

## RF exposure

According to **FCC part 1.1310** : The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in § 1.1307(b)

Friis transmission formula:  $P_d = (P_{out} \times G) / (4 \times \pi \times R^2)$

Where,

$P_d$  = power density

$P_{out}$  = output power to antenna in mW

$G$  = gain of antenna in linear scale

$\pi$  = 3.1416

$R$  = distance between observation point and center of the radiator in cm

$P_d$  the limit of MPE,  $f/1500$  mW/cm<sup>2</sup>. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

## Results

- 15.247C

Operation mode / Data Rate	Frequency (MHz)	Peak output power (dBm)	Antenna gain (dBi)	Power density at 20 cm (mW/cm <sup>2</sup> )	Power density at 20 cm (W/m <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )	Limit (W/m <sup>2</sup> )
802.11b / 11 Mbps	2 437	22.49	6.21	0.147 48	1.474 8	1	10
802.11g / 54 Mbps	2 412	21.92	6.21	0.129 34	1.293 4	1	10
802.11n(HT20) / MCS8	2 412	22.06	6.21	0.133 58	1.335 8	1	10
802.11n(HT40) / MCS8	2 422	20.77	6.21	0.099 25	0.992 5	1	10
802.11a / 6 Mbps	5 785	24.66	5.91	0.226 84	2.268 4	1	10
802.11n(HT20) / MCS8	5 825	24.86	5.91	0.237 54	2.375 4	1	10
802.11n(HT40) / MCS8	5 755	24.31	5.91	0.209 28	2.092 8	1	10

- 15.407E

Operation mode / Data Rate	Frequency (MHz)	output power (dBm)	Antenna gain (dBi)	Power density at 20 cm (mW/cm <sup>2</sup> )	Power density at 20 cm (W/m <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )	Limit (W/m <sup>2</sup> )
802.11a / 6 Mbps	5 240	12.79	5.61	0.013 76	0.137 6	1	10
802.11n(HT20) / MCS8	5 240	13.24	5.61	0.015 27	0.152 7	1	10
802.11n(HT40) / MCS8	5 230	13.69	5.61	0.016 93	0.169 3	1	10

**Result: The power density does NOT exceed the limit**