# Bluetooth module F-6188 V4.0 User's Manual

1. Product Overview:

F-6188 Bluetooth module is a self-developed intelligent wireless audio data transmission product, which is a low-cost, cost-effective stand.

The body sound wireless transmission solution, the module uses BEKEN's BK8000L chip to provide high quality sound quality and compatibility for the module, and the overall performance is superior. The F-6188 Bluetooth module is driver-free. Customers only need to connect the module to the application, they can quickly realize the wireless transmission of music, enjoy the fun of wireless music, and support SPP programs.

2. Application areas:

This module is mainly used for short-distance music transmission, and can be easily set up with Bluetooth for digital products such as laptops, mobile phones, PDAs, etc.

Connected to achieve wireless transmission of music.

※ Bluetooth audio

※ Bluetooth stereo headset

※ Speakerphone

※ Bluetooth wireless transmission audio

3. Basic characteristics:

Bluetooth Profiles

※ Bluetooth v2.1+EDR specification support

※ A2DPv1.2

※ AVRCPv1.0

※ HFPv1.5

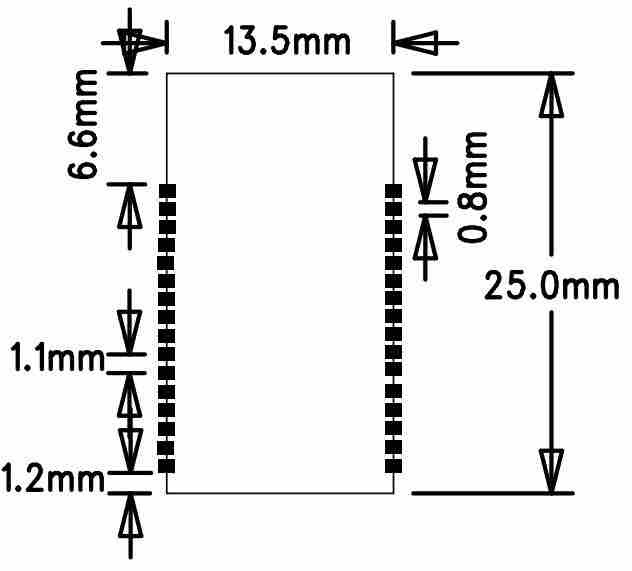
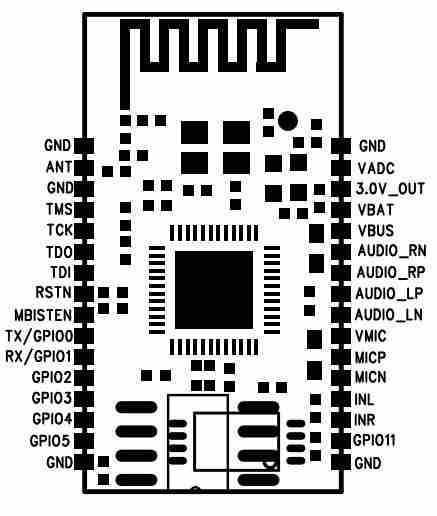
※GAVDP1.2

※HSP1.2

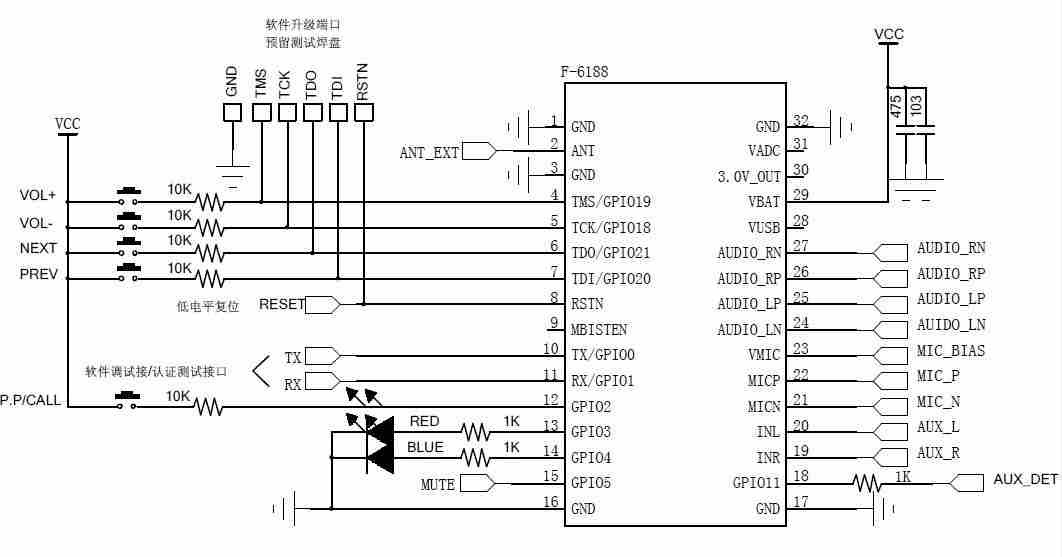
※IOP

1. Performance parameters:

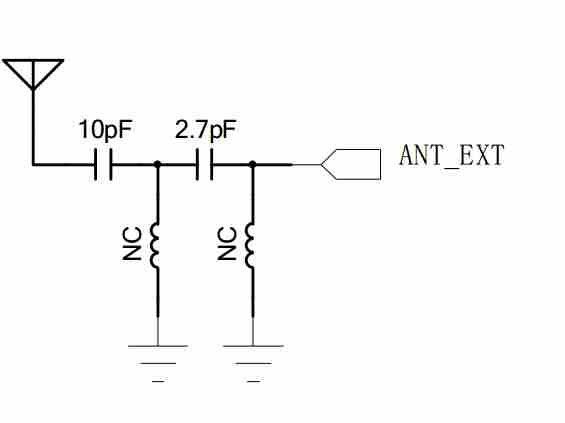
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| --- | --- |
| Model | F-6188 V4.0 |
| Bluetooth specification | Bluetooth v2.1+EDR |
| Supply voltage | DC2.8-4.2V |
| Support Bluetooth protocol | HFPV1.5, A2DPV1.2,AVRCPV1.4，HSP1.2, GAVDP1.2，IOP |
| Working current | ≤45mA |
| Stand-by current | <500uA |
| Temperature range | -40ºC to +85ºC |
| Wireless transmission range | 大于 10 M |
| Transmission power | CLASS2，4dbm |
| Sensitivity | -80dBm<0.1%BER |
| Frequency Range | 2.4GHz-2.480GHz |
| External Interface | I2C, SPI and UART interface |
| Audio performance | SBC decoding |
| Audio signal to noise ratio | ≥75dB |
| Size | 25X13.5X1.8MM |

1. 
2. 
3. PIN descriptions:

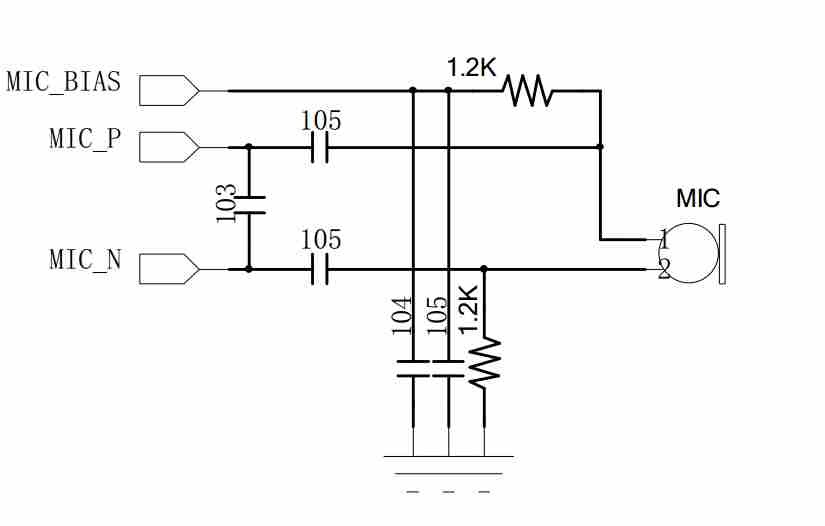
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| --- | --- | --- | --- |
| Pin | Symb | I/O | Description |
| 1 | GND | GND | RF\_GND |
| 2 | ANT | ANT | ANT PORT |
| 3 | GND | GND | RF\_GND |
| 4 | TMS(GPIO19) | Digital I/O | JTAG pin |
| 5 | TCK(GPIO18) | Digital I/O | JTAG pin |
| 6 | TDO(GPIO21) | Digital I/O | JTAG pin |
| 7 | TDI(GPIO20 | Digital I/O | JTAG pin |
| 8 | RSTN | Digital I/O | JTAG pin / Reset pin-low active |
| 9 | MBISTEN | Digital I/O | Memory bit check |
| 10 | GPIO0(TX) | Digital I/O | UART TX |
| 11 | GPIO1(RX) | Digital I/O | UART RX |
| 12 | GPIO2 | Digital I/O | GPIO2 |
| 13 | GPIO3 | Digital I/O | GPIO3 |
| 14 | GPIO4 | Digital I/O | GPIO4 |
| 15 | GPIO5 | Digital I/O | GPIO5 |
| 16 | GND | GND | Ground connect battery negative |
| 17 | AGND | AGND | Ground connect battery negative |
| 18 | GPIO11 | Digital I/O | GPIO11 |
| 19 | LINR | AUX\_INPUT | LINR |
| 20 | LINL | AUX\_INPUT | LINL |
| 21 | MICN | MIC- | MICN |
| 22 | MICP | MIC+ | MICP |
| 23 | VMIC | VMIC | VMIC |
| 24 | AUDIOLN | Audio output | Left channel audio output negative |
| 25 | AUDIOLP | Audio output | Left channel audio output positive |
| 26 | AUDIORP | Audio output | Right channel audio output positive |
| 27 | AUDIORN | Audio output | Right channel audio output negative |
| 28 | VBUS | Charge port | VBUS |
| 29 | VBAT | Power supply | Power supply |
| 30 | 3V0 | Power | 3.0V output |
| 31 | ADC | Power | ADC input |
| 32 | GND | GND | GND |

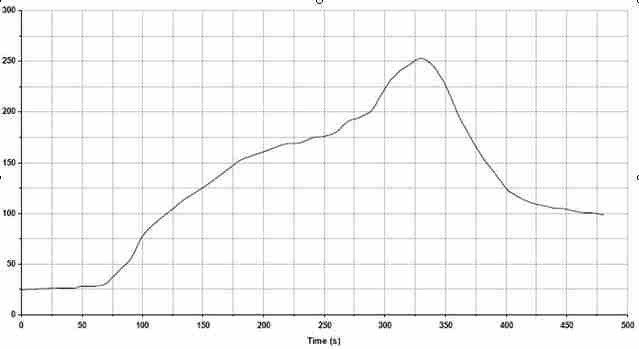


F-6188

1. 
2. MIC line:

MIC Recommended Specifications: Sensitivity -38dB/+-2dB DC2V Operating Voltage





## Key features of the profile:

-Initial Ramp=1-2.5℃/sec to 175℃ equilibrium

-Equilibrium time=60 to 80 seconds

-Ramp to Maximum temperature (250℃)=3℃/sec Max

-Time above liquidus temperature(217℃): 45 - 90 seconds

-Device absolute maximum reflow temperature: 250℃