

**** MPE Calculations ****

The MPE calculation for this exposure is shown below.

The peak radiated output power (EIRP) is calculated as follows:

| | |
|---------------------------|-------------------------------------|
| EIRP = P + G | Where, |
| EIRP = 14.41 dBm + 0.0dBi | P = Power input to the antenna (mW) |
| EIRP = 14.41 dBm | G = Power gain of the antenna (dBi) |

Power density at the specific separation:

| | |
|-----------------------------------------|--------------------------------------------------------------------------------------|
| $S = PG / (4R^2 \pi)$ | Where, |
| $S = (27.61 * 1.00) / (4 * 20^2 * \pi)$ | S = Maximum power density (mW/cm ²) |
| $S = 0.0055 \text{ mW/cm}^2$ | P = Power input to the antenna (mW) |
| | G = Numeric power gain of the antenna |
| | R = Distance to the center of the radiation of the antenna (20cm = limit for MPE) |

The Maximum permissible exposure (MPE) for the general population is 1 mW/cm².

The power density does not exceed the 1 mW/cm² limit.

Therefore, the exposure condition is compliant with FCC rules.

Estimated safe separation:

| | |
|-----------------------------------|--------------------------------------------------------------------------------------|
| $R = \sqrt{PG / 4 \pi}$ | Where, |
| $R = \sqrt{27.61 * 1.00 / 4 \pi}$ | P = Power input to the antenna (mW) |
| $R = 1.48 \text{ Cm}$ | G = Numeric power gain of the antenna |
| | R = Distance to the center of the radiation of the antenna (20cm = limit for MPE) |

The numeric gain(G) of the antenna with a gain specified in dB is determined by:

$$G = \text{Log}^{-1} (\text{dB antenna gain} / 10)$$

$$G = \text{Log}^{-1} (0 / 10)$$

$$G = 1.00$$