FCC ID: 2AGDA-919

MPE calculation

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(20cm)
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.
mW=10^(dBm/10)

11.2 Measurement Result

Operation Frequency: 2412- 2462MHz
Antenna Gain =2.0dBi

Test Channe	Frequency	Maximum Conducted Output Power(PK)	LIMIT
	(MHz)	(dBm)	dBm
TX 802.11b Mode			
CH01	2412	14.72	30
CH06	2437	14.86	30
CH11	2462	14.58	30
TX 802.11g Mode			
CH01	2412	13.57	30
CH06	2437	13.52	30
CH11	2462	13.69	30
TX 802.11n-HT20 Mode			
CH01	2412	13.63	30
CH06	2437	13.77	30
CH11	2462	13.41	30
TX 802.11n-HT40 Mode			
CH03	2422	12.79	30
CH06	2437	12.54	30
CH09	2452	12.37	30

max possible output power (PK,conducted)：14±1dbm
Pout=15dBm=31.62mW
Antenna Gain =2.0dBi, numeric gain result =1.585=G R=20cm
Pd=(Pout*G)\ (4*pi*R2)= 0.009976(mW/cm2)

Conclusion:
For the max result : 0.009976 (≤ 3.0 for 1g SAR, No SAR is required.