

FCC ID : 2APYG-OPSWT-1806

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: Pd= (Pout*G)\ (4*pi*R²)

Where

Pd= Power density in mW/cm²

Pout=output power to antenna in mW

G= Numeric gain of the antenna relative to isotropic antenna

Pi=3.1416

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

Pd 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/cm2)	Power density Limits (mW/cm2)
2.412	11b	36.56	15.63	15dBm to 17dBm	17	1	0.00997	<1
2.437	11b	39.36	15.95	15dBm to 17dBm	17	1	0.00997	<1
2.462	11b	41.98	16.23	15dBm to 17dBm	17	1	0.00997	<1
2.412	11g	77.98	18.92	18dBm to 20dBm	20	1	0.01989	<1
2.437	11g	92.90	19.68	18dBm to 20dBm	20	1	0.01989	<1
2.462	11g	92.90	19.68	18dBm to 20dBm	20	1	0.01989	<1
2.412	11n HT20	62.81	17.98	17dBm to 19dBm	19	1	0.01580	<1
2.437	11n HT20	94.84	19.77	19dBm to 21dBm	21	1	0.02505	<1
2.462	11n HT20	102.80	20.12	19dBm to 21dBm	21	1	0.02505	<1
2.422	11n HT40	100.00	20.00	19dBm to 21dBm	21	1	0.02505	<1
2.437	11n HT40	113.50	20.55	19dBm to 21dBm	21	1	0.02505	<1
2.452	11n HT40	97.50	19.89	19dBm to 21dBm	21	1	0.02505	<1