RF exposure

FCC ID : 2BC9S-WHSR-S100

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)

Limits for Maximum Permissible Exposure (MPE)

Frequency range (㎒)	Electric field strength(V/m)	Magnetic field strength (A/m)	Power density (㎽/㎠)	Average time
(A) Limits for Occupational / Control Exposures				
300 – 1 500	--	--	f/300	6
1 500 - 100000	--	--	5	6
(B) Limits for General Population / Uncontrol Exposures				
300 – 1 500	--	--	f/1500	6
1 500 – 100 000	--	--	1	30

f= frequency in ㎒

Friis transmission formula: $Pd = (Pout \times G)/(4 \times pi \times R^2)$
 Where,
  Pd = power density in ㎽/㎠
  Pout = output power to antenna in ㎽
  G = gain of antenna in linear scale
  Pi = 3.1416
  R = distance between observation point and center of the radiator in cm
  Pd the limit of MPE, 1 ㎽/㎠. 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

Operation mode	Frequency (㎒)	Maximum Average output power (dBm)	Antenna gain (dBi)	Power density at 20 ㎝(㎽/㎠)	Limit (㎽/㎠)
802.11b 1 Mbps (DC 12 V, DC 24 V)	2 412 ㎒ ~ 2 462 ㎒	13.0	1.46	0.005 56	1
802.11g 6 Mbps (DC 12 V, DC 24 V)	2 412 ㎒ ~ 2 462 ㎒	13.0	1.46	0.005 56	
802.11n_HT20 MCS0 (DC 12 V, DC 24 V)	2 412 ㎒ ~ 2 462 ㎒	13.0	1.46	0.005 56	