



## Maximum Permissible Exposure

**SSNT108**

**Silver Spring Networks NIC 540**

FCC Title 47, Part §1.1310

### 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)

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

EUT belongs to the General Population/Uncontrolled Exposure

The calculations in the tables below use highest gain antennas for the client EUT. These calculations represent worst case in terms of the exposure levels.

Per FCC 1.1310 Power density Limit for device operating in frequency range 300 to 1500MHz =  $f/1500$  (mW/cm<sup>2</sup>)

| Freq. Band (MHz) | Antenna Gain (dBi) | Numeric Gain (numeric) | Peak Output Power (dBm) | Peak Output Power (mW) | Calculated Safe Distance @ 0.6mW/cm <sup>2</sup> Limit(cm) | Minimum Separation Distance (cm) |
|------------------|--------------------|------------------------|-------------------------|------------------------|------------------------------------------------------------|----------------------------------|
| 900 - 928        | +6.0               | 3.98                   | 30.00                   | 1000                   | 23.0                                                       | 23.0                             |

Per FCC 1.1310 Power density Limit for device operating in frequency range 1500 to 100,000MHz = 1 mW/cm<sup>2</sup>

| Freq. Band (MHz) | Antenna Gain (dBi) | Numeric Gain (numeric) | Peak Output Power (dBm) | Peak Output Power (mW) | Calculated Safe Distance @ 1 mW/cm <sup>2</sup> Limit(cm) | Minimum Separation Distance (cm) |
|------------------|--------------------|------------------------|-------------------------|------------------------|-----------------------------------------------------------|----------------------------------|
| 2400 – 2483.5    | +6.0               | 3.98                   | 27.76                   | 597                    | 13.8                                                      | 20.0                             |

### Specification

#### Maximum Permissible Exposure Limits

**FCC §1.1310 Table 1**

300 to 1500MHz =  $f/1500$  (mW/cm<sup>2</sup>)

1500 to 100,000MHz = 1 mW/cm<sup>2</sup>

#### Laboratory Measurement Uncertainty for Power Measurements

|                         |          |
|-------------------------|----------|
| Measurement uncertainty | ±1.33 dB |
|-------------------------|----------|