

Appendix IV MPE

FCC ID: 2BPDB-DJGGD3-XJ801

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

917.4-918.8MHz

For Worst case Mode: 917.4MHz

Field strength =73.49dBuV/m @3m

Ant gain -7dBi; so Ant numeric gain=0.2

So $pt= \{[10^{(73.49/20)}/10^6 \times 3]^2/30 \times 0.2\} \times 1000 \text{ mW} = 0.0013 \text{ mW} = -28.86\text{dBm}$

Mode	Frequency (MHz)	Prediction distance (cm)	RF output power(Max) (dBm)	Tune-up power (Max)		MPE (mW/cm²)	Limit (mW/cm²)	SAR Test Exclusion
				dBm	mW			
GFSK	917.4-918.8	20	-28.86	-28	0.002	0.00000006	1	Yes

Therefore this device complies with FCC's RF radiation exposure limits for general population without SAR evaluation.