



FCC REPORT

Prepared For:	Shenzhen HiLED Technology Co., Ltd. No.337 Changfeng Road, Changzhen Community, Yutang Street, Guangming District, Shenzhen 518000.
Manufacture:	Shenzhen HiLED Technology Co., Ltd. No.337 Changfeng Road, Changzhen Community, Yutang Street, Guangming District, Shenzhen 518000.
Product Name:	LED display
Trade Mark:	SZHILED
Main Test Model:	P3.91
Additional models:	P0.5, P0.6, P0.8, P0.9, P1.0, P1.2, P1.25, P1.26, P1.49, P1.454, P1.5, P1.56, P1.575, P1.579, P1.6, P1.62, P1.667, P1.8, P1.875, P1.89, P1.9, P1.935, P2, P2.5, P2.54, P2.571, P2.6, P2.9, P2.97, P3, P3.076, P3.2, P3.75, P3.91, P4, P4.572, P4.81, P5, P5.6, P5.7, P5.95, P6, P6.25, P6.4, P6.6, P6.667, P7, P7.62, P7.81, P8, P8.25, P8.333, P8.75, P8.9, P10, P10.417, P10.66, P12, P12.5, P12.8, P14, P15.6, P16, P16.25, P16.6, P18, P18.75, P20, P22, P22.4, P25, P31.25, P33.3
Prepared By:	Dongguan True Safety Testing Co., Ltd. Room 201, No.20, East of Houjie Avenue, Houjie, Dongguan, Guangdong, China
Test Date:	Jul. 02, 2022 To Jul. 07, 2022
Date of Report:	Aug. 29, 2022
Report No.:	TST20220870262-4SR

The device described above is tested by us with the listed standards and found it and model have the same material quality and manufacturing engineering the model name. "LED display" has passed tests (Report No. TST20220770262-4SR the detailed content).So, no tests are necessary. The test results are contained in this test report.



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TEST REPORT DECLARATION

Applicant	:	Shenzhen HiLED Technology Co., Ltd.
Address	:	No.337 Changfeng Road, Changzhen Community, Yutang Street, Guangming District, Shenzhen 518000.
EUT Description	:	LED display
Model Number	:	P3.91
Rating	:	AC100~240V, 2.0A, 50/60Hz, 200W/pcs

Test Standards:

FCC Part 15:2016

The EUT described above is tested by US to determine the maximum emission levels emanating from the EUT, the maximum emission levels are compared to the FCC Part 15 Subpart Class B limits. The measurement results are contained in this test report and Dongguan True Safety Testing Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT is to be technically compliant with the FCC requirements. This report applies to above tested sample only and shall not be reproduced in part without written approval of Dongguan True Safety Testing Co., Ltd.

Tested by:

Test Engineer

Reviewer :

Supervisor

Approved & Authorized Signer :

Andy / Manager





1. GENERAL INFORMATION

1.1. Report information

- 1.1.1. This report is not a certificate of quality; it only applies to the sample of the specific product/equipment given at the time of its testing. The results are not used to indicate or imply that they are application to the similar items. In addition, such results must not be used to indicate or imply that TST approves recommends or endorses the manufacture, supplier or use of such product/equipment, or that TST in any way guarantees the later performance of the product/equipment.
- 1.1.2. The sample/s mentioned in this report is/are supplied by Applicant, TST therefore assumes no responsibility for the accuracy of information on the brand name, model number, origin of manufacture or any information supplied.
- 1.1.3. Additional copies of the report are available to the Applicant at an additional fee. No third part can obtain a copy of this report through TST, unless the applicant has authorized TST in writing to do so.

1.2. Measurement Uncertainty

Available upon request.

1.3. Test Facility

Site Description	:	Certificated by FCC
EMC Lab.	:	
Name of Firm	:	Dongguan True Safety Testing Co., Ltd.
Site Location	:	Room 201, No.20, East of Houjie Avenue, Houjie, Dongguan, Guangdong, China

1.4. Test Uncertainty

(95% confidence levels, $k=2$)

Test Item	Uncertainty
Uncertainty for Radiation emission test (30MHz to 1GHz)	4.0dB

2. PRODUCT DESCRIPTION

2.1. EUT Description

Description	:	LED display
Applicant	:	Shenzhen HiLED Technology Co., Ltd.
Address	:	No.337 Changfeng Road, Changzhen Community, Yutang Street, Guangming District, Shenzhen 518000.
Model Number	:	P3.91

2.2. Test Conditions

Temperature: 23~25°C

Relative Humidity: 55~63 %

3. TEST RESULTS SUMMARY

Table 1 Test Results Summary

Test Items	Test Results
Conducted disturbance	Pass
Radiated disturbance	Pass

Remark: "N/A" means "Not applicable."



4. TEST EQUIPMENT USED

4.1. For Conducted Emission Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESHS30	828985/018	Apr. 11, 23	1 Year
2.	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100006	Apr. 11, 23	1 Year
3.	L.I.S.N.	Rohde & Schwarz	ESH2-Z5	834549/005	Apr. 11, 23	1 Year
4.	Conical	Emtek	N/A	N/A	N/A	N/A
5.	Voltage Probe	Schwarzbeck	TK9416	N/A	Apr. 11, 23	1 Year
6.	Coaxial Switch	Anritsu	MP59B	6100214550	Apr. 11, 23	1 Year

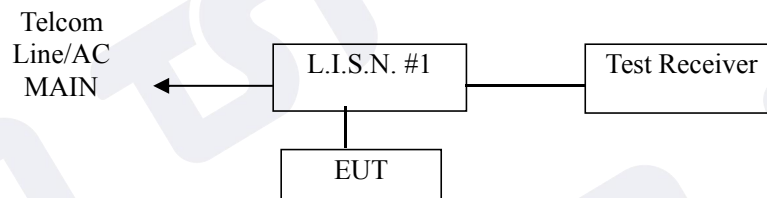
4.2. For Radiated Emission Measurement

Semi-Anechoic Chamber

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	ANRITSU	MS2661C	6200140915	Apr. 11, 23	1 Year
2.	Test Receiver	Rohde&Schwarz	ESC830	828982/018	Apr. 11, 23	1 Year
3.	Bilog Antenna	Schwarzbeck	VULB9163	142	Apr. 11, 23	1 Year
4.	50 Coaxial Switch	Anritsu Corp	MP59B	6100237248	Apr. 11, 23	1 Year
5.	Cable	Schwarzbeck	AK9513	ACRX1	Apr. 11, 23	1 Year
6.	Cable	Rosenberger	N/A	FR2RX2	Apr. 11, 23	1 Year
7.	Cable	Schwarzbeck	AK9513	CRRX2	Apr. 11, 23	1 Year
8.	Cable	Schwarzbeck	AK9513	CRRX2	Apr. 11, 23	1 Year
9.	Single Phase Power Line Filter	MPE	23332C	N/A	Apr. 11, 23	1 Year
10.	Single Phase Power Line Filter	MPE	23333C	N/A	Apr. 11, 23	1 Year
11.	Signal Generator	HP	864A	3625U00573	Apr. 11, 23	1 Year

5. CONDUCTED EMISSION TEST

5.1. Block Diagram of Test Setup



5.2. Test Standard

FCC Part 15: 2016

5.3. Conducted Emission Limit (Class B)

Frequency MHz	Limits dB(μV)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66 ~ 56*	56 ~ 46*
0.50 ~ 5.00	56	46
5.00 ~ 30.00	60	50

Notes: 1. *Decreasing linearly with logarithm of frequency.

5.4. EUT Configuration on Test

The following equipments are installed on conducted emission test to meet Part 15 requirement and operating in a manner, which tends to maximize its emission characteristics in a normal application.

5.4.1. EUT Information

Model Number : P3.91
 Serial Number : P0.5, P0.6, P0.8, P0.9, P1.0, P1.2, P1.25, P1.26, P1.49, P1.454, P1.5, P1.56, P1.575, P1.579, P1.6, P1.62, P1.667, P1.8, P1.875, P1.89, P1.9, P1.935, P2, P2.5, P2.54, P2.571, P2.6, P2.9, P2.97, P3, P3.076, P3.2, P3.75, P3.91, P4, P4.572, P4.81, P5, P5.6, P5.7, P5.95, P6, P6.25, P6.4, P6.6, P6.667, P7, P7.62, P7.81, P8, P8.25, P8.333, P8.75, P8.9, P10, P10.417, P10.66, P12, P12.5, P12.8, P14, P15.6, P16, P16.25, P16.6, P18, P18.75, P20, P22, P22.4, P25, P31.25, P33.3

5.5. Operating Condition of EUT

- 5.5.1. Setup the EUT and simulators as shown in Section 5.1.
- 5.5.2. Turn on the power of all equipments.
- 5.5.3. Let the EUT work in test modes (EUT Working) and test it.

5.6. Test Procedure

The EUT is put on a table of non-conducting material that is 80cm high. The vertical conducting wall of shielding is located 40cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.). A EMI test receiver (R&S Test Receiver ESCS30) is used to test the emissions form both sides of AC line. The bandwidth of EMI test receiver is set at 9kHz.

The bandwidth of the test receiver (R&S Test Receiver ESHS30) is set at 10KHz. and all the scanning waveform are attached within **Appendix I**.

5.7. Test Result

PASS

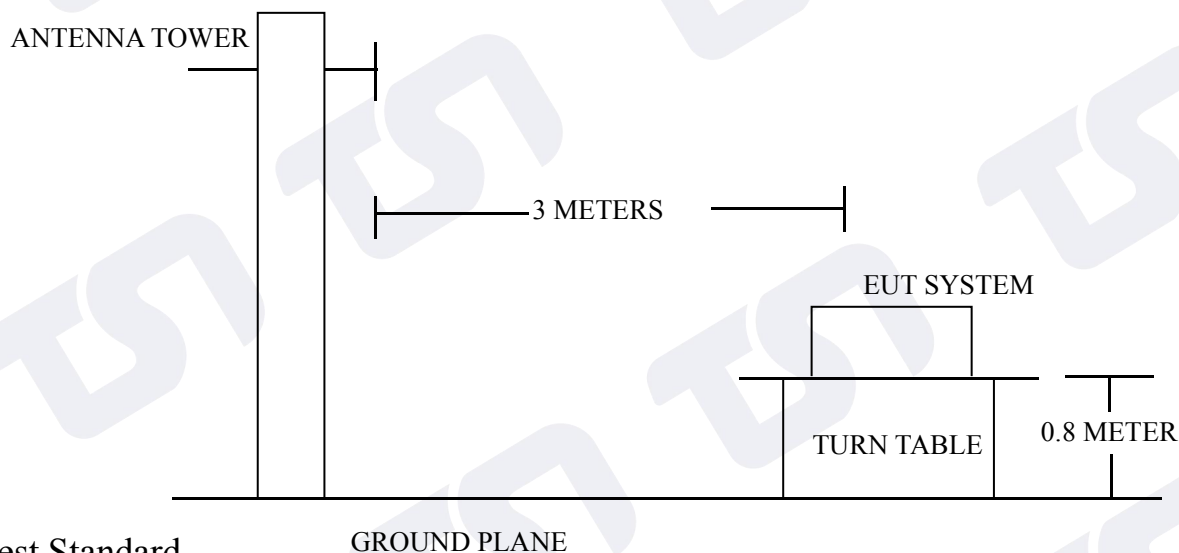
6. RADIATED EMISSION MEASUREMENT

6.1. Block Diagram of EUT Configuration

6.1.1. Block Diagram of connection between the EUT and the simulators



6.1.2. Semi-Anechoic Chamber Test Setup Diagram



6.2. Test Standard

FCC Part 15: 2016

6.3. Radiated Emission Limit (Class B)

FREQUENCY (MHz)	DISTANCE (Meters)	FIELD STRENGTHS LIMITS (dB μ V/m)
30 ~ 88	3	40.0
88 ~ 216	3	43.5
216 ~ 960	3	46.0
960 ~ 1000	3	54.0

Note: (1) The smaller limit shall apply at the edge between two frequency bands.

(2) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the EUT or system.

6.4.EUT Configuration on Test

The following equipment are installed on Radiated Emission Measurement to meet the Commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

6.5.Operating Condition of EUT

6.5.1.Setup the EUT as shown on Section 6.1.2

6.5.2.Turn on the power of all equipments.

6.5.3.Let the EUT work in test mode(EUT working) and measure it.

6.6.Test Procedure

The EUT is placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna which is mounted on a antenna tower. The antenna can move up and down between 1 to 4 meters to find out the maximum emission level. Broadband antenna (calibrated by dipole antenna) are used as a receiving antenna. Both horizontal and vertical polarization of the antenna are set on measurement.

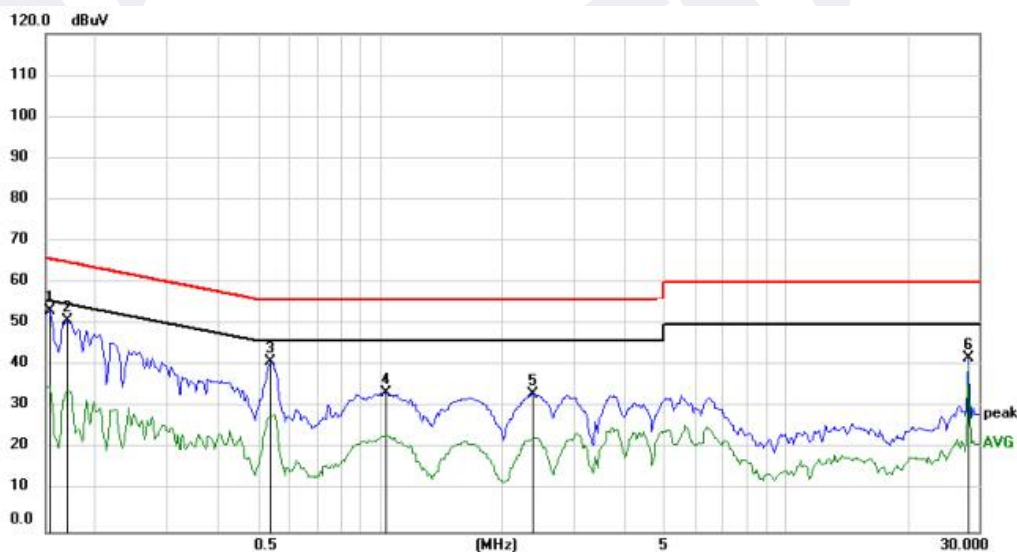
The bandwidth setting on the test receiver (R&S TEST RECEIVER ESCS20) is 120 KHz. The EUT is tested in Semi-Anechoic Chamber. The frequency range from 30MHz to 1000 MHz is checked.All the test results are listed in Section 6.7. and all the scanning waveform are attached within **Appendix II**.

6.7.Test Result

PASS



APPENDIX I



Site LAB

Phase: N

Temperature: 26

Limit:

Power:

Humidity: 60 %

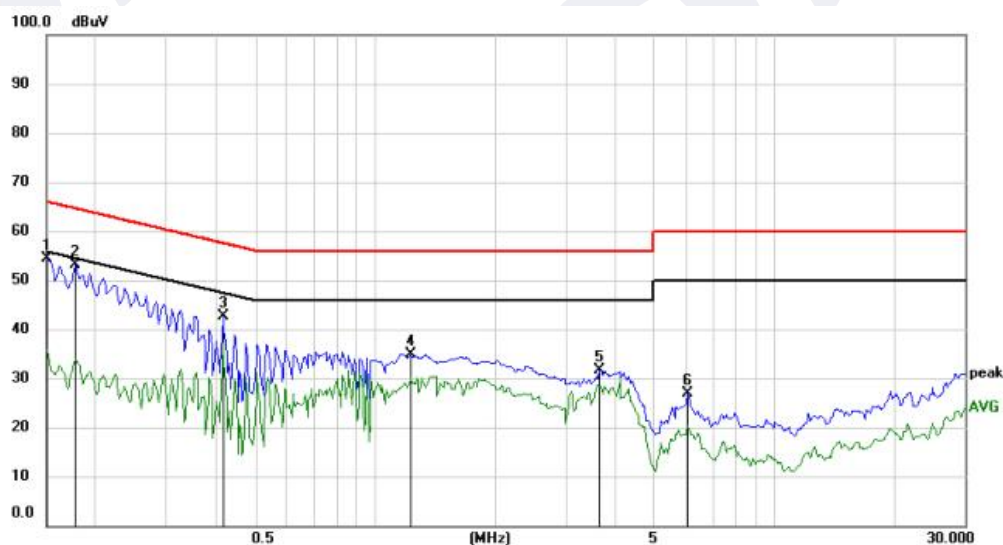
EUT:

M/N:

Mode:

Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	*	0.1539	42.24	10.92	53.16	65.79	-12.63	peak	
2		0.1695	39.91	10.92	50.83	64.98	-14.15	peak	
3		0.5400	30.08	10.92	41.00	56.00	-15.00	peak	
4		1.0353	22.64	10.92	33.56	56.00	-22.44	peak	
5		2.3847	22.06	10.98	33.04	56.00	-22.96	peak	
6		28.1706	29.69	12.02	41.71	60.00	-18.29	peak	



Site LAB

Phase: L1

Temperature:

Limit:

Power:

Humidity:

EUT:

M/N:

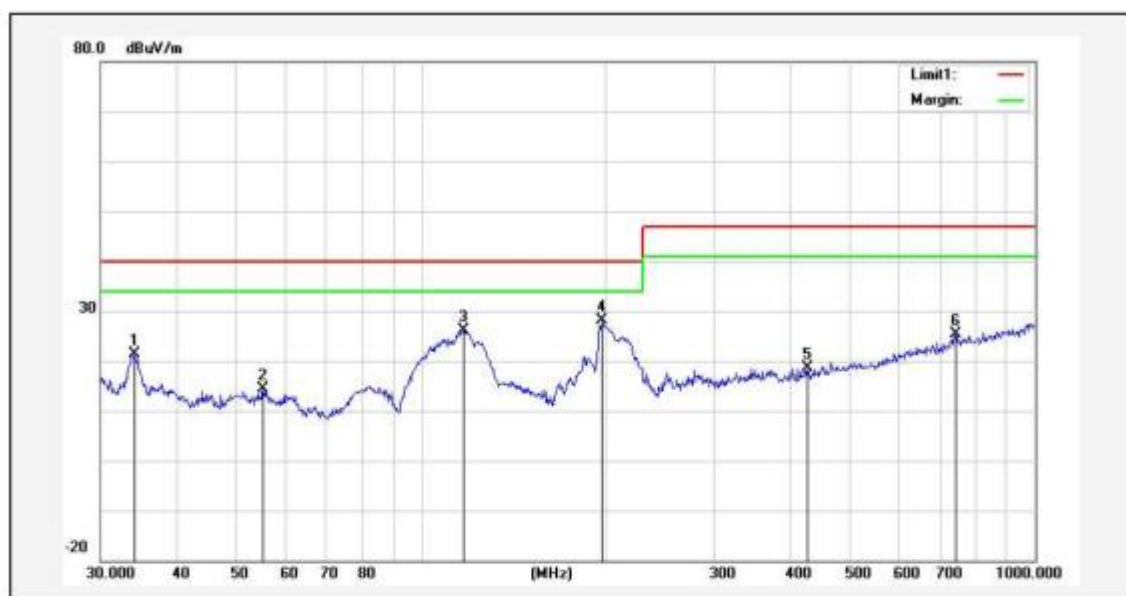
Mode:

Note:

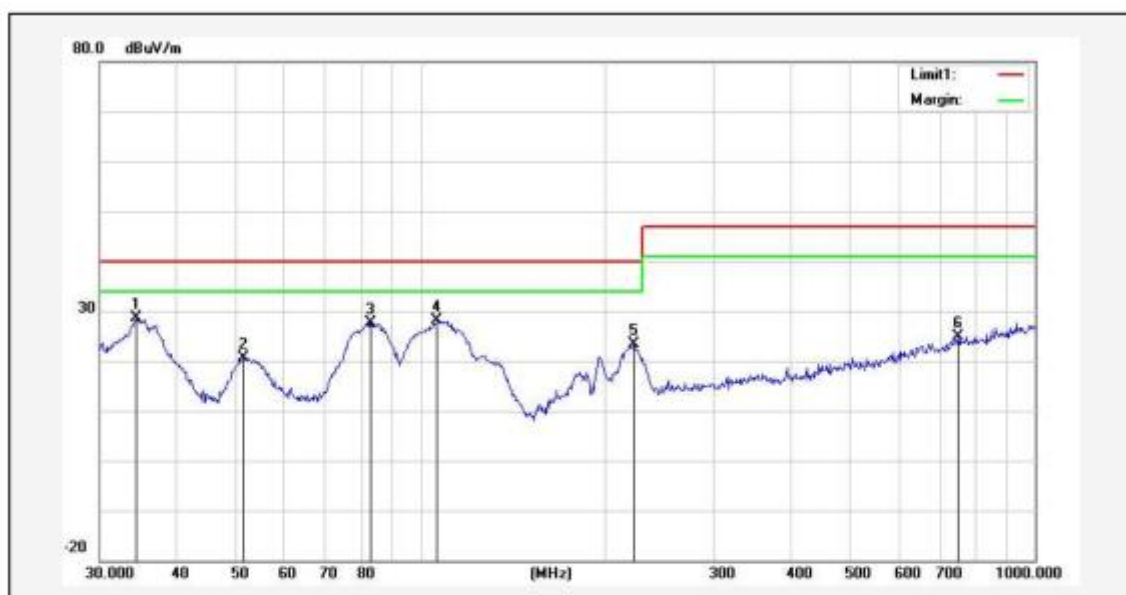
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1500	43.37	10.92	54.29	66.00	-11.71	peak	
2	*	0.1773	42.18	10.92	53.10	64.61	-11.51	peak	
3		0.4152	31.67	10.92	42.59	57.54	-14.95	peak	
4		1.2303	24.06	10.94	35.00	56.00	-21.00	peak	
5		3.6591	20.69	11.04	31.73	56.00	-24.27	peak	
6		6.0615	15.71	11.15	26.86	60.00	-33.14	peak	



APPENDIX II



No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1	34.0365	37.12	-15.62	21.50	40.00	-18.50			peak
2	55.2207	31.17	-16.87	14.30	40.00	-25.70			peak
3	117.3603	45.42	-19.19	26.23	40.00	-13.77			peak
4	196.5098	44.22	-16.17	28.05	40.00	-11.95			peak
5	425.0280	30.59	-11.91	18.68	47.00	-28.32			peak
6	742.2587	30.44	-5.07	25.37	47.00	-21.63			peak



No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1	34.3964	44.52	-15.86	28.66	40.00	-11.34			peak
2	51.4807	37.10	-16.45	20.65	40.00	-19.35			peak
3	82.9385	49.15	-21.40	27.75	40.00	-12.25			peak
4	106.3850	45.25	-17.22	28.03	40.00	-11.97			peak
5	222.1698	38.66	-15.39	23.27	40.00	-16.73			peak
6	750.1083	29.79	-4.82	24.97	47.00	-22.03			peak



APPENDIX III

Photo 1 General appearance of the EUT

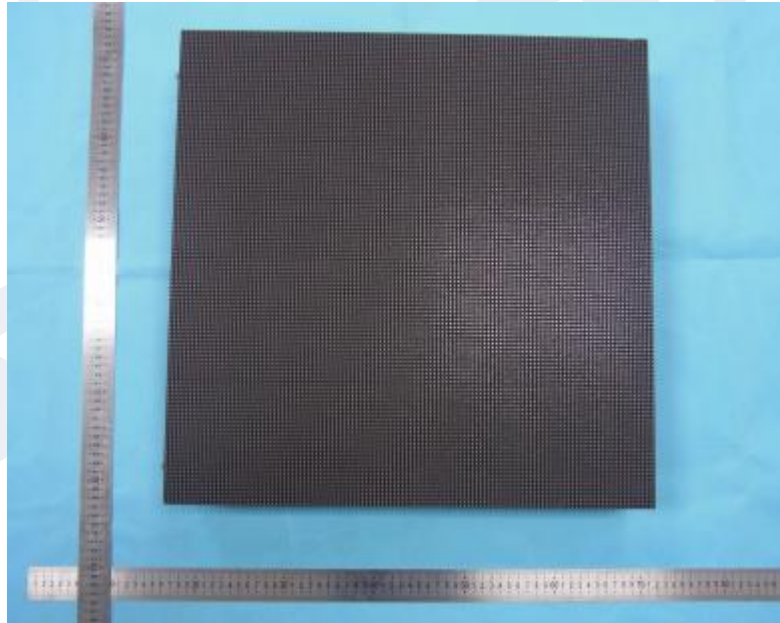


Photo 2 General appearance of the EUT



Photo 3 General appearance of the EUT



Photo 4 General appearance of the EUT

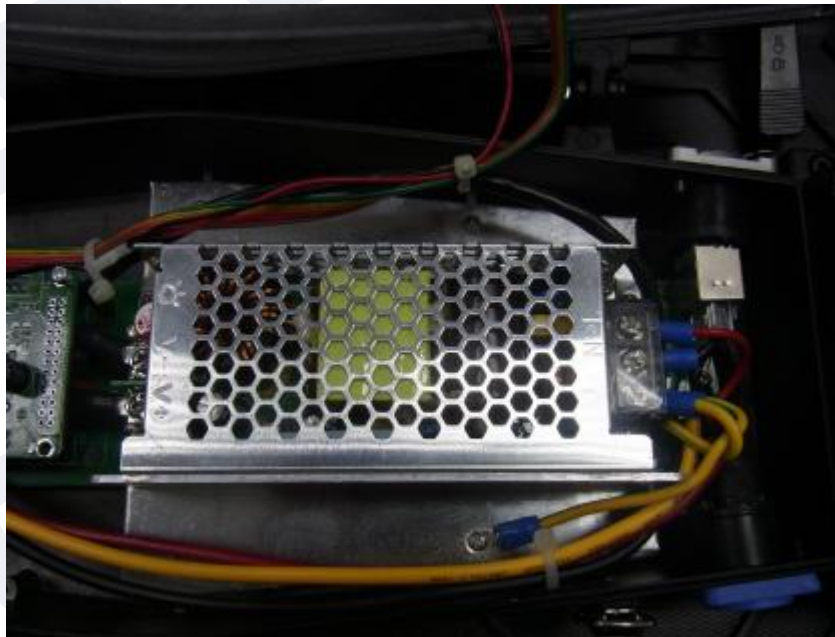


Photo 5 General appearance of the EUT



Photo 6 General appearance of the EUT



***** End Of The Report *****