# LoRa® ExpLoRaBLE Thing Plus

WRL- 17506

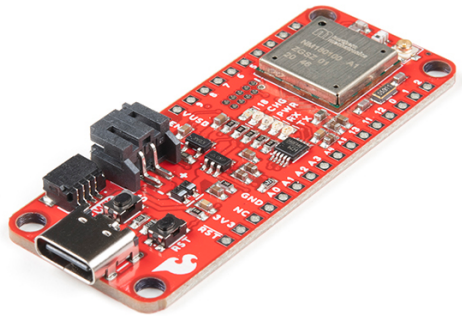
## Product Overview

09/16/2022

For the most up-to-date information, visit www.mouser.com or the supplier's website.

## Description

SparkFun LoRa® ExpLoRaBLE Thing Plus is a feather-footprint development board with the Northern Mechatronics NM180100 System in Package (SiP). This development board is equipped with a UFL connector which gives a choice between BLE and RF antennas. The LoRa ExpLoRaBLE thing plus features the NM180100, Ambiq Apollo3 microcontroller, and Semtech SX1262 LoRa transceiver. This thing plus is a highly integrated LoRa module supporting 868MHz, 915MHz bands, and Bluetooth® low energy. The ExpLoRaBLE thing plus uses the Qwiic connect system, where no soldering or shields are required to connect it to the rest of the system.



## Features

- 3.3V operating voltage (regulated from 5V USB-C™ supply)
- Battery charging circuit (500mA charge rate)
- UFL antenna connector - BLE and RF
- 24 GPIO
- Qwiic connector for I²C
- Compatible with "The Things Network" LoRaWAN

## Specifications

- Northern Mechatronics NM180100 SiP
  - 21 Multifunctional GPIO
    - Up to eight available 14-bit ADC channels
    - Up to twenty-one 16-bit PWM channels
    - Up to two UARTs
    - An available SPI Bus
    - Up to two I²C Buses
  - Thing Plus (or feather) form-factor:
    - 2.3inch x 0.9inch Dimensions

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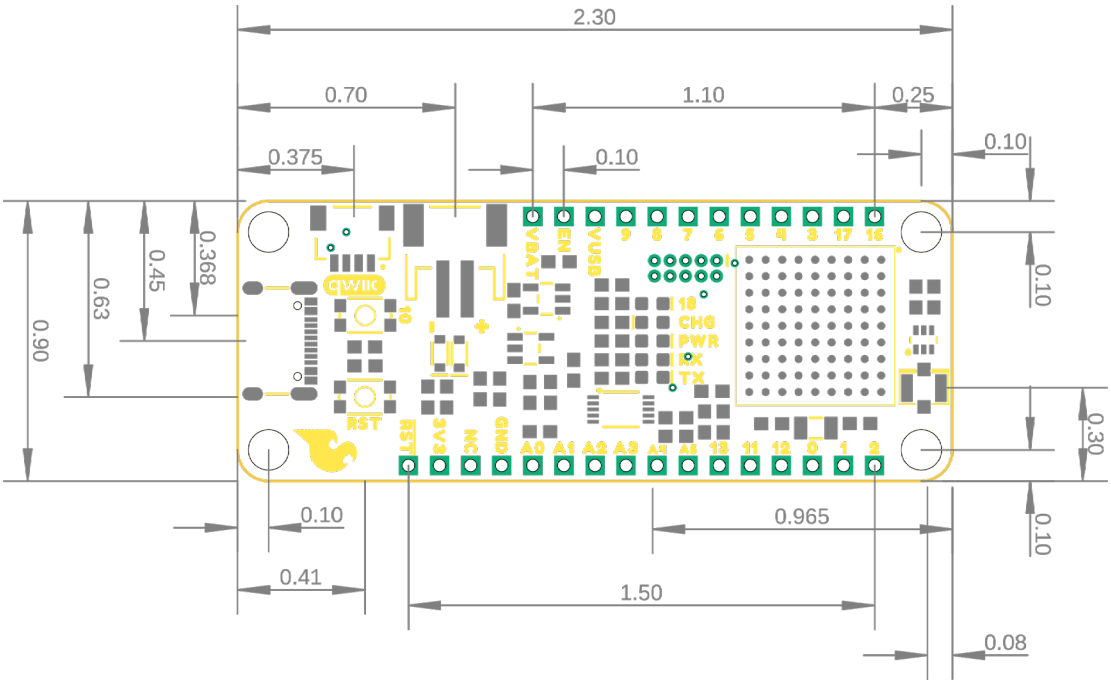
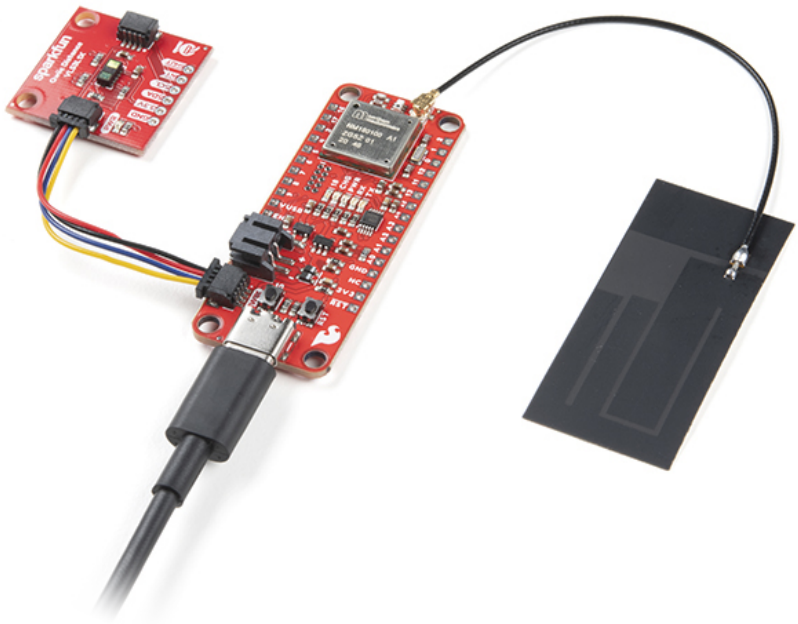
  - 2.3inch x 0.9inch Dimensions
  - Two mounting holes:
    - 4 - 40 screw compatible
    - 28 PTH Pins
    - USB-C Connector
    - 2-pin JST connector for a LiPo battery (Not included)
    - 4-pin JST Qwiic connector
- LEDs:
  - PWR - 3.3V Red power indicator
  - CHG - Yellow battery charging indicator
  - 18 - Blue status/test LED (Pin18)
  - RX - Yellow RX serial communication indicator
  - TX - Green TX serial communication indicator
- Buttons:
  - 10
  - Reset
- NM180100 SiP general specifications:
  - LoRa®:
    - 863-870MHz (Europe)
    - 902-928MHZ (US)
    - 22dBm maximum transmit power
    - -147.6dBm receiver sensitivity
  - Bluetooth® 5 low energy:
    - 2.402 to 2.480GHz
    - 2dBm maximum transmit power
    - -95dBm receiver sensitivity
  - Architecture:
    - Ambiq Apollo3 ARM® Cortex® M4 with FPU up to 96MHz
    - Arduino IDE through Apollo3 Arduino core
    - Flash 1MB on-chip with external flash support
    - 384kB RAM
  - Security:
    - ISO 7816 secure interface
    - Secure key storage:
      - Secure boot
      - Secure OTA
      - External flash Inline encryption/decryption

*The information contained in this document should be used as a guideline only.*

## Board Dimensions




## Development Board Overview



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## Mouser Part Number

View Part

To learn more, visit https://www.mouser.com/new/sparkfun/sparkfun-lora-thing-plus/

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