Ruckus Wireless Inc FCC ID: S9GR500

FCC §15.407 (f), §2.1091– RF Exposure

5.1 **Applicable Standard**

According to FCC §15.407(f) and §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm²)	Averaging Time (minutes)
Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	* (100)	30
1.34-30	824/f	2.19/f	* (180/f ²)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

f = frequency in MHz

5.2 **MPE Prediction**

Predication of MPE limit at a given distance, Equation from OET Bulletin 65, Edition 97-01

$$S = PG/4\pi R^2$$

Where: S = power density

P = power input to antenna

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R =distance to the center of radiation of the antenna

5.3 **MPE Results**

5.2 GHz band:

23.66 Maximum peak output power at antenna input terminal (dBm): Maximum peak output power at antenna input terminal (mW): 232.2737 Prediction distance (cm): 20 5240 Prediction frequency (MHz): 3.0 Maximum Antenna Gain, typical (dBi): 1.995 Maximum Antenna Gain (numeric): Power density of prediction frequency at 20.0 cm (mW/cm²): 0.0922 1.0

MPE limit for uncontrolled exposure at prediction frequency (mW/cm²):

^{* =} Plane-wave equivalent power density

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5.8 GHz band:

Maximum peak output power at antenna input terminal (dBm):25.14Maximum peak output power at antenna input terminal (mW):326.5878Prediction distance (cm):20Prediction frequency (MHz):5785Maximum Antenna Gain, typical (dBi):3.0Maximum Antenna Gain (numeric):1.995

Power density of prediction frequency at 20.0 cm (mW/cm²): 0.1296

MPE limit for uncontrolled exposure at prediction frequency (mW/cm²): 1.0

2.4 GHz band:

 Maximum peak output power at antenna input terminal (dBm):
 23.12

 Maximum peak output power at antenna input terminal (mW):
 205.1162

 Prediction distance (cm):
 20

 Prediction frequency (MHz):
 2437

 Maximum Antenna Gain, typical (dBi):
 1.0

 Maximum Antenna Gain (numeric):
 1.258

 Power density of prediction frequency at 20.0 cm (mW/cm²):
 0.0513

MPE limit for uncontrolled exposure at prediction frequency (mW/cm²): 1.0

The total exposure level of 2.4 GHz and 5.8 GHz band co-location at 20 cm distance is 0.1296+0.0513=0.1809 mW/cm² which is less than limit of 1.0 mW/cm².