Bluetooth module CSR8645 manual

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http://shop110280715.taobao.com

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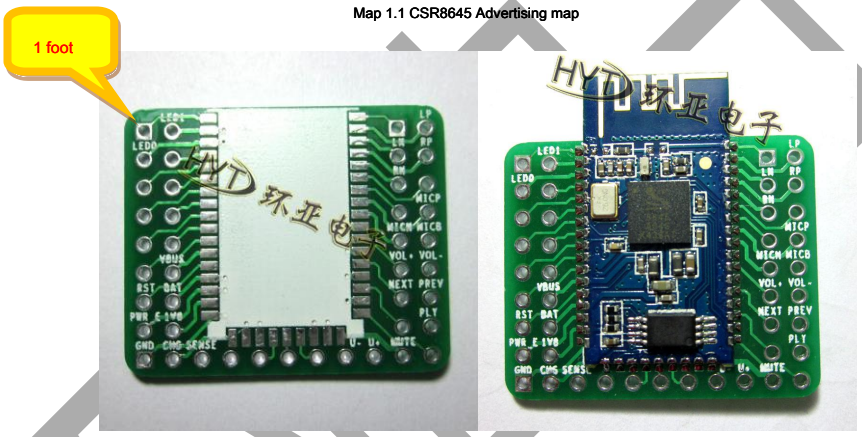
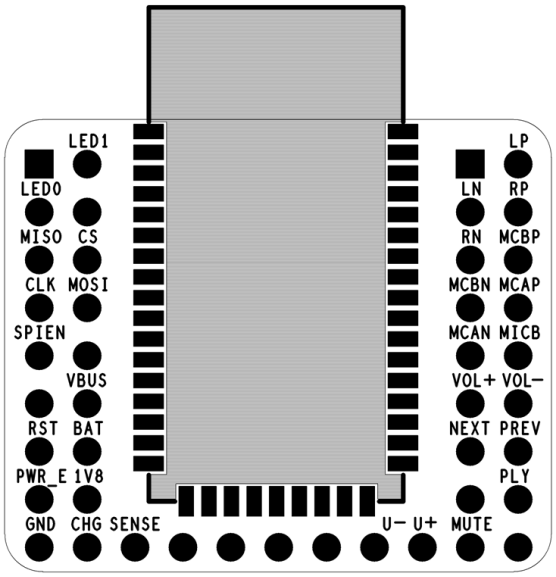
CSR8645 link: http://item.taobao.com/item.htm?id=42522462481

Adapter Boards Links: http://item.taobao.com/item.htm?id=42975846346

Map 1.1 CSR8645 Advertising map



Map 1.2 CSR8645 Adapter plate (2.1x3.5cm)



Map 1.3 CSR8645 Adapter plate IO definition

1.1 Module Description

This module uses the master CSR of BC8645 Chip module provides a high sound quality and compatibility, superior overall performance. Bluetooth module uses driver-free way, customers just need to block access to applications, you can quickly achieve wireless transmission of music, enjoy wireless music. Support high-quality sound APT-X Data transmission, and you can connect two Bluetooth master device. After the module is automatically switched back even to the last paired phone, the penultimate pairing over the phone needs to connect manually. in case 6 Paired devices simultaneously opened, automatically connects the last Paired phones .

1.2 Applications

The module is mainly used for short distance transmission of music, you can easily and notebook computers, mobile phones, PDA And other digital products connected to Bluetooth devices, wireless transmission of music.

1) Bluetooth stereo speakers;

2) Stereo Bluetooth headset;

3) Bluetooth hands-free calling;

4) Bluetooth control and multimedia equipment;

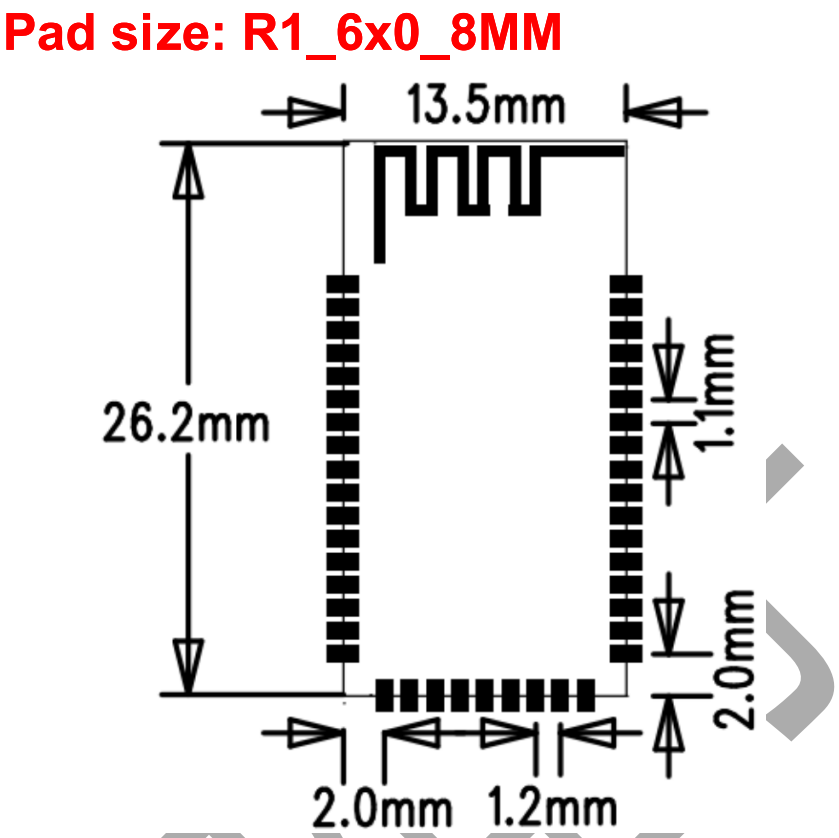
1.3 Basic characteristics

1) Bluetooth v4.0 ;
2) A2DP v1.2 ;
3) AVRCP v1.4 ;
4) HFP v1.6 ;
5) GAVDP1.2 ;
6) HSP1.2 ;
7) double MIC enter.

1.4 Performance parameters

model	CSR8645
Bluetooth Specification	Bluetooth V4.0
Modulation	GFSK , Π / 4 DQPSK , 8DPSK
Supply voltage	DC3.3-4.2V , ≤ 3.0V Automatic shutdown, ≤ 3.2V Call the police
Bluetooth protocol support	HFPV1.6, A2DPV1.2, AVRCPV1.4 , HSPV1.2
Working current	≤ 30mA
stand-by current	<50uA
temperature range	-40ºC ~ + 85ºC
Wireless transmission range	≤ 10 Meter
Power transmission	stand by Class1 / Class2 / Class3 Adjustable maximum 9dbm
Sensitivity	-80dBm <0.1% BER
Frequency Range	2.4GHz ~ 2.480GHz
External Interface	USB (USB Sound card)
Audio Performance	stand by ACC , MP3 , SBC , APT-X decoding
Audio SNR	≥ 75dB
Distortion	≤ 0.1%
Module size	26.2x13.5x0.8mm
Size adapter plate	29x23mm

1.5 **Module size**



Map 1.4 CSR8645 Dimensions

1.6 IO definition

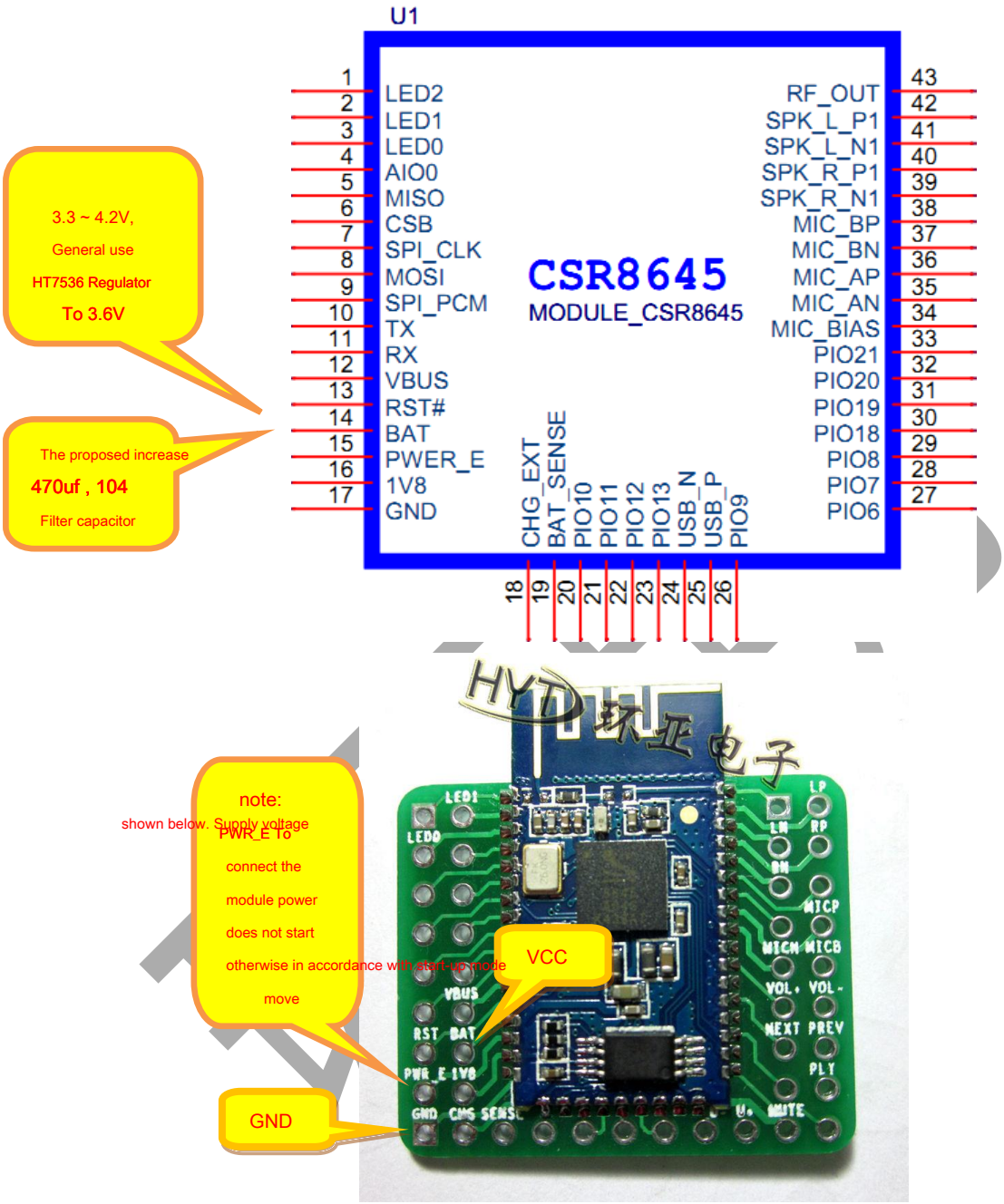
IO Numbering	IO name	IO description
1	LED2	Not enabled
2	LED1	Status Indicator
3	LED0	Status Indicator
4	AIO0	Not enabled
5	MISO	Burned into the program port
6	CSB	Burned into the program port
7	CLK	Burned into the program port
8	MOSI	Burned into the program port
9	SPI_EN	Burned into the program enable pin port (high enable)
10	TX	Serial ports TX (Not enabled)
11	RX	Serial ports RX (Not enabled)
12	VBUS	Charging port 5V enter
13	RST #	Low reset
14	BAT	power input(3.3 ~ 4.2V)
15	POWER_EN	Module Enable, active high (must delay 30ms And on again)
16	1.8V	1.8V Export
17	GND	Power Ground
18	CHG_EXT	External Battery Charge Management
19	BAT_SENSE	External Battery Charge Management
20	PIO10	Not enabled
twenty one	PIO11	Not enabled
twenty two	PIO12	Not enabled
twenty three	PIO13	Not enabled
twenty four	USB_N	USB Negative differential signal
25	USB_P	USB Positive differential signal
26	MUTE (PIO9) External amplifier mute control pin (mute, a low level after a period of time)	
27	PIO6	Not enabled
28	PP / CALL (PIO7)	Play / Pause / receive calls / call-back / re-pair
29	PIO8	Not enabled
30	PREV (PIO18)	previous piece
31	NEXT (PIO19)	next track
32	VOL- (PIO20)	Volume down
33	VOL + (PIO21)	Volume Up
34	MIC_BIAS	Microphone bias voltage
35	MIC_AN	Mike 1 Negative terminal
36	MIC_AP	Mike 1 The positive terminal
37	MIC_BN	Mike 2 A negative terminal (not enabled)
38	MIC_BP	Mike 2 A positive terminal (not enabled)
39	SPK_R_N1	Audio right differential output negative end
40	SPK_R_P1	Audio right differential output positive terminal
41	SPK_L_N1	Audio left differential output negative end
42	SPK_L_P1	Audio left positive differential output terminal
43	RFOUT	An antenna (default built-in antenna, an external antenna port is disconnected)

1.7 Precautions

1. If the next antenna module batteries, metal objects, LCD screen, speakers, a distance from the antenna requires at least 3cm ,
   It is recommended to use an external antenna.
2. Layout When the supply line is recommended to use a star wiring, and make sure that the Bluetooth module power supply line performance metric is better. and also
   BT Of the op amp, amplifier, MCU Etc. separated, and BT Under other side can not have interference, it is recommended Bluetooth module on
   the bottom corner.
3. The antenna module is recommended in the outer floor portion of the float, can not go around the antenna control lines, power lines, audio lines, MIC
   Other interference line, if the module to be placed in the middle, to be at around the slot antenna, it is recommended to use an external antenna.
4. If there row seat near the antenna module, the metallic iron shell with a net influence on the signal, it is recommended to use an external antenna
   Solve the distance problem.
5. When an external amplifier module to be connected to the input of the differential amplifier, power amplifier if you do not take a differential input, you must be connected
   A balance of the two differential op amp level, or there will be "flap" sound of impact.

1.8 Typical circuit

1.8.1 Power Connector



Map 1.5 Power Connector

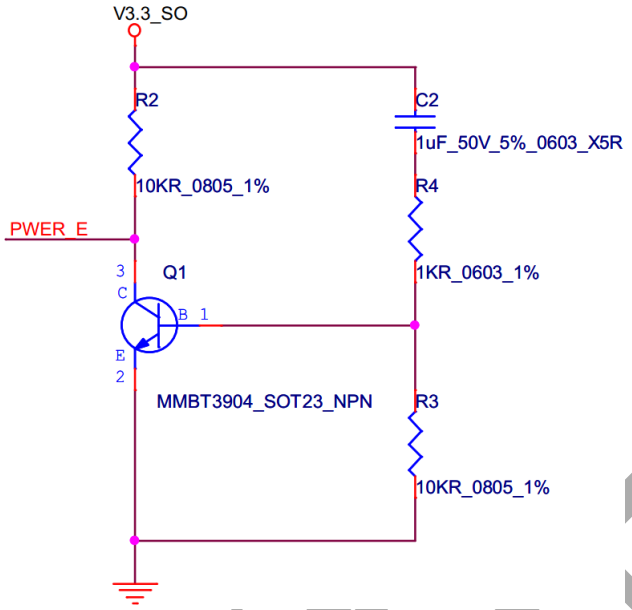
note:

- **VCC (3.3 ~ 4.2V), When the external power supply: 3.6V (HT7536)powered by. When using lithium battery: lithium guaranteed voltage 3.3V ~ 4.2V between;**
- **Bluetooth module in parallel recommended power supply terminal 470uf versus 0.1uf Capacitor, to suppress power supply noise;**
- **1V8 It is the output voltage.**

As FIG connection, At this time the module is powered on and did not work, because the module " PWER_E "Is not enabled, the power-up mode as

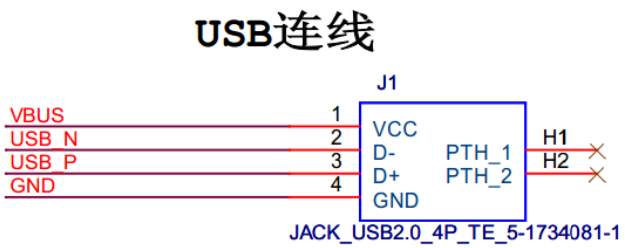
1.8.2 Starting method

Stable starting product according to the embodiment of FIG connected:

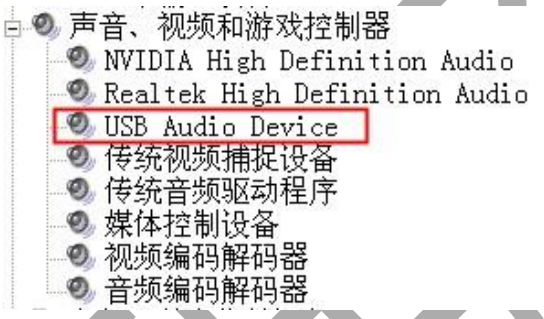


Map 1.6 Stable power-up mode

1.8.3 USB Sound card



Map 1.7 USB connection

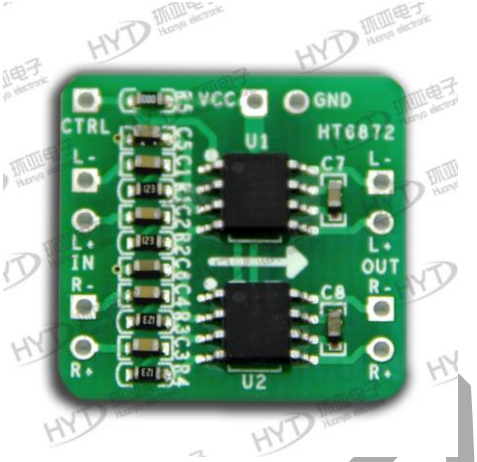


Map 1.8 USB Sound Card

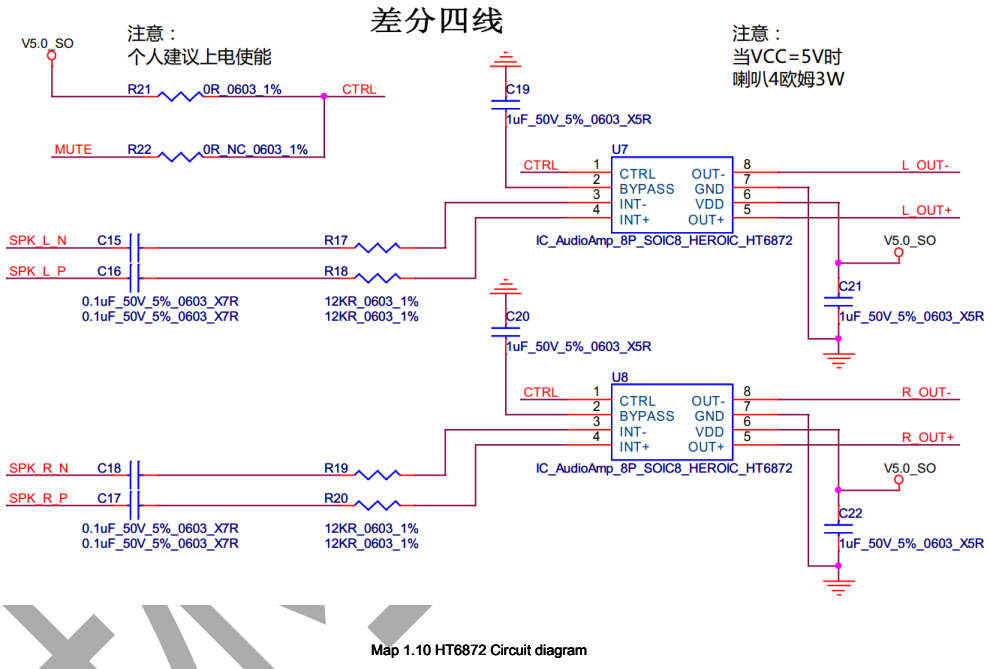
note:

- **Only the access module of FIG. 4 Root and connected to the computer can be identified as USB Sound card, driver-free;**
- **Suggest USB Cable not too long;**
- **The default version of the firmware with USB Sound card function;**
- **USB Sound card and Bluetooth functions can not work simultaneously.**

1.8.4 A differential amplifier connected



Map 1.9 HT6872 audio amplifier(2.1x2.1cm)



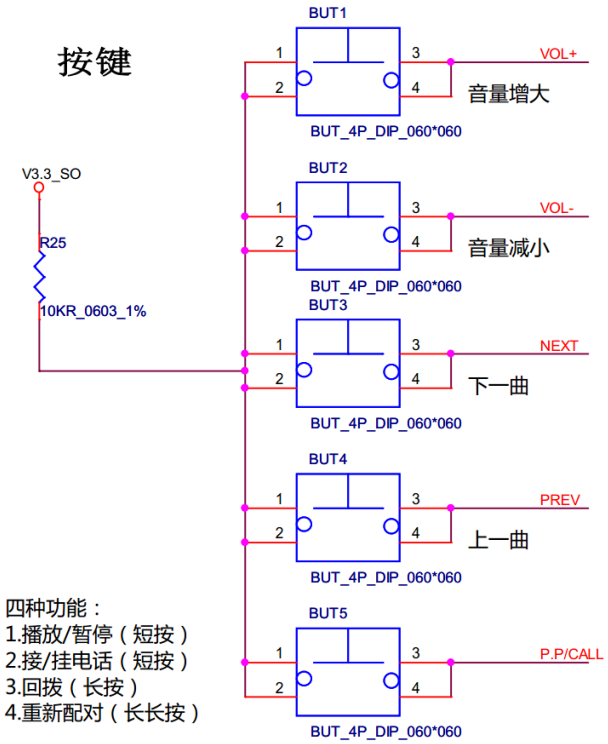
Map 1.10 HT6872 Circuit diagram

note:

- speaker: 4 Europe, 3W ;
- C21 , C22 near HT6872 ;
- Welding mute control chip module R22 No welding R21 . Uncontrolled WELDING R21 No welding R22 .

CSR8645 When mute, MUTE Will be delayed for some time goes low, avoid the problem of intermittent sound, while also reducing system power consumption. In doing so the product is recommended CSR8645 of MUTE control HT6872 . This module facilitate debugging using uncontrolled manner.

1.8.5 Button connection



Map 1.11 Button connection

note:

- PP / CALL The length of time corresponding to the function keys.

1.8.6 LED Connector

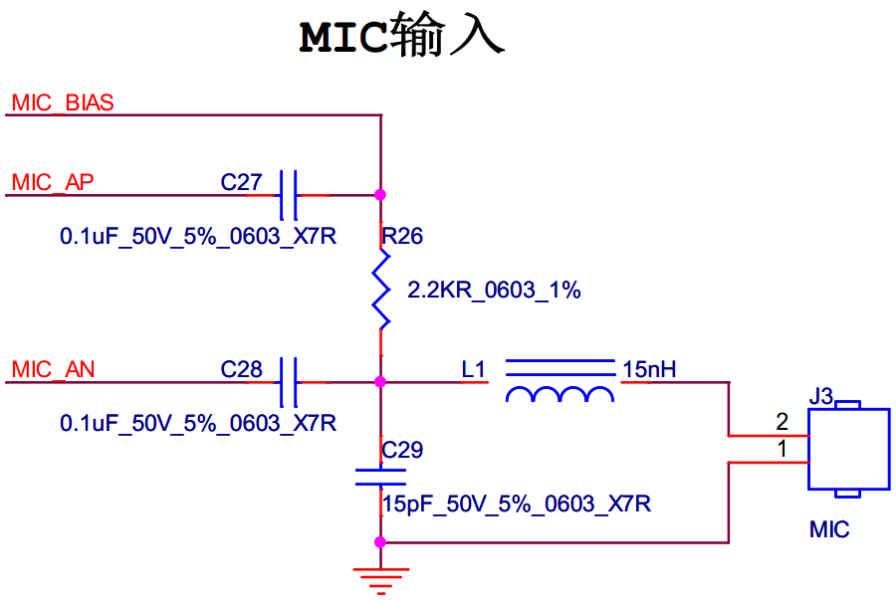
Map 1.12 LED Pilot lamp

Bluetooth module is powered on, in pairs, the dual-lamp flash alternately; pairing is successful, a single lamp LED2 Flashing, LED1 Off.

note:

- Personal recommendations debugging, the lights on welding, facilitate the observation module is started.

1.8.7 MIC connection



Map 1.13 MIC connection

note:

- MIC Are polar, do not weld backwards.