FCC ID : 2AM6L-C6DAI

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/cm2,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.

CONCLUSION of simultaneous transmitter：

11.2 Measurement Result

BT

Antenna Gain: 3.14 dBi

modulation	Channel Freq. (MHz)	Measured power (dBm)	Antenna Gain	Antenna Gain Numeric	Evaluation result (mW/cm2)	Power density Limits (mW/cm2)
GFSK	2402	10	3.14	2.06	0.0041	1
	2441	10	3.14	2.06	0.0041	1
	2480	10	3.14	2.06	0.0041	1
pi/4-DQPSK	2402	8	3.14	2.06	0.0026	1
	2441	8	3.14	2.06	0.0026	1
	2480	8	3.14	2.06	0.0026	1
8DPSK	2402	8	3.14	2.06	0.0026	1
	2441	8	3.14	2.06	0.0026	1
	2480	8	3.14	2.06	0.0026	1

BLE

Antenna Gain: 3.14 dBi

modulation	Channel Freq. (MHz)	Measured power (dBm)	Antenna Gain	Antenna Gain Numeric	Evaluation result (mW/cm2)	Power density Limits (mW/cm2)
GFSK	2402	9	3.14	2.06	0.0033	1
	2440	9	3.14	2.06	0.0033	1
	2480	9	3.14	2.06	0.0033	1

Wifi 2.4G

Antenna Gain: 3.14 dBi

modulation	Channel Freq. (MHz)	Measured power (dBm)	Antenna Gain	Antenna Gain Numeric	Evaluation result (mW/cm2)	Power density Limits (mW/cm2)
11b	2412	19	3.14	2.06	0.0326	1
	2437	19	3.14	2.06	0.0326	1
	2462	19	3.14	2.06	0.0326	1
11g	2412	18	3.14	2.06	0.0259	1
	2437	18	3.14	2.06	0.0259	1
	2462	18	3.14	2.06	0.0259	1
11n HT20	2412	18	3.14	2.06	0.0259	1
	2437	18	3.14	2.06	0.0259	1
	2462	18	3.14	2.06	0.0259	1

Wifi 5G

Antenna Gain: 3.14 dBi

modulation	Channel Freq. (MHz)	Measured power (dBm)	Antenna Gain	Antenna Gain Numeric	Evaluation result (mW/cm2)	Power density Limits (mW/cm2)
802.11a	5745	12	3.14	2.06	0.0065	1
	5785	12	3.14	2.06	0.0065	1
	5825	12	3.14	2.06	0.0065	1
802.11n-HT20	5745	12	3.14	2.06	0.0065	1
	5785	12	3.14	2.06	0.0065	1
	5825	12	3.14	2.06	0.0065	1
802.11 ac (HT20)	5745	7	3.14	2.06	0.0021	1
	5785	7	3.14	2.06	0.0021	1
	5825	7	3.14	2.06	0.0021	1

LTE

modulation	Measured power (dBm)	Antenna Gain	Antenna Gain Numeric	Evaluation result (mW/cm2)	Power density Limits (mW/cm2)
LTE BAND2	24	3.09	2.03	0.1014	1
LTE BAND4	24	4.53	2.80	0.1399	1
LTE BAND5	24	2.52	1.78	0.0890	0.55
LTE BAND12	24	1.92	1.56	0.0780	0.47
LTE BAND13	24	2.17	1.65	0.0825	0.52
LTE BAND14	24	2.78	1.90	0.0949	0.53
LTE BAND66	24	4.53	2.84	0.1419	1
LTE BAND71	24	1.69	1.48	0.0740	0.44

Simultaneous transmitter

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

Therefore the worst-case situation is：

BLE+LTE：
0.0033 /1.00+0.1014 /1.00 = 0.1047,
0.0033 /1.00+0.1399 /1.00 = 0.1432,
0.0033 /1.00+0.0890 /0.55 = 0.1651,
0.0033 /1.00+0.0780 /0.47 = 0.1693,
0.0033 /1.00+0.0825 /0.52 = 0.1620,
0.0033 /1.00+0.0949 /0.53 = 0.1824,
0.0033 /1.00+0.1419 /1.00 = 0.1452,
0.0033 /1.00+0.0740 /0.44 = 0.1715,

BT+LTE：

0.0041 /1.00+0.1014 /1.00 = 0.1055,
0.0041 /1.00+0.1399 /1.00 = 0.1440,
0.0041 /1.00+0.0890 /0.55 = 0.1659,
0.0041 /1.00+0.0780 /0.47 = 0.1701,
0.0041 /1.00+0.0825 /0.52 = 0.1628,
0.0041 /1.00+0.0949 /0.53 = 0.1832,
0.0041 /1.00+0.1419 /1.00 = 0.1460,
0.0041 /1.00+0.0740 /0.44 = 0.1723,

2.4G WiFi+LTE：

0.0326 /1.00+0.1014 /1.00 = 0.1340,
0.0326 /1.00+0.1399 /1.00 = 0.1725,
0.0326 /1.00+0.0890 /0.55 = 0.1944,
0.0326 /1.00+0.0780 /0.47 = 0.1986,
0.03261 /1.00+0.0825 /0.52 = 0.1913,
0.0326 /1.00+0.0949 /0.53 = 0.2117,
0.0326/1.00+0.1419 /1.00 = 0.1745,
0.0326 /1.00+0.0740 /0.44 = 0.2008,

5G WiFi +LTE： ,

0.0065 /1.00+0.1014 /1.00 = 0.1079,
0.0065 /1.00+0.1399 /1.00 = 0.1464,
0.0065 /1.00+0.0890 /0.55 = 0.1683,
0.0065 /1.00+0.0780 /0.47 = 0.1725,
0.00651 /1.00+0.0825 /0.52 = 0.1652,
0.0065 /1.00+0.0949 /0.53 = 0.1856,
0.0065/1.00+0.1419 /1.00 = 0.1484,
0.0065 /1.00+0.0740 /0.44 = 0.1747,

Which is less than “1”, This confirmed that the device comply with FCC 1.1310 MPE limit.

Both of the WIFI2.4G, WIFI5G, BT and BLE Cannot transmit simultaneously