



SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

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Report No.: GZEM180500269401
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TEST REPORT

Application No.: GZEM1805002694HS
Applicant: Guangdong Gaobo Electrical Appliance Co., Ltd.
Address of Applicant: Area Gaoling West Industrial Park, Liangdong Town, Lianjiang City, Guangdong, China
Manufacturer: The same as applicant.
Address of Manufacturer: The same as applicant.
Factory: The same as applicant.
Address of Factory: The same as applicant.
Equipment Under Test (EUT):
EUT Name: Rice cooker
Model No.: Please refer to page 2 of this report for details.
Standard(s) : EN 55014-1:2017
EN 61000-3-2:2014
EN 61000-3-3:2013
EN 55014-2:2015
Date of Receipt: 2018-05-22
Date of Test: 2018-05-25 to 2018-05-29
Date of Issue: 2018-06-06

Test Result:	Pass*
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* In the configuration tested, the EUT complied with the standards specified above.

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.



Kobe Jian

EMC Laboratory Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.

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Guangzhou Branch

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EUT Name: Rice cooker
Model No.: RC03-y, RC06A-^{*}yz, SRC06a-^{*}xyz, RC06B-^{*}yz, RC08-^{*}yz, SRC06a1-^{*}xyz, RC10A-^{*}yz, RC12A-^{*}yz, SRC10a-^{*}xyz, SRC12a-^{*}xyz, DRC10a-^{*}xmz, DRC12a-^{*}xmz, RC10B-^{*}yz, RC12B-^{*}yz, SRC10a1-^{*}xyz, SRC12a1-^{*}xyz, DRC10a1-^{*}xmz, DRC12a1-^{*}xmz, RC15A-^{*}yz, SRC15a-^{*}xyz, DRC15a-^{*}xmz, RC15B-^{*}yz, SRC15a1-^{*}xyz, DRC15a1-^{*}xmz, SRC18a2-^{*}xyz, RC18B-^{*}yz, SRC18a1-^{*}xyz, DRC18a1-^{*}xmz, RC18A-^{*}yz, SRC18a-^{*}xyz, DRC18a-^{*}xmz, RC18C-^{*}yz, RC22B-^{*}yz, SRC22a1-^{*}xyz, DRC22a1-^{*}xmz, RC22A-^{*}yz, SRC22a-^{*}xyz, DRC22a-^{*}xmz, RC28B-^{*}yz, SRC28a1-^{*}xyz, DRC28a2-^{*}xmz, RC28A-^{*}yz, SRC28a-^{*}xyz, DRC28a1-^{*}xmz, DRC28a-^{*}xmz, DRC32a-^{*}xmz, RC36B-^{*}yz, DRC32a1-^{*}xmz, DRC36a1-^{*}xmz, RC36A-^{*}yz, DRC36a-^{*}xmz, RC42B-^{*}yz, RC42A-^{*}yz, RC56B-^{*}yz, RC56A-^{*}yz, RC78A-^{*}yz, RC78B-^{*}yz, RC80B-^{*}yz, RC80A-^{*}yz, RC85B-^{*}yz, RC85A-^{*}yz, RC100A-^{*}yz, RC100B-^{*}yz, RC120B-^{*}yz, RC120A-^{*}yz (a = C or S, ^{*} = A to P, a to y, x = V, W or P, y = X or Y, m = A to O, z = 1, 2 or 3) □


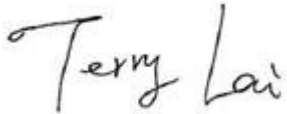
□ Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.



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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2018-06-06		Original

Authorized for issue by:			
Tested By	 Allen_Zhou /Project Engineer	2018-05-25 to 2018-05-29	Date
Checked By	 Terry_Lai /Reviewer	2018-06-06	Date



2 Test Summary

Emission Part				
Item	Standard	Method	Requirement	Result
Conducted Emissions at Mains Terminals (150kHz-30MHz)	EN 55014-1:2017	CISPR 16-2-1	N/A	Pass
Discontinuous Disturbance (150kHz-30MHz)	EN 55014-1:2017	EN 55014-1:2017	N/A	Pass
Disturbance Power	EN 55014-1:2017	CISPR 16-2-2	N/A	Pass
Harmonic Current Emission	EN 61000-3-2:2014	EN 61000-3-2:2014	Class A	Pass
Voltage Fluctuations and Flicker	EN 61000-3-3:2013	EN 61000-3-3:2013	Clause 5 of EN 61000-3-3	Pass

N/A: Not applicable

Immunity Part				
Immunity	Standard	Method	Requirement	Result
Immunity	EN 55014-2:2015	EN 55014-2:2015	Clause 4.1 of EN 55014-2	Pass

N/A: Not applicable

There is no EMS test requirement, since the EUT belongs to Category I of EN 55014-2:2015

▣ Declaration of EUT Family Grouping:

Model No.: RC03-y, RC06A-*yz, SRC06a-*xyz, RC06B-*yz, RC08-*yz, SRC06a1-*xyz, RC10A-*yz, RC12A-*yz, SRC10a-*xyz, SRC12a-*xyz, DRC10a-*xmz, DRC12a-*xmz, RC10B-*yz, RC12B-*yz, SRC10a1-*xyz, SRC12a1-*xyz, DRC10a1-*xmz, DRC12a1-*xmz, RC15A-*yz, SRC15a-*xyz, DRC15a-*xmz, RC15B-*yz, SRC15a1-*xyz, DRC15a1-*xmz, SRC18a2-*xyz, RC18B-*yz, SRC18a1-*xyz, DRC18a1-*xmz, RC18A-*yz, SRC18a-*xyz, DRC18a-*xmz, RC18C-*yz, RC22B-*yz, SRC22a1-*xyz, DRC22a1-*xmz, RC22A-*yz, SRC22a-*xyz, DRC22a-*xmz, RC28B-*yz, SRC28a1-*xyz, DRC28a2-*xmz, RC28A-*yz, SRC28a-*xyz, DRC28a1-*xmz, DRC28a-*xmz, DRC32a-*xmz, RC36B-*yz, DRC32a1-*xmz, DRC36a1-*xmz, RC36A-*yz, DRC36a-*xmz, RC42B-*yz, RC42A-*yz, RC56B-*yz, RC56A-*yz, RC78A-*yz, RC78B-*yz, RC80B-*yz, RC80A-*yz, RC85B-*yz, RC85A-*yz, RC100A-*yz, RC100B-*yz, RC120B-*yz, RC120A-*yz ((a = C or S, * = A to P, a to y, x = V, W or P, y = X or Y, m = A to O, z = 1, 2 or 3)

According to the declaration from the applicant, the electrical circuit design, layout, components used and internal wiring were identical for all models, with only difference being the model name, power and appearance.

Therefore only one model **RC120A-AY2 with maximum power(3500W)** was tested in this report.



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4 General Information

4.1 Details of E.U.T.

Power Supply: AC 220-240V, 50/60Hz
Test Voltage: AC 230V
Cable: 3 wires × 1.0m unscreened AC mains cable

4.2 Description of Support Units

The EUT has been tested with water as load.

4.3 Measurement Uncertainty

EMC

No.	Item	Measurement Uncertainty
1	Conducted Disturbance Voltage at Mains Terminals	3.63dB (9kHz to 150kHz)
		3.22dB (150kHz to 30MHz)
2	Disturbance Power	3.78dB
3	Radiated Emissions	5.0dB (30MHz-1GHz)
		5.0dB (1GHz-6GHz)
4	Temperature	0.4 °C
5	Humidity	1.3%
6	DC power	0.5 %

4.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou Branch EMC Laboratory,
198 Kezhu Road, Sciencetech Park, Guangzhou Economic & Technology Development District,
Guangzhou, China 510663

Tel: +86 20 82155555 Fax: +86 20 82075059

No tests were sub-contracted.



4.5 Test Facility

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

● **NVLAP (Lab Code: 200611-0)**

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP/NIST). NVLAP Code: 200611-0.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

● **ACMA**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our NVLAP accreditation.

● **SGS UK(Certificate No.: 32), SGS-TUV SAARLAND and SGS-FIMKO**

Have approved SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory as a supplier of EMC TESTING SERVICES and SAFETY TESTING SERVICES.

● **CNAS (Lab Code: L0167)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been assessed and in compliance with CNAS-CL01:2006 accreditation criteria for testing laboratories (identical to

ISO/IEC 17025:2005 General Requirements) for the Competence of Testing Laboratories.

● **FCC Recognized 2.948 Listed Test Firm(Registration No.: 282399)**

SGS-CSTC Standards Technical Services Co., Ltd., 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 282399, May 31, 2002.

● **FCC Recognized Accredited Test Firm(Registration No.: 486818)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been accredited and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Designation Number: CN5016, Test Firm Registration Number: 486818, Jul 13, 2017.

● **Industry Canada (Registration No.: 4620B-1)**

The 3m/10m Alternate Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd., has been registered by Certification and Engineering of Industry Canada for radio equipment testing with Registration No. 4620B-1.

● **VCCI (Registration No.: R-2460, C-2584, G-449 and T-1179)**

The 10m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-2460, C-2584, G-449 and T-1179 respectively.

● **CBTL (Lab Code: TL129)**

SGS-CSTC Standards Technical Services Co., Ltd., E&E Laboratory has been assessed and fully comply with the requirements of ISO/IEC 17025:2005, the Basic Rules, IECEE 01 and Rules of procedure IECEE 02, and the relevant IECEE CB-Scheme Operational documents.



4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None



5 Equipment List

Conducted Emissions at Mains Terminals (150kHz-30MHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Shielding Room	Zhong Yu	8m x 3m x 3.8m	EMC0306	N/A	N/A
Two-Line V-Netwok	R&S	ENV216	EMC0118	2018-01-19	2019-01-18
LISN	SCHAFFNER CHASE	MN2050D/1	EMC0102	2017-09-20	2018-09-19
EMI Test Receiver	Rohde & Schwarz	ESCS30	EMC0506	2017-11-27	2018-11-26
Coaxial Cable	HangTianXing	2m	EMC0107	2016-07-24	2018-07-23
Voltage Probe	SGS	N/A	EMC0106	2018-04-04	2020-04-03
Conical Metal Housing	SGS-EMC	N/A	EMC0167	2018-04-19	2020-04-18

Discontinuous Disturbance (150kHz-30MHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Click Meter	AFJ	CL55C	EMC2049	2017-06-19	2018-06-18
Coaxial Cable	N/A	1.5m	EMC0206	2016-09-20	2018-09-19
LISN	AFJ	LS16-OPT001	EMC0203	2018-01-08	2019-01-07

Disturbance Power					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Shielding Room	Zhong Yu	8m x 3m x 3.8m	EMC0306	N/A	N/A
EMI Test Receiver	Rohde & Schwarz	ESCS30	EMC0506	2017-11-27	2018-11-26
Absorbing Clamp	Beijing Dazhe Co. Ltd.	ZN23201	EMC2040	2018-01-11	2019-01-10
7m Coaxial Cable	SGS	7m	EMC0303	2017-06-30	2019-06-29
6dB Attenuator	HP	8491A	EMC2062	2018-04-04	2020-04-03
Slide Bar Controller	HD-GmbH	HD50	EMC0305	N/A	N/A
Slide Bar RP	HD-GmbH	KMS560	EMC0103	N/A	N/A

Harmonic Current Emission					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
AC Power Source	California	50001iX	EMC0608	2018-04-08	2019-04-08
Power Analyzer	California	PACS	EMC0607	2018-04-08	2019-04-08



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Voltage Fluctuations and Flicker					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
AC Power Source	California	50001iX	EMC0608	2018-04-08	2019-04-08
Power Analyzer	California	PACS	EMC0607	2018-04-08	2019-04-08

General used equipment					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
DMM	Fluke	73	EMC0006	2017-07-26	2018-07-25
DMM	Fluke	73	EMC0007	2017-07-26	2018-07-25

6 Emission Test Results

6.1 Conducted Emissions at Mains Terminals (150kHz-30MHz)

Test Requirement:	EN 55014-1:2017
Test Method:	CISPR 16-2-1
Frequency Range:	150kHz to 30MHz
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

6.1.1 E.U.T. Operation

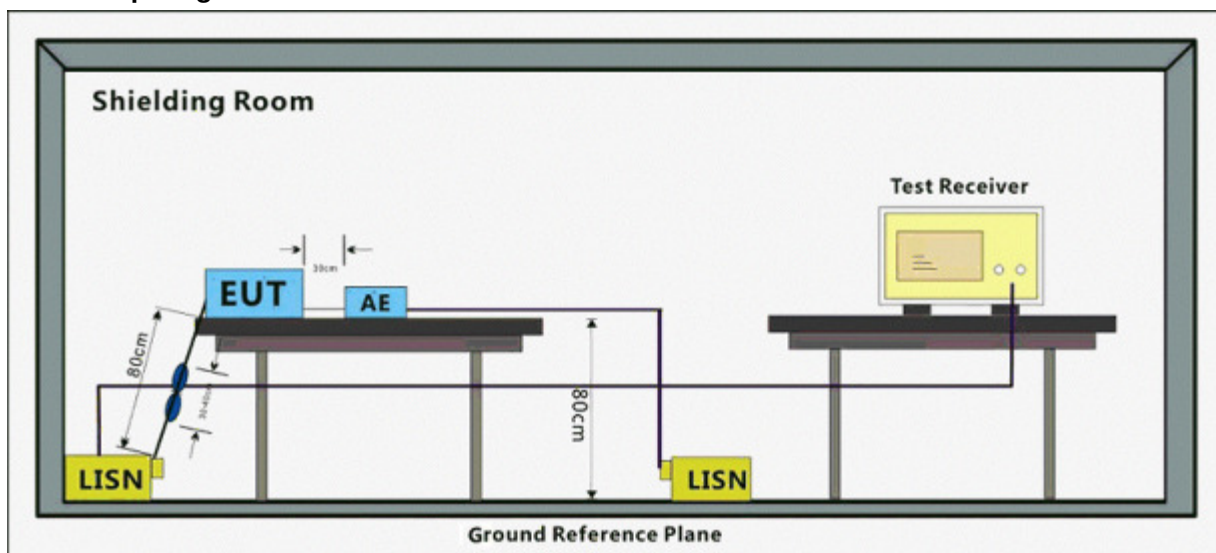
Operating Environment:

Temperature: 24.4 °C Humidity: 50.8 % RH Atmospheric Pressure: 1020 mbar

Pretest these modes to find the worst case:
 a: Test the EUT in heating mode.
 b: Test the EUT in keep warming mode.

The worst case for final test: b: Test the EUT in keep warming mode.

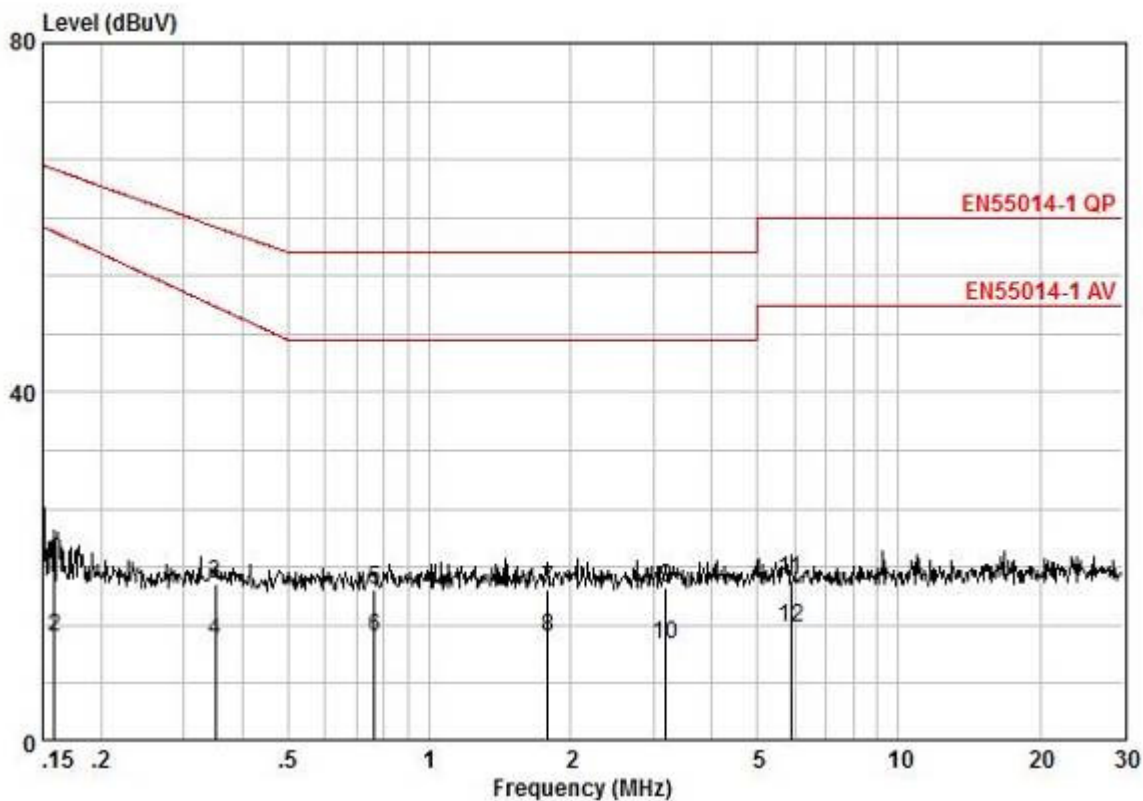
6.1.2 Test Setup Diagram



6.1.3 Measurement Data

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.

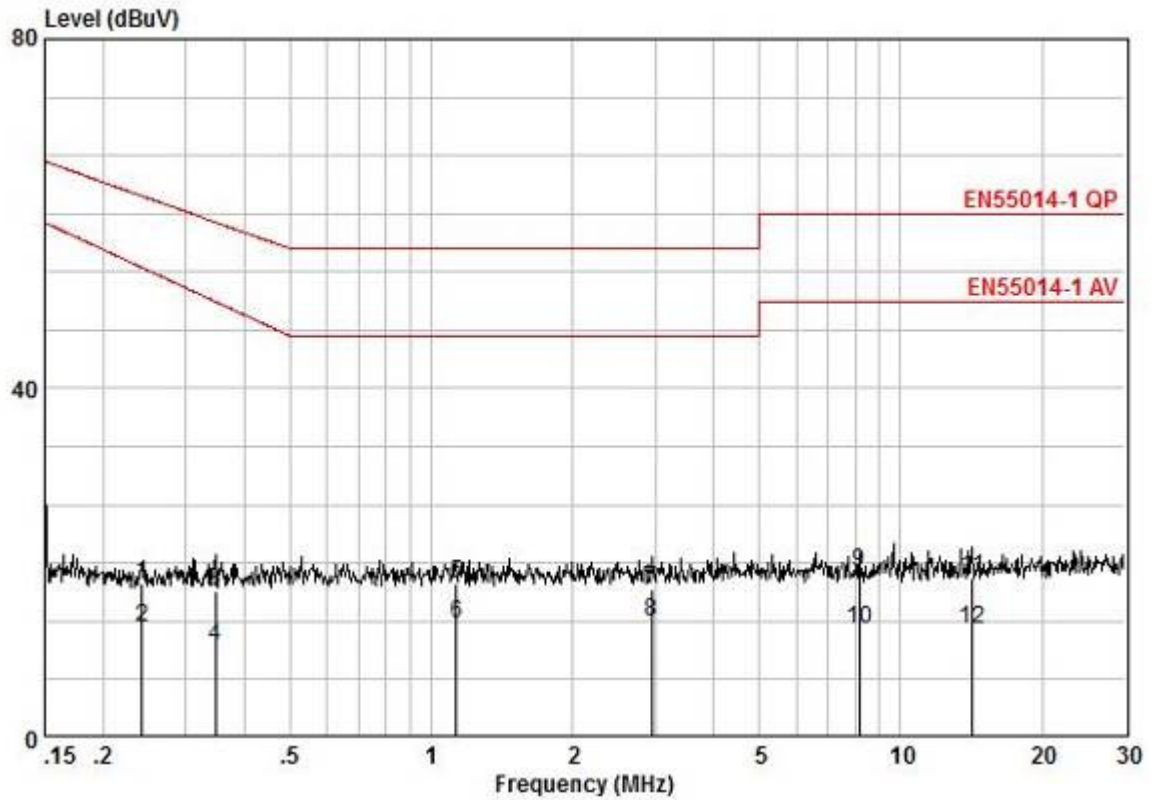
Mode:a; Line:Live Line



Pol :LIVE
 No :
 Model :

Frequency MHz	read level dBuV	Cable Loss dB	LISN Factor dB	Measured level dBuV	Limit Line dBuV	Over limit dB	Remark
0.16	9.94	0.10	9.65	19.69	65.52	-45.83	QP
0.16	2.30	0.10	9.65	12.05	58.37	-46.32	AVERAGE
0.35	8.38	0.16	9.64	18.18	58.96	-40.78	QP
0.35	1.83	0.16	9.64	11.63	49.85	-38.22	AVERAGE
0.76	7.58	0.26	9.65	17.49	56.00	-38.51	QP
0.76	2.14	0.26	9.65	12.05	46.00	-33.95	AVERAGE
1.79	7.52	0.36	9.66	17.54	56.00	-38.46	QP
1.79	1.91	0.36	9.66	11.93	46.00	-34.07	AVERAGE
3.19	7.48	0.55	9.68	17.72	56.00	-38.28	QP
3.19	0.91	0.55	9.68	11.15	46.00	-34.85	AVERAGE
5.90	8.02	0.68	9.72	18.42	60.00	-41.58	QP
5.90	2.75	0.68	9.72	13.15	50.00	-36.85	AVERAGE

Mode:a; Line:Neutral Line



Pol : NEUTRAL
 No :
 Model :

Frequency MHz	read level dBuV	Cable Loss dB	LISN Factor dB	Measured level dBuV	Limit Line dBuV	Over limit dB	Remark
0.24	7.98	0.12	9.66	17.76	62.04	-44.28	QP
0.24	2.91	0.12	9.66	12.69	53.85	-41.16	AVERAGE
0.35	7.06	0.16	9.66	16.88	59.05	-42.17	QP
0.35	0.75	0.16	9.66	10.57	49.96	-39.39	AVERAGE
1.13	7.62	0.30	9.68	17.60	56.00	-38.40	QP
1.13	3.14	0.30	9.68	13.12	46.00	-32.88	AVERAGE
2.95	6.78	0.53	9.70	17.01	56.00	-38.99	QP
2.95	3.07	0.53	9.70	13.30	46.00	-32.70	AVERAGE
8.15	8.54	0.63	9.80	18.97	60.00	-41.03	QP
8.15	1.91	0.63	9.80	12.34	50.00	-37.66	AVERAGE
14.21	7.70	0.70	9.97	18.37	60.00	-41.63	QP
14.21	1.83	0.70	9.97	12.50	50.00	-37.50	AVERAGE

6.2 Discontinuous Disturbance (150kHz-30MHz)

Test Requirement:	EN 55014-1:2017	
Test Method:	EN 55014-1:2017	
Frequency Range:	150kHz to 30MHz	
Limit:		
0.15MHz	Limit=66dB(μV)+Lq	
	Lq= 44 dB	N < 0.2
	Lq= 20 lg(30/N) dB	0.2 ≤ N < 30
0.5MHz	Limit=56dB(μV)+Lq	
	Lq= 44 dB	N < 0.2
	Lq= 20 lg(30/N) dB	0.2 ≤ N < 30
1.4MHz	Limit=56dB(μV)+Lq	
	Lq= 44 dB	N < 0.2
	Lq=20 lg(30/N) dB	0.2 ≤ N < 30
30MHz	Limit=60dB(μV)+Lq	
	Lq= 44 dB	N < 0.2
	Lq= 20 lg(30/N) dB	0.2 ≤ N < 30
	Lq is click limit, N is click rates	
Detector:	Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz	

6.2.1 E.U.T. Operation

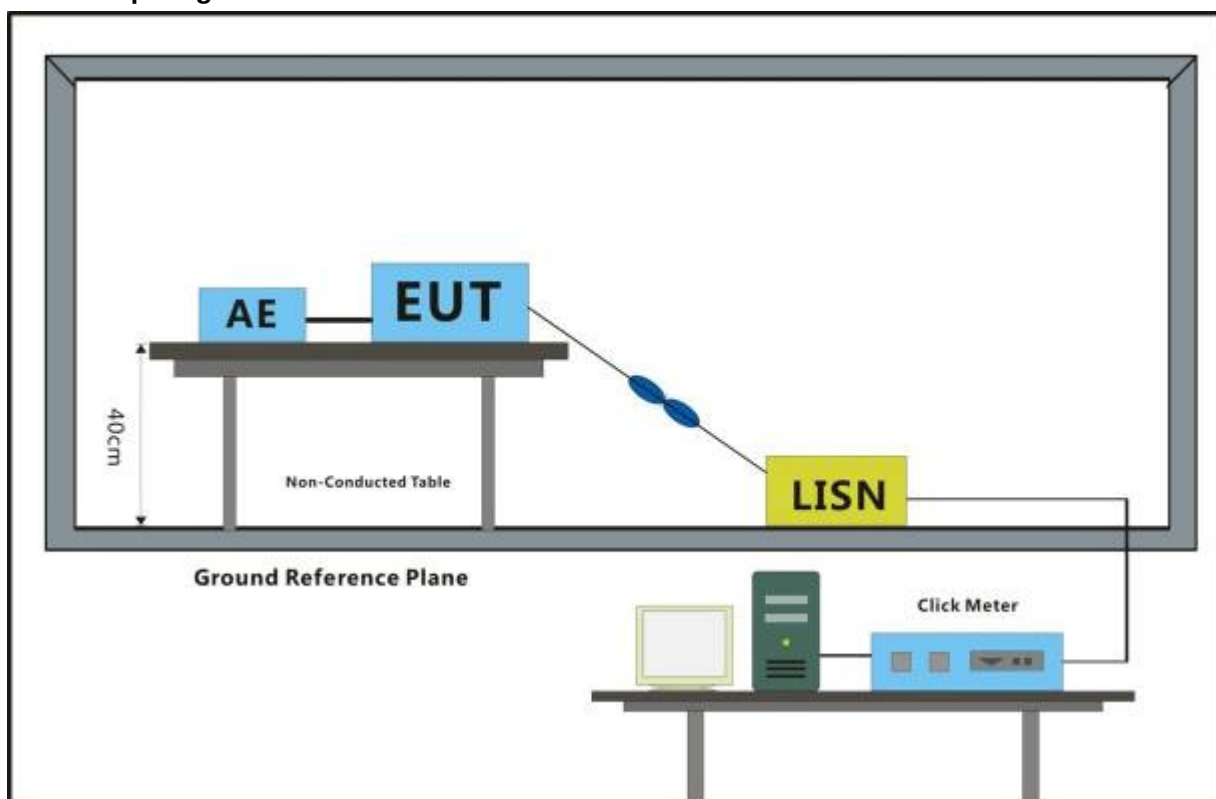
Operating Environment:

Temperature: 26.4 °C Humidity: 48.7 % RH Atmospheric Pressure: 1020 mbar

Pretest these modes to find the worst case:
a: Test the EUT in heating mode.
b: Test the EUT in keep warming mode.

The worst case for final test: b: Test the EUT in keep warming mode.

6.2.2 Test Setup Diagram





6.2.3 Measurement Data

Mode:b

Test Report

File

Title: _____ Test#: 1
Date: _____ Time: 120:02.423
Required: _____
Executed by: _____
Description: _____
Model: Default
SN: _____
Type: _____
Report: _____
Work Dir: _____

Sw Op f= 1.00 Click Rate

Rx1 150kHz	Instantaneous switchings: Exempt from amplitude limits
Rx2 500kHz	No Clicks
Rx3 1.4MHz	No Clicks
Rx4 30MHz	No Clicks

Test Conditions

Remote	Input Offset	External Attenuator
NONE	0.0	0 dB

Att. Rx1 150kHz	Att. Rx2 500kHz	Att. Rx3 1.4MHz	Att. Rx4 30MHz
20dB	10dB	10dB	10dB

View Log Run 2th Step Stop 2th Step

	Rx1 150kHz	Rx2 500kHz	Rx3 1.4MHz	Rx4 30MHz
First Pass				
CISPR 14-1 Short	13	0	0	0
Long	0	0	0	0
Fast Long	0	0	0	0
Total Clicks	13	0	0	0
Continuous Int. Events	0	0	0	0
Correction <input type="checkbox"/> TIME (s)	0.00	0.00	0.00	0.00
Manual <input type="checkbox"/> Switch Op	0	0	0	0
2 Click	0	0	0	0
Limit dBuV	66.0	56.0	56.0	60.0
7.4.2.2 N	0.11	0	0	0
Limit dBuV	66.0	56.0	56.0	60.0
Allowed Clicks	0	0	0	0
Second Pass				
Short	0	0	0	0
Long	0	0	0	0
Total Clicks	0	0	0	0
Continuous Int. Events	0	0	0	0
TIME (s)	0.00	0.00	0.00	0.00
2 Click	0	0	0	0
Peak Clipping	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PASS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

6.3 Disturbance Power

Test Requirement:	EN 55014-1:2017
Test Method:	CISPR 16-2-2
Frequency Range:	30MHz to 300MHz
Limit:	
30MHz- 300MHz	45dB(pw)-55dB(pw) quasi-peak, 35dB(pw)-45dB(pw) average
Detector:	Peak for pre-scan (120kHz resolution bandwidth) 30M to 300MHz

6.3.1 E.U.T. Operation

Operating Environment:

Temperature: 24.4 °C Humidity: 50.8 % RH Atmospheric Pressure: 1020 mbar

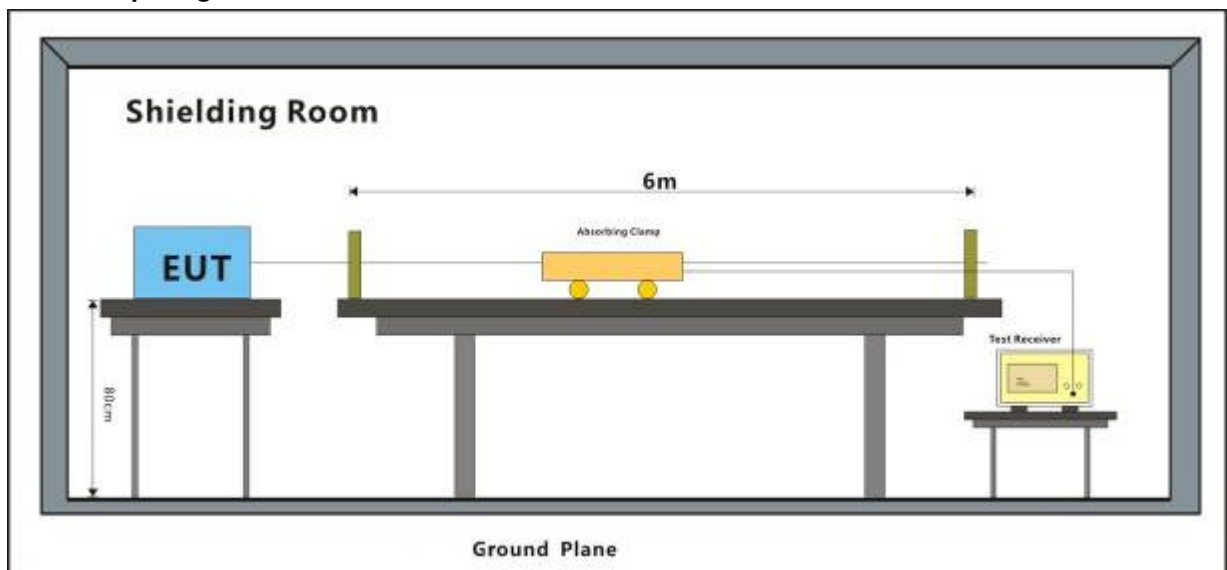
Pretest these modes to find the worst case:

- a: Test the EUT in heating mode.
- b: Test the EUT in keep warming mode.

The worst case for final test:

- b: Test the EUT in keep warming mode.

6.3.2 Test Setup Diagram

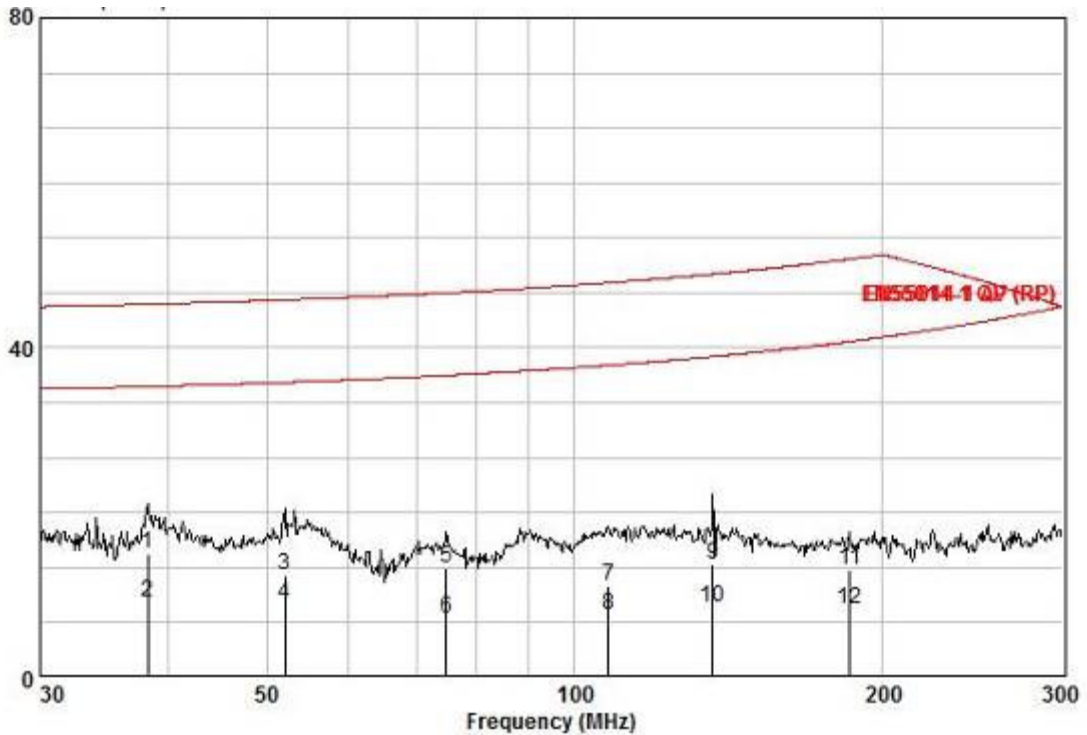


6.3.3 Measurement Data

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.

Mode:a

Level dB(pW)



Frequency MHz	Read level dBuV	Cable Loss dB	Clamp Factor dEpW/dBuV	Measured level dEpW	Limit Line dEpW	Over limit dB	Remark
38.205	9.80	0.97	4.36	15.13	45.30	-30.18	QP
38.205	3.81	0.97	4.36	9.14	35.30	-26.17	AVERAGE
52.014	6.84	1.12	4.49	12.45	45.82	-33.37	QP
52.014	3.25	1.12	4.49	8.86	35.82	-26.96	AVERAGE
74.838	8.60	1.25	3.37	13.22	46.66	-33.44	QP
74.838	2.57	1.25	3.37	7.19	36.66	-29.47	AVERAGE
107.925	5.20	1.54	4.34	11.08	47.89	-36.81	QP
107.925	1.68	1.54	4.34	7.56	37.89	-30.32	AVERAGE
136.496	8.00	1.70	4.03	13.73	48.95	-35.22	QP
136.496	2.87	1.70	4.03	8.60	38.94	-30.35	AVERAGE
185.832	8.34	1.93	2.70	12.97	50.77	-37.80	QP
185.832	3.76	1.93	2.70	8.39	40.77	-32.38	AVERAGE

6.4 Harmonic Current Emission

Test Requirement: EN 61000-3-2:2014
 Test Method: EN 61000-3-2:2014
 Frequency Range: 100Hz to 2kHz

6.4.1 E.U.T. Operation

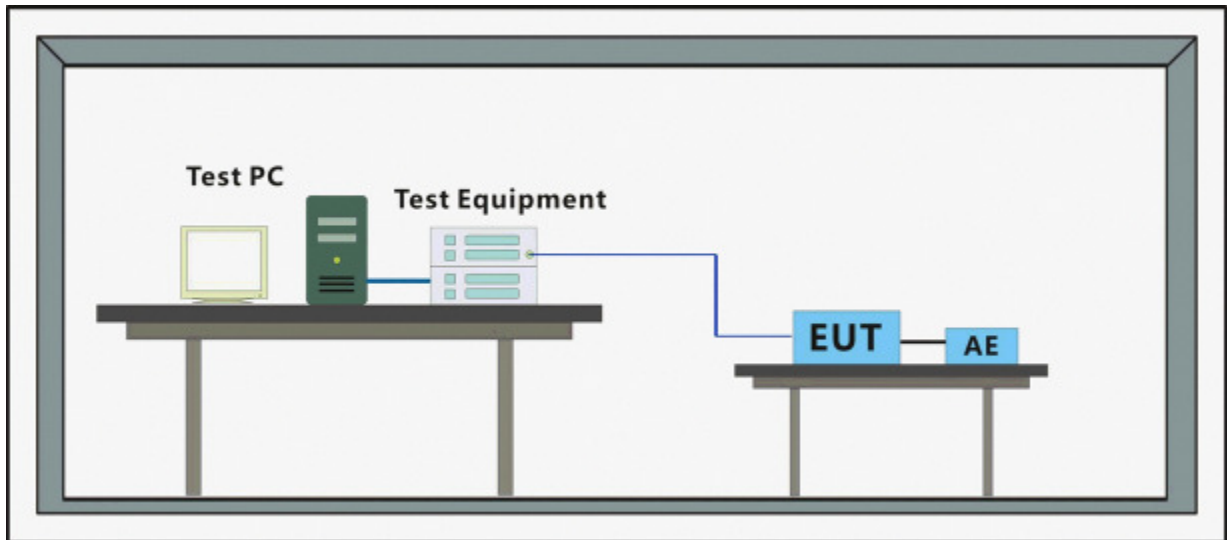
Operating Environment:

Temperature: 26.4 °C Humidity: 49.5 % RH Atmospheric Pressure: 1020 mbar

Pretest these modes to find the worst case:
 a:Test the EUT in heating mode.
 b:Test the EUT in keep warming mode.

The worst case for final test: a:Test the EUT in heating mode.

6.4.2 Test Setup Diagram





6.4.3 Measurement Data

Mode a:

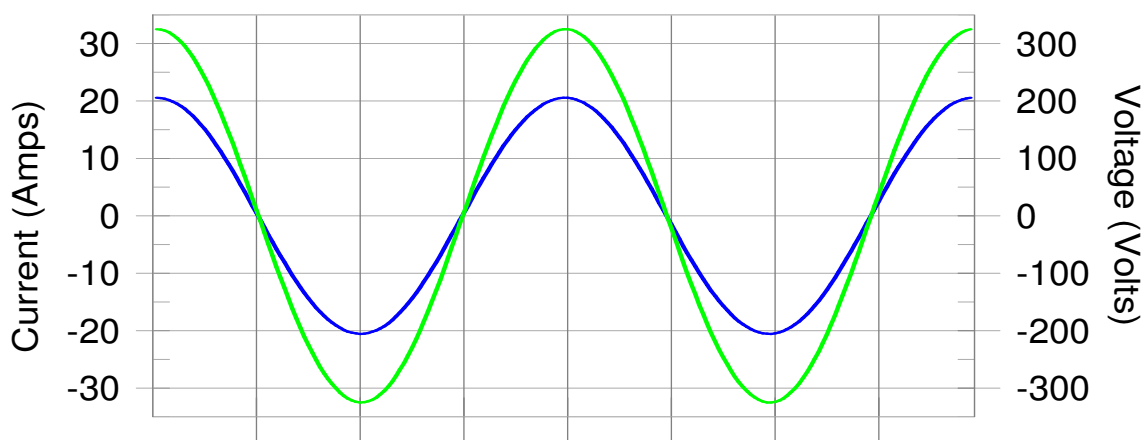
Harmonics – Class-A per Ed. 4.0 (2014)(Run time)

Test category: Class-A per Ed. 4.0 (2014) (European limits) Test Margin: 100

Test duration (min): 3

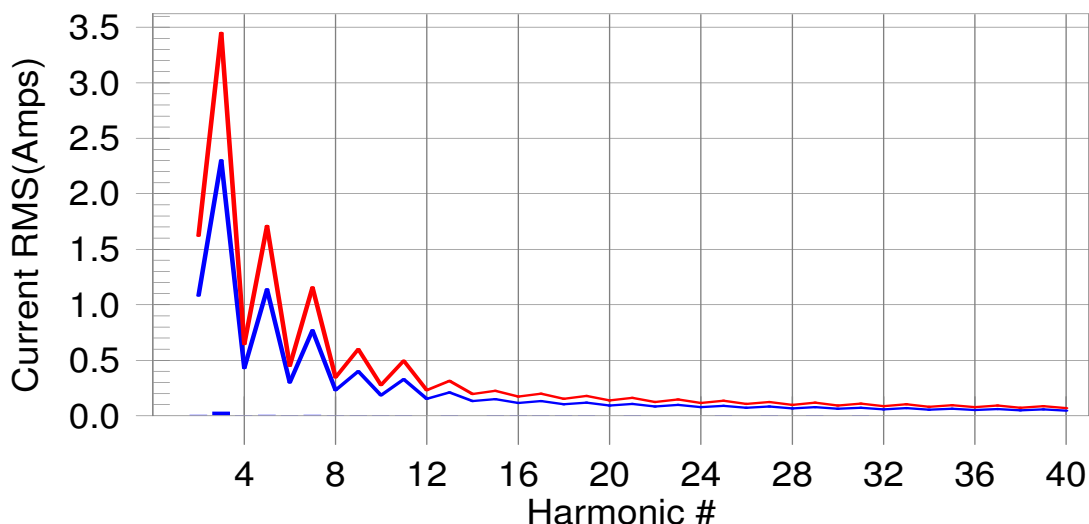
Test Result: Pass Source qualification: Normal

Current & voltage waveforms



Harmonics and Class A limit line

European Limits



Test result: Pass Worst harmonic was #0 with 0.0% of the limit.

6.5 Voltage Fluctuations and Flicker

Test Requirement: EN 61000-3-3:2013

Test Method: EN 61000-3-3:2013

6.5.1 E.U.T. Operation

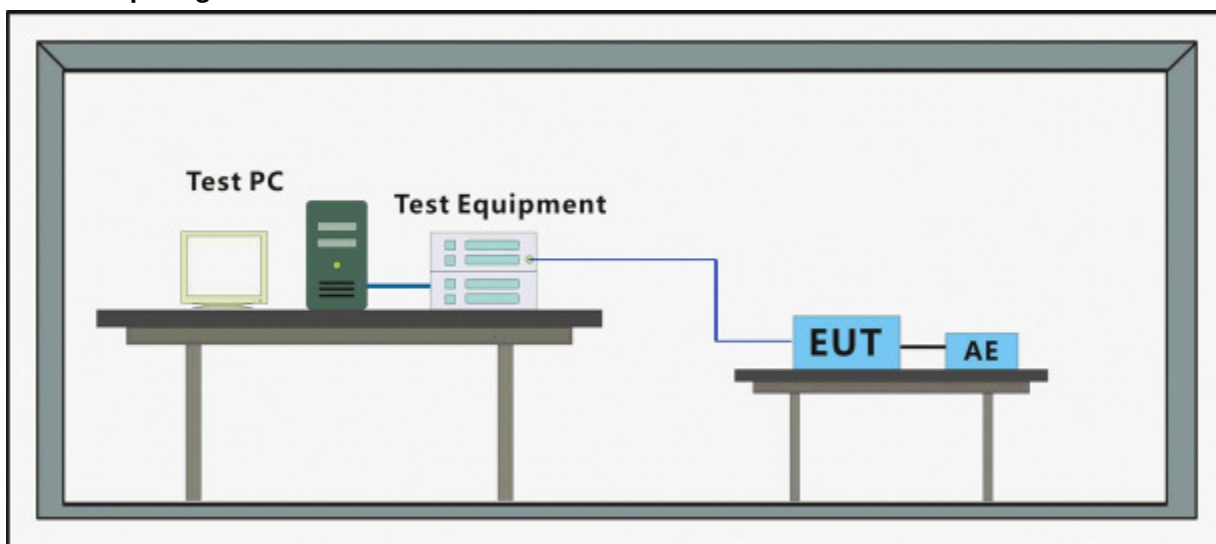
Operating Environment:

Temperature: 26.4 °C Humidity: 49.5 % RH Atmospheric Pressure: 1020 mbar

Pretest these modes to find the worst case:
 a: Test the EUT in heating mode.
 b: Test the EUT in keep warming mode.

The worst case for final test:
 b: Test the EUT in keep warming mode.

6.5.2 Test Setup Diagram





6.5.3 Measurement Data

Mode b:

Flicker Test Summary per EN61000-3-3 (Run time)

Test category: dt,dmax,dc and Pst (European limits)
Test duration (min): 10

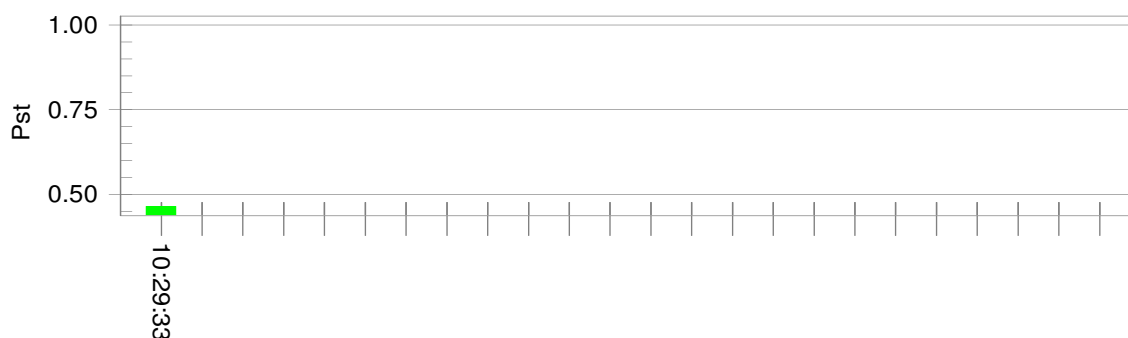
Test Margin: 100

Test Result: Pass

Status: Test Completed

Pst_i and limit line

European Limits



Parameter values recorded during the test:

Vrms at the end of test (Volt):	229.98		
Highest dt (%):	0.73	Test limit (%):	N/A
T-max (mS):	0	Test limit (mS):	500.0
Highest dc (%):	0.72	Test limit (%):	3.30
Highest dmax (%):	0.74	Test limit (%):	4.00
Highest Pst (10 min. period):	0.464	Test limit:	1.000
			Pass



7 Immunity Test Results

Test Requirement: EN 55014-2:2015

Test Method: N/A: See Remark Below

There is no need for immunity tests to be performed on this product in accordance with clause 7.2.1 of EN 55014-2 which states:

“Category I apparatus is deemed to fulfil the relevant immunity requirement without testing.”

For further details, please refer to clause 4.1 of EN 55014-2 which states:

“Category I: apparatus containing no electronic control circuitry.

Example: motor operated appliances, lighting toys, track sets without electronic control units, tools, heating appliances UV and IR radiators and apparatus containing components such as electromechanical switches and thermostats.

Electric circuits consisting of passive components (such as radio interference suppression capacitors or inductors, mains transformers and mains frequency rectifiers) are not considered to be electronic control circuitry.”

8 Photographs

8.1 Conducted Emissions at Mains Terminals (150kHz-30MHz) Test Setup



8.2 Discontinuous Disturbance (150kHz-30MHz) Test Setup



8.3 Disturbance Power Test Setup



8.4 Harmonic Current Emission Test Setup

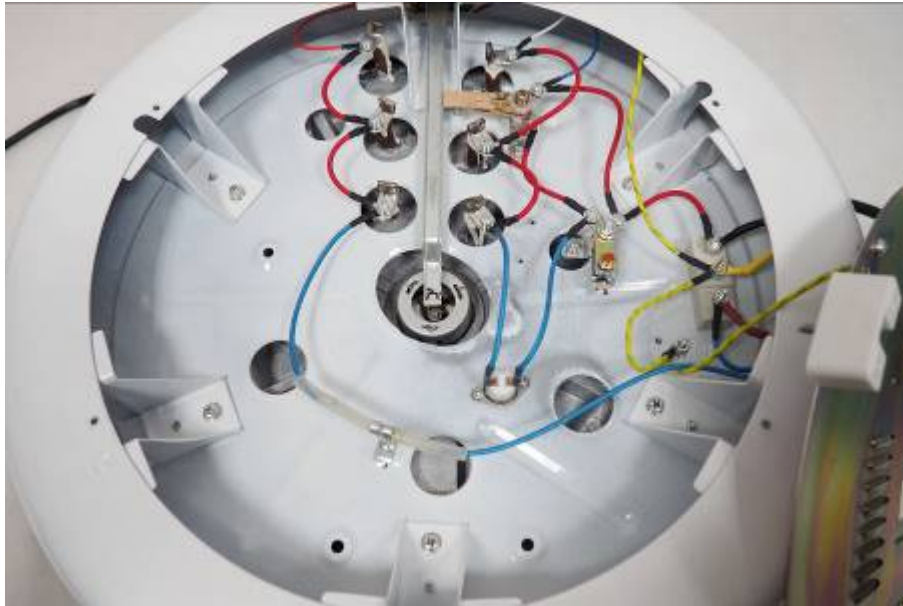


8.5 Voltage Fluctuations and Flicker Test Setup



8.6 EUT Constructional Details





The photo below were supplied by applicant.
Model DRC32S-xPB3



Model RC18A-IX3



Model SRC28C-qVX3



--End of Report--