4.10 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	2.70	1.862	18.0	63.10	20	0.0234	1
802.11 g	2412-2462	2.70	1.862	15.0	31.62	20	0.0117	1
802.11n HT20	2412-2462	2.70	1.862	14.0	25.12	20	0.0093	1
802.11n HT40	2422-2452	2.70	1.862	14.0	25.12	20	0.0093	1
Result: Compliance								

Note：

The target power(Average)： 802.11b:17dB±1dBm
802.11g:14dB±1dBm
802.11n:13dB±1dBm
which declared by the Manufacturer.