CTC Laboratories, Inc.

2/F., Building 1 and 1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Longhua District, Shenzhen, Guangdong, China
Tel : +86-0755-27521059 Fax: +86-0755-27521011

TEST REPORT

Report No. ·····:	**CTC20221152E**
Applicant·····:	**Shenzhen Fabulux Technology Co.,Ltd**
Address·····:	Factory 1201, No.14 of Xiawei Industrial Zone, Zhangkengjing Community, Guanhu Street, Longhua District, Shenzhen, China
Manufacturer·····:	Shenzhen Fabulux Technology Co.,Ltd
Address·····:	Factory 1201, No.14 of Xiawei Industrial Zone, Zhangkengjing Community, Guanhu Street, Longhua District, Shenzhen, China
Product Name·····:	**LED DISPLAY**
Trade Mark·····:	FABULUX LED 筧灿科技
Model/Type reference·····:	PT5.7
Listed Model(s) ·····:	PT6.67, PT8, PT10, PT Sport5.7, PT Sport6.67, PT Sport8, PT Sport10
Standard·····:	**J55032 (H29)**
Date of receipt of test sample…:	Aug. 05, 2022
Date of testing……..:	Aug. 05, 2022 to Aug. 08, 2022
Date of issue……....:	Sep. 22, 2022
Result……:	**PASS**

Compiled by: (Printed name+signature)	Carl Wu	Carl Wu
Supervised by: (Printed name+signature)	Eric Zhang	Eric Zhang
Approved by: (Printed name+signature)	Totti Zhao	Totti Zhao

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1 TEST SUMMARY

1.1 Test standards

The tests were performed according to following standards:

J55032 (H29)–Electromagnetic compatibility of multimedia equipment–Emission Requirements

1.2 Report version

Revised No.	Date of issue	Description
01	Sep. 22, 2022	Original

1.3 Test description

Test procedures according to the technical standards:

Standard	Test Item	Class	Result
J55032 (H29)	Conducted Emissions Test	Class A	Pass
	Radiated Emission Test	Class A	Pass

Note: The measurement uncertainty is not included in the test result.

1.4 Test facility

CTC Laboratories, Inc.

Add: 1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Shenzhen, Guangdong, China

Laboratory accreditation

The test facility is recognized, certified, or accredited by the following organizations:

A2LA-Lab Cert. No.: 4340.01

CTC Laboratories, Inc. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

Industry Canada (Registration No.: 9783A, CAB Identifier: CN0029)

CTC Laboratories, Inc. EMC Laboratory has been registered by Certification and Engineer Bureau of Industry Canada for the performance of with Registration NO.: 9783A on Jan, 2016.

FCC (Registration No.: 951311, Designation Number CN1208)

CTC Laboratories, Inc. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 951311, Aug 26, 2017.

1.5 Measurement uncertainty

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 TR-100028-01" Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics; Part 1" and TR-100028-02 "Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics; Part 2 " and is documented in the CTC Laboratories, Inc. 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.

Below is the best measurement capability for CTC Laboratories, Inc.

Test	Measurement Frequency Range	U (dB)	NOTE
Conducted Emission	9kHz ~ 30MHz	3.08	Main Power Port
Conducted Emission	150kHz ~ 30MHz	4.26	Telecommunication
Power disturbance	30MHz ~ 300MHz	2.38	Clamp
Conducted Emission	30MHz ~ 2150MHz	4.2	Antenna Port
Radiated Emission	30MHz ~ 1000MHz	4.51	3m chamber 2
Radiated Emission	1GHz ~ 18GHz	5.84	3m chamber 2
Radiated Emission	30MHz ~ 1000MHz	4.52	10m chamber
Radiated Emission	30MHz ~ 1000MHz	4.5	3m chamber 3
Radiated Emission	1GHz ~ 18GHz	5.7	3m chamber 3

Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

1.6 Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Normal Temperature	15-35°C
Lative Humidity	30-60%
Air Pressure	86-106kPa

2 GENERAL INFORMATION

2.1 Client Information

Applicant:	Shenzhen Fabulux Technology Co.,Ltd
Address:	Factory 1201, No.14 of Xiawei Industrial Zone, Zhangkengjing Community, Guanhu Street, Longhua District, Shenzhen, China
Manufacturer:	Shenzhen Fabulux Technology Co.,Ltd
Address:	Factory 1201, No.14 of Xiawei Industrial Zone, Zhangkengjing Community, Guanhu Street, Longhua District, Shenzhen, China
Factory:	Shenzhen Fabulux Technology Co.,Ltd
Address:	Factory 1201, No.14 of Xiawei Industrial Zone, Zhangkengjing Community, Guanhu Street, Longhua District, Shenzhen, China

2.2 General description of EUT

Product Name	LED DISPLAY
Trade Mark	FABULUX LED 效灿科技
Model/Type reference	PT5.7
Listed Model(s)	PT6.67, PT8, PT10, PT Sport5.7, PT Sport6.67, PT Sport8, PT Sport10
Model Difference	The lamp spacing and the number of lamp beads are different, and the others are the same.
Product Description	Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an ITE/Computing Device(Class A). More details of EUT technical specification, please refer to the User's Manual.
Power Source	Input: 100-240VAC, 50/60Hz,16A (MAX) Output: 100-240VAC, 50/60Hz,10A (MAX)
Sample ID	CTC220530-018-1-S0001
Remark	The maximum operating frequency of EUT is 144MHz.

2.3 Accessory equipment information

Equipment Information			
Name	Model	S/N	Manufacturer
LED Display Controller	MCTRL300	/	/
Laptop	T420	/	Lenovo
Cable Information			
Name	Shielded Type	Ferrite Core	Length
AC power cable	Unshielded	NO	200cm
Network cable	Unshielded	NO	200cm

Note:

(1) The support equipment was authorized by Declaration of Confirmation.

(2) For detachable type I/O cable should be specified the length in cm in『Length』column.

(3) “YES” is means “shielded” “with core”; “NO” is means “unshielded” “without core”.

2.4 Description of test modes

As the function of the EUT, test mode selected to test as below to conform this standard.

Test mode	Description	Test Voltage
1	White screen	AC 100V/50Hz
2	Color bar	AC 100V/50Hz

Pre-scan above all test mode, found below test mode which it was worse case mode, so only show the test data for worse case mode on the test report.

Test item	Test mode
Conducted emission	1
Radiated emission Below 1G	1
Radiated emission Above 1G	1

Note: “N/A” is no application

2.5 Measurement instruments list

Conducted Emission					
Used	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
☑	LISN	R&S	ENV216	101112	Dec. 23, 2022
	LISN	R&S	ENV216	101113	Dec. 23, 2022
☑	EMI Test Receiver	R&S	ESCS30	100353	Dec. 23, 2022
	ISN CAT6	Schwarzbeck	NTFM 8158	CAT6-8158-0046	Dec. 23, 2022
	ISN CAT5	Schwarzbeck	NTFM 8158	CAT5-8158-0046	Dec. 23, 2022
Radiated Emission					
Used	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
☑	Trilog-Broadband Antenna	Schwarzbeck	VULB 9168	9168-1013	Jan. 12, 2023
☑	Horn Antenna	Schwarzbeck	BBHA 9120D	9120D-647	Dec. 23, 2022
	Spectrum Analyzer	R&S	FSU26	100105	Dec. 23, 2022
	Spectrum Analyzer	R&S	FSV40-N	101331	Mar. 15, 2023
☑	Pre-Amplifier	SONOMA	310	186194	Dec. 23, 2022
☑	Low Noise Pre-Amplifier	EMCI	EMC051835	980075	Dec. 23, 2022
☑	Test Receiver	R&S	ESCI7	100967	Dec. 23, 2022
☑	3m chamber 2	Frankonia	EE025	/	Oct. 23, 2024

3 EMC EMISSION TEST

3.1 Conducted emission measurement

LIMIT

Please refer to J55032 (H29) Annex A Table A.8 to Table A.13.

AC Power Line Conducted Emission (Frequency Range 150kHz-30MHz)

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 - 0.5	79.00	66.00	66 - 56 *	56 - 46 *
0.5 - 5	73.00	60.00	56.00	46.00
5 - 30	73.00	60.00	60.00	50.00

Telecommunication Port Conducted Emission (Frequency Range 150kHz-30MHz)

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 - 0.5	97 - 87*	84 - 74*	84 - 74*	74 - 64*
0.5 - 30	87	74	74	64

Note:

(1) The tighter limit applies at the band edges.
(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

TEST PROCEDURE

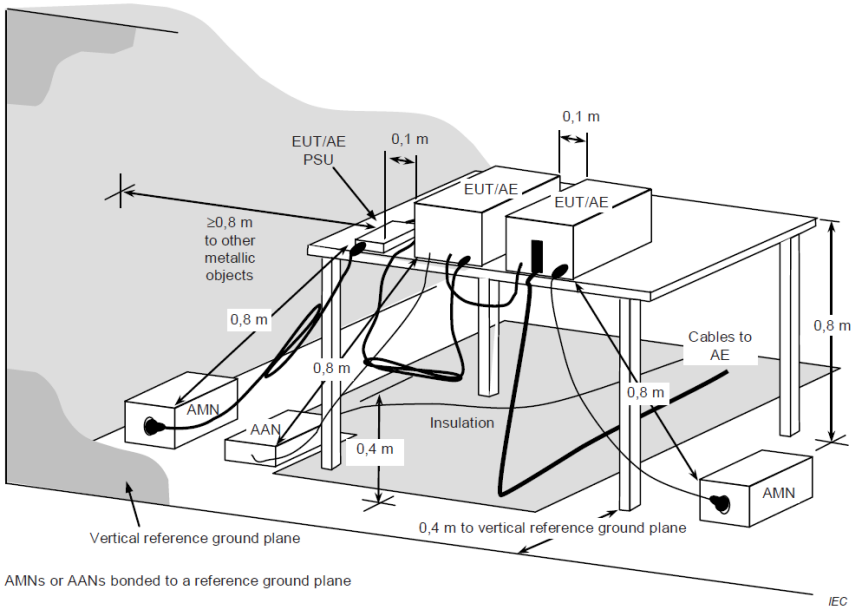
a.The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
b.Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
c.I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
d.LISN at least 80 cm from nearest part of EUT chassis.
e.For the actual test configuration, please refer to the related Item –EUT Test Photos

TEST MODE

Please refer to the Clause 2.3.

TEST SETUP

A) For AC mains power ports and asymmetric mode conducted emissions.



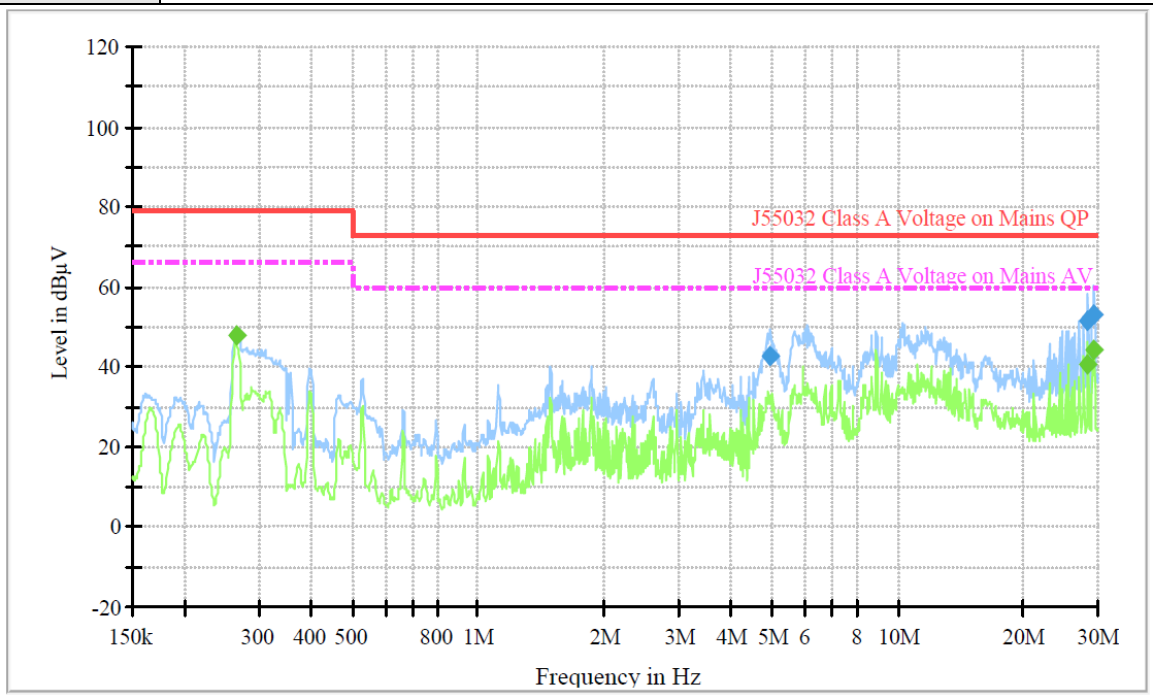
The 0,8 m distance specified between EUT/AE/PSU and AMN/AAN, is applicable only to the EUT being measured. If the device is AE then it shall be ≥0,8 m.

Environmental conditions

Normal Temperature:	25 °C	Lative Humidity:	47 %	Air Pressure:	101 kPa

TEST RESULTS

Test Mode	Mode 1
Phase	L



Final Measurement Detector 1

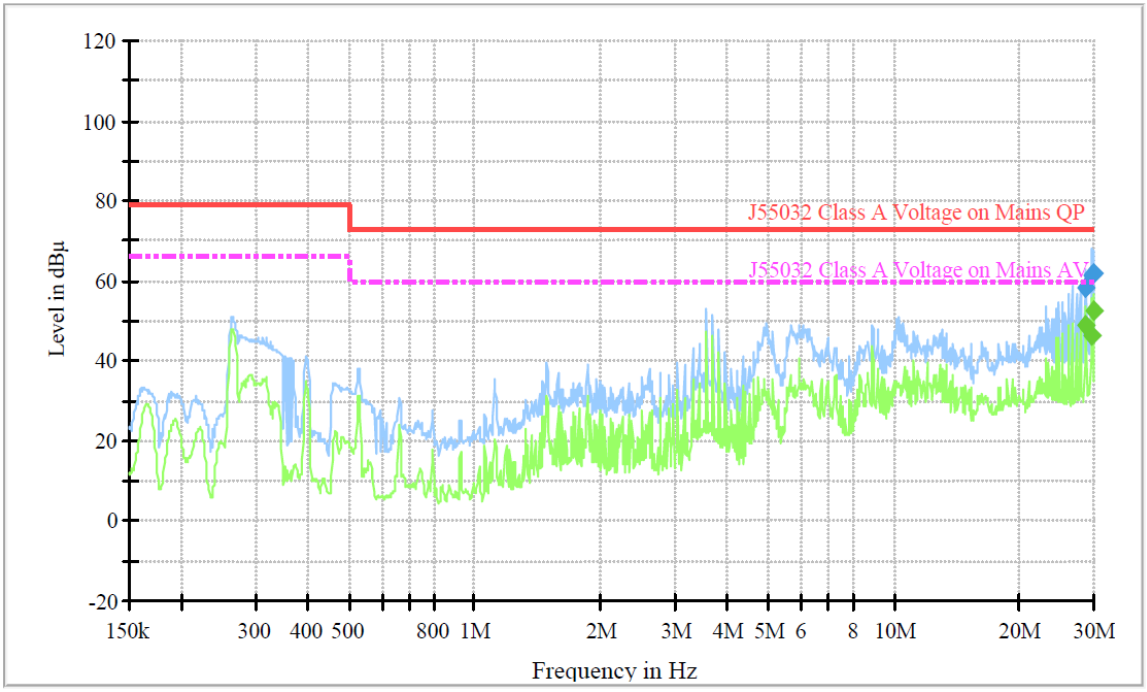
Frequency (MHz)	QuasiPeak (dB µ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)	Comment
4.976800	42.5	1000.00	9.000	On	L1	10.0	30.5	73.0	
28.443570	51.4	1000.00	9.000	On	L1	10.0	21.6	73.0	
29.371550	53.0	1000.00	9.000	On	L1	10.0	20.0	73.0	

Final Measurement Detector 2

Frequency (MHz)	Average (dB µ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)	Comment
0.264410	47.8	1000.00	9.000	On	L1	10.0	18.2	66.0	
28.448070	40.5	1000.00	9.000	On	L1	10.0	19.5	60.0	
29.371550	44.0	1000.00	9.000	On	L1	10.0	16.0	60.0	

Note：
Factor = Insertion loss of LISN + Cable Loss
Limit = Limit stated in standard
Margin = Limit (dBuV) –Result (dBuV)

Test Mode	Mode 1
Phase	N



Final Measurement Detector

Frequency (MHz)	QuasiPeak (dB µ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)	Comment
28.804420	58.5	1000.00	9.000	On	N	9.9	14.5	73.0	
29.725530	61.7	1000.00	9.000	On	N	9.8	11.3	73.0	
29.986500	62.1	1000.00	9.000	On	N	9.8	10.9	73.0	

Final Measurement Detector 2

Frequency (MHz)	Average (dB µ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)	Comment
28.671680	48.7	1000.00	9.000	On	N	9.9	11.3	60.0	
29.730030	46.5	1000.00	9.000	On	N	9.8	13.5	60.0	
29.991000	52.4	1000.00	9.000	On	N	9.8	7.6	60.0	

Note：
Factor = Insertion loss of LISN + Cable Loss
Limit = Limit stated in standard
Margin = Limit (dBuV) –Result (dBuV)

3.2 Radiated emission measurement

LIMIT

Please refer to J55032 (H29) Annex A Table A.2 to Table A.7.

FREQUENCY (MHz)	Class A dBuV/m		Class B dBuV/m	
	(at 10m)	(at 3m)	(at 10m)	(at 3m)
30 – 230	40	50	30	40
230 – 1000	47	57	37	47

FREQUENCY (MHz)	Class A (at 3m) dBuV/m		Class B (at 3m) dBuV/m	
	Peak	Average	Peak	Average
1000 - 3000	76	56	70	50
3000 - 6000	80	60	74	54

Notes:

(1) The limit for radiated test was performed according to as following: J55032 (H29)

(2) The tighter limit applies at the band edges.

(3) Emission level (dBuV/m)=20log Emission level (uV/m).

TEST MODE

Please refer to the Clause 2.3.

TEST PROCEDURE

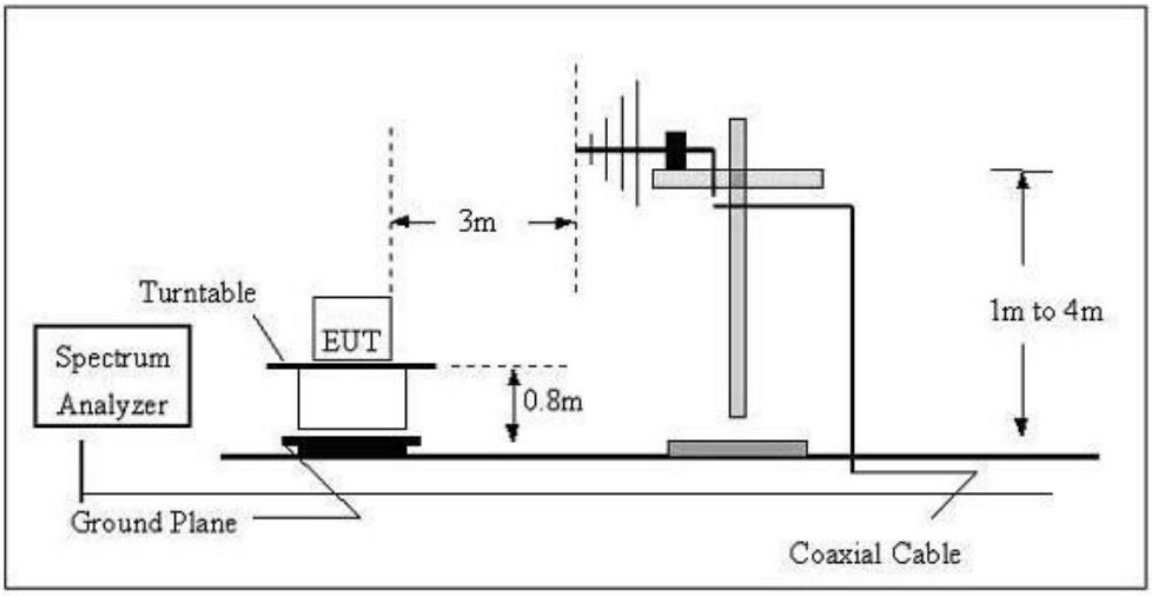
a. The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level.
b. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
c. The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna.
d. Use the following spectrum analyzer settings
Span shall wide enough to fully capture the emission being measured;

1) Below 1GHz, RBW=120kHz, VBW=300kHz, Sweep=auto, Detector function=peak, Trace=max hold;
2) If the emission level of the EUT measured by the peak detectoris 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
3) Above 1GHz, RBW=1MHz, VBW=3MHz

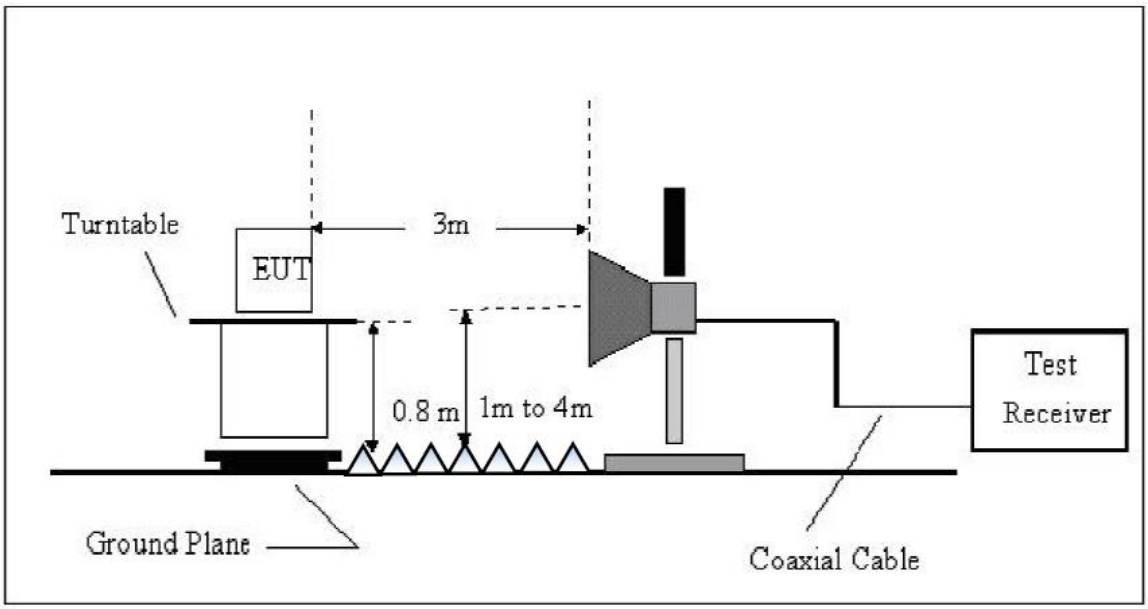
e. The maximum operating frequency inside the EUT is 144MHz.

TEST SETUP

A. Radiated Emission test Set-up Frequency Below 1 GHz.



B. Radiated Emission test Set-up Frequency Above 1 GHz.



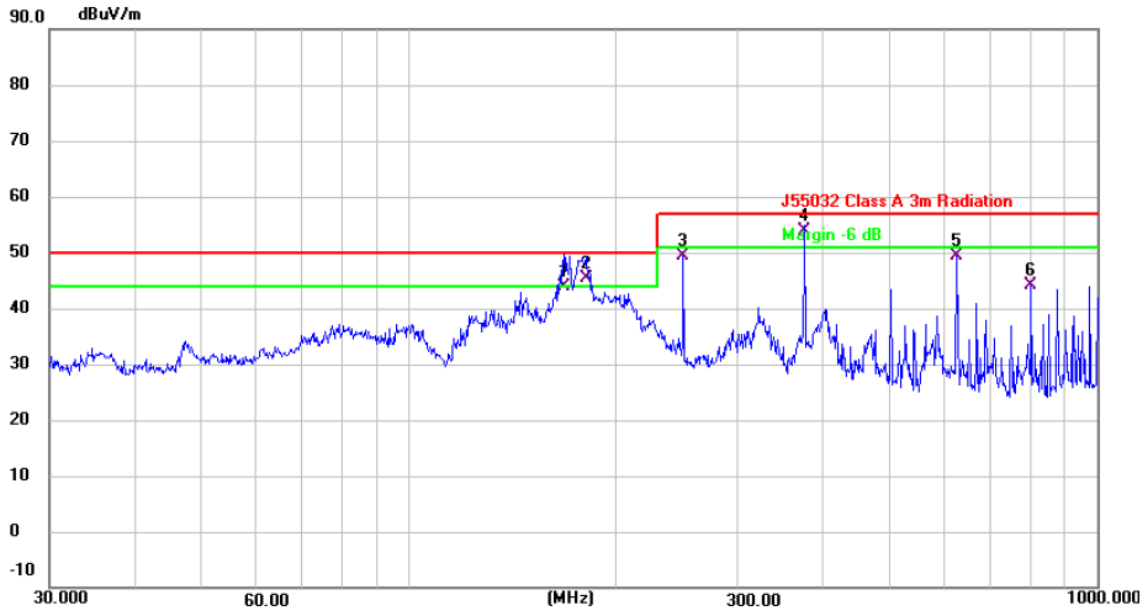
Environmental conditions

Normal Temperature:	24 °C	Lative Humidity:	46 %	Air Pressure:	101 kPa

TEST RESULTS

(1) Below 1 GHz

Test Mode	Mode 1
Polarization	Horizontal



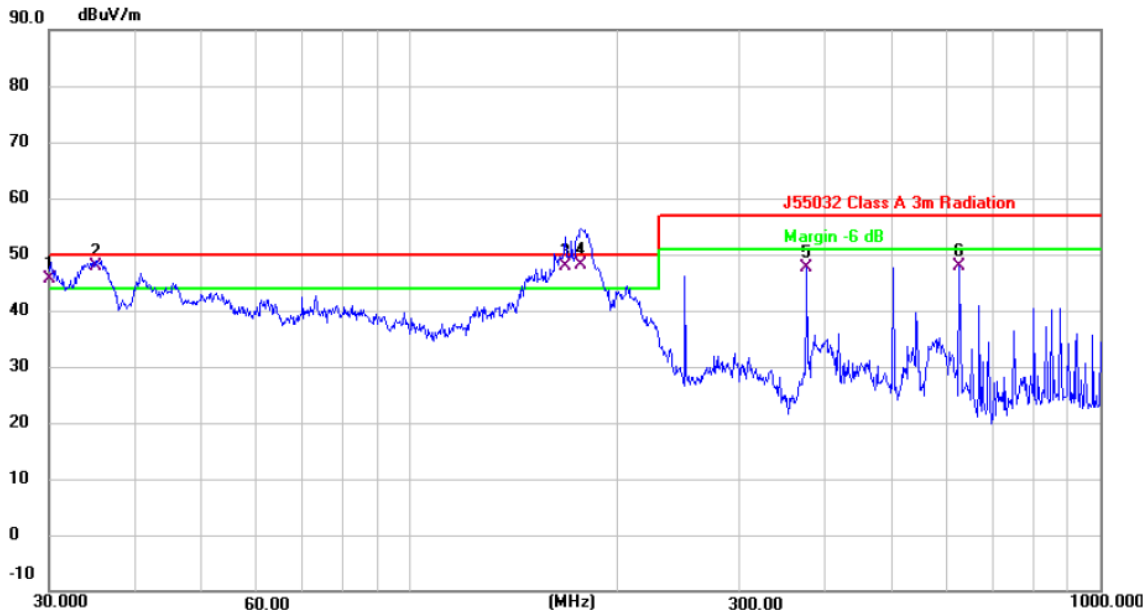
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	167.8243	62.28	-18.28	44.00	50.00	-6.00	QP
2 !	180.6488	64.63	-19.33	45.30	50.00	-4.70	QP
3	250.3012	68.54	-19.09	49.45	57.00	-7.55	QP
4 *	375.9385	70.07	-16.17	53.90	57.00	-3.10	QP
5	625.0780	59.86	-10.45	49.41	57.00	-7.59	QP
6	801.7863	51.63	-7.53	44.10	57.00	-12.90	QP

Remarks:

1. Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) - Pre-amplifier Factor

2. Margin value = Level - Limit value

Test Mode	Mode 1
Polarization	Vertical



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 !	30.0000	63.84	-18.24	45.60	50.00	-4.40	QP
2 !	35.1278	65.94	-18.04	47.90	50.00	-2.10	QP
3 !	167.8240	66.28	-18.28	48.00	50.00	-2.00	QP
4 *	176.8878	67.21	-19.01	48.20	50.00	-1.80	QP
5	375.9385	63.86	-16.17	47.69	57.00	-9.31	QP
6	625.0780	58.45	-10.45	48.00	57.00	-9.00	QP

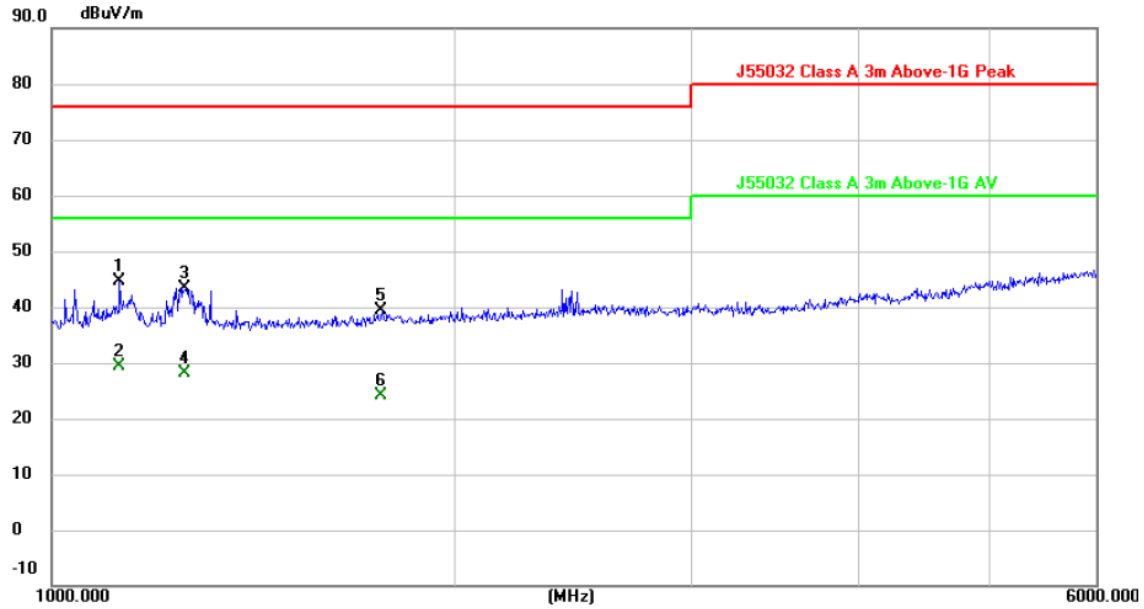
Remarks:

1. Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) - Pre-amplifier Factor

2. Margin value = Level - Limit value

(2) Above 1 GHz

Test Mode	Mode 1
Polarization	Horizontal



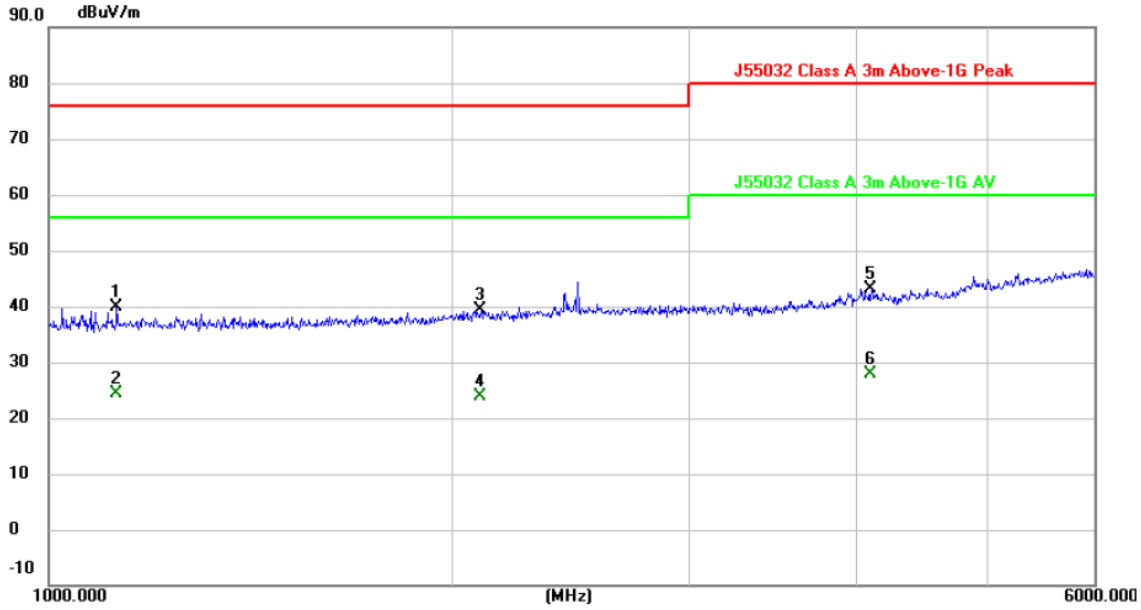
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1123.517	57.66	-13.05	44.61	76.00	-31.39	peak
2 *	1123.517	42.45	-13.05	29.40	56.00	-26.60	AVG
3	1257.776	56.00	-12.51	43.49	76.00	-32.51	peak
4	1257.776	40.67	-12.51	28.16	56.00	-27.84	AVG
5	1761.553	50.30	-10.91	39.39	76.00	-36.61	peak
6	1761.553	35.00	-10.91	24.09	56.00	-31.91	AVG

Remarks:

1. Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) - Pre-amplifier Factor

2. Margin value = Level - Limit value

Test Mode	Mode 1
Polarization	Vertical



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1123.517	52.85	-13.05	39.80	76.00	-36.20	peak
2 *	1123.517	37.44	-13.05	24.39	56.00	-31.61	AVG
3	2099.687	48.34	-8.97	39.37	76.00	-36.63	peak
4	2099.687	32.78	-8.97	23.81	56.00	-32.19	AVG
5	4096.425	47.48	-4.28	43.20	80.00	-36.80	peak
6	4096.425	32.18	-4.28	27.90	60.00	-32.10	AVG

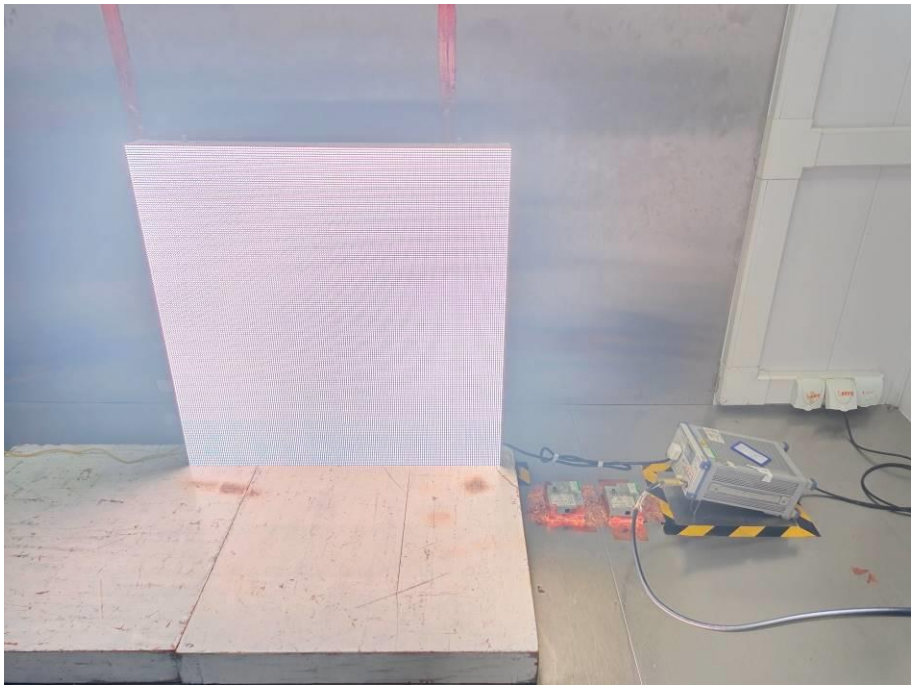
Remarks:

1. Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) - Pre-amplifier Factor

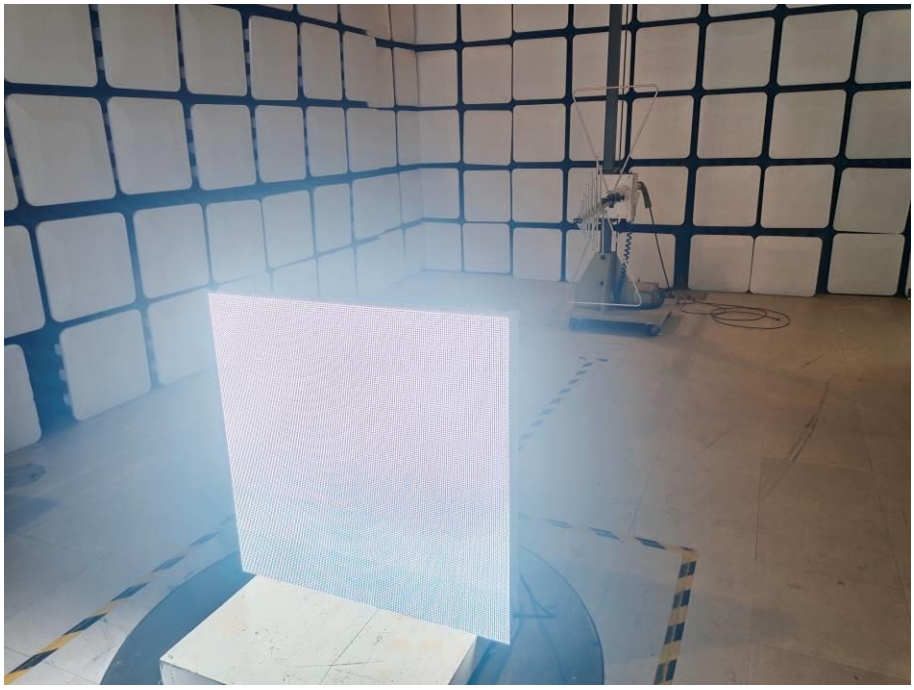
2. Margin value = Level - Limit value

4 EUT TEST PHOTO

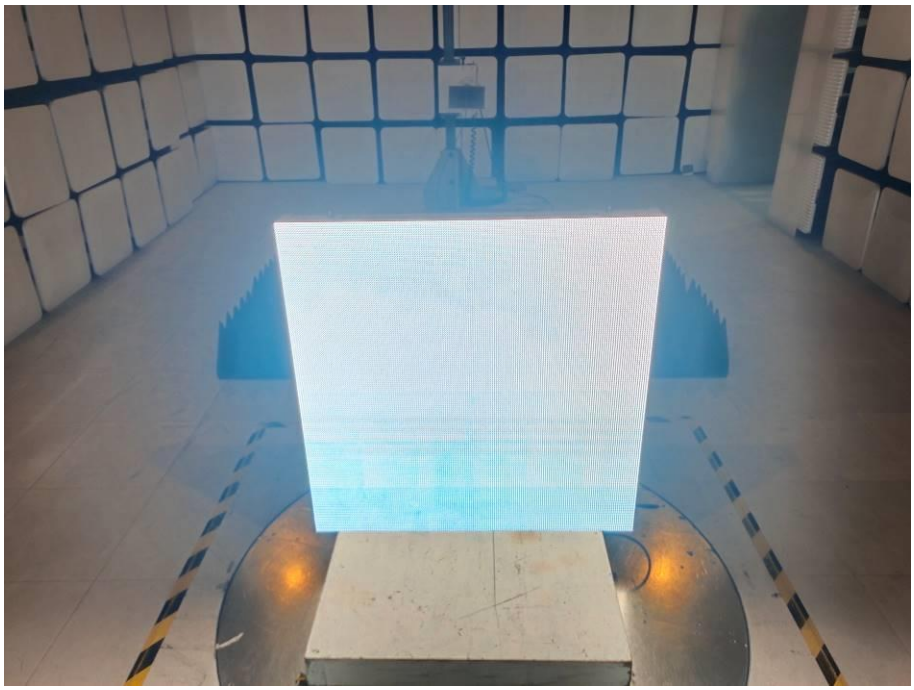
Conducted Emission



Radiated Emission Below 1G



Radiated Emission Above 1G

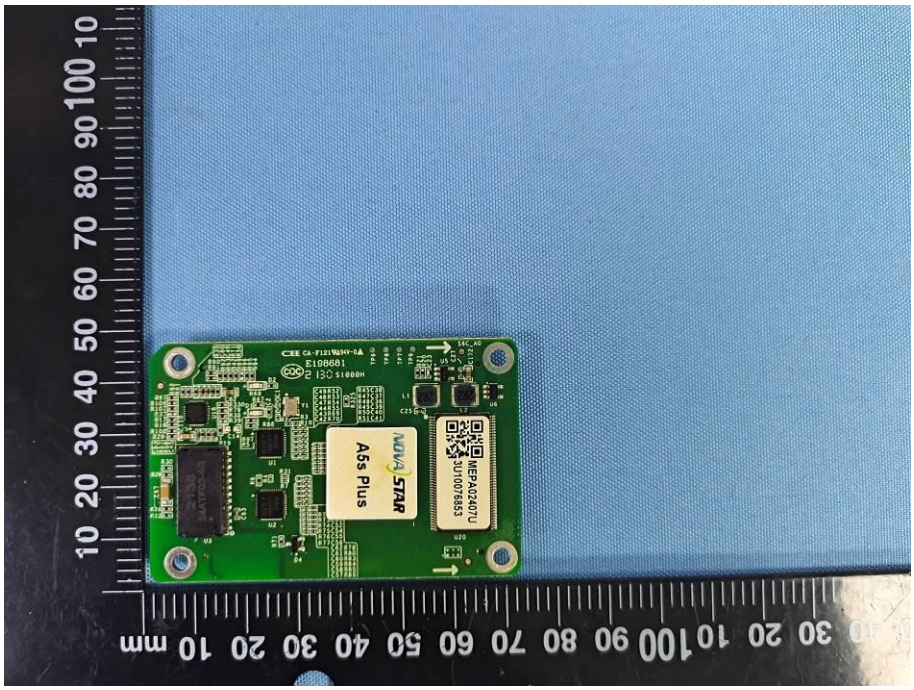


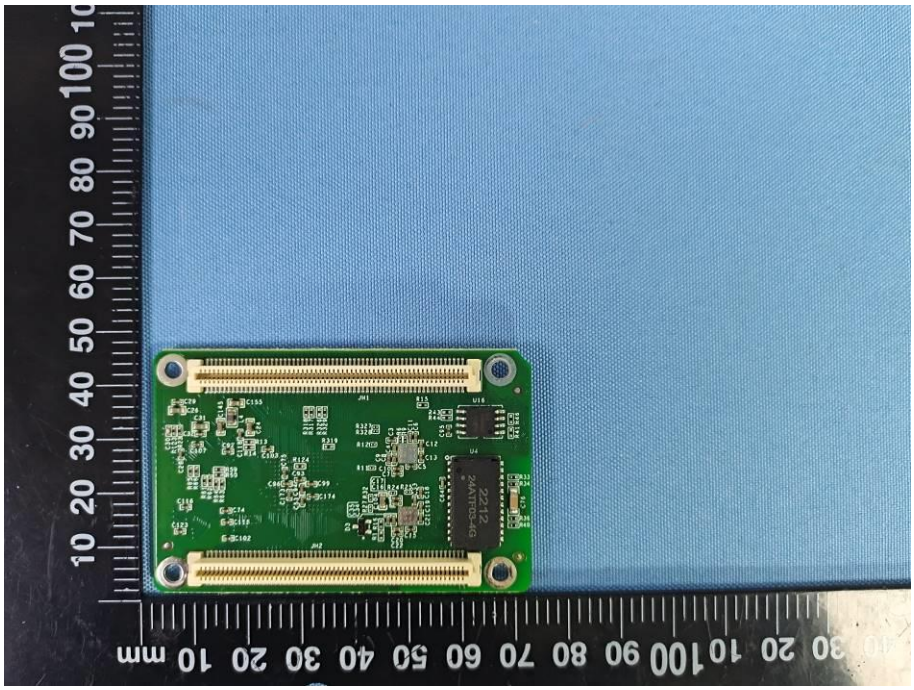
5 PHOTOGRAPHS OF EUT

External Photographs

Internal Photographs


XingXiu
深圳市行修电子有限公司
SHENZHEN XINGXIU ELECTRONICS CO.,LTD
开关电源 Switching Power Supply REV:A
型号/MODEL：DSP800A-3242
输入/INPUT：100-240V~50/60Hz 8.5A MAX
输出1/OUTPUT1：+4.2V 80A MAX(100V-179.9V~)
+4.2V 100A MAX(180V-240V~)
输出2/OUTPUT2：+3.2V 64A MAX(100V-179.9V~)
+3.2V 80A MAX(180V-240V~)
E492773
Made in China
DO NOT DISASSEMBLE
EMC





**********THE END**********