

# SGS-CSTC Standards Technical Services Co., Ltd.

**Guangzhou Branch** 

Application No..: GZEM1802000960CR

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FCC ID: 2AIC9-O2NAILS-V11P

# **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/cm²)	Averaging Times  E  2, H  2or 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/cm²)	Averaging Times   E  2, H  2or 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



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### 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<sup>2</sup>)

From the peak EUT RF output power, the minimum mobile separation distance, d=0.05m, as well as the gain of the used antenna, the RF power density can be obtained.

### 3. Calculated Result and Limit

### (1)802.11b:

Frequency (MHz)	Antenna Gain (Numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm²)	Limit of Power Density (S) (mW/cm²)	Test Result
2412	1.000	18.26	66.988	0.01333	1	Complies
2442	1.000	17.69	58.749	0.01169	1	Complies
2462	1.000	17.59	57.412	0.01142	1	Complies

# (2) 802.11g:

Frequency (MHz)	Antenna Gain (Numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm²)	Limit of Power Density (S) (mW/cm²)	Test Result
2412	1.000	16.58	45.499	0.00905	1	Complies
2442	1.000	15.95	39.355	0.00783	1	Complies
2462	1.000	15.89	38.815	0.00772	1	Complies



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(3)802.11n HT20:

Frequency (MHz)	Antenna Gain (Numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm²)	Limit of Power Density (S) (mW/cm²)	Test Result
2412	1.000	16.58	45.499	0.00905	1	Complies
2442	1.000	16.07	40.458	0.00805	1	Complies
2462	1.000	16.14	41.115	0.00818	1	Complies

(4) 802.11n HT40:

Frequency (MHz)	Antenna Gain (Numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm²)	Limit of Power Density (S) (mW/cm²)	Test Result
2412	1.000	15.3	33.884	0.00674	1	Complies
2442	1.000	15.05	31.989	0.00636	1	Complies
2462	1.000	14.98	31.477	0.00626	1	Complies