



**RDWN39-U10 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<sup>2</sup>) =  $EIRP / (4\pi d^2)$

$EIRP = P * G$

$P$  = 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/cm<sup>2</sup>

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 = 1mW / cm<sup>2</sup> 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 | ±1.33 dB |
|-------------------------|----------|

# RDWN39-U10 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 <sup>2</sup> Limit(cm) | Power Density @ 20cm (mW/cm <sup>2</sup> ) |
|---------------|-------------------------------------|----------------|------------------------|-------------------------|------------------------|----------------------------------------------------------|--------------------------------------------|
| 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                                       |
| AM0156430     | Integral Smart Dual Pole            | 20.5           | 112.2                  | 23.08                   | 203.2                  | 42.6                                                     | 4.54                                       |
| MT0070760     | Flat Panel Dual Pole Integrated     | 21             | 126                    | 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.