MPE Calculation : Bluetooth

RF function or Mode	Frequency range (MHz)		Max Target Power (dBm)	ANT Gain (dBi)	Maximum EIRP (dBm)	Maximum EIRP (mW)	Maximum power density (mW/cm^2)	Requriment (mW/cm^2)
Bluetooth(1Mbps)	2402.00	~ 2480.00	1.00	-0.18	0.82	1.208	0.0003	1.000
Bluetooth(2,3Mbps)	2402.00	~ 2480.00	-3.00	-0.18	-3.18	0.481	0.0001	1.000
		~						
		~						
		~						
		~						
		~						
		~						

Note: Please refer to the operation description for Max tune-up power.

The EUT will only be used with a separation of 20 centimeters or greater between the antenna and the body of the user.

The MPE sample calculation for this exposure is shown below.

- **S =** EIRP / (4 R^2 π)

- = 1.208 / (4 X 20^2 X π)

- = 0.0003 mW/cm^2

- **Note**

S= Maximum power density(mW/cm^2)

EIRP= Equivalent Isotropic Radiated Power(mW)

R= Distance to the center of the radiation of the antenn

- **Limits for Maximum Permissible Exposure (MPE)**

Frequency range (MHz)			Electric Field strength (V/m)	Magnetic field strength (A/m)	Power Density (mW/cm^2)	Averageing time (minutes)
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	~	1,500			f / 1500	30
1,500	~	100,000			1.0	30

Conclusion : **The exposure condition of this device is compliant with FCC**

MPE Calculation : WLAN

Mode(Worst case)	Frequency range (MHz)			Max Target Power (dBm)	ANT Gain (dBi)	Maximum EIRP (dBm)	Maximum EIRP (mW)	Maximum power density (mW/cm^2)	Requriment (mW/cm^2)
802.11n	2412.00	~	2462.00	10.50	-0.01	10.49	11.195	0.0023	1.000
802.11a	5180.00	~	5240.00	9.00	-0.61	8.39	6.903	0.0014	1.000
802.11a	5260.00	~	5320.00	9.00	-0.18	8.82	7.621	0.0016	1.000
802.11a	5500.00	~	5720.00	7.00	-0.77	6.23	4.198	0.0009	1.000
802.11a	5745.00	~	5825.00	7.00	-0.18	6.82	4.809	0.0010	1.000
		~							
		~							

Note: Please refer to the operation description for Max tune-up power.

The EUT will only be used with a separation of 20 centimeters or greater between the antenna and the body of the user.

The MPE sample calculation for this exposure is shown below.

▪ S = EIRP / (4 R^2 π)

= 6.903 / (4 X 20^2 X π)

= 0.001 mW/cm^2

- Note

S= Maximum power density(mW/cm^2)

EIRP= Equivalent Isotropic Radiated Power(mW)

R= Distance to the center of the radiation of the antenn

▪ **Limits for Maximum Permissible Exposure (MPE)**

Frequency range (MHz)			Electric Field strength (V/m)	Magnetic field strength (A/m)	Power Density (mW/cm^2)	Averageing time (minutes)
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	~	1,500			f / 1500	30
1,500	~	100,000			1.0	30

Conclusion : **The exposure condition of this device is compliant with FCC**

RF Exposure Compliance for simultaneous operations

- **Worst case for simultaneous operations**
- BT + WLAN(5GHz)

RF function or mode(Worst case)	BT	WLAN 5GHz		-	-	-	-	Σ of MPE ratios
Band(Worst case)	2.4GHz	NII-2		-	-	-	-	
Power Density (mW/cm2)	0.0003	0.0016					-	
Requirement (mW/cm2)	1.0000	1.0000					-	
MPE ratio (Power Density/Requirement)	0.0003	0.0016					-	
Worst case(MPE ratio)	0.0003	0.0016						0.0019

- **Requirment = Σ of MPE ratios ≤ 1**

Conclusion : The exposure condition of this device is compliant with FCC rules.