



EMC REPORT

Report reference No	CTG2411260888D_SR117AY
Compiled by (+ signature)	<i>Jane Ren</i>
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Approved by (+ signature)	<i>[Signature]</i>
Date of issue	Nov. 25, 2024
Testing laboratory	Shenzhen CTG Testing Co., Ltd.
Address	3/F, Yongxing Plastic Plant, No.11, Waihuan Road, Shiyan Street, Bao'an District, Shenzhen, Guangdong, China
Testing location	See above
Applicant's name.....	Red Sky Lighting LLC
Address.....	9370 Pittsburgh Ave, Rancho Cucamonga, CA 91730, United States
Test Procedure Used:	BS EN 55015:2019+A11:2020, BS EN 61000-3-2:2014, BS EN 61000-3-3:2013 BS EN 61547:2009 BS EN 61000-4-2:2009, BS EN 61000-4-3:2006+A1:2008+A2:2010 BS EN 61000-4-4:2012, BS EN 61000-4-5:2014 BS EN 61000-4-6:2014 BS EN 61000-4-8:2010, BS EN 61000-4-11:2004
Testing:	
Date of receipt of test item.....	Nov.18, 2024
Date(s) of performance of tests.....	Nov.18, 2024 To Nov.25, 2024
Non-standard test method.....	N/A
Test item particulars:	LED LIGHT BLX-15L-100-277-57K-HAR-120-X1-CG-GRY-SYK-M20 BLK-7L-100-277-aa-bb-cc-dd-ee-ff-gg-hh-ii; BLK-15L-100-277-aa-bb-cc-dd-ee-ff-gg-hh-ii; BLK-20L-100-277-aa-bb-cc-dd-ee-ff-gg-hh-ii; BLK-25L-100-277-aa-bb-cc-dd-ee-ff-gg-hh-ii; BLK-30L-100-277-aa-bb-cc-dd-ee-ff-gg-hh-ii
Model Number.....	【Suffix "aa" may be 57K, 4K, 3K; "bb" may be Blank, HAR, XXX (Each "X" stands any one from A to Z); "cc" may be 30, 60, 90, 120; "dd" may be X1; "ee" may be CG, DG (DG only available for 7L and 15L); "ff" may be GRY, BLK, WHT, BRZ; "gg" may be SYK, AYK; "hh" may be Blank, EM01, EM02 (EM only available for 7L and 15L); "ii" may be M20, M25;】
Trademark.....	RSL
Model Difference.....	The product's different for size and appearance color.
Manufacturer	Red Sky Lighting LLC
Address.....	9370 Pittsburgh Ave, Rancho Cucamonga, CA 91730, United States

The CE mark as shown below can be used, under the responsibility of the manufacturer, after completion of an EU Declaration of Conformity and compliance with all relevant EU Directives.



Shenzhen CTG Testing Co., Ltd.

Address: 3/F, Yongxing Plastic Plant, No.11, Waihuan Road, Shiyan Street, Bao'an District, Shenzhen, Guangdong, China

Tel: 4001-898-696 Website: <http://www.cert-ctg.com> Email: Services@cert-ctg.com

1 Test Summary

Emission Part				
Item	Standard	Method	Requirement	Result
Conducted Emissions at AC Mains Power Port (150kHz-30MHz)	EN IEC 55015:2019/A11:2020	BS EN IEC 55015:2019/A11:2020	--	Pass
Radiated Emissions	EN IEC 55015:2019/A11:2020	BS EN IEC 55015:2019/A11:2020	Class B	Pass
Discontinuous Interference	EN IEC 55015:2019/A11:2020	BS EN IEC 55015:2019/A11:2020	CISPR 15-1	Pass
Harmonic Current Emission	EN IEC 61000-3-2:2019/A1:2021	BS EN IEC 61000-3-2:2019/A1:2021	Class A	Pass
Voltage Fluctuations and Flicker	EN 61000-3-3:2013/A1:2019/A2:2021	BS EN 61000-3-3:2013/A1:2019/A2:2021	Clause 5 of BS EN 61000-3-3	Pass

Immunity Part				
Item	Standard	Method	Requirement	Result
Electrostatic Discharge	EN61547:2009	BS EN 61000-4-2:2009	2,4kV Contact Discharge, 2,4,8kV Air Discharge	Pass
Continuous RF Electromagnetic field Disturbance	EN IEC 61000-6-1:2019	BS EN 61000-4-3:2006 +A1:2007+A2:2010	80%,1kHz, AM Mod 3V/m,0.08~1GHz 3V/m,1.4~2.0GHz 1V/m,2.0~2.7GHz	Pass
Electrical Fast Transients Burst at AC Mains Power Port	EN IEC 61000-6-1:2019	BS EN 61000-4-4:2012	1kV, 5/50ns Tr/Td, 5kHz Repetition Frequency	Pass
Surge at AC Mains Power Port	EN IEC 61000-6-1:2019	BS EN 61000-4-5:2014 +A1:2017	1.2/50µs Tr/Td, 1kV Line to Line, 2kV Line to Ground	Pass
Conducted Immunity at AC Mains Power Port (150kHz-80MHz)	EN IEC 61000-6-1:2019	BS EN 61000-4-6:2014	3Vrms (emf),80%,1kHz Amp. Mod.	Pass
Voltage Dips and Interruptions	EN IEC 61000-6-1:2019	BS EN 61000-4-11:2004 +A1:2017	For 50Hz: 0 % UT for 0.5cycle, 0 % UT for 1.0cycles, 70 % UT for 25cycles 0 % UT for 250cycles,	Pass

Note: (1)= Continuous working product. (2)=Refer to section 5.4.

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General Information

3.1 Details of E.U.T.

Power supply: AC230V,50Hz
 Test Voltage: AC
 Cable(s): DC:2 wires 1.0m unshielded out put for the adapter.

3.2 Description of Support Units

3.3 Measurement Uncertainty

Test Item	Measurement Uncertainty
Conducted Emissions at AC Mains Power Port (150kHz-30MHz)	2.75dB
Radiated Emissions(30MHz-1000MHz)	4.51dB
Remark: The U_{lab} (lab Uncertainty) is less than U_{CISPR} (CISPR Uncertainty), so the test results – compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit; – non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.	

3.4 Test Location

Shenzhen CTG Testing Co.,Ltd.

3/F.,Yongxing Plastic Plant,No.11,Waihuan Road,Shiyan Street,Bao'an District,Shenzhen,Guangdong,China

3.5 Test Facility

The test facility is recognized, certified, or accredited.

3.6 Deviation from Standards

This report is based on the requirements of customers to carry the equipment in the manufacturer for on-site testing.

3.7 Abnormalities from Standard Conditions

The test equipment in the calibration period, but the test site has not been calibrated.

3.8 EMS Monitor

Visual: LCD Display
 Audio: Buzzing
 Other: N/A

4 Equipment List

Test Equipment	Model	Manufacturer	Serial No.	Cal Date
EMC Laboratory				
Conduction& Radiated Test equipment				
EMI Test Receiver	ESPI	R&S	102086	2024.10.14
LISN	ENV216	R&S	101242	2024.10.14
LISN	3810/2NM	EMCO	000-23625	2024.10.14
Bi-log Antenna	CBL6111D	TESEQ	34678	2024.10.11
Pre-Amplifier (0.1M-3GHz)	EM330	EM	060665	2024.10.11
RE Cable (9K-1G)	N/A	R01	N/A	2024.10.11
EMS Test equipment				
ESD				
ESD TEST GENERATOR	KES4021	KZKUSUI	LB003568	2024.06.27
EFT				
EFT/B Generator	HEFT 51	HTEC	143801	2024.10.14
Surge				
Surge Generator	HCWG71	HTEC	143804	2024.10.14
Conducted RF immunity				
CS	CDG-6000-25	SCHLODER	126A1280/2014	2024.10.14
Attenuator	ATT-6DB-100	Nemtest	A100W224	2024.10.17
CDN	CDN-M2+3	Frankonia	A2210275/2014	2024.10.14
Coupling clamp	---	KEMZ801	----	2024.10.14
Voltage dips, short interruptions and voltage variations immunity				
VOLTAGE DIPS & INTERRUPTIONS Generator	HPFS 161P	HTEC	143803	2024.10.17
Harmonics & Flicker				
Harmonic Voltage & Flicker	PACS-1	California Instruments	72812	2024.10.14
AC Power Source	5000ix	California Instruments	59862	2024.10.18

Radiated Immunity				
No.	Test Item	Equipment	Model No.	Cal due date
1	Power Meter	Agilent	E4419B	2024.10.09
2	Power Sensor	Hp	E9300A	2024.10.11
3	Power Sensor	Hp	E9300A	2024.10.11
4	Signal Generator	Agilent	N5181A	2024.10.11
5	Power Amplifier	MICOTOP	MPA-80-1000-250	2024.10.11
6	Power Amplifier	MICOTOP	MPA-1000-6000-100	2024.10.09
7	RS Test Antenna (0.08-1GHz)	SCHWARZBECK	VULP 9118E	N/A
8	RS Test Antenna (1-10GHz)	SCHWARZBECK	STLP 9149	N/A
9	Temperature & Humidity	Mieo	HH660	2024.10.12

5 Emission Test Results

5.1 Conducted Emissions at AC Mains Power Port (150kHz-30MHz)

Test Requirement:	BS EN IEC 55015:2019/A11:2020
Test Method:	BS EN IEC 55015:2019/A11:2020
Limit:	
0.15M-0.5MHz	66dB(μV)-56dB(μV) quasi-peak, 59dB(μV)-46dB(μV) average
0.5M-5MHz	56dB(μV) quasi-peak, 46dB(μV) average
5M-30MHz	60dB(μV) quasi-peak, 50dB(μV) average
Detector:	Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz

5.1.1 E.U.T. Operation

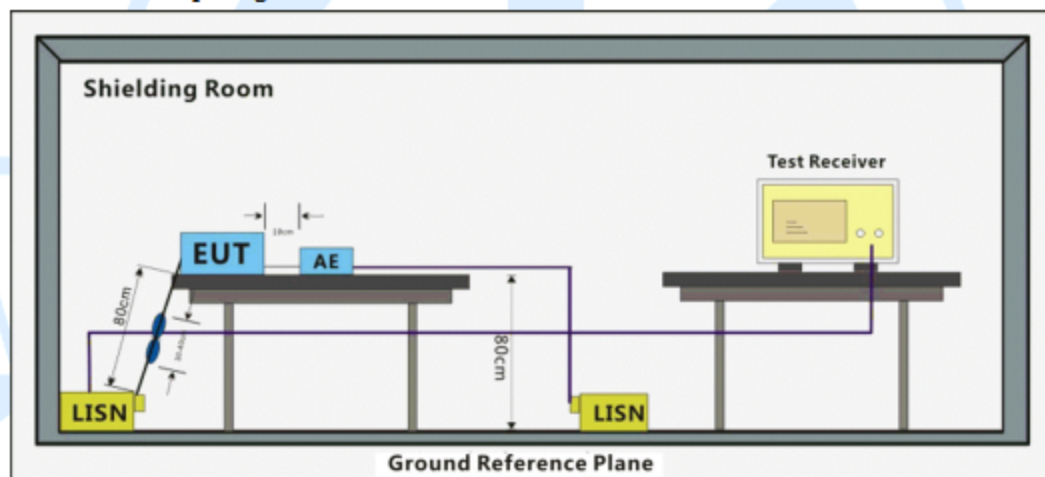
Operating Environment:

Temperature: 22.1 °C Humidity: 52 % RH Atmospheric Pressure: 1010 mbar

5.1.2 Test Mode Description

Test Mode: Normal working mode(Max Loading).

5.1.3 Test Setup Diagram



5.1.4 Measurement Procedure and Data

Frequency Range: 150kHz to 30MHz

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.

Measured Level = Read level + Cable Loss + LISN Factor

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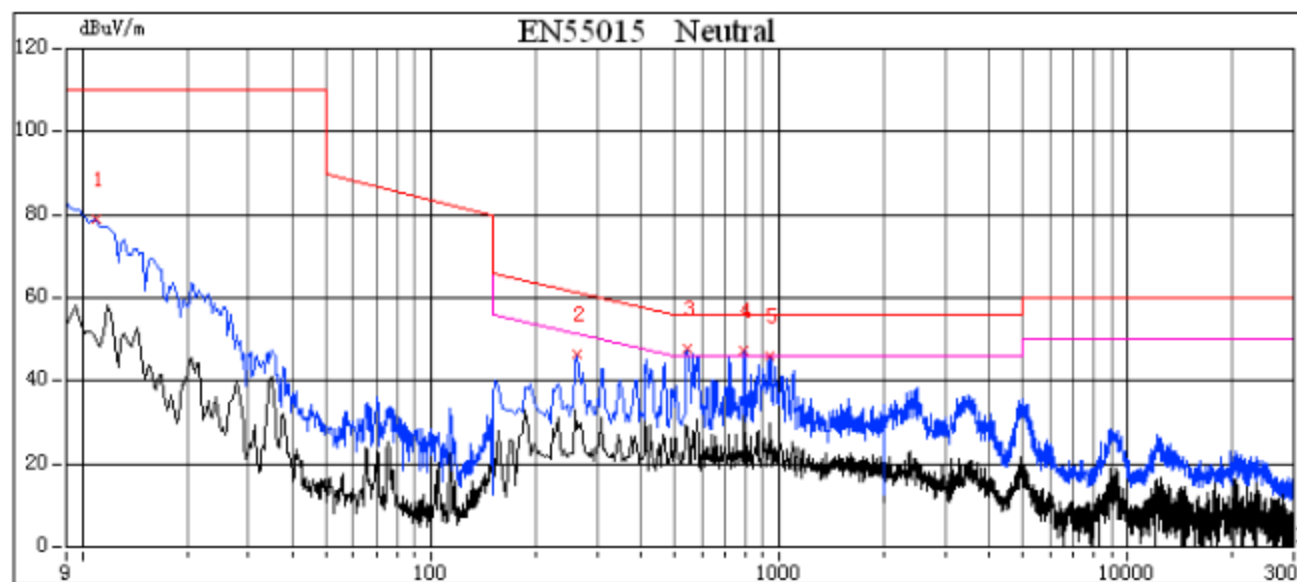
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Neutral Line

[illegible]

Note: Measurement Level = Reading Level + Correct Factor

5.2 Magnetic TEST

Test Requirement: BS EN IEC 55015:2019/A11:2020

Test Method: BS EN IEC 55015:2019/A11:2020

Limit:

Frequency	Limits for loop diameter (dB μ A)
	2m
9KHz ~ 70KHz	88
70KHz ~ 150KHz	88 ~ 58*
150KHz ~ 2.2MHz	58 ~ 26*
2.2MHz ~ 3.0MHz	58
3.0MHz ~ 30MHz	22

1. At the transition frequency the lower limit applies.
2. * decreasing linearly with logarithm of the frequency.

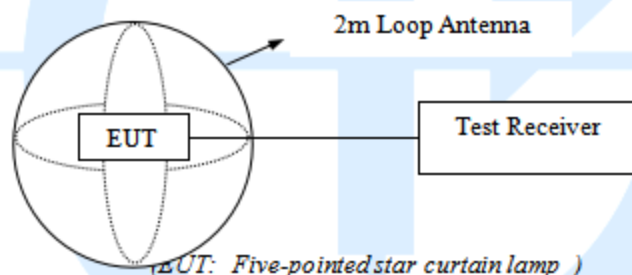
5.2.1 E.U.T. Operation

Operating Environment:

Temperature: 24 °C Humidity: 54 % RH Atmospheric Pressure: 1010 mbar

5.2.2 Test Mode Description

Test Mode: Normal working mode(Max Loading).



5.2.3 Measurement Procedure and Data

The EUT is placed on a wood table in the center of a loop antenna. The induced current in the loop antenna is measured by means of a current probe and the test receiver. Three field components is checked by means of a coax switch.

The frequency range from 9kHz to 30MHz is investigated. The receiver is measured with the quasi-peak detector. For frequency band 9kHz to 150kHz, the bandwidth of the field strength meter is set at 200Hz. For frequency band 150kHz to 30MHz, the bandwidth is set at 9kHz.

All the test results are listed in Section 6.7. and all the scanning waveform is put in **Appendix II**.

5.3 Disturbance POWER test

Test Requirement: BS EN IEC 55015:2019/A11:2020

Test Method: BS EN IEC 55015:2019/A11:2020

Limit:

30 ~ 300 45 Increasing Linearly with Frequency to 55 (Q.P.)

35 Increasing Linearly with Frequency to 45 (A.V.)

5.3.1 E.U.T. Operation

Operating Environment:

Temperature: 24 °C

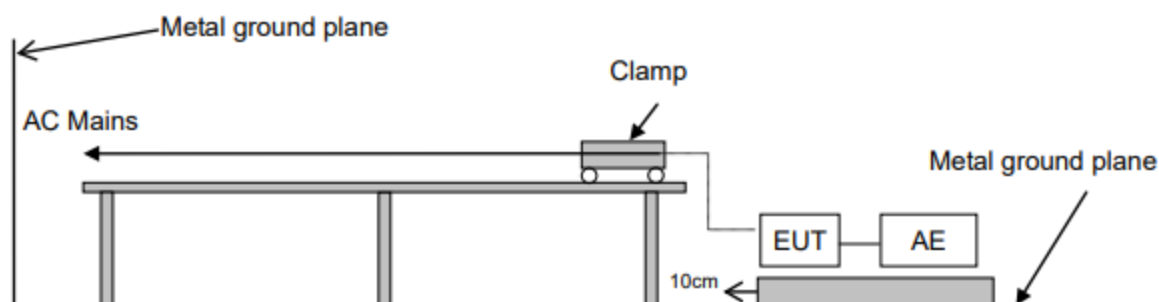
Humidity: 54 % RH

Atmospheric Pressure: 1010 mbar

5.3.2 Test Mode Description

Test Mode: Normal working mode(Max Loading).

5.3.3 Test Setup Diagram



5.3.4 Measurement Procedure and Data

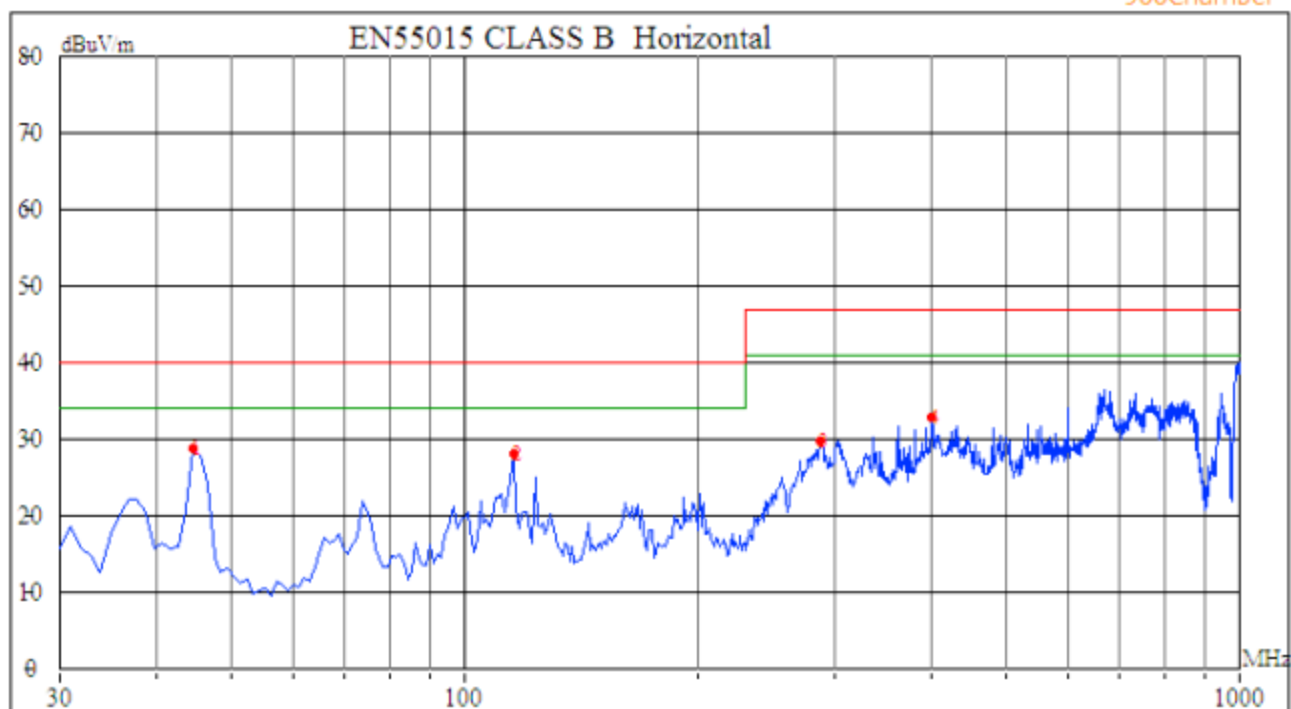
The EUT is placed on the ground and away from other metallic surface at least 0.4m. It is connected to the power mains through an extension cord of 6m min. The absorber clamp clamps the cord and moves from the far end to the EUT to measure the disturbing energy emitted from the cord.

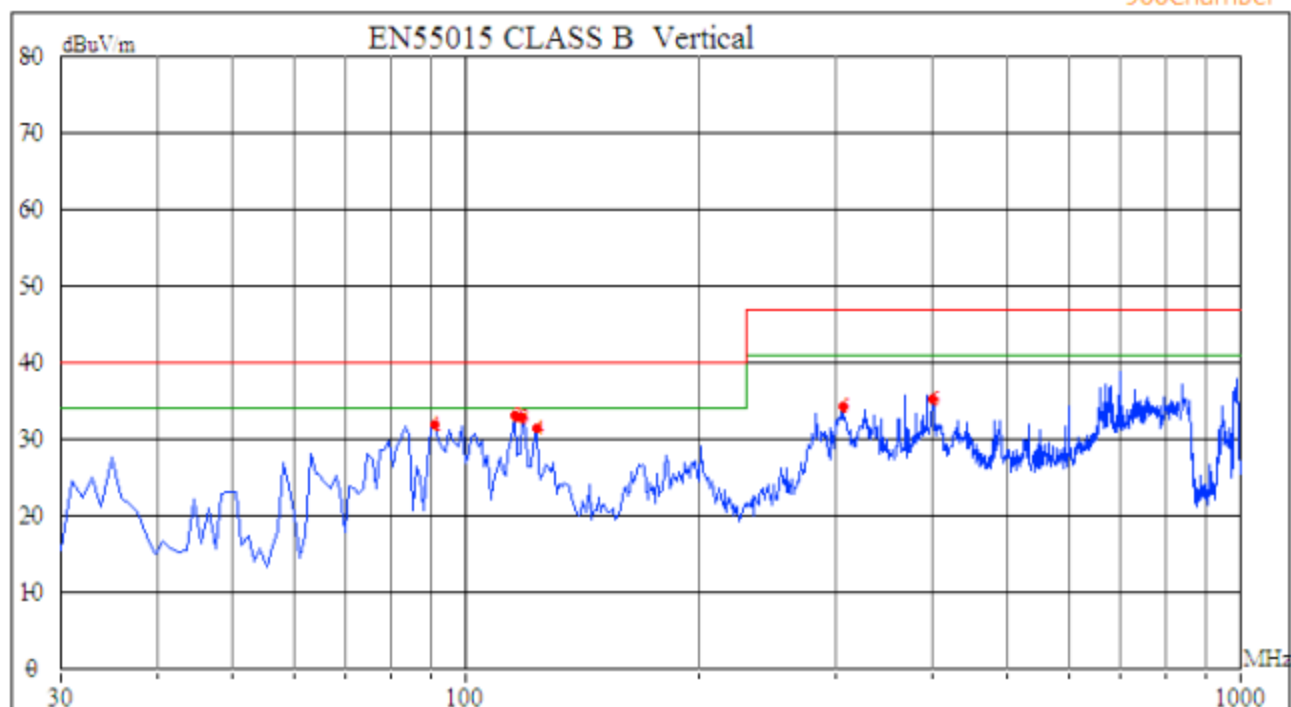
The bandwidth of the test receiver is set at 120kHz.

All the test results are listed in Section 6.6.

The frequency spectrum from 30 MHz to 300 MHz is investigated.

As the peak value is too low against the limit, so the quasi-peak value and average value have omitted. All the scanning waveforms are attached in **Appendix II**

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[illegible]

5.4 Radiated Emissions

Test Requirement:	BS EN IEC 55015:2019/A11:2020
Test Method:	BS EN IEC 55015:2019/A11:2020
Limit:	
30MHz- 230MHz:	40dBuV/m quasi-peak
230MHz- 1000MHz:	47dBuV/m quasi-peak
Detector:	Peak for pre-scan (120kHz resolution bandwidth) 30MHz to 1000MHz

5.4.1 E.U.T. Operation

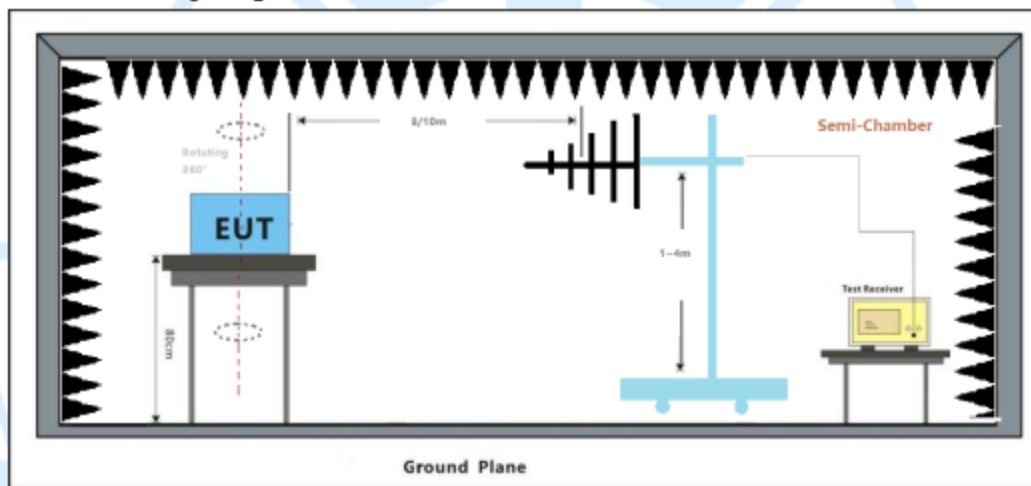
Operating Environment:

Temperature: 22.0 °C Humidity: 52 % RH Atmospheric Pressure: 1010 mbar

5.4.2 Test Mode Description

Test Mode: Normal working mode(Max Loading).

5.4.3 Test Setup Diagram



5.4.4 Measurement Procedure and Data

Frequency Range: 30MHz to 1000MHz

An initial pre-scan was performed with peak detector. Quasi-Peak measurement was performed at the frequencies with maximized peak emission were detected.

Measured Level = Read level + Cable Loss + Ant Factor- Pre-amp

5.5 Voltage Fluctuations and Flicker

Test Requirement: BS EN 61000-3-3:2013/A1:2019/A2:2021

Test Method: BS EN 61000-3-3:2013/A1:2019/A2:2021

5.5.1 E.U.T. Operation

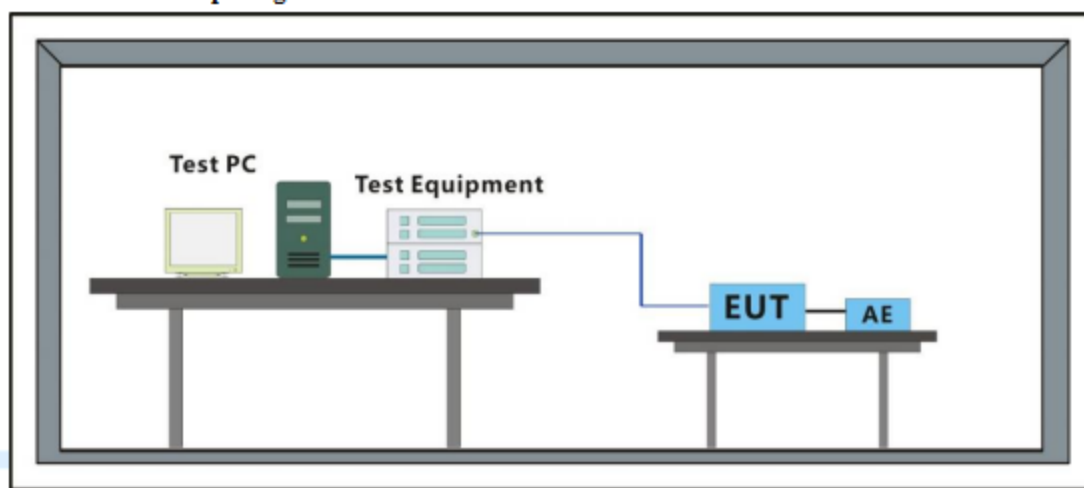
Operating Environment:

Temperature: 25.6 °C Humidity: 65.6 % RH Atmospheric Pressure: 1010 mbar

5.5.2 Test Mode Description

Test Mode: Normal working mode(Max Loading).

5.5.3 Test Setup Diagram



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5.5.4 Measurement Procedure and Data**Flicker Test Summary per EN/IEC61000-3-3 (Run time)**Test category: dt,dmax,dc and Pst (European limits)
Test duration (min): 10

Test Margin: 100

Test Result: Pass

Status: Test Completed

Pst, and limit line

European Limits

**Parameter values recorded during the test:**

Vrms at the end of test (Volt): 230.06

T-max (mS): 0

Highest dc (%): 0.00

Highest dmax (%): 0.00

Highest Pst (10 min. period): 0.064

Test limit (mS): 500.0 Pass

Test limit (%): 3.30 Pass

Test limit (%): 4.00 Pass

Test limit: 1.000 Pass

5.6 Harmonic Current Emission

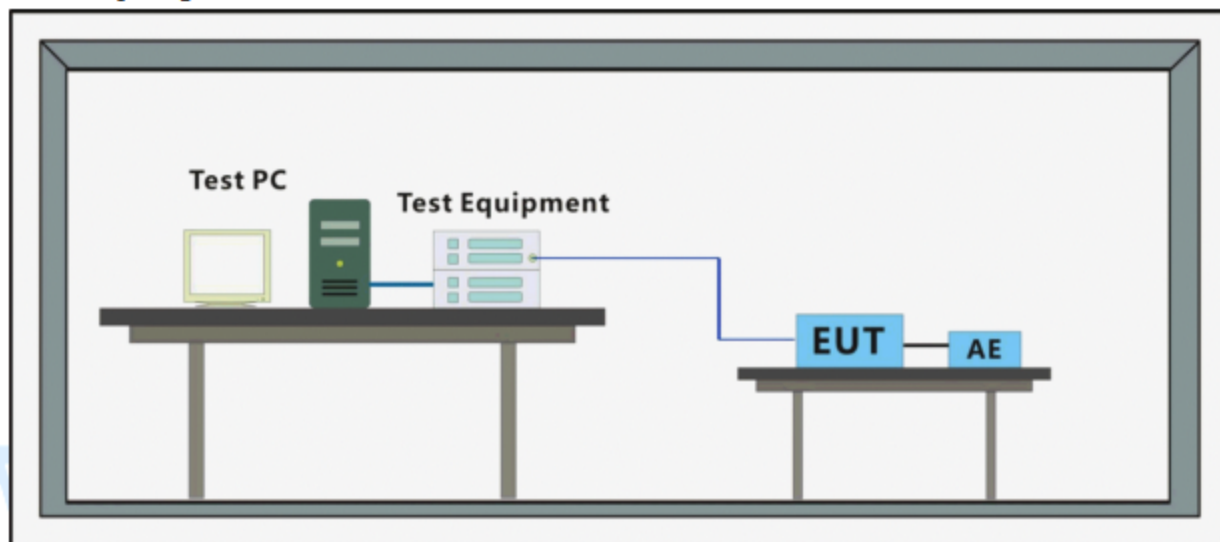
Test Requirement: BS EN IEC 61000-3-2:2019/A1:2021
Test Method: BS EN IEC 61000-3-2:2019/A1:2021
Frequency Range: 100Hz to 2kHz

5.6.1 E.U.T. Operation

Operating Environment:

Temperature: 25.6 °C Humidity: 65.6 % RH Atmospheric Pressure: 1010 mbar
Test Mode: Normal working mode(Max Loading).

5.6.2 Test Setup Diagram



5.6.3 Measurement Data

Ha	Entire measurement (0.320 s = 1 time window(s))						Worst 2.5 min		Average		PASS	FAIL
	Maximum	Window	BS EN 61000-3- 2 Class D 50W	Margin in MaxWin	100 to 150%	Ex- ceeded	100 to 150%	Ex- ceeded	Value	Ex- ceeded		
DC	0.0012 A	1	--	--	0	0	n.e.	n.e.	-0.0012 A	0	X	
1	0.2989 A	1	--	--	0	0	n.e.	n.e.	0.2989 A	0	X	
2	0.0002 A	1	--	--	0	0	n.e.	n.e.	0.0002 A	0	X	
3	0.0418 A	1	0.2239 A	81.3 %	0	0	n.e.	n.e.	0.0418 A	0	X	
4	0.0001 A	1	--	--	0	0	n.e.	n.e.	0.0001 A	0	X	
5	0.0263 A	1	0.1251 A	78.9 %	0	0	n.e.	n.e.	0.0263 A	0	X	
6	0.0000 A	1	--	--	0	0	n.e.	n.e.	0.0000 A	0	X	
7	0.0141 A	1	0.0658 A	78.6 %	0	0	n.e.	n.e.	0.0141 A	0	X	
8	0.0000 A	1	--	--	0	0	n.e.	n.e.	0.0000 A	0	X	
9	0.0051 A	1	0.0329 A	84.4 %	0	0	n.e.	n.e.	0.0051 A	0	X	
10	0.0000 A	1	--	--	0	0	n.e.	n.e.	0.0000 A	0	X	
11	0.0007 A	1	0.0230 A	97.1 %	0	0	n.e.	n.e.	0.0007 A	0	X	
12	0.0001 A	1	--	--	0	0	n.e.	n.e.	0.0001 A	0	X	
13	0.0029 A	1	0.0195 A	85.1 %	0	0	n.e.	n.e.	0.0029 A	0	X	
14	0.0000 A	1	--	--	0	0	n.e.	n.e.	0.0000 A	0	X	
15	0.0033 A	1	0.0169 A	80.3 %	0	0	n.e.	n.e.	0.0033 A	0	X	
16	0.0000 A	1	--	--	0	0	n.e.	n.e.	0.0000 A	0	X	
17	0.0039 A	1	0.0149 A	73.9 %	0	0	n.e.	n.e.	0.0039 A	0	X	
18	0.0000 A	1	--	--	0	0	n.e.	n.e.	0.0000 A	0	X	
19	0.0018 A	1	0.0133 A	86.9 %	0	0	n.e.	n.e.	0.0018 A	0	X	
20	0.0000 A	1	--	--	0	0	n.e.	n.e.	0.0000 A	0	X	
21	0.0016 A	1	0.0121 A	86.7 %	0	0	n.e.	n.e.	0.0016 A	0	X	
22	0.0000 A	1	--	--	0	0	n.e.	n.e.	0.0000 A	0	X	
23	0.0015 A	1	0.0110 A	86.4 %	0	0	n.e.	n.e.	0.0015 A	0	X	
24	0.0000 A	1	--	--	0	0	n.e.	n.e.	0.0000 A	0	X	
25	0.0023 A	1	0.0101 A	77.5 %	0	0	n.e.	n.e.	0.0023 A	0	X	
26	0.0000 A	1	--	--	0	0	n.e.	n.e.	0.0000 A	0	X	
27	0.0019 A	1	0.0094 A	80.0 %	0	0	n.e.	n.e.	0.0019 A	0	X	
28	0.0000 A	1	--	--	0	0	n.e.	n.e.	0.0000 A	0	X	
29	0.0017 A	1	0.0087 A	80.2 %	0	0	n.e.	n.e.	0.0017 A	0	X	
30	0.0001 A	1	--	--	0	0	n.e.	n.e.	0.0001 A	0	X	
31	0.0009 A	1	0.0082 A	88.5 %	0	0	n.e.	n.e.	0.0009 A	0	X	
32	0.0000 A	1	--	--	0	0	n.e.	n.e.	0.0000 A	0	X	
33	0.0015 A	1	0.0077 A	80.3 %	0	0	n.e.	n.e.	0.0015 A	0	X	
34	0.0000 A	1	--	--	0	0	n.e.	n.e.	0.0000 A	0	X	
35	0.0014 A	1	0.0072 A	80.3 %	0	0	n.e.	n.e.	0.0014 A	0	X	
36	0.0001 A	1	--	--	0	0	n.e.	n.e.	0.0001 A	0	X	
37	0.0013 A	1	0.0069 A	80.6 %	0	0	n.e.	n.e.	0.0013 A	0	X	
38	0.0001 A	1	--	--	0	0	n.e.	n.e.	0.0001 A	0	X	
39	0.0010 A	1	0.0065 A	84.3 %	0	0	n.e.	n.e.	0.0010 A	0	X	
40	0.0000 A	1	--	--	0	0	n.e.	n.e.	0.0000 A	0	X	

Note: The actual power is less than 75W.

6 Immunity Test Results

Performance Criteria Description

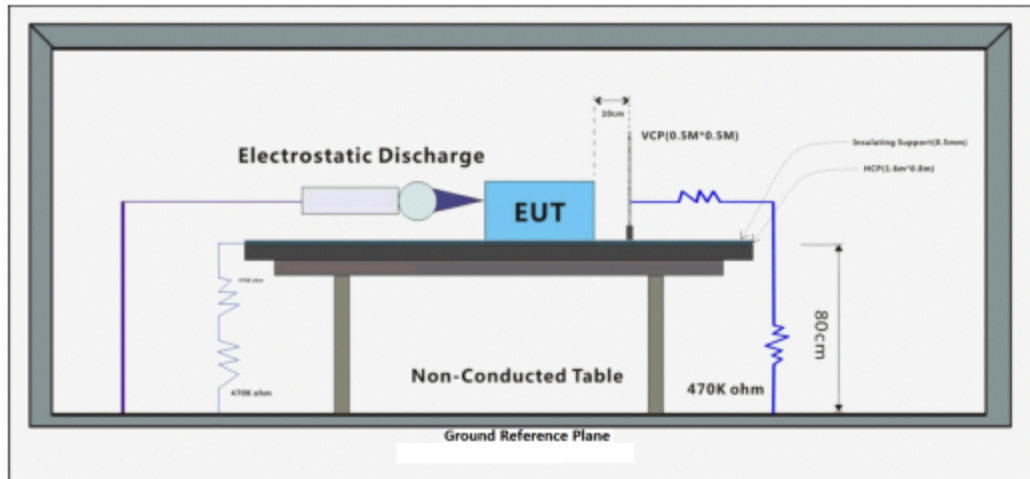
- Criterion A:** The apparatus shall continue to operate as intended during the test. No degradation of performance or loss of function is allowed below a performance level (or permissible loss of performance) specified by the manufacturer, when the apparatus is used as intended. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and from what the user may reasonably expect from the apparatus if used as intended.
- Criterion B:** The apparatus shall continue to operate as intended after the test. No degradation of performance or loss of function is allowed below a performance level (or permissible loss of performance) specified by the manufacturer, when the apparatus is used as intended. During the test, degradation of performance is allowed, however. No change of actual operating state or stored data is allowed. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation and from what the user may reasonably expect from the apparatus if used as intended.
- Criterion C:** Temporary loss of function is allowed, provided the function is self recoverable or can be restored by the operation of the controls, or by any operation specified in the instructions for use.

6.1 Electrostatic Discharge

Test Requirement: BS EN61547:2009

Test Method: BS EN 61000-4-2:2009

6.1.1 Test Setup Diagram



6.1.2 E.U.T. Operation

Operating Environment:

Temperature: 25.6 °C

Humidity: 55.9 % RH

Atmospheric Pressure: 1010 mbar

6.1.3 Test Mode Description

Test Mode: Normal working mode(Max Loading).

6.1.4 Test Condition and Results:

Performance Criterion: B

Discharge Impedance: 330 Ω / 150 pF

Discharge Voltage: Air Discharge: 8 kV; Contact Discharge: 4 kV; VCP/HCP: 4 kV.

Polarity: Positive & Negative

Number of Discharge: Minimum 10 times at each test point

Discharge Mode: Single Discharge

Discharge Period: 1 second minimum

Test Point 1: All insulated enclosure & seams.

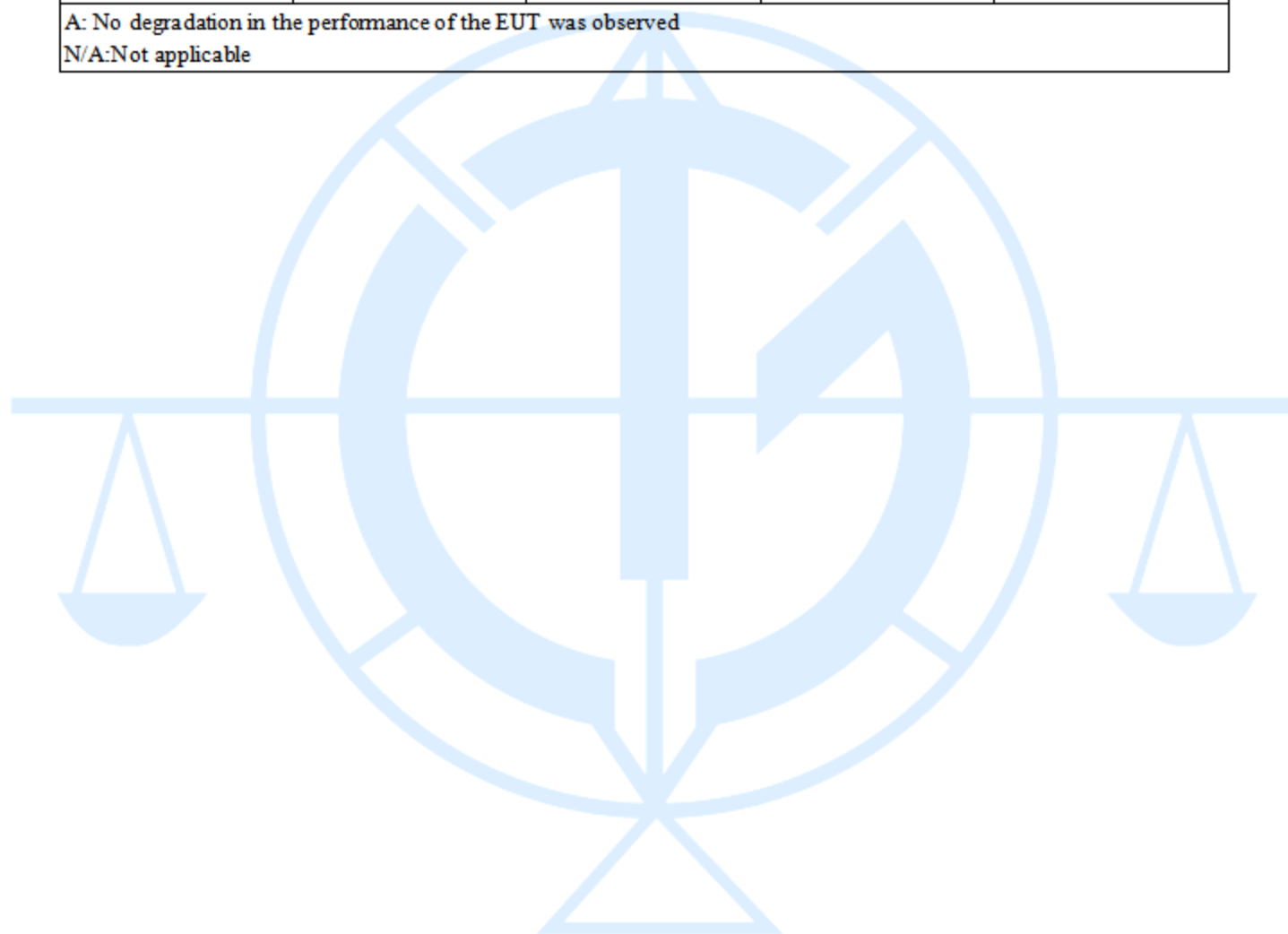
Test Point 2: All accessible metal parts of the enclosure.

Test Point 3: All sides.

Discharge type	Level (kV)	Polarity	Test Point	Result / Observations
Air Discharge	8	+	1	A
Air Discharge	8	-	1	A
Contact Discharge	4	+	2	A
Contact Discharge	4	-	2	A
Horizontal Coupling	4	+	3	A
Horizontal Coupling	4	-	3	A
Vertical Coupling	4	+	3	A
Vertical Coupling	4	-	3	A

A: No degradation in the performance of the EUT was observed

N/A: Not applicable

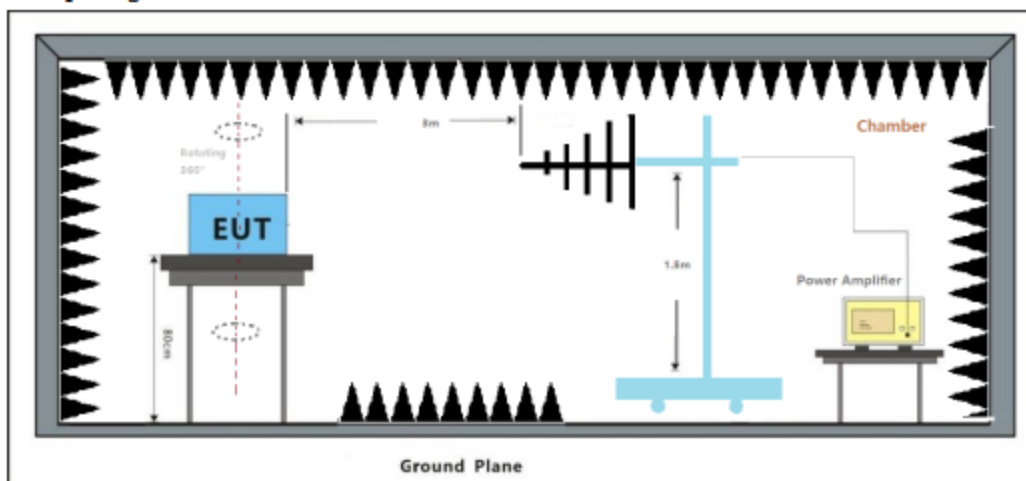


6.2 Continuous RF Electromagnetic field Disturbance

Test Requirement: BS EN IEC 55015:2019/A11:2020

Test Method: BS EN IEC 61000-4-3:2020

2.1.1 Test Setup Diagram



6.2.1 E.U.T. Operation

Operating Environment:

Temperature: 23.7 °C Humidity: 68.3 % RH Atmospheric Pressure: 1010 mbar

6.2.2 Test Mode Description

Test Mode: Normal working mode(Max Loading).

6.2.3 Test Condition and Results:

Performance Criterion: A

Step Size: 1%

Frequency Range: 80MHz to 2700MHz

Modulation: 80%, 1kHz Amplitude Modulation

80~2000MHz

Surface	Level (V/m)	Polarization	Dwell time	Result / Observations
AC power port	3	H&V	1s	A
AC power port	3	H&V	1s	A
AC power port	3	H&V	1s	A
AC power port	3	H&V	1s	A

A: No degradation in the performance of the EUT was observed

2.0~2.7GHz

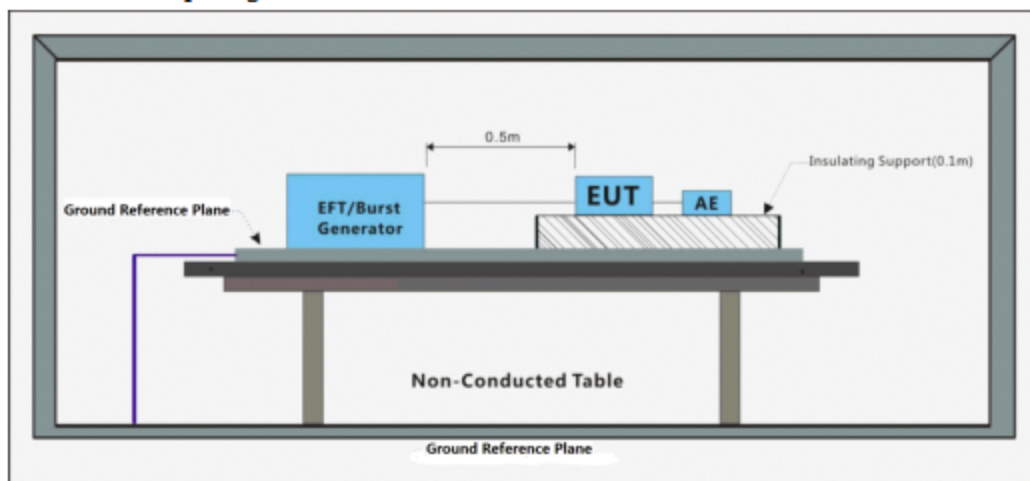
Surface	Level (V/m)	Polarization	Dwell time	Result / Observations
AC power port	1	H&V	1s	A
AC power port	1	H&V	1s	A
AC power port	1	H&V	1s	A
AC power port	1	H&V	1s	A

A: No degradation in the performance of the EUT was observed

6.3 Electrical Fast Transients Burst at AC Mains Power Port

Test Requirement: BS EN 61547:2009

Test Method: BS EN 61000-4-4:2012

6.3.1 Test Setup Diagram**6.3.2 E.U.T. Operation**

Operating Environment:

Temperature: 23.8 °C

Humidity: 67.5 % RH

Atmospheric Pressure: 1010 mbar

6.3.3 Test Mode Description

Test Mode: Normal working mode(Max Loading).

6.3.4 Test Condition and Results:

Performance Criterion: B

Repetition Frequency: 5kHz

Burst Period: 300ms

Test Duration: 2 minute per level & polarity

Test Level: 1.0kV

Polarity: Positive & Negative

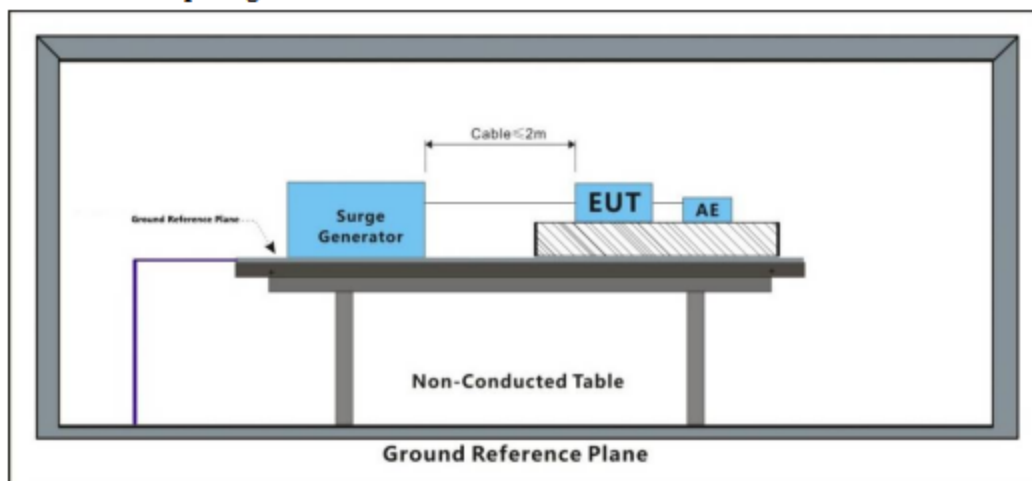
Test Line	Level (kV)	Polarity	CDN/Clamp	Result / Observations
AC power port	1	+	CDN	A
AC power port	1	-	CDN	A

A: No degradation in the performance of the EUT was observed

6.4 Surge at AC Mains Power Port

Test Requirement: BS EN IEC 55015:2019/A11:2020

Test Method: BS EN 61000-4-5:2014+A1:2017

6.4.1 Test Setup Diagram**6.4.2 E.U.T. Operation**

Operating Environment:

Temperature: 23.7 °C

Humidity: 68.4 % RH

Atmospheric Pressure: 1010 mbar

6.4.3 Test Mode Description

Test Mode: Normal working mode(Max Loading).

6.4.4 Test Condition and Results:

Performance Criterion: B

Interval: 60s between each surge

Test Level: $\pm 1\text{kV}$ Live to Neutral; $\pm 2\text{kV}$ Live, Neutral to Earth

Polarity: Positive & Negative

Generator source impedance: 2Ω

Trigger Mode: Internal

No. of surges: 5 positive at 90° , 5 negative at 270° .

Test Line	Level (kV)	Polarity	Phase (deg)	Result / Observations
L-N	1	+	$0^\circ, 90^\circ, 180^\circ, 270^\circ$	A
L-N	1	-	$0^\circ, 90^\circ, 180^\circ, 270^\circ$	A
L-E	2	+	$0^\circ, 90^\circ, 180^\circ, 270^\circ$	A
L-E	2	-	$0^\circ, 90^\circ, 180^\circ, 270^\circ$	A
N-E	2	+	$0^\circ, 90^\circ, 180^\circ, 270^\circ$	A
N-E	2	-	$0^\circ, 90^\circ, 180^\circ, 270^\circ$	A

A: No degradation in the performance of the EUT was observed

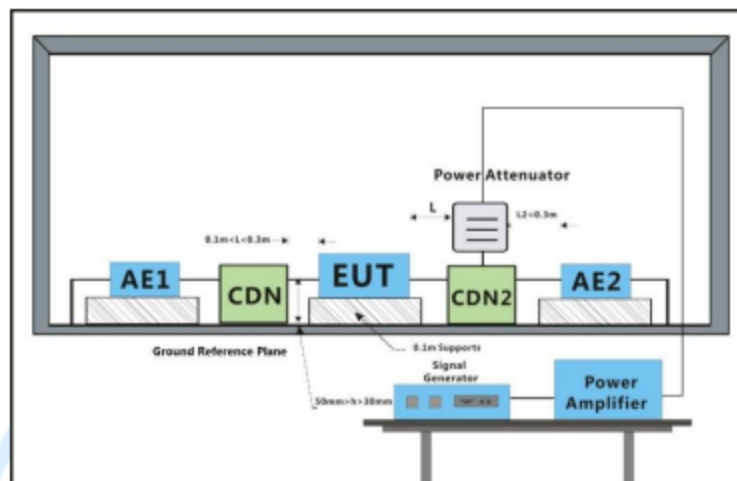
Report No.: CTG2411260888D_SR117AY

6.5 Conducted Immunity at AC Mains Power Port (150kHz-80MHz)

Test Requirement: BS EN IEC 55015:2019/A11:2020

Test Method: BS EN 61000-4-6:2014

2.1.2 Test Setup Diagram



6.5.1 E.U.T. Operation

Operating Environment:

Temperature: 23.7 °C

Humidity: 68.3 % RH

Atmospheric Pressure: 1010 mbar

6.5.2 Test Mode Description

Test Mode: ☐ Normal working mode(Max Loading).

6.5.3 Test Condition and Results:

Performance Criterion: A

Step Size: 1%

Frequency Range: 0.15MHz to 230MHz

Modulation: 80%, 1kHz Amplitude Modulation

Cable Port	Level (Vrms)	CDN/Clamp	Dwell time	Result / Observations
AC power port	3	CDN	2s	A

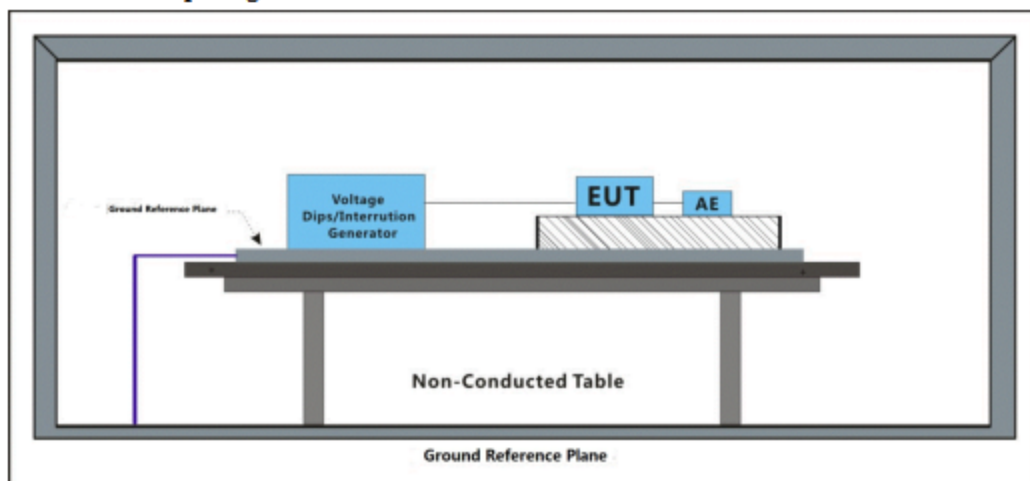
A: No degradation in the performance of the EUT was observed

6.6 Voltage Dips and Interruptions

Test Requirement: BS EN IEC 55015:2019/A11:2020

Test Method: BS EN IEC 61000-4-11:2020

6.6.1 Test Setup Diagram



6.6.2 E.U.T. Operation

Operating Environment:

Temperature: 23.8 °C

Humidity: 68.3 % RH

Atmospheric Pressure: 1010 mbar

6.6.3 Test Mode Description

Test Mode: Normal working mode(Max Loading).

6.6.4 Test Condition and Results:

Performance Criterion:

For 50Hz: 0% of UT (Rated Voltage) for 0.5 Cycle: C; 40% of UT for 10 Cycles: C; 70% of UT for 25 Cycles: C.

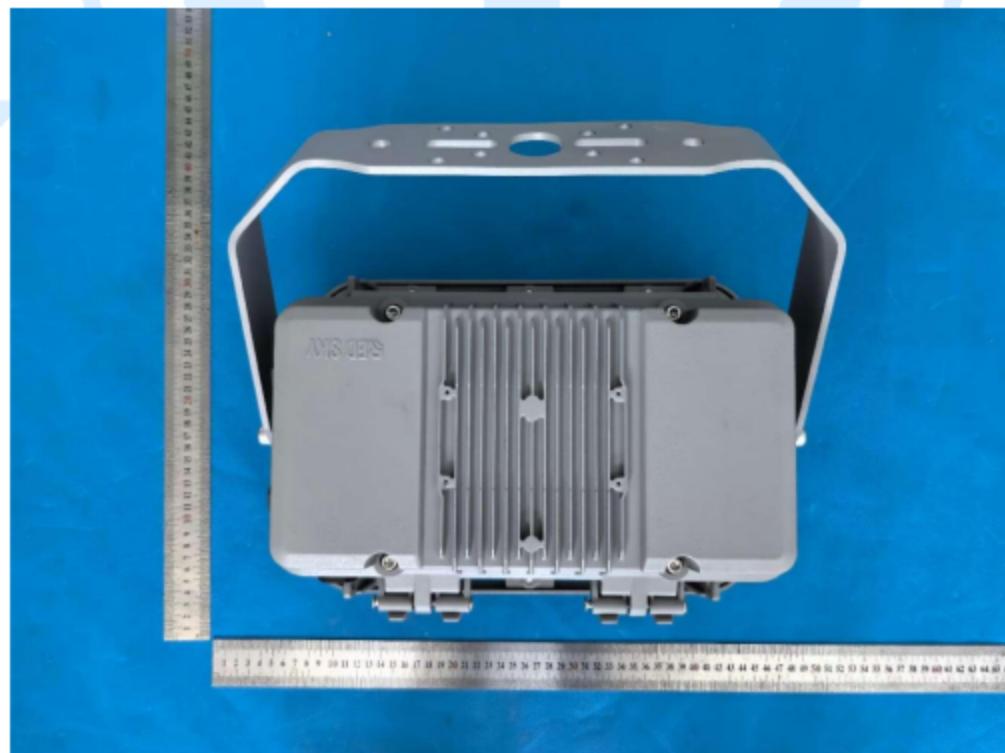
No. of Dips / Interruptions: 3 per Level

Time between dropout: 10s

Level % UT	Phase (deg)	Duration	No. of Dips / Interruptions	Result / Observations
0	0°	0.5 Cycle for 50Hz	3	A
0	180°	0.5 Cycle for 50Hz	3	A
40	0°	10 Cycles for 50Hz	3	A
40	180°	10 Cycles for 50Hz	3	A
70	0°	25 Cycles for 50Hz	3	A
70	180°	25 Cycles for 50Hz	3	A

A: No degradation in the performance of the EUT was observed

7 EUT Constructional Details (EUT Photos)





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—End of the report—