



### Maximum Permissible Exposure

**FCC, Part 15 Subpart C §15.247(b)(5)**  
**Industry Canada RSS-210 §14**

#### **Calculations for Maximum Permissible Exposure Levels**

$$\text{Power Density} = P_d \text{ (mW/cm}^2\text{)} = \text{EIRP}/(4\pi d^2)$$

$$\text{EIRP} = P * G$$

P = Peak output power (mW)

G = Antenna numeric gain (numeric)

d = Separation distance (cm)

$$\text{Numeric Gain} = 10^{(G \text{ (dBi)}/10)}$$

P (worst case) = **+18.09 dBm, 64.42 mW**, Antenna Gain = 5.2 dBi / **3.31 numeric**

Because the EUT belongs to the General Population/Uncontrolled Exposure the limit of power density is 1.0mW/cm<sup>2</sup>

| Antenna Gain<br>(Numeric) | Peak Output<br>Power (dBm) | Peak Output<br>Power (mW) | Calculated RF Exposure<br>at d=20cm (mW/cm <sup>2</sup> ) | Limit<br>(mW/cm <sup>2</sup> ) |
|---------------------------|----------------------------|---------------------------|---|--------------------------------|
| 3.31                      | +18.09                     | 64.42                     | 0.04  | 1                              |

### **Specification**

#### **Maximum Permissible Exposure Limits**

**§15.247 (b)(5)** Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency levels in excess of the Commission's guidelines. See §1.1307 (b)(1) of this chapter.

Limit S = 1mW / cm<sup>2</sup> from 1.310 Table 1

Note: for mobile or fixed location transmitters the minimum separation distance is 20cm, even if calculations indicate the MPE distance to be less.

**RSS-210 §14** Before equipment certification is granted, the procedures of RSS-102 must be followed concerning exposure of humans to RF fields.

#### **Laboratory Measurement Uncertainty for Power Measurements**

|                         |         |
|-------------------------|---------|
| Measurement uncertainty | ±1.33dB |
|-------------------------|---------|