# Demo Evaluation Board for 24G Biological Perception Radar

# DERADAR-24G

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# Instruction of EVB Structure

# 1. Overview

DERADAR-24G is the first version of the demo board targeting at 24GHz radar module from Good Display. It is designed for better user experience like more convenient and direct experiencing of the radar module performance and faster connecting of wireless general module. Since both the radar module and communication module support Plug/Unplug mode, users can compose their own service platform at will. Due to the extra MCU board docking port, users can also via their own MCU to communicate with the radar and wireless module respectively.

DERADAR-24G Function：

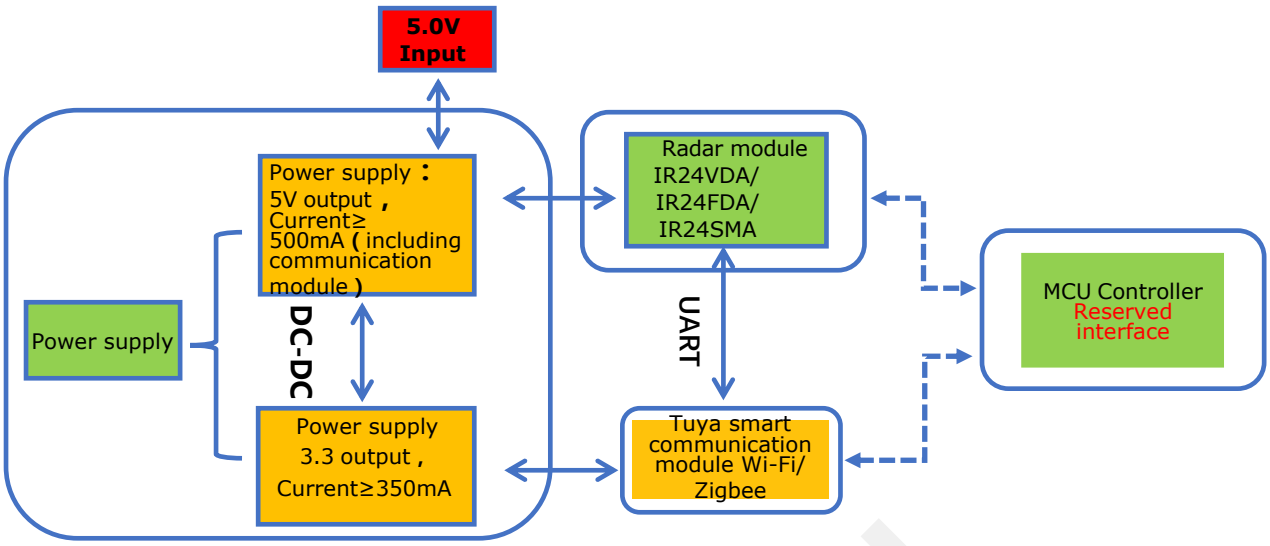
a. Manufacturer embedded engineer： Use 24G-RADAR -EVB to perform initial development and debugging of embedded program.

b. Maker: Use 24G -RADAR -EVB to realize demo of hardware products and develop projects along with communication module.

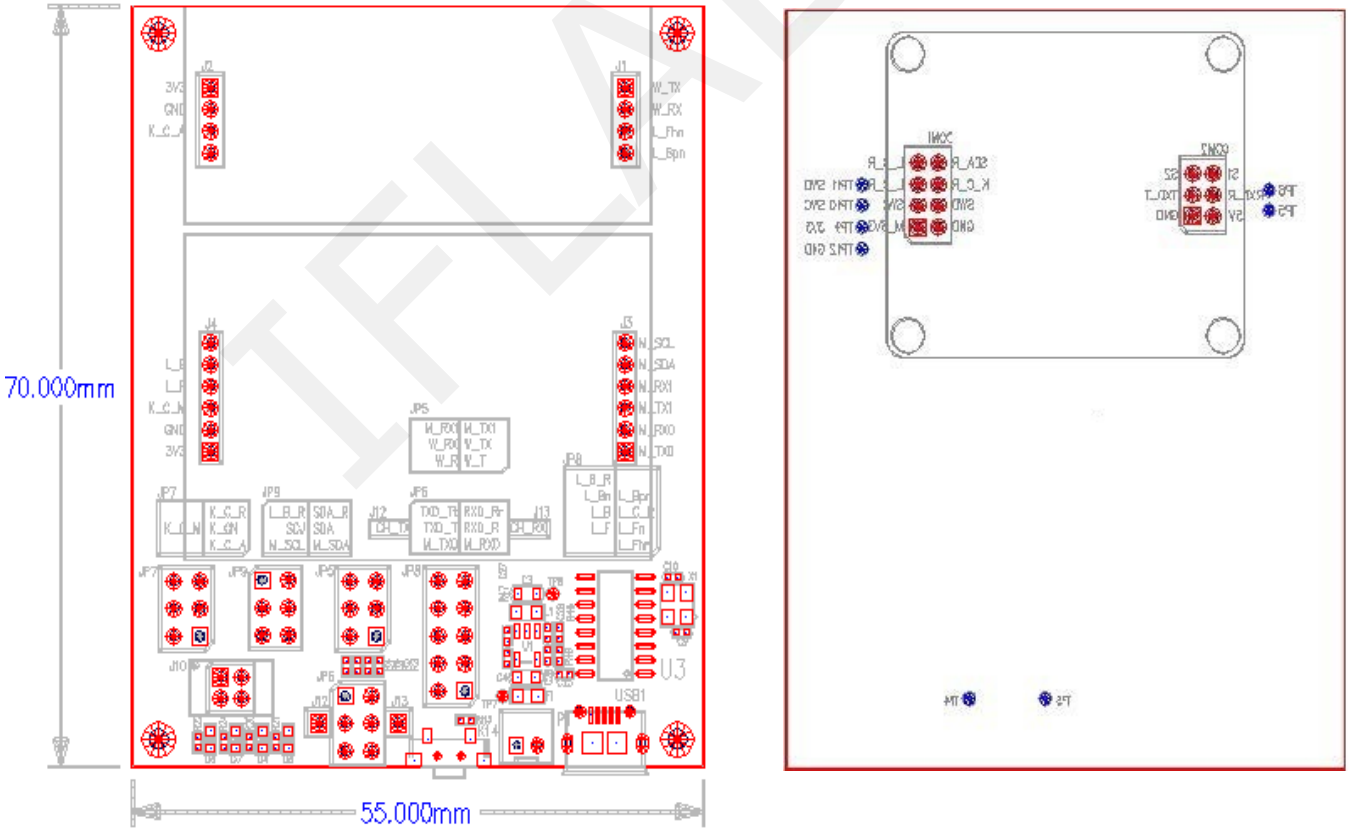
c. Technology enthusiasts Use 24G-RADAR -EVB for quick experiencing the theory, output parameters and interface protocol of radar.

# 2. Hardware Composition

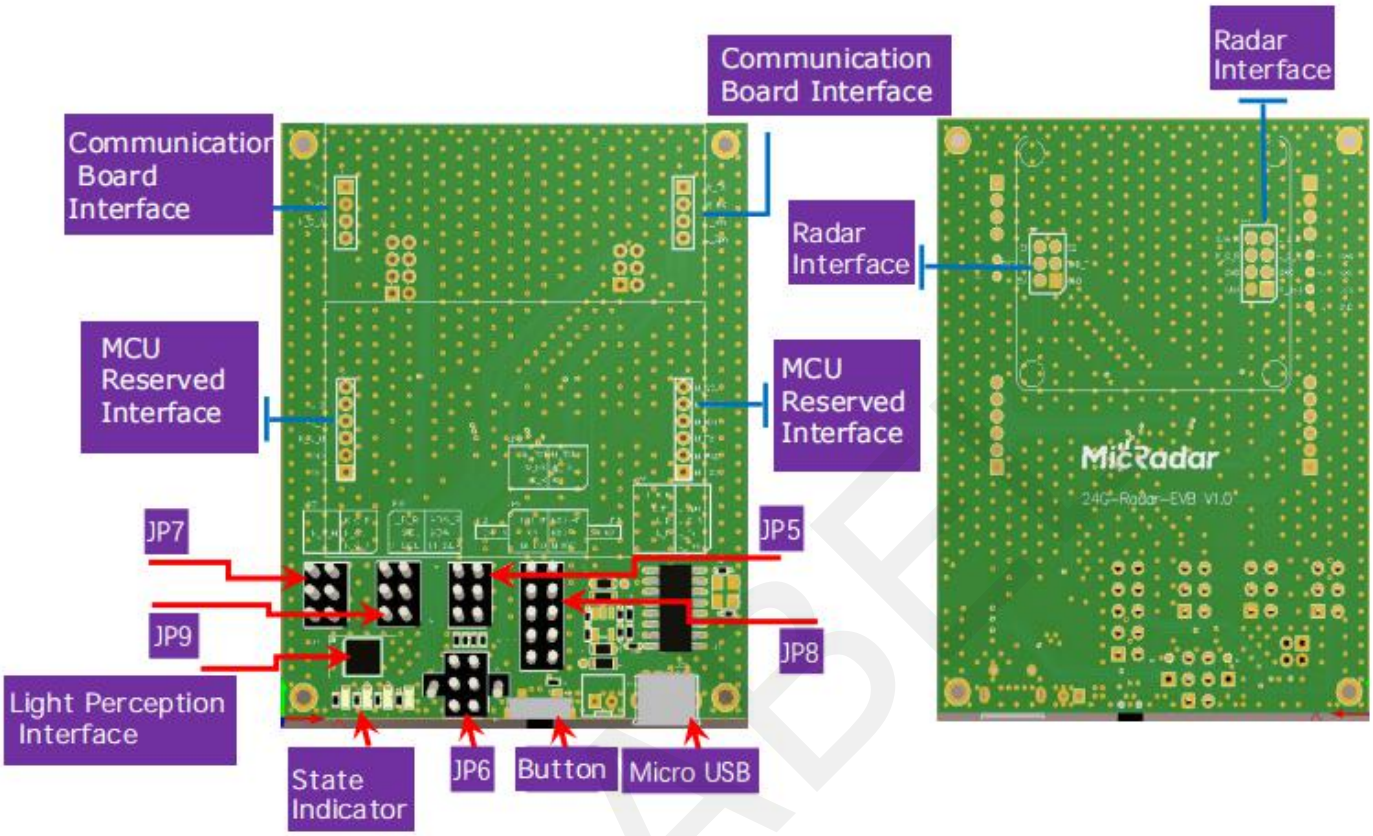
Power supply input mode： Micro USB – DC 5.0V ≥500mA
Output voltage： DC 5.0V , 3.3V
TTL serial port： Supports to be the debugging port
Interface of function board： 24G radar moduleR24VD1B , communication board for wireless module , MCU board, light perception board
Other: 1 slide switch , 4 indicators




## 3. Size Package



## 4. Instruction of Hardware

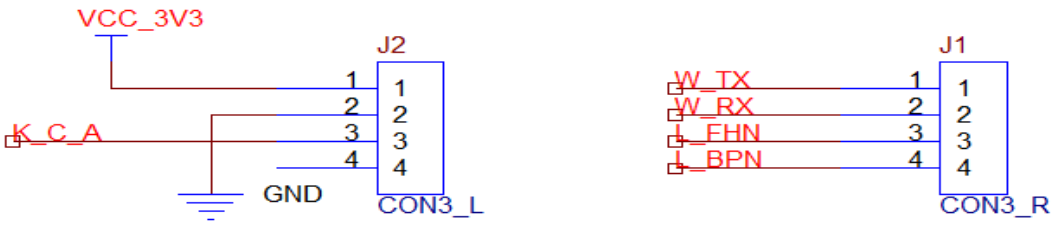



Functions for each interface:

1 . Communication board interface: 2.0mm single row busbar, serial port connecting to MCU interface and radar interface respectively
2 . MCU reserved interface: 2.0mm single row busbar, serial port connecting to communication board interface and radar interface respectively
3 . Radar interface: 2.0mm busbar, standard interface
4 . light perception board: BH1710
5 . JP5,JP6,JP7,JP8,JP9 : jump pin, interface selection
6 . State indicator : from left to right are blue, red, red and green
7 . Button: Network distribution trigger or user defined
8 . Micro USB : 5.0V ≥500mA power supply

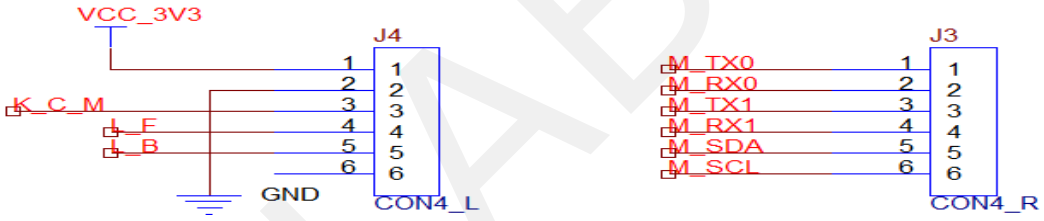
# 5. Schematic Circuit Guide

## a. Communication board interface



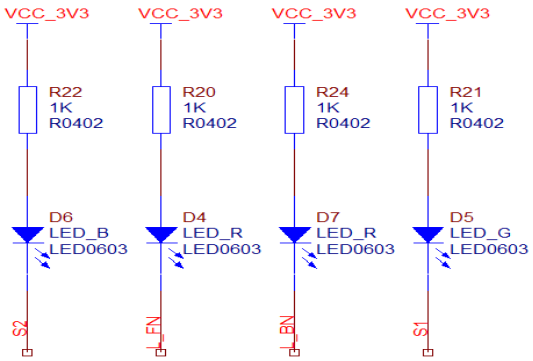

If the screen printing are the same,W_TX , W_RX connect the serial port of the module, L_FHN 、L_BPN connect the IO of the module respectively.

## b. MCU interface




If the screen printing are the same, M_TX0 、M_RX0 is MCU serial port 1 ， M_TX1、M_RX1 is MCU serial port 2 ， M_SDA 、M_SCL is Optical drive interface（IIC）

## c. Indicator definition




E.g. Board front face, from left to right are static/active, reserved, reserved, somebody/nobody

## 6. Development Interface Options

a. Radar module interact with Tuya Smart general modul e

Connections options:
JP7-K_CN toK_C_R
Button controlled by IO of radar module, long press 5s entering fast network distribution mode
JP8-L_BN to L_B
Network distribution indicato r controlled by IO of radar module, indicator quick flash in this mode
JP5-W_T toW_TX W_R to W_RX
Connect Tuya Smart module serial port
JP6-TXD_TT t o TXD_T RXD_RRto RXD_R
Connect radar module serial port

b. MCU interact with communication module and radar module respectivel y

Connections options:
JP7-K_C_M toK_CN
Button controlled by IO of MCU
JP8- L_F to L_FN
Network distribution indicator controlled by IO of MCU
JP6- M_TX0 to TXD_T M_RX0 to RXD_R
MCU serial port 0 interacts with radar module
JP5- M_TX1 toW_TX M_RX1 toW_RX
MCU serial port 1 interacts with communication module

c. More free options. Users can refer to the schematic diagram to construct.

## Version instructions

| Revision | Release Data | Summary |
|---|---|---|
| V1.0_0728 | 2021/07/28 | First Draft |