RF Exposure / MPE Calculation

No.	14219579S-C
Customer	PIONEER CORPORATION
Description of EUT	Display Audio
Model Number of EUT	AVH-0239ZT
FCC ID	AJDK120

PIONEER CORPORATION declares that Model: AVH-0239ZT 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 "AVH-0239ZT" 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.

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

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

Where

$P =$ 22.06 mW (Maximum average output power)

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

   ☑ Burst power average was used for the above value in consideration of worst condit

$G =$ 0.420 Numerical Antenna gain; equal to -3.77 dBi

$r =$ 20 cm (Separation distance)

*Power Density Result S = **0.00184 mW/cm^2***

Even taking into account the tolerance, this device can be satisfied with the limits.

AVH-0239ZT is intended to be used Bluetooth and Wireless LAN simultaneously within 20 cm.

RF Exposure Calculations:

The following information provides the minimum separation distance for the highest gain
antenna provided with the "AVH-0239ZT" as calculated
from FCC Part 1, §1.1310, TABLE 1 (B) Limits for General Population / Uncontrolled Exposure.
This calculation is based on the highest EIRP possible from the system,
considering maximum power and antenna gain, and considering a 1.0mW/cm^2 uncontrolled
exposure limit. The Friis formula used was:

$$S1 = ((P1 * G1) + (P2 * G2)) / (4* \pi * r^2)$$

Where

P1 =	22.06	mW (Maximum average output power) *1)		
P2 =	1.69	mW (Maximum average output power) *2)		
G1 =	0.42	Numerical Antenna gain; equal to	-3.77	dBi *1)
G2 =	0.44	Numerical Antenna gain; equal to	-3.60	dBi *2)
r =	20.0	cm		

For: AVH-0239ZT (Wireless LAN (5 GHz band) and Bluetooth)   S = 0.00199 mW/cm^2

Even taking into account the tolerance, this device can be satisfied with the limits.

*1) Wireless LAN (5 GHz band) value
*2) Bluetooth value

This calculation was made to show that the EUT complies with the limit in simultaneous transmitting of
Wireless LAN (5 GHz band) and Bluetooth.