

FCC 47 CFR MPE REPORT

TCL Entertainment Solutions Limited

5.1 Channel Sound Bar with Dolby Audio,
DTS Virtual:X, Wireless Subwoofer and Wired Satellite Speakers

Model Number: P735W

Additional Model: Alto 7e, Alto 7e+, Alto 7*, P735W****
(* represents any numerical number from "0-9", or any alphabetical
character from "a-z", or special character as "+ " and space " ")

FCC ID: 2ARUDP735W

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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			1.0	30

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

1.2. MPE Calculation Method

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

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)
GFSK	2402	4.19	2.6242	4 ± 1
	2441	3.72	2.3550	3 ± 1
	2480	3.84	2.4210	3 ± 1
8-DPSK	2402	4.96	3.1333	4 ± 1
	2441	4.45	2.7861	4 ± 1
	2480	4.66	2.9242	4 ± 1
GFSK 1M	2402	3.98	2.5003	3 ± 1
	2440	3.50	2.2387	3 ± 1
	2480	3.63	2.3067	3 ± 1
GFSK 2M	2402	3.91	2.4604	3 ± 1
	2440	3.39	2.1827	3 ± 1
	2480	3.54	2.2594	3 ± 1
5G SRD	5727	5.73	3.7411	5 ± 1
	5780	6.12	4.0926	6 ± 1
	5848	6.10	4.0738	6 ± 1

3. Calculated Result and Limit

Bluetooth

Antenna	MODE	Channel	MAX Target power (dBm)	Antenna gain		Power Density (S) (mW/cm ²)	Limited of Power Density (S) (mW/cm ²)	Test Result
				(dBi)	(Linear)			
1	8-DPSK	2402	5	3.62	2.301	0.0014	1	Complies

5.8G SRD

Antenna	Frequency MHz	MAX Target power (dBm)	Antenna gain		Power Density (S) (mW/cm ²)	Limited of Power Density (S) (mW/cm ²)	Test Result
			(dBi)	(Linear)			
1	5780	7	1.57	1.435	0.0028	1	Complies

Bluetooth+ 5.8G SRD

MAX Power Density (S) (mW/cm ²) Bluetooth	MAX Power Density (S) (mW/cm ²)	Total Ratio	Limit Ratio	Test Result
0.0014	0.0028	0.0042	1	Complies

End of Test Report