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	2.00	0.92	2.92	1.959	0.0004	1.000
Bluetooth(2,3Mbps)	2402.00	~	2480.00	-3.50	0.92	-2.58	0.553	0.0002	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)

= 1.959 / (4 X 20^2 X π)

= 0.0004 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

FCC ID: BP9-MTXRSE150

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)
802.11g	2412.00	~	2462.00	15.00	0.91	15.91	38.995	0.0078	1.000
802.11a	5180.00	~	5240.00	11.00	1.59	12.59	18.156	0.0037	1.000
802.11a	5745.00	~	5825.00	11.00	3.72	14.72	29.649	0.0059	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)

= 18.156 / (4 X 20^2 X π)

= 0.004 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(2.4 GHz)

RF function or mode(Worst case)	BT	WLAN 2.4 GHz	-	-	-	-	-	Σ of MPE ratios
Band(Worst case)	2.4 GHz	2.4 GHz	-	-	-	-	-	
Power Density (mW/cm2)	0.0004	0.0078					-	
Requirement (mW/cm2)	1.0000	1.0000					-	
MPE ratio (Power Density/Requirement)	0.0004	0.0078					-	
Worst case(MPE ratio)	0.0004	0.0078						0.0082

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

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