

Maximum Permissible Exposure

Applicable Standard

According to §1.1307(b), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

Remark: 1)

For 2.4G WIFI: The maximum output power for antenna 0 is 23.18dBm (207.97mW) at 2437MHz, 5dBi antenna gain(with 3.16 numeric antenna gain.)
The maximum output power for antenna 1 is 24.19dBm (262.42mW) at 2422MHz, 5dBi antenna gain(with 3.16 numeric antenna gain.)

2) For mobile or fixed location transmitters, no SAR consideration applied. The minimum separation generally be used is at least 20cm, even if the calculation indicate that the MPE distance would be lesser.

Calculation

$$\text{Given } E = \frac{\sqrt{30 \times P \times G}}{d} \quad \& \quad S = \frac{E^2}{3770}$$

Where E = Field Strength in Volts / meter

P = Power in Watts

G = Numeric antenna gain

d = Distance in meters

S = Power Density in milliwatts / square centimeter

Substituting the MPE safe distance using $d=20\text{cm}$ into above equation.

Yields: $S=0.000199 \times P \times G$

MPE ANT0:

Mode	Power(mW)	numeric antenna gain	Power density (mW/cm ²)
2.4G WIFI	207.97	3.16	0.130780

MPE ANT1:

Mode	Power(mW)	numeric antenna gain	Power density (mW/cm ²)
2.4G WIFI	262.42	3.16	0.165020

Total MPE:

Maximum Emissions Level					
Mode	MPE ANT0	MPE ANT1	Total MPE	Limit (mW/cm ²)	Result
2.4G WIFI	0.130780	0.165020	0.295800	1.0	PASS