FCC RF Exposure

EUT Description:BATTERY POWERED BLUETOOTH SPEAKER
ModelNo.:YXDZ-007
FCC ID: 2BB48YXDZ-007
Equipment type: mobile device equipment

Test procedures according to the technical standards: KDB 447498 D01 V06 andFCC 2.1091.

1. 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
Formula: Pd = (Pout*G)/(4* π *r^2)
Where :
Pd = power density in mW/cm^2,
Pout = output power to antenna in mW;
G = gain of antenna in linear scale,
π = 3.14;
R = distance between observation point and center of the radiator in cm
Pd id the limit of MPE, 1 mW/cm2. 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.

2. Test Procedure

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

highest channel individually.

3. Test Result of RF Exposure Evaluation

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Modulation	Channel Freq. (MHz)	Conducted power (dBm)	Max tune-up power (mW)	Antenna Gain (dBi)	Antenna gain numeric	Evaluation result (mW/cm2)	Power density Limits (mW/cm2)
GFSK	2402	3.79	2.393	-0.68	0.855	0.00040724	1
	2441	3.62	2.301	-0.68	0.855	0.00039159	1
	2480	3.73	2.360	-0.68	0.855	0.00040163	1

BLE

EIRP=EMeas+20log(dmeas)-104.7

EIRP is the equivalent isotropically radiated power,

E_{Meas} in dBmis the field strength of the emission at the measurement distance, in dB u V/m

d_{Meas} is the measurement distance, in m

Field strength(dBuV/m)	EIRP(dBm)	Max tune-up(mW)	Frequency(MHz)	Min. distance(mm)	Calc. thresholds	limit
89.61	-5.59	0.2760	2402	5	0.08555	3.0
88.53	-6.67	0.2152	2440	5	0.06723	3.0
90.66	-4.54	0.3515	2480	5	0.11070	3.0

BT：Conclusion: the max result : 0.00040724≤ 1.0 compliance with FCC's RF Exposure.

Note:Single PCB antenna has no dual simultaneous function