



12<sup>th</sup> January 2008

**ALNT30 - A1 - Alien Technology – ALR9650 RFID Reader**

**Maximum Permissible Exposure**

**FCC, Part 15 Subpart C §15.247(i)**

**Industry Canada RSS-Gen §5.5**

**Calculations for Maximum Permissible Exposure Levels**

Power Density = Pd (mW/cm<sup>2</sup>) = EIRP/(4πd<sup>2</sup>)

EIRP = P \* G

P = Peak output power (mW)

G = Antenna numeric gain (numeric)

d = Separation distance (cm)

Numeric Gain = 10 ^ (G (dBi)/10)

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

| Antenna Gain (dBi) | Numeric Gain (numeric) | Peak Output Power (dBm) | Peak Output Power (mW) | Calculated Safe Distance @ 1mW/cm <sup>2</sup> Limit(cm) | Minimum Separation Distance (cm) |
|--------------------|------------------------|-------------------------|------------------------|--|----------------------------------|
| 6                  | 4.0                    | +29.6                   | 912.0                  | 17.04  | 20*                              |

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

**Specification**

**Maximum Permissible Exposure Limits**

**§15.247(i)** 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.

**FCC §1.1310** Limit = 1mW / cm<sup>2</sup> from 1.310 Table 1

**RSS-Gen §5.5** Before equipment certification is granted, the applicable requirements of RSS-102 shall be met.