## 4.11 Maximum Permissible Exposure(MPE)

**LIMIT**

According to subpart 15.247(i)and subpart§1.1310,system operating under the provisions if 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 Maximum Permissible Exposure(MPE)( §1.1310, §2.1093)

| (B)Limits for General Population/uncontrolled Exposure | | | | |
|---|---|---|---|---|
| Frequency Range(MHz) | Electric Field Strength(V/m) | Magnetic Field Strength(A/m) | Power Density($mW/cm^2$) | Averaging Time(minutes) |
| 0.3-1.34 | 614 | 1.63 | *(100) | 30 |
| 1.34-30 | 824/f | 2.19/f | *($180/f^2$) | 30 |
| 30-300 | 27.5 | 0.073 | 0.2 | 30 |
| 300-1500 | | | f/1500 | 30 |
| 1500-100,000 | | | 1.0 | 30 |

F=frequency in MHz;*=Plane-wave equivalent power density

According to §1.1310, §2.1093 RF exposure is calculated.

Calculated Formulary:

Predication of MPE limit at a given distance

$S=PG/4\pi R^2$=power density（in appropriate units，e.g. $mW/cm^2$）;

P=power input to the antenna(in appropriate units，e.g., mW);

G=power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;

R = distance to the center of radiation of the antenna(appropriate units, e.g., cm)

**TEST RESULT**

| Mode | Frequency band (MHz) | Antenna Gain | | Target Power | | Evaluation Distance（cm） | Power Density（$mW/cm^2$） | MPE Limit（$mW/cm^2$） |
|---|---|---|---|---|---|---|---|---|
| | | dBi | numeric | dBm | mW | | | |
| 802.11 b | 2412-2462 | 3.0 | 2.0 | 17.0 | 50.12 | 20 | 0.0199 | 1 |
| 802.11 g | 2412-2462 | 3.0 | 2.0 | 15.0 | 31.62 | 20 | 0.0189 | 1 |
| 802.11n HT20 | 2412-2462 | 3.0 | 2.0 | 14.0 | 25.12 | 20 | 0.0150 | 1 |
| 802.11n HT40 | 2422-2452 | 3.0 | 2.0 | 14.0 | 25.12 | 20 | 0.0150 | 1 |
| Result: Compliance | | | | | | | | |

Note：

The target power(Average)： 802.11b:16dB±1dBm
802.11g:14dB±1dBm
802.11n:13dB±1dBm

which declared by the Manufacturer.