

FCC 47 CFR MPE REPORT

Dongguan City MeiZhiZun Electronics Technology Co., Ltd

Trolley BT Speaker

Model Number: IQ-7210DJBT

Additional Model: CM-09, DM61, M61, DDM61, DM60

FCC ID: 2ALS7IQ7210DJ

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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/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

2、MPE Calculation Method

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

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

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

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、Conducted Power Result

3.1 Module 1

Mode	Frequency (MHz)	Peak output power (dBm)	Peak output power (mW)	Target power (dBm)	Antenna gain	
					(dBi)	(Linear)
GFSK	2402	-5.432	0.286	-6 ± 1	0	1
	2441	-5.242	0.299	-6 ± 1	0	1
	2480	-5.439	0.286	-6 ± 1	0	1
$\pi/4$ -DQPSK	2402	-4.439	0.360	-5 ± 1	0	1
	2441	-4.445	0.359	-5 ± 1	0	1
	2480	-4.870	0.326	-5 ± 1	0	1

3.1 Module 2

Mode	Frequency (MHz)	Peak output power (dBm)	Peak output power (mW)	Target power (dBm)	Antenna gain	
					(dBi)	(Linear)
GFSK	2402	-6.142	0.243	-7 ± 1	0	1
	2441	-6.106	0.245	-7 ± 1	0	1
	2480	-5.739	0.267	-6 ± 1	0	1
$\pi/4$ -DQPSK	2402	-5.181	0.303	-6 ± 1	0	1
	2441	-5.123	0.307	-6 ± 1	0	1
	2480	-4.746	0.335	-5 ± 1	0	1

4、Calculated Result and Limit

4.1 Module 1

Mode	Target power (dBm)	Antenna gain		Power Density (S) (mW/cm ²)	Limited of Power Density (S) (mW/cm ²)	Test Result
		(dBi)	(Linear)			
GFSK	-5	0	1	0.00006	1	Compiles
$\pi/4$ -DQPSK	-4	0	1	0.00008	1	Compiles

4.1 Module 2

Mode	Target power (dBm)	Antenna gain		Power Density (S) (mW/cm ²)	Limited of Power Density (S) (mW/cm ²)	Test Result
		(dBi)	(Linear)			
GFSK	-5	0	1	0.00006	1	Compiles
$\pi/4$ -DQPSK	-4	0	1	0.00008	1	Compiles