



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

FCC ID: 2ARWG-1002

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

2.4g WiFi

IEEE 802.11b

max possible output power (PK,conducted) : 14±1dbm

IEEE 802.11g

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

IEEE 802.11n(20)

max possible output power (PK,conducted) : 11±1dbm



IEEE 802.11n(40)

max possible output power (PK, conducted) : $9 \pm 1 \text{ dbm}$

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.

918MHz

GFSK

max possible output power (PK, conducted) : $15 \pm 1 \text{ dbm}$



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/cm ²) | Limit (mW/cm ²) | Result |
|---------|---------------------------------|-----------------------------------|------------------------------------|-------------------|---|-----------------------------|--------|
| 802.11b | 14+1 | 15 | 31.62 | 1.0 (1.258) | 0.00792 | 1.0 | Pass |
| GFSK | 15+1 | 16 | 39.81 | 0 (1) | 0.00792 | 1.0 | Pass |