# GI07Y MP3 Bluetooth Headset
# Operational Manual

**Product Description**

This product integrated a Bluetooth module to support the Bluetooth HSHF profiles that allows users to use it as a hands-free for their mobile phones while listening to music as the primary usage of this device.

**The brief introduction of the circuit**

1. IC U1 is the MP3 SoC to support the audio playback feature.
2. IC U3 is the NAND flash memory as the media for storage of music files as well as other documents.
3. IC U2 is the Bluetooth module that consists of a CSR BC04 Bluetooth chipset, 16MHz crystal, DCDC, balun and other components and the Bluetooth signal is transmitted and received through the antenna system consists of the chip antenna ANT1, and the matching circuit C17, C18 and L3.
4. Power of the whole body is provided by 3.7V battery.
5. 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.
6. The rest of the circuit includes the mic, audio output and the buttons to achieve its functions.

## 1. FHSS characteristics

The Bluetooth AFH construction (see Fig. 3). Add a group mapping in frequency synchromesh 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.

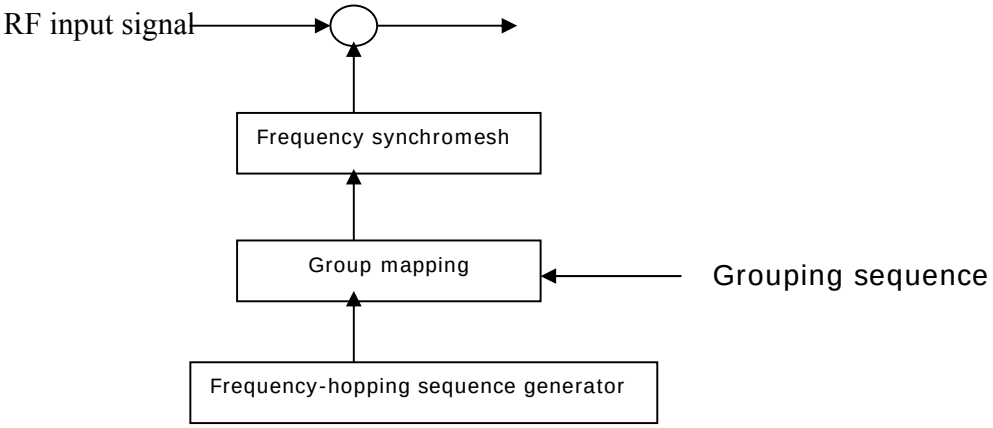


Figure 3 Bluetooth AFH Constructions

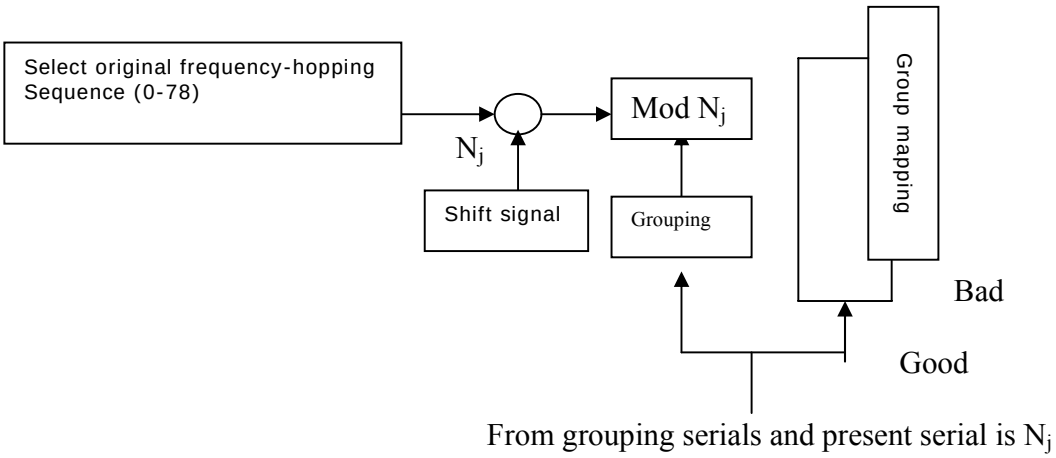


Figure 4 Group mapping construction

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，…，Nj－1｝scope. Nj 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 NG and bad channel NB=79-NG, define $N_{min}$ is the minimum required frequency number required for Bluetooth communication equipment.

Suitable for $N_{min}$ smaller than NG 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 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