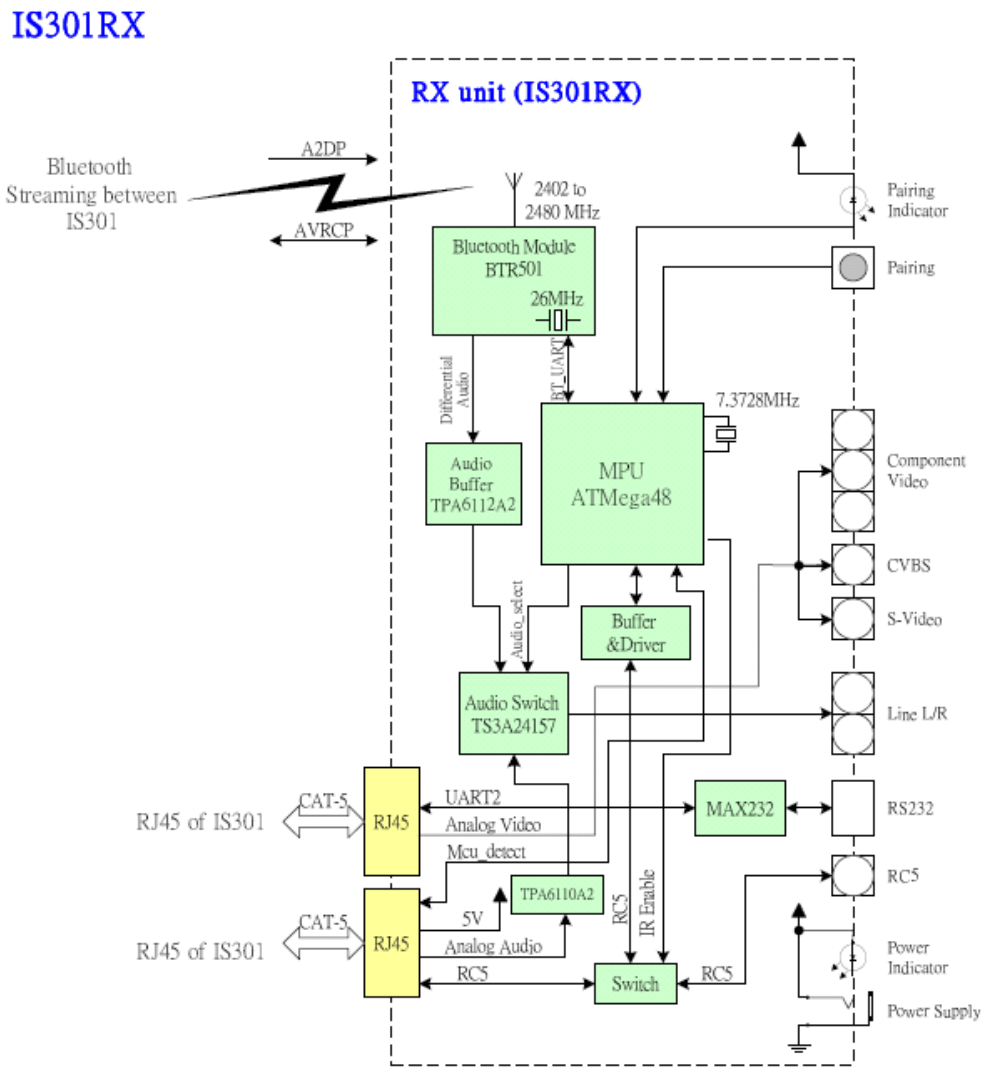
Applicant: Nicetex Electronics Ltd.
FCC ID: 0YNIS301R

Operation Description

Operation Frequency: 2402-2480MHz
Modulation Type: GFSK



The digital audio signal from IS301 received by Bluetooth Module BTR501, the Bluetooth Module BTR501 the Differential Audio signal to Audio Buffer:TPA6112A2, once Audio Buffer:TPA6112A2 got enough byte of signal, it transmit signal to Audio Switch:TS3A24157.
The Bluetooth Module BTR501 can communicate with MPU:ATMega48 by BT_UART. MPU:ATMega48 also processing other signal, Pairing, IR Enable, Buffer Driver (to RC5), MCU detect and audio select with Audio Switch:TS3A24157.

The Audio Switch:TS3A24157 sequence pass analog audio signal to Line L/R.
The two RJ45 receive signal from Base Unit for the purpose of Analog Video signal to Component Video, CVBS and S-Video, RC5 signal, 5V power to TPA6110A2, and UART2 to IC:MAX232.
The antenna used for this product is antenna with Reverse Polarity SMA connector, no consideration of replacement other than that furnished by the responsible party.
There is no external ground connection. The ground is only that of the printed circuit board. Electric current is supplied by a 8.0V AC to DC Adapter output.

1. FHSS characteristics

The Bluetooth AFH construction (see Fig. 1). 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. 2). 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.

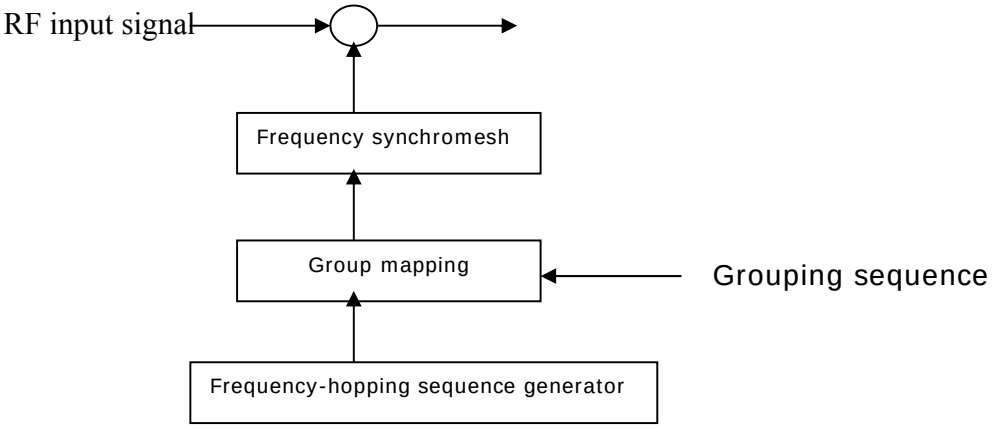


Figure 1 Bluetooth AFH Constructions

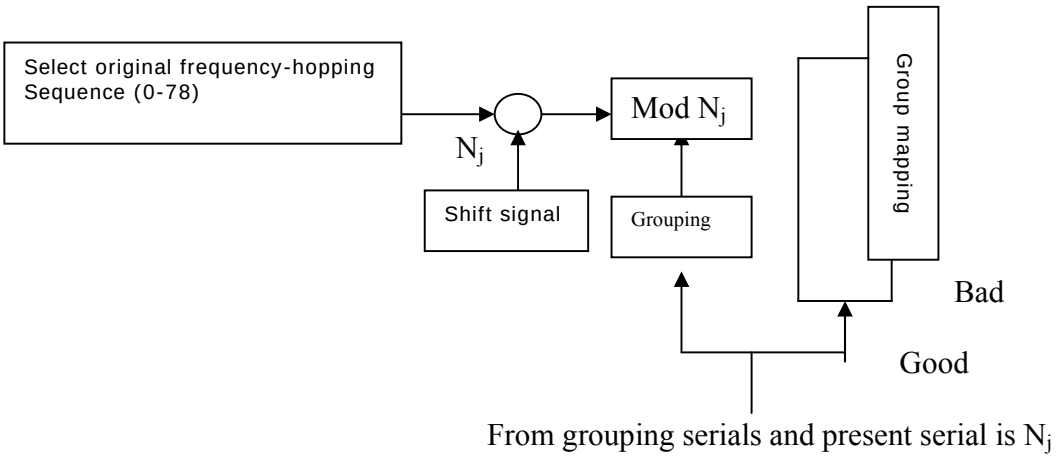


Figure 2 Group mapping construction

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, When the frequency-hopping generator happens good channel, no new mapping will repeat. When the channel is bad infrequency-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.

2. Equal Hopping Frequency Use

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

3. 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.

4. Receiver Hopping Capability

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