# SAR evaluation

MPE Calculation Method

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

Power Density: Pd (W/m2) = $E^2$/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 .2m, 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/cm2) | Limit of Power Density (s) (mW/cm2) | Test Result |
|---|---|---|---|---|
| -2.23dBi(0.598) | 20.1002 (802.11b 13.032dBm) | 0.00239 | 1 | Compiles |
| -2.23dBi(0.598) | 1.6448 (BLE 2.161dBm) | 0.0002 | 1 | Compiles |