



CONFIDENTIAL

MPE Calculations for the QTM-8524

The Maximum Permissible Exposure (MPE) for the QTM-8524 shall be calculated for two case antennas. The first is a wall mounted patch antenna with a gain of 7.5dBi, and the second is a ceiling mounted monopole antenna with a gain of 3.0dBi.

The equation used in this calculation is shown below:

$$S = \frac{PG}{4\pi R^2}$$

Where S = power density in mW/cm²

P = transmitter power in mW

G = numeric antenna gain over isotropic

Solving this equation for R:

$$R = \sqrt{\frac{PG}{4\pi S}}$$

From OET Bulletin 65, Appendix A, Table B, General Population/Uncontrolled Exposure, S =1 in the 2.4GHz range. The transmitter power, P, is 707mW.

Results of the calculations are shown below:

Antenna Type	Log Gain (dBi)	Numeric Gain	MPE (cm)
Patch	7.5	5.62	17.78
Monopole	3	2	10.6

Because the results are less than the required minimum 20cm distance, the user's manual will reflect the 20cm distance to ensure maximum safety for end users and the general public.