

# RF Exposure Evaluation

## FCC ID: 2ABHA7123-04

### 1. Client Information

**Applicant** : NINGBO CSTAR IMP&EXP CO., LTD.  
**Address** : Floor 4, Building E, No. 655-90, Qiming Road, Yinzhou Investment & Innovation Center, Ningbo, China.  
**Manufacturer** : NINGBO CSTAR IMP&EXP CO., LTD.  
**Address** : Floor 4, Building E, No. 655-90, Qiming Road, Yinzhou Investment & Innovation Center, Ningbo, China.

### 2. General Description of EUT

|                               |   |   |
|-------------------------------|---|---|
| <b>EUT Name</b>               | : Mobile Odyssey Duke Waterproof Bluetooth Speaker                                      |   |
| <b>Models No.</b>             | : 7123-04   |   |
| <b>Model Difference</b>       | : N/A   |   |
| <b>Product Description</b>    | Operation Frequency:<br>Bluetooth:2402~2480MHz  |   |
|                               | Number of Channel:  | Bluetooth:79 Channels                                     |
|                               | Max Peak Output Power:  | 8-DPSK: 2.661dBm  |
|                               | Antenna Gain:   | 0 dBi PCB Antenna   |
|                               | Modulation Type:  | GFSK 1Mbps(1 Mbps)<br>π/4-DQPSK(2 Mbps)<br>8-DPSK(3 Mbps) |
| <b>Power Supply</b>           | : DC Voltage supplied from Host System by USB cable<br>DC power by 400mA Li-ion Battery |   |
| <b>Power Rating</b>           | : DC 5.0V by USB cable.<br>DC 3.7V 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 v05r02.

- (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:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation, mm})]^{1/2} \leq 3.0$  for 1-g SAR

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation, mm})]^{1/2} \leq 7.5.0$  for 10-g SAR

## 2.

## Calculation:

| Test separation: 5mm  |                       |                |                              |                                     |                   |                 |
|-----------------------|-----------------------|----------------|------------------------------|-------------------------------------|-------------------|-----------------|
| Bluetooth Mode (GFSK) |                       |                |                              |                                     |                   |                 |
| Frequency (GHz)       | Conducted Power (dBm) | Ant Gain (dBi) | Turn-up Power Tolerance (dB) | Max power of tune up tolerance (mw) | Calculation Value | Threshold Value |
| 2.402                 | 2.112                 | 0              | ±1                           | 2.047                               | 0.635             | 3.0             |
| 2.441                 | 1.169                 | 0              | ±1                           | 1.648                               | 0.515             | 3.0             |
| 2.480                 | -0.175                | 0              | ±1                           | 1.209                               | 0.381             | 3.0             |

  

| Bluetooth Mode (8-DPSK) |                       |                |                              |                                     |                   |                 |
|-------------------------|-----------------------|----------------|------------------------------|-------------------------------------|-------------------|-----------------|
| Frequency (GHz)         | Conducted Power (dBm) | Ant Gain (dBi) | Turn-up Power Tolerance (dB) | Max power of tune up tolerance (mw) | Calculation Value | Threshold Value |
| 2.402                   | 2.661                 | 0              | ±1                           | 2.323                               | 0.720             | 3.0             |
| 2.441                   | 1.867                 | 0              | ±1                           | 1.935                               | 0.605             | 3.0             |
| 2.480                   | 0.595                 | 0              | ±1                           | 1.444                               | 0.455             | 3.0             |

So standalone SAR measurements are not required.