

Prediction of MPE limit at a given distance

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = \frac{PG}{4\pi R^2} \text{ re - arranged} \quad R = \sqrt{\frac{PG}{S4\pi}}$$

where:

S = power density

P = power input to the antenna

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the centre of radiation of the antenna

Maximum peak output power at the antenna terminal:	-0.7	dBm
Maximum peak output power at the antenna terminal:	0.85	mW
Power density	1.0	mW/cm ²
Antenna gain (typical):	-1.1	dBi
Maximum antenna gain:	0.77	numeric
Prediction frequency:	2402	MHz

Result

Prediction Frequency (MHz)	Maximum allowable antenna gain: (dBi)	Power density limit (S) (mW/cm ²)	Distance (R) cm required to be less than 1mW/cm ²
2402	-1.1	1.000000	0.22