FCC ID:2BFQY-PT-21

RF Exposure Evaluation

Limits

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 Exposures				
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
300–1500			f/300	6
1500–100,000			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
300–1500			f/1500	30
1500–100,000			1.0	30

f = frequency in MHz

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 = gain of antenna in linear scale, **Pi** = 3.1416;

R = distance between observation point and center of the radiator in cm

Pd id the limit of MPE, 1 mW/cm^2. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

Test Result of RF Exposure Evaluation

	Modulation	Frequency (MHz)	Output power to antenna (dBm)	Output power to antenna (mW)	Power Density at R=20cm (mW/cm^2)	Limit (mW/cm^2)	Result
BR/EDR	GFSK	2402	-1.425	0.7203	0.000183	1.0	PASS
		2441	-2.096	0.6172	0.000157	1.0	PASS
		2480	-2.605	0.5489	0.000139	1.0	PASS
	Π/4-DQPSK	2402	0.972	1.2508	0.000318	1.0	PASS
		2441	0.268	1.0637	0.000270	1.0	PASS
		2480	-0.259	0.9421	0.000239	1.0	PASS
	8DPSK	2402	1.399	1.3801	0.000350	1.0	PASS
		2441	0.744	1.1869	0.000301	1.0	PASS
		2480	0.178	1.0418	0.000265	1.0	PASS
BLE	GFSK	2402	-0.53	0.8851	0.000225	1.0	PASS
		2440	0.69	1.1722	0.000298	1.0	PASS
		2480	-0.98	0.7980	0.000203	1.0	PASS
FM	FM	88.1	-37.9	0.0002	0.00000004	1.0	PASS

FM				
Channel (MHz)	Electric Field (dBuV/m)	Electric Field (V/m)	Limit of Electric field strength (V/m)	Result
88.10	57.3	0.0007	27.5	PASS
Remark: Test data from page 21 of the FM report.				

Remark：1. BT Antenna gain is 1.06 dBi, FM Antenna gain is 0.42 dBi

In the case of simultaneous launches for BR/EDR and BLE and FM:

Calc. Thresholds : 0.000350+0.000295+0.00000004=0.00064504 < 1

So a SAR test is not required