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)

KDB Test Methodology: KDB 447498 D01 v06.

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

Mode	Frequency (MHz)	Prediction distance (cm)	RF output power(Max) (dBm)	Tune-up power (Max)		MPE (mW/cm^2)	Limit (mW/cm^2)	SAR Test Exclusion
				dBm	mW			
LTE B5	824~849	20	24.24	25	316.2278	0.0669	0.5493	Yes
LTE B38	2570~2620	20	24.56	25	316.2278	0.0533	1.0000	Yes
LTE B41	2496~2690	20	24.18	25	316.2278	0.0586	1.0000	Yes

LTE:

Maximum Gain is 0.27dBi for LTE Band 5

Maximum Gain is -0.72dBi for LTE Band 38

Maximum Gain is -0.31dBi for LTE Band 41

Conclusion: Then SAR evaluation is not required.