

RF Exposure Evaluation

FCC ID:2AYQ2-ES-T6

1. Client Information

| | | |
|---------------------|---|---|
| Applicant | : | SHENZHEN ESHINE INTERACTION TECHNOLOGY CO.,LTD |
| Address | : | 4F, Flat C, SIDE OF JINPENG INDUSTRIAL ZONE, XUEXIANG COMMUNITY, BANTIAN STREET, LONGGANG DISTRICT, SHENZHEN, CHINA |
| Manufacturer | : | SHENZHEN ESHINE INTERACTION TECHNOLOGY CO.,LTD |
| Address | : | 4F, Flat C, SIDE OF JINPENG INDUSTRIAL ZONE, XUEXIANG COMMUNITY, BANTIAN STREET, LONGGANG DISTRICT, SHENZHEN, CHINA |

2. General Description of EUT

| | | |
|---|---|--|
| EUT Name | : | Bluetooth earphone |
| Model(s) No. | : | ES-T6, ES-T6S, ES-T8, ES-T8S, ES-T9, ES-T9S, ES-T5, ES-T5S |
| Model Different | : | All these models are in the same PCB, layout and electrical circuit, the only difference is model. |
| Product Description | | Operation Frequency: Bluetooth V5.0(BT): 2402~2480 MHz |
| | | Number of Channel: Bluetooth: 79 Channels |
| | | Max Peak Output Power: Bluetooth: 2.564dBm(GFSK) |
| | | Antenna Gain: -1 dBi Caremic Antenna |
| | | Modulation Type: GFSK π /4-DQPSK 8-DPSK BLE1M/2Mbps |
| Power Supply (Earphone) | : | Input: Output DC 5V DC 3.7V by 55mAh Li-ion battery |
| Power Supply (Charger Box) | : | Input: Output DC 5V DC 3.7V by 2500mAh Li-ion battery |
| Software Version | : | N/A |
| Hardware Version | : | V2.1 |
| Remark: The antenna gain and adapter provided by the applicant, the adapter and verified for the RF conduction test provided by TOBY test lab. | | |

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

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:

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

- [(max. power of channel, including tune-up tolerance, mW)/(min. test separation, mm)] * $\sqrt{f_{\text{(GHz)}}} \leq 7.5.0$ 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 | 2.204 | 2±1 | 3 | 1.995 | 0.618 | 3.0 |
| 2.441 | 2.564 | 2±1 | 3 | 1.995 | 0.623 | 3.0 |
| 2.480 | 2.093 | 2±1 | 3 | 1.995 | 0.628 | 3.0 |
| Bluetooth Mode (π/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 | 1.991 | 1±1 | 2 | 1.585 | 0.491 | 3.0 |
| 2.441 | 2.178 | 2±1 | 3 | 1.995 | 0.623 | 3.0 |
| 2.480 | 1.641 | 1±1 | 2 | 1.585 | 0.499 | 3.0 |
| Bluetooth Mode (8-DPSK) | | | | | | |
| 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 | 2.34 | 2±1 | 3 | 1.995 | 0.618 | 3.0 |
| 2.441 | 2.465 | 2±1 | 3 | 1.995 | 0.623 | 3.0 |
| 2.480 | 1.921 | 1±1 | 2 | 1.585 | 0.499 | 3.0 |
| Bluetooth Mode (BLE1Mbps) | | | | | | |
| 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 |
| 2402 | 0.159 | 0±1 | 1 | 1.259 | 0.390 | 3.0 |
| 2442 | 0.623 | 0±1 | 1 | 1.259 | 0.393 | 3.0 |
| 2480 | 0.03 | 0±1 | 1 | 1.259 | 0.397 | 3.0 |
| Bluetooth Mode (BLE2Mbps) | | | | | | |
| 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 |
| 2402 | 1.187 | 1±1 | 2 | 1.585 | 0.491 | 3.0 |
| 2442 | 2.555 | 2±1 | 3 | 1.995 | 0.623 | 3.0 |
| 2480 | 2.017 | 2±1 | 3 | 1.995 | 0.628 | 3.0 |

| Simultaneous Transmission for SAR Exclusion | | | |
|---|----------|-------------------------|-------|
| Simultaneous Transmission for SAR Exclusion | | | Limit |
| Bluetooth Mode | BLE Mode | Total Calculation Value | |
| 0.0841 | 0.0841 | 0.1682 | 1.0 |
| Note: The sample support one BT modular and BLE modular, they supports difference antenna, need consider simultaneous transmission; | | | |

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-----