

TRZB16 Datasheet

V1.1

2025/3/5

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Develop, revise and abolish the resume

version number	Main changes	status	time	remarks
V1.0	first draft	first publish	2024.4.23	
V1.1	Increase FCC&IC aphorism		2025.6.5	

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一、summary

TRZB16 the module supports Zigbee3.0 and BLE5.0 protocols, with 132KB RAM, 192KB ROM, 1Kb eFuse and a maximum main frequency of 144MHz. Figure 1a and b below are the module diagrams.

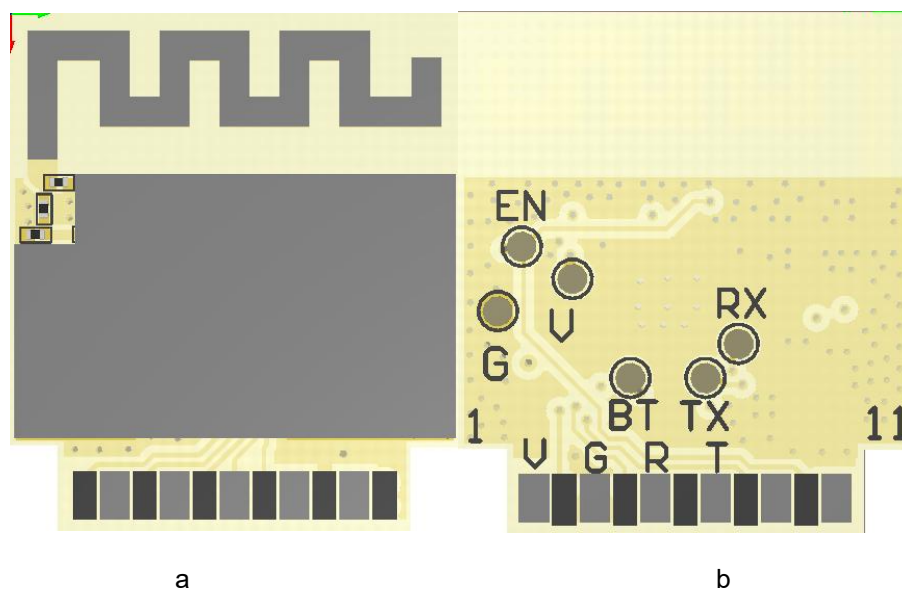


Figure 1

二、interface specification

(1) PIN interface

11PIN See the following table for the definition of pad interface1:

Table 1

Module pins	Pin name	IO type	describe
1	VDD	P	Module power supply input, typical application 3.3V power supply
2	LED1	I/O	Main chip GPIO1, PWM1
3	GND	P	Module power ground
4	LED2	I/O	Main chipGPIO0, PWM0
5	RX	I/O	Main chipGPIO27, UART RX
6	RELAY1	I/O	Main chipGPIO26
7	TX	I/O	Main chipGPIO25, UART TX
8	ADC	I/O	Main chipGPIO7
9	RELAY2	I/O	Main chipGPIO24

10	RST	/	Main chip PU_CHIP Pin, internal pull-up of the module, high level enable
11	KEY	I/O	Main chipGPIO23

(2) testpoint

See Figure 1b. The test points on the back of the module are used for product production and debug, as shown in Table 2 below:

Table 2

serial number	Pin name	describe
1	V	VDD, Module 3 is powered by 3V。
2	G	GND, Module power ground。
3	RX	Main chipGPIO15 (RX) , Special burn and debug functions are used。
4	TX	Main chipGPIO14 (TX) , Special burn and debug functions are used。
5	BT	Main chipGPIO28 (Boot) : The initial low level of power is turned on to enter the normal working mode; Enter the Flash burning mode with the initial high level of power supply.
6	EN	Main chipPU_CHIP Pin, internal pull-up high level enable of the

三、key parameter

See Table 3 below for the main parameters of the module.

表 3

characteristic	parameter	minimum	typical	maximum	test condition
supply voltage	VDD	2.7V	3.3V	3.5V	T=25°C Main chipbuilt-in Flash , voltage $\geq 2.7V$
operating temperature range	T _{Opr}	-20°C	25°C	85°C	VDD=3.3V
Output voltage high	V _{OH}		0.9VDD		VDD=3.3V,T=25°C
Output voltage low	V _{OL}		0.1VDD		VDD=3.3V,T=25°C
Input voltage high	V _{IH}	0.7VDD			VDD=3.3V,T=25°C
Input voltage low	V _{IL}			0.3VDD	VDD=3.3V,T=25°C
RF TX	mA		45		VDD=3.3V,T=25°C, 14dBm
RF RX	mA		3.5		

四、Mechanical dimensions

See Figure 2 below for the mechanical size of the module.

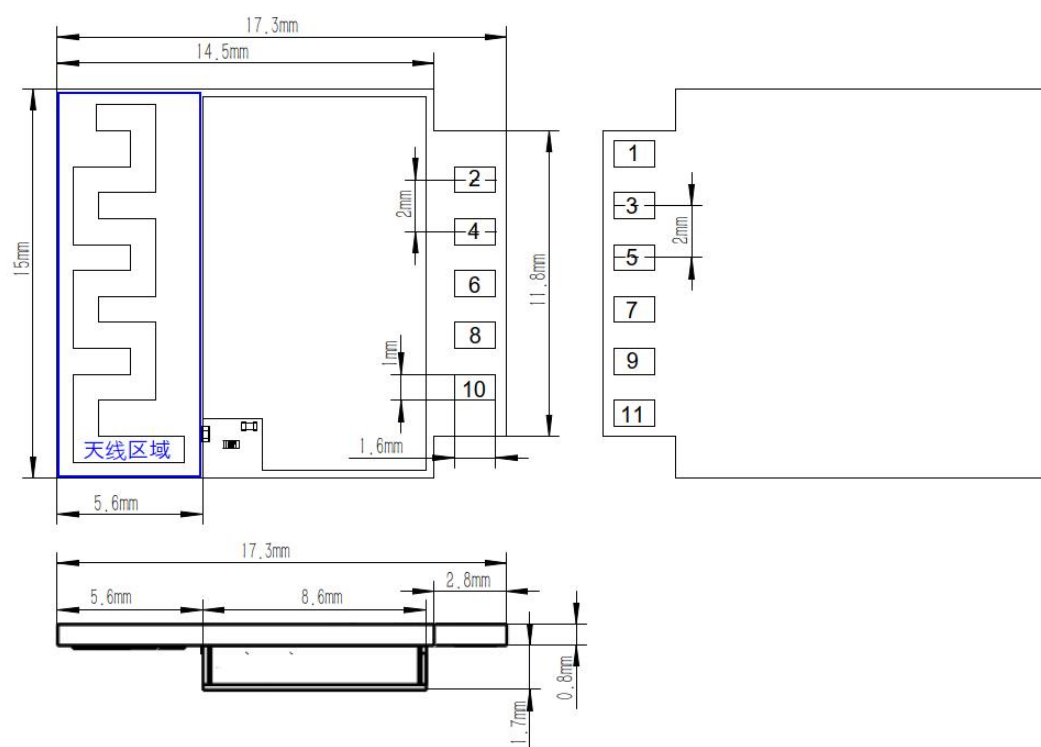


图 2

五、package

See Figure 3 below for PCB packaging recommendations.

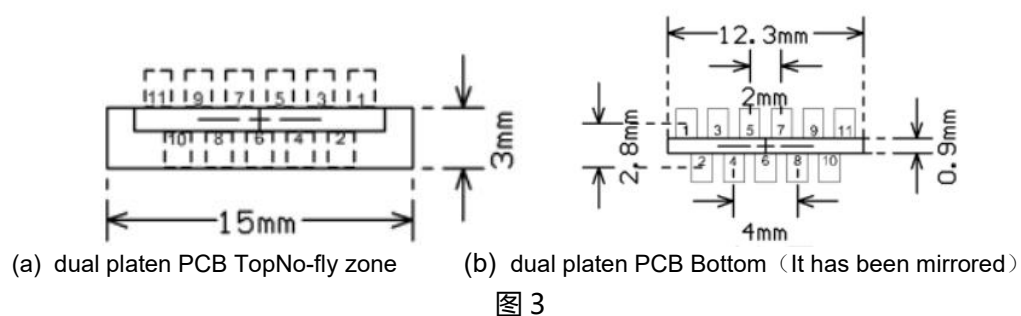


图 3

六、 antenna

(1) Antenna type

TRZB16 The module is a board mounted PCB antenna.

(2) Antenna description

To maximize the radiation effect of the antenna, it is recommended:

- ① The spatial three-dimensional distance between the module antenna area and the metal parts of the user product (such as shell positioning screws, power wires, signal wires, hardware parts, etc.) is at least 6~15mm;
- ② The user PCB board shall not have PCB traces or copper plating in the area directly below the module antenna and around 6mm;
- ③ The module is located at one corner or one side of the product, and the antenna area is external to the user.

七、 contact us

Business and technical support: 15996846172

FCC Statement

FCC standards: FCC CFR Title 47 Part 15 Subpart C Section 15.247

Device is equipped with PCB antenna , Antenna gain -5.31dBi

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.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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.

FCC Radiation Exposure Statement

If the FCC identification number is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. This exterior label can use wording such as the following: “Contains Transmitter Module FCC ID: 2BOSO-TRZB16 Or Contains FCC ID: 2BOSO-TRZB16”

When the module is installed inside another device, the user manual of the host must contain below warning statements;

1. 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;
- (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.

2. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

The devices must be installed and used in strict accordance with the manufacturer's instructions as described in the user documentation that comes with the product.

Any company of the host device which install the modular with modular approval should perform the test of radiated & conducted emission and spurious emission, etc. according to FCC part 15B Class B requirement, Only if the test result comply with FCC part 15B Class B requirement, then the host can be sold legally.

IC STATEMENT

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

Cet appareil contient des émetteurs / récepteurs exemptés de licence conformes aux RSS (RSS) d'Innovation, Sciences et Développement économique Canada. Le fonctionnement est soumis aux deux conditions suivantes :

- (1) Cet appareil ne doit pas causer d'interférences.
- (2) Cet appareil doit accepter toutes les interférences, y compris celles susceptibles de provoquer un fonctionnement indésirable de l'appareil.

IC Radiation Exposure Statement

This modular complies with IC 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.

If the IC number is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. This exterior label can use wording such as the following:

“Contains IC: 33844-TRZB16”

when the module is installed inside another device, the user manual of this device must contain below warning statements;

1. 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.

2. Cet appareil contient des émetteurs / récepteurs exemptés de licence conformes aux RSS (RSS) d'Innovation, Sciences et Développement économique Canada. Le fonctionnement est soumis aux deux conditions suivantes :

- (1) Cet appareil ne doit pas causer d'interférences.
- (2) Cet appareil doit accepter toutes les interférences, y compris celles susceptibles de provoquer un fonctionnement indésirable de l'appareil.

The devices must be installed and used in strict accordance with the manufacturer's instructions as described in the user documentation that comes with the product