



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)

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

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

§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 / 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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5725 – 5850 MHz; Antennas used for Point to Multi-Point Operation.

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)
MT0128930	Sector Dual Pole Integrated 120 Deg	11	13	24.97	314.05	17.74	0.79
RW-9061-5004	Sector Dual Pole 120 Deg	10*	10	25.97	395.37	17.74	0.79
AM0135060	Sector Dual Pole Integrated 95 Deg	12	16	23.97	249.46	17.74	0.79
RW-9061-5001	Sector Dual Pole 90 Deg	13*	20	22.97	198.15	17.74	0.79
RW-9061-5002	Sector Dual Pole 60 Deg	15.5*	35	20.47	111.43	17.74	0.79
MT0125250	Sector Dual Pole Integrated 90 Deg	13	20	22.97	198.15	17.74	0.79

*** The gain includes 1 dB feeder cable loss for external antennas**



5725 – 5850 MHz; Antennas used for Point to Point Operation.

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)
AM0119960	Flat Panel Dual Pole Integrated	16	40	29.97	993.12	56.09	7.87
AM0111760	Flat Panel Dual Pole Integrated	16.5	45	29.97	993.12	59.41	8.83
MT0070760	Flat Panel Dual Pole Integrated	24	251	29.97	993.12	140.89	49.63
RW-9612-5001	Flat Panel Dual Pole External	23	200	29.97	993.12	125.57	39.42
RW-9622-5001	Flat Panel Dual Pole External	29	794	29.97	993.12	250.55	156.94
RW-9721-5158	Dual Pole Dish	29	794	29.97	993.12	250.55	156.94
RW-9732-4958	Dual Pole Dish	32	1585	29.97	993.12	353.91	313.13

*** The gain includes 1 dB feeder cable loss for external antennas**