

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

FCC ID: 2A5C5-ZYC-9403

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=20cm

Test Result of RF Exposure Evaluation

	Tune up Produce power	Maximum peak output power (dBm)	Output power to antenna (mW)	Antenna Gain (numeric)	Power Density (S) (mW/ cm ²)	Limit (mW/ cm ²)	Result
EDR 8DPSK& MCH	3±1	4	2.5119	1.2589 (1dBi)	0.0006	1	Pass
2.4G WIFI 802.11b&24 37	14±1	15	31.6228	2.4889 (3.96dBi)	0.0157	1	Pass
5.8GWIFI 802.11n(HT 40)& 5755	13±1	14	25.1189	1.7418 (2.41dBi)	0.0087	1	Pass
LTE BAND 2	20±1	21	125.892 5	3.1915 (5.04dBi)	0.08	1	Pass
LTE BAND 4	21±1	22	158.489 3	2.5823 (4.12dBi)	0.0815	1	Pass
LTE BAND 5	21±1	22	158.489 3	2.7925 (4.46dBi)	0.0881	0.5	Pass
LTE BAND 7	20±1	21	125.892 5	1.2274 (0.89dBi)	0.0308	1	Pass
LTE BAND 12	22±1	23	199.526 2	3.2285 (5.09dBi)	0.1282	0.5	Pass
LTE BAND 17	22±1	23	199.526 2	3.2285 (5.09dBi)	0.1282	0.5	Pass
LTE BAND 38	22±1	23	199.526 2	1.2274 (0.89dBi)	0.0487	1	Pass
LTE BAND 40A	20±1	21	125.892 5	1.7298 (2.38dBi)	0.0433	1	Pass
LTE BAND 40B	19±1	20	100	1.8450 (2.66dBi)	0.0367	1	Pass

LTE BAND 41	21±1	22	158.489 3	1.2274 (0.89dBi)	0.0387	1	Pass
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