



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

22.8	dBm	From test report's measured radiated power.
+2.1		
24.9	dBm	EIRP

Maximum peak output power at antenna input terminal: 24.9 (dBm)

Maximum peak output power at antenna input terminal: 0.309 (W)

Antenna gain(typical): -1.00 (dBi)

Maximum antenna gain: 0.79 (numeric)

Prediction distance: 20.00 (cm)

Prediction frequency: 824.70 (MHz)

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

Power density at prediction frequency: **0.049** (mW/cm²)

Maximum allowable antenna gain: **42.11** (dBi)

Margin of Compliance: 13.1 dB

Therefore the power density at 20 cm is $490/4\pi/20^2 = 0.049 \text{ mW/cm}^2$