FCC 47 CFR MPE REPORT

Tymphany HK Limited

Wireless Soundbar

Model Number: R-4B Soundbar

FCC ID: 2AAGJR4BBAR

Prepared for : Tymphany HK Limited

    Room 1307-8, Dominon Centre, 43-59 Queen's Road East, WanChai, Hong Kong

Prepared By :EST Technology Co., Ltd.

    Santun(guantai Road), Houjie Town, DongGuan City,GuangDong, China.

    Tel: 86-769-83081888-808

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Maximum Permissible Exposure

1、Applicable Standard

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｜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/cm2)	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.o	30

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

2、MPE Calculation Method

$E \text{ (V/m)} = (30*P*G)^{0.5}/d$ Power Density: $Pd \text{ (W/m2)} = E^2/377$

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**

Mode	Frequency (MHz)	Peak output power (dBm)	Peak output power (mW)	Target power（dBm）	Antenna gain (dBi)	Antenna gain (Linear)	Power Density (S) (mW /cm2)	Limited of Power Density (S) (mW /cm2)	Test Result
GFSK	2402	-2.689	0.538	-2±2	3.14	2.06	**0.00041**	1	Compiles
	2441	0.775	1.195	0±2	3.14	2.06	**0.00065**	1	Compiles
	2480	0.457	1.111	0±2	3.14	2.06	**0.00065**	1	Compiles
8-DPSK	2402	-2.815	0.523	-2±2	3.14	2.06	**0.00041**	1	Compiles
	2441	1.040	1.271	0±2	3.14	2.06	**0.00065**	1	Compiles
	2480	0.698	1.174	0±2	3.14	2.06	**0.00065**	1	Compiles