

2.10 Maximum Permissible Exposure (MPE)

2.10.1 Test Limits

The EUT shows compliance to the requirements of this section, which states the MPE limits for general population / uncontrolled exposure are as shown below:

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Average Time (min)
0.3 - 1.34	614	1.63	100 ^{Note 2}	30
1.34 - 30	824 / f	2.19 / f	180 / f ² ^{Note 2}	30
30 - 300	27.5	0.073	0.2	30
300 - 1500	-	-	f / 1500	30
1500 - 100000	-	-	1.0	30
Notes				
1. f = frequency in MHz				
2. Plane wave equivalent power density				

Maximum Permissible Exposure Computation

The power density at 20cm distance was computed from the following formula:

$$\begin{aligned}
 S &= (30GP) / (377d^2) \\
 \text{where } S &= \text{Power density in W/m}^2 \\
 P &= 0.0005W \\
 d &= \text{Test distance at 0.2m} \\
 G &= \text{Numerical isotropic gain, 1.0 (0.0dBi)}
 \end{aligned}$$

Substituting the relevant parameters into the formula:

$$\begin{aligned}
 S &= [(30GP) / 377d^2] \\
 &= 0.0010 \text{ W/m}^2 \\
 &= 0.0001 \text{ mW/cm}^2
 \end{aligned}$$

∴ The power density of the EUT at 20cm distance is 0.0001mW/cm² based on the above computation and found to be lower than the power density limit of 1.0mW/cm².