RF Exposure / MPE Calculation

No.: 10607274H

Applicant : MITSUBISHI ELECTRIC CORPORATION SANDA WORKS

Type of Equipment: HEADUNIT A-HIGH

Model No. : NR-213 FCC ID : UJHNR213

MITSUBISHI ELECTRIC CORPORATION SANDA WORKS declares that Model: NR-213 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 "NR-213" 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 1.0mW/cm^2 uncontrolled exposure limit. The Friis formula used was:

 $S = (P * G) / (4* \pi * r^2)$

Where

P = 11.48 mW (Maximum average output power)

G = 2.14 Numerical Antenna gain; equal to 3.30 dBi

r = 20.0 cm

For: NR-213 (WLAN (2.4GHz band))

 $S = 0.00488 \text{ mW/cm}^2$

 $S = (P * G) / (4* \pi * r^2)$

Where

P = 0.35 mW (Maximum average output power)

G = 1.71 Numerical Antenna gain; equal to 2.32 dBi

r = 20.0 cm

For: NR-213 (Bluetooth (2402-2480MHz)) S = 0.00012 mW/cm2

 $S = (P * G) / (4* \pi * r^2)$

Where

P = 1.53 mW (Maximum Conducted output power)

G = 4.47 Numerical Antenna gain; equal to 6.50 dBi

r = 20.0 cm

For: NR-213 (WLAN (5GHz band))

S = 0.00136 mW/cm2

Therefore, if Bluetooth and WLAN (2.4GHz band / 5GHz band) transmit simultaneously,

S= 0.00488 mW/cm² + 0.00012 mW/cm² + 0.00136 mW/cm² = 0.00636 mW/cm²

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

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