

## 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 <sup>2</sup> ) | Limit of Power Density (s) (mW/cm <sup>2</sup> ) | Test Result |
|-----------------------------------|------------------------|-----------------------------------------|--------------------------------------------------|-------------|
| 5dBi(3.162)                       | 0.819(BLE1M 2480)      | 0.0076                                  | 1                                                | Compiles    |