



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

FCC ID: 2A165WCAP-AC

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, R=0.2m

TEST RESULTS

	Output power to antenna (dBm)	Maximum peak output power (mW)	Antenna Gain (numeric)	Power Density (S) (mW/ cm ²)	Limit of Power Density (S) (mW/ cm ²)	Result
2.4G 802.11b	15.81	38.11	3.16 (5.0dBi)	0.02397	1	Pass
2.4G 802.11g	13.60	22.91	3.16 (5.0dBi)	0.00722	1	Pass
2.4G 802.11n (HT20)	12.21	16.63	3.16 (5.0dBi)	0.00524	1	Pass
2.4G 802.11n (HT40)	11.78	15.07	3.16 (5.0dBi)	0.00598	1	Pass
5G 802.11a	15.84	38.37	3.16 (5.0dBi)	0.02414	1	Pass
5G 802.11n (HT20)	13.57	22.75	3.16 (5.0dBi)	0.00717	1	Pass
5G 802.11n (HT40)	12.79	19.01	3.16 (5.0dBi)	0.00599	1	Pass
5G 802.11ac (HT80)	12.56	18.03	3.16 (5.0dBi)	0.00716	1	Pass