1.1310 & 2.1091 / RSS-102

Maximum Permissible Exposure (MPE)

Determine the maximum power density for the general / uncontrolled population minimum separation distance of 20 cm. (f_{MHz} / 1500 mW/cm²).

The power density is calculated as:

$$P_d = \frac{P_t \times G}{4 \times \pi \times r^2}$$

P_d = power density in watts
P_t = transmit power in milliwatts
G = numeric antenna gain
r = distance between body and transmitter in centimeters.]

FCC Limit:

Max antenna gain = 0.3 dBi = 1.072 numeric

Max TX power = 21.14 dBm = 211.4 mW

$$908 \ / 1500 \ = 0.61 \ mW \ / cm^2 @ \ 20 \ cm$$

$$P_D = \frac{211.4 \times 1.072}{4 \times \pi \times 20^2} = 0.0449 \ mW \ / cm^2 @ 20 cm$$