

UTO-NBL-52A

OEM/Integrators Installation Manual

Brief

Bluetooth LE module (UTO-NBL-52A) User Manual

1. Product Information

UTO-NBL-52A is an antenna-embedded low-power Bluetooth module.

UTO-NBL-52A is a module that integrates wireless circuit, software stack and antenna for Bluetooth operation.

It is a function that can operate independently without the need of a separate external control device.

UTO-NBL-52A is applicable to Bluetooth wireless data communication for low power. It has optimal RF performance with transmit power up to +4 dBm and receive sensitivity of -93 dBm.

2. Description of operation

UTO-NBL-52A is a product using Bluetooth Low Energy Technology. The product is operating 2.4GHZ ISM frequency band and it provides a fully compliant Bluetooth specification system integrates all features of Bluetooth radio, software stack, GATT based profiles, Antenna and host end user applications, which means no external micro controller. It provides a Bluetooth Low Energy fully compliant system for a data communication. The product integrates NordicnRF52832 Bluetooth chipset, 32 MHz main clock oscillator, 32.768 KHz RTC clock oscillator and Antenna. RF signal is sent and received through Antenna.

The product is operated with 1.7 ~ 3.6V external voltage. The product has 30 PIOs.

The PIOs are functions with UART, ADC, I2C, SPI, I2S and General purpose IO.

Main core is ARM Cortex-M4. The processor implements several features that enable energy efficient arithmetic and high-performance signal processing including “digital signal processing”, “Single-cycle multiple and accumulate instructions”, “hardware divide”, “8 and 16 bit single instruction multiple data instructions”

3. Applications

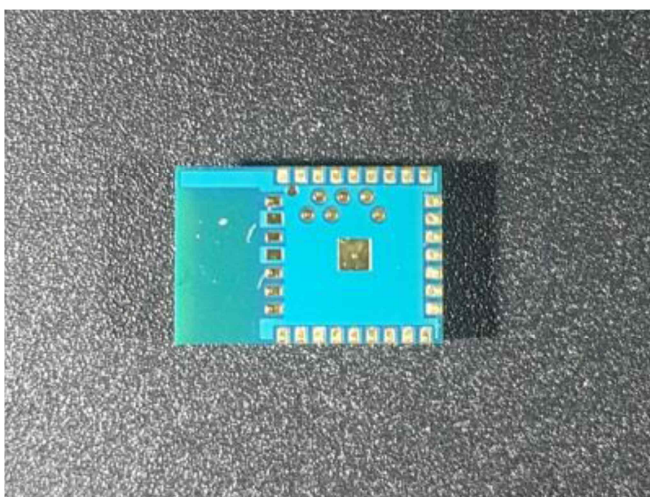
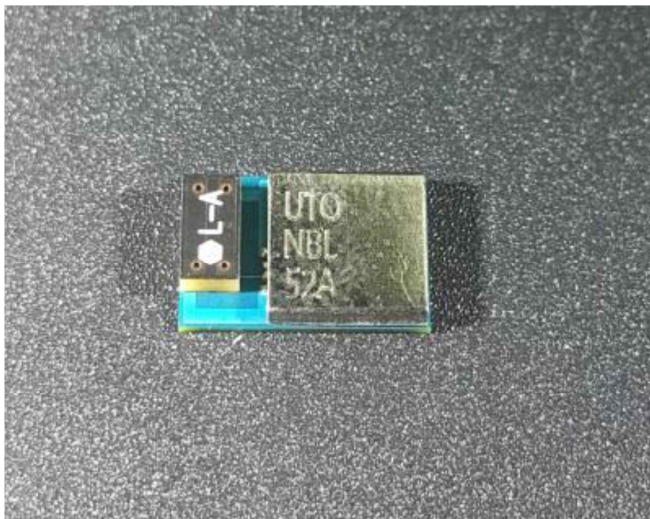
- Commercial product
- Sports and fitness
- Healthcare
- Medical Sensors
- Home Automation
- Mobile Accessories
- clock
- User reaction device

4. Product Specification

- Bluetooth V4.2 Single Mode Satisfaction
- Built-in Bluetooth Smart Stack
 - . GAP, GATT, L2CAP and SMP
 - . Bluetooth Smart profiles
- RF performance
 - . Transmission output : +4 dBm
 - . Reception sensitivity : -96 dBm

- Current consumption
 - . Transmit : 7.5 mA peak
 - . Receive : 12.9 mA peak
 - . waiting : 0.5 uA
- External interface
 - . UART/SPI(Master/Slave)/I2C
 - . GPIO
 - . 12-bit ADC
 - . I2S and PDM
 - . timer
 - . temperature Sensor
 - . Power supply : 1.7 ~ 3.6 V
 - . Size : 5.9 x 8.9 x 1.9 mm (W x L x H)

5. Product Photos



6. Warranty and AS information

Warranty Year

If the product does not work, please ask for A/S on the contact below.

Brand Name: Utovertek

Address: Rm210, KETI Business Incubator, 25 seonari-ro, Bundang-gu, Seongnam-si, Gyeonggi-do 463-816 Korea

Tel: 82-31-609-0703

Product name: BLE module

Model number: UTO-NBL-52A

Manufacturer / Country of Origin: Utovertek Co., Ltd. / Korea

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4. Warranty and AS information

FCC REQUIREMENTS PART 15

Caution: Any changes or modifications in construction of this device which are not expressly approved by the responsible for compliance could void the user's authority to operate the equipment.

NOTE: 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 interface, and
2. This device must accept any interference received, including interference that may cause undesired operation.

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 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 radio or television off and on, the user is encouraged to try to correct interference by one or more of the following measures.

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on another circuit.
4. Consult the dealer or an experienced radio/TV technician for help.

The module is limited to OEM installation ONLY.

OEM integrators are responsible for ensuring that the end-user has no manual instructions to remove or install module.

This module is intended for OEM integrator. The OEM integrator is responsible for the compliance to all the rules that apply to the product into which this certified RF module is

integrated. Additional testing and certification may be necessary when multiple modules are used.

In the users manual of the end product, the end user has to be informed to keep at least 20 cm separation with the antenna while this end product is installed and operated. The end user has to be informed that the FCC radio-frequency exposure guidelines for an uncontrolled environment can be satisfied.

The end user has to also be informed that any changes or modifications not expressly approved by manufacturer could void the user's authority to operate this equipment.

If the labelling area is small than the palm of the hand, then additional FCC part 15.19 statement is required to be available in the users manual: This device complies with Part 15 of 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.

The final end product must be labeled in a visible area with the following "contains Transmitter Module FCC ID: SX8UTO-NBL-52A

If the labelling area is larger than the palm of the hand, then the following FCC part 15.19 statement has to also be available on the label: This device complies with Part 15 of 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.

The module is limited to installation in mobile or fixed applications, according to Part 2.1091(b)

Separate approval is required for all other operating configurations, including portable configuration with respect to Part 2.1093 and different antenna configuration.