

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 centre of radiation of the antenna

3. Result

Worse case is as below:

Mode	Frequency (MHz)	Prediction distance (cm)	RF output power dBm	Tune up power dBm	Tune up power mW	MPE (mW/cm ²)	Limit (mW/cm ²)	SAR Test Exclusion
Band 2	1880	20	24.95	25	316.228	0.08255	1	Yes
Band 4	1711.5	20	23.05	25	316.228	0.08255	1	Yes
Band 5	827.5	20	22.76	25	316.228	0.08448	0.5516667	Yes
Band 12	707.5	20	24.08	25	316.228	0.08448	0.4716667	Yes
Band 13	782	20	22.92	25	316.228	0.08448	0.5213333	Yes
Band 14	793	20	23	25	316.228	0.08448	0.5286667	Yes
Band 66	1779.9	20	23.35	25	316.228	0.08255	1	Yes
Band 71	697.9	20	23.01	25	316.228	0.08448	0.46526667	Yes

FPC antenna,

LTE Band 2: Maximum Gain is 1.18dBi.

LTE Band 4: Maximum Gain is 1.18dBi.

LTE Band 5: Maximum Gain is 1.28dBi.

LTE Band 12: Maximum Gain is 1.28dBi.

LTE Band 13: Maximum Gain is 1.28dBi.

LTE Band 14: Maximum Gain is 1.28dBi.

LTE Band 66: Maximum Gain is 1.18dBi.

LTE Band 71: Maximum Gain is 1.28dBi.

Then SAR evaluation is not required.