MPE Calculation

Regulation(s): Part 1.1310, Part 2.1091

Method: KDB447498 D01v06

RF feature(Mode)	Frequency range (MHz)			Max Target Power (dBm)	ANT Gain (dBi)	Maximum EIRP (dBm)	Maximum EIRP (mW)	Maximum power density (mW/cm^2)	Requirement (mW/cm^2)
Bluetooth LE(1 Mbps)	2 402.00	~	2 480.00	3.00	2.36	5.36	3.436	0.000 7	1.000 0
		~							
		~							
		~							
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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)

= 3.436 / (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 antenna(20cm)

Part 1.1310

▪ 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)
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 + UWB

RF feature or mode	BT	UWB	-	-	-	-	-	Σ of MPE ratios
Band(Worst case)	2.4GHz	-	-	-	-	-	-	
Power Density (mW/cm2)	0.000 7	#REF!	-	-	-	-	-	
Requirement (mW/cm2)	1.000 0	#REF!	-	-	-	-	-	
MPE ratio (Power Density/Requirement)	0.000 7	#REF!	-	-	-	-	-	
Worst case(MPE ratio)	0.000 7	#REF!	-	-	-	-	-	#REF!

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

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