



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

FCC ID: 2AH4KFW6X

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



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IEEE 802.11b

max possible output power (PK,conducted) : 15.56dbm

IEEE 802.11g

max possible output power (PK,conducted) : 14.62dbm

IEEE 802.11N(HT20)

max possible output power (PK,conducted) : 12.54dbm

IEEE 802.11N(HT40)

max possible output power (PK,conducted) : 10.72dbm

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.

	Frequency	Antenna port	Maximum Conducted Output Power(PK)	Maximum Conducted Output Power(PK)	Total Conducted Output Power(PK)	Total Conducted Output Power(PK)	LIMIT
	(MHz)		(dBm)	(mW)	(mW)	(dBm)	dBm
802.11b	2412	Ant.1	15.56	35.97	N/A	N/A	30
		Ant.2	15.49	35.40			
	2437	Ant.1	15.36	34.36	N/A	N/A	30
		Ant.2	15.28	33.73			
	2462	Ant.1	15.52	35.65	N/A	N/A	30
		Ant.2	15.44	34.99			
802.11g	2412	Ant.1	14.62	28.97	N/A	N/A	30
		Ant.2	14.45	27.86			
	2437	Ant.1	14.57	28.64	N/A	N/A	30
		Ant.2	14.41	27.61			
	2462	Ant.1	14.36	27.29	N/A	N/A	30
		Ant.2	14.14	25.94			
802.11n20	2412	Ant.1	12.32	17.06	34.72	15.41	30
		Ant.2	12.47	17.66			



	2437	Ant.1	12.42	17.46	35.41	15.49	30
		Ant.2	12.54	17.95			
	2462	Ant.1	12.37	17.26	34.84	15.42	30
		Ant.2	12.45	17.58			
	802.11n40	2422	Ant.1	10.65	22.93	13.60	30
			Ant.2	10.54			
		2437	Ant.1	10.72	22.84	13.59	30
			Ant.2	10.43			
		2452	Ant.1	10.69	22.86	13.59	30
			Ant.2	10.47			

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

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	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)	Total Power Density at R=20cm (mW/cm ²)	Limit (mW/cm ²)	Result
802.11b ANT1	15±1.0	16.0	39.81	1.32 (1.2dBi)	0.01046	/	1.0	Pass
802.11b ANT2	15±1.0	16.0	39.81	1.32 (1.2dBi)	0.01046	/	1.0	Pass
802.11g ANT1	14±1.0	15.0	31.62	1.32 (1.2dBi)	0.00831	/	1.0	Pass
802.11g ANT2	14±1.0	15.0	31.62	1.32 (1.2dBi)	0.00831	/	1.0	Pass
802.11n20M Hz ANT1	12±1.0	13.0	19.95	2.64 (4.21dBi)	0.01048	0.02096	1.0	Pass
802.11n20M Hz ANT2	12±1.0	13.0	19.95	2.64 (4.21dBi)	0.01048		1.0	Pass
802.11n40M Hz ANT1	10±1.0	11.0	12.59	2.64 (4.21dBi)	0.00662	0.01324	1.0	Pass
802.11n40M Hz ANT2	10±1.0	11.0	12.59	2.64 (4.21dBi)	0.00662		1.0	Pass

Note: Directional Gain=1.2dBi+10log(2)=4.21dBi