

## MPE CALCULATIONS

The following MPE calculations are based on a 12.35 dBi Yagi antenna, with a conducted RF power of +21.4 dBm as presented to the antenna. The gain of this antenna, based on the manufacturer's data sheet is 10.2 dBd.

### Prediction of MPE limit at a given distance

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

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

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 center of radiation of the antenna

Maximum peak output power at antenna input terminal:	<u>21.40</u>	(dBm)
Maximum peak output power at antenna input terminal:	<u>138.038</u>	(mW)
Antenna gain(typical):	<u>12.35</u>	(dBi)
Maximum antenna gain:	<u>17.179</u>	(numeric)
Prediction distance:	<u>20</u>	(cm)
Prediction frequency:	<u>902-928</u>	(MHz)
MPE limit for uncontrolled exposure at prediction frequency:	<u>0.6</u>	(mW/cm <sup>2</sup> )
Power density at prediction frequency:	0.471770	(mW/cm <sup>2</sup> )
Maximum allowable antenna gain:	13.4	(dBi)
Margin of Compliance at 20 cm =		1.0 dB