

MPE Calculation

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	2 402.00	~	2 480.00	-3.50	0.80	-2.70	0.538	0.000 2	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.

$$\begin{aligned}
 S &= \text{EIRP} / (4 R^2 \pi) \\
 &= 0.538 / (4 \times 20^2 \times \pi) \\
 &= 0.0002 \text{ mW/cm}^2
 \end{aligned}$$

- Note

S= Maximum power density(mW/cm²)

EIRP= Equivalent Isotropic Radiated Power(mW)

R= Distance to the center of the radiation of the antenna(20cm)

▪ 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

MPE Calculation

RF feature(Mode)	Frequency range (MHz)			Maximum Tune-up EIRP(dBm)	Maximum EIRP (mW)	Maximum power density (mW/cm ²)	Requirement (mW/cm ²)
60 GHz SRD Radar	57 000	~	71 000	-2.10	0.617	0.000 2	1.000 0
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		~					
		~					
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		~					

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RF Exposure Compliance for simultaneous operations

- Worst case for simultaneous operations
- Bluetooth LE + 60 GHz SRD Radar

RF feature or mode	LE	Rader	-	-	-	-	-	Σ of MPE ratios
Band(Worst case)	2.4 GHz	60 GHz	-	-	-	-	-	
Power Density (mW/cm2)	0.000 2	0.000 2	-	-	-	-	-	
Requirement (mW/cm2)	1.000 0	1.000 0	-	-	-	-	-	
MPE ratio (Power Density/Requirement)	0.000 2	0.000 2	-	-	-	-	-	
Worst case(MPE ratio)	0.000 2	0.000 2	-	-	-	-	-	0.000 4

- Requirement = Σ of MPE ratios ≤ 1

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