1) Main parameters:

Power adaptor: 3.7V 900mAh built-in lithium battery
Charging voltage: DC 5V
Speaker resistor: 4Ohm
Power consumption output: 1W*2

2) Circuit declaration

1. ISP202 is a 2.0(stereo) portable Bluetooth speaker.
2. ISP202 can support both AUX and Bluetooth music.
   2.1. When play AUX music, sound frequency L&R signal enter into 3(R IN)&18(L IN) of IC HT6809(U3) through J5(earphone dock), after amplifying, transferring into L&R speaker from amplifier IC 5(RO+), 8(RO-) and 13(L-) 16(L+).
   2.2. The shift between AUX and Bluetooth can be controlled by J5(earphone dock). When AUX signal is input, J5(earphone dock) switch outputs L electrical level, counter wisely, J5(earphone dock) switch outputs H level.
   2.3. While playing AUX music, the Bluetooth module power will be cut off to stop working through J5(earphone dock) switch to control the Bluetooth module.
   2.4. Under Bluetooth working status, due to no AUX signal input, it can use J5(earphone dock) switch to control the Bluetooth module to make it pass, then the Bluetooth can be charged by power adaptor which will help Bluetooth work. The Bluetooth signal L,R input the common-mode noise which output from 1,7pin of U3 to stop U5(LM358), sound frequency L&R signal enter into 3(R IN)&18(L IN) of IC HT6809(U3) through J5(earphone dock), after amplifying, transferring into L&R speaker from amplifier IC 5(RO+), 8(RO-) and 13(L-) 16(L+).
   2.5.

3) Power charging

Electricity of ISP202 is supplied by 3.7V 900mAh built-in lithium battery. When the power is limited, it can be charged by outer DC 5V adaptor, which connected with mini USB cable, using charging management IC HX6001(U4) to transfer the power to device.

The mini usb of this device contains five pins. Only two pins which are used for charging is ability to function. Other three pins are suspended. There is no address information confirmation.

4) The device is a standard bluetooth stereo speaker, The working frequency of RF module

F-3088（crystal is 26MHz） is setted to 2402MHz ~ 2480MHz, the frequency separation is 1MHz and there are
79 channels. with the spread spectrum code sequences to hopping constantly.

To make sure the communication stable, Bluetooth special design the fast acknowledge and frequency hopping plan to ensure that link stability. First link, between bluetooth devices will build a pseudorandom code, Only the pseudorandom code is same, the information transfer will be accepted. Other interference is not possible in the same sequence of interference. Bluetooth through the spread spectrum technology, Make the influence of interference may become very small.

The working procedures are:
1. Power on, the indicator light flashes faster, the ISP202 enter to pair mode.The ISP202 will do the frequency hopping according to a certain sequence, and then send the connection command.
2. If there is a Device response, the ISP202 will judge whether it can be permitted to connect. Prompt enter a passkey.
3. If the passkey is right, then can be permitted to connect, send the connection command to build up the connection.
4. While the connection build up successfully, the data transmission is beginning. At the same time, the ISP202 and device will shift frequencies in synchronization per a same pseudo randomly ordered list of hopping frequencies, the hopping rate is 1600 times per second.
5. The bandwidth of the receiver, which is set to a fix width by the software, match the hopping channel bandwidth of their corresponding transmitter.