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

FCC ID: 2AEBWEL-384

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

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

TEST RESULTS

Test Channe	Frequency	Maximum Conducted Output Power（PK）	Maximum Conducted Output Power（AV）	LIMIT
	(MHz)	(dBm)	(dBm)	dBm
TX 802.11b Mode				
CH01	2412	17.54	14.51	30
CH06	2437	17.22	14.45	30
CH11	2462	17.46	14.53	30
TX 802.11g Mode				
CH01	2412	13.57	10.29	30
CH06	2437	13.36	10.14	30
CH11	2462	13.44	10.27	30
TX 802.11n(20) Mode				
CH01	2412	12.42	8.55	30
CH06	2437	12.31	8.33	30
CH11	2462	12.41	8.41	30
TX 802.11n(40) Mode				
CH03	2422	11.12	8.24	30
CH06	2437	11.34	8.31	30
CH09	2452	11.45	8.40	30

Mode	Range	Maximum AV output power (dBm)	Output power (mW)	Antenna Gain (numeric)	Power Density (S) (mW/ cm^2)	Limit of Power Density (S) (mW/ cm^2)	Result
802.11b	14~16	16	39.81	1(1.26)	0.0100	1	Pass
802.11g	9~11	11	12.59	1(1.26)	0.0032	1	Pass
802.11n-HT20	7~9	9	7.94	1(1.26)	0.0020	1	Pass
802.11n-HT40	7~9	9	7.94	1(1.26)	0.0020	1	Pass

Frequency MHz	Range	Maximum AV output power (dBm)	Output power (mW)	Antenna Gain (numeric)	Power Density (S) (mW/ cm^2)	Limit of Power Density (S) (mW/ cm^2)	Result
2412-2462	14~16	16	39.81	1(1.26)	0.0100	1	Pass