

Alien Technology ALR-9680

Maximum Permissible Exposure

FCC, Part 15 Subpart C §15.247(i)

Industry Canada RSS-Gen §5.6

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)

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

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.

Because the EUT belongs to the General Population/Uncontrolled Exposure the limit of power density is 0.6 mW/cm²

Antenna Gain (dBi)	Numeric Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Calculated Safe Distance @ 0.6mW/cm ² Limit(cm)
5.5	3.55	+29.70	933.3	21.0

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 mW / cm² 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
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