

**47 C.F.R. Part 1, Subpart I, Section 1.1310
47 C.F.R. Part 2, Subpart J, Section 2.1091
Maximum Permissible Exposure Calculations**

For FCC ID: 2AJAC-ESSTRPRE4

EUT Device Category = General Population/Uncontrolled Exposure

EUT consists of one ISM band radio transmitting, operating over a range of: **2412 MHz to 2462 MHz and 5180 MHz to 5825 MHz**

MPE Summary:

According subpart 1.1307 (b)(1) and 2.1091 systems operating under the provisions of this section shall be operated in a manner that ensures the public is not exposed to RF energy level in excess of the communication guidelines.

Limits for General Population/Uncontrolled Exposure

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)	
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; * = Plane-wave equivalent power density

Calculated Formulary:

Predication of MPE limit at a given distance

$$S = \frac{PG}{4\pi R^2}$$

S = power density (in appropriate units, e.g. mW/cm²)

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

PG = EIRP

MPE and Limit are calculated for this device as follows: (Only maximum power for each transmission type shown)

2.4 GHz Frequency Band								
Freq	Output Power (dBm)	Tune-up Tolerance (dB)	Max Antenna Gain (dBi)	Max EIRP (dBm)	Max EIRP (mW)	Power Density at 20 cm (mW/cm ²)	Limit (mW)	Margin (mW)
802.11b								
2412	19.6	0	2.7	22.3	169.8	0.034	1.000	0.966
802.11g								
2412	16.6	0	2.7	19.3	85.1	0.017	1.000	0.983
802.11n								
2437	16.2	0	2.7	18.9	77.6	0.015	1.000	0.985
5 GHz Frequency Band								
UNII-1 band								
5240	17.9	0	4.0	21.9	154.9	0.031	1.000	0.969
UNII-2A								
5260	17.7	0	4.0	21.7	147.9	0.029	1.000	0.971
UNII-2C								
5600	17.7	0	4.0	21.7	147.9	0.029	1.000	0.971
UNII-3 band								
5785	17.0	0	4.0	21.0	125.9	0.025	1.000	0.975

Result: There is only 1 transmit path in the device. Only one transmission band can be used at a time. The device meets FCC MPE limit at 20 cm for General Population/Uncontrolled Exposure as specified in 47 CFR §1.1310 and §2.1091.