Prediction of MPE limit at a given distance

802.11a Radio

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

Note: TX power at 95% duty cycle

Maximum peak output power at antenna input terminal:	13.27	(dBm)
Maximum peak output power at antenna input terminal:	21.23244462	(mW)
Antenna gain(typical):	15	(dBi)
Maximum antenna gain:	31.6227766	(numeric)
Prediction distance:	20	(cm)
Prediction frequency:	5250-5825	(MHz)
MPE limit for uncontrolled exposure at prediction frequency:	1	(mW/cm^2)
Power density at prediction frequency:	0.133577	(mW/cm^2)
Maximum allowable antenna gain:	23.74269855	(dBi)
Margin of Compliance:	8.742698554	

Note:The power delivered to the antenna is reduced by 0.5dB due to cable loss.