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 Exposures				
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
300–1500			f/300	6
1500–100,000			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
300–1500			f/1500	30
1500–100,000			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 centre of radiation of the antenna

3. Result

Frequency (MHz)	Maximum Output power (dBm)	Maximum Output power (mW)	Antenna Gain (dBi)	Antenna Gain (numeric)	Distance (cm)	Result (mW/cm^2)	Limits for General Population/ Uncontrolled Exposure (mW/cm^2)
BLE							
2442	3.44	2.21	1.5	1.41	20	0.0006	1.0
BT							
2441	6.09	4.06	1.5	1.41	20	0.0011	1.0
2.4G Wi-Fi							
2462	16.90	48.98	1.5	1.41	20	0.0138	1.0
5.2G Wi-Fi							
5180	17.51	56.36	1.0	1.26	20	0.0141	1.0
5.3G Wi-Fi							
5290	17.60	57.54	1.0	1.26	20	0.0144	1.0
5.6G Wi-Fi							
5500	16.90	48.98	1.0	1.26	20	0.0123	1.0
5.8G Wi-Fi							
5755	11.97	15.74	1.0	1.26	20	0.0039	1.0
WCDMA 850							
826.4	23.42	219.79	2.3	1.70	20	0.0743	0.55
WCDMA 1700							
1712.4	23.74	236.59	2.3	1.70	20	0.0799	1.0
WCDMA 1900							
1852.4	24.17	261.22	2.3	1.70	20	0.0883	1.0
LTE Band 2							
1880	23.31	214.29	3.4	2.19	20	0.0933	1.0
LTE Band 4							
1732.5	23.07	202.77	3.4	2.19	20	0.0883	1.0
LTE Band 5							
836.5	22.86	193.20	3.4	2.19	20	0.0841	0.56
LTE Band 12							
707.5	23.54	225.94	3.4	2.19	20	0.098	0.47
LTE Band 13							
782	23.24	210.86	3.4	2.19	20	0.0918	0.52
LTE Band 17							
710	23.50	223.87	3.4	2.19	20	0.0974	0.47
LTE Band 66							
1770	23.63	230.67	3.4	2.19	20	0.1004	1.0
LTE Band 71							
680.5	23.87	243.78	3.4	2.19	20	0.1061	0.45

Note:

1. WCDMA and LTE Maximum Output power Refer to FCC ID: ZMONL668AM00, Report No.: FG8O1914-01A and Report No.: FG8O1914-01B.
2. Just the worst case mode was shown in report.

Max Simultaneous MPE calculation results

Mode	MPE Ratio	Results
BT+5.3G Wi-Fi + WCDMA 1900	0.0006+0.0144 + 0.0883	0.1033 < 0.55
BT+5.3G Wi-Fi + LTE Band 71	0.0006+0.0144 +0.1061	0.1211 < 0.45

4. Conclusion

The device is exempt from the RF exposure evaluation.