

RF Exposure / MPE Calculation

No.	15196050M, 15196051S
Customer	PIONEER CORPORATION
Description of EUT	RDS AV RECEIVER
Model Number of EUT	DMH-WT6000NEX
FCC ID	AJDK125

PIONEER CORPORATION declares that Model: DMH-WT6000NEX 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-WT6000NEX” 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 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 1mW/cm² uncontrolled exposure limit. The Friis formula used was:

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

Where

$P =$ 7.40 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.

$G =$ 2.799 Numerical Antenna gain; equal to 4.47 dBi

$r =$ 20 cm (Separation distance)

Power Density Result $S = 0.00412 \text{ mW/cm}^2$

[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/cm² uncontrolled exposure limit. The Friis formula used was:

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

Where

$P =$ 1.21 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.

$G =$ 0.826 Numerical Antenna gain; equal to -0.83 dBi

$r =$ 20 cm (Separation distance)

Power Density Result $S = 0.00020 \text{ mW/cm}^2$

[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 1mW/cm² uncontrolled exposure limit. The Friis formula used was:

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

Where

$P =$ 0.85 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.

$G =$ 0.826 Numerical Antenna gain; equal to -0.83 dBi

$r =$ 20 cm (Separation distance)

Power Density Result $S = 0.00014 \text{ mW/cm}^2$

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

$$\begin{aligned} S &= 0.00412 \text{ mW/cm}^2 + 0.00020 \text{ mW/cm}^2 \\ &= 0.00432 \text{ mW/cm}^2 \end{aligned}$$

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

$$\begin{aligned} S &= 0.00412 \text{ mW/cm}^2 + 0.00014 \text{ mW/cm}^2 \\ &= 0.00426 \text{ mW/cm}^2 \end{aligned}$$