

# MuYu

## MY-BT303A

Bluetooth 5.1 Audio + Data Module

Version 1.0

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## Release Recode

Version	Date	Comments
1.0	2023/06/01	Initial Version

Shenzhen Muyu Technology Co., Ltd

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# 1 Introduction

## 1.1 Overview

MY-BT303A Bluetooth Module is a high performance, cost effective, low power and compact solution. The Bluetooth module provides highest level of integration with integrated 2.4GHz radio, DSP, Power management, battery Charger, stereo audio Codec based on the QCC3024 BGA chipset. It can be designed for mono and stereo audio applications. This module supports Bluetooth v5.0 BR/EDR and BLE Dual mode standard.

## 1.2 Features

- Bluetooth v5.1 specification support
- BT303A: SBC, MP3, AAC
- Transfer port: PIO, UART, USB, I2C, SPI, AIO, LED.
- Audio output port: I2S, ANALOG
- Audio input port: I2S, USB, AUX, MIC
- dual mode, The traditional Bluetooth and BLE
- Integrated 16-64MB SPI Flash
- Class II type output power
- Low power consumption
- High SNR class AB or class D analog output is optional
- Small size: 20\*13\*2.0mm
- RoHS compliant

## 1.3 Applications

- High-End Stereo Wireless Headsets
- High-END Mono Headsets
- Hands-Free Car Kits
- Bluetooth-Enabled Automotive Dashboards
- Wireless Speakers
- VOIP handsets
- Analogue and USB Multimedia Dongles

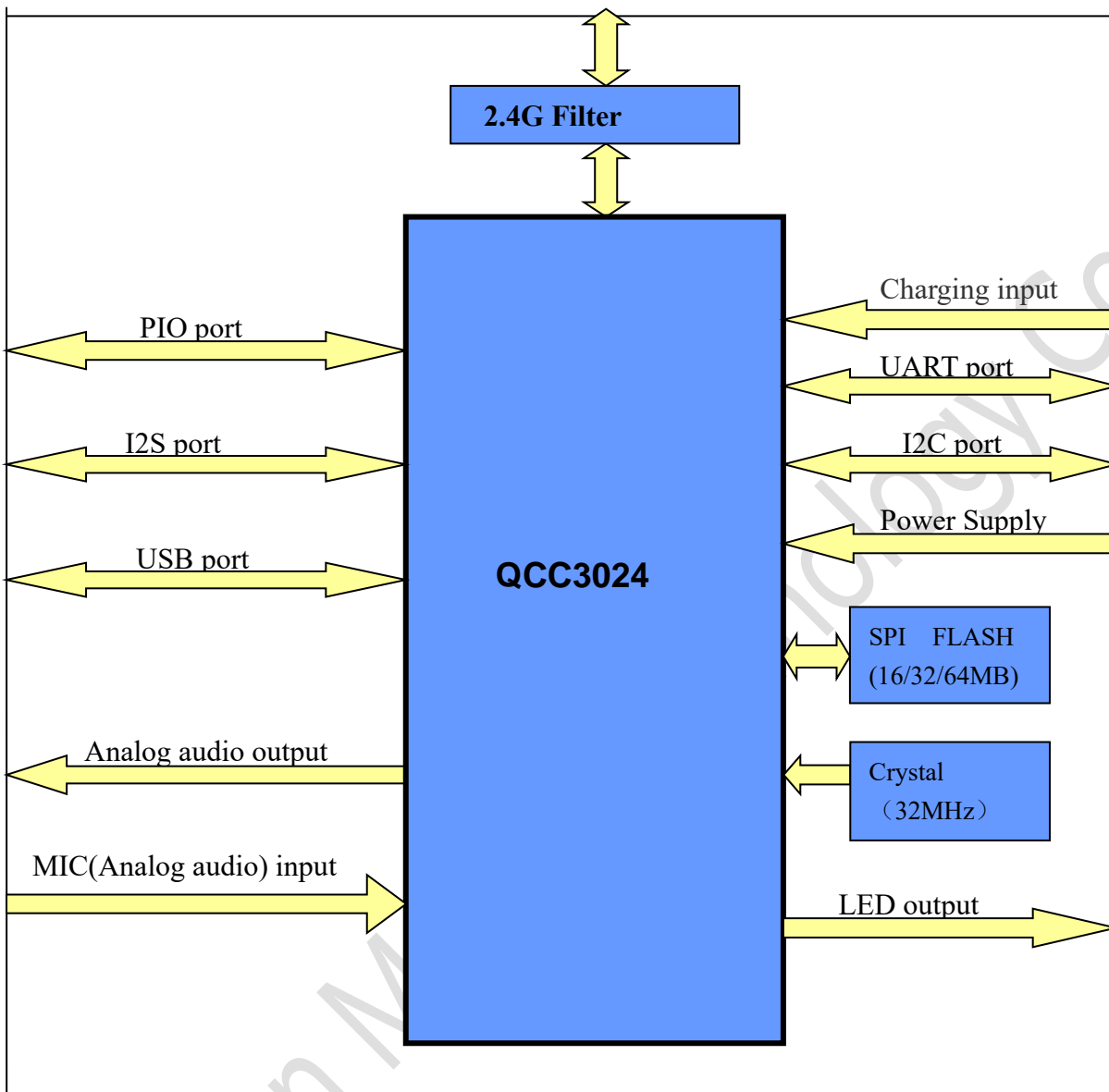
## 2 Key Features

Operating Frequency Band	2.402GHz -2.480GHz ISM band
Bluetooth Specification	V5.1
Theoretical range in open field	Bluetooth Class II
Main Chip	MY-BT303A:QCC3024
Transmitter Power	+9dBm (Max)
Receive Sensitivity	-91dB at 0.1% BER (Typical)
Antenna	External
Antenna Impedance	50Ω
Power Supply	3.0V-4.3V
Dimension	20mm(L) * 13mm(W) * 2.0mm(H)

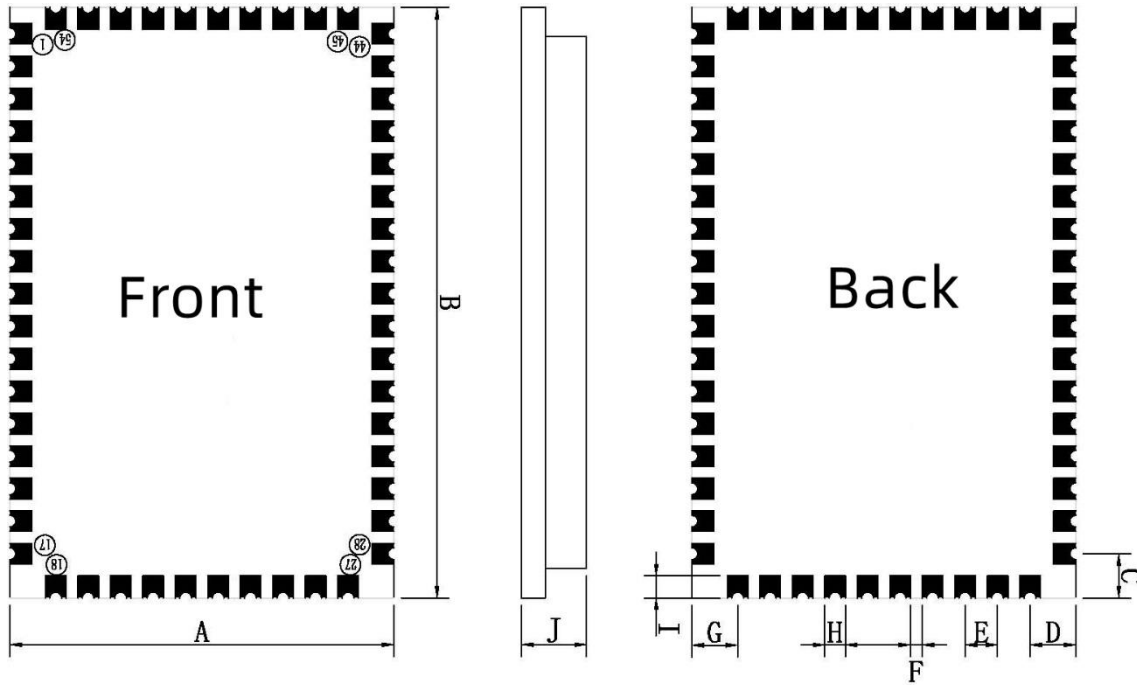
## 3 Electrical Characteristic

Rating	Min	Typ	Max	Unit
Store temperature	-40	+20	+85	°C
Operation temperature	-20	+20	+70	°C
Power supply (VBAT)	3.0	3.6	4.2	V
USB_5V, Charge input	4.5	5	5.5	V
PIO Power supply (VDD_PAD1/VDD_PAD3)	1.8	3.3	3.6	V

## 4 Schematic Block diagram

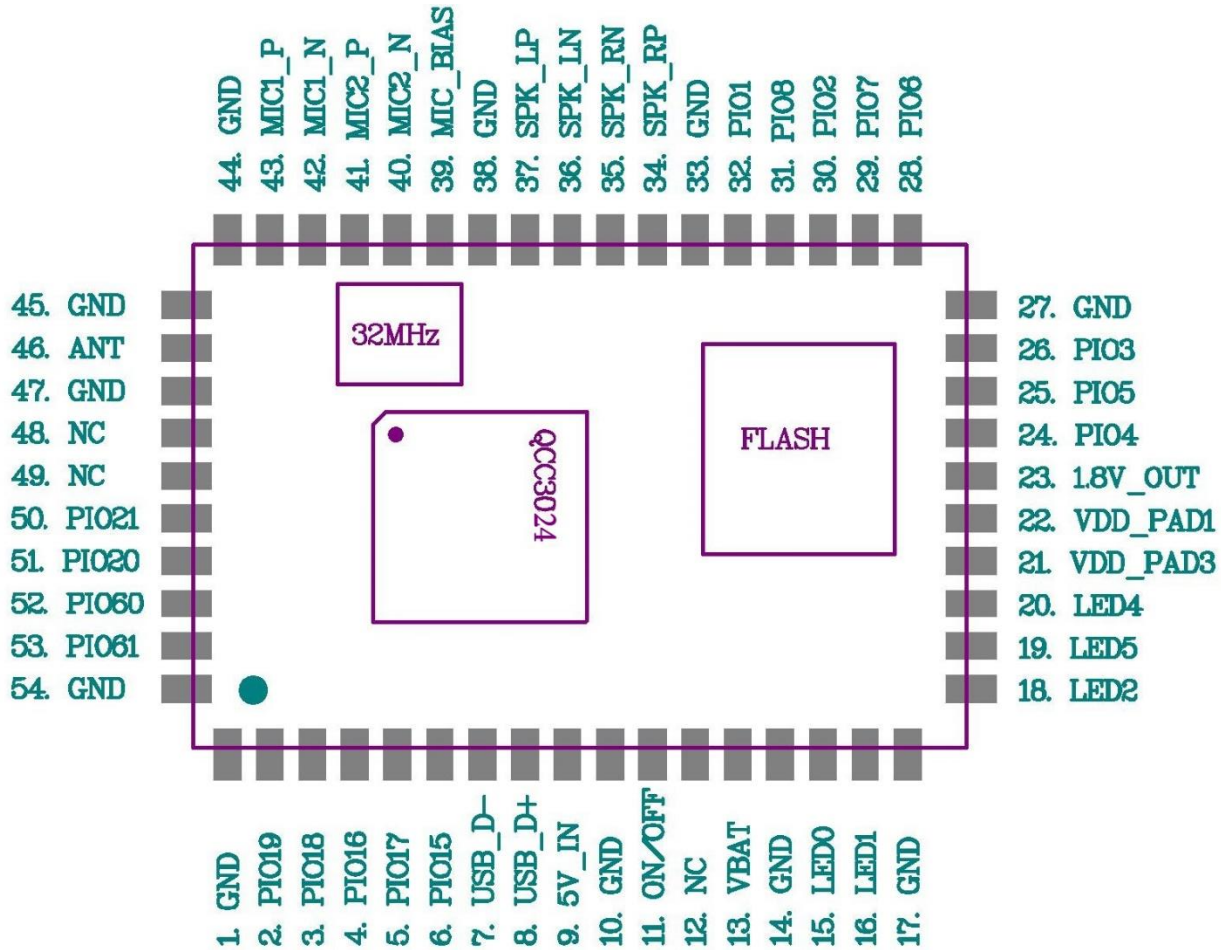


## 5 Mechanical Dimensions



Dimension Limits (Units:mm)		
Symbol	Value	Error
A	13.0	±0.2
B	20.0	±0.2
C	1.5	±0.1
D	1.55	±0.1
E	1.1	—
F	0.4	—
G	1.55	±0.1
H	0.7	—
I	0.75	±0.05
J	2.2	Max

## 6 Pin Definition Descriptions



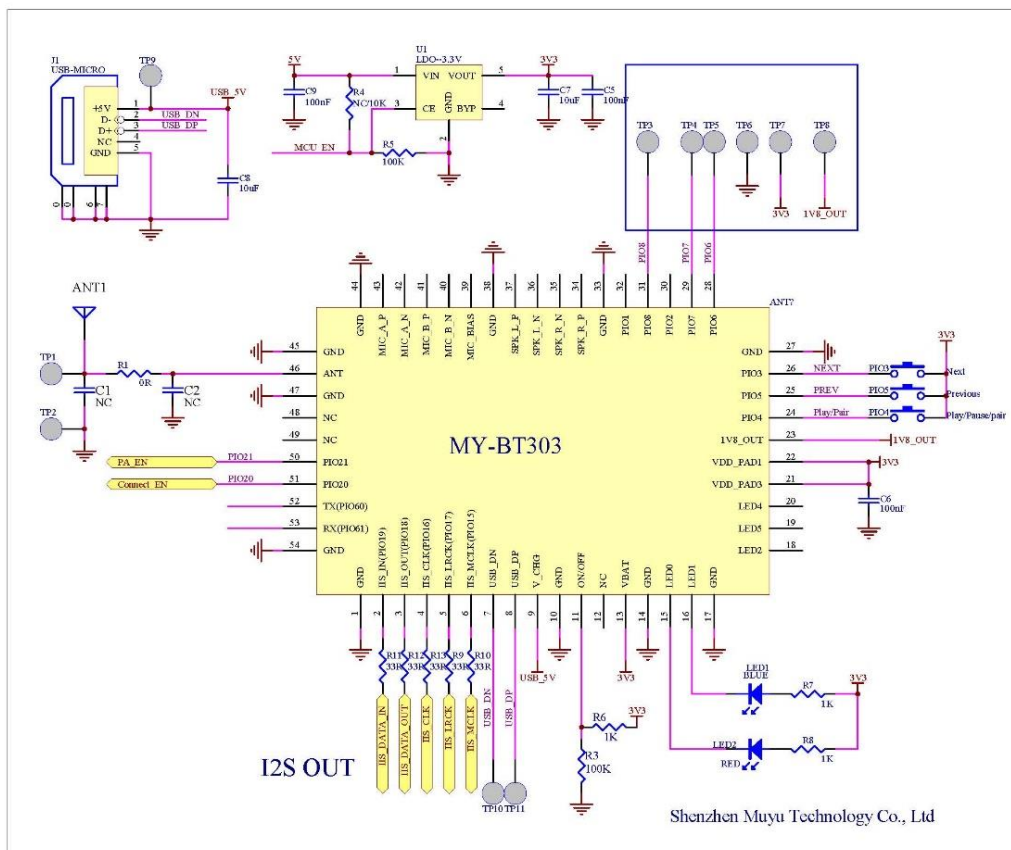
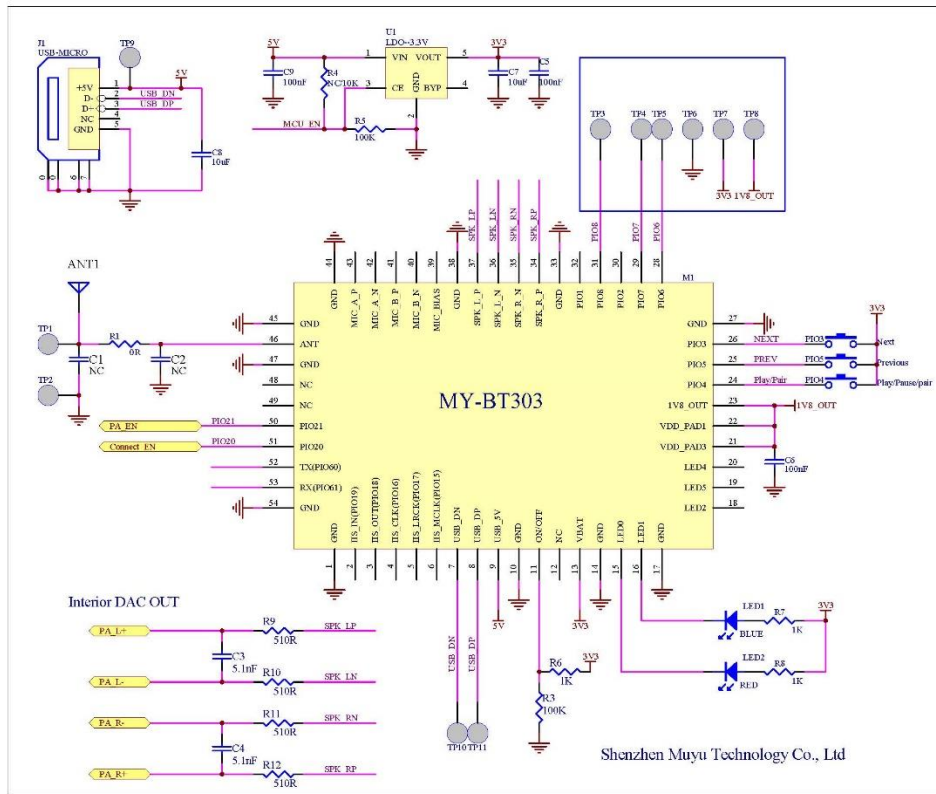
Pin NO.	Pin Name	Supply voltage	Pin Descriptions
1	GND	0	Ground
2	I2S_IN (PIO19)	VDD_PAD3	I2S_IN, Programmable input/output line
3	I2S_DOUT (PIO18)	VDD_PAD3	I2S_DOUT, Programmable input/output line
4	I2S_BCLK (PIO16)	VDD_PAD3	I2S_BCLK, Programmable input/output line
5	I2S_LRCK (PIO17)	VDD_PAD3	I2S_LRCK, Programmable input/output line
6	I2S_MCLK (PIO15)	VDD_PAD3	I2S_MCLK, Programmable input/output line
7	USB_DN		USB data minus
8	USB_DP		USB data plus
9	USB_5V		Charger input, 5V input



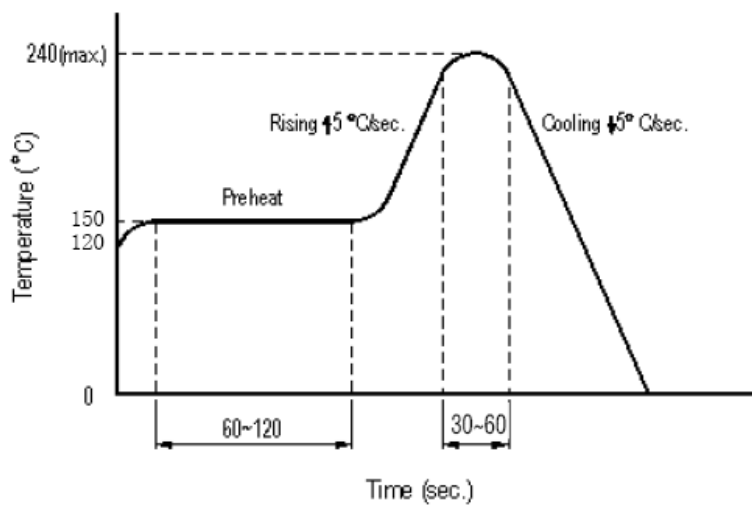
10	GND	0	Ground
11	ON/OFF(SYS_CTRL)		Regulator enable input, boot pin
12	NC		No connect
13	BAT	3.0-4.3V	Battery positive terminal, 3.3V input(typical)
14	GND	0	Ground
15	LED0		LED0
16	LED1		LED1
17	GND	0	Ground
18	LED2		LED2
19	LED5		LED5
20	LED4		LED4
21	VDD_PAD3		GPIO power supply (PIO15-21) (PIO5X/PIO6X)
22	VDD_PAD1		GPIO power supply (PIO1-8)
23	1.8V_OUT	1.8V	Internal 1.8V output
24	PIO4	VDD_PAD1	Programmable input/output line
25	PIO5	VDD_PAD1	Programmable input/output line
26	PIO3	VDD_PAD1	Programmable input/output line
27	GND	0	Ground
28	PIO6	VDD_PAD1	TRB SPI port
29	PIO7	VDD_PAD1	TRB SPI port
30	PIO2	VDD_PAD1	Programmable input/output line
31	PIO8	VDD_PAD1	TRB SPI port
32	PIO1	VDD_PAD1	Programmable input/output line
33	GND	0	Ground
34	SPK_RP		Speaker output right positive
35	SPK_RN		Speaker output right negative
36	SPK_LN		Speaker output left negative
37	SPK_LP		Speaker output left positive
38	GND	0	Ground
39	MIC_BIAS		Microphone bias

40	MIC2_N		Microphone negative pole input
41	MIC2_P		Microphone positive pole input
42	MIC1_N		Microphone negative pole input
43	MIC1_P		Microphone positive pole input
44	GND	0	Ground
45	GND	0	Ground
46	ANT(RF_PORT)		RF port, antenna
47	GND	0	Ground
48	NC		No connect
49	NC		No connect
50	PIO21	VDD_PAD3	Programmable input/output line
51	PIO20	VDD_PAD3	Programmable input/output line
52	PIO60	VDD_PAD3	Programmable input/output line
53	PIO61	VDD_PAD3	Programmable input/output line
54	GND	0	Ground

# 7 Peripheral reference schematic



## 8 SMT reference



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