

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

FCC ID: 2AKL3S1010

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

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/ cm²)	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

WIFI

IEEE 802.11b

max possible output power (PK,conducted): 12±1dbm

IEEE 802.11g

max possible output power (PK,conducted): 10±1dbm

IEEE 802.11n(20)

max possible output power (PK,conducted): 10±1dbm

IEEE 802.11n(40)

max possible output power (PKconducted): 9±1dbm

^{* =} Power density limit is applicable at frequencies greater than 100 MHz

^{* =} Plane-wave equivalent power density



The max possible output power (PK,conducted) of All (IEEE 802.11b, IEEE 802.11g, IEEE 802.11n(20/40)) is IEEE 802.11b.	



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

	Target power W/ tolerance (dBm)	Max tune up power tolerance (dBm)	Total Output power to antenna (mW)	Antenna Gain(dBi)	Total Power Density at R=20cm (mW/cm²)	Limit (mW/cm	Result
802.11b	12±1.0	13	19.95	1.0 (1.258)	0.004995	1.0	Pass