BCTC

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

FCC ID: 2BOF7-HT-S055

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

	Tune up Produce power	Maximum output power (dBm)	Output power to antenna (mW)	Antenna Gain (numeric)	Power Density (S) (mW/ cm2)	Limit (mW / cm2)	Result
BT	2±1	3	1.995	2.04(3.1dBi)	0.000810	1	Pass
BLE	8.5±1	9.5	8.91	2.04(3.1dBi)	0.003617	1	Pass
2.4G WIFI	12±1	13	19.95	2.04(3.1dBi)	0.008099	1	Pass
5.1G WIFI	10±1	11	12.59	1.78(2.51dBi)	0.004460	1	Pass
5.8G WIFI	10±1	11	12.59	1.85(2.66dBi)	0.004635	1	Pass
GSM 850	33±1	34	2511.89	0.43(-3.64dBi)	0.214942	0.55	Pass
GSM 1900	28.5±1	29.5	891.25	0.35(-4.62dBi)	0.062076	1	Pass
WCDMA-B2	23.5±1	24.5	281.84	0.35(-4.62dBi)	0.019630	1	Pass
WCDMA-B4	24±1	25	316.23	0.34(-4.72dBi)	0.021396	1	Pass
WCDMA-B5	25±1	26	398.11	0.43(-3.64dBi)	0.034066	0.55	Pass
LTE Band2	22.5±1	23.5	223.872	0.35(-4.62dBi)	0.015593	1	Pass
LTE Band4	22±1	23	199.53	0.34(-4.72dBi)	0.013500	1	Pass
LTE Band5	23.5±1	24.5	281.84	0.43(-3.64dBi)	0.024117	0.55	Pass
LTE Band7	22±1	23	199.53	0.28(-5.57dBi)	0.011118	1	Pass

LTE Band12	22.5±1	23.5	223.87	0.39(-4.11dBi)	0.017375	0.47	Pass
LTE Band17	23±1	24	251.19	0.39(-4.11dBi)	0.019495	0.47	Pass

Simultaneous transmitting evaluation:
WIFI and Bluetooth

Mode	Power Density (S) (mW/ cm2)	Total (mW/ cm2)	Limit (mW/ cm2)
2.4G WIFI	0.008099	0.3989	1
GSM 850	0.214942		

Total=0.008099/1+0.214942/0.55

Conclusion:
For the max result: 0.3989≤ 1.0, compliance with FCC's RF Exposure