FCC OET 65 MPE Value Calculations

The purpose of this report is to document the Maximum Permissible Exposure value for the IRU 600 high band product.

Manufacturer:	Aviat Networks
Equipment Category:	Microwave Fixed Link
Equipment Name:	IRU 600
FCC ID:	VK6-IRU600HB

1. Introduction

FCC OET Bulletin 65 defines guidelines and limits for Maximum Permissible Exposure (MPE) in terms of electric and magnetic field strength and power density for transmitters operating at frequencies between 300 kHz and 100 GHz.

This report documents the MPE value (distance) for the IRU 600 high band system which is spot tuned to either 5805 or 5835MHz.

This product has a FCC ID: VK6-IRU600HB

2. References

[1] FCC OET Bulletin 65 edition 97-01

3. Formula and limit.

From OET 65 [1] the formula for calculating the maximum permissible exposure is:

$S = PG/4\pi R^2$ (1)

MPE limit for uncontrolled exposure at prediction frequency = 1 mW/cm^2

Re-arranging the above formula to calculate R:

$R = \sqrt{(PG/4\pi S)}$ (2)

4. Input values

P = power input to antenna = 30dBm or 1000mW
G = Antenna gain = 46.8dBi or 47863 numeric
S = MPE limit for uncontrolled exposure = $1mW/cm^2$

R = Distance to the centre of the antenna (cm)

5. Calculating distance to antenna

Using formula (2) from above:

$R = \sqrt{((1000 \times 47863)/4\pi)}$

R = 1952 cm

It should be noted that this distance contains zero margin so the distance cannot be any shorter than this.

In order to guarantee some margin a distance of 2000cm is proposed and using formula (1) from above, this gives an exposure level of:

$S = 1000 \times 47863/4\pi 2000^2$

$S = 0.95269$ mW/cm^2

i.e. a compliance margin of 0.0473 mW/cm^2

6. Conclusion

The recommended minimum distance from the centre of the antenna to ensure exposure below the limit specified in OET Bulletin 65 [1] is 2000cm.