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# **APPENDIX B - MPE CALCULATION**

Page 38 of 39 Test Report No.: 2010070015

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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	Where,
EIRP = 12.40 dBm	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:

$S = PG/(4R^2\pi)$	Where,
$S = (17.38 * 0.79) / (4 * 20^2 * \pi)$ $S = 0.0027 \text{ mW/cm}^2$	S = Maximum power density (mW/cm²) 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
0 010027 11111/ 0111	(20cm = limit for MPE)

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

### Estimated safe separation:

$R = \sqrt{(PG / 4\pi)}$	Where,
$R = \sqrt{(17.38 * 0.79 / 4\pi)}$	P = Power input to the antenna (mW) G = Numeric power gain of the antenna
R = 1.05cm	R = Distance to the center of the radiation of the antenna (20cm = limit for MPE)

Test Report No.: 2010070015 Page 39 of 39

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