



MPE Calculations

R33CXMRCR11

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1.0 SCOPE:

This Report Demonstrates Evaluation and Compliance for Human Exposure to Radiofrequency Electromagnetic Fields as Outlined by the Federal Communications Commission Office of Engineering and Technology Bulletin 65.

2.0 REVISION LEVEL:

DATE	COMMENTS	REVISION
4/25/05	Created.	1.0

3.0 REFERENCE DOCUMENTS:

- (A) Limits for Maximum Permissible Exposure (MPE). Code of Federal Regulations Title 47, Volume 1, Section 1.1310.
- (B) Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields. OET Bulletin 67 Edition 97-01.

4.0 CALCULATIONS:

The following worst case emissions are based on a PPt (Peak Power Total) measurement of 10.4 dBm. And the worst case antenna gain on axis is found to be 3.64 dBi.

Total radiated power at the Transmitter:

$$\text{A) } P_t = 7.0 \text{ dBm} + 2.0 \text{ dBi} = 9 \text{ EIRP}$$

$$9.0 \text{ EIRP} = 10.23 \text{ mW or } .01023 \text{ Watts.}$$

Power density at a distance of .02 meters is:

$$\text{B) } S = \text{EIRP} / 4\pi \cdot R^2$$

S = Power density (mW/cm²)

EIRP = Equivalent isotropically radiated power (mW)

R = Distance to the center of radiation of the antenna (cm)

$S = 40.71 \text{ mW per meter squared.}$

Power density based on a Per Centimeter Squared is:

$10.178 \text{ } \mu\text{W per centimeter squared.}$

5.0 CONCLUSION:

Based on the FCC Limits for Maximum Permissible Exposure (MPE) given in Table 1 of reference document (A) this device falls under the required limits.