

**\*\* MPE Calculations \*\***

(a) FCC limit at 881.6MHz

The MPE calculation for this exposure is shown below.

Limits for Occupational/Controlled Exposure

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

Maximum permissible exposure is  $\text{Freq. (MHz)}/300 = \text{MPE mW/cm}^2$

$$881.6 \text{ MHz}/300 = 2.94 \text{ mW/cm}^2$$

The following calculations determine at what distance from the antenna the power density is

$$= 2.94 \text{ mW/cm}^2$$

Max Tx output power = 39.93dBm

numeric Gain = 10dBi

**MPE Calculation****Estimated safe separation:**

$R = \sqrt{(PG / 4\pi 2.94)}$ $R = \sqrt{(9840 * 10 / 4 \pi 2.94)}$ $R = 51.61 \text{ Cm}$	Where,  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)
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The minimum safe distance for Occupational/Controlled exposure is 51.61cm for the antenna when installed.

This is the worst case for the downlink. The maximum antenna gain stated is for the downlink.

This product is installed by trained professionals in outdoor applications only

(a) FCC limit at 1960MHz

The MPE calculation for this exposure is shown below.

Limits for Occupational/Controlled Exposure

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

Maximum permissible exposure is 5 mW/cm<sup>2</sup>

The following calculations determine at what distance from the antenna the power density is  
=5 mW/cm<sup>2</sup>

Max Tx output power = 39.95 dBm

numeric Gain = 11.22 dBi

### **MPE Calculation**

#### **Estimated safe separation:**

$R = \sqrt{(PG / 4\pi 5.0)}$ $R = \sqrt{(9885 * 11.22 / 4 \pi 5.0)}$ $R = 42.01 \text{ Cm}$	<p>Where,</p> <p>P = Power input to the antenna (mW)</p> <p>G = Numeric power gain of the antenna</p> <p>R = Distance to the center of the radiation of the antenna (20cm = limit for MPE)</p>
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The minimum safe distance for Occupational/Controlled exposure is 42.01cm for the antenna when installed.

This is the worst case for the downlink. The maximum antenna gain stated is for the downlink.

This product is installed by trained professionals in outdoor applications only