



# **TRZB2 Module datasheet**

**V1.0**  
**2023/06/01**

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## Revision

| Rev. | Major changes   | State    | Date       | Remark |
|------|-----------------|----------|------------|--------|
| V0.1 | First draft     | Draft    | 2022.03.20 |        |
| V1.0 | Initial release | Starting | 2023.06.01 |        |
|      |                 |          |            |        |

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## 1、 Overview

The TRZB2 module contain a TLSR8258F1KET32 chip, designed to provide highly integrated, ultra-low-power application functions. Typical products are smart sockets, smart sensors, smart curtains, Bluetooth scales, etc. Figure 1 below is the physical diagram of the module.

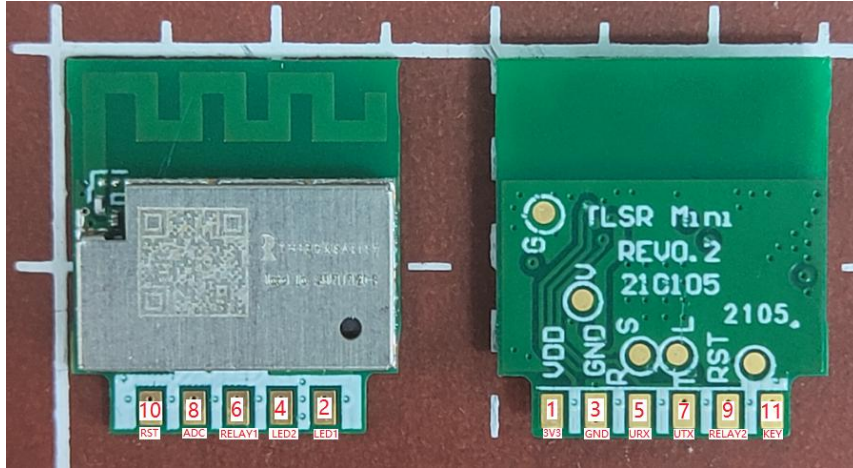


Figure 1

## 2、 Interface Pin Description

### (1) Pad interface

The definition of the PIN pad interface is described in Table 1 below:

Table 1

| PIN | Name   | IO | Description                           |
|-----|--------|----|---------------------------------------|
| 1   | VDD    | P  | Typical application 3.3V power supply |
| 2   | LED1   | O  | PB4, PWM                              |
| 3   | GND    | P  | Module power ground                   |
| 4   | LED2   | O  | PB5, PWM                              |
| 5   | URX    | I  | PC3, UART RX                          |
| 6   | RELAY1 | O  | PD4                                   |
| 7   | UTX    | O  | PB1, UART TX                          |
| 8   | ADC    | I  | PB6, ADC                              |
| 9   | RELAY2 | O  | PD3                                   |
| 10  | RST    | /  | RST, Low level reset                  |
| 11  | KEY    | I  | PD2                                   |

## (2) Test Point

As shown in Figure 1, the test points on the back of the module are used for product production testing and debugging, as shown in Table 2 below:

Table 2

| No. | Name | Description                                                     |
|-----|------|-----------------------------------------------------------------|
| 1   | V    | VDD=3.3V                                                        |
| 2   | G    | GND                                                             |
| 3   | S    | PA7 (SWS) , Dedicated burning and debugging functions are used. |
| 4   | L    | PA0 (LOG) , Dedicated debug output log is used.                 |
| 5   | RST  | RST , Low level reset                                           |

## 3、Parameters

For details, see Table 3 below for the main parameters of the module.

Table 3

| Item                                 | Sym.              | Min  | Typ.  | Max   | Condition                                           |
|--------------------------------------|-------------------|------|-------|-------|-----------------------------------------------------|
| Power-supply voltage                 | VDD               | 2.0V | 3.3V  | 3.5V  | T=25℃                                               |
| Supply rise time (from 1.6V to 1.8V) | t <sub>R</sub>    | /    | /     | 10 ms | T=25℃                                               |
| Operating Temperature Range          | T <sub>Opr</sub>  | -40℃ | 20℃   | 85℃   | VDD=3.3V                                            |
| RX current                           | I <sub>Rx</sub>   | /    | 5.3mA | /     | Whole Chip<br>(VDD=3.3V, T=25℃)                     |
| TX current                           | I <sub>Tx</sub>   | /    | 4.8mA | /     | Whole chip @ 0dBm with<br>DCDC<br>(VDD=3.3V, T=25℃) |
| Deep sleep with 32kB SRAM retention  | I <sub>Deep</sub> | /    | 1.4uA | 3.5uA | Without 32K RC<br>(VDD=3.3V, T=25℃)                 |
| Frequency range                      | 2400MHz~2483.5MHz |      |       |       |                                                     |

## 4、 Mechanical Dimensions

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

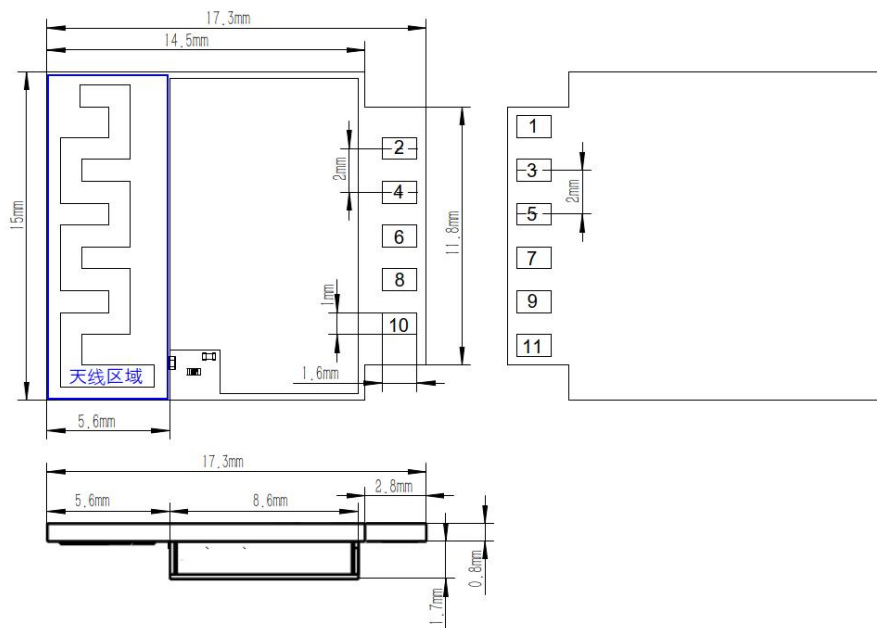


Figure 2

## 5、 lib

See Figure 3 below for details:

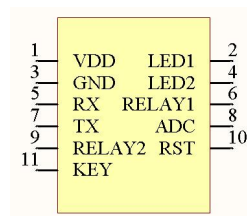


Figure 3

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

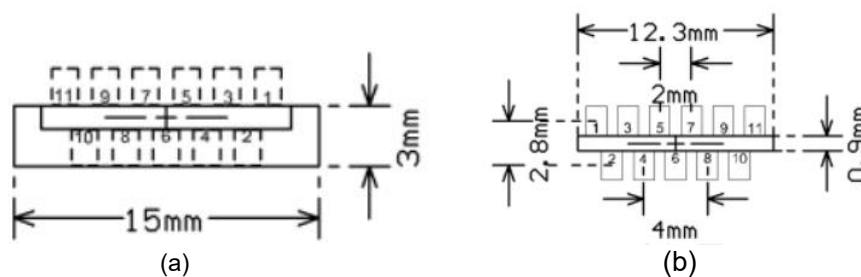


Figure 4

## 6、Antenna

### (1) Antenna type

The TRZB2 module is an on-board PCB antenna.

### (2) Antenna description

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 the corner or side of the product, and the antenna area is external and to the user.

## 7、Contact us

Company website: [www.3reality.com](http://www.3reality.com)  
Business & Technical Support: [support@3reality.com](mailto: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 modular complies with FCC 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.