



## RADIO FREQUENCY EXPOSURE

### LIMIT

Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines. See §15.247(b)(4) and §1.1307(b)(1) of this chapter.

### Conducted Power Results

| Mode           | Channel | Frequency(MHz) | Average Conducted Output Power (dBm) |
|----------------|---------|----------------|--------------------------------------|
| GFSK           | 00      | 2402           | -4.89                                |
|                | 39      | 2441           | -4.78                                |
|                | 78      | 2480           | -4.80                                |
| $\pi/4$ -DQPSK | 00      | 2402           | -8.62                                |
|                | 39      | 2441           | -8.47                                |
|                | 78      | 2480           | -8.62                                |
| 8DPSK          | 00      | 2402           | -8.55                                |
|                | 39      | 2441           | -8.45                                |
|                | 78      | 2480           | -8.55                                |

### Manufacturing tolerance

| GFSK (Average)           |            |            |            |
|--------------------------|------------|------------|------------|
| Channel                  | Channel 00 | Channel 39 | Channel 78 |
| Target (dBm)             | -4.0       | -4.0       | -4.0       |
| Tolerance $\pm$ (dB)     | 1.0        | 1.0        | 1.0        |
| $\pi/4$ -DQPSK (Average) |            |            |            |
| Channel                  | Channel 00 | Channel 39 | Channel 78 |
| Target (dBm)             | -8.0       | -8.0       | -8.0       |
| Tolerance $\pm$ (dB)     | 1.0        | 1.0        | 1.0        |
| 8DPSK (Average)          |            |            |            |
| Channel                  | Channel 00 | Channel 39 | Channel 78 |
| Target (dBm)             | -8.0       | -8.0       | -8.0       |
| Tolerance $\pm$ (dB)     | 1.0        | 1.0        | 1.0        |

**EUT Specification**

|                                   |                                                                                                                                                                                                                                                                                           |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>EUT</b>                        | Micro Bluetooth® Stereo with CD Player and FM Radio                                                                                                                                                                                                                                       |
| <b>Frequency band (Operating)</b> | <input type="checkbox"/> WLAN: 2.412GHz ~ 2.462GHz<br><input type="checkbox"/> WLAN: 5.18GHz ~ 5.32GHz / 5.50GHz ~ 5.70GHz<br><input type="checkbox"/> WLAN: 5.745GHz ~ 5825GHz<br><input checked="" type="checkbox"/> Bluetooth: 2.402GHz~ 2.480GHz<br><input type="checkbox"/> Others _ |
| <b>Device category</b>            | <input type="checkbox"/> Portable (<20cm separation)<br><input checked="" type="checkbox"/> Mobile (>20cm separation)<br><input type="checkbox"/> Others _____                                                                                                                            |
| <b>Exposure classification</b>    | <input type="checkbox"/> Occupational/Controlled exposure ( $S = 5mW/cm^2$ )<br><input checked="" type="checkbox"/> General Population/Uncontrolled exposure ( $S=1mW/cm^2$ )                                                                                                             |
| <b>Antenna diversity</b>          | <input checked="" type="checkbox"/> Single antenna<br><input type="checkbox"/> Multiple antennas<br><input type="checkbox"/> Tx diversity<br><input type="checkbox"/> Rx diversity<br><input type="checkbox"/> Tx/Rx diversity                                                            |
| <b>Max. output power</b>          | -3.0dBm (0.50mW)                                                                                                                                                                                                                                                                          |
| <b>Antenna gain (Max)</b>         | 0dBi (Numeric gain:1.00)                                                                                                                                                                                                                                                                  |
| <b>Evaluation applied</b>         | <input checked="" type="checkbox"/> MPE Evaluation<br><input type="checkbox"/> SAR Evaluation                                                                                                                                                                                             |

**Note:**

1. The maximum output power(including turn tolerance) is -3.0dBm (0.50mW) and maximum antenna gain is 1dBi
2. For mobile or fixed location transmitters, no SAR consideration applied. The minimum separation generally be used is at least 20 cm, even if the calculations indicate that the MPE distance would be lesser.



## **TEST RESULT**

*No non-compliance noted.*

## **Calculation**

Given  $S = \frac{P \times G}{4\pi d^2}$  ***Equation 1***

Where  $d$  = distance in cm

$P$  = Power in mW

$G$  = Numeric antenna gain

$S$  = Power Density in mW / cm<sup>2</sup>

## **Maximum Permissible Exposure**

EUT Output Power=0.50mW

Numeric antenna gain=1.00

Substituting the MPE safe distance using  $d=20$  cm into ***Equation 1*** :

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The power density  $S = 0.50 \times 1.00 / (4\pi \times 400) \text{ cm}^2 = 9.95223 \times 10^{-5} \text{ mW/cm}^2$

(For mobile or fixed location transmitters, the maximum power density is  $1.0 \text{ mW/cm}^2$  even if the calculation indicates that the power density would be larger.)



## **Compliance Certification Services (Shenzhen) Inc.**

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