

FCC 22H 24E 27L, §2.1091 – RF Exposure

FCC ID: 2A73PYBT-107

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&HCH)	5±1	6	3.9811	1.259 (1dBi)	0.001	1	Pass
2.4GWIFI (802.11b&2462)	10±1	11	12.5893	1.259 (1dBi)	0.00315	1	Pass
LTE BADN 2	26±1	27	501.19	2.512 (4dBi)	0.25059	1	Pass
LTE BADN 4	27±1	28	630.96	2.512 (4dBi)	0.31548	1	Pass
LTE BADN 5	24±1	25	316.23	2.512 (4dBi)	0.15811	0.5	Pass
LTE BADN 12	21±1	22	158.48 9	2.512 (4dBi)	0.07924	0.5	Pass
LTE BADN 13	24±1	25	316.23	2.512 (4dBi)	0.15811	0.5	Pass
LTE BADN 66	28±1	29	794.33	2.512 (4dBi)	0.39716	1	Pass
LTE BADN 71	23±1	24	251.19	2.512 (4dBi)	0.12559	0.4	Pass

$S=0.001/1+0.00315/1+0.39716/1=0.4131\leq 1$, So passed