

The brief introduction of the circuit of the

Bluetooth Handsfree & Headset

- 1 This EUT is a Bluetooth Handsfree & Headset. The actual operational frequency range is 2402-2480MHz and its maximum RF transmit power is 2dBm.
2. IC U1 crystal vibration Y1 16MHz will be launched out via antenna, after the 64 times frequency in U1, enlarged by the inside U1, exported passing RF_P and RF_N, and then going through the internet composed by U2、L2、C2、C3、C4、C5 and filtered noises.
3. the adjusted signal adds via U1, XTAL_IN, by adjusting the change of frequency of Y1, 16MHz, in order to reach the purpose which is to add the signal to the main frequency.
4. Latching antenna is printing antenna, in fact, good effect can be obtained by **PIFA** antenna.
5. power of the whole body is provided by 3.7V battery.
6. Shooting frequency testing point, via a solid connecting frequency testing point on the designing connection board, puts a shooting frequency change connecting equipment on the sieve and antenna.
7. The program memory U3 for the BlueCore6- Audio ROM QFN is internal ROM so the I²C interface can only connect to a serial EEPROM, an example is shown in Figure 8.4. The EEPROM stores PS Keys and configuration information.
8. Logic for forward error correction, header error control, access code correlation, CRC, demodulation, encryption bit stream generation, whitening and transmit pulse shaping. Supports all mandatory Bluetooth v2.1 + EDR specification features including eSCO and AFH.
9. Multipoint support, allowing the headset to connect to two phones or one phone and a VoIP dongle.

1. FHSS characteristics

The Bluetooth AFH construction (see Fig. 3). Add a group mapping in frequency synchro mesh and frequency-hopping sequence generator. This mapping is a self-adjusting frequency selector in fact.

Group mapping construction (see Fig. 4). Select a channel from the groups need to be divided, through PN mapping instrument, select channel mapping to grouping sequence from original frequency-hopping sequence. Enumerates grouping channel content in every channel list according to rising forward sequence.

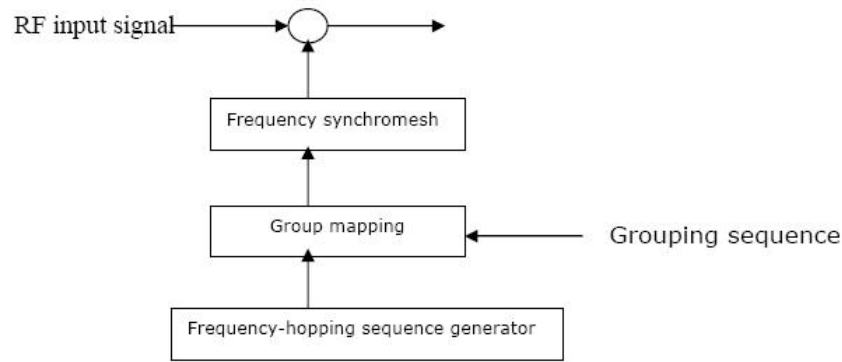


Figure 3 Bluetooth AFH Constructions

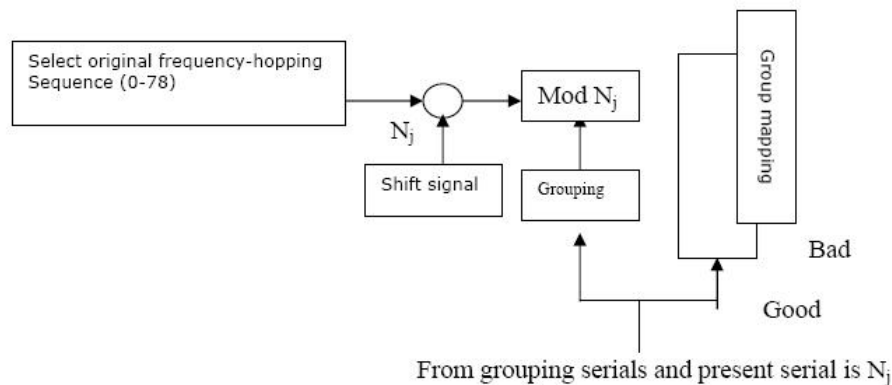


Figure 4 Group mapping construction

After grouping mapping, average shift signal balanced the channel usage. These shift signal is series counter, every counter indicate a group. The number J group is counting periodically in $\{0, 1, 2, \dots, N_j - 1\}$ scope. N_j is the number J channel number in grouping. The selected grouping counter is counting the next data. And take the data as the shift signal output.

Channel is dynamically separated to 2 kinds of channel in Bluetooth: good channel N_G and bad channel $N_B = 79 - N_G$, define N_{\min} is the minimum required frequency number required for Bluetooth communication equipment.

Suitable for N_{\min} smaller than N_G situation. All the frequency spot can be selected in good channel in this situation, as indicated in Fig. 5. When the frequency-hopping generator happens good channel, no new mapping will repeat. When the channel is bad in frequency-hopping sequence, then choose a better channel from a good channel storehouse.

Through these 2 mode, in Bluetooth frequency selector, if the output channel is good, the use it directly; if it is the bad channel, then select frequency in good channel grouping. This selection avoids hit between the output frequency and other disturbing frequency.

3. Equal Hopping Frequency Use

The EUT Complies with the Bluetooth RF specifications, for details refer to Bluetooth standards

4. Receiver input Bandwidth

The receiver bandwidth is equal to the receiver bandwidth in the 79 hopping channel mode, which is 1MHz, The receiver bandwidth was verified during Bluetooth RF conformance testing.

5. Receiver Hopping Capability

The EUT Complies with the Bluetooth RF specifications, for details refer to Bluetooth standards