



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

**FCC ID: 2AGZ3S00911**

### 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 <sup>2</sup> )	Averaging Time  E  <sup>2</sup> ,  H  <sup>2</sup> 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 <sup>2</sup> )	Averaging Time  E  <sup>2</sup> ,  H  <sup>2</sup> 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

## 2.4G

*IEEE 802.11b*

*max possible output power (PK,conducted) : 20±1dbm*

*IEEE 802.11g*

*max possible output power (PK,conducted) : 20±1dbm*

*IEEE 802.11n(20)*

*max possible output power (PK,conducted) : 22±1dbm*

*IEEE 802.11n(40)*



*max possible output power (PK,conducted):  $22 \pm 1$  dbm*

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

### **5180-5240MHz**

*IEEE 802.11a*

*max possible output power (PK conducted) :  $15 \pm 1$  dbm*

*IEEE 802.11N(20)*

*max possible output power (PK,conducted) :  $18 \pm 1$  dbm*

*IEEE 802.11N(40)*

*max possible output power (PK,conducted) :  $20 \pm 1$  dbm*

*IEEE 802.11ac(80)*

*max possible output power (PK,conducted) :  $22 \pm 1$  dbm*

*The max possible output power (PK,conducted) of All (IEEE 802.11a , IEEE 802.11n(20), IEEE 802.11N (40), IEEE 802.11ac(80)) is IEEE 802.11ac(80)*

### **5745-5825MHz**

*IEEE 802.11a*

*max possible output power (PK conducted) :  $20 \pm 1$  dbm*

*IEEE 802.11N(20)*

*max possible output power (PK,conducted) :  $23 \pm 1$  dbm*

*IEEE 802.11N(40)*

*max possible output power (PK,conducted) :  $22 \pm 1$  dbm*

*IEEE 802.11ac(80)*



*max possible output power ( $P_{K,conducted}$ ) :  $23\pm 1\text{dbm}$*

*The max possible output power ( $P_{K,conducted}$ ) of All (IEEE 802.11a , IEEE 802.11n(20), IEEE 802.11N (40), IEEE 802.11ac(80)) is IEEE 802.11ac(80) and IEEE 802.11n(20)*



**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**

**2.4G**

	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/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )	Result
802.11n(40)	22±1.0	23	199.53	5 (3.16)	0.12550	1.0	Pass

**5G**

	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/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )	Result
5180-5240MHz 802.11ac(80)	22±1.0	23	199.53	5 (3.16)	0.12550	1.0	Pass
5745-5825MHz 802.11n(20) 802.11ac(80)	23±1.0	24	251.19	5 (3.16)	0.15799	1.0	Pass