I-SENS i-BLE 2 Module

Contents [hide]

Introduction

The i-sen’s i-BLE 2 module is a Bluetooth Low Energy (BLE) 5.3 module. This module is mounted on i-sen’s products (such as glucose monitoring system) to transmit data quickly and conveniently

Hardware Architecture

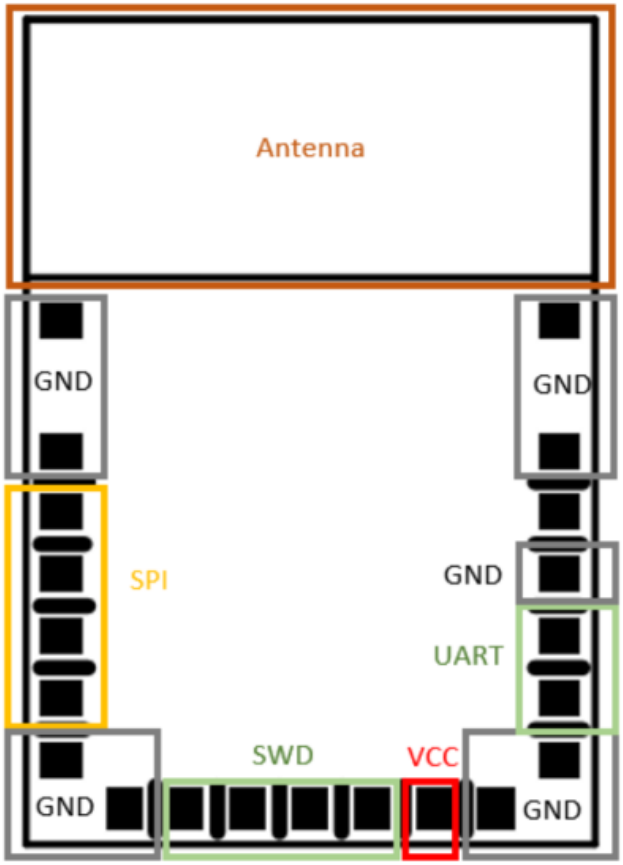
Main Module / Chipset Information

- Core Chipset: CC2340R5, Texas INSTRUMENTS , 2.4GHz RF transceiver compatible with Bluetooth Low Energy (BLE) 5.3 specification.
- Antenna: PCB pattern Antenna for 2.4GHz Band.

Install

This i-BLE 2 module must be installed in a device and not allow the user to replace nor modify it.

- **Figure 2**. Solder PAD



PIN Description

Pin NO.	Pin Name	Signal name
1	GND	GND
2	SPI_CLK	SPI Interface
3	SPI_CS	SPI Interface
4	SPI_POCI	SPI Interface
5	SPI_PICO	SPI Interface
6	GND	GND
7	GND	GND
8	DIO_0	Bootloader trigger
9	SWDIO	SWD Interface

10	SWDCLK	SWD Interface
11	/RST	Reset
12	DVCC	Power
13	GND	GND
14	GND	GND
15	UART_RX	UART Interface
16	UART_TX	UART Interface
17	GND	GND
18	NC	N.C.
19	GND	GND
20	GND	GND
21	GND	GND

Click Spec

- **Frequency used:** 2402 to 2480 MHz
- **Output:** 0.016 W
- **Propagation Format**: F1D
- **Oscillation method**: X-TAL
- **Modulation:** GFSK
- **Data Rate**: 1 Mbps Only
- **Communication method**: Iterative communication
- **Number of channels**: 40CH
- **Power source**: DC 3V
- **Dimensions:** 11(W)mm*16(L)mm*2.5(H)mm
- **Operating temperature, humidity**: -40℃ ~ +85℃ , 0 ~ 95
- **Storage temperature**: Indication of conformance assessment

- Name of equipment (model name): Certain small power radios (radios for wireless data communication systems) (BM002)
- Authentication number:
- **Company name:** i-sens
- **When manufactured:** December, 2024.
- **Manufacturer, Country of Manufacture:** i-sens / South Korea
  The radio apparatus cannot provide services related to life safety due to possible radio interference.

Compliance Statements

FCC

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.

Changes or modifications not expressly approved by the manufacturer (or party responsible) for compliance could void the user’s authority to operate the equipment

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.

IC

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada’s licence-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

Oem Integration Instructions

This device is intended only for OEM integrators under the following conditions:

The transmitter module may not be co-located with any other transmitter or antenna. The module shall be only used with the internal on-board antenna that has been originally tested and certified with this module.

External antennas are not supported. As long as these 2 conditions above are met, further transmitter test will not be required.

However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed (for example, digital device emissions, PC peripheral requirements, etc.). The end-product may need Verification testing, Declaration of Conformity testing, a Permissive Class II Change or new Certification. Please involve a FCC certification specialist in order to determine what will be exactly applicable for the end-product.

- **Must list of Applicable FCC Rule**

  The modular transmitter is only FCC and ISED authorized for FCC Part 15C and ISED RSS-247. The host product manufacturer is responsible for compliance to any other FCC rules that apply to the host not covered by the modular transmitter grant of certification
- **RF Exposure Conditions**

  co-location of this module with other radio transmitters will require additional assessment and possible certifications for FCC and ISED in accordance to FCC and ISED RF Exposure multi-transmitter procedures
- **Antennas**

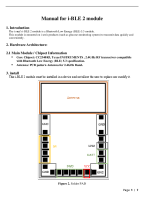
  This module uses a trace antenna located on the PCB of module and cannot use any other external antenna.
- **Label and Compliance Information**

  The host system using this module, should have label in a visible area indicated the following texts: “Contains FCC ID: OELBM002” & “Contains IC: 21003-BM002”.
- **Additional Testing, Part 15 Subpart B Disclaimer**

  The final host product still requires Part 15 Subpart B compliance testing with the modular transmitter installed.
- EMI Considerations

  A host manufacture is recommended to use KDB 996369 D04 Module Integration Guide recommending as “best practice” RF design engineering testing and evaluation in case non-linear interactions generate additional non-compliant limits due to module placement to host components or properties For standalone mode, reference the guidance in KDB 996369 D04 Module Integration Guide and for simultaneous mode; see KDB 996369 D02 Module Q&A Question 12, which permits the host manufacturer to confirm compliance.

Documents / Resources

	I-SENS i-BLE 2 Module [pdf] User Manual BM002, OELBM002, i-BLE 2 Module, i-BLE 2, Module

References

- User Manual

BM002, i-BLE 2, i-BLE 2 Module, i-sens, Module,
i-sens OELBM002

—Previous Post
i-sens CareSens N Plus Bluetooth Blood Glucose Monitor User Manual

Leave a comment

Your email address will not be published. Required fields are marked *

Comment *

Name

Email

Website

Save my name, email, and website in this browser for the next time I comment.

Post Comment

Search:

e.g. whirlpool wrf535swhz

Search