

EXHIBIT 13. 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 117.95 dBµV/m, at 3 meters, and conducted RF power of +19.72 dBm as presented to the antenna. The calculated gain of this antenna, based on the ERP measurements is 3.0 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:	19.72 (dBm)
Maximum peak output power at antenna input terminal:	93.756 (mW)
Antenna gain(typical):	3 (dBi)
Maximum antenna gain:	1.995 (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:	0.037216 (mW/cm ²)
Maximum allowable antenna gain:	17.3 (dBi)
Margin of Compliance at 20 cm =	14.3 dB

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