FCC 47 CFR MPE REPORT

All Best Technology Limited

Bluetooth Speaker System with Alarm Clock Wireless Charging Station

Model Number: HS1-qi

Additional Model: HS1-WC,HS1,S1 Hotel

FCC ID:2AIEG-HS1-QI

Prepared for:	All Best Technology Limited
	Yincheng 1st Rd., Yincheng Industrial Zone, Xiabian Village, Chang'an Town,
	Dongguan City, Guangdong Province, China
Prepared By:	EST Technology Co., Ltd.
	Chilingxiang, Qishantou, Santun, Houjie, Dongguan, 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 (V/m) = (30*P*G) 0.5/d   Power Density: Pd (W/m2) = $E2/377$

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

$Pd = (30*P*G) / (377*d2)$

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、**Conducted Power Result**

Mode	Frequency (MHz)	Peak output power (dBm)	Peak output power (mW)	Target power（dBm）	Antenna gain (dBi)	Antenna gain (Linear)
GFSK	2402	-5.426	0.287	-6±1	1.2	1.318
	2441	-5.997	0.251	-6±1	1.2	1.318
	2480	-6.280	0.236	-7±1	1.2	1.318
8-DPSK	2402	-6.426	0.228	-7±1	1.2	1.318
	2441	-7.251	0.188	-8±1	1.2	1.318
	2480	-7.275	0.187	-8±1	1.2	1.318

4、**Calculated Result and Limit**

Mode	Target power（dBm）	Antenna gain (dBi)	Antenna gain (Linear)	Power Density (S) (mW/cm2)	Limited of Power Density (S) (mW/cm2)	Test Result
2.4G Band						
GFSK	-5	1.2	1.318	**0.00008**	1	Compiles
8-DPSK	-6	1.2	1.318	**0.00007**	1	Compiles