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		MPE (mW/cm^2)	Limit (mW/cm^2)	SAR Test Exclusion
				dBm	mW			
2.4G WiFi	2412-2462	12.529	20	13	19.53	0.0062	1	Yes
5G WiFi B1	5180-5240	12.03	20	13	19.53	0.0073	1	Yes
5G WiFi B2	5260-5320	12.758	20	13	19.53	0.0073	1	Yes
5G WiFi B3	5500-5700	11.897	20	12	15.85	0.0058	1	Yes
5G WiFi B4	5745-5825	11.154	20	12	15.85	0.0058	1	Yes

2.4G WiFi Antenna Gain: 1.95dBi, 1.57(numeric)

5 WiFi Antenna Gain: 2.64dBi, 1.84(numeric)

Then SAR evaluation is not required.