MPE Calculations

R33AVMTUN1X1

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
5/18/2005	Created.	1.0

3.0 REFERANCE 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 AVM-TUN1-B utilizes a low power 2.4 GHz radio located approx 1 cm behind the front panel plastic. The following worst case emissions are based on a PPt (Peak Power Total) measurement of 12.8 dBm. And the worst case antenna gain on axis is found to be 3.64 dBi.

Total radiated power at the Transmitter:

A) Pt = 12.8 dBm + 3.64 dBi = 16.4 dBm EIRP

16.4 dBm EIRP = .0441 Watts. (44.1mW)

Power density at a distance of 10cm from the antenna is:

B) $S = EIRP/4\pi \cdot r^2$

Where S is Power density in units of mW/cm2 and EIRP is Equivalent Isotropic Radiated Power in units of mW and r is distance to the center of radiation of the antenna in units of cm

$S = 44.1mW/(4\pi (10cm)^2) = .00351mW/cm^2$

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.