



ARUB111-U1

Maximum Permissible Exposure

FCC, Part 15 Subpart C §15.407(f)

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

Because the EUT belongs to the General Population/Uncontrolled Exposure the limit of power density is 1.0 mW/cm²

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

FCC §1.1310 Limit = 1mW / 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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5250 – 5350 MHz

Antenna Model	Type	Ant Gain (dBi)	Numeric Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Calculated Safe Distance @ 1mW/cm ² Limit(cm)	Power Density @ 20cm (mW/cm ²)
AP-ANT-10	Dipole	6	4	23.29	213.30	8.22	0.17
AP-ANT-86D	Dipole	9	8	21	125.89	8.92	0.20
AP-ANT-89	Directional	14.0	25	16	39.81	8.92	0.20

5470 – 5725 MHz

Antenna Model	Type	Ant Gain (dBi)	Numeric Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Calculated Safe Distance @ 1mW/cm ² Limit(cm)	Power Density @ 20cm (mW/cm ²)
AP-ANT-10	Dipole	6	4	23.37	217.27	8.30	0.17
AP-ANT-86D	Dipole	9	8	21	125.89	8.92	0.20
AP-ANT-89	Directional	13.25	21	16.75	47.32	8.92	0.20