

* Standalone SAR test exclusion considerations

1. Applicable Standard

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 limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 0.2m normally can be maintained between the user and the device.

a) Limits for Occupational / Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Times E 2, H 2 or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f)*	6
30-300	61.4	0.163	1.0	6
300-1500			F/300	6
1500-10000			5	6

b) Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Times E 2, H 2 or S (minutes)
0.3-3.0	614	1.63	(100)*	30
3.0-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-10000			1.0	30

Note : f=frequency in MHz

***=Plane-wave equivalent power density**

2. MPE Calculation Method

S = power density

P = power input to antenna

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna

Predication of MPE limit at a given distance, Equation from OET Bulletin 65, Edition 97-01

$$S = PG/4\pi R^2$$

3. Calculated Result and Limit

Mode	Frequency (MHz)	Maximum conducted power		Antenna Gain		Distance Cm	Power Density mW/cm ²	Limit mW/cm ²
		dBm	mW	dBi	mW			
Bluetooth LE	2402	4.6	2.884	-0.63	0.865	20	0.000	1
	2441	5.3	3.388	-0.63	0.865	20	0.001	1
	2480	5.6	3.611	-0.63	0.865	20	0.001	1
Bluetooth BDR (GFSK)	2402	6.7	4.677	-0.63	0.865	20	0.001	1
	2441	7.2	5.248	-0.63	0.865	20	0.001	1
	2480	5.8	3.802	-0.63	0.865	20	0.001	1
Bluetooth EDR ($\pi/4$ -DQPSK)	2402	5.2	3.311	-0.63	0.865	20	0.001	1
	2441	5.8	3.802	-0.63	0.865	20	0.001	1
	2480	6.1	4.074	-0.63	0.865	20	0.001	1
Bluetooth EDR (8DPSK)	2402	5.2	3.311	-0.63	0.865	20	0.001	1
	2441	5.9	3.890	-0.63	0.865	20	0.001	1
	2480	6.1	4.074	-0.63	0.865	20	0.001	1