

**FCC 47 CFR MPE REPORT**

TCL Entertainment Solutions Limited

3.1 Channel Sound Bar with Dolby Audio,  
DTS Virtual:X and Wireless Subwoofer

Model Number: P733W

Additional Model: Alto 7I, Alto 7I+, Alto 7\*, P733W\*\*\*  
(\* represents any numerical number from "0-9", or any alphabetical  
character from "a-z", or special character as "+ " and space " ")

FCC ID: 2ARUDP733W

Applicant:	TCL Entertainment Solutions Limited
Address:	7/F, building 22E, 22 science park east avenue Hong Kong science park, SHATIN, N.T. ,Hong Kong, China
Prepared By:	EST Technology Co., Ltd.
	Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China
Tel: 86-769-83081888-808	

Report Number:	ESTE-R2204187
Date of Test:	Mar. 21~Apr. 18, 2022
Date of Report:	Apr. 20, 2022

## 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 <sup>2</sup> )	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 <sup>2</sup> )	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	5.46	3.5156	$5 \pm 1$
	2441	5.09	3.2285	$5 \pm 1$
	2480	5.30	3.3884	$5 \pm 1$
8-DPSK	2402	6.04	4.0179	$6 \pm 1$
	2441	5.76	3.7670	$5 \pm 1$
	2480	6.10	4.0738	$6 \pm 1$
GFSK 1M BLE 1	2402	4.74	2.9785	$4 \pm 1$
	2440	4.31	2.6977	$4 \pm 1$
	2480	4.57	2.8642	$4 \pm 1$
GFSK 2M BLE 1	2402	4.81	3.0269	$4 \pm 1$
	2440	4.48	2.8054	$4 \pm 1$
	2480	4.62	2.8973	$4 \pm 1$
GFSK 1M BLE 2	2402	7.48	5.5976	$7 \pm 1$
	2440	6.67	4.6452	$6 \pm 1$
	2480	6.42	4.3853	$6 \pm 1$
GFSK 2M BLE 2	2402	7.63	5.7943	$7 \pm 1$
	2440	6.72	4.6989	$6 \pm 1$
	2480	6.40	4.3652	$6 \pm 1$

## 3. Calculated Result and Limit

Antenna	MODE	Channel	MAX Target power (dBm)	Antenna gain		Power Density (S) (mW/cm <sup>2</sup> )	Limited of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
				(dBi)	(Linear)			
1	GFSK 2M	2402	8	1.1	1.288	0.0016	1	Complies

**End of Test Report**

