

**FCC §1.1310 & §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE)**

**Applicable Standard**

According to subpart 15.247(i) and subpart §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission’s guidelines.

Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

<b>(B) Limits for General Population/Uncontrolled Exposure</b>				
<b>Frequency Range (MHz)</b>	<b>Electric Field Strength (V/m)</b>	<b>Magnetic Field Strength (A/m)</b>	<b>Power Density (mW/cm<sup>2</sup>)</b>	<b>Averaging Time (minutes)</b>
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f <sup>2</sup> )	30
30–300	27.5	0.073	0.2	30
300–1500	/	/	f/1500	30
1500–100,000	/	/	1.0	30

f = frequency in MHz; \* = Plane-wave equivalent power density;

According to §1.1310 and §2.1091 RF exposure is calculated.

**Result**

**Calculation formula:**

Prediction of power density at the distance of the applicable MPE limit

$S = PG/4\pi R^2$  = power density (in appropriate units, e.g. mW/cm<sup>2</sup>);

P = power input to the antenna (in appropriate units, e.g., mW);

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

For simultaneously transmit system, the calculated power density should comply with:

$$\sum_i \frac{S_i}{S_{Limit,i}} \leq 1$$

**Calculated Data:**

For worst case:

Mode	Frequency (MHz)	Antenna Gain <sup>#</sup>		Max Tune-up Power <sup>#</sup>		Evaluation Distance (cm)	Power Density (mW/cm <sup>2</sup> )	MPE Limit (mW/cm <sup>2</sup> )
		(dBi)	(numeric)	(dBm)	(mW)			
BT	2402-2480	2.50	1.78	2.5	1.78	25	0.0004	1.0
BLE	2402-2480	2.50	1.78	7.0	5.01	25	0.0011	1.0
2.4G Wi-Fi	2412-2462	5.51	3.56	30.0	1000	25	0.4533	1.0
5G Wi-Fi	5150-5250	5.61	3.64	15.5	35.48	25	0.0164	1.0
	5250-5350	5.61	3.64	16.5	44.67	25	0.0207	1.0
	5470-5725	5.61	3.64	16.0	39.81	25	0.0185	1.0
	5725-5850	5.61	3.64	19.0	79.43	25	0.0368	1.0
	5850-5895	5.61	3.64	20.5	112.20	25	0.0520	1.0
6G Wi-Fi	5925-6425	5.61	3.64	12.0	15.85	25	0.0073	1.0
	6425-6525	5.61	3.64	11.0	12.59	25	0.0058	1.0
	6525-6875	5.61	3.64	11.0	12.59	25	0.0058	1.0
	6875-7125	5.61	3.64	11.0	12.59	25	0.0058	1.0

Note:

- 1) The tune up conducted power and antenna gain was declared by the applicant.
- 2) For the Wi-Fi mode, the antenna gain should be the directional gain.
- 3) The BT, 2.4G Wi-Fi, 5G Wi-Fi and 6G Wi-Fi cannot Simultaneous transmitting.

To maintain compliance with the FCC’s RF exposure guidelines, place the equipment at least 25cm from nearby persons.

**Result: Compliant.**