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APPENDIX B – MPE CALCULATION

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** 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.

EIRP = P + G EIRP = 8.70 dBm	Where, P = Power input to the antenna (mW) G = Power gain of the antenna (dBi)

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/ 10)

G = 0.79

Power density at the specific separation:

$S = PG/(4R^2\pi)$ S = (7.41* 0.79) / (4 * 20^2 * π) S = 0.001 mW/cm^2	Where, $\quad$ 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 $\quad\quad$ (20cm = limit for MPE)

The Maximum permissible exposure (MPE) for the general population is 1 mW/cm^2 .
The power density at 20cm does not exceed the 1 mW/cm^2 limit.

Estimated safe separation:

$R = \sqrt{(PG / 4\pi)}$ $R = \sqrt{(7.41 * 0.79 / 4\pi)}$ R = 0.68 cm	Where, $\quad$ P = Power input to the antenna (mW) $\quad$ G = Numeric power gain of the antenna $\quad$ R = Distance to the center of the radiation of the antenna $\quad\quad$ (20cm = limit for MPE)