

RF Exposure Evaluation

LIMIT

The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3–3.0	614	1.63	*(100)	6
3.0–30	1842/f	4.89/f	*(900/f ²)	6
30–300	61.4	0.163	1.0	6
300–1500	-	-	f/300	6
1500–100,000	-	-	5	6
(B) 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

Note: f = frequency in MHz

EVALUATION METHOD

Transmission formula: $Pd = (Pout * G) / (4 * \pi * r^2)$

Where

Pd = power density in mW/cm², **Pout** = output power to antenna in mW, **G** = gain of antenna in linear scale;

Pi = 3.1416, **R** = distance between observation point and center of the radiator in cm

TEST RESULT

Passed

Not Applicable

Frequency range (MHz)	Type	Conducted Average Power (dBm)	Maximum Tune up (dBm)	Power Density (mW/cm ²)	Limit (mW/cm ²)	Result
2412-2462	802.11b	15.42	16.00	0.02810	1.0000	Pass
2412-2462	802.11g	15.17	16.00	0.02810	1.0000	Pass
2412-2462	802.11n(HT20)	14.58	15.00	0.02232	1.0000	Pass
2422-2452	802.11n(HT40)	14.74	15.00	0.02232	1.0000	Pass
5180-5240	802.11a/n/ac	17.11	18.00	0.04454	1.0000	Pass
5745-5825	802.11a/n/ac	17.26	18.00	0.04454	1.0000	Pass

Note:

- 1) *The maximum antenna gain is 5.5dBi*
- 2) *The exposure evaluation safety distance is 20cm.*