

FCC ID : 2APN54CHR3

RF EXPOSURE EVALUATION

According to FCC 1.1310: 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)	Average Time
(A) Limits for Occupational/Control Exposures				
300-1500	--	--	F/300	6
1500-100000	--	--	5	6
(B) Limits for General Population/Uncontrol Exposures				
300-1500	--	--	F/1500	6
1500-100000	--	--	1	30

11.1 Friis transmission formula: $P_d = \frac{P_{out} \cdot G}{4 \cdot \pi \cdot R^2}$

Where

P_d = Power density in mW/cm²

P_{out} =output power to antenna in mW

G = Numeric gain of the antenna relative to isotropic antenna

π =3.1416

R = distance between observation point and center of the radiator in 20cm

P_d the limit of MPE, 1mW/cm². If we know the maximum gain of the nd total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

11.2 Measurement Result

WIFI 2.4G:

Channel Freq. (MHz)	modulation	conducted power (mW)	conducted power (dBm)	Tune-up power (dBm)	Max tune-up power (dBm)	Antenna Gain Numeric	Evaluation result (mW/cm ²)	Power density Limits (mW/cm ²)
2.412	11b	19.36	12.87	11dBm to 13dBm	13	1.33	0.00528	<1
2.437	11b	17.54	12.44	11dBm to 13dBm	13	1.33	0.00528	<1
2.462	11b	14.19	11.52	11dBm to 13dBm	13	1.33	0.00528	<1
2.412	11g	35.65	15.52	15dBm to 17dBm	17	1.33	0.01326	<1
2.437	11g	43.55	16.39	15dBm to 17dBm	17	1.33	0.01326	<1
2.462	11g	25.47	14.06	13dBm to 15dBm	15	1.33	0.00837	<1
2.412	11n HT20	33.65	15.27	15dBm to 17dBm	17	1.33	0.01326	<1
2.437	11n HT20	37.15	15.70	15dBm to 17dBm	17	1.33	0.01326	<1
2.462	11n HT20	21.93	13.41	13dBm to 15dBm	15	1.33	0.00837	<1