Nemko

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 isotropic radiator
R = distance to the center of radiation of the antenna

Maximum peak output power at antenna input terminal:	20.3	(dBm) *
Maximum peak output power at antenna input terminal:	107.9	(mW)
Antenna gain(maximum):	7.15	(dBi) *
Maximum antenna gain:	5.19	(numeric)
Time Averaging:	100	(%) *
Prediction distance:	20	(cm) *
Prediction frequency:	904.1	(MHz) *
FCC MPE limit for uncontrolled exposure at prediction frequency:	0.603	(mW/cm^2)
IC MPE limit for uncontrolled exposure at prediction frequency:	8.69	(W/m^2)
Power density at prediction frequency:	0.111	(mW/cm^2)
This equates to:	1.11	(W/m^2)

Antenna	Model	Part#	dBi
Yagi	Astron Wireless 918-3	AA203Es	7.15
Omni	PCTEL MFB9155	AA20ES900	7.15
Whip	ESTeem	AA20DMEs	2

Frequency(MHz)	Limit(mW/cm^2)
0.3	100
1.34	100
1.341	#REF!
29.9	#REF!
30	0.2
299.999	0.2
300	0.2
350	0.233333333
375	0.25
400	0.266666667
450	0.3
460	0.306666667
475	0.316666667
500	0.333333333
525	0.35
540	0.36
550	0.366666667
600	0.4
625	0.416666667
650	0.433333333
700	0.466666667
800	0.533333333
900	0.6
1000	0.666666667
1100	0.733333333
1200	0.8
1300	0.866666667
1400	0.933333333
1500	1
100000	1