

## Alien Technology ALR-9680

### ALNT65

#### Maximum Permissible Exposure

**FCC, Part 15 Subpart C §15.247(i)**

**Industry Canada RSS-Gen §5.6**

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

Power Density =  $P_d$  (mW/cm<sup>2</sup>) =  $EIRP / (4\pi d^2)$

$EIRP = P * G$

$P$  = Peak output power (mW)

$G$  = Antenna numeric gain (numeric)

$d$  = Separation distance (cm)

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

The ALR-9680 has 4 antennas ports only one of which is actively transmitting at any one time. Measurements were made on the antenna port with the highest power.

Highest Gain Antenna: 8 dBi (ALR-8698)

Because the EUT belongs to the General Population/Uncontrolled Exposure the limit of power density is 0.6 mW/cm<sup>2</sup>

| Because<br>Antenna<br>Gain (dBi) | Numeric<br>Gain<br>(numeric) | Peak Output<br>Power<br>(dBm) | Peak<br>Output<br>Power (mW) | Calculated Safe Distance @<br>0.6mW/cm <sup>2</sup> Limit(cm) |
|----------------------------------|------------------------------|-------------------------------|------------------------------|---------------------------------------------------------------|
| 8.0                              | 6.31                         | +27.70                        | 588.8                        | 22.2                                                          |

#### **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 =  $f/1500 = 0.6 \text{ mW} / \text{cm}^2$  from 1.310 Table 1

**RSS-Gen §5.6** Category I and Category II equipment shall comply with the applicable requirements of RSS-102.

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

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