FCC ID : 2AA53-LIFX02

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)\ ($4*pi*R^2$)

Where

Pd= Power density in mW/cm^2

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 cm

Pd the limit of MPE, $1mW/cm^2$. 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

Antenna gain: 1.5dBi

802.11b:

Channel	Channel Freq. (MHz)	Measured power (dBm)	Tune-up power (dBm)	Max tune-up power (dBm)	Antenna Gain Numeric	Evaluation result (mW/cm2)	Power density Limits (mW/cm2)
1	2412	13.36	13.0±1	14.0	1.4125	0.0071	1
6	2437	13.60	13.0±1	14.0	1.4125	0.0071	1
11	2462	13.76	13.0±1	14.0	1.4125	0.0071	1

802.11g:

Channel	Channel Freq. (MHz)	Measured power (dBm)	Tune-up power (dBm)	Max tune-up power (dBm)	Antenna Gain Numeric	Evaluation result (mW/cm2)	Power density Limits (mW/cm2)
1	2412	15.69	16.0±1	17.0	1.4125	0.0141	1
6	2437	15.88	16.0±1	17.0	1.4125	0.0141	1
11	2462	16.12	16.0±1	17.0	1.4125	0.0141	1

802.11n HT20:

Channel	Channel Freq. (MHz)	Measured power (dBm)	Tune-up power (dBm)	Max tune-up power (dBm)	Antenna Gain Numeric	Evaluation result (mW/cm2)	Power density Limits (mW/cm2)
1	2412	15.73	15.0±1	16.0	1.4125	0.0112	1
6	2437	15.80	15.0±1	16.0	1.4125	0.0112	1
11	2462	15.94	15.0±1	16.0	1.4125	0.0112	1

Wifi+Zigbee

Max Evaluation for Wifi(mW/cm2)	Max Evaluation for Zigbee(mW/cm2)	combined power evaluation(mW/cm2)	Power density Limits (mW/cm2)
0.0141	0.0001	0.0142	1