



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

24.9 dBm From test report's measured radiated power.

26.9 dBm ERP promoted to EIRP

Maximum peak output power at antenna input terminal: 26.90 (dBm)

Maximum peak output power at antenna input terminal: 0.490 (W)

Antenna gain(typical): 0.00 (dBi)

Maximum antenna gain: 1.00 (numeric)

Prediction distance: 20.00 (cm)

Prediction frequency: 824.20 (MHz)

MPE limit for uncontrolled exposure at prediction frequency: 1.00 (mW/cm²)

Power density at prediction frequency: **0.097** (mW/cm²)

Maximum allowable antenna gain: **40.11** (dBi)

Margin of Compliance:

10.11 dB

Therefore the power density at 20 cm is $490/4/\pi/20^2=0.097\text{mW/cm}^2$