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The theory of Bluetooth Speaker (Model: Gearbeast):

1, MCU: Processor running the embedded software, RF devices through the SPI interface to control the work.

2, RF Unit: RF device transmits data by modulating; the Crystal frequency is 26.000MHz.

3, Match NET: RF signal and the antenna impedance matching.

4, Antenna is on the PCB. The antenna gain is 0dBi.

5, Battery: Providing power for the product operating.

6, LED light: Display current state of Bluetooth Speaker

7, Sequence Pseudo-Random Sequence Generator to control channel frequency, the operating frequency of system is jumped randomly, and then, the next frequency start to operate, so this is a true frequency hopping system.

The hopping sequence is generated by internal random number generator , for example the hopping sequence is: 36, 15, 2, 53, 28, 77, 25, 19, 39, 41, 57, 4, 63, 13, 22, 31, 1, 36, 71, 18, 67, 21 etc.

8, Each new transmission event begins on the next channel in the hopping sequence after the final channel used in the previous transmission event, So each frequency is used equally on the average by each transmitter.

9, The associated bandwidth requirements of the associated receiver must meet the bandwidth of the transmitter and that they were tested together to assure that they operated together successfully and maintained synchronization

10, The operating frequency of system is jumped randomly and the next frequency start to operate , so this is a true frequency hopping system.

11, System operating frequency change by internal random number generator, it can not know external frequency occupancy, so it can not avoid frequency interference.