Prediction of MPE at a given distance

1. Limits

The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	*900/f^2	6
30-300	61.4	0.163	1.0	6
300-1,500			f/300	6
1,500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
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

2. Test Procedure

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = \frac{P \times G}{4 \times \pi \times R^2}$$

Where:

S = power density

P = power input to the antenna

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

R = distance to the center of radiation of the antenna

3. Result

Mode	Frequency (MHz)	Prediction distance (cm)	Rated Peak RF power output		MPE (mW/cm^2)	Limit (mW/cm^2)	SAR Test Exclusion
			dBm	mW			
2.4G WIFI	2462	20	16.929	49.3060	0.02915	1	Yes
EDR	2402	20	3.952	2.4843	0.00147	1	Yes
BLE 1M	2440	20	4.337	2.7146	0.00040	1	Yes
BLE 2M	2402	20	4.09	2.5645	0.00038	1	Yes
5G WIFI	5230	20	15.293	33.8298	0.00644	1	Yes

2.4G WiFi&BT Antenna Gain: 4.73dBi, 2.97(numeric)

5G WiFi Antenna Gain: 5.83dBi, 3.83(numeric)

Then SAR evaluation is not required.