RF Exposure / MPE Calculation

No.	:	12219846H-A
Applicant	:	Sony Interactive Entertainment Inc.
Type of Equipment	:	Wireless communication module
Model No.	:	J20H096 *Bluetooth part
FCC ID	:	AK8M18DFT1

Sony Interactive Entertainment Inc. declares that Model: J20H096 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 "J20H096" 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.

[Bluetooth part]

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 = 1.40 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 = 5.012 Numerical Antenna gain; equal to 7.0 dBi

r = 20 cm (Separation distance)

Power Density Result S = **0.00140 mW/cm^2**

UL Japan, Inc.
Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN
Telephone : +81 596 24 8999
Facsimile : +81 596 24 8124

Reference:
[WLAN (2.4 GHz) part]

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 = 13.19 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 = 7.261 Numerical Antenna gain; equal to 8.61 dBi

r = 20 cm (Separation distance)

Power Density Result S = **0.01905 mW/cm^2**

Reference:
[WLAN (5 GHz) part]

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 = 15.28 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 = 6.792 Numerical Antenna gain; equal to 8.32 dBi

r = 20 cm (Separation distance)

Power Density Result S = **0.02065 mW/cm^2**

Therefore, if Bluetooth and WLAN 2.4GHz transmit simultaneously,
S=0.00140 mW/cm^2+0.01905 mW/cm^2
=0.02045 mW/cm^2

Therefore, if Bluetooth and WLAN 5GHz transmit simultaneously,
S=0.00140 mW/cm^2 + 0.02065 mW/cm^2
=0.02205 mW/cm^2

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

UL Japan, Inc.
Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN
Telephone : +81 596 24 8999
Facsimile : +81 596 24 8124