

MPE Calculation Method

Predication of MPE limit at a given distance

Equation from page 19 of OET Bulletin 65, Edition 97-01

$$S = \frac{EIRP}{4\pi R^2}$$

where:

S = power density (in appropriate units, e.g. mW/cm²)

EIRP = equivalent (or effective) isotropically radiated power (in appropriate units, e.g., mW)

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

As declared by the Applicant, the EUT is a wireless device used in a fix application, at least 20 cm from any body part of the user or nearby persons; from the maximum EUT RF output power, the minimum separation distance, r =20cm, as well as the gain of the used antenna is 2dBi, the RF power density can be obtained. So, the worst result is below:

Max Output Power = 15.26 dBm, Ant gain 2.42dBi

EIRP=PG= (15.26+2.42) dBm=17.68 dBm= $10^{(17.68/10)}$ mW=58.61mW

So, $S = \frac{EIRP}{4\pi R^2} = \frac{58.61}{4\pi \times 20^2} = \underline{0.012} \text{mW/cm}^2 < 1.0 \text{mW/cm}^2$

Conclusion: **Pass.**