

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:

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

Worst case power: 6.6 mW

General population/uncontrolled limit: 1mW/cm².

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

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

Notes:

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