FCC 47 CFR MPE REPORT

Parts Express International, Inc.

8-Source 8-Zone Distributed Whole House Audio System Amplifier;

Dayton Audio Division of Parts Express;

8-Source 8-Zone Distributed Audio Matrix Amplifier

Model Number: DAX88

FCC ID: 2AVBE-DAX88

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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 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.o	30

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

1.2. MPE Calculation Method

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

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=0.2m, as well as the gain of the used antenna, the RF power density can be obtained

2. Conducted Power Result

Mode	Frequency (MHz)	Peak output power (dBm)	Peak output power (mW)	Target power（dBm）	Antenna gain	
					(dBi)	(Linear)
IEEE 802.11b	2412	14.74	29.785	14±1	2	1.585
	2437	14.74	29.785	14±1	2	1.585
	2462	14.49	28.119	14±1	2	1.585
IEEE 802.11g	2412	19.02	79.799	19±1	2	1.585
	2437	18.98	79.068	18±1	2	1.585
	2462	18.79	75.683	18±1	2	1.585
IEEE 802.11n HT20	2412	17.27	53.333	17±1	2	1.585
	2437	17.19	52.360	17±1	2	1.585
	2462	17.05	50.699	17±1	2	1.585
IEEE 802.11n HT40	2422	17.96	62.517	17±1	2	1.585
	2437	17.97	62.661	17±1	2	1.585
	2452	17.79	60.117	17±1	2	1.585

3. Calculated Result and Limit

Mode	Target power（dBm）	Antenna gain		Power Density (S) (mW /cm2)	Limited of Power Density (S) (mW /cm2)	Test Result
		(dBi)	(Linear)			
2.4G Band						
IEEE 802.11b	15	2	1.585	**0.00997**	1	Compiles
IEEE 802.11g	20	2	1.585	**0.03153**	1	Compiles
IEEE 802.11n HT20	18	2	1.585	**0.01989**	1	Compiles
IEEE 802.11n HT40	18	2	1.585	**0.01989**	1	Compiles

End of Test Report