

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/cm²) = $EIRP/(4\pi d^2)$

$EIRP = P * G$

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/cm²

Because Antenna Gain (dBi)	Numeric Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Calculated Safe Distance @ 0.6mW/cm ² 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
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