

7. RF Exposure Requirements

7.1 Test Equipment

Please refer to Section 10 this report.

7.2 Limit

According to FCC 15.247(i), Systems operating under provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commissions guidelines.

FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environmental impact of human exposure to radio-frequency (RF) radiation as specified in 1.1307(b)(1) of this chapter.

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3–3.0	614	1.63	*(100)	6
3.0–30	1842/f	4.89/f	*(900/f ²)	6
30–300	61.4	0.163	1.0	6
300–1500 .....	.....	.....	f/300	6
1500–100,000 .....	.....	.....	5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f ²)	30
30–300	27.5	0.073	0.2	30
300–1500 .....	.....	.....	f/1500	30
1500–100,000 .....	.....	.....	1.0	30

f = frequency in MHz

* = Plane-wave equivalent power density

NOTE 1 TO TABLE 1: Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

NOTE 2 TO TABLE 1: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.

7.3 Test Result

Product	: WIFI MODULE	Test Mode	: IEEE 802.11b/g/n
Test Item	: RF Exposure	Temperature	: 25 °C
Test Voltage	: DC 3.3V (Power by DC Power Supply)	Humidity	: 56% RH
Test Result	: PASS		

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Evaluation of RF Exposure Compliance Requirements	
MPE Prediction of MPE according to FCC Rule Part 2.1091 and KDB 447498 D01	
RF Exposure Requirements	Compliance with FCC Rules
$S = PG/4\pi R^2$ Where: S=Power density P=Power input to antenna G=Power gain of the antenna relative to an isotropic radiator R=Distance to the center of radiation of the antenna	Maximum output power at antenna input terminal: 15.33 dBm = 34.12 mW (802.11b/g, 2412MHz) 12.36 dBm = 17.22 mW (802.11n, 2412MHz) 10.23 dBm = 10.54 mW (802.11n, 2422MHz) Prediction distance: 20 cm Antenna gain : 2.0dBi Prediction frequency: 2412MHz MPE limit for uncontrolled exposure at prediction frequency: 1.0 mW/cm ² Power density at 20 cm: Antenna: 0.01076 mW/cm ² (802.11b/g, 2412MHz) Antenna: 0.00543 mW/cm ² (802.11n, 2412MHz) Antenna: 0.00333 mW/cm ² (802.11n, 2422MHz)