ATTACHMENT

** 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 = 18.83 dBm + -1.45 dBi	P = Power input to the antenna (mW)
EIRP = 17.38 dBm	G = Power gain of the antenna (dBi)

Power density at the specific separation:

$S = PG/(4R^2\pi)$
 	
 $S = (76.38*0.72) / (4 * 20^2 * \pi)$
 	
 $S = 0.0109$ mW/cm^2
	Where,
	   S = Maximum power density (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/cm^2 .

The power density does not exceed the 1 mW/cm^2 limit.

Therefore, the exposure condition is compliant with FCC rules.

Estimated safe separation:

$R = \sqrt{(PG / 4\pi)}$
 	
 $R = \sqrt{(76.38*0.72 / 4\pi)}$
 	
 $R = 2.09$ 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)

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

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

$G = Log^{-1}$ (-1.45 / 10)

$G = 0.72$