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

FCC ID: 2BNXI-BST883C

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

	Bandwidth (MHz)	Tune up Produce power	Maximum peak output power (dBm)	Output power to antenna (mW)	Antenna Gain (numeric)	Power Density (S) (mW/ cm2)	Limit (mW / cm2)	Result
LTE BAND 2	1.4	22±1	23	199.52623	1.6982 (2.3dBi)	0.0674	1	Pass
LTE BAND 2	3	22±1	23	199.52623	1.6982 (2.3dBi)	0.0674	1	Pass
LTE BAND 2	5	23±1	24	251.1886	1.6982 (2.3dBi)	0.0849	1	Pass
LTE BAND 2	10	22±1	23	199.52623	1.6982 (2.3dBi)	0.0674	1	Pass
LTE BAND 2	15	22±1	23	199.52623	1.6982 (2.3dBi)	0.0674	1	Pass
LTE BAND 2	20	22±1	23	199.52623	1.6982 (2.3dBi)	0.0674	1	Pass
LTE BAND 4	1.4	22±1	23	199.5262	1.6144 (2.08dBi)	0.064	1	Pass
LTE BAND 4	3	22±1	23	199.5262	1.6144 (2.08dBi)	0.064	1	Pass
LTE BAND 4	5	22±1	23	199.5262	1.6144 (2.08dBi)	0.064	1	Pass
LTE BAND 4	10	22±1	23	199.5262	1.6144 (2.08dBi)	0.064	1	Pass
LTE BAND 4	15	22±1	23	199.5262	1.6144 (2.08dBi)	0.064	1	Pass
LTE BAND 4	20	22±1	23	199.5262	1.6144 (2.08dBi)	0.064	1	Pass

LTE BAND 5	1.4	23±1	24	251.18864	1.3583 (1.33dBi)	0.0679	0.6	Pass
LTE BAND 5	3	23±1	24	251.18864	1.3583 (1.33dBi)	0.0679	0.6	Pass
LTE BAND 5	5	23±1	24	251.18864	1.3583 (1.33dBi)	0.0679	0.6	Pass
LTE BAND 5	10	23±1	24	251.18864	1.3583 (1.33dBi)	0.0679	0.6	Pass
LTE BAND 12	1.4	22±1	23	199.5262	1.074 (0.31dBi)	0.0537	0.5	Pass
LTE BAND 12	3	23±1	24	251.1886	1.074 (0.31dBi)	0.0537	0.5	Pass
LTE BAND 12	5	22±1	23	199.5262	1.074 (0.31dBi)	0.0427	0.5	Pass
LTE BAND 12	10	22±1	23	199.5262	1.074 (0.31dBi)	0.0427	0.5	Pass
LTE BAND 13	5	23±1	24	251.1886	0.9441 (-0.25dBi)	0.0472	0.5	Pass
LTE BAND 13	10	23±1	24	251.1886	0.9441 (-0.25dBi)	0.0472	0.5	Pass
LTE BAND 66	1.4	23±1	24	251.1886	0.6194 (-2.08dBi)	0.031	1	Pass
LTE BAND 66	3	23±1	24	251.1886	0.6194 (-2.08dBi)	0.031	1	Pass
LTE BAND 66	5	23±1	24	251.1886	0.6194 (-2.08dBi)	0.031	1	Pass
LTE BAND 66	10	23±1	24	251.1886	0.6194 (-2.08dBi)	0.031	1	Pass
LTE BAND 66	15	23±1	24	251.1886	0.6194 (-2.08dBi)	0.031	1	Pass
LTE BAND 66	20	22±1	23	199.5262	0.6194 (-2.08dBi)	0.0246	1	Pass