



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

5 MHz channel

Maximum peak output power at antenna input terminal:	<u>22.54</u>	(dBm)
Maximum peak output power at antenna input terminal:	<u>179.4733627</u>	(mW)
Antenna gain(typical):	<u>19</u>	(dBi)
Maximum antenna gain:	<u>79.43282347</u>	(numeric)
Prediction distance:	<u>120</u>	(cm)
Prediction frequency:	<u>4965</u>	(MHz)
MPE limit for uncontrolled exposure at prediction frequency:	<u>1</u>	(mW/cm ²)
Power density at prediction frequency:	0.078782	(mW/cm ²)
	0.787821	(W/m ²)
Maximum allowable antenna gain:	30.03572356	(dBi)
Margin of Compliance:	11.03572356	

10 MHz channel

Maximum peak output power at antenna input terminal: 22.04 (dBm)
Maximum peak output power at antenna input terminal: 159.9558029 (mW)
Antenna gain(typical): 19 (dBi)
Maximum antenna gain: 79.43282347 (numeric)
Prediction distance: 120 (cm)
Prediction frequency: 4985 (MHz)
MPE limit for uncontrolled exposure at prediction frequency: 1 (mW/cm²)

Power density at prediction frequency: **0.070215** (mW/cm²)
0.702146 (W/m²)
Maximum allowable antenna gain: **30.53572356** (dBi)

Margin of Compliance: 11.53572356

20 MHz channel

Maximum peak output power at antenna input terminal: 23.69 (dBm)
Maximum peak output power at antenna input terminal: 233.8837239 (mW)
Antenna gain(typical): 19 (dBi)
Maximum antenna gain: 79.43282347 (numeric)
Prediction distance: 120 (cm)
Prediction frequency: 4980 (MHz)
MPE limit for uncontrolled exposure at prediction frequency: 1 (mW/cm²)

Power density at prediction frequency: **0.102666** (mW/cm²)
1.026662 (W/m²)
Maximum allowable antenna gain: **28.88572356** (dBi)

Margin of Compliance: 9.885723561