FCC ID: 2AES6WUNENGT303

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)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	$*900/f^2$	6
30-300	61.4	0.163	1.0	6
300-1,500			f/300	6
1,500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	$*180/f^2$	30
30-300	27.5	0.073	0.2	30
300-1,500			f/1500	30
1,500-100,000			1.0	30

f = frequency in MHz * = Plane-wave equivalent power density

MPE Calculation Method

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=3.14115926

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.

Measurement Result

WIFI:

Operation Frequency: WIFI 802.11b/g/n HT20: 2412-2462MHz,
Power density limited: 1mW/ cm^2
Antenna Type: PCB Antenna;
WIFI antenna gain: 1dBi (ANT A);
R=20cm
mW=10^(dBm/10)
antenna gain Numeric=10^(dBi/10)= 10^(1/10)=1.26

Channel Freq. (MHz)	modulation	conducted power	Tune-up power	Max		Antenna	Evaluation result at 20cm	Power density Limits
		(dBm)	(dBm)	tune-up power		Gain	Power density(mW/cm	(mW/cm2)
				(dBm)	(mW)	Numeric		
		Ant A	Ant A	Ant A	Ant A	Ant A	Ant A	
2412	802.11b	12.06	12±1	13	19.95262	1.26	0.00500	1
2437		12.11	12±1	13	19.95262	1.26	0.00500	1
2462		12.41	12±1	13	19.95262	1.26	0.00500	1
2412	802.11g	8.12	8±1	9	7.943282	1.26	0.00199	1
2437		8.21	8±1	9	7.943282	1.26	0.00199	1
2462		8.66	8±1	9	7.943282	1.26	0.00199	1
2412	802.11n H20	7.08	7±1	8	6.309573	1.26	0.00158	1
2437		7.24	7±1	8	6.309573	1.26	0.00158	1
2462		7.33	7±1	8	6.309573	1.26	0.00158	1

Conclusion:
For the max result : 0.00500≤ 1.0 for 1g SAR, No SAR is required.

Signature: **Date:** 2016-12-22

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