



RDWN34-U9 MPE

Maximum Permissible Exposure

4.9 GHz Licensed Operation

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.

Specification

Maximum Permissible Exposure Limits

FCC §1.1310 Limit = $1\text{mW} / \text{cm}^2$ from 1.310 Table 1
Ref FCC KDB 447498 General RF Exposure Guidance

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	$\pm 1.33 \text{ dB}$
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RDWN34-U9 MPE
4940 – 4990 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)
MT0128930	Sector Dual Pole Integrated 120 Deg	11	13	23.08	203.2	14.3	0.51
RW-9061-5004	Sector Dual Pole 120 Deg	11	13	23.08	203.2	14.3	0.51
AM0135060	Sector Dual Pole Integrated 95 Deg	12	16	23.08	203.2	16.0	0.64
RW-9401-5002	Shark Fin Monopole	12.5	17.78	23.06	203.2	16.9	0.72
MT0125250	Sector Dual Pole Integrated 90 Deg	13	20	23.08	203.2	18.0	0.81
RW-9061-5001	Sector Dual Pole 90 Deg	14	25	23.08	203.2	20.20	1.02
AM0119960	Flat Panel Dual Pole Integrated	14	25	23.08	203.2	20.20	1.02
RW-9061-5002	Sector Dual Pole 60 Deg	15	35	23.08	203.2	22.6	1.28
AM0111760	Flat Panel Dual Pole Integrated	16	40	23.08	203.2	25.4	1.61
MT0070760	Flat Panel Dual Pole Integrated	21	224	23.08	203.2	45.1	5.09
RW-9612-5001	Flat Panel Dual Pole External	23	200	23.08	203.2	56.80	8.07
RW-9721-5158	Dual Pole Dish	28	631	21.08	128.2	80.20	16.10
RW-9622-5001	Flat Panel Dual Pole External	29	794	20.08	101.9	80.20	16.10
RW-9732-4958	Dual Pole Dish	30	1585	19.08	80.9	80.20	16.10

* 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.