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)	Maximum output power	Prediction distance (cm)	Rated Peak RF power output(Max)		MPE (mW/cm^2)	Limit (mW/cm^2)	SAR Test Exclusion
				dBm	mW			
EDR	2402-2480	3.064	20	5	3.162	0.0003	1	Yes
BLE	2402-2480	1.659	20	2	1.585	0.0001	1	Yes
2.4G WiFi	2412-2462	17.527	20	18	63.096	0.0038	1	Yes
5G WiFi B1	5180-5240	17.15	20	18	63.096	0.0038	1	Yes
5G WiFi B4	5745-5825	17.72	20	18	63.096	0.0038	1	Yes

BT/2.4G WiFi Antenna1/2 Gain: -3.98dBi, 0.40(numeric)

5 WiFi Antenna1/2 Gain: -5.24dBi, 0.30(numeric)

Maximum Simultaneous transmission MPE Ratios for 2.4GHz WLAN and 5G WLAN

Maximum MPE ratio $_{2.4GWLAN}$	Maximum MPE ratio $_{5GWLAN}$	∑MPE ratios	Limit	Results
0.0003	0.0038	0.0041	1.0	PASS

Then SAR evaluation is not required.