EMC REPORT

Applicant	Shenzhen SoStron Technology Co., Ltd.
Address	Building D, Hongfa Science Park, 2035 Songbai Road, Baoan District, Shenzhen City.
Manufacturer	Shenzhen SoStron Technology Co., Ltd.
Address	Building D, Hongfa Science Park, 2035 Songbai Road, Baoan District, Shenzhen City.
Product Name	LED Display
Trade Name	/
Model Number	P1.8mm
Additional Model	Reta2 P1.25mm, Reta2 P1.5mm, Reta2 P1.6mm, Reta2 P2.0mm, Reta2 P2.5mm
Test Laboratory	Shenzhen Circle Testing Certification Co., Ltd.
Address	302&101, 1/F., Building 1, Donglongxing Technology Park, Huaning Road, Xinshi Community, Dalang Subdistrict, Longhua District, Shenzhen, Guangdong, China
CNAS No.	L12276
Test Date	Dec. 09, 2024 - Dec. 12, 2024
Date of Report	Dec. 12, 2024
Report Number	CTC142H1203701ER

This report shall not be altered,increased or deleted.The results shown in this test report refer only to the sample(s) tested. Without written approval of CIRCLE Lab, this test report shall not be copied except in full and published as advertisement. CIRCLE Lab.

TABLE OF CONTENTS

TEST REPORT DECLARATION 4
1. TEST RESULTS SUMMARY 5
2. GENERAL INFORMATION 5
2.1. Report information 5
2.2. Measurement Uncertainty 5
3. PRODUCT DESCRIPTION 6
3.1. EUT Description 6
3.2. Block Diagram of EUT Configuration 6
3.3. Operating Condition of EUT 6
3.4. Test Conditions 6
3.5. Modifications 6
3.6. Abbreviations 6
3.7. Performance Criterion 7
4. TEST EQUIPMENT USED 7
4.1. For Conducted Emission Test 7
4.2. For Radiated Emission Measurement 7
4.3. For Harmonic / Flicker Test 7
4.4. For Electrostatic Discharge Immunity Test 8
4.5. For RF Strength Susceptibility Test 8
4.6. For Electrical Fast Transient/Burst Immunity Test 8
4.7. For Surge Test 8
4.8. For Injected Currents Susceptibility Test 8
4.9. For Voltage Dips and Interruptions Test 8
5. POWER LINE CONDUCTED EMISSION TEST 9
5.1. Block Diagram of Test Setup 9
5.2. Test Standard 9
5.3. Power Line Conducted Emission Limit 9
5.4. EUT Configuration on Test 9
6. RADIATED EMISSION TEST 10
6.1 Semi-Anechoic Chamber Setup Diagram 10
6.2 Test Standard 10
6.3 Radiated Emission Limit 10
6.4 EUT Configuration on Test 10
6.5 Operating Condition of EUT 11
6.6 Test Procedure 11
6.7 Test Results 11
7. HARMONIC CURRENT EMISSION TEST 11
7.1 Block Diagram of Test Setup 11
7.2 Test Standard 11
7.3 Operating Condition of EUT 11
7.4 Test Procedure 12
7.5 Test Results 12
8. VOLTAGE FLUCTUATIONS & FLICKER TEST 12
8.1 Block Diagram of Test Setup 12
8.2 Test Standard 12
8.3 Operating Condition of EUT 12
8.4 Test Data 12
8.5 Test Results 12
9. ELECTROSTATIC DISCHARGE TEST 13
9.1. Block Diagram of ESD Test Setup 13
9.2. Test Standard 13
9.3. Severity Levels and Performance Criterion 13
9.4. EUT Configuration on Test 13

This report shall not be altered,increased or deleted.The results shown in this test report refer only to the sample(s) tested. Without written approval of CIRCLE Lab, this test report shall not be copied except in full and published as advertisement. CIRCLE Lab.

9.5. Operating Condition of EUT 13
9.6. Test Procedure 13
9.7. Test Results 14
10. RF FIELD STRENGTH SUSCEPTIBILITY TEST 15
10.1.R/S Test Setup 15
10.2.Test Standard 15
10.3.Severity Levels and Performance Criterion 15
10.4.EUT Configuration on Test 15
10.5.Operating Condition of EUT 15
10.6.Test Procedure 15
10.7.Test Results 16
11. ELECTRICAL FAST TRANSIENT/BURST TEST 16
11.1.EFT Test Setup 16
11.2.Test Standard 16
11.3.Severity Levels and Performance Criterion 17
11.4.EUT Configuration on Test 17
11.5.Operating Condition of EUT 17
11.6.Test Procedure 17
11.7.Test Results 17
12. SURGE TEST 18
12.1.Surge Test Setup 18
12.2.Test Standard 18
12.3.Severity Levels and Performance Criterion 18
12.4.EUT Configuration on Test 18
12.5.Operating Condition of EUT 18
12.6.Test Procedure 19
12.7.Test Results 19
13. INJECTED CURRENTS SUSCEPTIBILITY TEST 19
13.1.Block Diagram of Test AC Mains Setup 19
13.2.Test Standard 19
13.3.Severity Levels and Performance Criterion 20
13.4.EUT Configuration on Test 20
13.5.Operating Condition of EUT 20
13.6.Test Procedure 20
13.7.Test Results 20
14. MAGNETIC FIELD IMMUNITY TEST 21
14.1 Block Diagram of Test Setup 21
14.2 Test Standard 21
14.3 Severity Levels and Performance Criterion 21
14.4 EUT Configuration on Test 21
14.5 Operating Condition of EUT 21
14.6 Test Procedure 22
14.7 Test Results 22
15. VOLTAGE DIPS AND INTERRUPTIONS TEST 22
15.1.Voltage Dips and Interruptions Test Setup 22
15.2.Test Standard 22
15.3.Severity Levels and Performance Criterion 22
15.4.EUT Configuration on Test 22
15.5.Operating Condition of EUT 23
15.6.Test Procedure 23
15.7.Test Result 23
APPENDIX I :HARMONICS CURRENT AND FLICKER DATA 24
APPENDIX II :CONDUCTED EMISSION 28
APPENDIX III: RADIATED EMISSION TEST DATA 30
APPENDIX IV: EUT AND TEST SETUP PHOTO 32

This report shall not be altered,increased or deleted.The results shown in this test report refer only to the sample(s) tested. Without written approval of CIRCLE Lab, this test report shall not be copied except in full and published as advertisement. CIRCLE Lab.

TEST REPORT DECLARATION

Applicant :	Shenzhen SoStron Technology Co., Ltd.
Address :	Building D, Hongfa Science Park, 2035 Songbai Road, Baoan District, Shenzhen City.
EUT Description :	LED Display
Model Number :	P1.8mm

Test Standards:

EN 55032:2015/A11:2020
EN 55035:2017/A11:2020
EN IEC 61000-3-2:2019/A1:2021
EN 61000-3-3:2013/A2:2021

The EUT described above is tested by Shenzhen Circle Testing Certification Co., Ltd.(CTC) EMC Laboratory to determine the maximum emissions from the EUT and ensure the EUT to be compliance with the immunity requirements of the EUT.CTC EMC Laboratory is assumed full responsibility for the accuracy of the test results. Also, this report shows that the EUT technically complies with the 2014/30/EU directive and its amendment requirements.
The test report is valid for above tested sample only and shall not be reproduced in part without written approval of the laboratory.

Tested By: _____
Test Engineer

Approved & Authorized Signer: _____
Technical Manager

This report shall not be altered,increased or deleted.The results shown in this test report refer only to the sample(s) tested. Without written approval of CIRCLE Lab, this test report shall not be copied except in full and published as advertisement. CIRCLE Lab.

1. TEST RESULTS SUMMARY

Table 1 Test Results Summary

Test Items	Test Results
Power Line Conducted Emission Test	PASS
Radiated Emission	PASS
Harmonic Current Emission Test	PASS
Voltage Fluctuations & Flicker Test	PASS
Electrostatic Discharge Test	PASS
RF Field Strength Susceptibility Test	PASS
Electrical Fast Transient/Burst Test	PASS
Surge Test	PASS
Injected Currents Susceptibility Test	PASS
Magnetic Field Immunity Test	PASS
Voltage Dips And Interruptions Test	PASS

2. GENERAL INFORMATION

2.1. Report information

2.1.1. 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 CTC approves recommends or endorses the manufacture, supplier or use of such product/equipment, or that CTC in any way guarantees the later performance of the product/equipment.

2.1.2. The sample/s mentioned in this report is/are supplied by Applicant, CTC therefore assumes no responsibility for the accuracy of information on the brand name, model number, origin of manufacture or any information supplied.

2.1.3. 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 CTC, unless the applicant has authorized CTC in writing to do so.

2.2. Measurement Uncertainty

(95% confidence levels, k=2)

Test Item	**Uncertainty**
Uncertainty for Conduction emission test	2.2dB
Uncertainty for Magnetic emission test	3.3dB
Uncertainty for Radiation emission test (30MHz to 1GHz)	4.0dB

This report shall not be altered,increased or deleted.The results shown in this test report refer only to the sample(s) tested. Without written approval of CIRCLE Lab, this test report shall not be copied except in full and published as advertisement. CIRCLE Lab.

3. PRODUCT DESCRIPTION

3.1. EUT Description

EUT Description	LED Display
Applicant	Shenzhen SoStron Technology Co., Ltd.
Address	Building D, Hongfa Science Park, 2035 Songbai Road, Baoan District, Shenzhen City.
Manufacturer	Shenzhen SoStron Technology Co., Ltd.
Address	Building D, Hongfa Science Park, 2035 Songbai Road, Baoan District, Shenzhen City.
Model Number	P1.8mm
Rating(s)	Input: 110-240VAC, 50/60Hz, 40A

3.2. Block Diagram of EUT Configuration



3.3. Operating Condition of EUT

Test mode : White screen, maximum brightness

3.4. Test Conditions

Temperature: 22-26℃
Relative Humidity: 55-58 %
Atmospheric pressure: 101kPa

3.5. Modifications

No modification was made.

3.6. Abbreviations

AC	Alternating Current
AMN	Artificial Mains Network
DC	Direct Current
EM	ElectroMagnetic
EMC	ElectroMagnetic Compatibility

This report shall not be altered,increased or deleted.The results shown in this test report refer only to the sample(s) tested. Without written approval of CIRCLE Lab, this test report shall not be copied except in full and published as advertisement. CIRCLE Lab.

EUT	Equipment Under Test
IF	Intermediate Frequency
RF	Radio Frequency
rms	root mean square
EMI	Electromagnetic Interference
EMS	Electromagnetic Susceptibility

3.7. Performance Criterion

Criterion A: The equipment shall continue to operate as intended without operator intervention. No degradation of performance of loss of function is allowed below a performance level specified by the manufacturer when the equipment is used as intended.

Criterion B: After the test, the equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed, after the application of the phenomena below a performance level specified by the manufacturer, when the equipment is used as intended.

Criterion C: Loss of function is allowed, provided the function is self-recoverable, or can be restored by the operation of the controls by the user in accordance with the manufacturer's instructions.

4. TEST EQUIPMENT USED

4.1. For Conducted Emission Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal. Until	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESCI	E087	2025-02-27	1 Year
2.	Coaxial Cable	CTC	10B	E159	2025-02-26	1 Year
3.	L.I.S.N.	Rohde & Schwarz	ENV 216	E089	2025-05-30	1 Year
4.	Shielding Room	CTC	CTC443	E099	2025-02-17	2 Year

4.2. For Radiated Emission Measurement

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal. Until	Cal. Interval
1.	Test Receiver	Rohde& Schwarz	ESCI	E087	2025-02-27	1 Year
2.	Test Receiver	Rohde & Schwarz	ESPI	E155	2025-02-26	1 Year
3.	Broadband Trilog Antenna	Schwarzbeck	VULB 9162	E088	2025-06-03	1 Year
4.	OPT H64 Preamplifier	HP	8447F	E164	2025-02-27	1 Year
5.	Cable	CTC	3B	E139	2025-02-26	1 Year
6.	Cable	CTC	3C	E140	2025-02-26	1 Year
7.	Cable	CTC	3D	E141	2025-02-26	1 Year
8.	Cable	CTC	10A	E158	2025-02-26	1 Year
9.	Horn Antenna	Schwarzbeck	BBHA 9120D	E161	2025-02-17	1 Year
10.	Broadband Preamplifier	Schwarzbeck	BBV9718	E162	2025-02-27	1 Year

4.3. For Harmonic / Flicker Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal. Until	Cal. Interval
1.	Harmonic and Flicker Test System	EVERFINE	HFM-3000-V200	E207	2025-10-15	1 Year

This report shall not be altered,increased or deleted.The results shown in this test report refer only to the sample(s) tested. Without written approval of CIRCLE Lab, this test report shall not be copied except in full and published as advertisement. CIRCLE Lab.

2.	AC Power Source	EVERFINE	HFS-4000-V200	E208	2025-10-11	1 Year

4.4. For Electrostatic Discharge Immunity Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal. Until	Cal. Interval
1.	ESD Tester	SCHLODER	SESD 216	E085	2025-06-26	1 Year

4.5. For RF Strength Susceptibility Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal. Until	Cal. Interval
1.	Signal Generator	HP	8648A	3633A02081	2025-05-03	1 Year
2.	Amplifier	A&R	500A100	17034	NCR	NCR
3.	Amplifier	A&R	100W/1000M1	17028	NCR	NCR
4.	Isotropic Field Monitor	A&R	FM2000	16829	NCR	NCR
5.	Isotropic Field Probe	A&R	FLW220100	16755	2025-05-03	1 Year
6.	Biconic Antenna	EMCO	3108	9507-2534	NCR	NCR
7.	Log-periodic Antenna	A&R	AT1080	16812	NCR	NCR
8.	PC	N/A	486DX2	N/A	N/A	N/A

4.6. For Electrical Fast Transient/Burst Immunity Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal. Until	Cal. Interval
1.	Burst/Surge/Dip Tester	HTEC	HCOMPACT 5	E084	2025-06-25	1 Year
2.	Capacitive Coupling Clamp	HTEC	N/A	E111	2025-02-27	1 Year

4.7. For Surge Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal. Until	Cal. Interval
1.	Burst/Surge/Dip Tester	HTEC	HCOMPACT 5	E084	2025-06-25	1 Year

4.8. For Injected Currents Susceptibility Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal. Until	Cal. Interval
1.	Simulator	EMTEST	CWS 500C	0900-12	2025-05-03	1 Year
2.	CDN	EMTEST	CDN-M2	510010010010	2025-05-03	1 Year
3.	VDN	EMTEST	CDN-M3	0900-11	2025-05-03	1 Year
4.	Injection Clamp	EMTEST	F-2031-23MM	368	2025-05-03	1 Year
5.	Attenuator	EMTEST	ATT6	0010222a	2025-05-03	1 Year

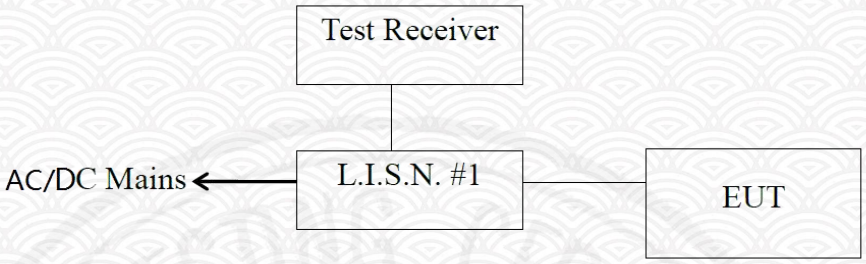
4.9. For Voltage Dips and Interruptions Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal. Until	Cal. Interval
1.	Burst/Surge/Dip Tester	HTEC	HCOMPACT 5	E084	2025-06-25	1 Year
2.	Voltage sag coupler	HTEC	HV1P16T	E083	2025-06-25	1 Year

This report shall not be altered,increased or deleted.The results shown in this test report refer only to the sample(s) tested. Without written approval of CIRCLE Lab, this test report shall not be copied except in full and published as advertisement. CIRCLE Lab.

5. POWER LINE CONDUCTED EMISSION TEST

5.1. Block Diagram of Test Setup



5.2. Test Standard

EN 55032:2015/A11:2020 Class A

5.3. Power Line Conducted Emission Limit

Frequency		Limits dB(uV)
MHz	Quasi-peak Level	Average Level
0.15-0.50	79	66
0.50-30	73	58

Notes: 1.*Decreasing linearly with logarithm of frequency.
2.The lower limit shall apply at the transition frequencies.

5.4. EUT Configuration on Test

The following equipment are installed on conducted emission test to meet EN 55032 requirement and operating in a manner, which tends to maximize its emission characteristics in a normal application.

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 equipment.
5.5.3.Let the EUT work in test modes (ON) and test it.

5.6. Test Procedure

The EUT is put on the ground and connected to the AC/DC mains through a Artificial Mains Network (AMN). This provided 50ohm-coupling impedance for the tested equipment. Both sides of AC/DC line are checked to find out the maximum conducted emission levels according to the EN55032 regulations during conducted emission test.

The bandwidth of the test receiver is set at 9kHz.

This report shall not be altered,increased or deleted.The results shown in this test report refer only to the sample(s) tested. Without written approval of CIRCLE Lab, this test report shall not be copied except in full and published as advertisement. CIRCLE Lab.

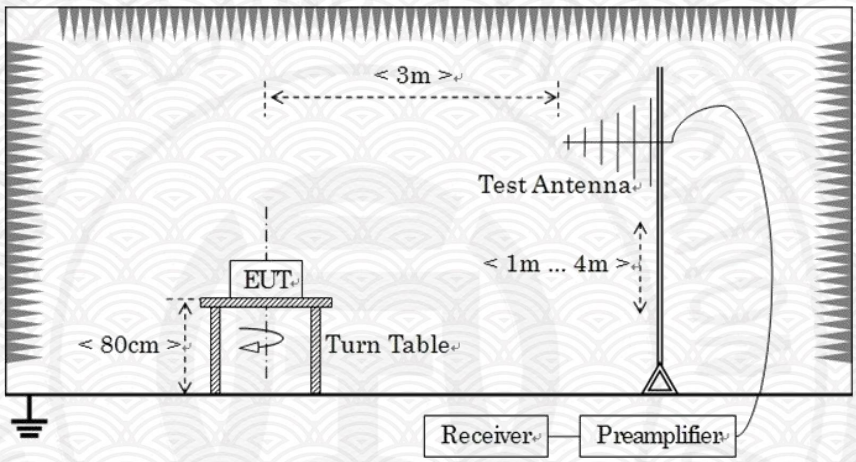
The frequency range from 150 kHz to 30 MHz is investigated. and all the scanning waveform is put in **Appendix II.**

5.7. Test Result

PASS.

6. RADIATED EMISSION TEST

6.1 Semi-Anechoic Chamber Setup Diagram



6.2 Test Standard

EN 55032:2015/A11:2020 Class A

6.3 Radiated Emission Limit

All emanations from a Class A computing devices or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified below:

FREQUENCY (MHz)	DISTANCE (Meters)	FIELD STRENGTHS LIMITS (dBuV/m)
30-230	3	50
230-1000	3	57

Note:(1) The tighter limit shall apply at the edge between two frequency bands.
(2) Distance refers to the distance in meters between the measuring instruments antenna and the closed point of any part of the EUT.

6.4 EUT Configuration on Test

The EN55032 Class A regulations test method must be used to find the maximum emission during radiated emission test.

This report shall not be altered,increased or deleted.The results shown in this test report refer only to the sample(s) tested. Without written approval of CIRCLE Lab, this test report shall not be copied except in full and published as advertisement. CIRCLE Lab.

6.5 Operating Condition of EUT

6.5.1.Setup the EUT as shown on Section 6.1.

6.5.2.Turn on the power of all equipment.

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

6.6 Test Procedure

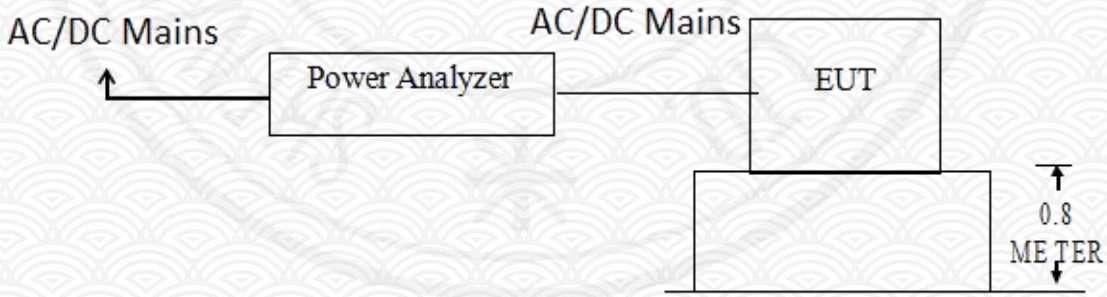
The EUT is placed on a turn table which is 0.8 meter above ground. The turn table can rotate 358 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna which is mounted on a antenna tower. The antenna can move up and down between 1 to 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 test.
The bandwidth setting on the test receiver is 120 kHz.
The EUT is tested in Semi-Anechoic Chamber. and all the scanning waveform is put in **Appendix III.**

6.7 Test Results

PASS.

7. HARMONIC CURRENT EMISSION TEST

7.1 Block Diagram of Test Setup



7.2 Test Standard

EN IEC 61000-3-2:2019/A1:2021 Class A

7.3 Operating Condition of EUT

7.3.1.Setup the EUT as shown in Section 7.1.
7.3.2.Turn on the power of all equipments.
7.3.3.Let the EUT work in test mode (ON) and test it.

This report shall not be altered,increased or deleted.The results shown in this test report refer only to the sample(s) tested. Without written approval of CIRCLE Lab, this test report shall not be copied except in full and published as advertisement. CIRCLE Lab.

7.4 Test Procedure

The power cord of the EUT is connected to the output of the test system. Turn on the Power of the EUT and use the test system to test the harmonic current level.

7.5 Test Results

PASS. Data see **Appendix I**

8. VOLTAGE FLUCTUATIONS & FLICKER TEST

8.1 Block Diagram of Test Setup

Same as Section 7.1.

8.2 Test Standard

EN 61000-3-3:2013/A2:2021

8.3 Operating Condition of EUT

Same as Section 8.3.. The power cord of the EUT is connected to the output of the test system. Turn on the power of the EUT and use the test system to test.

Flicker Test Limit

Test items	Limits
Pst	1.0
dc	3.3%
dmax	4.0%
dt	Not exceed 3.3% for 500ms

8.4 Test Data

Test Mode: 1		
Items	Reading	Limit
dmax	0.01	4.0%
dc	0.03	3.3%
dt	0.05	Not exceed 3.3% for 500ms
Pst	0.001	1.0

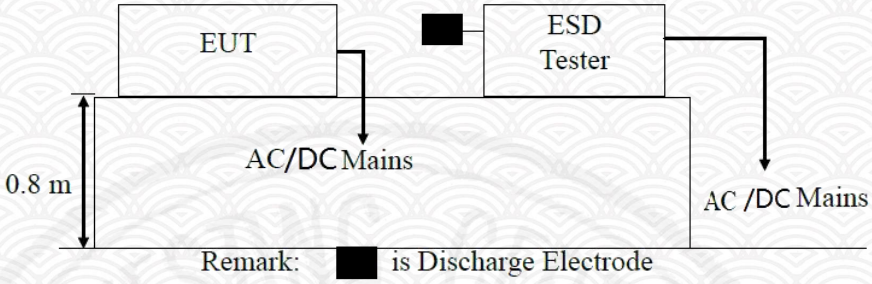
8.5 Test Results

PASS. Data see **Appendix I**

This report shall not be altered,increased or deleted.The results shown in this test report refer only to the sample(s) tested. Without written approval of CIRCLE Lab, this test report shall not be copied except in full and published as advertisement. CIRCLE Lab.

9. ELECTROSTATIC DISCHARGE TEST

9.1. Block Diagram of ESD Test Setup



9.2. Test Standard

EN 55035:2017/A11:2020
Severity Level 3 for Air Discharge at 8kV
Severity Level 2 for Contact Discharge at 4kV

9.3. Severity Levels and Performance Criterion

9.3.1.Severity level

Level	Test Voltage Contact Discharge (kV)	Test Voltage Air Discharge (kV)
1.	2	2
2.	4	4
3.	6	8
4.	8	15
X.	Special	Special

9.3.2.Performance criterion: B

9.4. EUT Configuration on Test

The configuration of EUT are listed in Section 3.2.

9.5. Operating Condition of EUT

9.5.1.Setup the EUT as shown in Section 9.1.

9.5.2.Turn on the power of all equipment.

9.5.3.Let the EUT work in test mode (On) and test it.

9.6. Test Procedure

This report shall not be altered,increased or deleted.The results shown in this test report refer only to the sample(s) tested. Without written approval of CIRCLE Lab, this test report shall not be copied except in full and published as advertisement. CIRCLE Lab.

9.6.1.Air Discharge:

This test is done on a non-conductive surfaces. The round discharge tip of the discharge electrode shall be approached as fast as possible to touch the EUT.
After each discharge, the discharge electrode shall be removed from the EUT. The generator is then re-triggered for a new single discharge and repeated 10 times for each pre-selected test point. This procedure shall be repeated until all the air discharge completed.

9.6.2.Contact Discharge:

All the procedure shall be same as Section 9.6.1. except that the tip of the discharge electrode shall touch the EUT before the discharge switch is operated.

9.6.3.Indirect discharge for horizontal coupling plane

At least 20 single discharges shall be applied to the horizontal coupling plane, at points on each side of the EUT. The discharge electrode positions vertically at a distance of 0.1m from the EUT and with the discharge electrode touching the coupling plane.

9.6.4.Indirect discharge for vertical coupling plane

At least 20 single discharge shall be applied to the center of one vertical edge of the coupling plane. The coupling plane, of dimensions 0.5m X 0.5m, is placed parallel to, and positioned at a distance of 0.1m from the EUT. Discharges shall be applied to the coupling plane, with this plane in sufficient different positions that the four faces of the EUT are completely illuminated.

9.7. Test Results

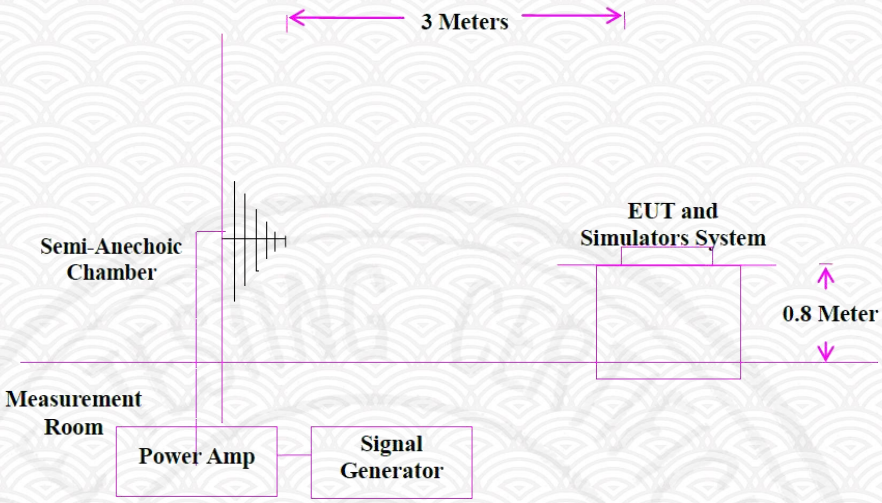
Temperature:	25℃	Humidity:	55%
Air Discharge: ±8kV Contact Discharge: ±4kV	For each point positive 25 times and negative 25 times discharge.		
Location	**Kind** A-Air Discharge C-Contact Discharge		**Result**
HCP	C		PASS
VCP	C		PASS
Gap	A		PASS
LED Display screen	A		PASS
Screw	C		PASS
Product surface	C		PASS

Discharge should be considered on Contact and Air and Horizontal Coupling Plane (HCP) and Vertical Coupling Plane (VCP).

This report shall not be altered,increased or deleted.The results shown in this test report refer only to the sample(s) tested. Without written approval of CIRCLE Lab, this test report shall not be copied except in full and published as advertisement. CIRCLE Lab.

10. RF FIELD STRENGTH SUSCEPTIBILITY TEST

10.1. R/S Test Setup



10.2. Test Standard

EN 55035:2017/A11:2020

10.3. Severity Levels and Performance Criterion

10.3.1. Severity level 2

Level	Field Strength V/m
1.	1
2.	3
3.	10
X.	Special

10.3.2. Performance criterion : A

10.4. EUT Configuration on Test

The configuration of EUT are listed in Section 3.2

10.5. Operating Condition of EUT

Setup the EUT as shown in Section 10.1. The operating condition of EUT are listed in section 3.3.

10.6. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above the ground. The EUT is set 3 meters away from the transmitting antenna which is mounted on an

This report shall not be altered,increased or deleted.The results shown in this test report refer only to the sample(s) tested. Without written approval of CIRCLE Lab, this test report shall not be copied except in full and published as advertisement. CIRCLE Lab.

antenna tower. Both horizontal and vertical polarization of the antenna are set on test. Each of the four sides of EUT must be faced this transmitting antenna and measured individually. In order to judge the EUT performance, a CCD camera is used to monitor the EUT. All the scanning conditions are as follows :

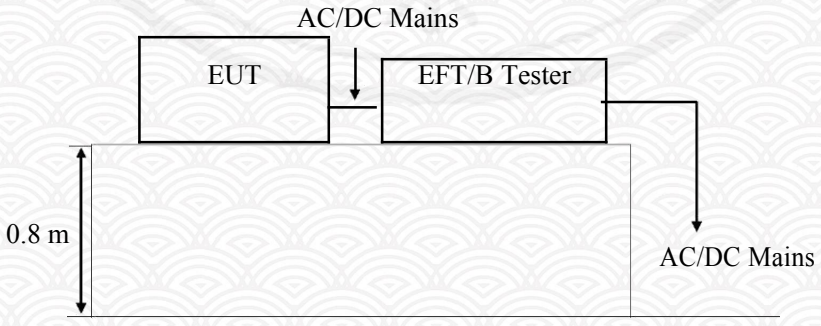
Condition of Test	Remarks
1. Fielded Strength	3 V/m (Severity Level 2)
2. Radiated Signal	Modulated
3. Scanning Frequency	80 - 1000 MHz, 1.4GHz-2.7GHz
4. Sweeping time of radiated	0.0015 decade/s
5. Dwell Time	1 Sec.

10.7.Test Results

Temperature:	25℃		Humidity:	55%
Modulation: ■AM	□ Pulse	□ none	■1kHz 80%	
Criterion : A				
Frequency Range : 80 MHz to 1000 MHz，1.4GHz-2.7GHz				
Steps:1%				
	Horizontal	Vertical		
Front	Pass	Pass		
Right	Pass	Pass		
Rear	Pass	Pass		
Left	Pass	Pass		

11.ELECTRICAL FAST TRANSIENT/BURST TEST

11.1.EFT Test Setup



11.2.Test Standard

EN55035:2017/A11:2020
Severity Level 2 at 1kV

This report shall not be altered,increased or deleted.The results shown in this test report refer only to the sample(s) tested. Without written approval of CIRCLE Lab, this test report shall not be copied except in full and published as advertisement. CIRCLE Lab.

11.3.Severity Levels and Performance Criterion

11.3.1.Severity level

Open Circuit Output Test Voltage ±10%		
Level	On Power Supply Lines	On I/O (Input/Output) Signal data and control lines
1.	0.5 kV	0.25 kV
2.	1 kV	0.5 kV
3.	2 kV	1 kV
4.	4 kV	2 kV
X	Special	Special

11.3.2.Performance criterion : B

11.4.EUT Configuration on Test

The configuration of EUT are listed in Section 3.2..

11.5.Operating Condition of EUT

Setup the EUT as shown in Section 11.1. The operating condition of EUT are listed in section 3.3.

11.6.Test Procedure

The EUT is put on the table which is 0.8 meter high above the ground. This reference ground plane shall project beyond the EUT by at least 0.1m on all sides and the minimum distance between the EUT and all other conductive structure, except the ground plane beneath the EUT, shall be more than 0.5m.

11.6.1.For input and output AC power ports:

The EUT is connected to the power mains by using a coupling device which couples the EFT interference signal to AC power lines. Both polarities of the test voltage should be applied during compliance test and the duration of the test is 2 mins.

11.6.2.For signal lines and control lines ports: It's unnecessary to test.

11.6.3.For DC output line ports: It's unnecessary to test.

11.7.Test Results

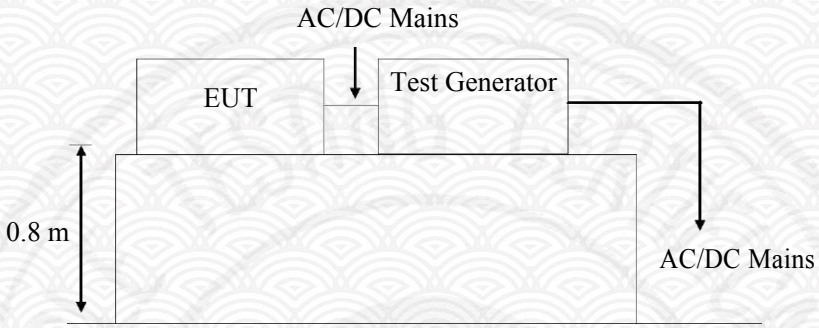
Temperature:	25℃			Humidity:	55%			
Power Supply :	AC 230V/50Hz			Test Mode:	White screen, maximum brightness			
Inject Place : AC Mains								
Inject Line	Voltage kV	Inject Time(s)	Inject Method	Results	Inject Line	Voltage kV	Inject Time(s)	Inject Method	Results
L	±1	120	Direct	PASS					
N	±1	120	Direct	PASS					
L+N	±1	120	Direct	PASS					
PE	±1	120	Direct	PASS					

This report shall not be altered,increased or deleted.The results shown in this test report refer only to the sample(s) tested. Without written approval of CIRCLE Lab, this test report shall not be copied except in full and published as advertisement. CIRCLE Lab.

L+N+PE	±1	120	Direct	PASS					
L+PE	±1	120	Direct	PASS					
N+PE	±1	120	Direct	PASS					

12.SURGE TEST

12.1.Surge Test Setup



12.2.Test Standard

EN55035:2017/A11:2020
Severity Level 2 for Line to Line at 1.0kV
Severity Level 3 for Line to earth(ground) at 2.0kV

12.3.Severity Levels and Performance Criterion

12.3.1.Severity level

Severity Level	Open-Circuit Test Voltage
	kV
1	0.5
2	1.0
3	2.0
4	4.0
*	Special

Performance criterion **: B**

12.4.EUT Configuration on Test

The configuration of EUT are listed in Section 3.2.

12.5.Operating Condition of EUT

12.5.1.Setup the EUT as shown in Section 12.1..

12.5.2.Turn on the power of all equipment.

12.5.3.Let the EUT work in test mode (On) and test it.

This report shall not be altered,increased or deleted.The results shown in this test report refer only to the sample(s) tested. Without written approval of CIRCLE Lab, this test report shall not be copied except in full and published as advertisement. CIRCLE Lab.

12.6.Test Procedure

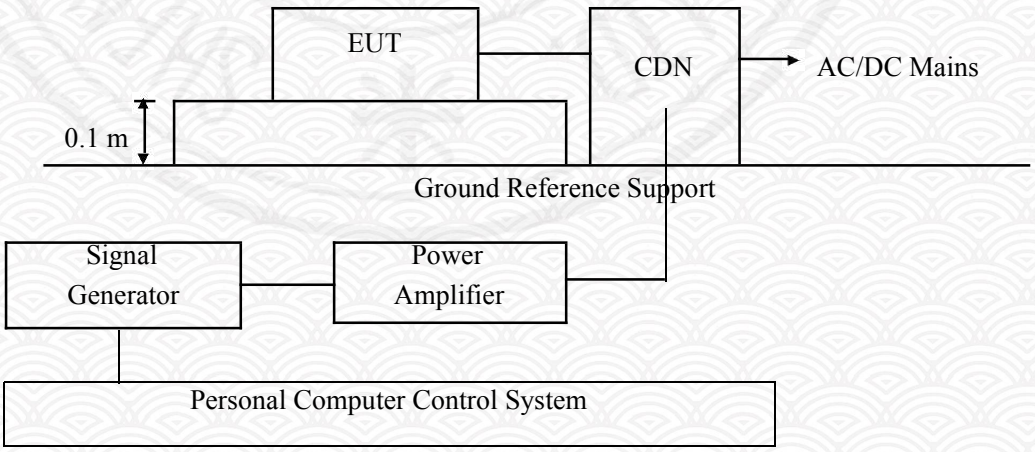
1. Setup the EUT and test generator as shown on Section 12.1.
2. For line to line coupling mode, provide a 1.0kV 1.2/50us voltage surge (at open-circuit condition) and 8/20us current surge to EUT selected points.
3. At least 5 positive and 5 negative (polarity) tests with a maximum 1/min repetition rate are conducted during test.
4. Different phase angles are done individually.
5. Record the EUT operating situation during compliance test and decide the EUT immunity criterion for above each test.

12.7.Test Results

Temperature:	25℃		Humidity:	55%	
Location	Polarity	Phase Angle	No of Pulse	Pulse Voltage (kV)	Result
L-N	+/-	90/270	5	1.0	PASS
L-PE	+/-	90/270	5	2.0	PASS
N-PE	+/-	90/270	5	2.0	PASS
L+N-PE	+/-	90/270	5	2.0	PASS

13.INJECTED CURRENTS SUSCEPTIBILITY TEST

13.1.Block Diagram of Test AC Mains Setup



13.2.Test Standard

EN55035:2017/A11:2020
Severity Level 2 at 3 V (rms), 0.15MHz ~ 30MHz
Severity Level 1 at 1V (rms), 30MHz ~ 80MHz

This report shall not be altered,increased or deleted.The results shown in this test report refer only to the sample(s) tested. Without written approval of CIRCLE Lab, this test report shall not be copied except in full and published as advertisement. CIRCLE Lab.

13.3.Severity Levels and Performance Criterion

13.3.1.Severity level 2

Level	Field Strength V/m
1.	1
2.	3
3.	10
X	Special

13.3.2.Performance criterion: A

13.4.EUT Configuration on Test

The configuration of EUT are listed in Section 3.2

13.5.Operating Condition of EUT

Setup the EUT as shown in Section 13.1.. The operating condition of EUT are listed in section 3.3

13.6.Test Procedure

1. Set up the EUT, CDN and test generators as shown on Section 13.1.
2. Let the EUT work in test mode and test it.
3. The EUT are placed on an insulating support 0.8m high above a ground reference plane. CDN (coupling and decoupling device) is placed on the ground plane about 0.3m from EUT. Cables between CDN and EUT are as short as possible, and their height above the ground reference plane shall be between 30 and 50 mm (where possible).
4. The disturbance signal described below is injected to EUT through CDN.
5. The EUT operates within its operational mode(s) under intended climatic conditions after power on.
6. The frequency range is swept from 150kHz to 80MHz using 3V signal level, and with the disturbance signal 80% amplitude modulated with a 1kHz sine wave.
7. The rate of sweep shall not exceed 1.5*10-3decades/s. Where the frequency is swept incrementally, the step size shall not exceed 1% of the start and thereafter 1% of the preceding frequency value.
8. Recording the EUT operating situation during compliance testing and decide the EUT immunity criterion.

13.7.Test Results

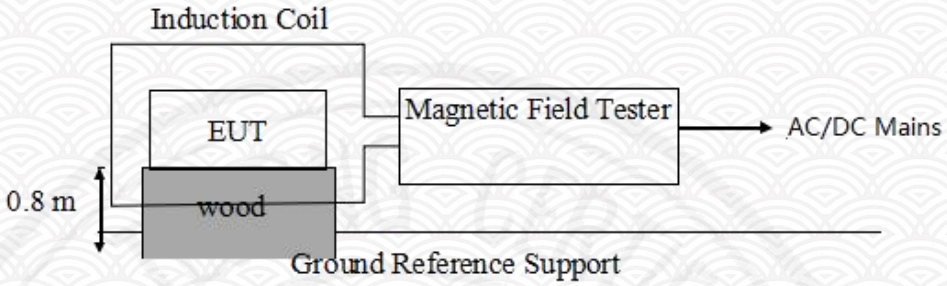
Temperature	25℃	Humidity	55%	
Frequency Range (MHz)	Injected Position	Strength	Criterion	Result
0.15 ~ 30	AC Line	3V(rms), Unmodulated	A	PASS
30 ~ 80	AC Line	1V(rms), Unmodulated	A	PASS

This report shall not be altered,increased or deleted.The results shown in this test report refer only to the sample(s) tested. Without written approval of CIRCLE Lab, this test report shall not be copied except in full and published as advertisement. CIRCLE Lab.

30 ~ 80	AC Line	3V(rms), Unmodulated	A	PASS

14. MAGNETIC FIELD IMMUNITY TEST

14.1 Block Diagram of Test Setup



14.2 Test Standard

EN55035:2017/A11:2020
Severity Level 1 at 1A/m

14.3 Severity Levels and Performance Criterion

14.3.1 Severity level

Level	Magnetic Field Strength A/m
1.	1
2.	3
3.	10
4.	30
5.	100
X.	Special

14.3.2 Performance criterion : A

14.4 EUT Configuration on Test

The configuration of EUT are listed in Section 3.2.

14.5 Operating Condition of EUT

14.5.1.Setup the EUT as shown in Section 14.1

14.5.2.Turn on the power of all equipments.

This report shall not be altered,increased or deleted.The results shown in this test report refer only to the sample(s) tested. Without written approval of CIRCLE Lab, this test report shall not be copied except in full and published as advertisement. CIRCLE Lab.

14.5.3.Let the EUT work in test mode (ON) and test it.

14.6 Test Procedure

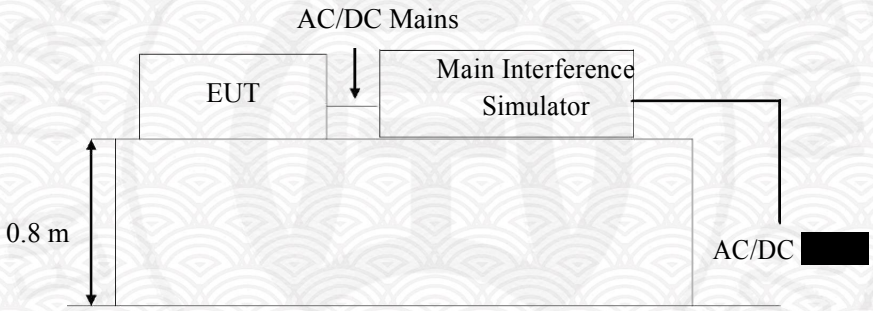
The EUT shall be subjected to the test magnetic field by using the induction coil of standard dimensions (1m*1m) and shown in Section 14.1. The induction coil shall then be rotated by 90°in order to expose the EUT to the test field with different orientations.

14.7 Test Results

PASS.

15.VOLTAGE DIPS AND INTERRUPTIONS TEST

15.1.Voltage Dips and Interruptions Test Setup



Remark: Combination wave generator and decoupling network are included in test generator.

15.2.Test Standard

EN55035:2017/A11:2020

15.3.Severity Levels and Performance Criterion

15.3.1.Severity level

Test Level %UT	Voltage dip and short interruptions %UT	Duration (in period)	Duration Times
0	100	0.5p	10ms
70	30	25p	500ms
0	100	250p	5000ms

15.3.2.Performance criterion : C & B

15.4.EUT Configuration on Test

The configuration of EUT are listed in Section 3.2.

This report shall not be altered,increased or deleted.The results shown in this test report refer only to the sample(s) tested. Without written approval of CIRCLE Lab, this test report shall not be copied except in full and published as advertisement. CIRCLE Lab.

15.5.Operating Condition of EUT

15.5.1.Setup the EUT as shown in Section 15.1.

15.5.2.Turn on the power of all equipment.

15.5.3.Let the EUT work in test mode (On) and test it.

15.6.Test Procedure

1. Set up the EUT and test generator as shown on Section 15.1.
2. The interruptions is introduced at selected phase angles with specified duration.
3. Record any degradation of performance.

15.7.Test Result

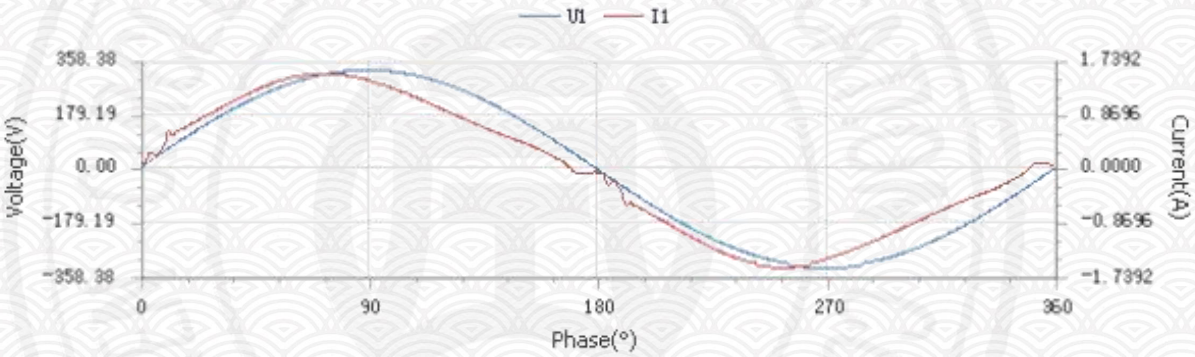
Temperature	25℃		Humidity	55%	
Test Level % U_T	Voltage Dips & Short Interruptions % U_T	Duration (in period)	Phase Angle	Criterion	Result
0	100	0.5P	0°,90°, 270°	A	PASS
30	70	25P	0°,90°, 270°	A	PASS
0	100	250P	0°,90°, 270°	C	PASS

This report shall not be altered,increased or deleted.The results shown in this test report refer only to the sample(s) tested. Without written approval of CIRCLE Lab, this test report shall not be copied except in full and published as advertisement. CIRCLE Lab.

APPENDIX I :Harmonics Current and Flicker Data

Harmonics Test Report_IEC 61000-3-2 Ed. 5.1 (2020)

Tester	:	NEVA					
Tested Device	:	LED Display	Product Type	:	P1.8mm	Work Mode	: White screen, maximum brightness
Test Type	:	Class A_IEC 61000-3-2 Ed. 5.1 (2020)				Pre-Heat Time	: 900 s
Test Date	:	2024-12-10	Start Time	:	16:11:16	End Time	: 16:21:46
Temperature	:	25.0°C	Humidity	:	55.0%	Test Volt.	: 220.00V
Comments	:						
Customer	:					Result	: Pass





This report shall not be altered,increased or deleted.The results shown in this test report refer only to the sample(s) tested. Without written approval of CIRCLE Lab, this test report shall not be copied except in full and published as advertisement. CIRCLE Lab.

Current Test Record

Tester	:	NEVA					
Tested Device	:	LED Display	Product Type	:	P1.8mm	Work Mode	: White screen, maximum brightness
Test Type	:	Class A_IEC 61000-3-2 Ed. 5.1 (2020)				Pre-Heat Time	: 900 s
Test Date	:	2024-12-10	Start Time	:	16:11:16	End Time	: 16:21:46
Temperature	:	25.0°C	Humidity	:	55.0%	Test Volt.	: 220.00V
Comments	:						
Customer	:					Result	: Pass

Total Current Harmonic ans Some Odd Harmonic Parameters

THC(A)	0.0961	THD(%)	9.49	POHC(A)	0.0098	POHC Limit(A)	0.2514

Maximum Value of Relevant Parameter During Test Period

Urms(V)	230.24	Freq(Hz)	50.000
Irms(A)	1.0178	Ipeak(A)	1.5809
I1(A)	1.0135	ICF	1.5570
P(W)	228.67	λ	0.9756

Determination of Harmonics and Limits

Order(n)	Harmonics Current Avg.(A)	100% Limit(A)	Limit Percent(%)	Harmonics Current Max.(A)	150% Limit(A)	Limit Percent(%)	Result
2	0.0088	1.0800	0.81	0.0091	1.6200	0.56	Pass
3	0.0914	2.3000	3.97	0.0922	3.4500	2.67	Pass
4	0.0016	0.4300	N/A	0.0018	0.6450	N/A	Pass
5	0.0064	1.1400	0.56	0.0069	1.7100	0.40	Pass
6	0.0008	0.3000	N/A	0.0009	0.4500	N/A	Pass
7	0.0066	0.7700	0.86	0.0069	1.1550	0.60	Pass
8	0.0005	0.2300	N/A	0.0006	0.3450	N/A	Pass
9	0.0095	0.4000	2.38	0.0100	0.6000	1.67	Pass
10	0.0005	0.1840	N/A	0.0005	0.2760	N/A	Pass
11	0.0121	0.3300	3.67	0.0126	0.4950	2.55	Pass
12	0.0004	0.1533	N/A	0.0005	0.2300	N/A	Pass
13	0.0120	0.2100	5.71	0.0124	0.3150	3.94	Pass
14	0.0003	0.1314	N/A	0.0003	0.1971	N/A	Pass
15	0.0104	0.1500	6.93	0.0107	0.2250	4.76	Pass
16	0.0002	0.1150	N/A	0.0002	0.1725	N/A	Pass
17	0.0087	0.1324	6.57	0.0089	0.1985	4.48	Pass
18	0.0001	0.1022	N/A	0.0002	0.1533	N/A	Pass
19	0.0069	0.1184	5.83	0.0070	0.1776	3.94	Pass
20	0.0002	0.0920	N/A	0.0002	0.1380	N/A	Pass
21	0.0050	0.1071	N/A	0.0051	0.1607	N/A	Pass
22	0.0002	0.0836	N/A	0.0003	0.1255	N/A	Pass
23	0.0031	0.0978	N/A	0.0033	0.1467	N/A	Pass
24	0.0002	0.0767	N/A	0.0003	0.1150	N/A	Pass
25	0.0013	0.0900	N/A	0.0016	0.1350	N/A	Pass
26	0.0002	0.0708	N/A	0.0002	0.1062	N/A	Pass
27	0.0006	0.0833	N/A	0.0007	0.1250	N/A	Pass
28	0.0002	0.0657	N/A	0.0002	0.0986	N/A	Pass
29	0.0019	0.0776	N/A	0.0021	0.1164	N/A	Pass
30	0.0001	0.0613	N/A	0.0002	0.0920	N/A	Pass
31	0.0029	0.0726	N/A	0.0031	0.1089	N/A	Pass
32	0.0001	0.0575	N/A	0.0001	0.0863	N/A	Pass
33	0.0035	0.0682	N/A	0.0036	0.1023	N/A	Pass
34	0.0001	0.0541	N/A	0.0002	0.0812	N/A	Pass
35	0.0036	0.0643	N/A	0.0037	0.0964	N/A	Pass
36	0.0002	0.0511	N/A	0.0002	0.0767	N/A	Pass
37	0.0035	0.0608	N/A	0.0036	0.0912	N/A	Pass
38	0.0002	0.0484	N/A	0.0003	0.0726	N/A	Pass
39	0.0030	0.0577	N/A	0.0032	0.0865	N/A	Pass
40	0.0003	0.0460	N/A	0.0003	0.0690	N/A	Pass

This report shall not be altered,increased or deleted.The results shown in this test report refer only to the sample(s) tested. Without written approval of CIRCLE Lab, this test report shall not be copied except in full and published as advertisement. CIRCLE Lab.

Voltage Test Record

Tester : NEVA

Tested Device : LED Display Product Type : P1.8mm Work Mode : White screen, maximum brightness

Test Type : Class A_IEC 61000-3-2 Ed. 5.1 (2020) Pre-Heat Time : 900 s

Test Date : 2024-12-10 Start Time : 16:11:16 End Time : 16:21:46

Temperature : 25.0°C Humidity : 55.0% Test Volt. : 220.00V

Comments :

Customer : Result : Pass

Determination of Voltage Relevant Parameter During Test Period

Item	Nominal Value	Tested Value	Error Value	Allowable Error Value	Result
Urms(V)	230.00	230.25	0.25	±2.0%	Pass
Frequency(Hz)	50.000	49.999	0.001	±0.5%	Pass
CFU	1.4100	1.4154	0.0054	±0.01	Pass
Peak-Volt Phase	90.00	89.61	0.39	±3	Pass

Determination of Voltage Harmonics and Limits

Order(n)	Uhdf	Limit(%)	Limit Percent(%)	Result
1	100%	---	---	---
2	0.01%	0.20	5.08%	Pass
3	0.01%	0.90	1.45%	Pass
4	0.00%	0.20	1.13%	Pass
5	0.00%	0.40	0.22%	Pass
6	0.00%	0.20	1.28%	Pass
7	0.00%	0.30	0.39%	Pass
8	0.00%	0.20	1.87%	Pass
9	0.01%	0.20	2.90%	Pass
10	0.01%	0.20	4.25%	Pass
11	0.00%	0.10	2.41%	Pass
12	0.01%	0.10	8.40%	Pass
13	0.01%	0.10	6.34%	Pass
14	0.00%	0.10	4.22%	Pass
15	0.01%	0.10	6.00%	Pass
16	0.00%	0.10	1.87%	Pass
17	0.00%	0.10	3.52%	Pass
18	0.00%	0.10	1.13%	Pass
19	0.01%	0.10	5.98%	Pass
20	0.00%	0.10	0.89%	Pass
21	0.01%	0.10	8.72%	Pass
22	0.00%	0.10	0.91%	Pass
23	0.01%	0.10	9.55%	Pass
24	0.00%	0.10	0.92%	Pass
25	0.01%	0.10	8.55%	Pass
26	0.00%	0.10	0.78%	Pass
27	0.01%	0.10	9.32%	Pass
28	0.00%	0.10	0.60%	Pass
29	0.01%	0.10	9.23%	Pass
30	0.00%	0.10	1.05%	Pass
31	0.01%	0.10	8.67%	Pass
32	0.00%	0.10	1.01%	Pass
33	0.01%	0.10	9.33%	Pass
34	0.00%	0.10	1.59%	Pass
35	0.01%	0.10	8.33%	Pass
36	0.00%	0.10	1.31%	Pass
37	0.01%	0.10	8.21%	Pass
38	0.00%	0.10	1.53%	Pass
39	0.01%	0.10	8.00%	Pass
40	0.00%	0.10	1.45%	Pass

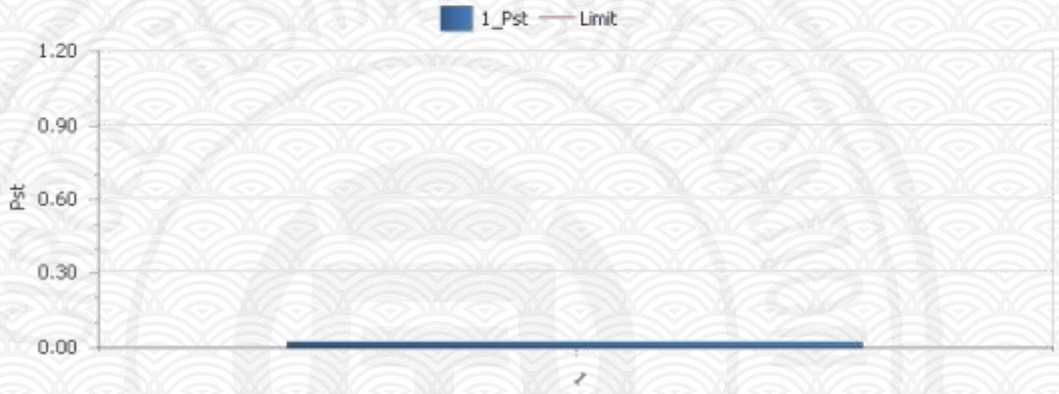
This report shall not be altered,increased or deleted.The results shown in this test report refer only to the sample(s) tested. Without written approval of CIRCLE Lab, this test report shall not be copied except in full and published as advertisement. CIRCLE Lab.

Flicker Test Summary per EN 61000-3-3

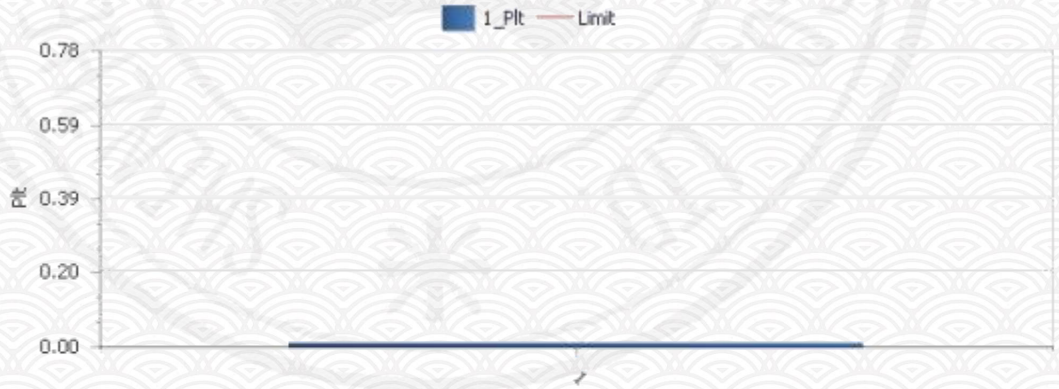
Flicker Test Report IEC 61000-3-3 Ed. 3.1 (2017)

Tester	:	NEVA					
Tested Device	:	LED Display	Product Type	:	P1.8mm	Work Mode	: White screen, maximum brightness
Test Type	:	All Parameters					
Test Date	:	2024-12-10	Start Time	:	16:30:33	End Time	: 16:40:33
Temperature	:	25.0°C	Humidity	:	55.0%	Test Volt.	: 220.00V
Comments	:						
Customer	:					Result	: PASS

Pst and Limit



Plt and Limit



Relevant Parameter and Judgement During Test Period

Vrms at the end of test(V)	229.99			
Error Max(%)		Test Limit(%)		
T-max(ms)	0.00	Test Limit(ms)	500	Pass
dc(%)	0.00	Test Limit(%)	3.30	Pass
dmax(%)	0.00	Test Limit(%)	4.00	Pass
Pst	0.022	Test Limit	1.000	Pass
Plt	0.010	Test Limit	0.650	Pass

Elem 1 Test Parameters

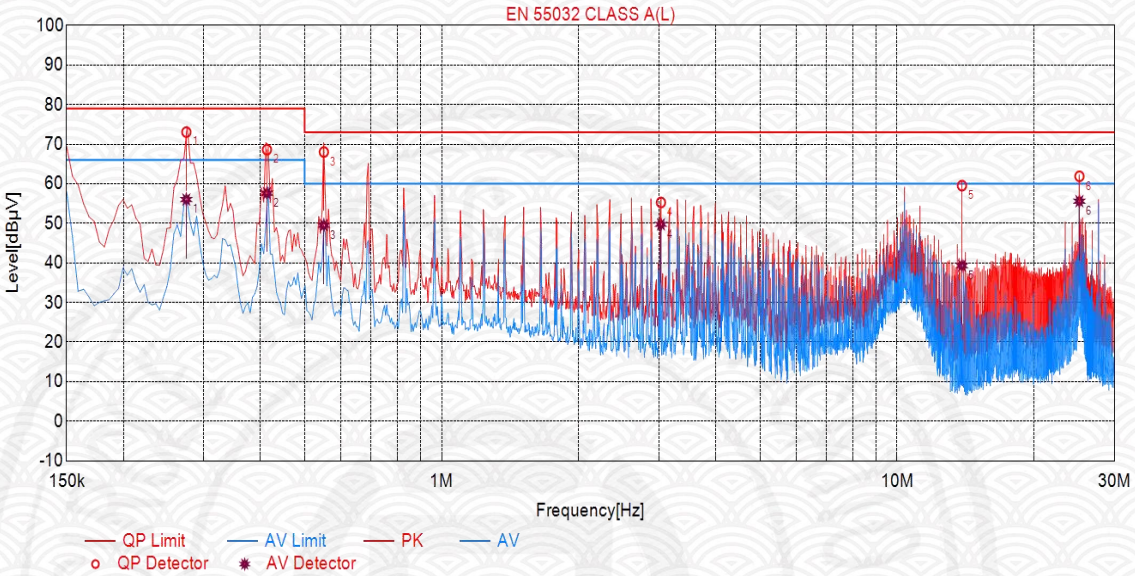
Num	dc(%)	dmax(%)	Tmax(ms)	Pst	Plt
1	0.00	0.00	0.00	0.022	0.010

This report shall not be altered,increased or deleted.The results shown in this test report refer only to the sample(s) tested. Without written approval of CIRCLE Lab, this test report shall not be copied except in full and published as advertisement. CIRCLE Lab.

APPENDIX II :Conducted Emission

Operation Mode : White screen, maximum brightness

Phase : L (150kHz – 30MHz)

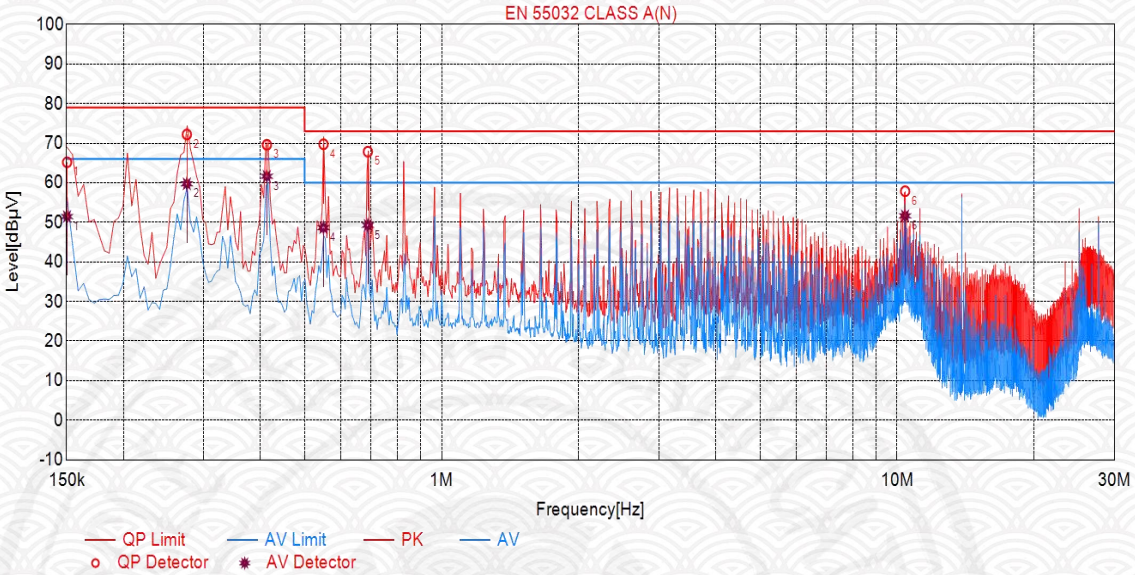


Final Data List

NO.	Freq. [MHz]	QP Value [dBµV]	QP Limit [dBµV]	QP Margin [dB]	AV Value [dBµV]	AV Limit [dBµV]	AV Margin [dB]	Verdict
1	0.2748	73.06	79.00	5.94	56.02	66.00	9.98	PASS
2	0.4131	68.62	79.00	10.38	57.62	66.00	8.38	PASS
3	0.5509	68.03	73.00	4.97	49.50	60.00	10.50	PASS
4	3.0306	55.29	73.00	17.71	49.75	60.00	10.25	PASS
5	13.8899	59.54	73.00	13.46	39.31	60.00	20.69	PASS
6	25.1565	61.89	73.00	11.11	55.60	60.00	4.40	PASS

This report shall not be altered,increased or deleted.The results shown in this test report refer only to the sample(s) tested. Without written approval of CIRCLE Lab, this test report shall not be copied except in full and published as advertisement. CIRCLE Lab.

Operation Mode : White screen, maximum brightness
Phase : N (150kHz – 30MHz)



Final Data List

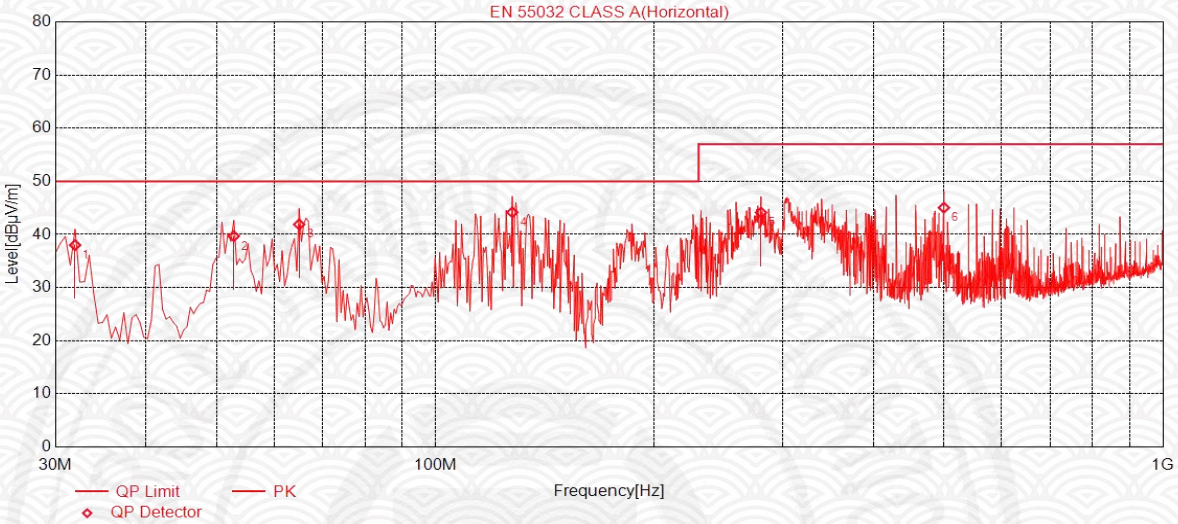
NO.	Freq. [MHz]	QP Value [dBµV]	QP Limit [dBµV]	QP Margin [dB]	AV Value [dBµV]	AV Limit [dBµV]	AV Margin [dB]	Verdict
1	0.1503	65.19	79.00	13.81	51.47	66.00	14.53	PASS
2	0.2755	72.21	79.00	6.79	59.73	66.00	6.27	PASS
3	0.4129	69.61	79.00	9.39	61.64	66.00	4.36	PASS
4	0.5499	69.73	73.00	3.27	48.65	60.00	11.35	PASS
5	0.6882	67.87	73.00	5.13	49.27	60.00	10.73	PASS
6	10.4176	57.87	73.00	15.13	51.65	60.00	8.35	PASS

This report shall not be altered,increased or deleted.The results shown in this test report refer only to the sample(s) tested. Without written approval of CIRCLE Lab, this test report shall not be copied except in full and published as advertisement. CIRCLE Lab.

APPENDIX III: Radiated Emission Test data

Polarization : Horizontal
Operation Mode : White screen, maximum brightness

Test Graph

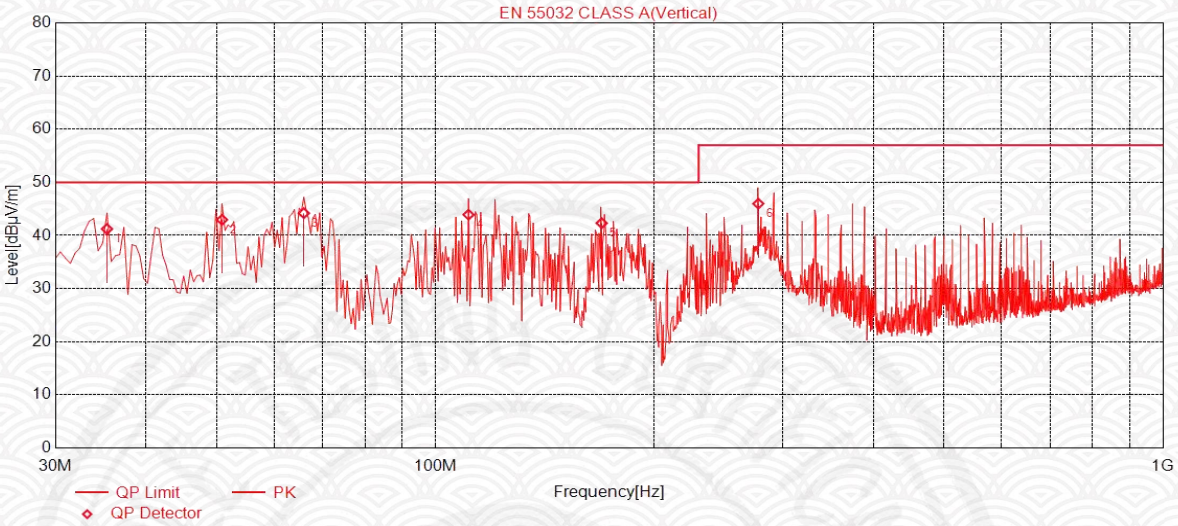


Final Data List								
NO.	Freq. [MHz]	Factor [dB]	QP Value [dBµV/m]	QP Limit [dBµV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity
1	31.9400	-7.20	37.99	50.00	12.01	100	327	Horizonta
2	52.7950	-4.74	39.67	50.00	10.33	100	288	Horizonta
3	64.9200	-7.01	41.88	50.00	8.12	100	323	Horizonta
4	127.4850	-8.45	44.15	50.00	5.85	100	68	Horizonta
5	280.2600	-2.44	44.11	57.00	12.89	100	202	Horizonta
6	499.9650	3.03	45.04	57.00	11.96	100	127	Horizonta

This report shall not be altered,increased or deleted.The results shown in this test report refer only to the sample(s) tested. Without written approval of CIRCLE Lab, this test report shall not be copied except in full and published as advertisement. CIRCLE Lab.

Polarization	Vertical
Operation Mode	White screen, maximum brightness

Test Graph



Final Data List								
NO.	Freq. [MHz]	Factor [dB]	QP Value [dBµV/m]	QP Limit [dBµV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity
1	35.3350	-6.58	41.22	50.00	8.78	100	25	Vertical
2	50.8550	-4.56	42.95	50.00	7.05	100	142	Vertical
3	65.8900	-7.31	44.19	50.00	5.81	100	9	Vertical
4	110.9950	-7.37	43.91	50.00	6.09	100	177	Vertical
5	169.1950	-7.74	42.32	50.00	7.68	100	196	Vertical
6	277.8350	-2.47	45.97	57.00	11.03	100	208	Vertical

This report shall not be altered,increased or deleted.The results shown in this test report refer only to the sample(s) tested. Without written approval of CIRCLE Lab, this test report shall not be copied except in full and published as advertisement. CIRCLE Lab.

APPENDIX IV: EUT and Test Setup Photo

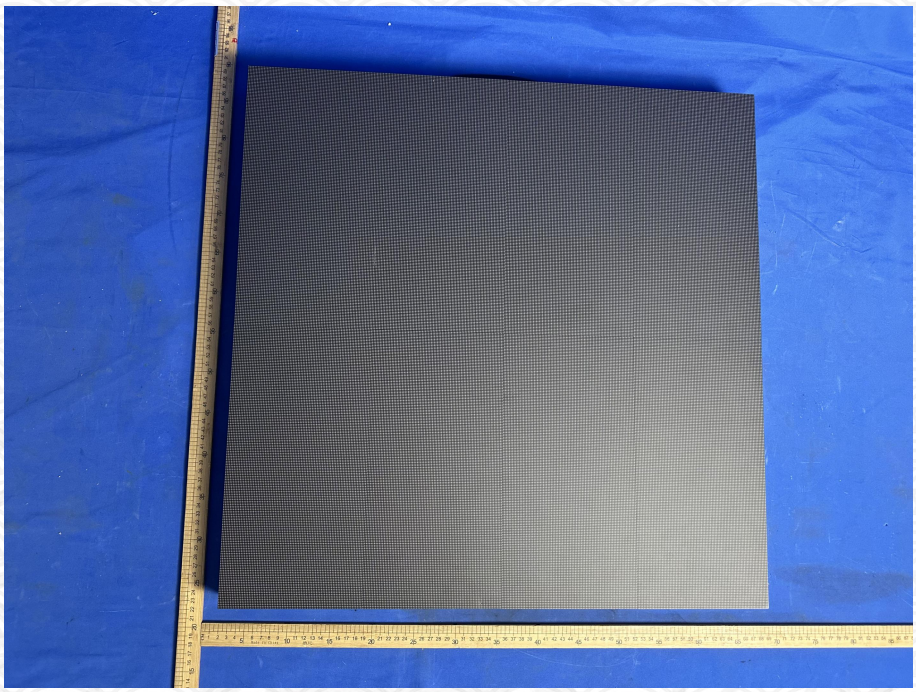


Figure 1: EUT Front-side

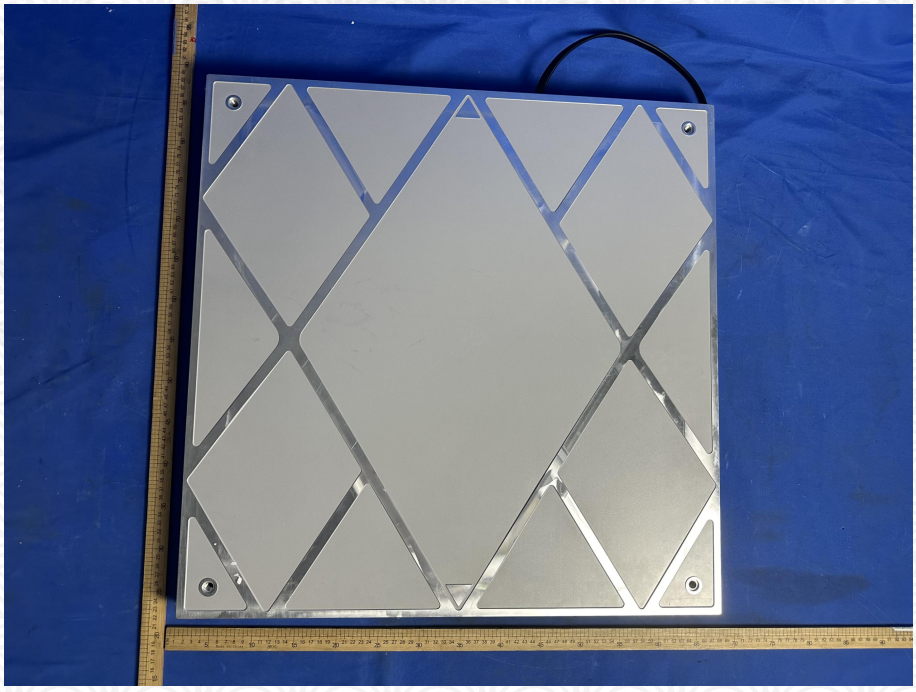


Figure 2: EUT Back-side

This report shall not be altered,increased or deleted.The results shown in this test report refer only to the sample(s) tested. Without written approval of CIRCLE Lab, this test report shall not be copied except in full and published as advertisement. CIRCLE Lab.

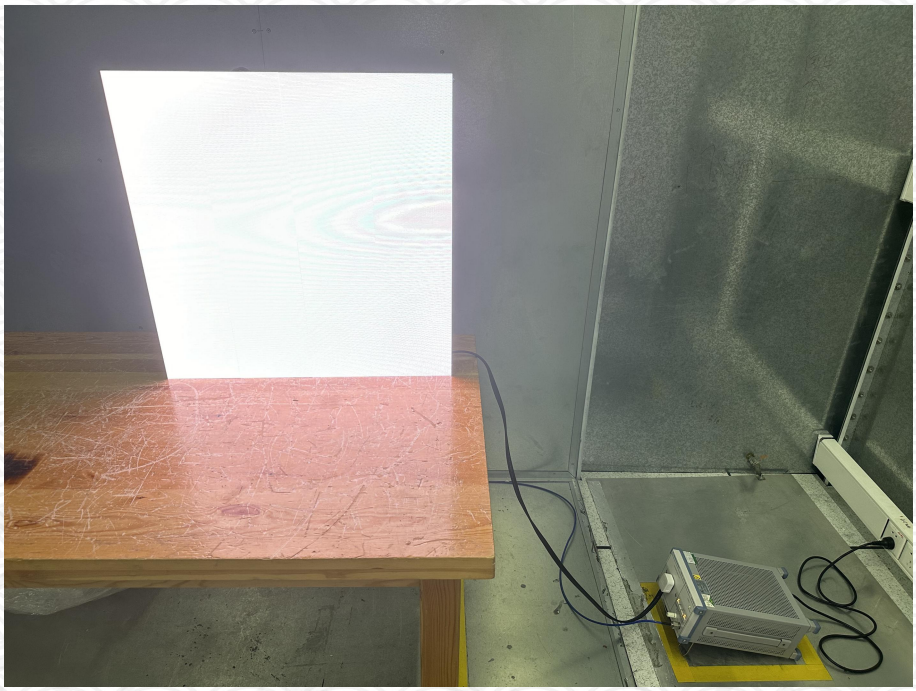


Figure 3:Conducted Emission Test Setup

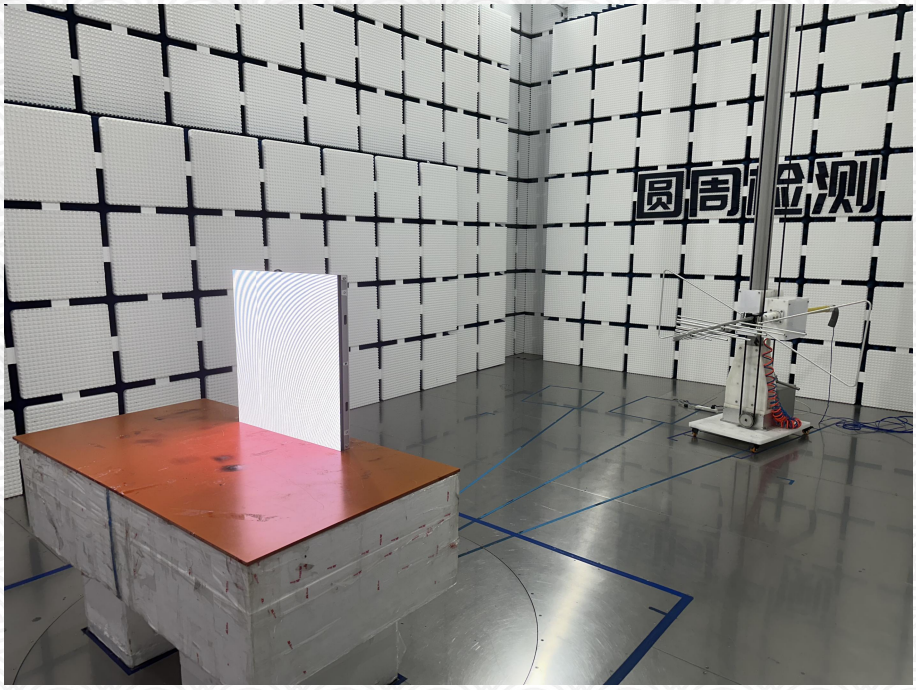


Figure 4: Radiated Emission Test Setup

This report shall not be altered,increased or deleted.The results shown in this test report refer only to the sample(s) tested. Without written approval of CIRCLE Lab, this test report shall not be copied except in full and published as advertisement. CIRCLE Lab.

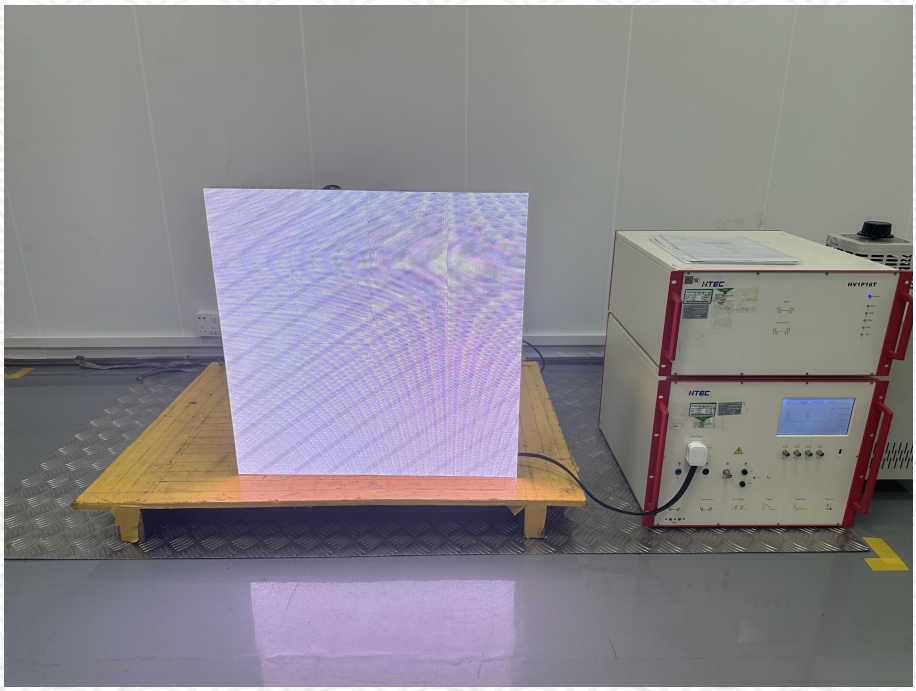


Figure 5: EFT\AC-DIP & Surge Test Setup



Figure 6: ESD Test Setup

This report shall not be altered,increased or deleted.The results shown in this test report refer only to the sample(s) tested. Without written approval of CIRCLE Lab, this test report shall not be copied except in full and published as advertisement. CIRCLE Lab.

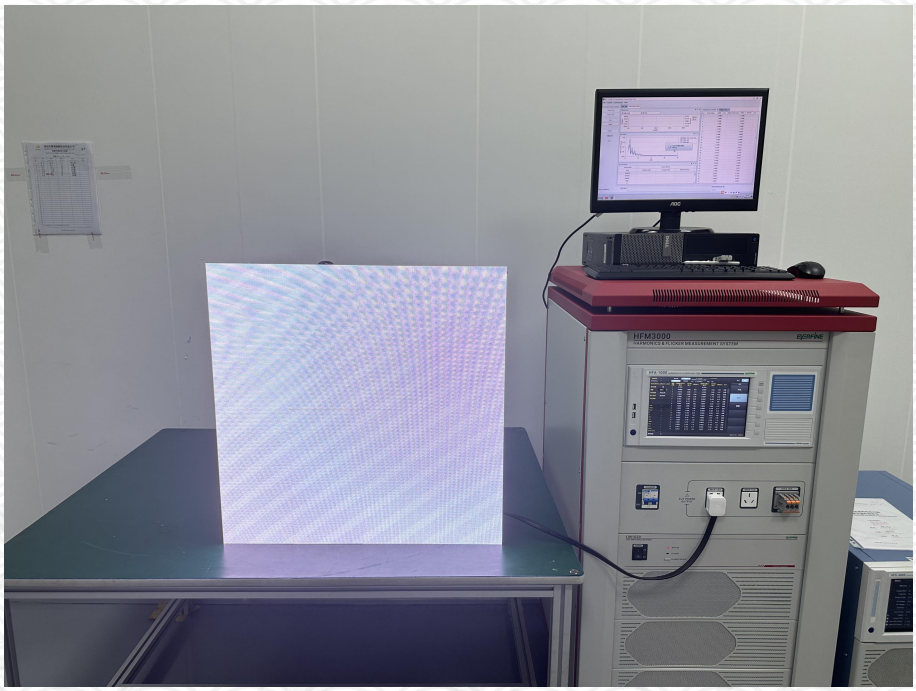


Figure 7: Harmonic Current Emission Test

***** End of Report *****

This report shall not be altered,increased or deleted.The results shown in this test report refer only to the sample(s) tested. Without written approval of CIRCLE Lab, this test report shall not be copied except in full and published as advertisement. CIRCLE Lab.