

Maximum Permissible Exposure

FCC, Part 15 Subpart C §15.407(f), Industry Canada RSS-Gen §5.5

Calculations for Maximum Permissible Exposure Levels

$$\text{Power Density} = P_d \text{ (mW/cm}^2\text{)} = \text{EIRP}/(4\pi d^2)$$

$$\text{EIRP} = P * G$$

$$P = \text{Peak output power (mW)}$$

$$G = \text{Antenna numeric gain (numeric)}$$

$$d = \text{Separation distance (cm)}$$

$$\text{Numeric Gain} = 10 ^ (G \text{ (dBi)})/10$$

The peak power in the table below is calculated by assuming a worst case scenario where all of the EUT transmitters for both the MIMO 3x3 and legacy radio are operating simultaneously in the same band. The Peak Power in mW is the highest transmitter power measured and combined for both radios.

1).. Radio 1 - 802.11a/b/g/n 3x3 Spatial Multiplexing MIMO.

2).. Radio 2 - 802.11a/b/g legacy device (does not operate in 5250 – 5350 MHz and 5470 – 5725 MHz bands)

Because the EUT belongs to the General Population/Uncontrolled Exposure the limit of power density is 1.0 mW/cm²

Freq. Band (MHz)	Ant Gain (dBi)	Antenna Numeric Gain (numeric)	Radio1 Pk Power (dBm)	Radio2 Pk Power (dBm)	Peak Output Power (mW)	Calculated Safe Distance @ 1mW/cm ² Limit(cm)	Minimum Separation Distance (cm)
5150 - 5250	+1.2	1.32	+14.49	+14.89	58.95	2.5	20.00
5250 - 5350	+1.2	1.32	+17.65		58.21	2.5	20.00
5470 - 5725	+1.2	1.32	+15.61		36.39	2.0	20.00

Note: for mobile or fixed location transmitters the minimum separation distance is 20cm, even if calculations indicate the MPE distance to be less.

Specification

Maximum Permissible Exposure Limits

FCC §1.1310 Limit = 1mW / cm² from 1.310 Table 1

RSS-Gen §5.5 Before equipment certification is granted, the application requirements of RSS-102 shall be met.