Technical Description:

The Equipment Under Test (EUT) is a 2.4GHz Bluetooth speaker. The Bluetooth portion is operating between 2402MHz and 2480MHz (79 channels with 1MHz channel spacing). The EUT is powered by 120VAC. It has a USB port and AC port for charging corresponding device. When the EUT is switched ON, the light will be flashing. The corresponding Bluetooth device would be searched and connected to the EUT before playing audio. After pairing, the light will stay lit.

2.4GHz Bluetooth Module:
Modulation Type: GFSK
Frequency Range: 2402MHz - 2480MHz, 1MHz channel spacing, 79 channels
Antenna Type: Integral, Internal (PCB Trace)
Antenna Gain: 0dBi
Nominal rated field strength: 102.7dBµV/m at 3m
Maximum allowed field strength of production tolerance: +2dB / - 3dB

1. Bluetooth module F-3098:
a. BC6145 (U1) acts as the 2.4GHz radio core of Bluetooth module.
b. The 26MHz crystal (XT1) provides system clock for BC6145 (U1).

2. Audio:
a. HT6873 (U3) is power amplifier driving a speaker.

3. Power Management portion:
a. HT7533 (U1) is 3.3V regulator which is providing 3.3V to Bluetooth module.

F-3098 Module Specification

Module description

●Using the latest CSR BC6 chip, the quality and the overall RF performance improved significantly

●in accordance with Bluetooth V3.0

●Bluetooth headsets, speakers, car low cost solution

● support with connected with two mobile phone

●support HSP V1.2, HFP V1.5

· ●high quality audio processing A2DP V1.2

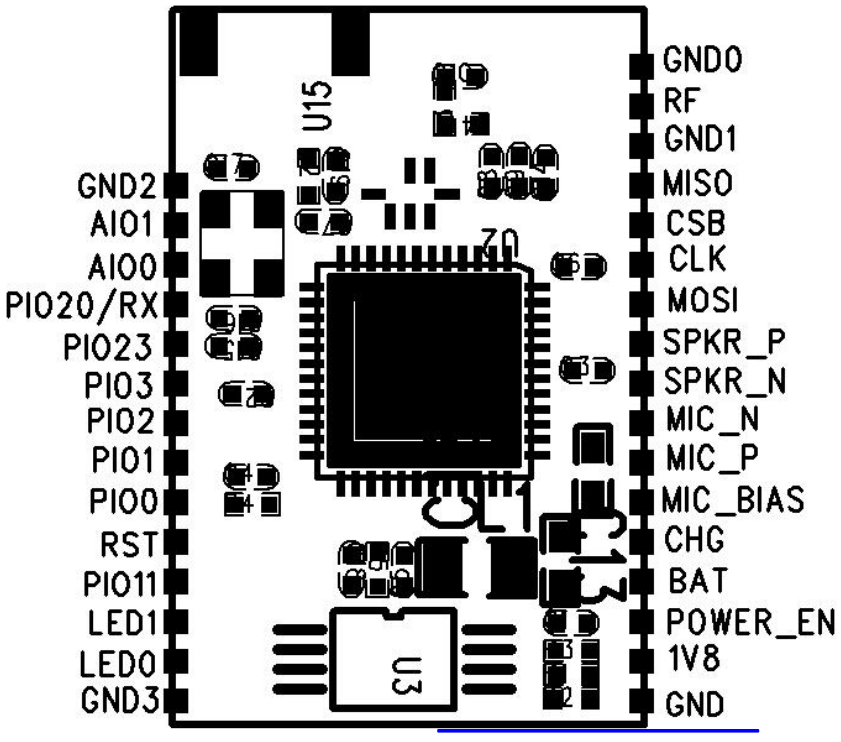
●It is up to the 8.5dB transmit power, receive sensitivity: 91dB

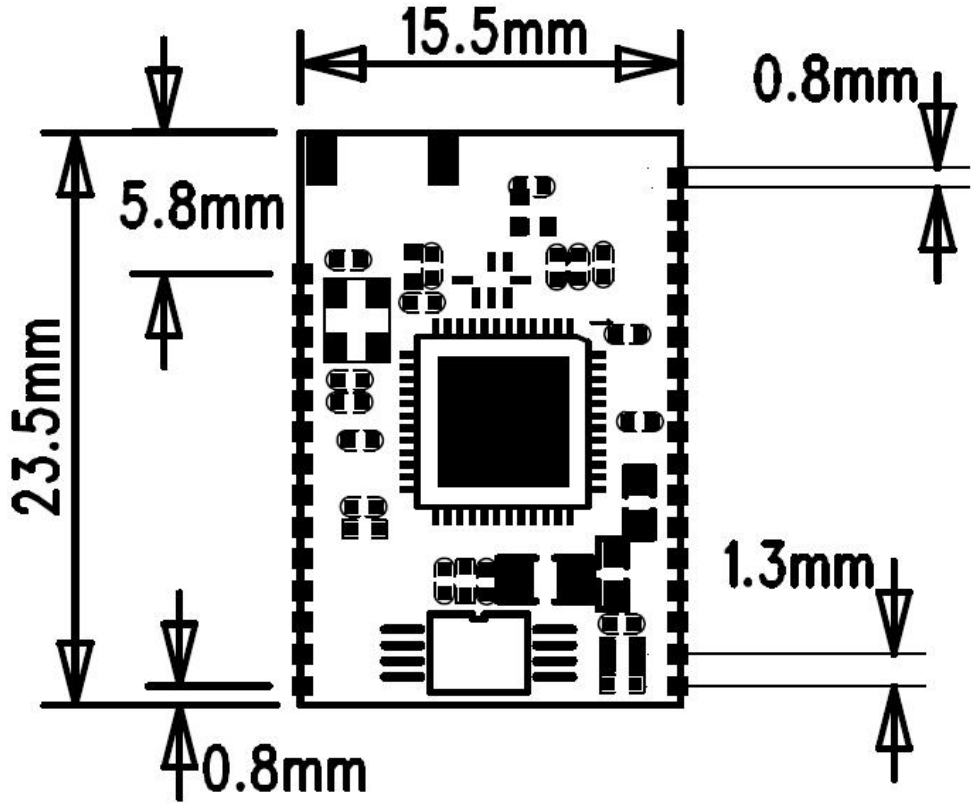
● module size: L23.5 x W15.5 x H1.8 mm

Application:

- High quality Bluetooth headset
- The Bluetooth hands-free,
- The Bluetooth hands-free,

The size of the module and foot bitmap:





性能参数：

型号	F-3098
蓝牙规格	Bluetooth V3.0
调制方式	GFSK, 1Mbps, 0.5BT Gaussian
供电电压：	Battery voltage VDD:3.3 supply
支持蓝牙协义	A2DP,HSP,HFP
工作电流	≤30mA
待机电流	<0.4mA
温度范围	-40°C to +80°C
无线传输范围：	10米
传输功率：	CLASS 2 4dBm
灵敏度：	-91dBm@0.1%BER
频率范围：	2.4GHz-2.480GHz
对外接口：	PIO, SPI, Speake, Microphone
音频性能	High acoustic fidelity sound
音频信噪比：	≥75dB
失真度	≤0.01%
模块尺寸	23.5X15.5X1.8MM

Pin description:

1、Pin Configurations	NAME	TYPE	FUNCTION
PIN NO.	**GND2**	GND	Ground connections
1	**AIO1**	Bidirectional	Programmable input/output line
2	**AIO1**	Bidirectional	Programmable input/output line
3			
4	**PIO20/RX**	Bidirectional with weak internal pull-down	UART data input, active high. PIO[20] is clock for SPI flash interface
5	**PIO23/TX**	Bidirectional with weak internal pull-up	UART data output, active high. PIO[23] is data output for SPI flash interface
6	**PIO3**	Bidirectional with programmable strength internal pull-up/down	Programmable input/output line
7	**PIO2**	Bidirectional with programmable strength internal pull-up/down	PIO[3] is chip select for SPI flash interface Programmable input/output line
8	**PIO1**	Bidirectional with programmable strength internal pull-up/down	Programmable input/output line
9	**PIO0**	Bidirectional with programmable strength internal pull-up/down	Programmable input/output line
10	**RST**	Input with weak internal pull-up	Reset if low. Input debounced so must be low for >5ms to cause a reset
11	**PIO11**	Bidirectional with programmable strength internal pull-up/down	Programmable input/output line. PIO[11] is data input for SPI flash interface
12	**LED1**	Open drain output	LED driver
13	**LED0**	Open drain output	LED driver
14	**GND3**	GND	Gronnd connections
15	**GND**	GND	Gronnd connections
16	**1V8**	Power	Positive supply for bluecore
17	**POWER_EN**		Take high to enable both high-voltage regulator and switch-mode regulator
18	**BAT**		Lithium ion/polymer battery positive teminal.Battery charger output and input to switch-mode regulator
19	**CHG**		Lithium ion/polymer battery charger input
20	**MIC_BIAS**	Analogue	Microphone bias

21	MIC_P	Analogue	Microphone input, positive
22	MIC_N	Analogue	Microphone input, negative
23	SPKR_N	Analogue	Speaker output, negative
24	SPKR_P	Analogue	Speaker output, positive
25	MOSI	with weak internal	SPI data input
26	CLK	pull-down Bidirectional with weak	SPI clock
27	CSB	internal pull-down Bidirectional with weak	Chip select for SPI, active low
28	MISO	internal pull-down Bidirectional with weak	SPI data output
29	GND1	internal pull-down GND	Gronnd connections
30	RF	RF	RF
31	GND0	GND	GND

Matters needing attention:

1.The antenna side not of metal

2 .box can not be large shield

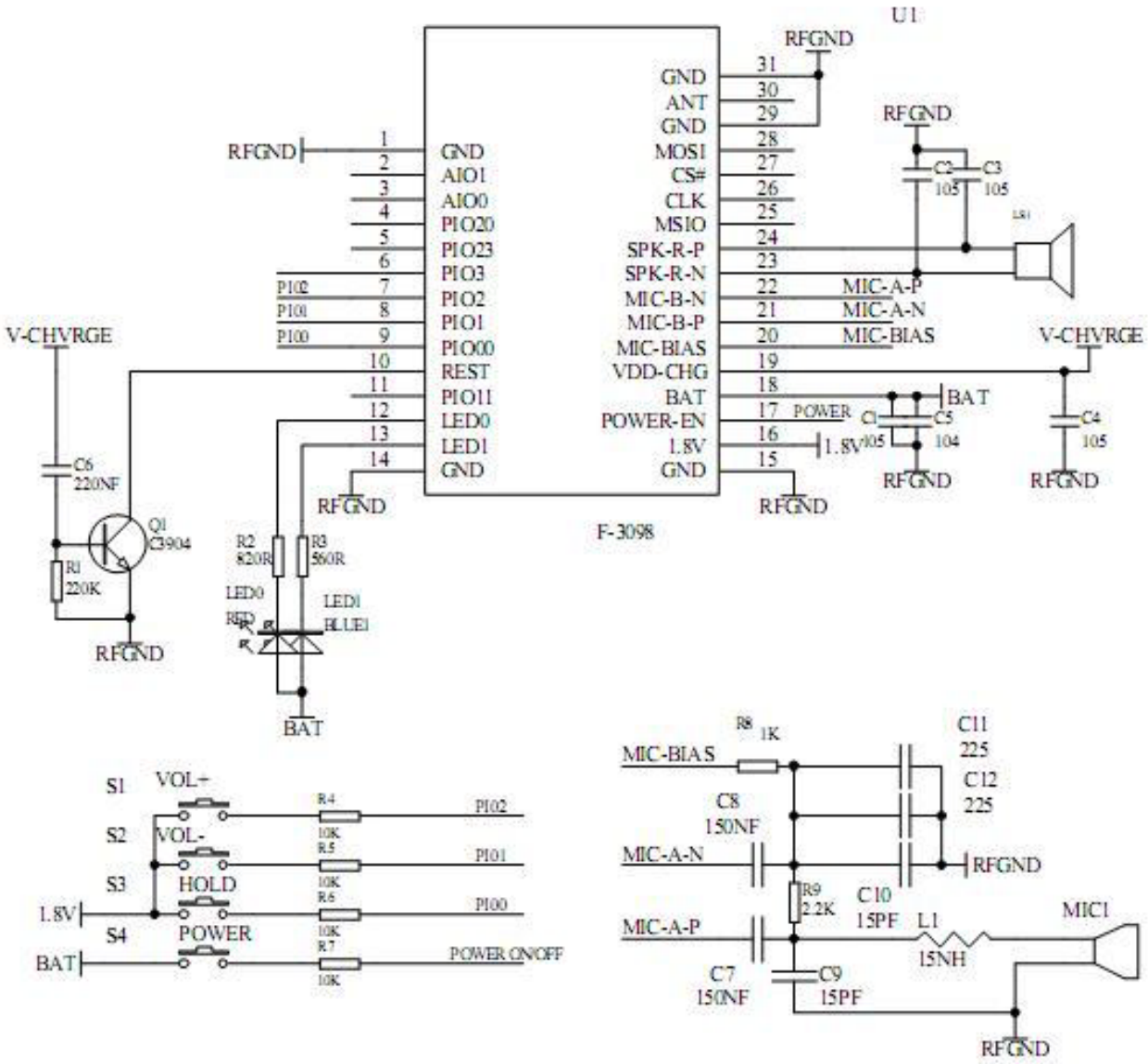
3 .should be placed near the electrolytic capacitor in the PAD modules.

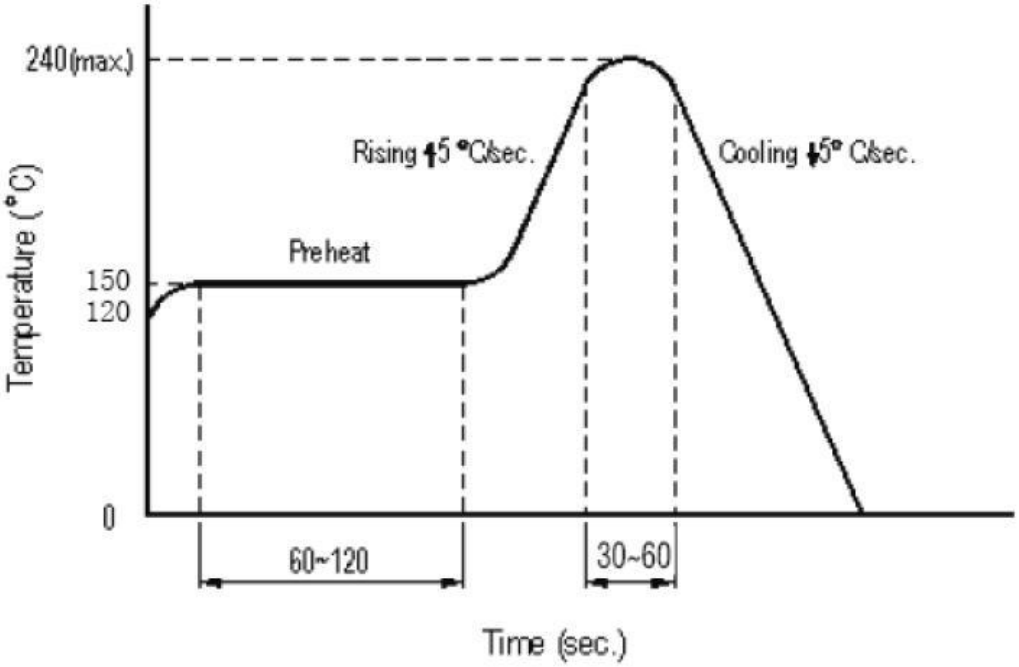
4.The common end of noise inhibition, the need to increase the operational amplifier in front amplifier or master to eliminate interference

5. main control, power amplifier, the module must be well grounded, don't allow the island or closed loop, module grounding

And the main control and power amplifier ground potential difference between shall not be greater than 1mV.

The application circuit diagram:




240(max.)
Rising 5 °C/sec.
Cooling 5° C/sec.
Preheat
150
120
0
Temperature (°C)
60~120
30~60
Time (sec.)