



Tuesday, July 19, 2005

ARWT01-A1 AlphaWave AW400

Maximum Permissible Exposure Calculation

Calculations for Maximum Permissible Exposure Levels

$$\text{Power Density} = P_d \text{ (mW/cm}^2\text{)} = \text{EIRP}/(4\pi d^2)$$

$$d = \sqrt{(\text{EIRP}/(4\pi P_d))}$$

$$\text{EIRP} = P * G$$

P = Peak output power (mW)

G = Antenna numeric gain (numeric)

d = Separation distance (cm)

$$\text{Numeric Gain} = 10^{(G \text{ (dBi)}/10)}$$

P (worst case) = +33 dBm, **2,000 mW**, Antenna Gain = 0 dBi, **1.0 numeric**

The MPE limit for 450 MHz in this case is $f(\text{MHz})/1500$ or 0.3 mW/cm²

Antenna Gain (Numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Calculated Safe Distance (d) @ 0.3 mW/cm ²	Limit (mW/cm ²)
1	+33.0	2,000	23 cm	0.3