19. MPE Calculations

The following MPE calculations are based on the Centurion whip antenna, with a measured EFI of 120.4 dBµV/m, at 3 meters, and conducted RF power of +19.8 dBm as presented to the antenna. The declared gain of the antenna is listed as 2.0 dBi, but the calculated gain of this antenna, as used in the calculations below, based on the EFI measurements is 5.4 dB.

Antenna Type:
Centurion Wireless Technologies, Incorporated,
model number "WCR-2400-SMRP"

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:	19.80	(dBm)
Maximum peak output power at antenna input terminal:	95.499	(mW)
Antenna gain(typical):	5.4	(dBi)
Maximum antenna gain:	3.467	(numeric)
Prediction distance:	20	(cm)
Prediction frequency:	2400	(MHz)
MPE limit for uncontrolled exposure at prediction frequency:	1	(mW/cm^2)
Power density at prediction frequency:	0.065876	(mW/cm^2)
Maximum allowable antenna gain:	17.2	(dBi)
Margin of Compliance at 20 cm =	11.8	dB