



FCC §15.247 (i), §2.1091 – RF Exposure

FCC ID: 2ALYRHG-F01A

Applied procedures / limit

According to FCC §15.247(i) and §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

Limits for Occupational / Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842 / f	4.89 / f	(900 / f)*	6
30-300	61.4	0.163	1.0	6
300-1500			F/300	6
1500-100,000			5	6

Note: *f* is frequency in MHz

* = Power density limit is applicable at frequencies greater than 100 MHz

Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100,000			1.0	30

Note: *f* = frequency in MHz

* = Plane-wave equivalent power density



2.4G WIFI

IEEE 802.11b

max possible output power (PK,conducted) : 19.76±1dbm

IEEE 802.11g

max possible output power (PK,conducted) : 16.94±1dbm

IEEE 802.11N(HT20)

max possible output power (PK,conducted) : 14.81±1dbm

IEEE 802.11N(HT40)

max possible output power (PK,conducted) : 12.46±1dbm

The max possible output power (PK,conducted) of All (IEEE 802.11b , IEEE 802.11g, IEEE 802.11n(20), IEEE 802.11n(40)) is IEEE 802.11b.

802.11b Mode			
Test Channe	Frequency	Maximum Conducted Output Power(PK)	LIMIT
	(MHz)	(dBm)	dBm
CH01	2412	19.76	30
CH06	2437	19.68	30
CH11	2462	19.73	30
802.11g Mode			
CH01	2412	16.94	30
CH06	2437	16.82	30
CH11	2462	16.85	30
802.11n-HT20 Mode			
CH01	2412	14.72	30
CH06	2437	14.81	30
CH11	2462	14.53	30
802.11n-HT40 Mode			
CH03	2422	12.25	30
CH06	2437	12.46	30
CH09	2452	12.38	30



MPE PREDICTION

Predication of MPE limit at a given distance, Equation from OET Bulletin 65, Edition 97-01

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

Where: S = power density

P = power input to antenna

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna, R=20cm

Test Result of RF Exposure Evaluation

2.4G WIFI

	Target power W/ tolerance (dBm)	Max tune up power tolerance (dBm)	Output power to antenna (mW)	Antenna Gain(dBi)	Power Density at R=20cm (mW/cm ²)	Limit (mW/cm ²)	Result
802.11b	19.76±1.0	20.76	119.12	2.0 (3.0dBi)	0.023710	1.0	Pass
802.11g	16.94±1.0	17.94	62.23	2.0 (3.0dBi)	0.012387	1.0	Pass
802.11n20M Hz	14.81±1.0	15.81	38.11	2.0 (3.0dBi)	0.007586	1.0	Pass
802.11n40M Hz	12.46±1.0	13.46	22.19	2.0 (3.0dBi)	0.004417	1.0	Pass