

FCC ID : A5MSL2501F

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: $P_d = (P_{out} * G) / (4 * \pi * R^2)$

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 antenna and total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

11.2 Measurement Result

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)
WIFI								
2412	802.11b	44.67	16.50	16dBm to 18dBm	18	1.995	0.02504	1
2437	802.11b	41.59	16.19	16dBm to 18dBm	18	1.995	0.02504	1
2462	802.11b	52.72	17.22	16dBm to 18dBm	18	1.995	0.02504	1
2412	802.11g	135.52	21.32	20dBm to 22dBm	22	1.995	0.06290	1
2437	802.11g	119.12	20.76	20dBm to 22dBm	22	1.995	0.06290	1
2462	802.11g	79.25	18.99	18dBm to 20dBm	20	1.995	0.03969	1
2412	802.11n20	103.75	20.16	20dBm to 22dBm	22	1.995	0.06290	1
2437	802.11n20	107.40	20.31	20dBm to 22dBm	22	1.995	0.06290	1
2462	802.11n20	73.11	18.64	18dBm to 20dBm	20	1.995	0.03969	1

Note: Antenna gain: 3 dBi