



MPE Calculations

R33C4HC5001

1.0	SCOPE	3
2.0	REVISION LEVEL	3
3.0	REFERENCE DOCUMENTS	3
4.0	CALCULATIONS	3
5.0	CONCLUSION	4

1.0 SCOPE:

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

2.0 REVISION LEVEL:

DATE	COMMENTS	REVISION
1/22/2007	Created.	1.0
10/25/2007	Change the FCC number	2.0

3.0 REFERENCE DOCUMENTS:

- (A) Limits for Maximum Permissible Exposure (MPE). Code of Federal Regulations Title 47, Volume 1, Sections 1.1310
- (B) Limits for Maximum Permissible Exposure (MPE). Code of Federal Regulations Title 47, Volume 1, Sections 2.1093
- (C) 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 0.0 dBm into the antenna. And the worst case antenna gain on axis is found to be 1.0 dBi.

Total power into antenna:

$$\text{A) } P_t = 0.0 \text{ dBm} = 10^{(0.0 \text{ dBm}/10)} = 1.0 \text{ mW}$$

Total effective isotropic radiated power at the Transmitter:

$$\text{B) } \text{EIRP} = 1.0 \text{ dBm} + 1.0 \text{ dBi} = 2.0 \text{ dBm}$$

$$2.0 \text{ dBm} = 1.58 \text{ mW}$$

Power density at a distance of 20 centimeters is:

$$C) \quad S = \frac{EIRP}{4\pi R^2} = 0.31 \mu W/cm^2$$

Where S = Power density (mW/cm²), EIRP = Equivalent isotropic radiated power (mW), R = Distance to the center of radiation of the antenna (cm)

5.0 CONCLUSION:

Based on the FCC Limits for Maximum Permissible Exposure (MPE) given in Table 1 of reference document (A) as 1 mW/cm² this device falls under the required limits.