TRZB1 Hardware Specification

V1.0

2023/07/1

1、Overview

The TRZB1 module is a TLSR8258F1KET32 main chip designed to provide highly integrated and ultra-low-power application functions. Typical products are smart sockets, smart sensors, smart curtains, Bluetooth scales, etc.

Figure 1

2、 GPIO Description

Table 1

PIN	Function	Orientation	Description
1	ADC	I/O	Chip PC4, ADC acquisition port, 10bit, 12bit, 14bit optional
2	NC1	/	Empty
3	RST	I	Module Pin 22,Module reset pin, and the effective reset of the low level
4	NC2	/	Empty
5	PA1	I/O	Chip PA1，GPIO
6	PC2	I/O	Chip PC2，GPIO
7	UTX	O	Chip PB1，Module UART1 data output
8	URX	I	Chip PC3，Module UART1 data input
9	PB6	I/O	Chip PB6，GPIO
10	PWM3	I/O	Chip PD2，PWM output function
11	PWM1_N	I/O	Chip PD3，PWM output function
12	LOG	O	Chip PA0，The module serial port Log output, baud rate 10000
13	SWS	I/O	Module single-wire debugging interface
14	PD7	I/O	Chip PD7，GPIO
15	PB7	I/O	Chip PB7，GPIO
16	PC0	I	Chip PC0，GPIO
17	VDD	-	Bluetooth module power input, 2.0V ~ 3.4V.
18	GND	-	Power Ground.
19	PWM5	O	Chip PB5，PWM output function
20	PWM4	I/O	Chip PB4，PWM output function
21	PWM2_N	I	Chip PD4，PWM output function
22	RST	I	Module reset pin, effective reset low
23	NC3	/	NC3
24	NC4	/	NC4
25	PC1	I/O	Chip PC1，GPIO
26	NC5	/	NC5
27	NC6	/	NC6

3、Main Parameters

Table 2

Characteristic	Parameter	Min	Typical	Max	Test conditions
Supply voltage	VDD	2.0V	3.3V	3.5V	T=25℃
Supply rise time (from 1.6V to 1.8V)	t_R	/	/	10 ms	T=25℃
Operating temperature	T_{Opr}	-40°C	20°C	85°C	VDD=3.3V
RX current	I_{Rx}	/	5.3mA	/	Whole Chip (VDD=3.3V, T=25℃)
TX current	I_{Tx}	/	4.8mA	/	Whole chip @ 0dBm with DCDC (VDD=3.3V, T=25℃)
Deep sleep with 32kB SRAM retention	I_{Deep}	/	1.4uA	3.5uA	Without 32K RC (VDD=3.3V, T=25℃)
Frequency range	2400MHz~2483.5MHz				

4、Mechanical Dimensions

See Figure 2 below for details, which is the mechanical dimension diagram of the module.

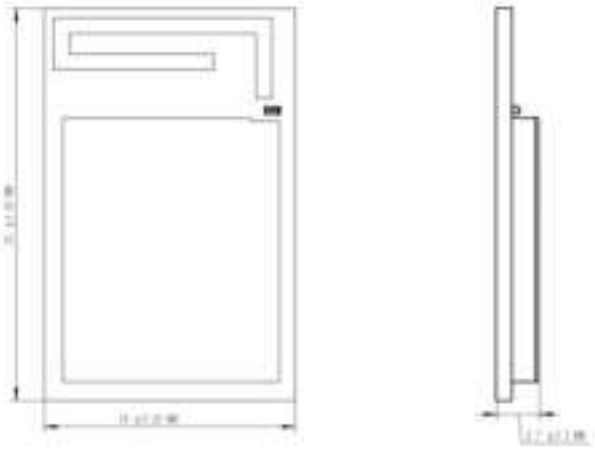

Figure 2

5、Packaged

See Figure 3 below for details, and schematic encapsulation is recommended.

Figure 3

See Figure 4 below for details, recommended PCB package size drawing.

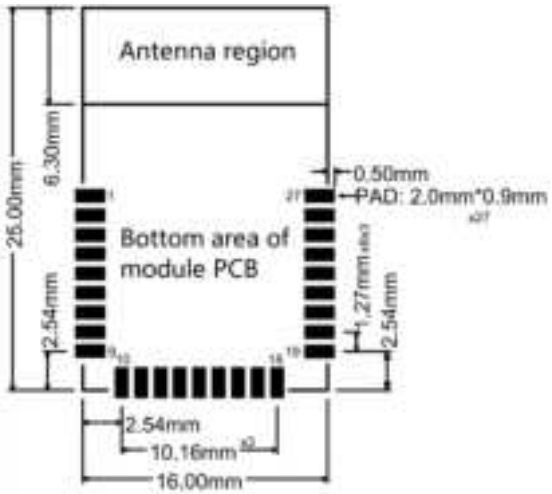

Figure 4

6、Installation

In order to ensure the radiation effect of the antenna to the greatest extent, it is recommended that:

① The three-dimensional distance between the antenna area of the module and the metal parts of the user's products (such as shell positioning screws, power wires, signal wires, hardware, etc.) should be at least 6~15mm;

② The user's PCB board should be directly below the module antenna area and in the surrounding 6mm area, and the PCB should not be traced or copper poured;

③ The module is located in one corner or one side of the product, and the antenna area is external and to the user.

As shown in Figure 5 and Figure 6, Figure 5 is preferred.

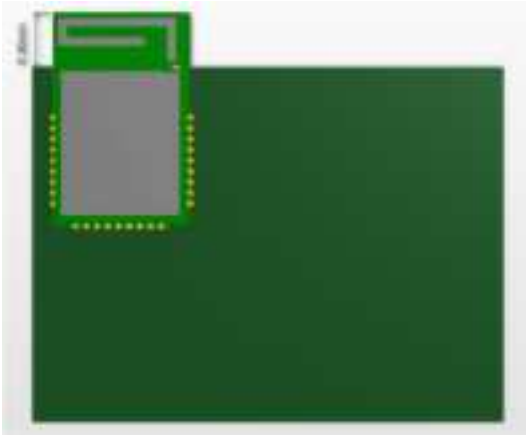

Figure 5

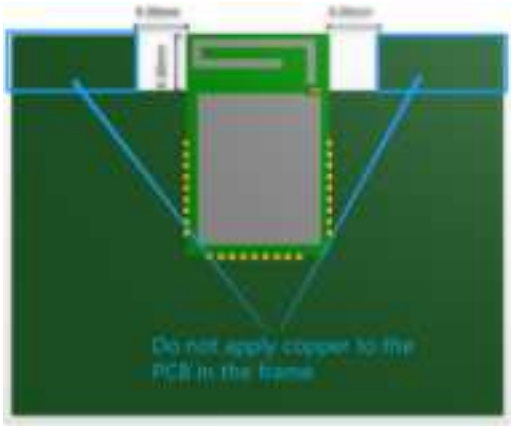

Figure 6

7、Reference Design

The external reference circuit of the TRZB1 module is shown in Figure 7 below.

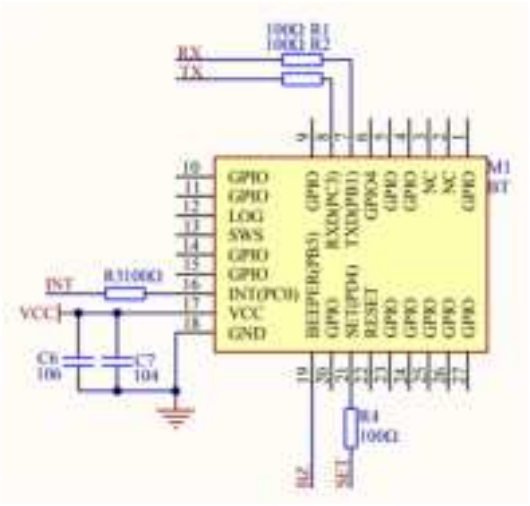

Figure 7

8、Packaging Information

The number of packages is shown in the table below:

Model	MOQ (pcs)	Packing	Modules/Reel	Reels/Box	Remark
TRZB1	3250	Tape reel	650	5	PCB ANT

9 Contact us

The company's official website: www.3reality.com
Business & Technical Support: support@3reality.com

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.

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 important announcement

Radiation Exposure Statement

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

This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The availability of some specific channels and/or operational frequency bands is country-dependent and firmware programmed at the factory to match the intended destination.

The firmware setting is not accessible by the end-user.

The final end product must be labeled in a visible area with the following:

Contains Transmitter Module: 2BAGQ-TRZB1

This radio module must not be installed to co-locate and operating simultaneously with other radios in the host system, additional testing and equipment authorization may be required to operate simultaneously with other radios.