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 = 4.81 dBm + 5.37 dBi	P = Power input to the antenna (mW)
EIRP = 10.18 dBm	G = Power gain of the antenna (dBi)

Power density at the specific separation:

$S = PG/(4R^2 \pi)$	Where,
	S = Maximum power density (mW/cm^2)
$S = (3.03 * 3.44) / (4 * 20^2 * \pi)$	P = Power input to the antenna (mW)
	G = Numeric power gain of the antenna
$S = 0.0021$ mW/cm^2	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:

$R = \sqrt{(PG / 4\pi)}$	Where,
	P = Power input to the antenna (mW)
$R = \sqrt{(3.03 * 3.44 / 4\pi)}$	G = Numeric power gain of the antenna
	R = Distance to the center of the radiation of the antenna
R = 0.91 Cm	(20cm = limit for MPE)

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

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

$G = \text{Log}^{-1}$ (5.37 / 10)

G = 3.44