



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

FCC ID: TVVKS-12

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=0.2m

TEST RESULTS

| | Maximum peak output power (mW) | Output power to antenna (dBm) | Antenna Gain (numeric) | Power Density (S) (mW/ cm ²) | Limit of Power Density (S) (mW/ cm ²) | Result |
|---------------------------|--------------------------------------------|----------------------------------------|------------------------------|------------------------------------------------|------------------------------------------------------------|--------|
| 2.4G 802.11b | 61.38 | 17.88 | 6.31(8.0dBi) | 0.07704 | 1 | Pass |
| 2.4G 802.11g | 37.76 | 15.77 | 6.31(8.0dBi) | 0.04739 | 1 | Pass |
| 2.4G 802.11n (HT20) | 28.05 | 14.48 | 6.31(8.0dBi) | 0.03522 | 1 | Pass |
| 2.4G 802.11n (HT40) | 18.20 | 12.60 | 6.31(8.0dBi) | 0.02284 | 1 | Pass |

Note: Directional Gain=5.0dBi+10log(2)=8.0dBi