

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(1Mbps)	2 402.00	~ 2 480.00	-14.00	0.50	-13.50	0.045	0.000 1	1.000 0
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		~						

Note: Please refer to the operation description for Max Target 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.

$$\begin{aligned}
 S &= \text{EIRP} / (4 R^2 \pi) \\
 &= 0.045 / (4 \times 20^2 \times \pi) \\
 &= 0.000 \text{ mW/cm}^2
 \end{aligned}$$

- 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)

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

MPE Calculation

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Method: KDB447498 D01v06

RF feature(Mode)	Frequency range (MHz)			Max Target EIRP (dBm)	Maximum EIRP (mW)	Maximum power density (mW/cm ²)	Requirement (mW/cm ²)
60GHz Radar	57 000.0	~	64 000.0	8.00	6.310	0.001 3	1.000 0
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		~					
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		~					
		~					
		~					
		~					

Note: Please refer to the operation description for Max Target 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.

$$\begin{aligned}
 S &= \text{EIRP} / (4 R^2 \pi) \\
 &= 6.310 / (4 \times 20^2 \times \pi) \\
 &= 0.001 \text{ mW/cm}^2
 \end{aligned}$$

- 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)

Part 1.1310

▪ Limits for Maximum Permissible Exposure (MPE)

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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
- BLE + 60GHz mmW

RF feature or mode	BLE	mmW Radar	-	-	-	-	-	Σ of MPE ratios
Band(Worst case)	1Mbps	60GHz	-	-	-	-	-	
Power Density (mW/cm ²)	0.000 1	0.001 3	-	-	-	-	-	
Requirement (mW/cm ²)	1.000 0	1.000 0	-	-	-	-	-	
MPE ratio (Power Density/Requirement)	0.000 1	0.001 3	-	-	-	-	-	
Worst case(MPE ratio)	0.000 1	0.001 3	-	-	-	-	-	0.001 4

- Requirement = Σ of MPE ratios ≤ 1

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