

Instruction Manual

Model: F-6988

Product overview

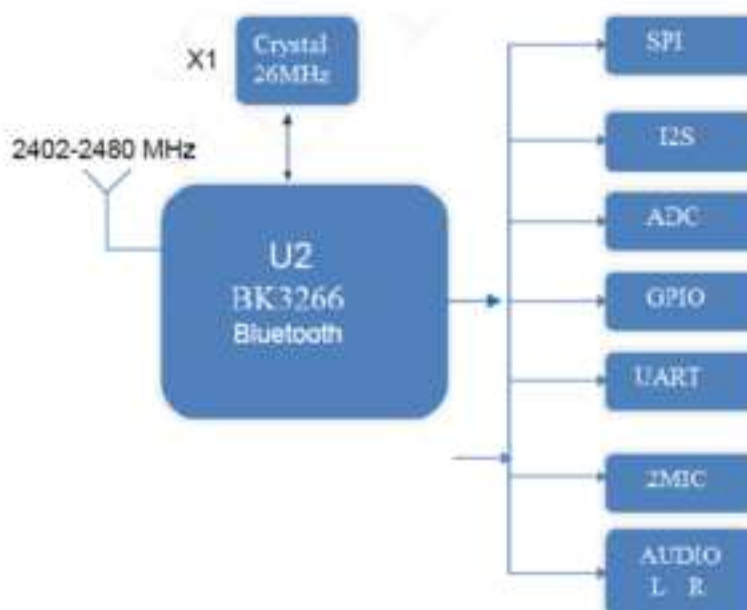
F-6988 is the Bluetooth module for intelligent wireless audio transmission products. Also it is the low cost stereo audio Bluetooth solution with high performance. The main chip uses BEKEN BK3266 chip QFN40 packaging design. Without any driver, you can connect the module with your device to enjoy the high quality music easily and simple data transmission functions. It supports intelligent voice prompting and reporting number function, integrated TF card playback function and integrated mobile USB-disk playback function. It also supports internal LINE-IN.

Modulation Type: GFSK, π /4DQPSK, 8DPSK

Bluetooth Version: 5.0

Antenna Type: PCB antenna

Block Diagram



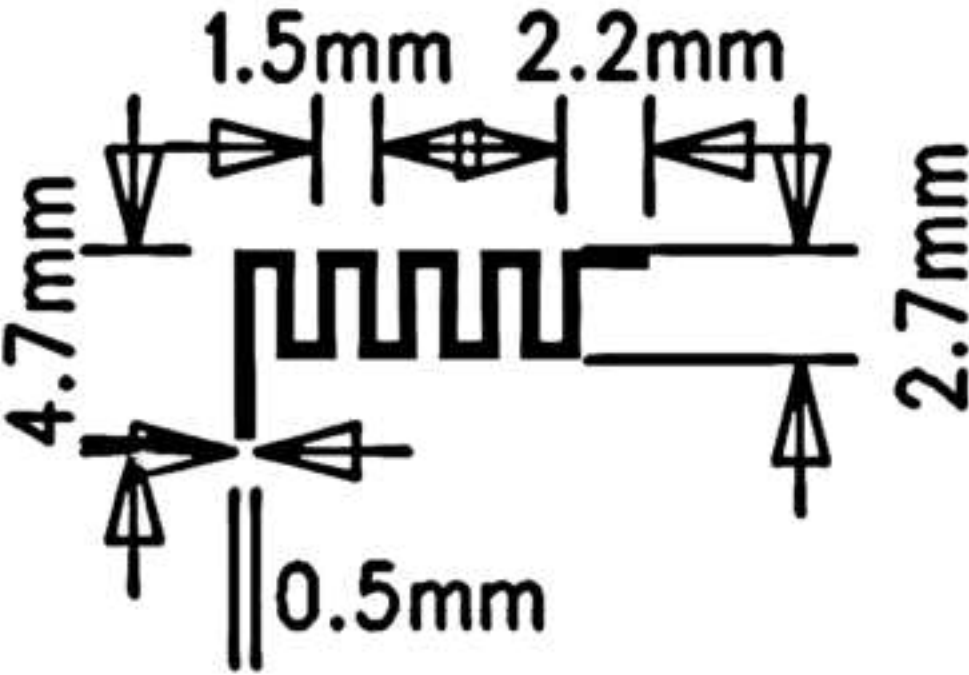
Power Design notes

In order to better SNR, please pay attention to the hardware design of PA, DC booster, DC/DC circuit and the module power circuit to avoid influencing module.

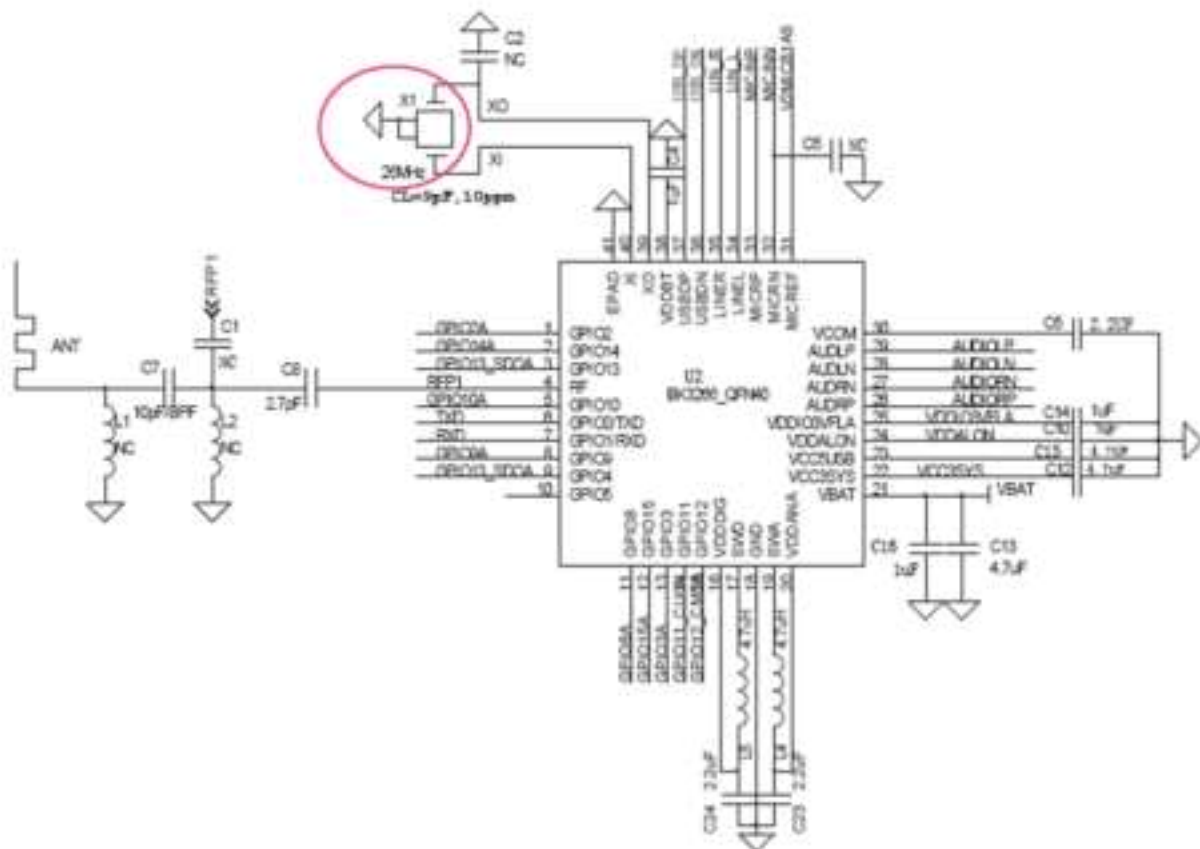
Antenna Specification

Frequency	2400~2483MHz
Antenna Type	PCB Microstrip Antenna
Antenna plate	Monopole antenna
Gain	0dBi
Connector type	direct

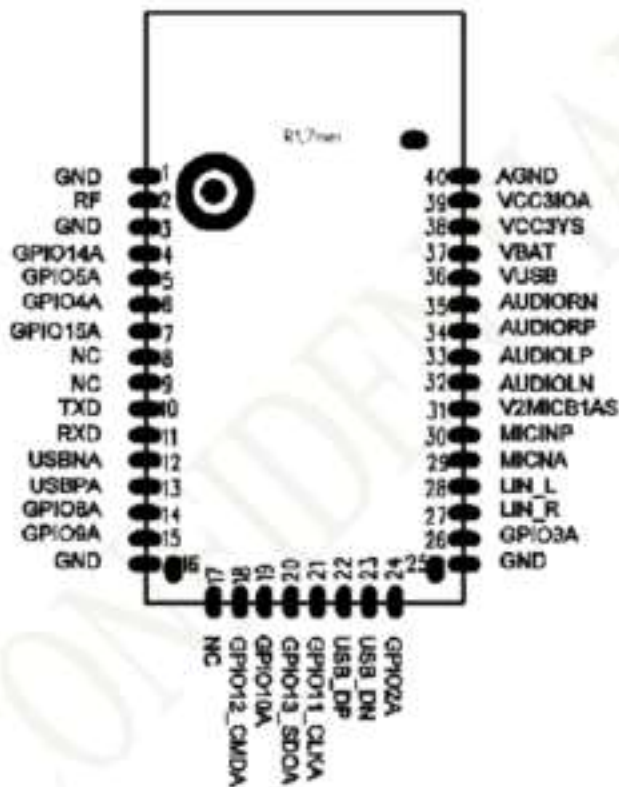
Outside view drawing for Antenna:



Application schematic diagram



Device pin out diagram:



Installation notes

- A. The signal strength is depending on the environment of Bluetooth application, such as wood and metal will block the transmission signal to get the shorter transmission distance.
- B. Because of metal will block the signal transmission, it is recommend not to using the metal housing.
- C. PCB layout guideline: no any copper existed in the antenna area of the module is the PCB antenna, the metal will weak en the function of the antenna when the antenna module to the module board, following prohibited paving and walk the line.
- D. If the module antenna next to the battery, metal, liquid crystal screen, loudspeaker, at least keep them away from antenna distance 15mm.
- E. When layout the power supply line recommended star line, and to ensure that the Bluetooth module Power supply lines is better , and BT should be with the amplifier, power amplifier, MCU, separately, and the underside of the BT has no other interference.
- F. Always suggests the module antenna part floating on the floor. Do not go around the antenna control line, power line, audio line, MIC interference lines.
- G. If the module antenna near the row seats, Because of metal will block the signal transmission, it is recommended to use professional high-gain antenna.

Federal Communication Commission Interference Statement

This device complies with Part 15 of the FCC Rules. 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.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Radiation Exposure Statement:

The product is a low power device and its output power is lower than FCC SAR exemption level.

This device is intended only for OEM integrators under the following conditions:

The transmitter module may not be co-located with any other transmitter or antenna.

The co-transmitting with other radio will need a separate evaluation.

As long as this condition is met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed.

IMPORTANT NOTE: In the event that this condition cannot be met (for example certain lap top configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID cannot be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

End Product Labeling

The final end product must be labeled in a visible area with the following: **"Contains FCC ID: 2AFHW-F6988"**. The grantee's FCC ID can be used only when all FCC compliance requirements are met.

Manual Information to the End User

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module. The end user manual shall include all required regulatory information/warning as show in this manual.

Industry Canada statement

- ❶ This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions:
 - 1) this device may not cause interference, and
 - 2) this device must accept any interference, including interference that may cause undesired operation of the device.
- ❷ 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.
- ❸ This Class B digital apparatus complies with Canadian ICES-003.
- ❹ Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.
- ❺ This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter, except tested built-in radios.
- ❻ Cet appareil et son antenne ne doivent pas être situés ou fonctionner en conjonction avec une autre antenne ou un autre émetteur, exception faites des radios intégrées qui ont été testées.
- ❼ The County Code Selection feature is disabled for products marketed in the US/ Canada.
- ❽ La fonction de sélection de l'indicatif du pays est désactivée pour les produits commercialisés aux États-Unis et au Canada.
- ❾ **FOR MOBILE DEVICE (>20cm from body / low power)**

Radiation Exposure Statement:

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Déclaration d'exposition aux radiations:

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.