



RF Exposure Compliance Requirement

1. Standard requirement

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 limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 0.2m normally can be maintained between the user and the device.

(a) 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 Times 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
1500-100000	--	--	5	6

(b) 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 Times 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
1500-100000	--	--	1.0	30

Note: f=frequency in MHz; *Plane-wave equivalent power density



2. MPE Calculation Method

$E (V/m) = (30 * P * G)^{0.5} / d$ Power Density: $Pd (W/m^2) = E^2 / 377$

E=Electric Field (V/m)

P=Peak RF output Power (W)

G=EUT Antenna numeric gain (numeric)

d= Separation distance between radiator and human body (m)

The formula can be changed to

$Pd = (30 * P * G) / (377 * d^2)$

From the peak EUT RF output power, the minimum mobile separation distance, d=0.2m, as well as the gain of the used antenna, the RF power density can be obtained.

3. Calculated Result and Limit

(1)802.11b 11Mbps data rate:

Frequency (MHz)	Antenna Gain (Numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2412	1.0	27.24	529.663	0.10537	1	Complies
2437	1.0	26.92	492.040	0.09789	1	Complies
2462	1.0	26.48	444.631	0.08845	1	Complies

(2) 802.11g 54Mbps data rate:

Frequency (MHz)	Antenna Gain (Numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2412	1.0	26.70	467.735	0.09305	1	Complies
2437	1.0	27.11	514.044	0.10226	1	Complies
2462	1.0	26.95	495.450	0.09856	1	Complies



SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch

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3) 802.11n HT20 72.2Mbps data rate:

Frequency (MHz)	Antenna Gain (Numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2412	1.0	25.47	352.371	0.07010	1	Complies
2437	1.0	26.84	483.059	0.09610	1	Complies
2462	1.0	26.66	463.447	0.09220	1	Complies

4) 802.11n HT40 135Mbps data rate:

Frequency (MHz)	Antenna Gain (Numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2412	1.0	20.65	116.145	0.02311	1	Complies
2437	1.0	26.93	493.174	0.09811	1	Complies
2462	1.0	27.02	503.501	0.10017	1	Complies