

### Maximum Permissible Exposure Calculations.

The following calculations are based on guidelines published in OET Bulletin 65, Edition 97-01, August 1997: Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields.

	Near to Far Field		
	Frequency (GHz)	Wavelength (m)	Transition (cm)
Lower	2.4000	0.125	~2.0
Upper	2.4835	0.121	~1.9

For a simple case, discounting reflections, equation 4, page 19 gives:

$$\text{Power Density, } S = PG / 4\pi R^2$$

Worst case power input to antenna : 0.28 mW.

Antenna gain : 0 dBi.

Numeric antenna gain : 1.

General population/ uncontrolled limit: 1mW/cm<sup>2</sup>.

Distance from antenna, R, where power density limit is reached is:

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

$$\underline{R = 0.15 \text{ cm}}$$

### Notes.

1. The general population/ uncontrolled limit is taken from OET 65, Appendix A Table 1B page 67.

For a worst case prediction of power density, including reflections from nearby surfaces, OET 65 recommends using equation 6, page 20.

$$\text{Power Density } S = PG / \pi R^2$$

Red-M

Wexham Springs · Framewood · Framewood Road · Wexham · Slough · SL3 6PJ

Tel: +44 (0)1753 661700 Fax: +44 (0)1753 661745

[www.red-m.com](http://www.red-m.com)



Using the same figures as above the distance from antenna, R, where power density limit is reached is:

$$R = \sqrt{PG / \pi S}$$

R = 0.3 cm.

Mark Bailey

20/03/01

Red-M Ltd.