

MPE Limit Calculation: EUT's operating frequencies @ 2412 and 2462 MHz; only channel 1 and 11 are active on this unit. There are two transmitter modules and each one has its own antenna.. Highest conducted power on channel 1 = 20.12 dBm (peak) and highest conducted power on channel 11 = 20.60 dBm. The following antennas will be used under the class II change:

6 dBi Omni directional antenna
 9 dBi 120 degree sector antenna
 12 dBi Omni directional antenna
 14 dBi 180 degree sector antenna

The MPE calculation will be done with the highest gain antenna; 14 dBi.

Limit for Uncontrolled exposure: 1 mW/cm².

EUT maximum antenna gain =14 dBi.

Equation from page 18 of OET 65, Edition 97-01

$$S = PG / 4\pi R^2$$

where, S = Power Density mW/m²
 P = Power Input to antenna mili Watts
 G = Numeric Antenna Gain
 R = Distance to the center of radiation of the antenna (20 cm for Mobile minimum distance)

Channel 1:

$$\text{Antenna Numeric Gain} = 10^{\text{dBi}/10}$$

$$\text{Power at antenna port} = 103 \text{ mW}$$

$$\text{Antenna Gain} = 14 \text{ dBi}$$

$$\text{Numeric antenna gain} = 10^{14/10} = 25.1$$

$$S = (103)(25.1) / 4(3.1416)(20)^2$$

$$S = 0.514 \text{ mW/cm}^2$$

Channel 11:

$$\text{Antenna Numeric Gain} = 10^{\text{dBi}/10}$$

$$\text{Power at antenna port} = 115 \text{ mW}$$

$$\text{Antenna Gain} = 14 \text{ dBi}$$

$$\text{Numeric antenna gain} = 10^{14/10} = 25.1$$

$$S = (115)(25.1) / 4(3.1416)(20)^2$$

$$S = 0.574 \text{ mW/cm}^2$$

Each antenna is going to be placed more than 20cm apart. Therefore, each channel meets the Uncontrolled Exposure Limit.