

# RF Exposure Evaluation

## FCC ID:2AXZT-RLBT-14CD

### 1. Client Information

|                     |   |                                                                                                         |
|---------------------|---|---------------------------------------------------------------------------------------------------------|
| <b>Applicant</b>    | : | Shenzhen Ruilin Industrial Co., Ltd                                                                     |
| <b>Address</b>      | : | 22D, NanJingYuan Bldg, Chang'Xing Rd, Nanshan District, Shenzhen, China                                 |
| <b>Manufacturer</b> | : | Shenzhen XiangShengChang Electronics Co., Ltd                                                           |
| <b>Address</b>      | : | 4th Floor, Bldg 3, Li'Bang Industrial Park, Xi'Tian, GongMing Town, GuangMing District, Shenzhen, China |

### 2. General Description of EUT

|                                                                                                                                                |   |                                                                                                                                                                                                                         |                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|
| EUT Name                                                                                                                                       | : | Boombox with or without CD                                                                                                                                                                                              |                                                                  |
| Model(s) No.                                                                                                                                   | : | RLBT-14CD,RLBT-14, RLBT-14CD-AM, SC-509BT                                                                                                                                                                               |                                                                  |
| Model Different                                                                                                                                | : | The product with the difference is with CD and without CD and CD-AM function differenc. All these models are identical in the same PCB, layout and electrical circuit, the only difference is appearance.(Test with CD) |                                                                  |
| Product Description                                                                                                                            | : | Operation Frequency:                                                                                                                                                                                                    | Bluetooth V5.0(BT): 2402~2480 MHz                                |
|                                                                                                                                                |   | Number of Channel:                                                                                                                                                                                                      | Bluetooth 5.0(BT): 79 channels<br>Bluetooth 5.0(BLE):40 channels |
|                                                                                                                                                |   | RF Output Power:                                                                                                                                                                                                        | 2.444dBm (Max)                                                   |
|                                                                                                                                                |   | Antenna Gain:                                                                                                                                                                                                           | 0.68dBi PCB Antenna                                              |
|                                                                                                                                                |   | Modulation Type:                                                                                                                                                                                                        | GFSK, $\pi$ /4-DQPSK, BLE(GFSK)                                  |
|                                                                                                                                                |   | Bit Rate of Transmitter:                                                                                                                                                                                                | GFSK(1Mbps)<br>Pi/4-DQPSK(2Mbps)<br>BLE(GFSK1Mbps)               |
| Power Supply                                                                                                                                   | : | DC 5.3V from adapter:<br>Input:100V-240V,50Hz~60Hz,0.4A<br>Output:DC 5.3V,1.3A<br>4*1.5AA battery                                                                                                                       |                                                                  |
| Software Version                                                                                                                               | : | v1.2                                                                                                                                                                                                                    |                                                                  |
| Hardware Version                                                                                                                               | : | BT14 V1.2                                                                                                                                                                                                               |                                                                  |
| 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  $\leq 5$  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                      | 2.444                 | 2±1                          | 3.0                                  | 1.995                               | 0.618             | 3.0             |
| 2.441                      | 2.363                 | 2±1                          | 3.0                                  | 1.995                               | 0.623             | 3.0             |
| 2.480                      | 1.826                 | 1±1                          | 2.0                                  | 1.585                               | 0.499             | 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                      | 2.285                 | 2±1                          | 3.0                                  | 1.995                               | 0.618             | 3.0             |
| 2.441                      | 2.326                 | 2±1                          | 3.0                                  | 1.995                               | 0.623             | 3.0             |
| 2.480                      | 1.809                 | 1±1                          | 2.0                                  | 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 |
| 2.402                      | 0.62                  | 0±1                          | 1.0                                  | 1.2589                              | 0.390             | 3.0             |
| 2.442                      | 0.886                 | 0±1                          | 1.0                                  | 1.2589                              | 0.393             | 3.0             |
| 2.480                      | 0.392                 | 0±1                          | 1.0                                  | 1.2589                              | 0.397             | 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-----