

**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-TSSA1200

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

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	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:

2.4 GHz Frequency Band								
802.11b								
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)
2412	22.5	0.5	2.7	25.7	371.5	0.074	1.000	0.926
2437	22.7	0.5	2.7	25.9	389.0	0.077	1.000	0.923
2462	22.9	0.5	2.7	26.1	407.4	0.081	1.000	0.919
802.11g								
2412	25.5	0.5	2.7	28.7	741.3	0.147	1.000	0.853
2437	25.4	0.5	2.7	28.6	724.4	0.144	1.000	0.856
2462	25.8	0.5	2.7	29.0	794.3	0.158	1.000	0.842
802.11n								
2412	26.0	0.5	2.7	29.2	831.8	0.165	1.000	0.835
2437	26.2	0.5	2.7	29.4	871.0	0.173	1.000	0.827
2462	26.4	0.5	2.7	29.6	912.0	0.181	1.000	0.819
5 GHz Frequency Band								
UNII-1 band								
5180	15.6	0.5	2.6	18.7	74.1	0.015	1.000	0.985
5220	19.4	0.5	2.6	22.5	177.8	0.035	1.000	0.965
5240	19.3	0.5	2.6	22.4	173.8	0.035	1.000	0.965
UNII-2A								
5260	19.6	0.5	4.1	24.2	263.0	0.052	1.000	0.948
5300	19.4	0.5	4.1	24.0	251.2	0.050	1.000	0.950
5320	17.5	0.5	4.1	22.1	162.2	0.032	1.000	0.968
UNII-2C								
5500	12.9	0.5	4.1	17.5	56.2	0.011	1.000	0.989
5600	19.0	0.5	4.1	23.6	229.1	0.046	1.000	0.954
5700	13.4	0.5	4.1	18.0	63.1	0.013	1.000	0.987
UNII-3 band								
5745	19.6	0.5	4.0	24.1	257.0	0.051	1.000	0.949
5785	19.6	0.5	4.0	24.1	257.0	0.051	1.000	0.949
5825	19.4	0.5	4.0	23.9	245.5	0.049	1.000	0.951

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.