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)
WCDMA W850							
826.4	23.49	223.36	1.03	1.27	20.00	0.0564	0.5509
WCDMA W1700							
1712.40	23.07	202.77	1.93	1.56	20.00	0.0629	1.0
WCDMA W1900							
1852.40	23.60	229.09	1.93	1.56	20.00	0.0711	1.0
LTE Band 2							
1880.0	23.14	206.06	1.93	1.56	20.00	0.0640	1.0
LTE Band 4							
1715.0	22.60	181.97	1.93	1.56	20.00	0.0565	1.0
LTE Band 5							
826.5	23.22	209.89	1.03	1.27	20.00	0.0530	0.5510
LTE Band 12							
701.5	23.77	238.23	1.03	1.27	20.00	0.0601	0.4677

Note: Just the worst case mode was shown in report.

4. Conclusion

The device is exempt from the RF exposure evaluation.