FCC ID : A7K-SIW

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 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

Antenna gain: 3.79dBi
801.11b

Channel	Channel Frequency (MHz)	Output Peak power (dBm)	Output Peak power (mW)	Antenna Gain (dBi) Numeric	Power density at 20cm (mW/cm^2)	Power density Limits (mW/cm^2)
1	2412	14.52	28.31	2.39	0.0135	1
6	2437	14.2	26.30	2.39	0.0125	1
11	2462	13.95	24.83	2.39	0.0118	1

801.11g

Channel	Channel Frequency (MHz)	Output Peak power (dBm)	Output Peak power (mW)	Antenna Gain (dBi) Numeric	Power density at 20cm (mW/cm^2)	Power density Limits (mW/cm^2)
1	2412	13.13	20.56	2.39	0.0098	1
6	2437	12.85	19.28	2.39	0.0092	1
11	2462	12.23	16.71	2.39	0.0079	1

801.11n HT 20

Channel	Channel Frequency (MHz)	Output Peak power (dBm)	Output Peak power (mW)	Antenna Gain (dBi) Numeric	Power density at 20cm (mW/cm^2)	Power density Limits (mW/cm^2)
1	2412	12.82	19.14	2.39	0.0091	1
6	2437	12.15	16.41	2.39	0.0078	1
11	2462	11.64	14.59	2.39	0.0069	1

801.11n HT 40

Channel	Channel Frequency (MHz)	Output Peak power (dBm)	Output Peak power (mW)	Antenna Gain (dBi) Numeric	Power density at 20cm (mW/ cm2)	Power density Limits (mW/cm2)
3	2422	11.2	13.18	2.39	0.0063	1
6	2437	10.82	12.08	2.39	0.0057	1
9	2452	10.13	10.30	2.39	0.0049	1