



FCC 47 CFR MPE REPORT

Eastech (Huizhou) Co., Ltd

Wireless Subwoofer

Model Number: S5120Q

Additional Model: S5120R, S5120S, S5120QW, S5121Q, S5121R, S5121S, S512Q, S512LQ, S512S, S512LS, S512R, S512LR, S8Q, S8LQ, S8R, S8LR, SL80Q, SL81Q, SL80R, SL81R, T8, T8Q, T8R, T8S, A3120Q, A7140Q, S7140Q, S7140QW, S7140S, S7140SW, S70, S700, S71, S701, S5120DE, S5120WDE, A5120S, A5120SW, RA-B770, RA-B770F, T80QW, T5120Q

FCC ID: 2BWL4-S5120QSW

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Maximum Permissible Exposure

1. Applicable Standards

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 & KDB 447498 D04 V01 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.

1.1. Limits for Maximum Permissible Exposure (MPE)

(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
1500-10000			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
1500-10000			1.0	30

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

1.2. MPE Calculation Method

$$E \text{ (V/m)} = \frac{\sqrt{30 \times P \times G}}{d} \quad \text{Power Density: } Pd \text{ (W/m}^2\text{)} = \frac{E^2}{377}$$

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

$$Pd = \frac{30 \times P \times G}{377 \times d^2}$$

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

2. Conducted Result and Limit

For 5.8G SRD

Field strength =66.95dBuV/m@3m

$P*G = \{ [10^{(66.95/20)} / 10^6 * 3]^2 / 30 \} * 1000 \text{mW} = 0.001 \text{mW}$

$P_d = (30 * 0.001) / (377 * 20^2) = 0.0000002 < 1$

End of Test Report