FCC ID: 2AGAH-SOCIAL1

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.
mW = 10^(dBm/10)

11.2 Measurement Result

Operation Frequency: 2402MHz-2480MHz;
Power density limited: $1mW/ cm^{2;}$
Antenna gain: PCB Antenna 2dBi;
Bluetooth DSS &DTS:

Channel Freq. (MHz)	modulation	conducted power (mW)	conducted power (dBm)	Tune-up power (dBm)	Max tune-up power (dBm)	Antenna Gain Numeric	Power density at 20cm (mW/cm2)	Power density Limits (mW/cm2)
2402	GFSK	1.69	2.283	3.0±1	4	1.58	0.000792	1
2441		1.88	2.753	3.0±1	4	1.58	0.000792	1
2480		1.86	2.702	3.0±1	4	1.58	0.000792	1
2402	pi/4-DQPSK	2.28	3.573	4.0±1	5	1.58	0.000997	1
2441		2.52	4.008	4.0±1	5	1.58	0.000997	1
2480		2.43	3.863	4.0±1	5	1.58	0.000997	1
2402	8DPSK	2.34	3.692	4.0±1	5	1.58	0.000997	1
2441		2.58	4.113	4.0±1	5	1.58	0.000997	1
2480		2.18	3.391	4.0±1	5	1.58	0.000997	1
2402	GFSK	7.72	8.875	8.5±1	9.5	1.58	0.002810	1
2440		8.47	9.278	8.5±1	9.5	1.58	0.002810	1
2480		8.28	9.180	8.5±1	9.5	1.58	0.002810	1