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User Manual

TD-9050A

Brand Name: TaiDoc

Version 1.0
2021-10

Description:

The TD-9050A is a low power and low costs Bluetooth 5.1 BLE module based on the Powerful Arm[®] Cortex[®]-M3 CPU .Perfect for communication and cable replacement between your device and a smartphone, computer or other devices. It is easy to setup and use thanks to real and virtual UART interface.

Key Features

- 2.4-GHz RF transceiver compatible with Bluetooth low energy 5.1
- Excellent receiver sensitivity (-97dBm for BLE), selectivity, and blocking performance
- 125 kbps, 500 kbps, 1 Mbps, 2 Mbps supported data rates
- Programmable output power up to +5 dBm
- Active-mode RX: 5.9 mA
- Active-mode TX at 0 dBm: 6.1 mA
- Active-mode TX at +5 dBm: 9.1 mA
- 12-bit ADC, 200-ksamples/s, 8-channel analog MUX
- 275KB of nonvolatile memory including 128KB of in-system programmable flash
- Up to 28KB of system SRAM, of which 20KB is ultra-low leakage SRAM
- UART, I²C, and I2S
- AES-128 security module

Applications

- Medical devices
 - SpO2

1. Pinout and Terminal Description

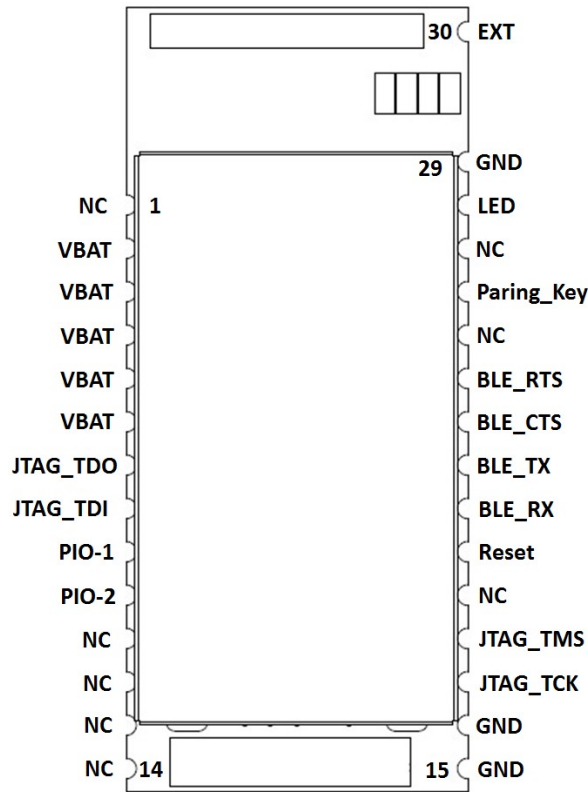


Figure 1: Pinout

Pin	Symbol	I/O Type	Description
1	NC	NC	Not Connect
2	VBAT	P	Power input
3	VBAT	P	Power input
4	VBAT	P	Power input
5	VBAT	P	Power input
6	VBAT	P	Power input
7	JTAG_TDO	I/O	GPIO, JTAG_TDO
8	JTAG_TDI	I/O	GPIO, JTAG_TDI
9	PIO-1	I/O	GPIO
10	PIO-2	I/O	GPIO
11	NC	NC	Not Connect
12	NC	NC	Not Connect
13	NC	NC	Not Connect
14	NC	NC	Not Connect

15	GND	P	GND
16	GND	P	GND
17	JTAG_TCK	I/O	JTACK Clock
18	JTAG_TMS	I/O	JTACK Data
19	NC	NC	Not Connect
20	Reset	I	RESET, active-low
21	BLE_RX	I	UART RX
22	BLE_TX	O	UART TX
23	BLE_CTS	O	UART CTS
24	BLE_RTS	I	UART RTS
25	NC	NC	Not Connect
26	Parinig_Key	I	GPIO
27	NC	NC	Not Connect
28	LED	O	LED indicator
29	GND	P	GND
30	EXT	O	TEST

2. Power supply

The module accept 3.0V to 3.3V DC voltage input , power supply should guarantee good ripple suppression and enough current.

3. Antenna

The module integrates a chip antenna so there's no need to use antenna on customer's PCB.

4. UART interface

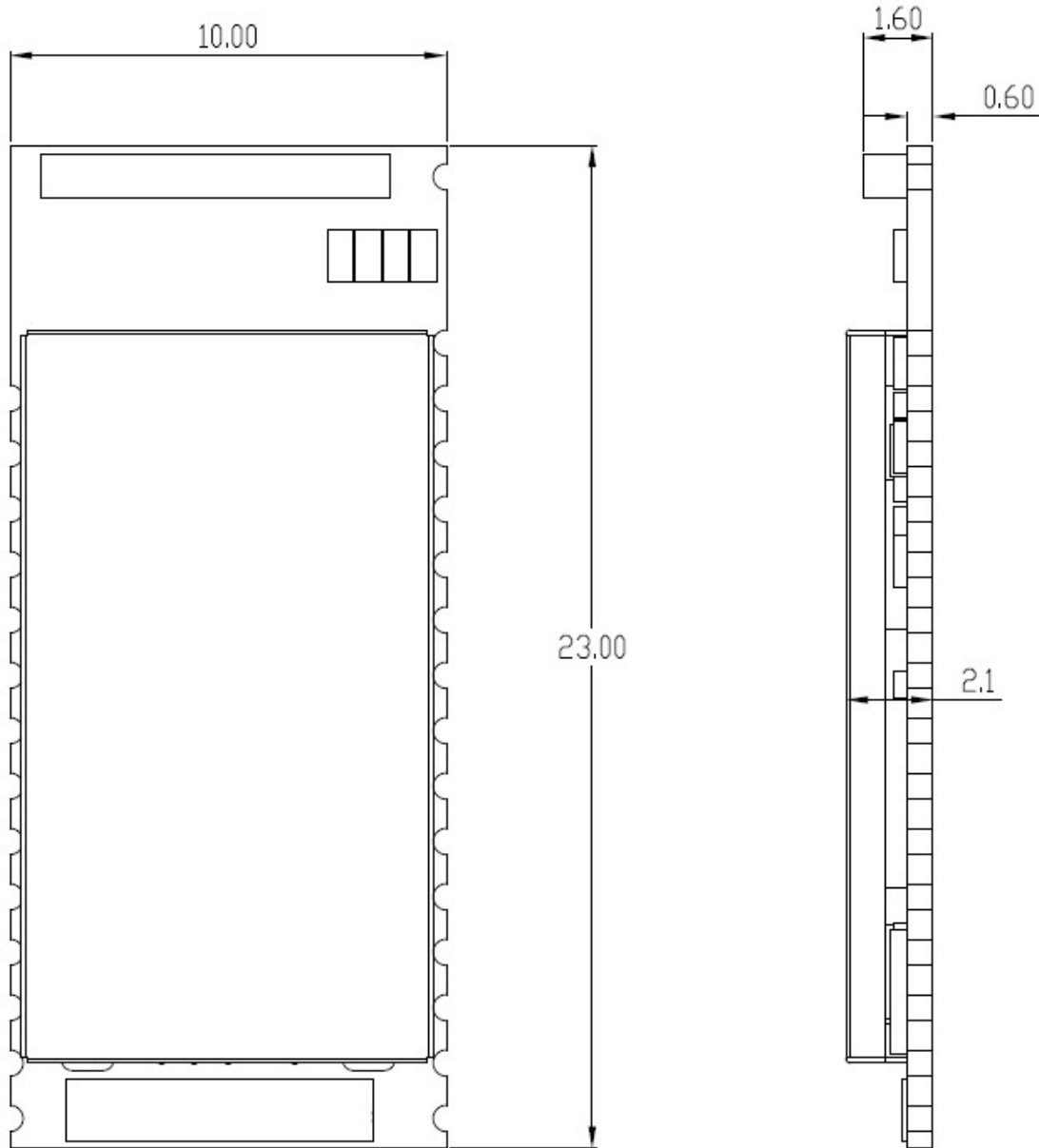
This is a standard UART interface for communicating with other serial devices. The UART interface provides a simple mechanism for communicating with other serial devices using the RS232 protocol.

The UART CTS and RTS signals can be used to implement RS232 hardware flow control where both are active low indicators.

Default parameter set is baud rate : 115200, data bit : 8, parity bit : n, stop bit :

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5. Dimension



FEDERAL COMMUNICATIONS COMMISSION (FCC) STATEMENT

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.

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.

FCC RF Radiation Exposure Statement:

1. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
2. This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance.

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, and
2. This device must accept any interference, including interference that may cause undesired operation of the device.

L' émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d' Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L' exploitation est autorisée aux deux conditions suivantes :

1. l'appareil ne doit pas produire de brouillage, et
2. l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Caution: Exposure to Radio Frequency Radiation

1. To comply with the Canadian RF exposure compliance requirements, this device and its antenna must not be co-located or operating in conjunction with any other antenna or transmitter.
2. To comply with RSS 102 RF exposure compliance requirements, a separation distance of at least 20 cm must be maintained between the antenna of this device and all persons.

Attention: exposition au rayonnement radiofréquence

1. Pour se conformer aux exigences de conformité RF canadienne l'exposition, cet appareil et son antenne ne doivent pas être co-localisés ou fonctionnant en conjonction avec une autre antenne ou transmetteur.
2. Pour se conformer aux exigences de conformité CNR 102 RF exposition, une distance de séparation d'au moins 20 cm doit être maintenue entre l'antenne de cet appareil et toutes les personnes.

NCC 低功率警語

LP0002 低功率射頻器材技術規範_章節 3.8.2

取得審驗證明之低功率射頻器材，非經核准，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。低功率射頻器材之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前述合法通信，指依電信管理法規定作業之無線電通信。低功率射頻器材須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

此模組於取得認證後將依規定於模組本體標示審驗合格標籤，並要求平台廠商於平台上標示

『內含發射器模組：』

或相似含意的標示