

# RF Exposure Evaluation

## FCC ID: 2AAZR-HSD8032A

### 1. Client Information

**Applicant** : Shenzhen Highstar Electrical Co., Ltd  
**Address** : 2F&4F, Building 6, Highstar Industrial zone, Gangtou, Bantian Street, Longgang District, Shenzhen, China  
**Manufacturer** : Shenzhen Highstar Electrical Co., Ltd  
**Address** : 2F&4F, Building 6, Highstar Industrial zone, Gangtou, Bantian Street, Longgang District, Shenzhen, China

### 2. General Description of EUT

|                               |   |                                                                                                                                  |                                       |
|-------------------------------|---|----------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| <b>EUT Name</b>               | : | ICAN OUTDOOR BLUETOOTH SPEAKER WITH LED LIGHT                                                                                    |                                       |
| <b>Models No.</b>             | : | HSD80312A, HSD8032B, HSD8032C                                                                                                    |                                       |
| <b>Model Difference</b>       | : | All these models are identical in the same PCB, layout and electrical circuit, the only difference is model name for commercial. |                                       |
| <b>Product Description</b>    | : | Operation Frequency:                                                                                                             | Bluetooth V2.1+EDR: 2402~2480 MHz     |
|                               | : | RF Output Power:                                                                                                                 | Bluetooth: -0.827dBm( $\pi$ /4-DQPSK) |
|                               | : | Antenna Gain:                                                                                                                    | 0dBi PCB Antenna                      |
| <b>Power Supply</b>           | : | DC Voltage supplied by USB cable<br>DC Voltage supplied by Li-ion battery                                                        |                                       |
| <b>Power Rating</b>           | : | DC 5.0V from the USB cable<br>DC 3.7V by 2200mAh Li-ion battery                                                                  |                                       |
| <b>Connecting I/O Port(S)</b> | : | Please refer to the User's Manual                                                                                                |                                       |

**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  $\leq 5$  mm are determined by:

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

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

## 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                            | -2.191                | $-2 \pm 1$                   | -1                                   | 0.794                               | 0.246             | 3.0             |
| 2.441                            | -1.998                | $-2 \pm 1$                   | -1                                   | 0.794                               | 0.248             | 3.0             |
| 2.480                            | -2.090                | $-2 \pm 1$                   | -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                            | -1.037                | $-1 \pm 1$                   | 0                                    | 1.000                               | 0.310             | 3.0             |
| 2.441                            | -0.827                | $-1 \pm 1$                   | 0                                    | 1.000                               | 0.312             | 3.0             |
| 2.480                            | -0.921                | $-1 \pm 1$                   | 0                                    | 1.000                               | 0.315             | 3.0             |

So standalone SAR measurements are not required.

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