The Bluetooth module F-6188 manual

Product overview

Intelligent wireless audio data transmission products F-6188 Bluetooth module for the independent development of our company, is the high price of stereo wireless transmission scheme of low cost, module uses BEKEN chip to provide the high quality and compatibility for the module, the overall better performance. F-6188 Bluetooth module with free driving mode, customers only need to access the application module products, wireless transmission can quickly realize the music, enjoy wireless music.

Field of application

This module is mainly used for music transmission in short distance, can be connected with mobile phone and personal computer, conveniently, the connection between PDA and other digital products, enjoy bluetooth wireless transmission of music.

Bluetooth audio

Bluetooth stereo headset

hands-free phone

The Bluetooth wireless audio transmission

Essential qualities

Bluetooth Profiles
Bluetooth v3.0 specification support
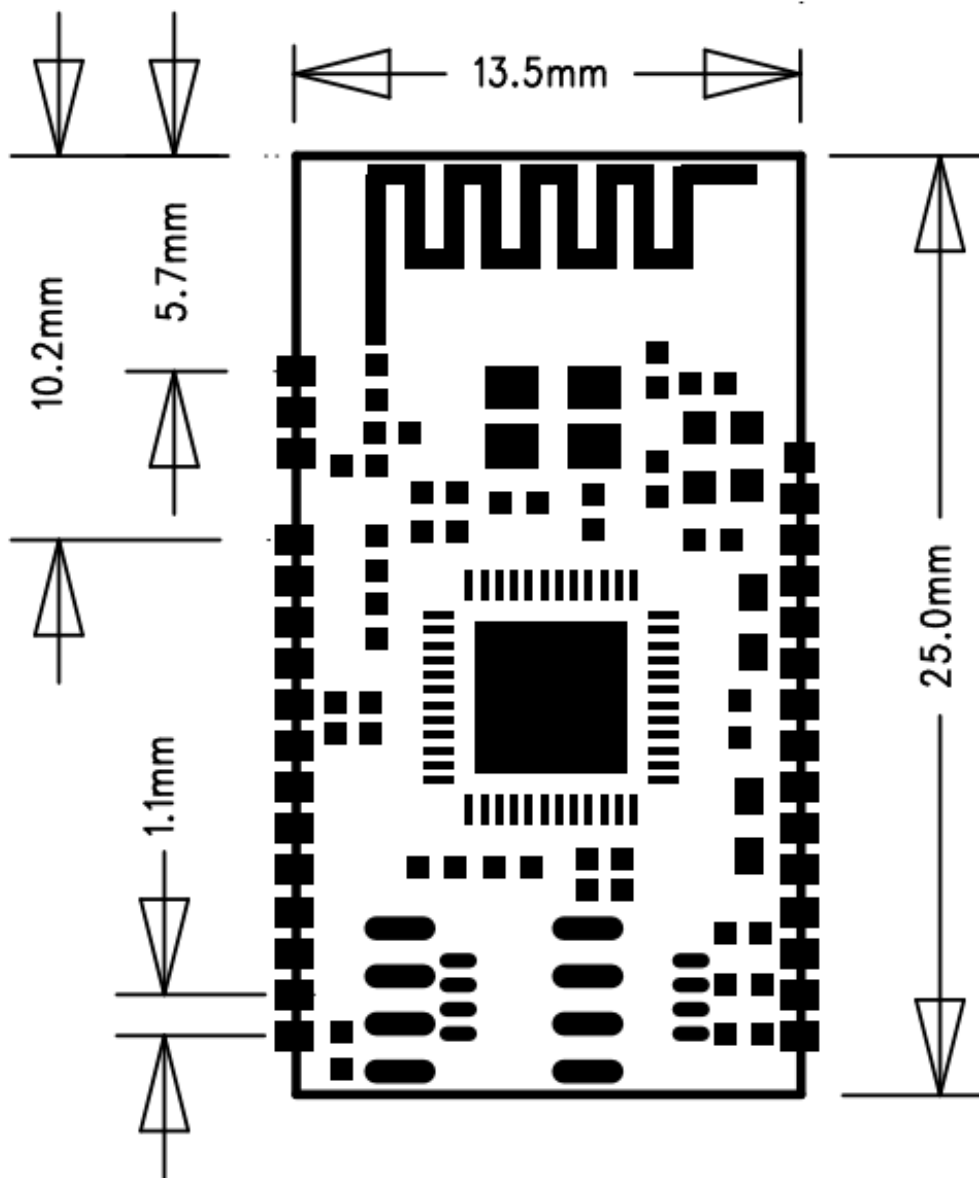A2DPv1.2
AVRCPv1.0
HFPv1.5
GAVDP1.2
HSP1.2
IOP

Performance parameters
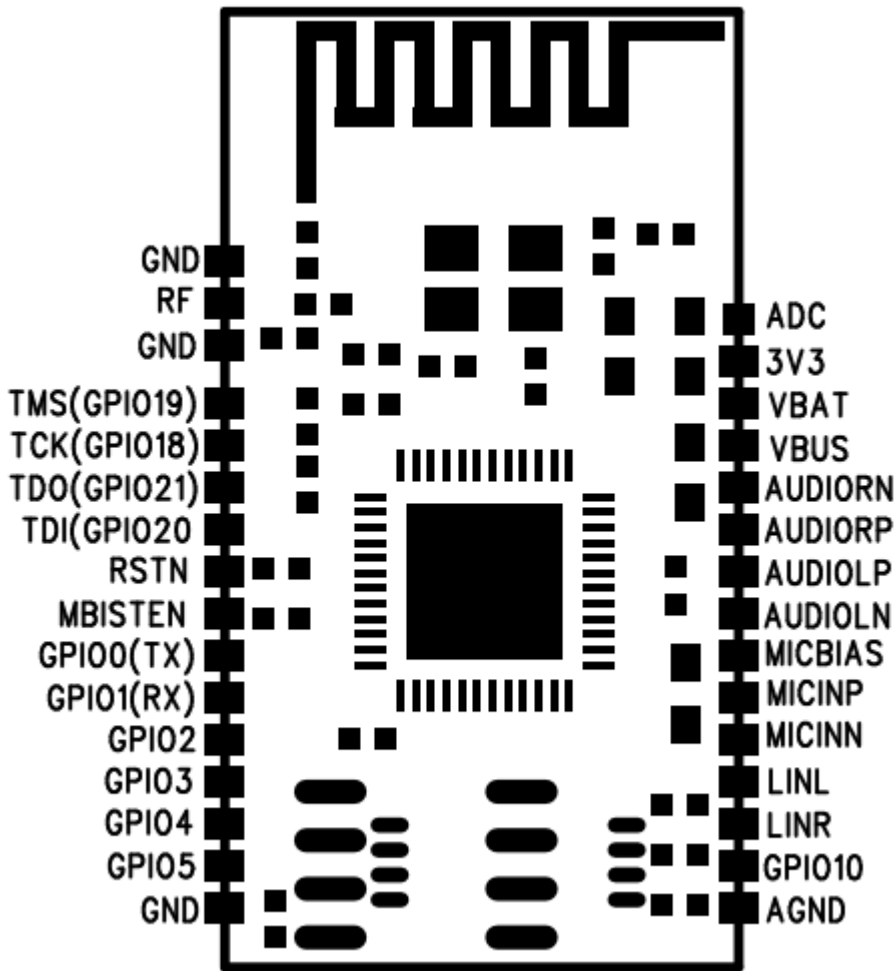
Model	F-6188 v4.0
Bluetooth	Bluetooth V3.0

specification	
supply voltage	DC2.8-4.2V
Support Bluetooth protocol	HFPV1.5, A2DPV1.2,AVRCPV1.4 HSP1.2, GAVDP1.2 IOP
working current	60mA
standby current	<500uA
temperature range	-40℃ to +85℃
The wireless tranmission range	<10 meter
Transmission power	CLASS2 4dbm
sensitivity	-80dBm<0.1%BER
frequency range	2.4GHz-2.480GHz
External Port	I2C, SPI and UART interface
audio performance	SBCdecode
The audio Signal to Noise Ratio	75dB
Module size	25X13.5X1.8MM

The size graph of the module

Module pin definition diagram

GND	
RF	ADC
GND	3V3
TMS(GPIO19)	VBAT
TCK(GPIO18)	VBUS
TDO(GPIO21)	AUDIORN
TDI(GPIO20	AUDIORP
RSTN	AUDIOLP
MBISTEN	AUDIOLN
GPIO0(TX)	MICBIAS
GPIO1(RX)	MICINP
GPIO2	MICINN
GPIO3	LINL
GPIO4	LINR
GPIO5	GPIO10
GND	AGND

Pin description

Pin	Symb	I/O	Description
1	RF_GND	RF_GND	RF_GND
2	ANT	ANT	ANT PORT
3	RF_GND	RF_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	GPIO10	Digital I/O	GPIO10
19	LINR	AUX_INPUT	LINR
20	LINL	AUX_INPUT	LINL
21	MICINN	MIC-	MICINN
22	MICINP	MIC+	MICINP
23	MICBIAS	MICBIAS	MICBIAS
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			

Connection circuit notice

The F-6188 module in the application process, please pay attention to avoid the influence of power amplifier, a boost circuit to avoid interference source module, module power supply circuit with high power circuit unit to form a series circuit, in order to improve the SNR
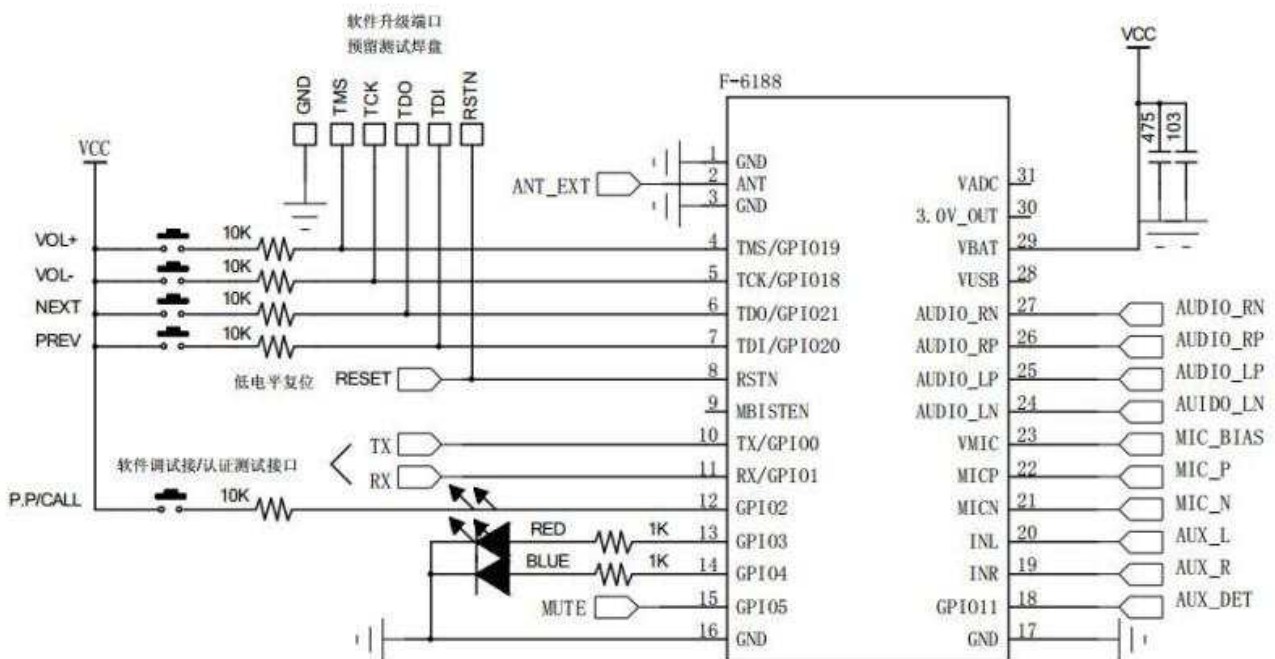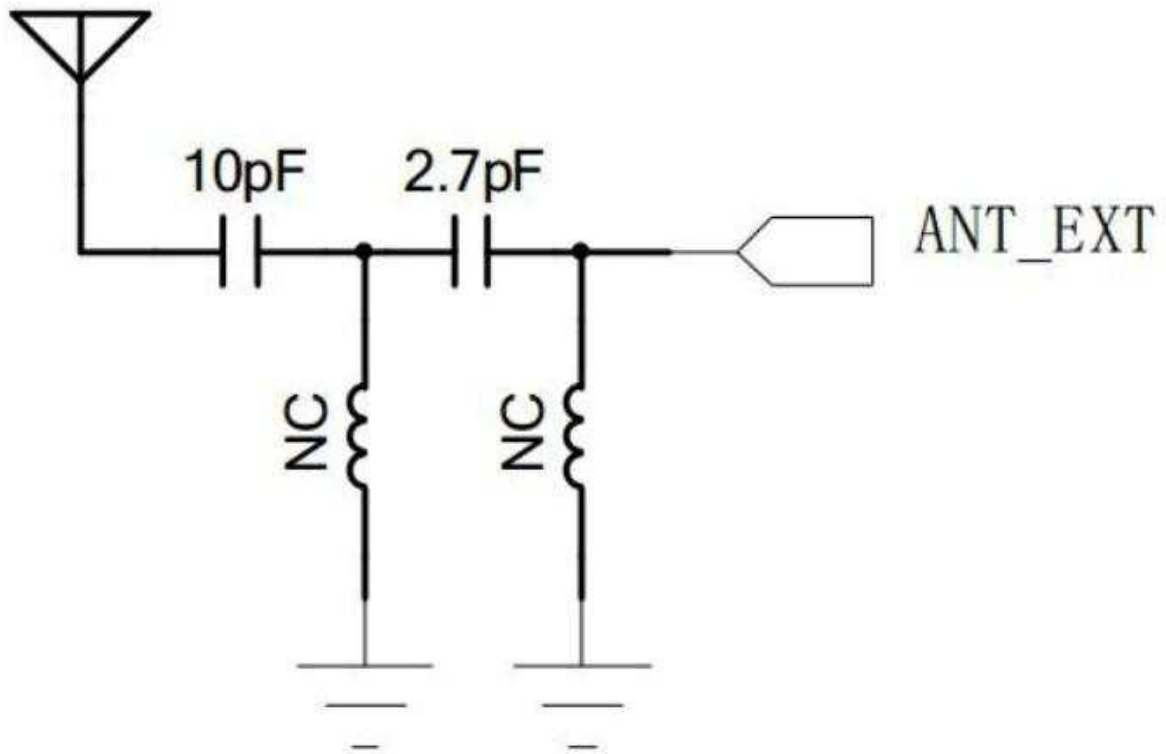
Notice

A About the Bluetooth wireless application environment, wireless signal includes a Bluetooth application are influenced by the surrounding environment, such as

Wood, metal and other obstacles will be absorbed on the wireless signal, thus in the practical application, influence the distance of data transmission

B Because Bluetooth module to complete the existing system, placed in the shell. Because of the metal shell on the radio frequency signal Is a shielding effect. It is recommended not to install in a metal shell.

C PCB Layout The antenna part of the Bluetooth module is the PCB antenna, the metal will weaken the function of antenna, while to the module layout, below the antenna module is prohibit paving and walk the line, if hollow out it is better
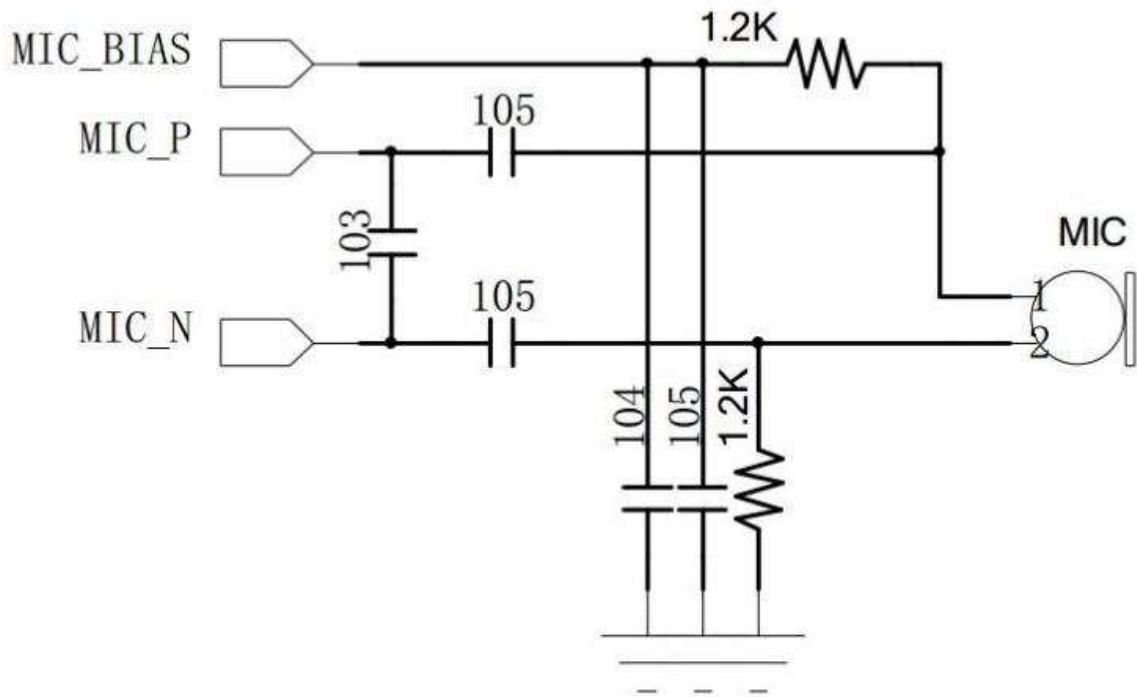
Application ciriuit

10pF   2.7pF

NC   NC

ANT_EXT

Notice The module has built-in antenna, external antenna as the need increases

MIC circuit

MIC Recommended Specification:sensitivity-38dB/+-2dB DC2V working voltage

The output power of this device is less than 20mW.The SAR test is not required.

This device complies with Part 15 of the FCC Rules and with RSS-210 of Industry Canada. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This Class B digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

NOTE: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications or changes to this equipment. Such modifications or changes could void the user's authority to operate the equipment.

A certified modular has the option to use a permanently affixed label, or an electronic label.

For a permanently affixed label, the module must be labelled with an FCC ID: KKI-F-6188 The OEM manual must provide clear instructions explaining to the OEM the labelling requirements, options and OEM user manual instructions that are required

For a host using a this FCC certified modular with a standard fixed label, if (1) the module's FCC ID is notvisible when installed in the host, or (2) if the host is marketed so that end users do not have straightforward commonly used methods for access to remove the module so that the FCC ID of the module is visible; then an additional permanent label referring to the enclosed module:
" Contains Transmitter Module FCC ID: KKI-F-6188 or "Contains FCC ID: KKI-F-6188" must be used. The host OEM user manual must also contain clear instructions on how end users can find and/or access the module and the FCC ID.

Host product is required to comply with all applicable FCC equipment authorizations regulations, requirements and equipment functions not associated with the transmitter module portion. compliance must be demonstrated to regulations for other transmitter components within the host product; to requirements for unintentional radiators (Part 15B). To ensure compliance with all non-transmitter functions the host manufacturer is responsible for ensuring compliance with the module(s) installed and fully operational. If a host was previously authorized as an unintentional radiator under the Declaration of Conformity procedure without a transmitter certified module and a module is added, the host manufacturer is responsible for ensuring that the after the module is installed and operational the host continues to be compliant with the Part 15B unintentional radiator requirements. Since this may depend on the details of how the module is integrated with

the host, we suggest the host device to recertify part 15B to ensure complete compliance with FCC requirement: Part 2 Subpart J Equipment Authorization Procedures , KDB784748 D01 v07, and KDB 997198 about importation of radio frequency devices into the United States.