



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

FCC ID: 2APVT-STICK

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

IEEE 802.11b

max possible output power (PK,conducted) : 8±1dbm

IEEE 802.11g

max possible output power (PK,conducted) : 8±1dbm

IEEE 802.11n(20)

max possible output power (PK,conducted) : 10±1dbm

IEEE 802.11n(40)

max possible output power (PK,conducted): 9 ±1dbm



	Frequency (MHz)	Maximum Conducted Output Power(PK)(dBm)		Total Output Power (dBm)	LIMIT dBm
		ANT1	ANT2		
802.11b	2412	8.083	8.055	/	30
	2437	7.805	8.285	/	30
	2462	7.662	7.695	/	30
802.11g	2412	7.981	8.397	/	30
	2437	7.954	7.885	/	30
	2462	7.975	7.928	/	30
802.11n20	2412	7.397	7.514	10.47	30
	2437	7.614	8.098	10.87	30
	2462	7.560	7.344	10.46	30
802.11n40	2422	6.463	6.436	9.46	30
	2437	6.257	6.719	9.50	30
	2452	6.288	6.326	9.32	30

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 802.11n(20)

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

	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	8±1.0	9.0	7.94	1 (0dBi)	0.00158	/	1.0	Pass
802.11b ANT2	8±1.0	9.0	7.94	1 (0dBi)	0.00158	/	1.0	Pass
802.11g ANT1	8±1.0	9.0	7.94	1 (0dBi)	0.00158	/	1.0	Pass
802.11g ANT2	8±1.0	9.0	7.94	1.26 (1.0dBi)	0.00158	/	1.0	Pass
802.11n20M Hz ANT1	8±1.0	9.0	7.94	1 (0dBi)	0.00158	0.00316	1.0	Pass
802.11n20M Hz ANT2	8±1.0	9.0	7.94	1 (0dBi)	0.00158		1.0	Pass
802.11n40M Hz ANT1	6±1.0	7.0	5.01	1 (0dBi)	0.00100	0.00200	1.0	Pass
802.11n40M Hz ANT2	6±1.0	7.0	5.01	1 (0dBi)	0.00100		1.0	Pass