

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

FCC ID: APIHKOMNI10

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

WIFI: Ant A

Mode	Maximum peak output power (dBm)	Output power to antenna (mW)	(Antenna Gain) numeric	Power Density (S) (mW/ cm ²)	Limit of Power Density (S) (mW/ cm ²)	Result
802.11b	9.53	8.97	1.77(2.47dBi)	0.0032	1	Pass
802.11g	8.67	7.36	1.77(2.47dBi)	0.0026	1	Pass
802.11n-HT20	7.84	6.08	1.77(2.47dBi)	0.0021	1	Pass

WIFI: Ant B

Mode	Maximum peak output power (dBm)	Output power to antenna (mW)	(Antenna Gain) numeric	Power Density (S) (mW/ cm ²)	Limit of Power Density (S) (mW/ cm ²)	Result
802.11b	9.54	8.99	1.93(2.86dBi)	0.0035	1	Pass
802.11g	8.56	7.18	1.93(2.86dBi)	0.0028	1	Pass
802.11n-HT20	7.51	5.64	1.93(2.86dBi)	0.0022	1	Pass

BT:

Mode	Maximum peak output power (dBm)	Output power to antenna (mW)	(Antenna Gain) numeric	Power Density (S) (mW/ cm ²)	Limit of Power Density (S) (mW/ cm ²)	Result
1Mbps	1.906	1.55	2.34(3.7dBi)	0.0007	1	Pass
2Mbps	1.446	1.40	2.34(3.7dBi)	0.0006	1	Pass
3Mbps	1.807	1.52	2.34(3.7dBi)	0.0007	1	Pass

Note: Note: The assess distance is 20cm.