Maximum Permissible Exposure Calculations

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

	Frequency (GHZ)	Wavelength (m)	Near to Far Field 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:

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

Worst case power: 6.6 mW

General population/uncontrolled limit: 1mW/cm^2.

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

$R = \sqrt{(PG / 4\pi S)}$
$R = 0.7$ cm

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