

# RF Exposure Evaluation

**FCC ID: 2BDRN-D68F**

## 1. Client Information

|                     |   |                                                                                                                          |
|---------------------|---|--------------------------------------------------------------------------------------------------------------------------|
| <b>Applicant</b>    | : | Shenzhen Visual Beat Technology Co., Ltd                                                                                 |
| <b>Address</b>      | : | 2805, Block 9, Huating Phase 2, Manjinghua Joyful Lane, No. 6 Yincui Road, Nanlian Community, Shenzhen, Guangdong, China |
| <b>Manufacturer</b> | : | Shenzhen Visual Beat Technology Co., Ltd                                                                                 |
| <b>Address</b>      | : | 2805, Block 9, Huating Phase 2, Manjinghua Joyful Lane, No. 6 Yincui Road, Nanlian Community, Shenzhen, Guangdong, China |

## 2. General Description of EUT

|                                                                                                                                                |   |                                              |                                 |
|------------------------------------------------------------------------------------------------------------------------------------------------|---|----------------------------------------------|---------------------------------|
| EUT Name                                                                                                                                       | : | Bluetooth Speaker                            |                                 |
| Model(s) No.                                                                                                                                   | : | D68F                                         |                                 |
| Model Difference                                                                                                                               | : | ----                                         |                                 |
| Product Description                                                                                                                            | : | Operation Frequency:                         | Bluetooth V5.3: 2402MHz~2480MHz |
|                                                                                                                                                |   | Number of Channel:                           | 79 channels                     |
|                                                                                                                                                |   | Antenna Gain:                                | -0.58dBi PCB Antenna            |
|                                                                                                                                                |   | Modulation Type:                             | GFSK, Pi/4-DQPSK, 8-DPSK        |
|                                                                                                                                                |   | Bit Rate of Transmitter:                     | 1/2/3Mbps                       |
| Power Supply                                                                                                                                   | : | Input: DC 5V/1A                              |                                 |
| Li-ion Polymer Battery                                                                                                                         | : | 3.7V by 1200mAh Rechargeable Li-ion battery  |                                 |
| Software Version                                                                                                                               | : | (D68F)_65E_F8A1(WC1)+D68F_C987_20230802(ufw) |                                 |
| Hardware Version                                                                                                                               | : | D68F-M_V2.0                                  |                                 |
| 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.



## 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                       | 0.948                 | 1±1                          | 2                                    | 1.585                               | 0.491             | 3.0             |
| 2.441                       | 1.073                 | 1±1                          | 2                                    | 1.585                               | 0.495             | 3.0             |
| 2.480                       | 0.877                 | 1±1                          | 2                                    | 1.585                               | 0.499             | 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                       | 1.747                 | 2±1                          | 3                                    | 1.995                               | 0.618             | 3.0             |
| 2.441                       | 1.848                 | 2±1                          | 3                                    | 1.995                               | 0.623             | 3.0             |
| 2.480                       | 1.658                 | 2±1                          | 3                                    | 1.995                               | 0.628             | 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                       | 2.356                 | 2±1                          | 3                                    | 1.995                               | 0.618             | 3.0             |
| 2.441                       | 2.464                 | 2±1                          | 3                                    | 1.995                               | 0.623             | 3.0             |
| 2.480                       | 2.334                 | 2±1                          | 3                                    | 1.995                               | 0.628             | 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-----