

August 23, 2005

**FCC ID: KNY-820181531119**

**Maximum Permissible Exposure calculations**

To whom it may concern,

FreeWave Technologies is submitting a low power output 902-928 MHz frequency DTS transceiver (FCC ID: KNY-820181531119).

The MPE distance will be calculated for the worst case of a 100% transmitter duty cycle.

For an isotropic radiator the surface area of a sphere can be used to determine the area over which the transceiver energy is radiated.

$$\text{Surface area of a sphere} = 4 * \pi * \text{radius}^2$$

In the case where there is an antenna gain, the worst case energy density is increased by the antenna gain. In this case, the exposure level for a controlled environment can be calculated as follows:

$$\text{MPE distance} = ((\text{output power} * \text{duty cycle} * 10 * (\text{antenna gain}/10)) / (4 * \pi * \text{Exposure Limit [mW/cm}^2]))^{1/2}$$

In the case of 6 dBi antenna

$$\begin{aligned} \text{MPE distance} &= ((1000 \text{ mW} * 1 * 3.98) / (4 * 3.14 * 0.6))^{1/2} \\ &= 22.981 \text{ cm} \end{aligned}$$

Sincerely,



Rich Arment  
Engineering Technician