

RF Exposure

MPE Calculation

KDB 447498

Prediction of MPE limit at a given distance

Equation from IEEE C95.1

$$S = \frac{EIRP}{4\pi R^2} \text{ re - arranged } R = \sqrt{\frac{EIRP}{S 4\pi}}$$

where:

S = power density

R = distance to the centre of radiation of the antenna

EIRP = EUT Maximum power

Note:

The following formula may be used to convert field strength (FS) in volts/metre to transmitter output power (TP) in watts:

$$TP = (FS \times D)^2 / (30 \times G)$$

where D is the distance in metres between the two antennas and G is the antenna numerical gain referenced to isotropic gain.

Result

EUT operation	Prediction Frequency (MHz)	Maximum Field Strength (dBuV/m)	Output Power (mW)	Minimum Distance (cm)	Power density at distance (mW/cm ²)	Power density limit (S) (mW/cm ²)
10 MHz Sweep	24125	110.82	36.22	1.7	0.99	1
30 MHz Sweep	24125	111.07	38.37	1.8	0.94	1