US207-TRACKLBLEVZ
Smart Asset Tracking Label

The US207-TRACKLBLEVZ Smart Asset Tracking solution is a BLE-connected label that offers several advantages compared to traditional, passive RF interface (e.g. NFC, UHF) solutions. These labels actively measure, log, and report parameters such as temperature & humidity, acceleration, and light exposure actively.

Further, they can be accessed in high-volume scenarios such as inventory and/or status and event control involving several thousand labels using ubiquitous devices such as smartphones, tablets, or laptops.

In addition, this specific demonstrator features a flexible, disposable, safe battery, minimizing the logistical effort of using a battery-equipped solution.

Features

- Flexible architecture to support various sensor needs:
  - Temperature & Humidity
  - Acceleration
  - Light
  - Air quality / Gas / Odor
- Active beacon function for inventory control
- Several weeks of operating time using a 20mAh flexible battery
- Ultra-low leakage 8MBit Flash memory AT25XE081D
- SUOTA (Software Update Over The Air)

Board Contents

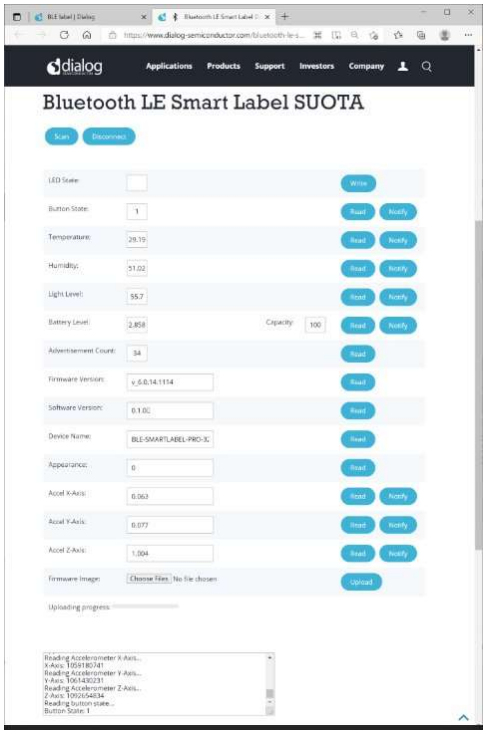
- US207-TRACKLBLEVZ Board

Figure 1. US207-TRACKLBLEVZ Smart Asset Tracking Label Board Im

1. Setup and Configuration

The Web App is located at:
https://www.dialog-semiconductor.com/bluetooth-le-smart-label-demonstration
Google Chrome, Microsoft Edge, or Safari on an Android phone or a Windows or MAC computers are required!
iOS is NOT supported

- press the 'ON' push-button on the label for >2s and release
- the LED will illuminate for 1s then begin blinking slowly ~ every 3 sec.
- click on the 'SCAN' button in the web app
- select the 'BLE-SMARTLABEL-PRO-xxxx'
- Click 'OK' and wait until the communication is established – the LED stops blinking!
  (please see the log-window on the bottom of the page)
- Start using the different features!
- The label has a built-in timer and turns off after 15 / 30 min (connected / unconnected state)
- Disconnect the BLE label and press the push-button again for >2s to turn off the label – the LED will flash 3x



1.1 Additional Information

Powering On

Press and hold the button for 1 second or longer.
The LED will illuminate for approximately 1 second and then start slowly blinking to indicate the label is advertising.

Low Battery

The battery voltage is measured when powering on to ensure there is enough capacity to operate normally.
If the battery is found to be low the LED will quickly blink 10 times and the label will then return to the
power off state. The battery threshold is set at 2Vmin.

Powering Off

When the device is advertising it can be powered off by pressing and holding the button for
1 second or longer. The LED will blink quickly 3 times and then enter the power-off state.

Timeouts

Advertising Timeout
When advertising, the label will return to the power-off state if a connection is not made within 30 minutes.
Once this period has expired the LED will blink quickly 3 times and then the label will enter the power-off state.
Connected Timeout
When connected, the label will return to the power-off state if a connection is maintained for more than 15 minutes. Once this period has expired the LED will blink quickly 3 times and then the label will enter the power-off state.

1.2 Pairing the Label

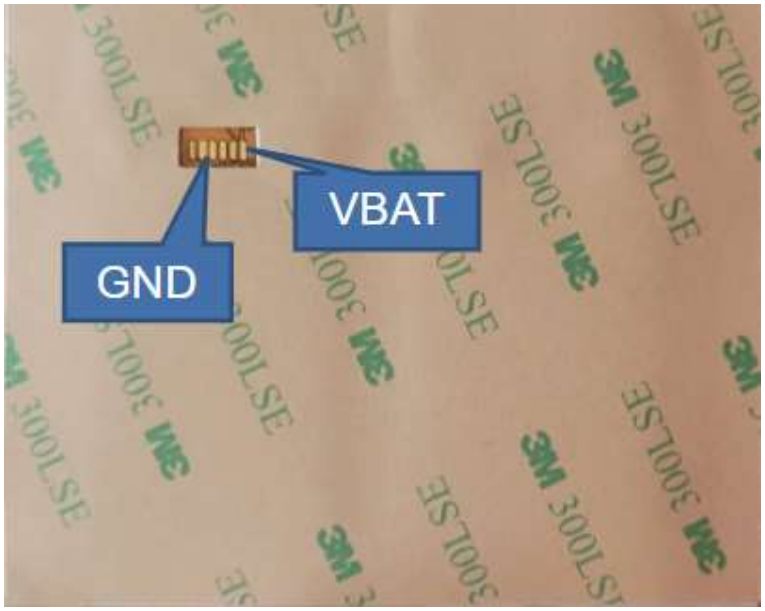
Follow these procedures to pair up the kit.
The Bluetooth LE Smart Asset Tracking Label Web Application can be used to pair the label to a PC or Android device using a Chromium-based browser such as Google Chrome or Microsoft Edge.
(Please note that the Samsung Android Internet browser does not work (V13.0.2.9))
The current web app supports the following functions:

- Pair phone – press the SCAN button and select the detected label
- Read the battery level in Volt and provide a n SoC estimate
- Set the LED state (write a value > '0' to turn ON and '0' to turn Off again)
- Read the button state
- Read the temperature
- Read the humidity
- Read the light sensor level
- Read Firmware, Software, Device Name and Appearance information
- Read the 3-axis of the accelerometer
- Conduct a Firmware Software Update Over The Air (SUOTA), providing an easy path for adding customized functions

1.3 Recharging the Imprint Battery

The used Imprint Energy battery type 8349 can be recharged.
Apply a voltage of 3.2V with ~2mA current limit and charge until the charge current drops to ~0.3mA

- The battery is UL2054 certified.
- On the right is the backside, top-up view of the label.



The connector contacts (left to right) are:
SWDIO/GND/RSWCLK/SIN/Serial Port/VBAT
DA14531 pins connected:
P0_10/GND /P0_2 / P0_0/P0_5/VBAT

2. Ordering Information

Part Number	Description
US207-TRACKLBLEVZ	Smart Asset Tracking Label Board

3. Revision History

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Contact Information

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