Tibe Lighter Bluetooth module
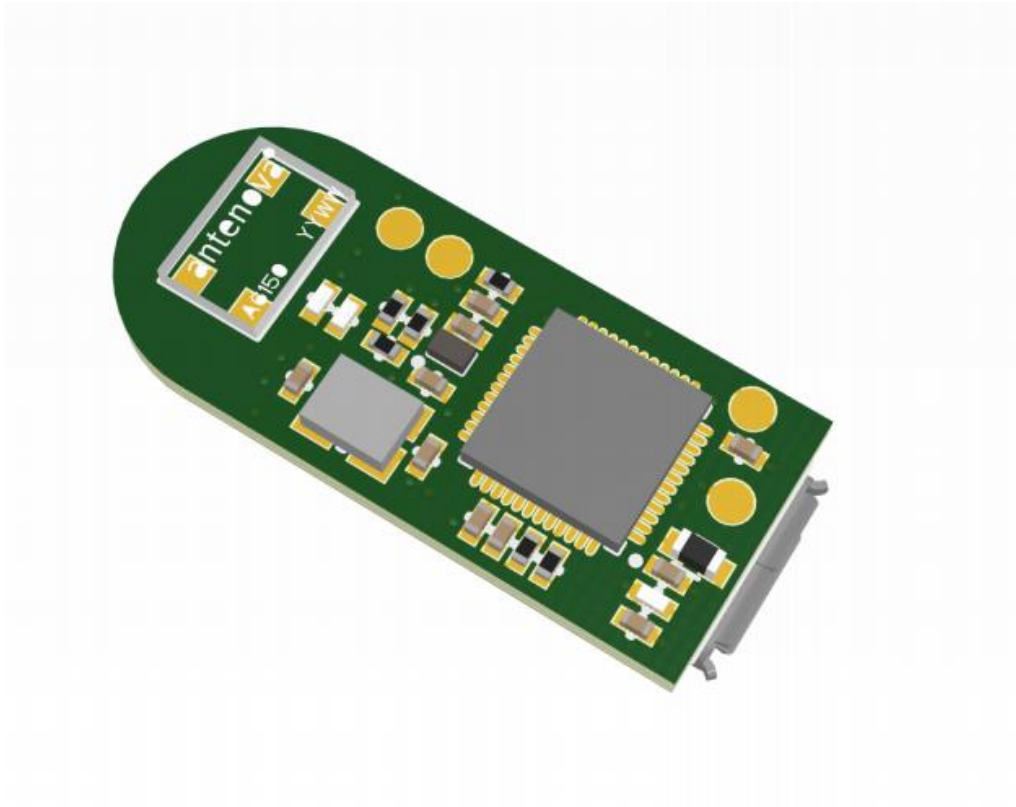
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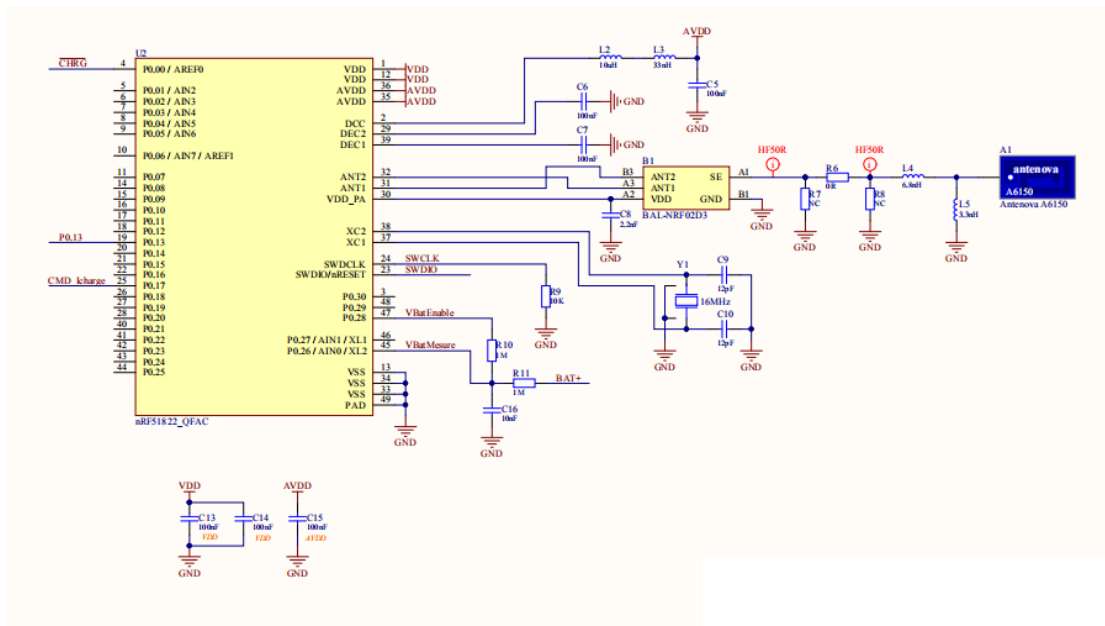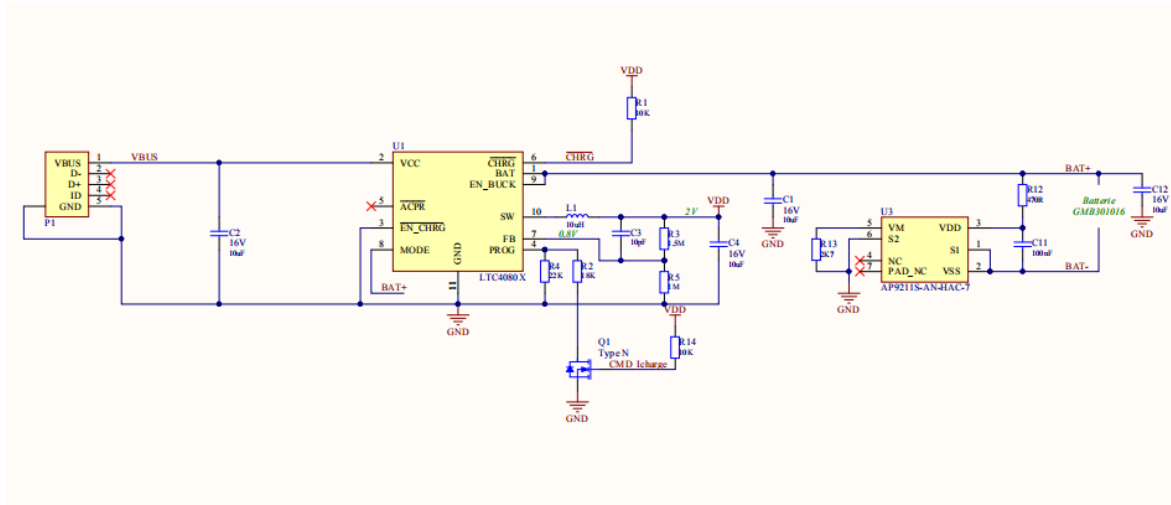**TinyBLE specs**
spring@hyyunjia.com
www.holyiot.com

Overview

Tibe Lighter which we selected Nordic nRF51822 Chip(QFAA chip) ,the Tibe Lighter is very very Tiny module , the size is just about 24.25mm*10.50 mm , just like a finger size. The Tibe Lighter is a powerful, highly flexible ultra-low power multiprotocol SoC ideally suited for *Bluetooth* low energy (previously called Bluetooth Smart),32-bit ARM ® cortex M0 ,Which support Bluetooth 4,0,BLuetooth mesh, we also layout the SWDIO,SWCLK, VCC and GND for the developer debug and program by themselves.
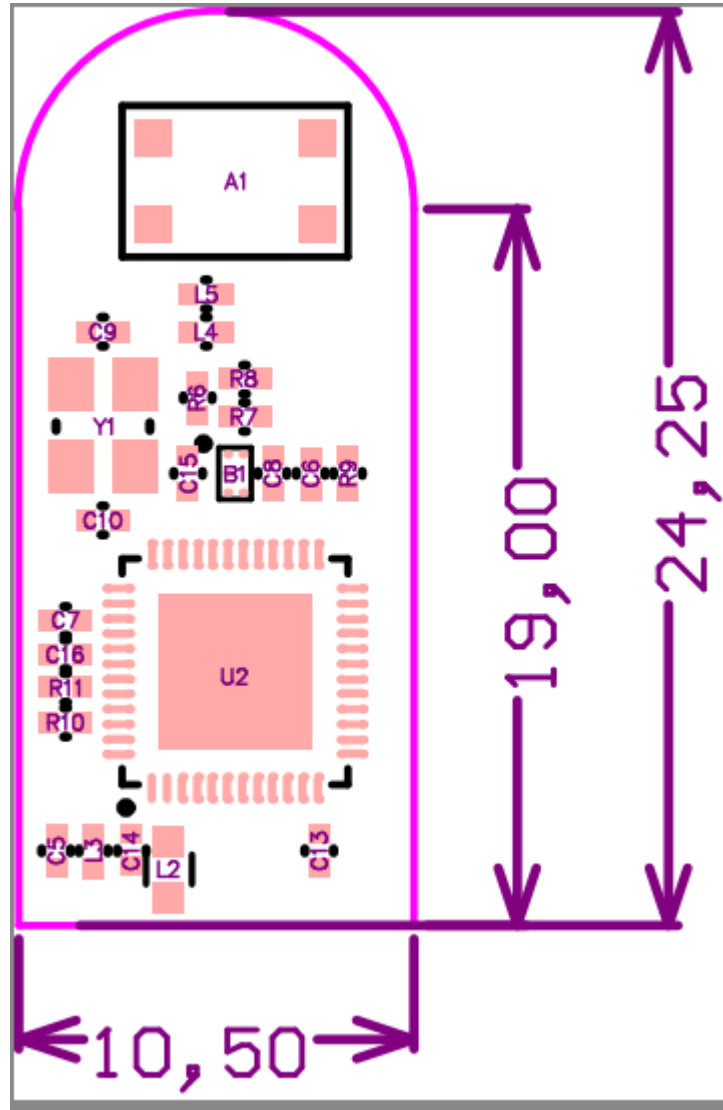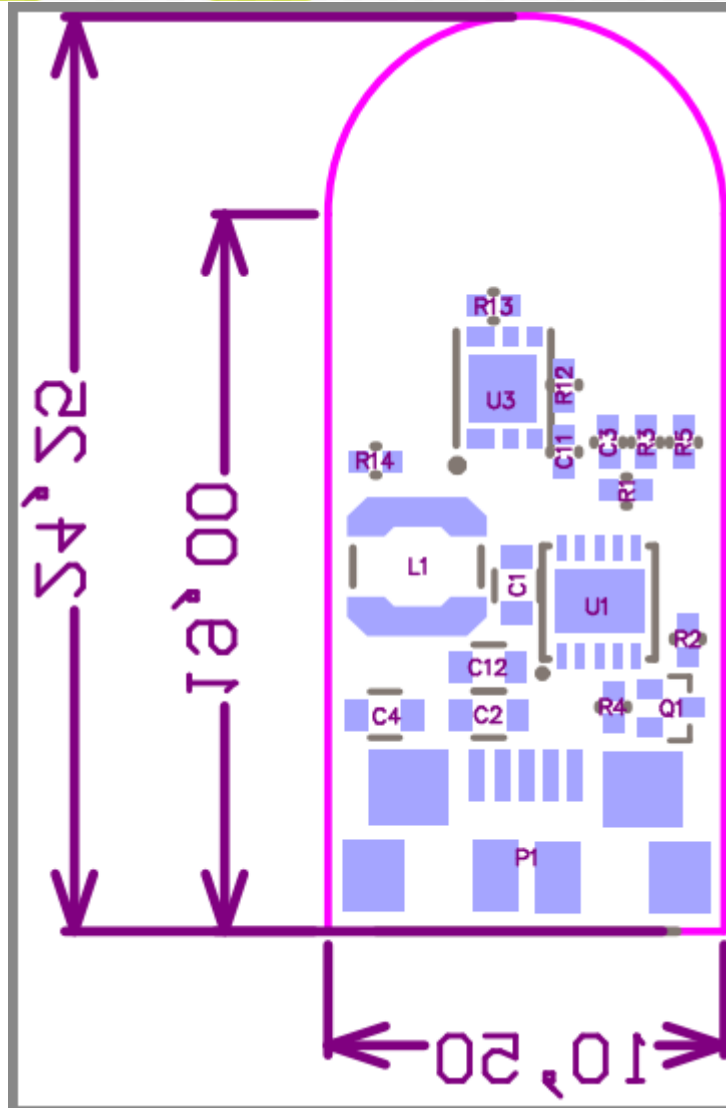
Feature

- ➢ Single chip, highly flexible, 2.4 GHz multi-protocol device

- ➢ 32-bit ARM Cortex M0 CPU core

- ➢ 256kB/128kB flash + 32kB/16kB RAM

- ➢ Supports Bluetooth low energy protocol stacks

- ➢ Thread safe and run-time protected

- ➢ Event driven API

- ➢ On air compatible with nRF24L series

- ➢ 3 data rates (2Mbps/1Mbps/250kbps)

- ➢ +4dBm output power

- ➢ -93dBm sensitivity, Bluetooth low energy

- ➢ PPI system for maximum power-efficient applications and code simplification

- ➢ Flexible power management system with automatic power management of each peripheral

- ➢ Configurable I/O mapping for analog and digital I/O
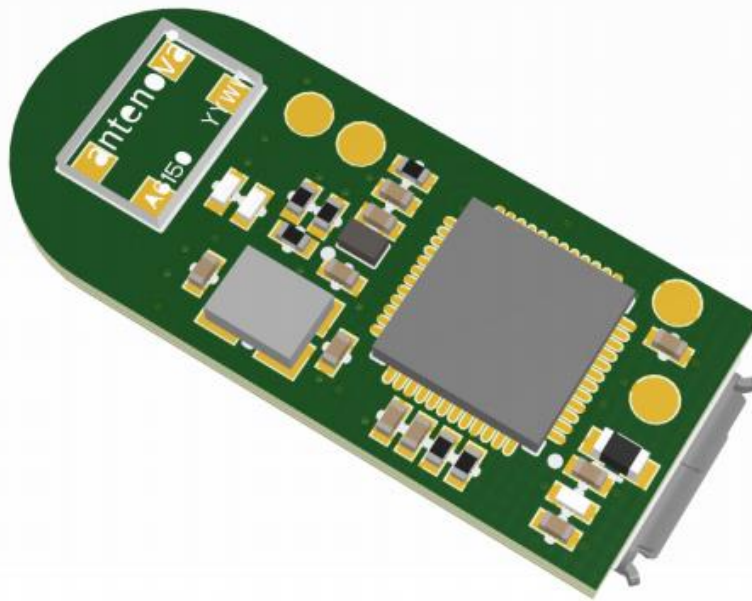
- ➢ Operating temperature range: -40 ℃ to + 85 ℃

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Schematic

PCB Layout

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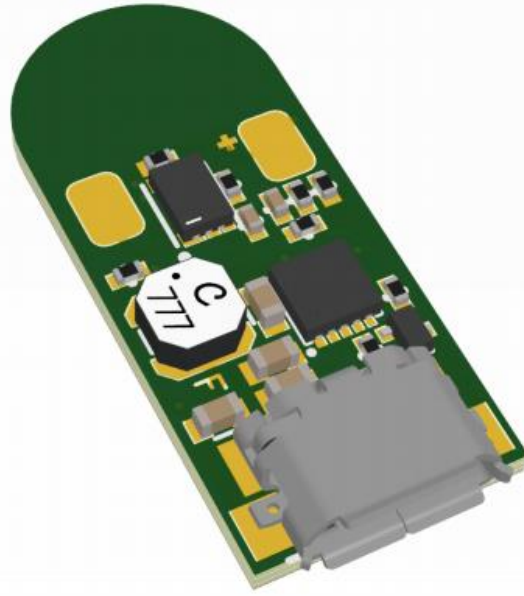
Pin definition

PIN No	PIN Definition	Description
PIN 1	VCC	Power on
PIN 13	GND	Power on
PIN 23	SWDIO	Debug/program
Pin 24	SWCLK	Debug/program

Application

Internet of Things (IoT)

Wearables

SmartHome sensors

Connected white goods

Computer peripherals

Voice-command smart remotes

A4WP 'Rezence' wireless charging

Beacons

Sports and fitness sensors and hubs

Connected health products

Smart watches

RC Toys

Interactive games

Building automation and sensor networks

About Us

We are a company who located in shenzhen ,China . we have already develop a lot of IOT products , such as smart jump rope , smart pets training, pets fitness and health tracking ,key finder for anti-lost . Smart bluetooth tag , smart sexy product . We cooperation with a lot of customers . Like south Korea , USA , Germany , Greece , Israel . We help our partner to work with the firmware code via BLE solutions . Help them solve the distance range , and let the products more low energy and battery will be last longer . We are focus on iBeacon ,eddystone , BLE bluetooth 4.0 with different sensor like temperature sensor , humidity sensor , pressure sensor , air quality sensor , accelerometer sensor (motion) such as 3-axis accekerometer 6-axis accelerometer , 9- acceleromter sensor (Gyroscope) . Barometric pressure sensor . And so on . We provide BLE solutions ,RF solutions for our customer . We can customize different firmware for our client . We provide one- stop service . Like PCB design ,PCBA layout ,PCBA produce, firmware and case   design . And work with the app developer to complete the whole solutions . From app, web applications to compatible with our firmware .

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FCC Statement:

This device complies with part 15 of the FCC Rules.

Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

---Reorient or relocate the receiving antenna.

---Increase the separation between the equipment and receiver.

---Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

---Consult the dealer or an experienced radio/TV technician for help.

Warning: Changes or modifications to this unit not expressly approved by the part responsible for compliance could void the user's authority to operate the equipment.

LABEL OF THE END PRODUCT:

The final end product must be labelled in a visible area with the following "Contains TX FCC ID:" 2ANX5-LIGHTER " If the size of the end product is smaller than 8x10cm,then additional FCC part 15.19 statement is required to be available in the users manual: This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

RF Exposure

This device has been evaluated and shown compliant with the FCC RF Exposure limits under fixed exposure conditions (antennas are greater than 20cm from a person's body) when installed in certain specific OEM configurations.

This modular complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. Due to missing shielding the module is strictly limited to integration by the Grantee himself or his dedicated OEM integrator under control of the Grantee. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed.

IMPORTANT NOTE:

This device is intended only for OEM integrators under the following conditions:
(1) According to FCC Part 15 Subpart C Section 15.212, the radio elements of the modular transmitter must have their own shielding. However, due to there is no shielding for this BT module, this module is granted as a Limited Modular Approval. This module has been designed to operate with a internal antenna having a maximum gain of 2 dBi.
(2) Integration is typically strictly restricted to Grantee himself or dedicated OEM integrators under control of the Grantee.

In the event that these conditions can not be met (for example certain laptop configurations or co-location with another transmitter. then the FCC authorization is no longer considered valid and the FCC ID can not be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

This module is intended for OEM integrator only and the OEM integrators and instructed to ensure that the end user has no manual instructions to remove or install the device. The OEM integrator is still responsible for the FCC compliance requirement of the end product, which integrates this module.

The module has no shielding and tested stand alone. This module is tested and approved as Limited modular approval with stand alone configuration, any OEM incorporated this radio module into any system are require additional testing and evaluation.

The module must in the end-product be installed in such manner that the authorized antennas can be used, any change of the antenna will void the certification.