MPE Calculations

R33LCAVMHTC101

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
8/07/2005	Created.	1.0

3.0   REFERANCE 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 10.70 dBm into the antenna. And the worst case antenna gain on axis is found to be 3.2 dBi.

Total power into antenna:
   A) $Pt = 10.70$ dBm $= 10^{\wedge}(9.70$ dBm$/10) = 11.75$ mW

Total effective isotropic radiated power at the Transmitter:

   B)   EIRP $= 10.70$ dBm $+ 3.2$dBi $= 13.90$ dBm

           13.90 dBm $= 24.55$ mW

Power density at a distance of 20 centimeters is:

C) $S = \dfrac{EIRP}{4\pi R^2} = 4.9 \ \mu W/cm^2$

Where S = Power density (mW/cm^2), 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/cm^2 this device falls under the required limits.