

RF Exposure Evaluation

FCC ID: 2A58W-F2

1. Client Information

| | | |
|---------------------|---|---|
| Applicant | : | Dongguan Hengdarui Electronic Technology Co.,Ltd |
| Address | : | Room 401, Building 2, No 51, Dakeng Road, Humen Town, Dongguan, China |
| Manufacturer | : | Dongguan Hengdarui Electronic Technology Co.,Ltd |
| Address | : | Room 401, Building 2, No 51, Dakeng Road, Humen Town, Dongguan, China |

2. General Description of EUT

| | | |
|---|--------------------------|---|
| EUT Name | : | Bluetooth Earphone |
| Model(s) No. | : | F2, F1, F4, F5, F6, F7, F8, R1, R2, R3, R4, S1, S4, S7 |
| Model Different | : | All these models are identical in the same PCB layout and electrical circuit, the only difference is that appearance and color. |
| Product Description | Operation Frequency: | Bluetooth V5.2: 2402MHz~2480MHz |
| | Number of Channel: | Bluetooth 5.2(BDR+EDR): 79 channels |
| | RF Output Power: | 1.893dBm (Max) |
| | Antenna Gain: | 2 dBi PCB Antenna |
| | Modulation Type: | GFSK, π /4-DQPSK |
| | Bit Rate of Transmitter: | 1/2Mbps |
| Power Supply | : | Input: DC 5V/100mA DC 3.7V by 250mAh Li-ion battery |
| Software Version | : | VER1.0 |
| Hardware Version | : | VER1.0 |
| Remark: The antenna gain provided by the applicant, the adapter and verified for the RF conduction test and adapter provided by TOBY test lab. | | |

Note: More test information about the EUT please refer the RF Test Report.

TB-RF-074-1.0

SAR Test Exclusion Calculations

1. FCC: According to KDB 447498 D01 Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies v06.

(1) Clause 4.3: General SAR test reduction and exclusion guidance

Sub clause 4.31: Standalone SAR test exclusion considerations

1) The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6GHz at test separation distance ≤ 5 mm are determined by:

$$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation, mm})] * [\sqrt{f_{\text{GHz}}}] \leq 3.0 \text{ for 1-g SAR}$$

$$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation, mm})] * [\sqrt{f_{\text{GHz}}}] \leq 7.5.0 \text{ for 10-g SAR}$$

2. Calculation:

| Test separation: 5mm | | | | | | |
|----------------------------------|-----------------------|------------------------------|--------------------------------------|-------------------------------------|-------------------|-----------------|
| Bluetooth Mode (GFSK) | | | | | | |
| Frequency (GHz) | Conducted Power (dBm) | Turn-up Power Tolerance (dB) | Max power of tune up tolerance (dBm) | Max power of tune up tolerance (mw) | Calculation Value | Threshold Value |
| 2.402 | -0.23 | -0 ± 1 | 1 | 1.259 | 0.390 | 3.0 |
| 2.441 | -1.02 | -1 ± 1 | 0 | 1.000 | 0.312 | 3.0 |
| 2.480 | -2.20 | -2 ± 1 | -1 | 0.794 | 0.250 | 3.0 |
| Bluetooth Mode ($\pi/4$ -DQPSK) | | | | | | |
| Frequency (GHz) | Conducted Power (dBm) | Turn-up Power Tolerance (dB) | Max power of tune up tolerance (dBm) | Max power of tune up tolerance (mw) | Calculation Value | Threshold Value |
| 2.402 | 1.89 | 2 ± 1 | 3 | 1.995 | 0.618 | 3.0 |
| 2.441 | 1.07 | 1 ± 1 | 2 | 1.585 | 0.495 | 3.0 |
| 2.480 | -0.11 | -0 ± 1 | -1 | 0.794 | 0.250 | 3.0 |

Conclusion:

The measurement results comply with the FCC Limit per 47 CFR 2.1093 for the uncontrolled RF Exposure and SAR Exclusion Threshold per KDB 447498 v06.

-----END OF REPORT-----