

FCC 47 CFR MPE REPORT

Dong guan Synst Electronics.Co.,Ltd

Bluetooth speaker

Model Number: NYNE Bass

FCC ID: SV9-NYNEBASS

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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

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

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

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

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、Calculated Result and Limit

Adapter 1

Model	Frequency (MHz)	Peak output power (dBm)	Peak output power (mW)	Antenna gain		Power Density (S) (mW/cm ²)	Limited of Power Density (S) (mW/cm ²)	Test Result
				(dBi)	(Linear)			
GFSK	2402	2.788	1.900	0	1	0.00038	1	Compiles
	2441	4.547	2.849	0	1	0.00057	1	Compiles
	2480	5.634	3.659	0	1	0.00073	1	Compiles
8-DPSK	2402	1.862	1.535	0	1	0.00031	1	Compiles
	2441	3.720	2.355	0	1	0.00047	1	Compiles
	2480	4.531	2.839	0	1	0.00057	1	Compiles

Adapter 2

Model	Frequency (MHz)	Peak output power (dBm)	Peak output power (mW)	Antenna gain		Power Density (S) (mW/cm ²)	Limited of Power Density (S) (mW/cm ²)	Test Result
				(dBi)	(Linear)			
GFSK	2402	2.201	1.660	0	1	0.00033	1	Compiles
	2441	4.103	2.572	0	1	0.00051	1	Compiles
	2480	4.628	2.903	0	1	0.00058	1	Compiles
8-DPSK	2402	0.587	1.145	0	1	0.00023	1	Compiles
	2441	3.152	2.066	0	1	0.00041	1	Compiles
	2480	3.882	2.445	0	1	0.00049	1	Compiles