



FCC TEST REPORT

For

SHENZHEN NSE ELECTRONICS CO., LTD

Outdoor LED Screen

Test Model: P2.5

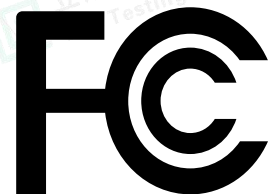
Additional Model No.: Please Refer to Page 8

Prepared for : SHENZHEN NSE ELECTRONICS CO., LTD
1F, Bld No.1, YaLi Ind park, No.13 TianBao Rd,
Address : YingRenShi, Shiyan town, BaoAn district, Shenzhen, China

Prepared by : Shenzhen LCS Compliance Testing Laboratory Ltd.
Room 101, 201, Building A and Room 301, Building C,
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Date of receipt of test sample : October 12, 2024
Number of tested samples : 1
Serial number : Prototype
Date of Test : October 12, 2024 to October 23, 2024
Date of Report : October 24, 2024



**TEST REPORT****Report No.** : **LCSA10084182E****Date of Issue** : October 24, 2024**Testing Laboratory Name** : **Shenzhen LCS Compliance Testing Laboratory Ltd.****Address** : Room 101, 201, Building A and Room 301, Building C, Juji Industrial Park, Yabianxueziwei, Shajing Street, Bao'an District, Shenzhen, Guangdong, China**Testing Location/ Procedure** : Full application of Harmonised standards ■
Partial application of Harmonised standards □
Other standard testing method □**Applicant's Name** : **SHENZHEN NSE ELECTRONICS CO., LTD****Address** : 1F, Bld No.1, YaLi Ind park, No.13 TianBao Rd, YingRenShi, Shiyan town, BaoAn district, Shenzhen, China**Test Specification****Standard** : FCC 47 CFR Part 15, Subpart B
ANSI C63.4-2014**Test Report Form No.** : TRF-4-E-010 A/0**TRF Originator** : Shenzhen LCS Compliance Testing Laboratory Ltd.**Master TRF** : Dated 2011-03**Shenzhen LCS Compliance Testing Laboratory Ltd. All rights reserved.**

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Test Item Description : **Outdoor LED Screen****Trade Mark** : NSE**Test Model** : P2.5**Result** : **Positive****Compiled by:**

Zi Liao

Zi Liao / File Administrator

Supervised by:

Cary Luo

Cary Luo/ Technique principal

Approved by:

Gavin Liang / Manager



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TEST REPORT

Test Report No.: LCSA10084182E	<u>October 24, 2024</u> Date of issue
---------------------------------------	--

Test Model	: P2.5
EUT	: Outdoor LED Screen
Applicant	: SHENZHEN NSE ELECTRONICS CO., LTD
Address	: 1F, Bld No.1, YaLi Ind park, No.13 TianBao Rd, YingRenShi, Shiyan town, BaoAn district, Shenzhen, China
Telephone	: /
Fax	: /
Manufacturer	: SHENZHEN NSE ELECTRONICS CO., LTD
Address	: 1F, Bld No.1, YaLi Ind park, No.13 TianBao Rd, YingRenShi, Shiyan town, BaoAn district, Shenzhen, China
Telephone	: /
Fax	: /
Factory	: SHENZHEN NSE ELECTRONICS CO., LTD
Address	: 1F, Bld No.1, YaLi Ind park, No.13 TianBao Rd, YingRenShi, Shiyan town, BaoAn district, Shenzhen, China
Telephone	: /
Fax	: /

Test Result	Positive
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The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.



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Revision History

Report Version	Issue Date	Revision Content	Revised By
000	October 24, 2024	Initial Issue	/





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1. SUMMARY OF STANDARDS AND RESULTS

1.1 Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below.

Description of Test Item	Standard	Limits	Result
Conducted emissions on AC mains	FCC 47 CFR Part 15, Subpart B ANSI C63.4-2014	15.107, Class A	Pass
Radiated emissions (Below 1GHz)	FCC 47 CFR Part 15, Subpart B ANSI C63.4-2014	15.109, Class A	Pass
Radiated emissions (Above 1GHz)	FCC 47 CFR Part 15, Subpart B ANSI C63.4-2014	15.109, Class B	Pass





1.2 Description of Test Modes

No	Title	Description
TM1	Working (AC 120V/60Hz)	Record





2. GENERAL INFORMATION

2.1 Description of Device (EUT)

EUT	: Outdoor LED Screen
Test Model	: P2.5
Additional Model No.	: P2.8, P2.9, P3, P3.9, P4, P5, P5.33, P6, P6.67, P7.8, P8, P10
Model Declaration	: PCB board, structure and internal of these model(s) are the same, So no additional models were tested.
Power Supply	: Input: 100-220V~
Highest Internal Frequency	: 1.705-108MHz
Classification of Equipment	: Class A

Highest internal frequency (Fx)	Highest measured frequency
$Fx \leq 1.705\text{MHz}$	30MHz
$1.705\text{MHz} < Fx \leq 108\text{MHz}$	1GHz
$108\text{MHz} < Fx \leq 500\text{MHz}$	2GHz
$500\text{MHz} < Fx \leq 1000\text{MHz}$	5GHz
$Fx > 1\text{GHz}$	5 x Fx up to a maximum of 40GHz

2.2 Support equipment List

Manufacturer	Description	Model	Serial Number	Certificate
Lenovo	PC	Lenovo E41-55	MP1ZW5C4	/

2.3 Description of Test Facility

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. To CISPR 16 – 4 “Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements” and is documented in the LCS quality system acc. To DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

NVLAP Accreditation Code is 600167-0.

FCC Designation Number is CN5024.

CAB identifier is CN0071.

CNAS Registration Number is L4595.

2.4 Measurement Uncertainty

Test Item	Measurement Uncertainty
Conducted Emission (150kHz to 30MHz)	$\pm 2.35 \text{ dB}$
Radiated Emission (30MHz to 1000MHz)	$\pm 3.48 \text{ dB}$
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	





3. MEASURING DEVICES AND TEST EQUIPMENT

Conducted emissions on AC mains

Equipment	Manufacturer	Model No	Serial No.	Cal Date	Due Date
EMI Test Software	Farad	EZ	/	/	/
Artificial Mains	R&S	ENV216	101288	2024-06-06	2025-06-05
Pulse Limiter	R&S	ESH3-Z2	102750-NB	2024-06-06	2025-06-05
EMI Test Receiver	R&S	ESR3	102312	2024-03-02	2025-03-01

Radiated emissions (30MHz-1GHz)

Radiated emissions (above 1GHz)

Equipment	Manufacturer	Model No	Serial No.	Due Date
EMI Test Software	Farad	EZ	/	/
EMI Test Software	AUDIX	E3	/	/
By-log Antenna	SCHWARZBECK	VULB9163	9163-470	2027-07-19
Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-1925	2027-07-19
EMI Test Receiver	R&S	ESR3	102311	2025-06-05
Broadband Preamplifier	/	BP-01M18G	P190501	2025-06-05
EMI Test Receiver	R&S	ESCI7	101173	2025-10-07
By-log Antenna	SchwarzZBECK	VULB9163	01428	2027-07-12
MXA Signal Analyzer	Agilent	N9020A	MY53290398	2025-06-05
EMI Test Receiver	R&S	ESPI	101940	2025-06-05





4. EMISSION TEST RESULTS (EMI)

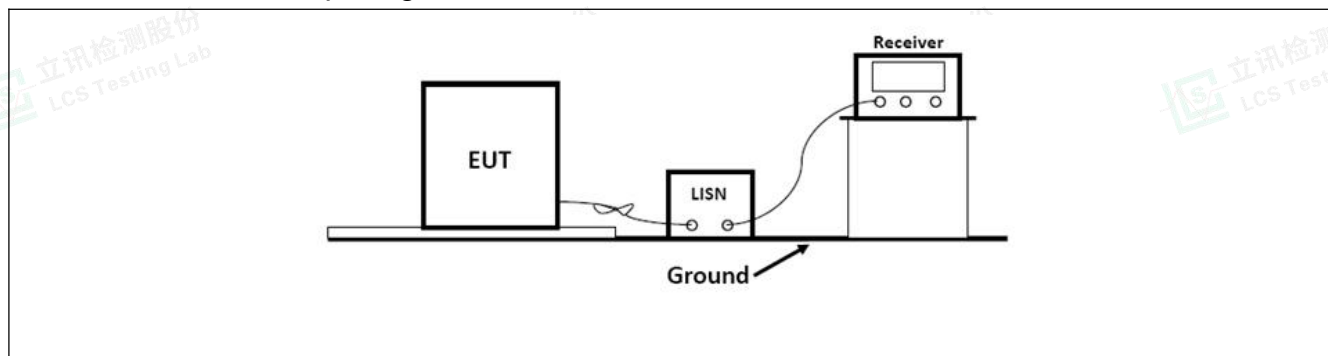
4.1 Conducted emissions on AC mains

Test Requirement:	15.107, Class A		
Test Limit:	Frequency of emission (MHz)	Conducted limit (dBμV)	
		Quasi-peak	Average
	0.15-0.5	79	66
	0.5-30	73	60
	*Decreases with the logarithm of the frequency.		
Test Method:	ANSI C63.4-2014		
Procedure:	An initial pre-scan was performed with peak detector. Quasi-Peak or Average measurement were performed at the frequencies with maximized peak emission were detected. Remark: Level= Read Level+ Cable Loss+ LISN Factor		

4.1.1 E.U.T. Operation:

Operating Environment:			
Temperature:	22.5 °C	Humidity:	53.7 %
Pre test mode:	TM1		
Final test mode:	TM1		

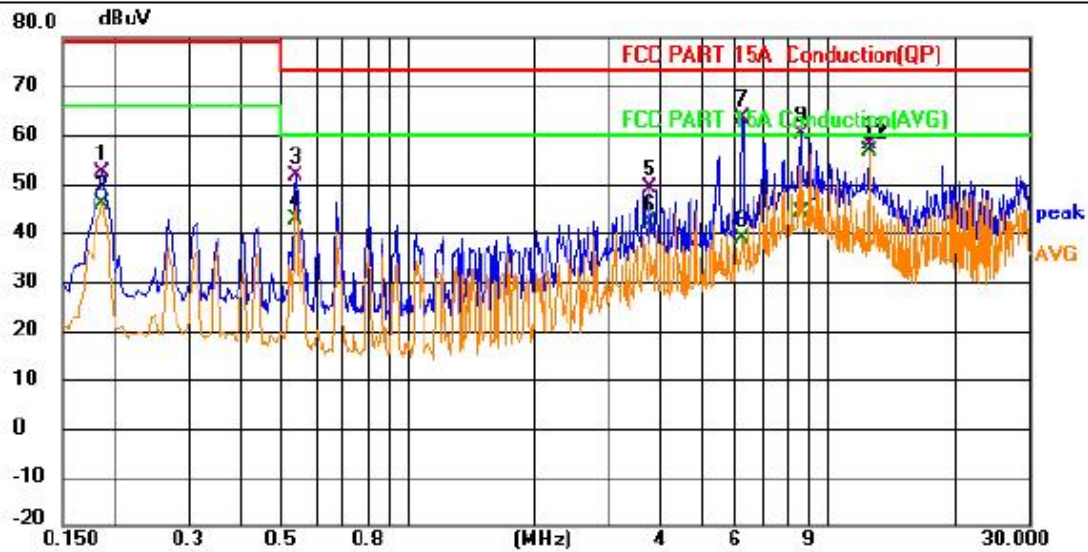
4.1.2 Test Setup Diagram:





4.1.3 Test Data:

TM1 / Line: Line

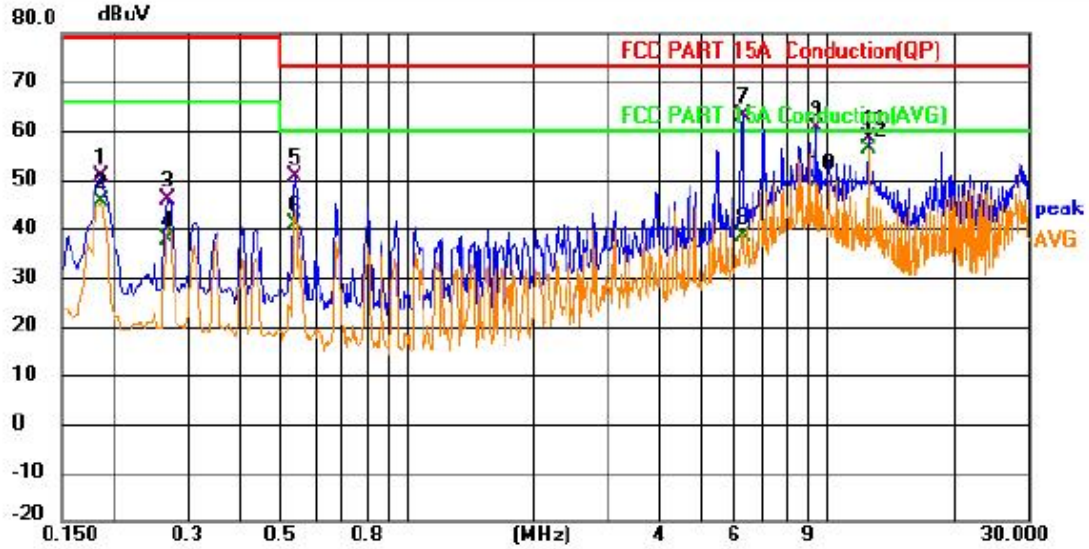


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.186	32.60	19.63	52.23	79.00	-26.77	QP	
2		0.186	26.11	19.63	45.74	66.00	-20.26	AVG	
3		0.537	31.95	19.65	51.60	73.00	-21.40	QP	
4		0.537	23.13	19.65	42.78	60.00	-17.22	AVG	
5		3.759	29.41	19.70	49.11	73.00	-23.89	QP	
6		3.759	22.20	19.70	41.90	60.00	-18.10	AVG	
7		6.243	43.64	19.70	63.34	73.00	-9.66	QP	
8		6.243	19.02	19.70	38.72	60.00	-21.28	AVG	
9		8.601	40.44	19.79	60.23	73.00	-12.77	QP	
10		8.601	24.19	19.79	43.98	60.00	-16.02	AVG	
11		12.498	38.37	19.84	58.21	73.00	-14.79	QP	
12	*	12.498	36.64	19.84	56.48	60.00	-3.52	AVG	





TM1 / Line: Neutral



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin		
		MHz	Level	Factor	ment			Detector	Comment
			dBuV	dB	dBuV	dBuV	dB		
1		0.186	31.08	19.63	50.71	79.00	-28.29	QP	
2		0.186	25.86	19.63	45.49	66.00	-20.51	AVG	
3		0.267	26.10	19.63	45.73	79.00	-33.27	QP	
4		0.267	18.13	19.63	37.76	66.00	-28.24	AVG	
5		0.537	30.76	19.65	50.41	73.00	-22.59	QP	
6		0.537	21.35	19.65	41.00	60.00	-19.00	AVG	
7		6.252	43.29	19.80	63.09	73.00	-9.91	QP	
8		6.252	18.77	19.80	38.57	60.00	-21.43	AVG	
9		9.375	40.68	19.85	60.53	73.00	-12.47	QP	
10		9.375	29.68	19.85	49.53	60.00	-10.47	AVG	
11		12.498	38.59	19.84	58.43	73.00	-14.57	QP	
12	*	12.498	36.35	19.84	56.19	60.00	-3.81	AVG	

***Note: 1) Pre-scan all modes and recorded the worst case results in this report.

2) Margin= Reading level + Correct factor-Limit

Correct Factor=Lisn Factor+Cable Factor+Insertion loss of Pulse Limiter





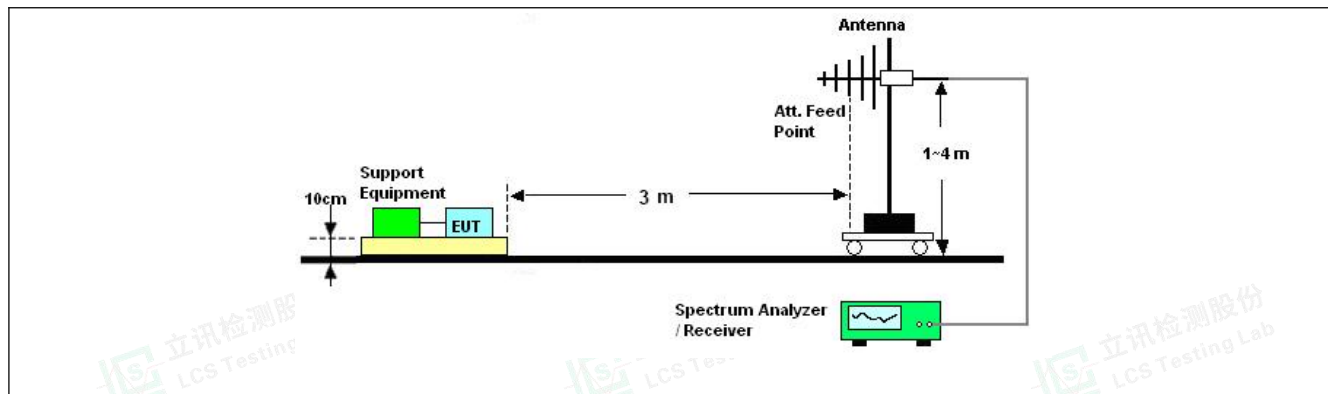
4.2 Radiated emissions (Below 1GHz)

Test Requirement:	15.109, Class A				
Test Limit:	Except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:				
	Frequency of emission (MHz)	Field strength @3m		Field strength @10m	
		(uV/m)	(dBuV/m)	(uV/m)	(dBuV/m)
	30 – 88	90	39.1	300	49.5
	88 – 216	150	43.5	500	54.0
	216 – 960	210	46.4	700	56.9
	Above 960	300	49.5	1000	60.0
Test Method:	ANSI C63.4-2014				
Procedure:	An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities. Remark: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor				

4.2.1 E.U.T. Operation:

Operating Environment:			
Temperature:	26.4 °C	Humidity:	54.2 %
Pre test mode:	TM1		
Final test mode:	TM1		

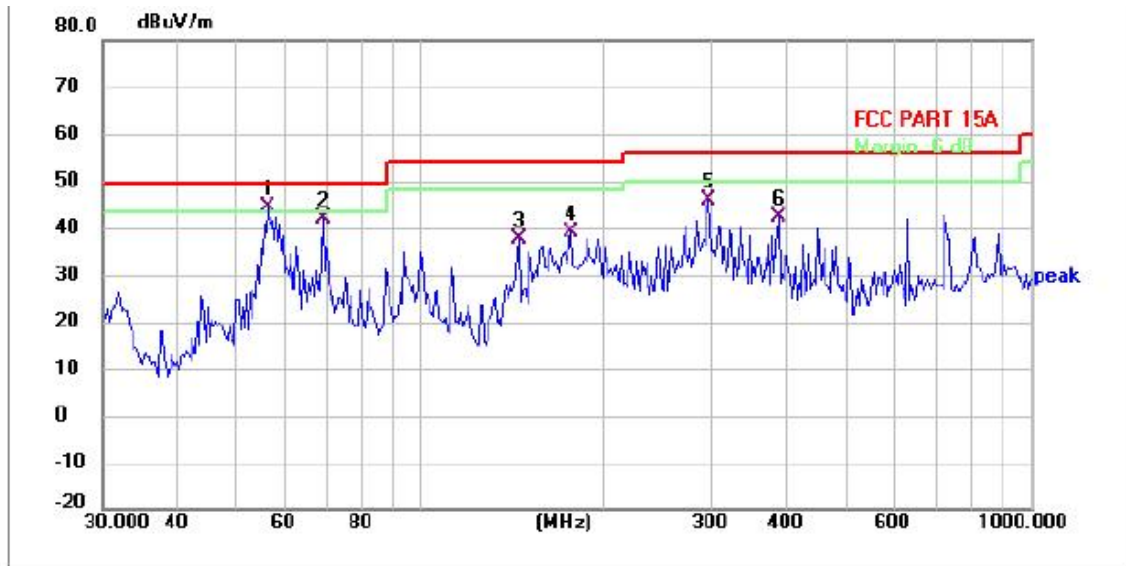
4.2.2 Test Setup Diagram:





4.2.3 Test Data:

TM1 / Polarization: Horizontal

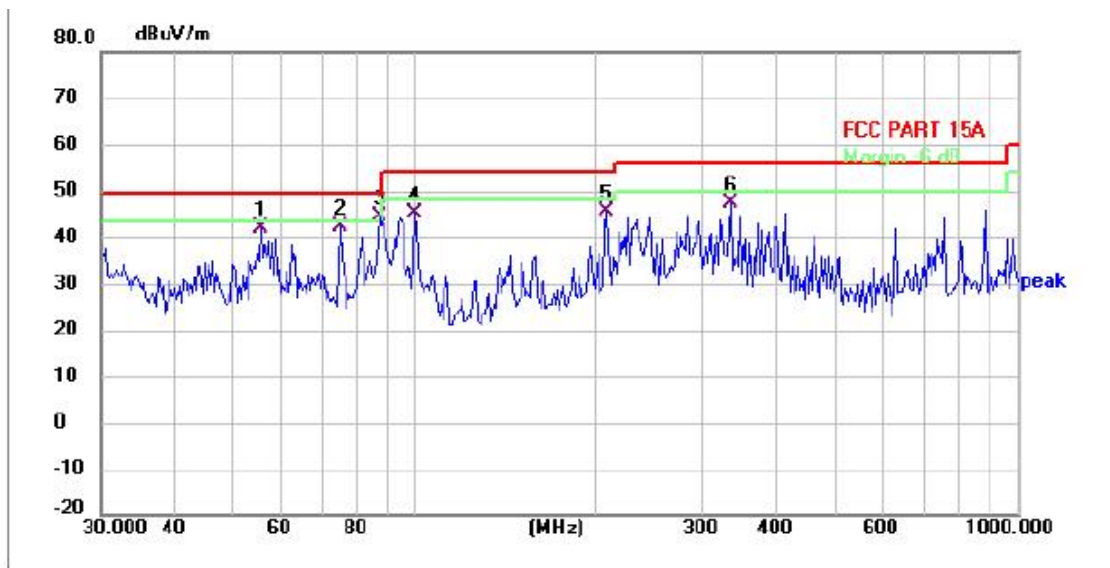


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1 *	56.071	61.51	-17.16	44.35	49.50	-5.15	QP	P	
2	68.745	61.94	-19.99	41.95	49.50	-7.55	QP	P	
3	144.790	59.88	-22.05	37.83	54.00	-16.17	QP	P	
4	176.274	59.75	-20.66	39.09	54.00	-14.91	QP	P	
5	296.502	61.97	-16.10	45.87	56.00	-10.13	QP	P	
6	384.545	57.14	-14.66	42.48	56.00	-13.52	QP	P	





TM1 / Polarization: Vertical



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	55.288	58.83	-17.01	41.82	49.50	-7.68	QP	P	
2	74.793	63.39	-21.22	42.17	49.50	-7.33	QP	P	
3 *	87.298	65.41	-20.78	44.63	49.50	-4.87	QP	P	
4	99.767	63.67	-18.51	45.16	54.00	-8.84	QP	P	
5	207.196	63.62	-18.20	45.42	54.00	-8.58	QP	P	
6	334.125	62.70	-15.47	47.23	56.00	-8.77	QP	P	

Note:1).Pre-Scan all mode, Thus record worse case mode result in this report.

2) Margin= Reading level + Correct factor – Limit

Correct Factor=Antenna Factor+Cable Factor- Pre-amplifier Factor



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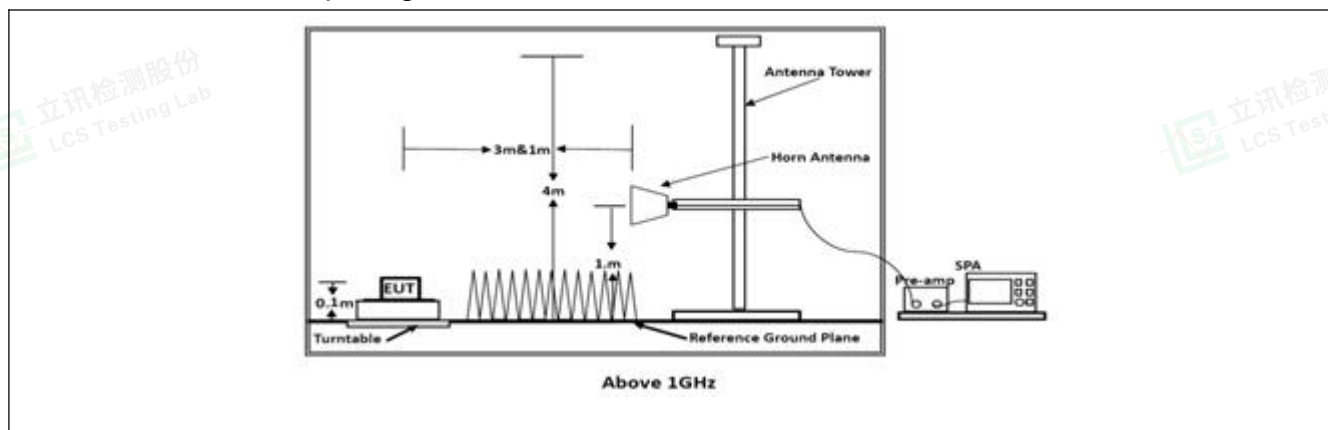
4.3 Radiated emissions (above 1GHz)

Test Requirement:	Class B		
Test Limit:	Frequency (MHz)	Limit (dBuV/m)	
		Peak	Average
	1000 to 6000	74	54
	Detector: Peak for pre-scan (1000kHz resolution bandwidth) 1000MHz to 6000MHz		
Test Method:	BS EN 55032:2015+A1:2020		
Procedure:	An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Average measurements were conducted based on the peak sweep graph. The EUT was measured by Horn antenna with 2 orthogonal polarities. Remark: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor		

4.3.1 E.U.T. Operation:

Operating Environment:			
Temperature:	23.5 °C	Humidity:	52.1 %
Pre test mode:	TM1		
Final test mode:	TM1		

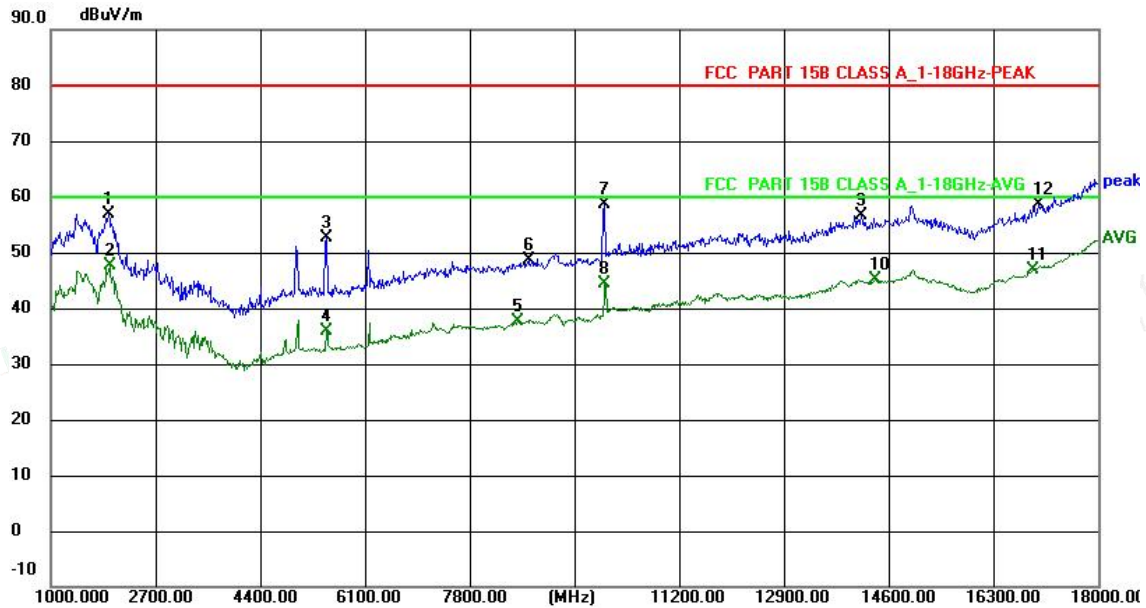
4.3.2 Test Setup Diagram:





4.3.3 Test Data:

TM2 / Polarization: Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/R
1	1935.000	70.38	-13.44	56.94	80.00	-23.06	peak	P
2	1952.000	60.97	-13.36	47.61	60.00	-12.39	AVG	P
3	5471.000	55.93	-3.26	52.67	80.00	-27.33	peak	P
4	5471.000	39.07	-3.26	35.81	60.00	-24.19	AVG	P
5	8582.000	36.15	1.47	37.62	60.00	-22.38	AVG	P
6	8752.000	46.94	1.63	48.57	80.00	-31.43	peak	P
7	9976.000	55.10	3.50	58.60	80.00	-21.40	peak	P
8	9993.000	40.80	3.53	44.33	60.00	-15.67	AVG	P
9	14158.000	47.29	9.31	56.60	80.00	-23.40	peak	P
10	14379.000	35.70	9.49	45.19	60.00	-14.81	AVG	P
11	16946.000	35.68	11.12	46.80	60.00	-13.20	AVG	P
12	17031.000	47.16	11.52	58.68	80.00	-21.32	peak	P



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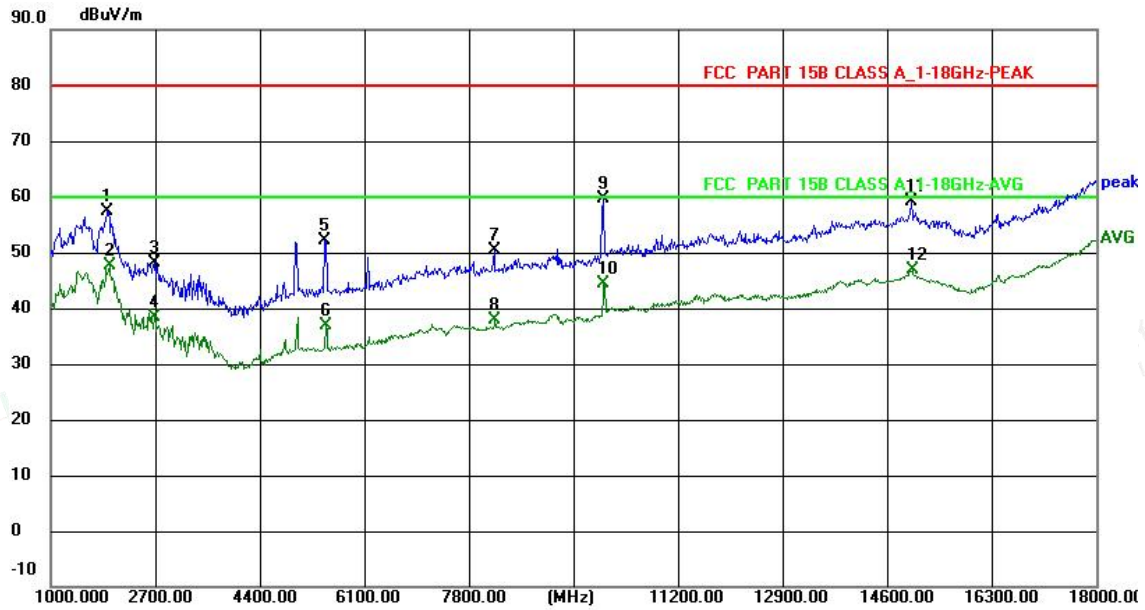
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TM2 / Polarization: Vertical



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	1918.000	71.02	-13.53	57.49	80.00	-22.51	peak	P
2	1952.000	61.04	-13.36	47.68	60.00	-12.32	AVG	P
3	2683.000	58.88	-10.71	48.17	80.00	-31.83	peak	P
4	2683.000	49.02	-10.71	38.31	60.00	-21.69	AVG	P
5	5454.000	55.39	-3.29	52.10	80.00	-27.90	peak	P
6	5471.000	40.10	-3.26	36.84	60.00	-23.16	AVG	P
7	8208.000	49.40	0.93	50.33	80.00	-29.67	peak	P
8	8225.000	36.96	0.96	37.92	60.00	-22.08	AVG	P
9	9976.000	56.09	3.50	59.59	80.00	-20.41	peak	P
10	9993.000	40.95	3.53	44.48	60.00	-15.52	AVG	P
11	14991.000	49.26	9.99	59.25	80.00	-20.75	peak	P
12	15008.000	36.94	9.97	46.91	60.00	-13.09	AVG	P



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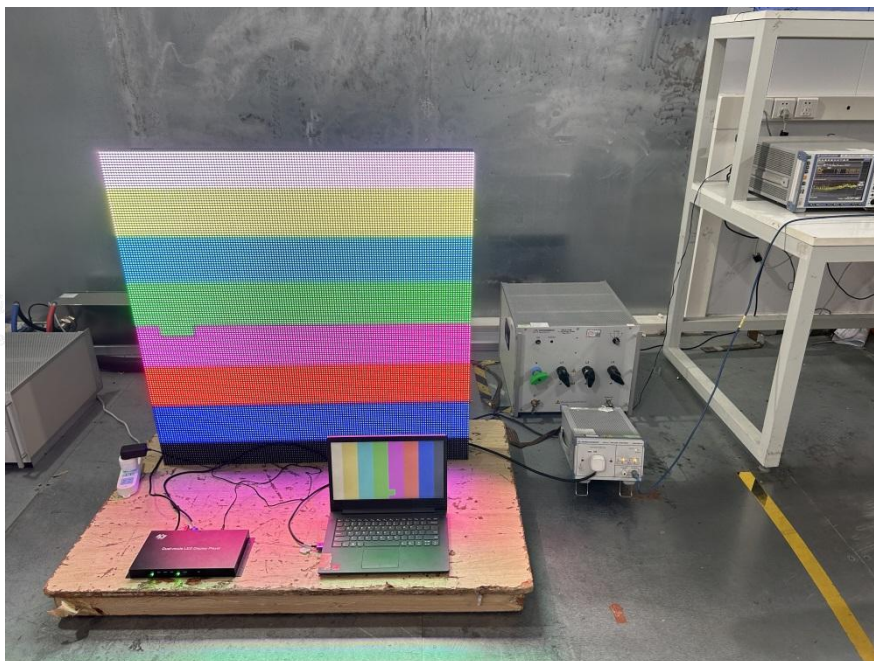
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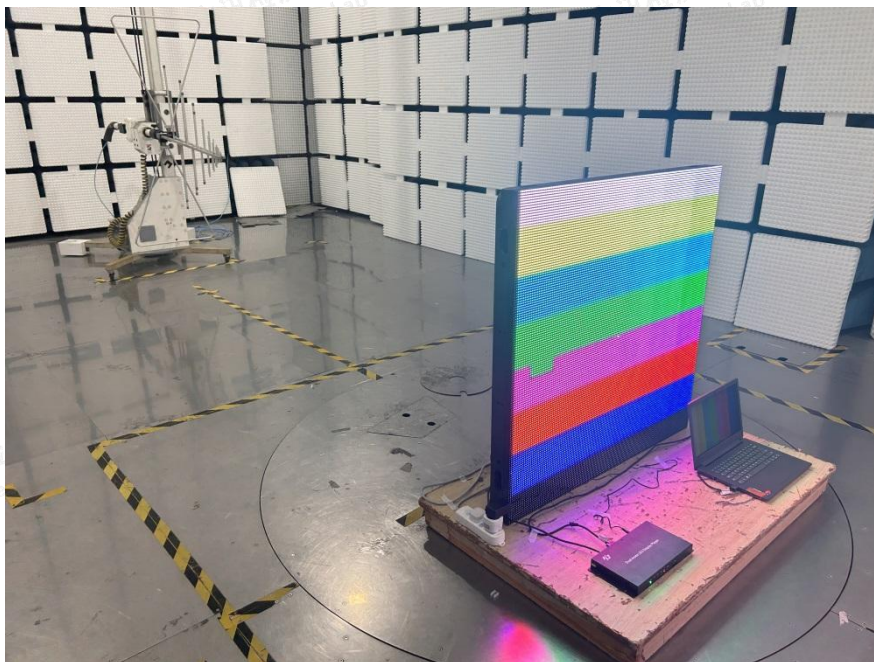


5. TEST SETUP PHOTOS

Conducted emissions on AC mains



Radiated emissions (Below 1GHz)





6. EUT CONSTRUCTIONAL DETAILS (EUT PHOTOS)

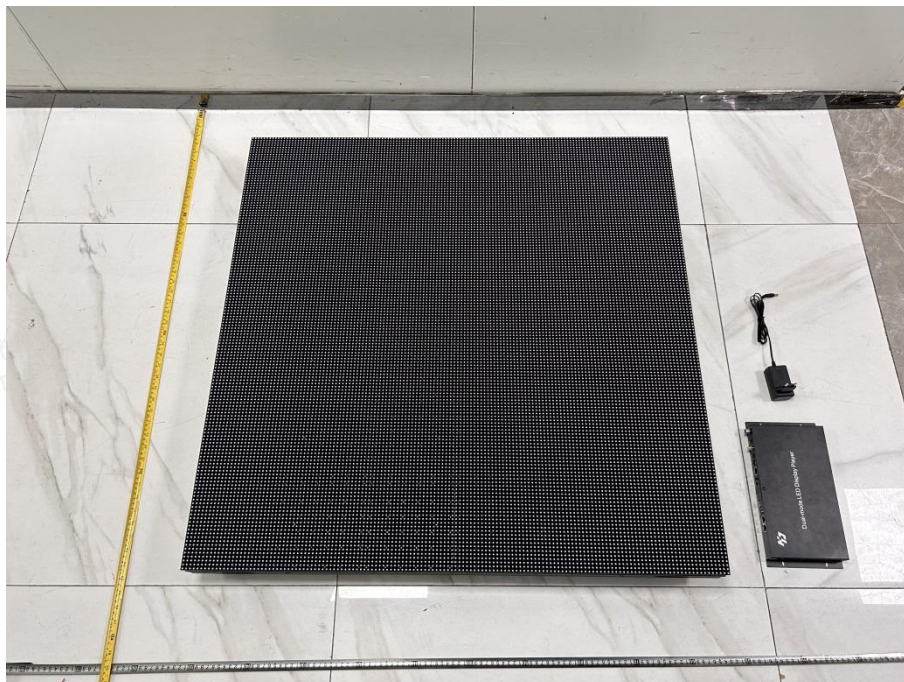


Fig. 1

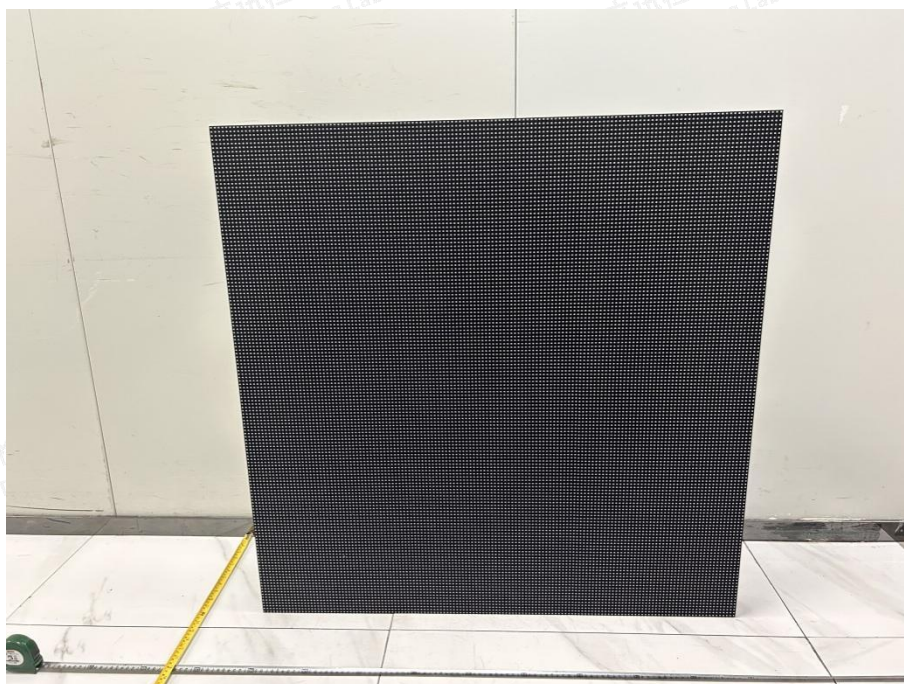


Fig. 2





Fig. 3



Fig. 4





Fig. 5



Fig. 6





Fig. 7

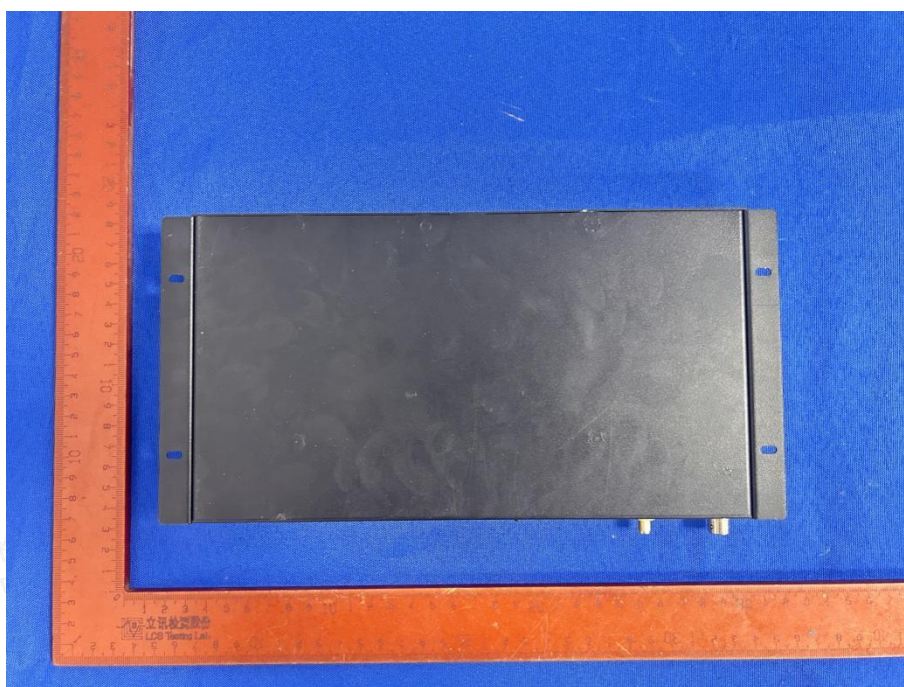


Fig. 8





Fig. 9



Fig. 10





Fig. 11



Fig. 12





Fig. 13



Fig. 14





Fig. 15

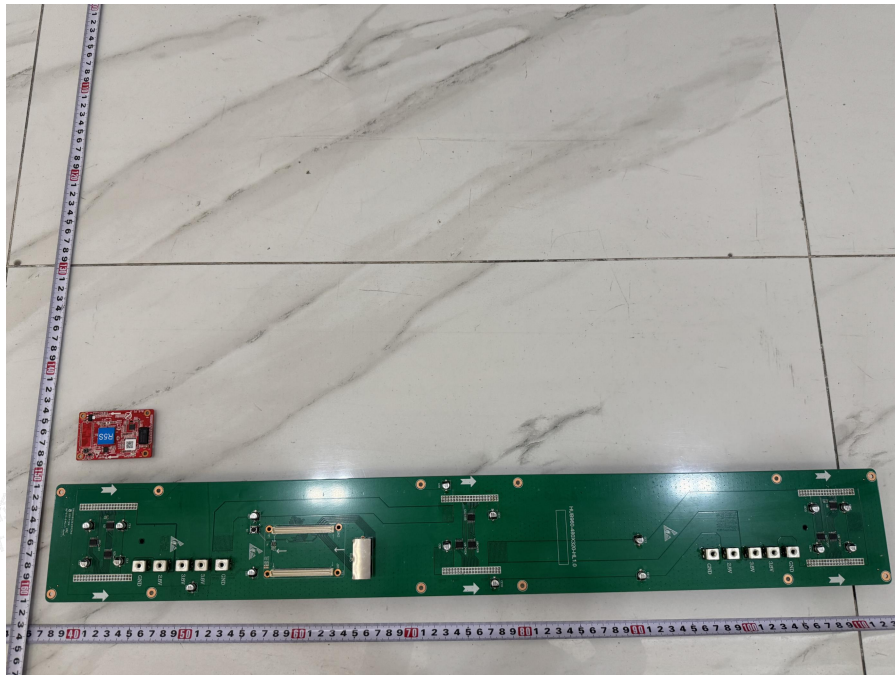


Fig. 16



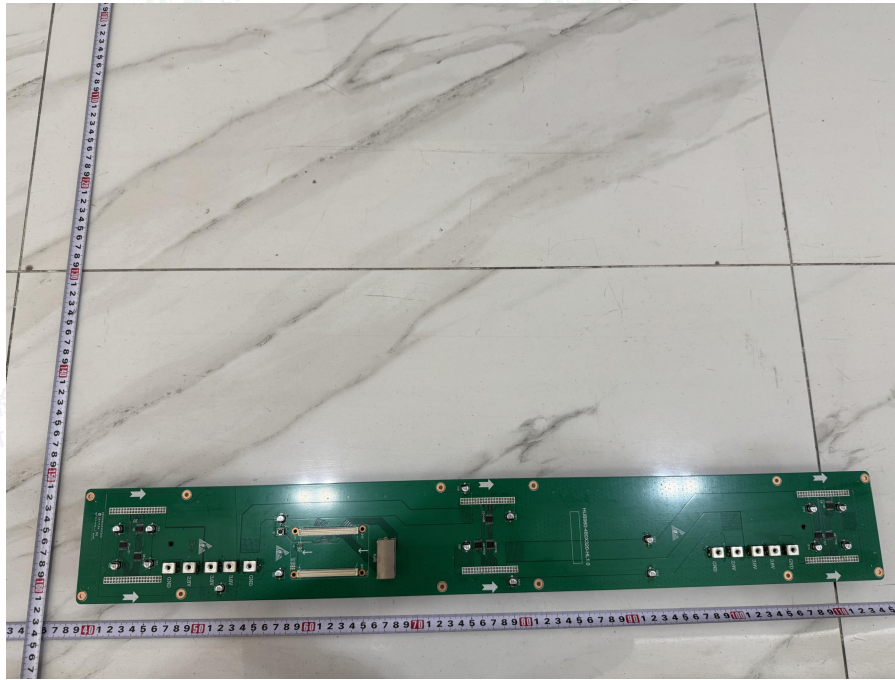


Fig. 17



Fig. 18





Fig. 19

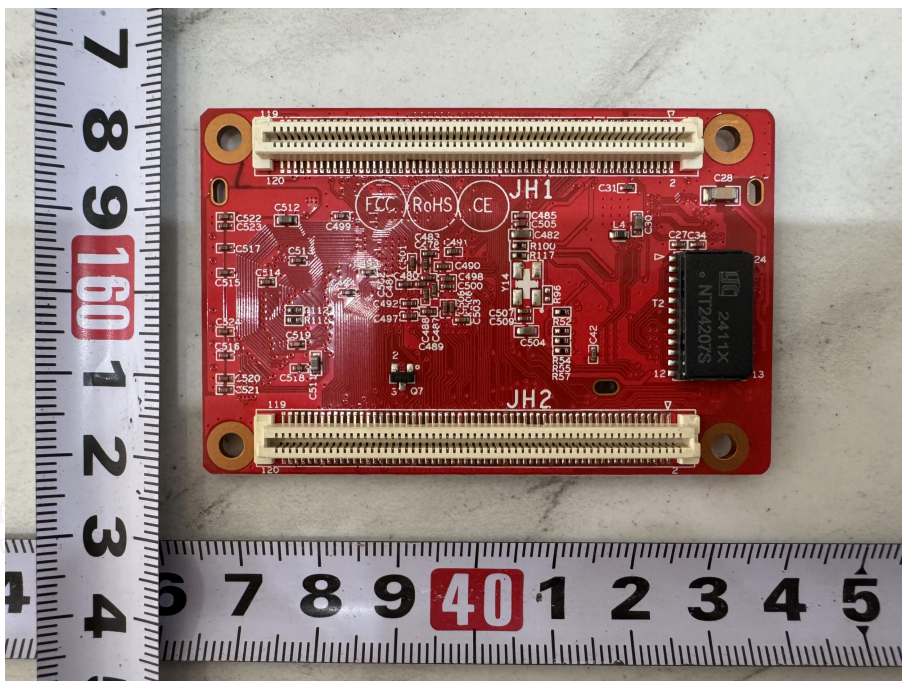


Fig. 20



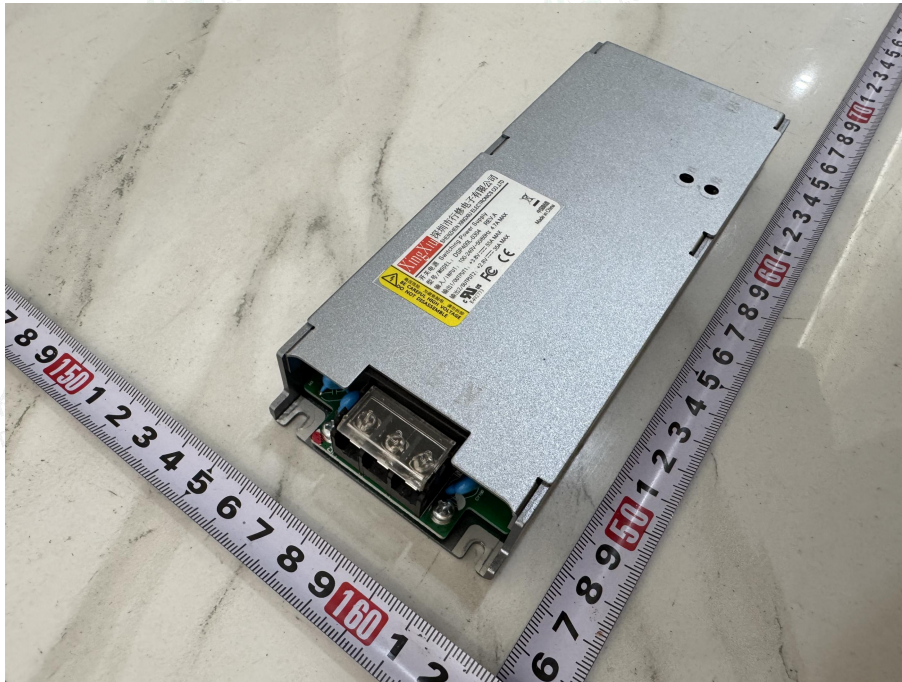


Fig. 21

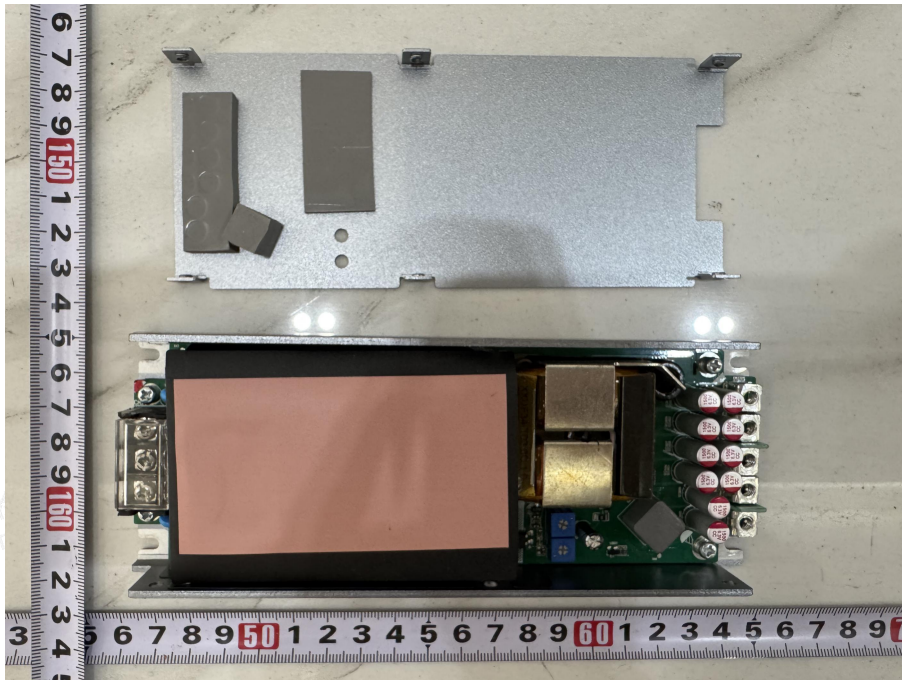


Fig. 22



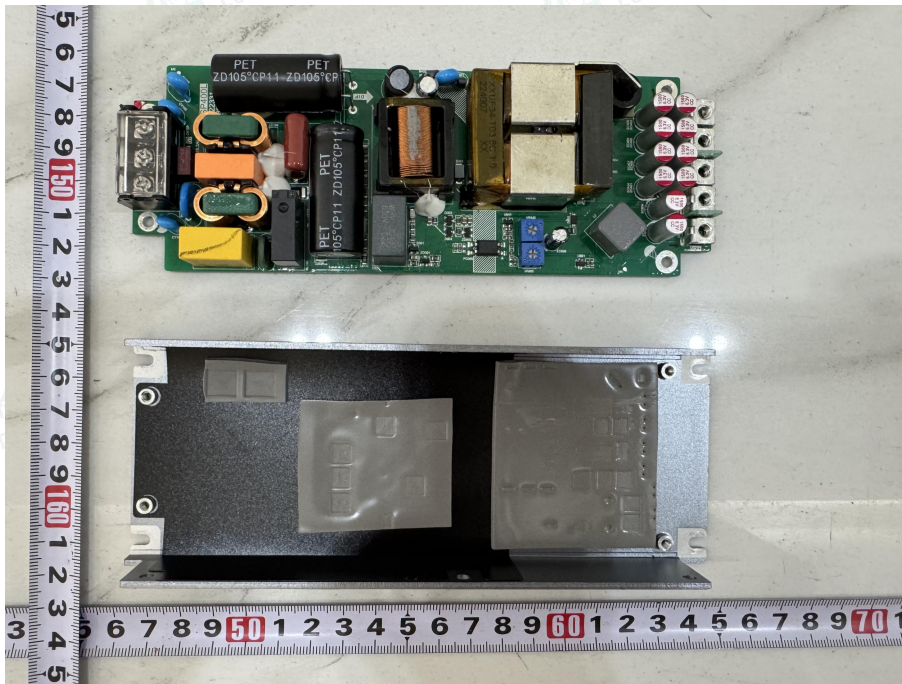


Fig. 23

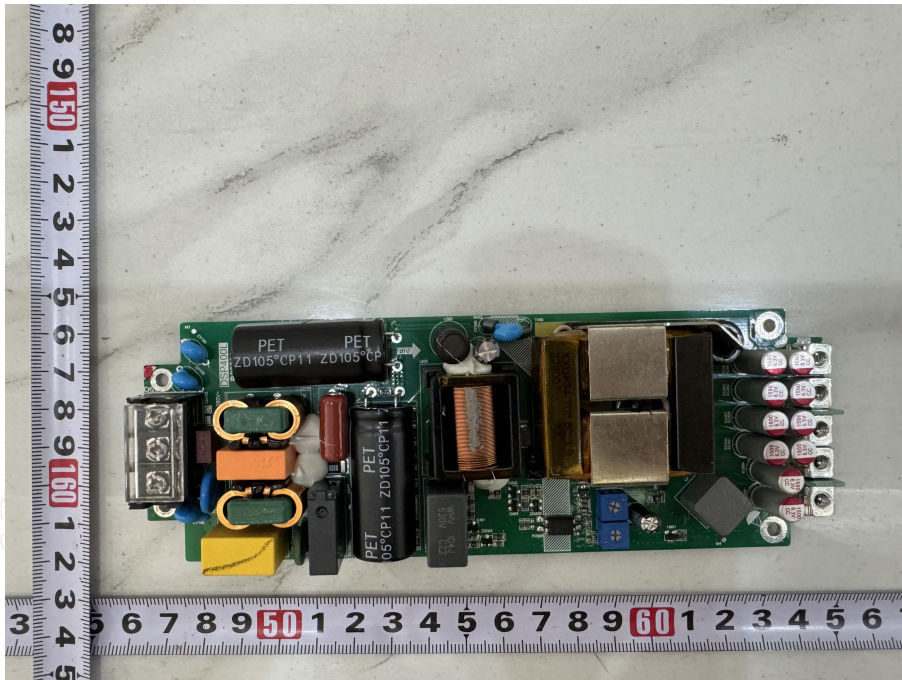


Fig. 24



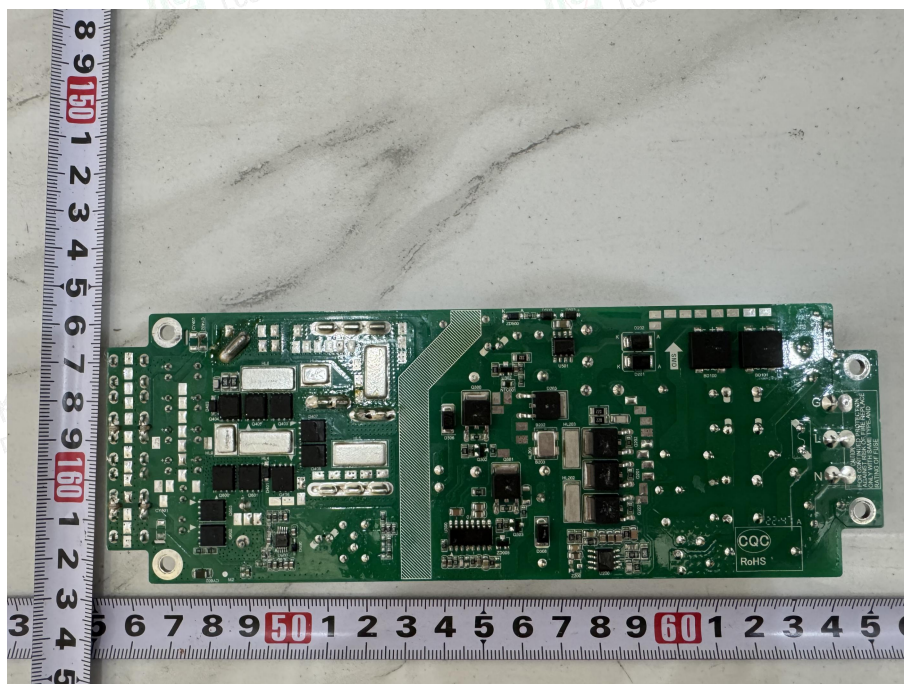


Fig. 25



Fig. 26

--- End of Report ---

