



RDWN34-U10 MPE

Maximum Permissible Exposure

FCC, Part 15 §1.1310

Calculations for Maximum Permissible Exposure Levels

Power Density = P_d (mW/cm^2) = $\text{EIRP}/(4\pi d^2)$

$\text{EIRP} = P * G$

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 $1.0 \text{ mW}/\text{cm}^2$

The calculations in the table below use highest gain antennas for the client EUT. Where the antenna gain exceeds 6dBi the transmitter power is reduced where necessary to meet the EIRP requirements. These calculations represent worst case in terms of the exposure levels.



Worst case results for each antenna type

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	12.59	24.85	305.49	17.49	0.77
AM0135060	Sector Dual Pole Integrated 95 Deg	12	15.85	23.94	247.74	17.68	0.78
RW-9401-5002	Shark Fin Monopole	11.5*	14.13	24.44	277.97	17.68	0.78
RW-9061-5002	Sector Dual Pole 60 Deg	14.5*	28.18	23.4	218.78	22.15	1.23
AM0111760	Flat Panel Dual Pole Integrated	16	39.81	29.66	924.70	54.12	7.32
MT0070760	Flat Panel Dual Pole Integrated	23.5	223.87	29.66	924.70	123.35	41.18
RW-9622-5001	Flat Panel Dual Pole External	28*	630.96	29.66	924.70	215.47	116.07
RW-9732-4958	Dual Pole Dish	31*	1258.93	29.66	924.70	304.37	231.60
AM0156430	Integrated Smart Flat Panel	20.5	112.2	29.66	924.70	90.86	20.64

* Gain includes 1 dB feeder loss for external antennas

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
Ref FCC KDB 447498 General RF Exposure Guidance

Laboratory Measurement Uncertainty for Power Measurements

Measurement uncertainty	±1.33 dB
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