

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

Application No..: GZEM1306002908RF

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# **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 <sup>2</sup> )	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 <sup>2</sup> )	Averaging Times   E   <sup>2</sup> , H   <sup>2</sup> 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



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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

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

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) Normal mode::

Frequency (MHz)	Antenna Gain (Numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm <sup>2</sup> )	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
2402	1.629	2.57	1.807	0.00059	1	Complies
2441	1.629	3.00	1.995	0.00065	1	Complies
2480	1.629	4.13	2.588	0.00084	1	Complies

#### (2) EDR mode:

Frequency (MHz)	Antenna Gain (Numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm <sup>2</sup> )	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
2402	1.629	0.92	1.236	0.00040	1	Complies
2441	1.629	2.48	1.770	0.00057	1	Complies
2480	1.629	3.58	2.280	0.00074	1	Complies