

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

FCC ID: 2BCOLJY-UZS11N8

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	Maximu m peak output power (dBm)	Output power to antenna (mW)	Antenna Gain (numeric)	Power Density (S) (mW/ cm2)	Limit (mW / cm2)	Result
EDR 8DPSK&HCH	3±1	4	2.5119	2.7164 (4.34dBi)	0.00136	1	Pass
BLE GFSK&LCH	0±1	1	1.2589	2.7164 (4.34dBi)	0.0007	1	Pass
2.4G WIFI 802.11b&2412	14±1	15	31.6228	2.3605 (3.73dBi)	0.01486	1	Pass
5.2GWIFI 802.11a20&5240	13±1	14	25.1189	1.0495 (0.21dBi)	0.0052	1	Pass
5.8GWIFI 802.11n(HT40)& 5755	12±1	13	19.9526	1.6069 (2.06dBi)	0.0064	1	Pass
GSM850	31±1	32	1584.89 32	2.5235 (4.02dBi)	0.7961	0.5	Pass
GSM1900	28±1	29	794.328 2	1.8923 (2.77dBi)	0.2992	1	Pass
WCDMA Band 2	21±1	22	158.489 3	1.8923 (2.77dBi)	0.0597	1	Pass
WCDMA Band 5	22±1	23	199.526 2	2.5235 (4.02dBi)	0.1002	0.5	Pass
LTE BAND 4	23±1	24	251.188 6	2.3714 (3.75dBi)	0.11856	1	Pass
LTE BAND 5	23±1	24	251.188 6	2.5235 (4.02dBi)	0.1262	0.6	Pass
LTE BAND 7	24±1	25	316.227 8	1.5922 (2.02dBi)	0.10022	1	Pass

LTE BAND 12	23±1	24	251.188 6	2.7606 (4.41dBi)	0.13802	0.5	Pass
LTE BAND 41	24±1	25	316.227 8	1.5776 (1.98dBi)	0.0993	1	Pass
LTE BAND 66	23±1	24	251.188 6	2.4717 (3.93dBi)	0.1236	1	Pass