

# Bio-sensing Universal development board

Development board 24-RADAR-EVB

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Instructions (Ver. 1.1)

## 1.Overview

24-RADAR-EVB is the first version of Micradar 's Demo Board tailored for millimeter-wave radar modules . In order to allow users to experience the performance of radar modules more conveniently and directly, and to allow users to quickly connect into the wireless universal module, both the radar module and the communication module support the pluggable mode, and users can freely adapt to build their own service platform. Also equipped with MCU board-to-interface, users can use their own MCU to communicate with radar and wireless modules respectively.

### 2 4-RADAR-EVB role:

- **Manufacturer embedded engineer** : use 24-RADAR-EVB for pre-development and debugging of embedded programs
- **Creator** : Use 24-RADAR-EVB to realize hardware product demo, and **cooperate** with communication module to realize project development
- **Technology enthusiasts**: use 24-RADAR-EVB to quickly experience radar principles, output parameters and interface protocols

## 2.Hardware composition

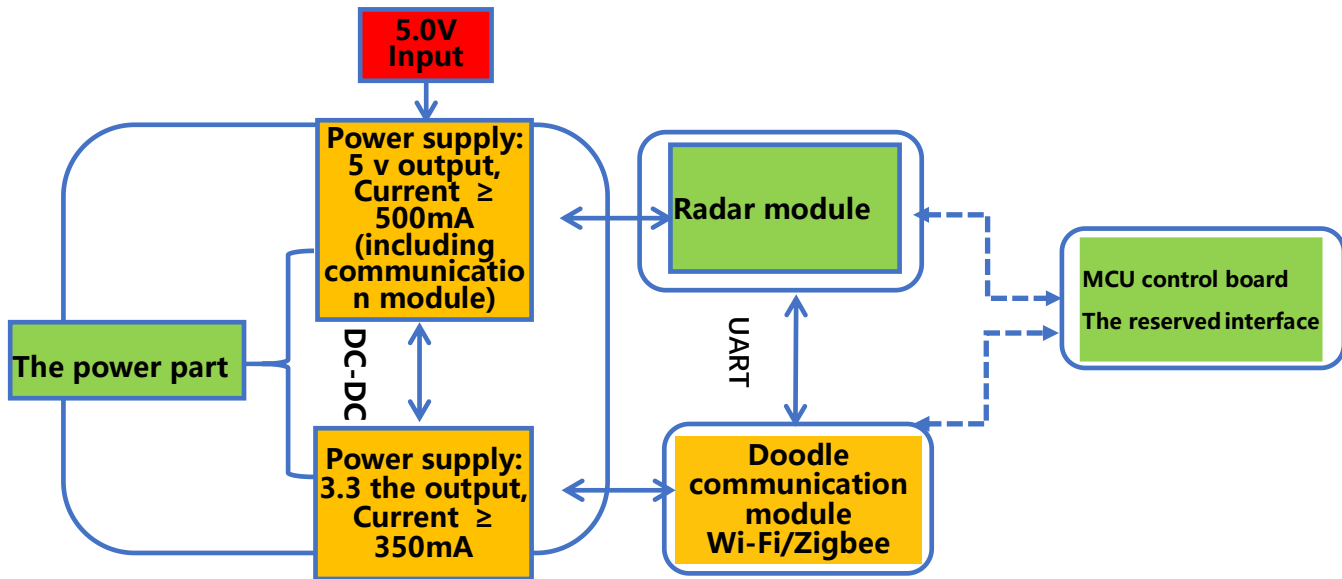
Power supply input method: Micro USB – DC 5.0V  $\geq$ 500mA

Output voltage: DC 5.0V, 3.3V

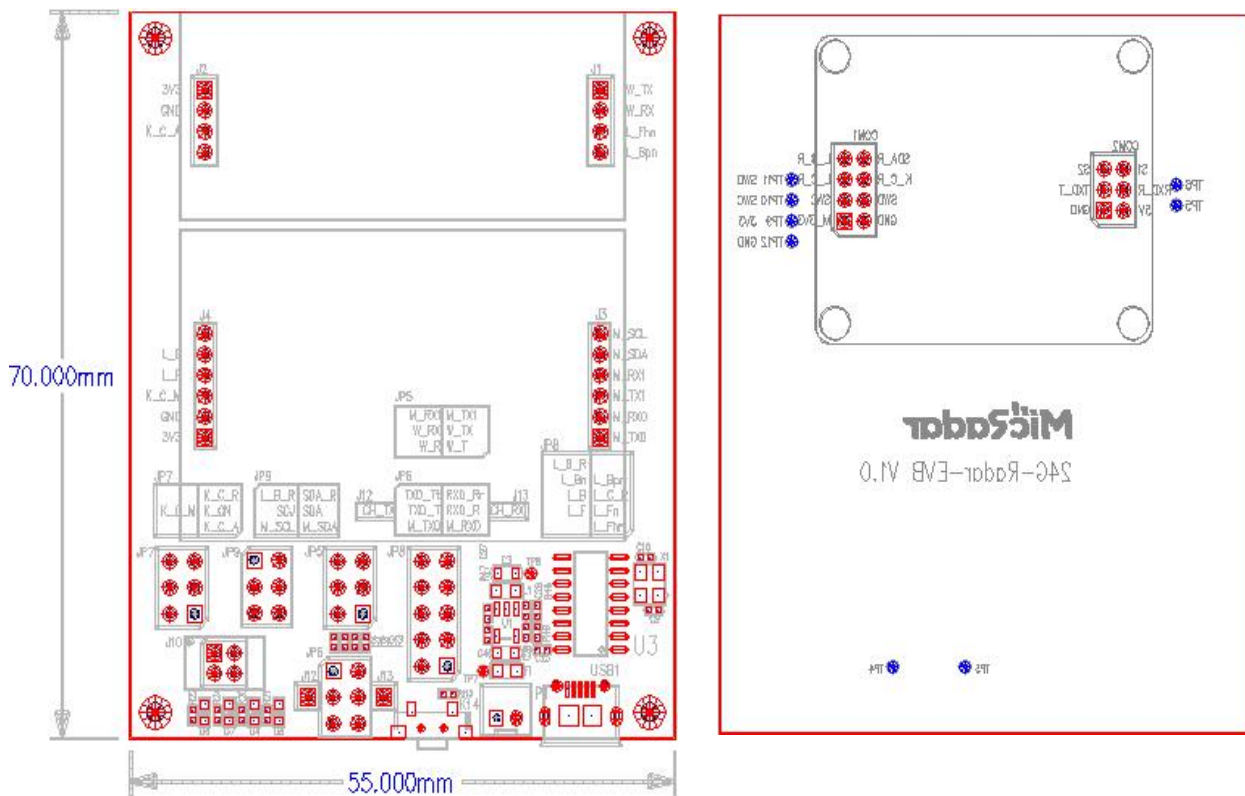
TTL serial port: can support optional as debug port

Function board interface: radar module, wireless module communication board, MCU board, light sensor board

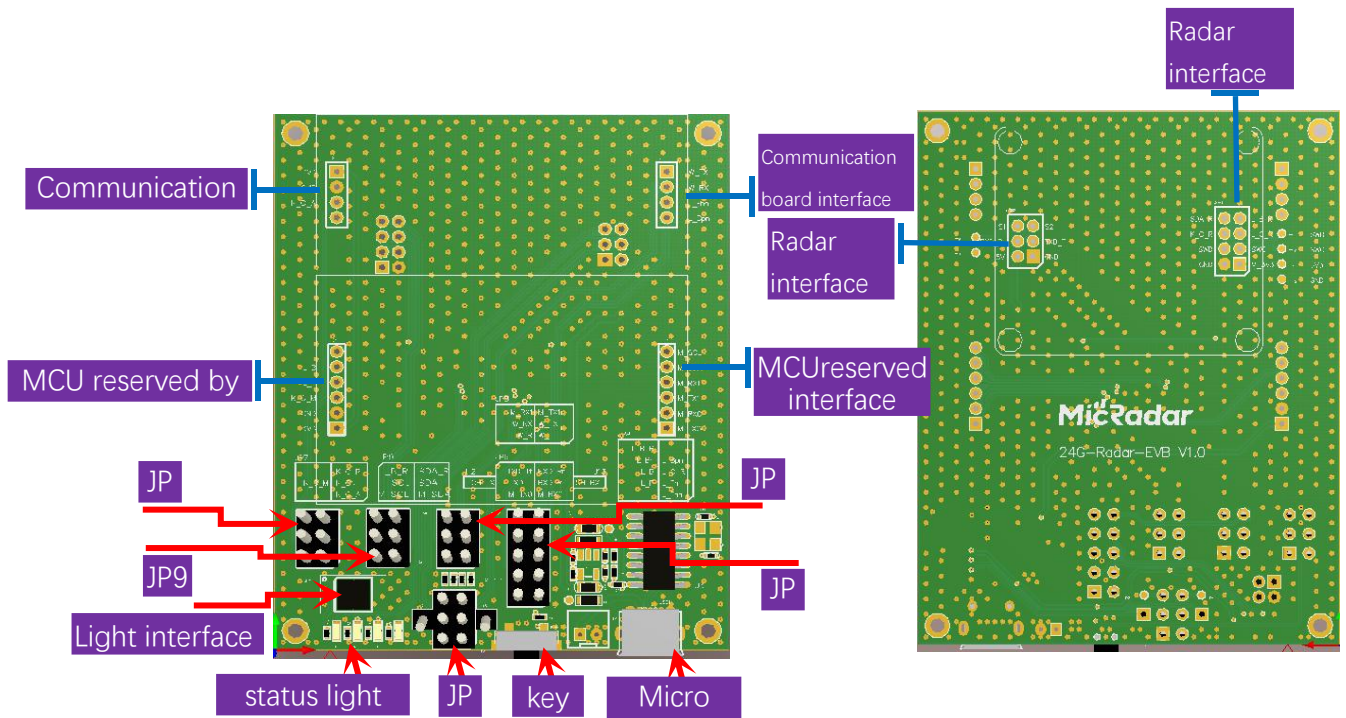
Others: 1 touch button, 4 indicator lights



### 3.Size package



### 4.Hardware introduction

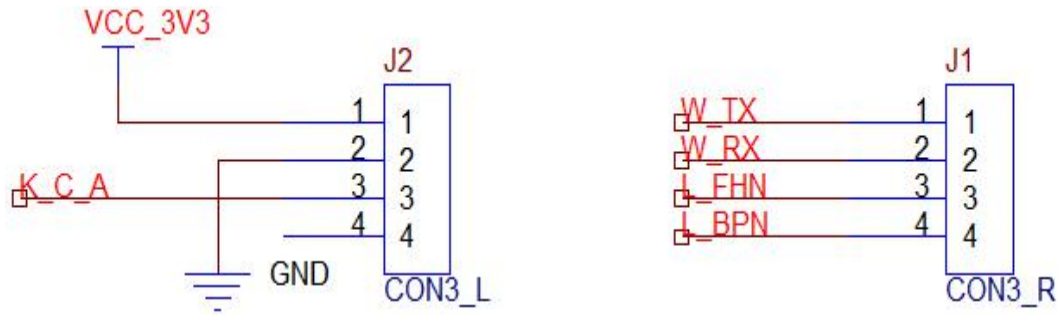


The functions of each interface are described as follows:

1. Communication board interface: 2.0mm single-row female header, respectively, the serial port interface is connected to the MCU interface and the radar interface
2. MCU reserved interface: 2.0mm single-row female header, respectively, the serial port is connected to the communication board and the radar interface
3. Radar interface: 2.0mm female header, standard interface
4. Light sensor interface: BH1710
5. JP5, JP6, JP7, JP8, JP9: jump pins, interface selection
6. Status indicator light: blue light, red light, red light, green light from left to right
7. Button: distribution network trigger or user-defined
8. Micro USB: 5.0V  $\geq$ 500mA power supply

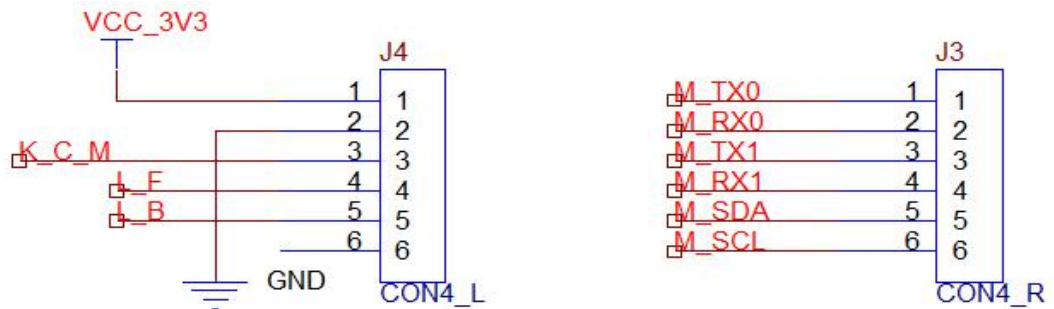
## 5.Schematic Circuit Guide

### A. Communication board interface



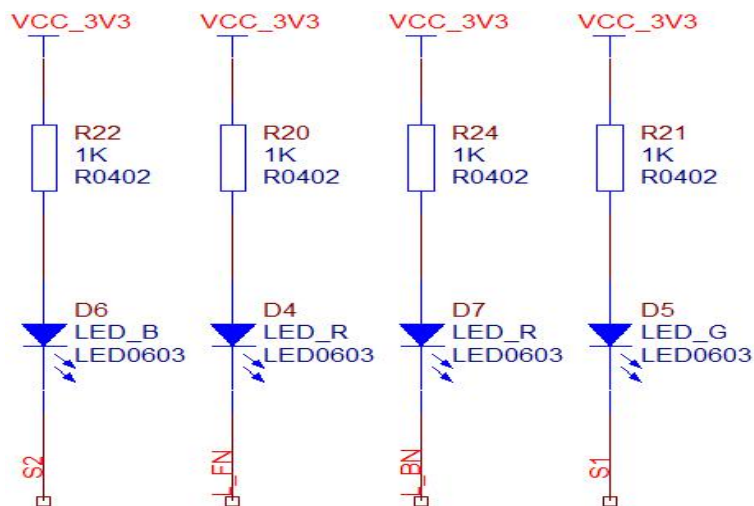
If the silk screen of the board is the same, W\_TX and W\_RX are the serial ports of the connection module, and L\_FHN and L\_BPN are the IO of the connection module respectively.

### B. MCU interface



If the silk screen of the board is the same, M\_TX0, M\_RX0 are MCU serial port 1, M\_TX1, M\_RX1 are MCU serial port 2, M\_SDA, M\_SCL are the light sensor driver interface (IIC)

### C. Definition of indicator lights



For example, on the front of the board, from left to right, the order is still active, reserved, reserved, and no one is there.

## 6. Development interface option

### A. Radar module interacts with Tuya general module

Connection option: JP 7-K\_CN connected to K\_C\_R button is controlled by radar module IO, long press for 5 s to enter fast network configuration mode

JP8-L\_BN to L\_B The distribution network indicator is controlled by the radar module IO, and the distribution network mode flashes quickly

JP5-W\_T to W\_TX W\_R to W\_RX Tuya module serial port is connected to one end

JP6-TXD\_TT to TXD\_T RXD\_RR to RXD\_R The serial port of the radar module is connected to one end

### B. MCU interacts with communication module and radar module respectively

Connection option: JP 7-K\_C\_M connected to K\_CN button is controlled by IO of MCU

JP8- L\_F connected to L\_FN distribution network indicator is controlled by MCU IO

JP6- M\_TX0 is connected to TXD\_T M\_RX0 is connected to RXD\_R MCU serial port 0 and radar module interaction

JP5- M\_TX1 to W\_TX M\_RX1 to W\_RX The serial port 1 of the MCU interacts with the communication module

### C. More free options, users can refer to the schematic diagram to build

## 7. Historical version update instructions

Revision	Release Data	Summary	Author
V1.0_0728	2021/07/28	first draft	OF_Frank
V1.1_0606	2022/6/6	Adjust the cover of a document	Mark