

RF Exposure / MPE Calculation

No. : 12551237H
Applicant : Japan Radio Co., Ltd.
Type of Equipment : C-Band Weather Radar Radio Module
Model No. : GKP-2794
FCC ID : CKEGKP2794

Japan Radio Co., Ltd. declares that Model: GKP-2794 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 "GKP-2794" 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/cm² uncontrolled exposure limit. The Friis formula used was:

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

Where

$P = 23856.1654 \text{ mW}$ (Maximum average output power) *1)
($P = (11534.5326 \text{ mW (40.62 dBm)} + 393.5501 \text{ mW (25.95 dBm)}) \times 2 = 23856.1654 \text{ mW}$)

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.

$G = 28183.829$ Numerical Antenna gain; equal to 44.5dBi

$r = 7500 \text{ cm}$ (Separation distance)

Power Density Result $S = 0.95119 \text{ mW/cm}^2$

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

*1) When radio waves are transmitted from the antenna, horizontal and vertical radio waves are transmitted simultaneously.

Therefore, the maximum average output power used for calculation in this declaration takes above into consideration.

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