

SAR evaluation

MPE Calculation Method

$$E \text{ (V/m)} = (30 * P * G)^{0.5} / d$$

$$\text{Power Density: } Pd \text{ (W/m}^2\text{)} = E^2 / 377$$

E = Electric Field (V/m)

P = Peak RF output Power (W)

G = EUT Antenna numeric gain (numeric)

d = Separation distance between radiator and human body (m)

The formula can be changed to

$$Pd = (30 * P * G) / (377 * d^2)$$

From the peak EUT RF output power, the minimum mobile separation distance, $d=0.2\text{m}$, as well as the gain of the used antenna, the RF power density can be obtained .

Calculated Result and Limit (WORSE CASE IS AS BELOW)

Directional antennaGain (Numeric)	Peak Output Power (mW)	Power Density (s) (mW/cm ²)	Limit of Power Density (s) (mW/cm ²)	Test Result
-4.47dBi(0.357)	20.4739 (802.11b 13.112dBm)	0.00145	1	Compiles
-4.47dBi(0.357)	1.3823 (BLE 1.406dBm)	0.0001	1	Compiles