

Circuit Description

The USB Dongle is part of a wireless headset, it includes three main IC: IA2EH, SGM2019 and SA02.

IC IA2EH, which utilizes a 16MHz OSC, controls the transceiver and USB audio process, it is a full duplex system.

IC SGM2019 is the power management IC which supply the PCB power for transmitter.

And the IC SA02 controls transceiver LNA and PA.

The working procedures are:

1. When power on, the USB dongle will do the frequency hopping according to a certain sequence, and then send the connection command.
2. If there is a Device response, the USB dongle will judge whether it can be permitted to connect.
3. If it can be permitted to connect, then 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 USB dongle and device (headset) will shift frequencies in synchronization per a same pseudo randomly ordered list of hopping frequencies, the hopping rate is 250 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.
6. The USB dongle could recognize other type of devices within the ISM band to avoid hopping on occupied channels by using the build-in Intelligent Recognition Technology