FCC ID : YMX-EC628M1

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 nd total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

11.2 Measurement Result

BT
Antenna gain: 2.5dBi

modulation	Channel Freq. (MHz)	Measured power (dBm)	Tune-up power (dBm)	Max tune-up power (dBm)	Antenna Gain Numeric	Evaluation result (mW/cm2)	Power density Limits (mW/cm2)
GFSK	2402	5.42	4 to 6	6	1.78	0.0014	1
	2441	5.70	4 to 6	6	1.78	0.0014	1
	2480	5.40	4 to 6	6	1.78	0.0014	1
pi/4-DQPSK	2402	5.79	4 to 6	6	1.78	0.0014	1
	2441	5.97	4 to 6	6	1.78	0.0014	1
	2480	5.73	4 to 6	6	1.78	0.0014	1
8DPSK	2402	6.40	5 to 7	7	1.78	0.0018	1
	2441	6.58	5 to 7	7	1.78	0.0018	1
	2480	6.36	5 to 7	7	1.78	0.0018	1

BLE
Antenna gain: 2.5 dBi

modulation	Channel Freq. (MHz)	Measured power (dBm)	Tune-up power (dBm)	Max tune-up power (dBm)	Antenna Gain Numeric	Evaluation result (mW/cm2)	Power density Limits (mW/cm2)
GFSK	2402	5.20	4 to 6	6	1.78	0.0014	1
	2440	5.53	4 to 6	6	1.78	0.0014	1
	2480	5.30	4 to 6	6	1.78	0.0014	1

WIFI
Antenna gain: 2.0dBi

modulation	Channel Freq. (MHz)	Measured power (dBm)	Tune-up power (dBm)	Max tune-up power (dBm)	Antenna Gain Numeric	Evaluation result (mW/cm2)	Power density Limits (mW/cm2)
802.11b	2412	14.93	13 to 15	15	1.58	0.0099	1
	2437	15.06	14 to 16	16	1.58	0.0125	1
	2462	14.14	13 to 15	15	1.58	0.0099	1
802.11g	2412	16.01	15 to 17	17	1.58	0.0158	1
	2437	16.52	15 to 17	17	1.58	0.0158	1
	2462	15.42	14 to 16	16	1.58	0.0125	1
802.11n (HT20)	2412	16.06	15 to 17	17	1.58	0.0158	1
	2437	16.52	15 to 17	17	1.58	0.0158	1
	2462	15.18	14 to 16	16	1.58	0.0125	1

CONCLUSION of simultaneous transmitter
Both of the module 1 and module 2 can transmit simultaneously, the formula of calculated the MPE is:

CPD1/LPD1+CPD2/LPD2+·····etc. < 1
CPD = Calculation power density
LPD = Limit of power density

Therefore the worst-case situation is 0.0018 /1.00+0.0158 /1.00 = 0.0176, which is less than “1”,
This confirmed that the device comply with FCC 1.1310 MPE limit.