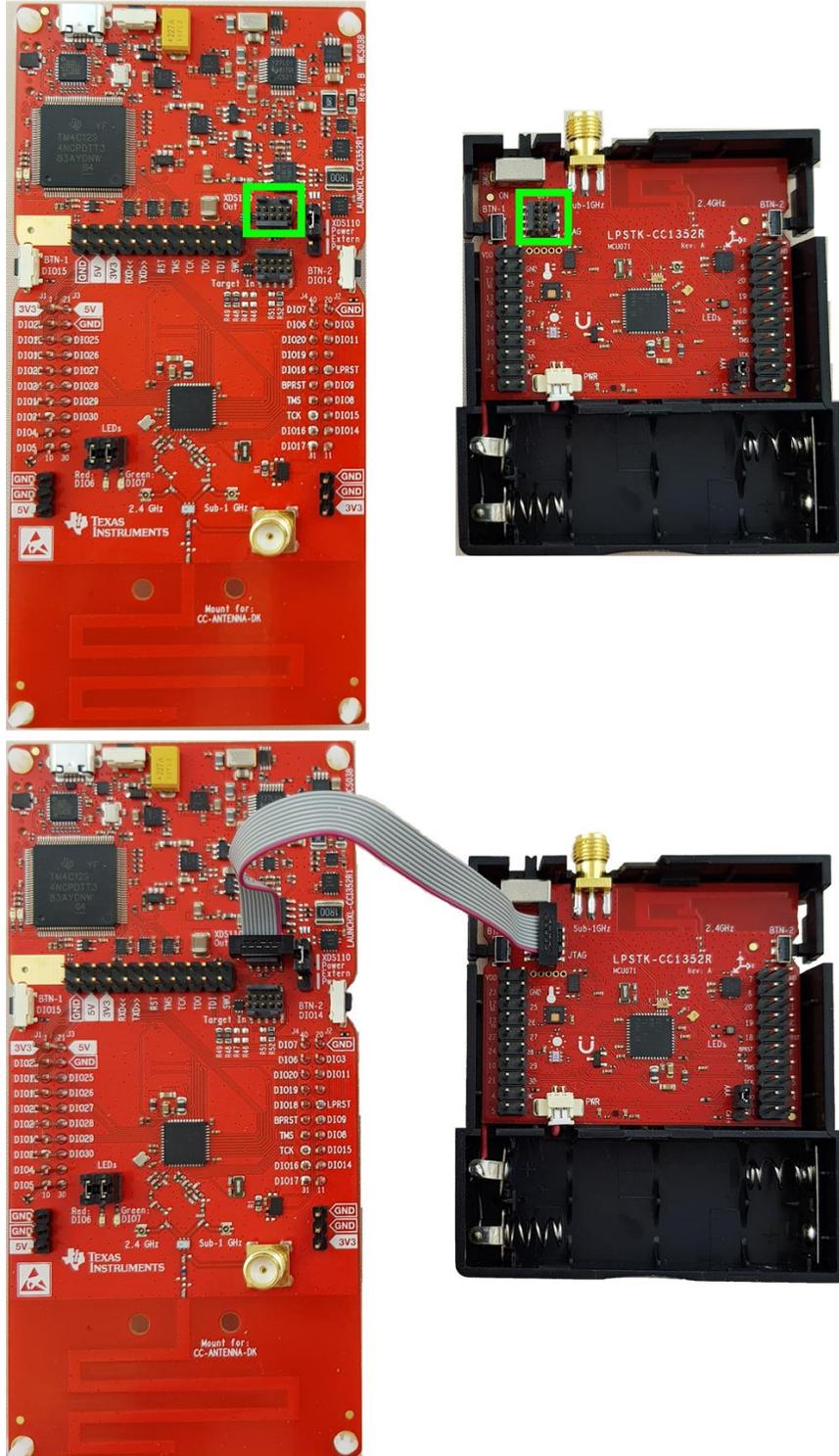
- [Download and install MIOTY Demo Software](#)
- [Download and install UniFlash](#)

## 2 Device Description

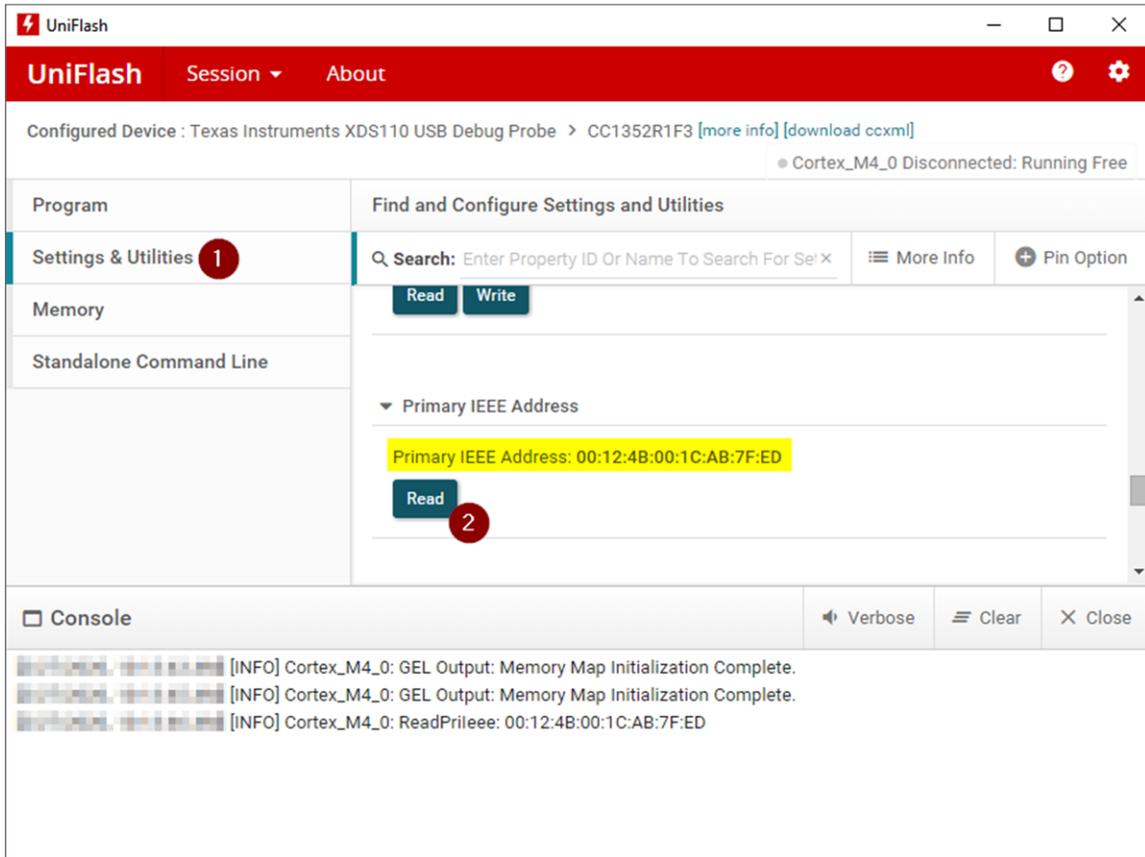
1. Remove all jumpers from the debugger on the CC1352R LaunchPad kit.



- Connect the CC1352R LaunchPad SensorTag to the CC1352R LaunchPad kit through the 10-pin JTAG connection. Make sure the power switch on the CC1352R LaunchPad SensorTag is set to off while using the 10-pin JTAG connection.



3. Open UniFlash and read the primary IEEE MAC address, found under Settings & Utilities.



The screenshot shows the UniFlash application window. The top bar is red with the UniFlash logo and menu items: Session, About, a help icon, and a settings icon. Below the bar, the configured device is identified as "Texas Instruments XDS110 USB Debug Probe" with ID "CC1352R1F3". A status indicator shows "Cortex\_M4\_0 Disconnected: Running Free".

The main interface is divided into a left sidebar and a main content area. The sidebar includes "Program", "Settings & Utilities" (marked with a red '1'), "Memory", and "Standalone Command Line". The main content area is titled "Find and Configure Settings and Utilities" and contains a search bar, "Read" and "Write" buttons, and a section for "Primary IEEE Address". The address "00:12:4B:00:1C:AB:7F:ED" is highlighted in yellow, and a "Read" button (marked with a red '2') is located below it.

At the bottom, there is a "Console" window with the following log output:

```
[INFO] Cortex_M4_0: GEL Output: Memory Map Initialization Complete.
[INFO] Cortex_M4_0: GEL Output: Memory Map Initialization Complete.
[INFO] Cortex_M4_0: ReadPrileee: 00:12:4B:00:1C:AB:7F:ED
```

4. Disconnect the CC1352R LaunchPad SensorTag from the CC1352R LaunchPad kit. On the CC1352R LaunchPad SensorTag, mount the antenna, add batteries, and turn on the power switch. A blinking blue LED indicates the device is on.



5. Add the CC1352R LaunchPad SensorTag as a new MIOTY end-point device in gateway with the following parameters:

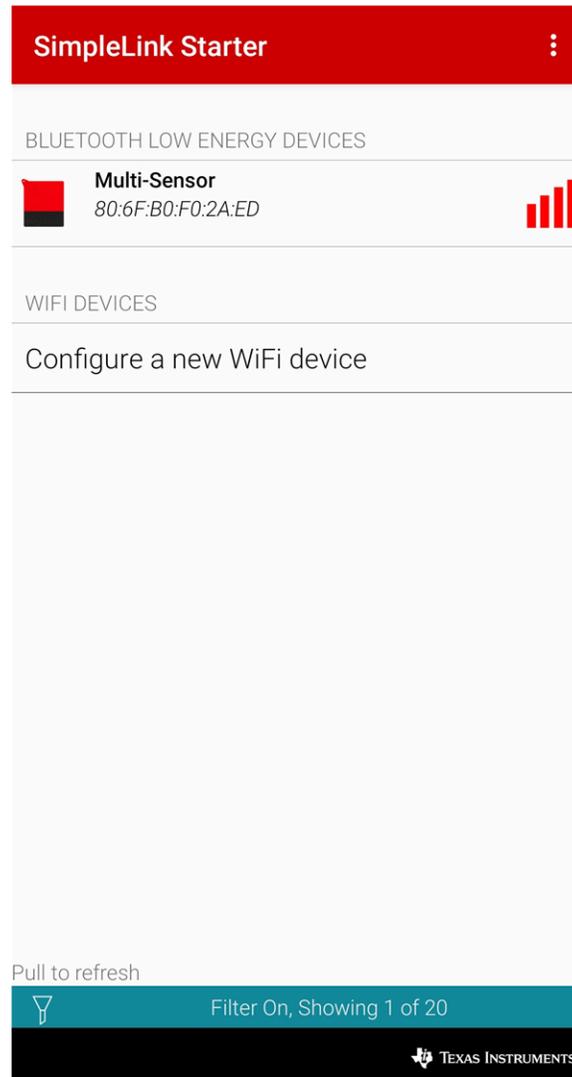
- a. Configuration parameters:

EUI64	Primary IEEE MAC address
Short Address	Bytes 5 and 6 of the primary IEEE MAC address
Network key	Hardcoded = 00:11:22:33:44:55:66:77:88:99:AA:BB:CC:DD:EE:FF

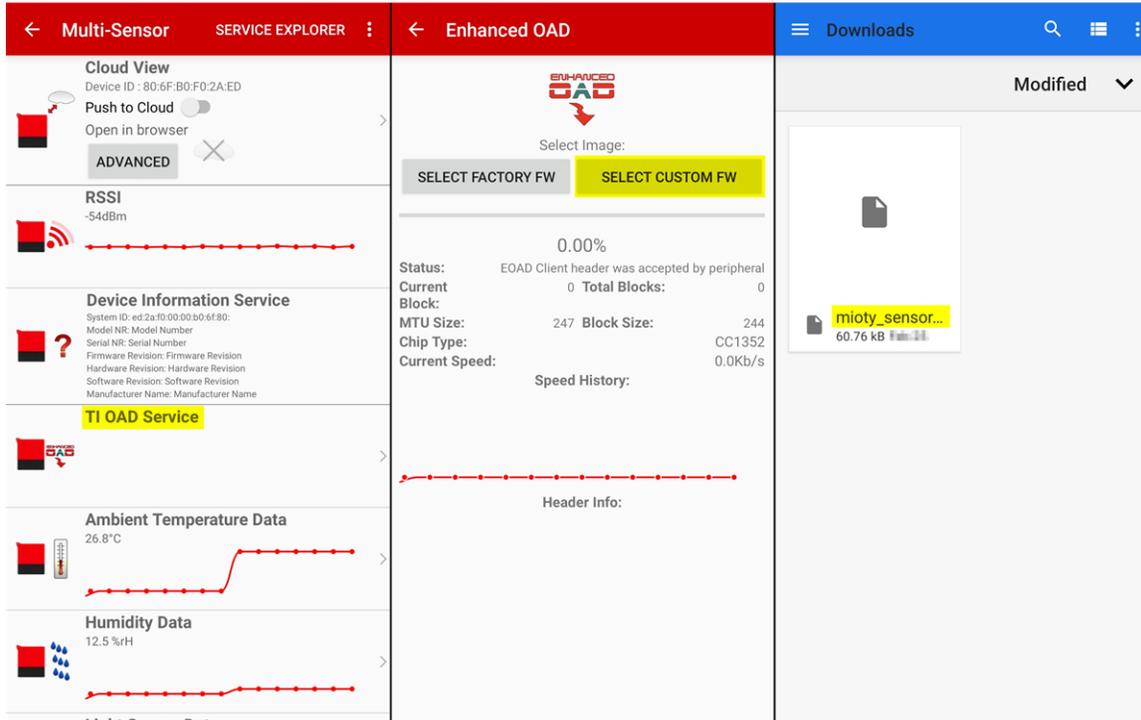
- b. For example, with primary IEEE MAC address = 00:12:4B:00:1C:AB:7F:ED

EUI64	00:12:4B:00:1C:AB:7F:ED
Short Address	1C:AB
Network key	00:11:22:33:44:55:66:77:88:99:AA:BB:CC:DD:EE:FF

6. Download and install the MIOTY demo binary from [TI.com](http://TI.com).
7. Connect to the CC1352R LaunchPad SensorTag with your phone using the SimpleLink™ Starter app. It shows up as “Multi-Sensor”.
  - a. You can download the SimpleLink Starter app from Google Play store or Apple App store.



8. When connected, perform an OAD update by clicking “TI OAD Service” and select an image through “Select Custom FW”. Select the MIOTY demo binary, which is named “mioty\_sensor\_app\_CC1352R\_LPSTK\_tirtos\_ccs\_oad.bin”.



9. Wait until the OAD update completes. After completion, the device should reset into a MIOTY device and automatically start to transmit MIOTY packages to the gateway.
- a. c. For each transmission cycle, two frames are transmitted with the following format:

i. Frame 1

Byte 0	Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7
Frame ID	Counter	Light Sensor Lux MSB	Light Sensor Lux LSB	Magnetic Flux MSB	Magnetic Flux LSB	Temperature	Humidity
0x1	<value>	[lx]	[lx]	[mT]	[mT]	[C°]	[RH]

ii. Frame 2

Byte 0	Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7
Frame ID	Counter	Accelerometer X axis	Accelerometer Y axis	Accelerometer Z axis	Battery Voltage MSB	Battery Voltage LSB	Battery Percentage
0x2	<value>	[m/s <sup>2</sup> ]	[m/s <sup>2</sup> ]	[m/s <sup>2</sup> ]	[mV]	[mV]	[%]

### 3 Revision History

NOTE: Page numbers for previous revisions may differ from page numbers in the current version.

<b>Changes from Revision * (March 2020) to Revision A (September 2020)</b>	<b>Page</b>
• Added a link to the MIOTY store in <a href="#">Section 1, Prerequisites</a> .....	<a href="#">1</a>
• Changed the Short Address field in Step (5) of <a href="#">Section 2, Device Description</a> .....	<a href="#">2</a>

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