RF Exposure Evaluation Report

Application No.:	DNT230690R0808-1530
Applicant:	Shenzhen Shengren Electronic Technology Co., Ltd.
Address of Applicant:	No. 1 South China Avenue, Hehua Community, Pinghu Street, Longgang District, Shenzhen, China
EUT Description:	Projector
Model No.:	P7 Pro
FCC ID:	2BDHA-P7PRO
Power supply	DC 24V/2.5A From Adapter Input AC 100-240V, 50/60Hz
Standards:	47 CFR Part 2.1091 FCC KDB 447498 D01 v06
Trade Mark:	N/A
Date of Receipt:	2023/11/13
Date of Test:	2023/11/13 to 2023/12/25
Date of Issue:	2023/12/25
Test Result :	**PASS ***

Note:All models are just name differences, motherboard, PCB circuit board, chip, electronic components, appearance is all the same.

Prepared By: Wayne.Lin (Testing Engineer)

Reviewed By: Pencils.chen (Project Engineer)

Approved By: Wick.Feng (Manager)

Note: If there is any objection to the results in this report, please submit a written inquiry to the company within 15 days from the date of receiving the report. The test report is effective only with both signature and specialized stamp, and is issued by the company in accordance with the requirements of the "Conditions of Issuance of Test Reports" printed in the attached page. Unless otherwise stated, the results presented in this report only apply to the samples tested this time. Partial reproduction of this report is not allowed unless approved by the company in writing.

Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Dec.15, 2023	Valid	Original Report

Contents

1 General Information

1.1 Test Location

Company:	Dongguan DN Testing Co., Ltd
Address:	No. 1, West Fourth Street, South Xinfa Road, Wusha Liwu, Chang ' an Town, Dongguan City, Guangdong P.R.China
Test engineer:	Wayne Lin

1.2 General Description of EUT

EUT Description::	Projector
Manufacturer:	Shenzhen Shengren Electronic Technology Co., Ltd.
Address of Manufacturer:	No. 1 South China Avenue, Hehua Community, Pinghu Street, Longgang District, Shenzhen, China
Model No.:	P7 Pro
Addition Model(s):	P1,P2,P3,P4,P5,P6,P7,P8,P9,P10,P11,P12,P13,P14,P15,P16,P17,P18, P19,P20, P21,P22,P23,P24,P25,P26,P27,P28,P29,P30,P31,P32,P33, P34, P35,P36,P37, P38,P39,P40,P41,P42,P43,P44,P45,P46,P47, P48, P49,P50,P51,P52,P53,P54, P55,P56,P57,P58,P59,P60,P61,P62, P63, P64, P65,P66,P67,P68,P69,P70,P71, P72, P73,P74,P75,P76, P77 ,P78, P79,P80,P81,P82,P83,P84,P85,P86,P87, P88, P89,P90,P91,P92,P93, P94,P95,P96,P97,P98,P99,P1 Pro,P2 Pro,P3 Pro,P4 Pro,P5 Pro,P6 Pro,P8 Pro,P9 Pro,P10 Pro,P11 Pro,P12 Pro,P13 Pro,P14 Pro,P15 Pro,P16 Pro,P17 Pro,P18,Pro,P19 Pro,P20 Pro,P21 Pro, P22 Pro,P23 Pro,P24 Pro,P25 Pro, P26 Pro,P27 Pro,P28 Pro,P29 Pro, P30 Pro,P31 Pro,P32 Pro,P33 Pro,P34 Pro,P35 Pro,P36 Pro,P37 Pro, P38 Pro,P39 Pro,P40 Pro,P41 Pro,P42 Pro,P43 Pro,P44 Pro, P45 Pro, P46 Pro,P47 Pro,P48 Pro,P49 Pro,P50 Pro,P51 Pro,P52 Pro,P53 Pro, P54 Pro,P55 Pro,P56 Pro,P57 Pro,P58 Pro,P59 Pro,P60 Pro,P61 Pro, P62 Pro,P63 Pro, P64 Pro,P65 Pro,P66 Pro,P67 Pro,P68 Pro,P69 Pro, P70 Pro,P71 Pro,P72 Pro,P73 Pro,P74 Pro,P75 Pro,P76 Pro,P77 Pro, P78 Pro,P79 Pro,P80 Pro,P81 Pro,P82 Pro, P83 Pro,P84 Pro,P85 Pro, P86 Pro,P87 Pro,P88 Pro,P89 Pro,P90 Pro,P91 Pro,P92 Pro,P93 Pro, P94 Pro,P95 Pro,P96 Pro,P97 Pro,P98 Pro,P99 Pro
Chip Type:	AIC8800D
Serial number:	SP2301103012
Trade Mark:	N/A
Hardware Version:	V1.0
Software Version:	V1.0
Sample Type:	☐ Portable Device, ☐ Module,☒ Mobile Device
Antenna Type:	☐ External, ☒ Integrated
Antenna Gain:	☒ Provided by applicant
	0dBi

Remark:

*All models are just name differences, motherboard, PCB circuit board, chip, electronic components, appearance is a ll the same.

*Since the above data and/or information is provided by the applicant relevant results or conclusions of this report are only made for these data and/or information , DNT is not responsible for the authenticity, integrity and results of the data and information and/or the validity of the conclusion.

2 RF Exposure Evaluation

2.1 RF Exposure Compliance Requirement

2.1.1 Limits

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f2)	6
30-300	61.4	0.163	1.0	6
300-1500	/	/	f/300	6
1500-100,000	/	/	5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f2)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30
F=frequency in MHz *=Plane-wave equivalent power density RF exposure compliance will need to be determined with respect to 1.1307(c) and (d) of the FCC rules. The emissions should be within the limits at 300kHz in Table 1 of 1.1310(use the 300kHz limits for 150kHz:614V/m,1.63A/m).				

Friis Formula

Friis transmission formula: Pd = (Pout*G)/(4* Pi * R 2)

Where

Pd = power density in mW/cm2

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

R = distance between observation point and center of the radiator in cm

Pd id the limit of MPE, 1 mW/cm2 . If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

2.1.2 Test Procedure

Software provided by client enabled the EUT to transmit data at lowest, middle and highest channel individually

2.1.3 EUT RF Exposure Evaluation

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 2.0 / 2.0 in linear scale.
Output Power Into Antenna & RF Exposure Evaluation Distance:
This confirmed that the device comply with MPE limit.

Test Mode	Antenna	Freq(MHz)	Power [dBm]
GFSK	Ant1	2402	6.57
		2441	6.16
		2480	5.96
π/4-DQPSK	Ant1	2402	6.52
		2441	6.19
		2480	5.89
8DPSK	Ant1	2402	6.83
		2441	6.30
		2480	6.07
IEEE 802.11b	Ant1	2412	14.43
		2437	13.99
		2462	14.45
IEEE 802.11g	Ant1	2412	16.24
		2437	15.69
		2462	15.93
IEEE 802.11n HT20	Ant1	2412	16.52
		2437	16.10
		2462	16.21
IEEE 802.11n HT40	Ant1	2422	16.61
		2437	16.38
		2452	16.10
IEEE 802.11ax HE20	Ant1	2412	16.11
		2437	15.45
		2462	15.81
IEEE 802.11ax HE40	Ant1	2422	16.28
		2437	16.09
		2452	16.18

The Worst Mode	Antenna	Peak output power (dBm)	Target power (dBm)	MAX Target power (dBm)	Antenna gain		Power Density (S) (mW /cm^2)	Limited of Power Density (S) (mW /cm^2)	Test Result
					(dBi)	(Linear)			
2.4G Band									
8DPSK	Ant1	6.83	6±1	7	0	1	0.001	1	Complies
IEEE 802.11 ax HE40	Ant1	16.61	16±1	17	0	1	0.01	1	Complies

BT+ WIFI

Bluetooth Max Power Density (S) (mW/cm^2)	WIFI Max Power Density (S) (mW/cm^2)	Total Ratio	Limit Ratio	Test Result
0.001	0.01	0.011	1	Complies

--The End Report--