

### **RF Exposure / MPE Calculation**

|                     |                     |
|---------------------|---------------------|
| No.                 | 14409150S           |
| Customer            | PIONEER CORPORATION |
| Description of EUT  | RDS AV RECEIVER     |
| Model Number of EUT | DMH-WT3800NEX       |
| FCC ID              | AJDK122             |

PIONEER CORPORATION declares that Model: DMH-WT3800NEX complies with FCC radiation exposure requirement specified in the FCC Rule 2.1091 (for mobile).

#### **RF Exposure Calculations:**

The following information provides the minimum separation distance for the highest gain antenna provided with the “DMH-WT3800NEX” as calculated from (B) Limits for General Population / Uncontrolled Exposure of TABLE 1- LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE) of §1.1310 Radiofrequency radiation exposure limits.

#### **[WLAN 2.4 GHz band part]**

This calculation is based on the highest EIRP possible from the system, considering maximum power and antenna gain, and considering a 1 mW/cm<sup>2</sup> uncontrolled exposure limit. The Friis formula used was:

$$S = \frac{P \times G}{4 \times \pi \times r^2}$$

Where

$P =$  21.98 mW (Maximum average output power)

☐ Time average was used for the above value in consideration of 6-minutes time-averaging

☒ Burst power average was used for the above value in consideration of worst condition.

$G =$  0.724 Numerical Antenna gain; equal to -1.4 dBi

$r =$  20 cm (Separation distance)

**Power Density Result  $S = 0.00317 \text{ mW/cm}^2$**

### [WLAN 5 GHz band part]

This calculation is based on the highest EIRP possible from the system, considering maximum power and antenna gain, and considering a 1 mW/cm<sup>2</sup> uncontrolled exposure limit. The Friis formula used was:

$$S = \frac{P \times G}{4 \times \pi \times r^2}$$

Where

$P =$  12.91 mW (Maximum average output power)

☐ Time average was used for the above value in consideration of 6-minutes time-averaging

☒ Burst power average was used for the above value in consideration of worst condition.

$G =$  1.205 Numerical Antenna gain; equal to 0.81 dBi

$r =$  20 cm (Separation distance)

**Power Density Result  $S = 0.00309 \text{ mW/cm}^2$**

### [Bluetooth Low Energy part]

This calculation is based on the highest EIRP possible from the system, considering maximum power and antenna gain, and considering a 1mW/cm<sup>2</sup> uncontrolled exposure limit. The Friis formula used was:

$$S = \frac{P \times G}{4 \times \pi \times r^2}$$

Where

$P =$  1.02 mW (Maximum average output power)

☐ Time average was used for the above value in consideration of 6-minutes time-averaging

☒ Burst power average was used for the above value in consideration of worst condition.

$G =$  0.793 Numerical Antenna gain; equal to -1.01 dBi

$r =$  20 cm (Separation distance)

**Power Density Result  $S = 0.00016 \text{ mW/cm}^2$**

### [Bluetooth (BR/EDR)part]

This calculation is based on the highest EIRP possible from the system, considering maximum power and antenna gain, and considering a 1 mW/cm<sup>2</sup> uncontrolled exposure limit. The Friis formula used was:

$$S = \frac{P \times G}{4 \times \pi \times r^2}$$

Where

$P =$  0.78 mW (Maximum average output power)

☒ Time average was used for the above value in consideration of 6-minutes time-averaging

☐ Burst power average was used for the above value in consideration of worst condition.

$G =$  0.793 Numerical Antenna gain; equal to -1.01 dBi

$r =$  20 cm (Separation distance)

$$\text{Power Density Result } S = 0.00012 \text{ mW/cm}^2$$

Therefore, if WLAN (5 GHz band) and Bluetooth (BR/EDR) transmit simultaneously,

$$\begin{aligned} S &= 0.00309 \text{ mW/cm}^2 + 0.00012 \text{ mW/cm}^2 \\ &= 0.00321 \text{ mW/cm}^2 \end{aligned}$$

Therefore, if WLAN (5 GHz band) and Bluetooth Low Energy transmit simultaneously,

$$\begin{aligned} S &= 0.00309 \text{ mW/cm}^2 + 0.00016 \text{ mW/cm}^2 \\ &= 0.00325 \text{ mW/cm}^2 \end{aligned}$$