EXHIBIT 12. MPE CALCULATIONS

The following MPE calculations are based on a 1.8 centimeter inverted-F printed circuit board trace antenna, with a measured ERP of 110 dBµV/m, at 3 meters, and conducted RF power of +15.32 dBm as presented to the antenna. The calculated gain of this antenna, based on the ERP measurements is 0.25 dBi.

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:	15.32	(dBm)
Maximum peak output power at antenna input terminal:	34.041	(mW)
Antenna gain(typical):	0.25	(dBi)
Maximum antenna gain:	1.059	(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:	0.007173	(mW/cm^2)
Maximum allowable antenna gain:	21.7	(dBi)
Margin of Compliance at 20 cm =	21.4	dB
