

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

Type	Maximum PK conducted output power(dBm)
802.11b	16.50 ~ 17.50
802.11g	15.50 ~ 16.50
	Maximum PK conducted output power(dBm) ANT1+ANT2
802.11n(H20)	17.50 ~ 18.50
802.11n(H40)	16.50 ~ 17.50

Type	Maximum conducted output power(dBm)	Power Density (mW/cm2)	Limit (mW/cm2)	Result
802.11b	17.50	0.02232	1.0000	Pass
802.11g	16.50	0.01773	1.0000	Pass
802.11n(H20)	18.50	0.05607	1.0000	Pass
802.11n(H40)	17.50	0.04454	1.0000	Pass

Note:

- 1) Antenna gain of ANT1 = Antenna gain of ANT2= 3dBi, Antenna gain of ANT1 + ANT2=3dBi + 10log(2) = 6dBi.
- 2) The exposure safety distance is 20cm.