RF Exposure Statement: JP2125FA 001

Client:	New Japan Radio Co.,Ltd. 1-1, Fukuoka 2-Chome, Fujimino-City, Saitama, 356-8510 Japan
Test item:	K-Band Doppler Sensor Module (Movement Sensor)
Identification:	NJR4274

FCC Requirement

According to FCC §2.1093 (d)(1), Portable Devices that transmit at frequencies above 6 GHz must comply with the following applicable limit for maximum permissible exposure (MPE) specified in FCC §1.1310 (e)(1), Table 1:

Equipment Use	Frequency Range [MHz]	Power Density Limit	Average Time [min]
General Population / Uncontrolled Exposure	1,500 – 100,000	1.0 [mW/cm^2]	<30

Note: This evaluation was conducted at 5cm test separation distance (variable r in the statement). It was specified by the customer.

Measurement Result

The maximum measured E-field strength and corresponded estimated EIRP from the transmitter are given in the following table:

Freq. [GHz]	Wave Length [cm]	Measured E-Field Strength E		Meas. Distance R [m]	Calculated EIRP		Test Distance r [cm]	Calculated Power Density S [mW/cm^2]
		[dBuV/m]	[V/m]		[mW]	[dBm]		
24.17122870	1.2411	80.47	0.0106	3.0	0.033708	-14.723	**5.0**	**0.000107**

Note:

The EIRP in mW is calculated in conjunction with the following formula:

$$EIRP = (E \times R)^2/30 = (0.0106 \times 3.0)^2 / 30 = 0.000033708 \text{ [W]} = 0.033708 \text{ [mW]}$$

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The power density S in mW/cm^2 is calculated in conjunction with the next formula:

$S = EIRP / (4 \times \pi \times r^2) = 0.033708 / (4 \times \pi \times 5.0^2) =$ **0.000107 [mW/cm^2]**

Since the shortest wave length λ of transmitter is 1.2411cm, above mentioned calculations are considered in far field condition.

Normal mode is the worst case configuration of this transmitter, therefore above mentioned condition is considered as the most severe estimation. For details, refer to the relevant sections that is submitted test report, JP216XYU 002.

Conclusion

This transmitter module is classified as Portable Devices by the client.

SAR evaluation is not required since nominal frequency of the transmitter is higher than 6GHz, therefore, RF exposure evaluation (MPE) was conducted by the above-mentioned calculated method.

As a result, calculated Power Density S is below FCC limit at the separation distance of 5cm.