

## **MPE EVALUATION**

The MPE Limits for General Population/Uncontrolled Environment is  $(f/1500 \text{ (mW/cm Squared)})$  where  $f$  is in MHZ for frequencies between 300 and 1500 MHZ. When calculating the limit always use the lowest frequency of the device. OET bulletin 65 and Supplement C explains MPE calculations and measurements. The general equation is MPE distance (cm) = Square Root  $(\text{EIRP (mW)}/4\pi\text{e}^2\text{Limit})$ .

Limit=  $f/1500 \text{ mW/m}$  where  $f$  is in MHz

$\pi = 3.14159$

EIRP is equal to  $P$  in watts multiplied by  $G$  (numeric gain of antenna)

(numeric gain=  $\text{inv log}(\text{gain in dBi}/10)$ )

$\text{EIRP} = P \cdot G$

Convert to mW to use in the equation.

List the antennas and the gains.

Calculate the worst case MPE distance. XX cm

$$\text{MPE} = \sqrt{\frac{1 \text{ watt} \times 2}{4 \pi \times 5.4 \times 10^{-4}}}$$

$\text{MPE} = 2526 \text{ cm for 3 dB antenna}$

Add information in the user manual to use only the listed antennas and add a warning such as the following to inform users of the RF safety requirements – The user manual will contain a warning consistent with the following:

### **CAUTION:**

To comply with RF safety requirements, antennas with greater than 3db gain are not to be used with this product. Use only approved antennas of 3db gain or less. Use of antennas of higher than 3db gain is prohibited and may cause the booster and or phone to become inoperative. The antennas must be installed to provide a minimum distance of 2600 cm from nearby persons.