MPE Calculations

The EUT will only be used with a separation of 20 centimeters or greater between the antenna and the body of the user. The MPE calculation for this exposure is shown below.

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

EIRP = P + G EIRP = 24.449 dBm + 2.66 dBi EIRP = 27.11 dBm	Where, P = Power input to the antenna (mW) G = Power gain of the antenna (dBi)

Power density at the specific separation:

$S = PG/(4R^2\pi)$ $S = (278.548 * 1.85) / (4 * 20^2 * \pi)$ $S = 0.103\ mW/cm^2$	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)

Conclusion:

The Maximum permissible exposure (MPE) for the general Population/Uncontrolled is 0.55 mW/cm^2 (=f/1500=824/1500).The power density at 20cm does not exceed the 0.55 mW/cm^2.

<u>Therefore, the exposure condition of the EUT is compliant with FCC rules.</u>

Estimated safe separation:

$R = \sqrt{(PG / 4\pi)}$ $R = \sqrt{(278.548 * 1.85 / 4\pi)}$ R = 6.404 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)

$G = Log^{-1}$ (2.66 / 10)

G = 1.85