

### Maximum Permissible Exposure(MPE) :

The limit for Maximum Permissible Exposure(MPE) at frequency of 1.96 GHz is 1.00 mW/cm<sup>2</sup>. (1.00 mW/cm<sup>2</sup> for General Population/Uncontrolled environment in §1.1310.) Since the total power of all channels is less than 2000 WERP(3280 WEIRP), compliance testing with the MPE limits of §1.1307 is not required.

The conversion from power to power density uses the following equation :

$$PD = PrG/4\pi r^2 = EIRP/4\pi r^2$$

Where : PD is Power Density(in W/m<sup>2</sup>);

Pr is radiated power (in W);

G is the numeric gain of the antenna; and

EIRP is Equivalent Isotropically Radiated Power(=PrG) = 0.600 (W); and

r is the distance(in m) from the antenna

The conversion from W/m<sup>2</sup> to mW/cm<sup>2</sup> is: mW/cm<sup>2</sup> = W/m<sup>2</sup>/10

#### Calculations:

At a distance of r = 1 m from the antenna, the power density is (note that this power density will only be induced on an individual if that individual was physically 1 m in line-of-site of the antenna):

#### Power density calculations for MPE

Items	Transmitter Antenna
Measured Maximum EIRP(W)	0.6
Power Density(W/m <sup>2</sup> )	0.048
Power Density(mW/cm <sup>2</sup> )	0.0048
Minimum distance in m for MPE	0.07

At this power level, an individual would need to be within 0.07 m of the device in order to be at the limit for General Population/Uncontrolled exposure.

This TUT ,at 1m away from the transmitter antenna, is well within the limits for maximum permissible exposure.