

TEST REPORT ELECTROMAGNETIC COMPATIBILITY (EMC)

Report Reference No.....: 367801

Supervised by (name & signature) ...: Jianbo Ru

Jianbo Ru

Approved by (name & signature).....: Juno Wong

Juno Wong

Date of issue.....: 2019-02-26

Report issued by: Nemko Shanghai Ltd Shenzhen Branch

Address: Unit C&D, Floor 10, Tower 2, Financial Base, Kefa Road 8#,
Hi-Technology Park, Nanshan District, Shenzhen 518057,
China

Testing procedure.....: Tested at N and external laboratory

Testing location/ address.....: See page 7

Applicant's name.....: New Nanfang Electrical Appliance Co., Ltd.

Address: No.213, Wenzhang Cun, Cunjin Road, Chikan District, Zhan
jiang, Guangdong

Test specification:

Standards for Emission: EN55014-1:2017

EN61000-3-3:2013


EN61000-3-2:2014

Standards for Immunity: EN55014-2:2015

Arrival of EUT: 2012-01-31

Test date of EUT: 2012-02-01

Test item description: Rice Cooker

Trade Mark: 

Manufacturer: New Nanfang Electrical Appliance Co., Ltd.

Address: No.213, Wenzhang Cun, Cunjin Road, Chikan District, Zhan
jiang, Guangdong

Representative Type: RC-16A, RC-45

Serial number: See page 6

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1 Summary Emission

1.1 Standards

Generic standard

EN 61000-3-3:2013

EN 61000-3-2:2014

Product or product family standard

EN55014-1:2017

Product category

Household Appliance

1.2 Results

Environmental phenomena	Port / Test module	Basic standard and test setup	Limit class	Result
Conducted Emission	AC input power ports	CISPR 16-2-1	Table 5 of EN 55014-1	Pass
Discontinuous disturbance	AC input power ports	CISPR 16-2-1	Clause 4.4 of EN 55014-1	Pass
Disturbance power	AC input power port	CISPR 16-2-3	Table 7 of EN 55014-1	Pass
Radiated emission	Enclosure	CISPR 16-2-3	Table 9 of EN 55014-1	N/A*)
Harmonic current emission	AC input power ports	EN 61000-3-2:2014	Class A	Pass**)
Voltage fluctuations and flicker	AC input power ports	EN 61000-3-3:2013	Clause 5 of EN 61000-3-3	Pass***)

Remarks: N/A-Not Applicable

*) Appliances are deemed to comply in the frequency range from 300 MHz to 1 000 MHz:

- 1) all emission readings from the equipment under test are lower than the applicable limits (Table 2a) reduced by the margin (Table 2b), see the disturbance power data;
- 2) the maximum clock frequency is less than 30 MHz.

***) For devices with a rated power of 75 W or less, not being lighting equipment, no limit values are effective. (EN61000-3-2)

For professionally used devices with a total rated power exceeding 1 kW no limit values are effective. (EN61000-3-2)

***) There is no testing required if the device does not generate any significant voltage fluctuations or flicker. (EN61000-3-3)

A short time measurement confirmed the assumption that this is the fact. The details in the test module are representing the results of the short time measurement.

2 Summary Immunity

2.1 Standards

Generic standard /

Product or product family standard **EN 55014-2:2015**

Product category: **Category I**

Performance criteria: **As below**

2.2 Results

Environmental phenomena	Port / Test module	Basic standard and test setup	Performance criteria	Result
Electrostatic Discharge	Enclosure port	EN 61000-4-2:2009	B	N/A
Radiated Electromagnetic field Susceptibility Test	Enclosure port	EN 61000-4-3:2006/A1:2008+A2:2010	A	N/A
Electrical Fast Transient /Burst Test	Input AC Power port	EN 61000-4-4:2012	B	N/A
Surge Test	Input AC Power port	EN 61000-4-5: 2014/A1:2017	B	N/A
Conducted Susceptibility Test	Input AC Power port	EN 61000-4-6:2014	A	N/A
Voltage Dips and Interruptions Test	Input AC Power port	EN 61000-4-11: 2004+A1:2017	C	N/A

Remarks: N/A-Not Applicable

- *) The EUT contains no electronic control circuitry, category I.
Category I apparatus is deemed to fulfil the relevant immunity requirements without testing.

2.3 Performance criteria according to product or product family standards

Performance 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 permission 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.

Performance 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 permission 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.

Performance 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.

3 General information

3.1 Description of Equipment under test (EUT)

Type of equipment	Table top	<input checked="" type="checkbox"/>
	Floor standing	<input type="checkbox"/>
	Combination	<input type="checkbox"/>
	Hand held EUT	<input type="checkbox"/>

The EUT is a rice cooker.

Model Name: RC-XXY

The "XX" can be 2, 3, 4, 5, 8, 10, 15, 16, 20, 23, 28, 45 or 55, it denotes difference capacity and rating; The "Y" can be A, B, C, D or blank, it denotes difference model name only.

1. All the models are rice cooker for household use only.

The rice cooker incorporated two functions: "warm" and "cook".

2. All models are same except that their capacity, size, rating of heating element and appearance are different. Sameness and difference of rating, switch and capacity between models can be found in the table as below:

Model	Rating	Rated capacity
RC-2A, RC-2B, RC-2C, RC-2D	200W 220-240V 50/60Hz, Class I	0.4L
RC-3A, RC-3B, RC-3C, RC-3D	300W 220-240V 50/60Hz, Class I	0.6L
RC-4A, RC-4B, RC-4C, RC-4D	350W 220-240V 50/60Hz, Class I	0.7L
RC-5A, RC-5B, RC-5C, RC-5D	400W 220-240V 50/60Hz, Class I	1.0L
RC-8A, RC-8B, RC-8C, RC-8D	500W 220-240V 50/60Hz, Class I	1.5L
RC-10A, RC-10B, RC-10C, RC-10D	700W 220-240V 50/60Hz, Class I	1.8L
RC-15A, RC-15B, RC-15C, RC-15D	900W 220-240V 50/60Hz, Class I	2.5L
RC-16A , RC-16B, RC-16C, RC-16D	1000W 220-240V 50/60Hz, Class I	2.8L
RC-20	1300W 220-240V 50/60Hz, Class I	3.6L
RC-23	1600W 220-240V 50/60Hz, Class I	4.2L
RC-28	1900W 220-240V 50/60Hz, Class I	5.6L
RC-45	2500W 220-240V 50/60Hz, Class I	8.0L
RC-55	2650W 220-240V 50/60Hz, Class I	10.0L

RC-16A and RC-45 are the representative test model for full test. According to EN 55014-1 7.4.3.15, rice cooker are tested with the rated capacity of tap water and with the lid closed.

Remark: This report 323629 is on the basis of the original report 153541, standards are updated, add new models RC-20 and RC-55. Additional test is not need. Other data are from the original report.

This report 367801 is on the basis of the original report 323629, Update manufacturer address and update standard, additional test is not need, All test data are from the original report 323629.

3.2 Test Mode (TM)**Working mode**

TM1	198V-264VAC 50/60Hz Cook mode Maximum power state
TM2	230VAC 50/60Hz Cook mode Maximum power state
Remark	Maximum power state is the worst shift by pre-scan. And only list the worse mode in the report.

3.3 Measurement uncertainty

Conducted Emission :150kHz-30MHz	2.46dB
Disturbance Power: 30MHz-300MHz	3.10dB

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

3.4 Climatic conditions

parameter	admissible range	actual range	Result
Ambient temperature	15 °C - 35 °C	22-24°C	OK
Relative humidity	30 % - 60 %	47-50%	OK
Atmospheric pressure	86-106kPa	101.7kPa	OK

3.5 Testing location

Address 1#: Nemko Shanghai Ltd.
7F, No.1 Building, No. 2007 Hong Mei Road, Xuhui district, Shanghai, China

Address 2#: Global United Technology Services Co., Ltd. -- Nemko ELA 632
2nd Floor, Block No.2, Laodong Industrial Zone, Xixiang Road Baoan District, Shenzhen, China

Remark: All tests have been supervised by a Nemko engineer.

4 Measurement of Conducted disturbance

4.1 Standards

Generic standard	/
Product or product family standard	EN55014-1:2017
Limit class	Table 5 of EN 55014-1
Basic standard	CISPR 16-2-1
Date of testing	2010-07-07, 2012-02-01

4.2 Measurement equipment

Equipment in N:

	Equipment	Calibration due	Type	Serial No.	Manufacturer
<input checked="" type="checkbox"/>	EMI Test Receiver	2020-01-14	ESCI	100658	R&S
<input checked="" type="checkbox"/>	AMN	2020-01-14	ENV216	100065	R&S

Equipment in GTS:

	Equipment	Calibration due	Type	Serial No.	Manufacturer
<input checked="" type="checkbox"/>	Shielding Room	2019-07	7.0(L)x3.0(W)x3.0(H)	GTS252	ZhongYu Electron
<input checked="" type="checkbox"/>	EMI Test Receiver	2019-07	ESCS30	1102.4500K30	Rohde & Schwarz
<input checked="" type="checkbox"/>	10dB Pulse Limita	2019-07	N/A	GTS224	Rohde & Schwarz
<input checked="" type="checkbox"/>	LISN	2019-07	NSLK 8127	8127549	SCHWARZBECK MESS-ELEKTRONIK
<input checked="" type="checkbox"/>	Coaxial Cable	2019-07	N/A	N/A	GTS
<input checked="" type="checkbox"/>	EMI Test Software	2019-07	E3	N/A	AUDIX

4.3 Test set-up

Annex B-1 with photos or a rough figure of the test set-up are attached.
The test has been performed as following:

The power line of the EUT is connected to the AC mains through an Artificial Mains Network (A.M.N.). A EMI test receiver used to test the emissions form both sides of AC line. The bandwidth of EMI test receiver is set at 9 kHz.

A test at about 160 kHz shall be made over a range of 0,9 to 1,1 times the rated voltage in order to check whether the level of disturbance varies considerably with the supply voltage; in which case, the measurements are to be made at the voltage that causes maximum disturbance.

If an appliance has a rated voltage range, the multipliers 0,9 and 1,1 apply to the lowest and highest, most common nominal supply voltages that fall within the rated voltage range that is specified by the manufacturer.

If an appliance has more than one rated voltage the multipliers 0,9 and 1,1 apply to the rated voltage that causes maximum disturbance.

For appliances with a frequency range of 50 Hz to 60 Hz, a test at about 160 kHz shall be made using supply frequencies of 50 Hz and 60 Hz at the above determined supply voltage, in order to check whether the level of disturbance varies considerably with the supply frequency; in which case, the measurements are to be made at the supply frequency which causes maximum disturbance.

The EUT was placed on the top of an insulating table 0.8 meters above the ground at a shielded room. The EUT was placed 0.4 meters from the conducting wall of shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). The LISN provide 50Ohm/50μH of coupling impedance for the measuring instrument. Both lines of the power mains connected to the EUT were checked for maximum conducted interference. The frequency range from 150kHz to 30MHz was searched. The worst-case emissions are reported.

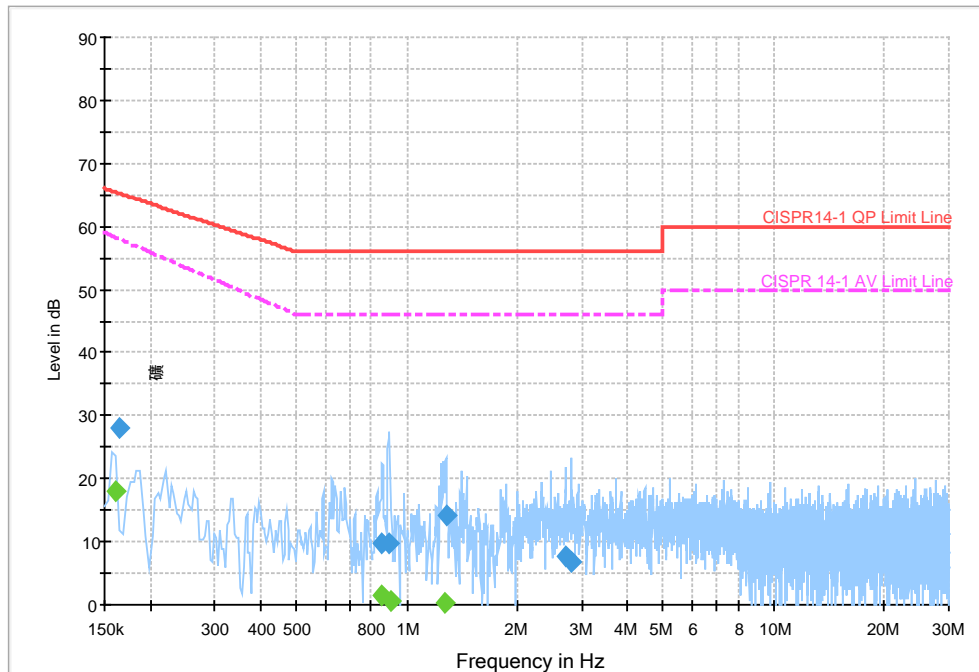
4.4 Test result

Mode:	TM1	Power ports	AC input port
Diagram	Description	Model	Result
001	Line L	RC-16A	Pass
002	Line N		Pass
003	Line L	RC-45	Pass
004	Line N		Pass
Remark:	Only the worst test result diagram list in report and if the reading value is too low then only list the test diagram. 264V 50Hz is the worst mode for test		

4.5 Diagrams and tables

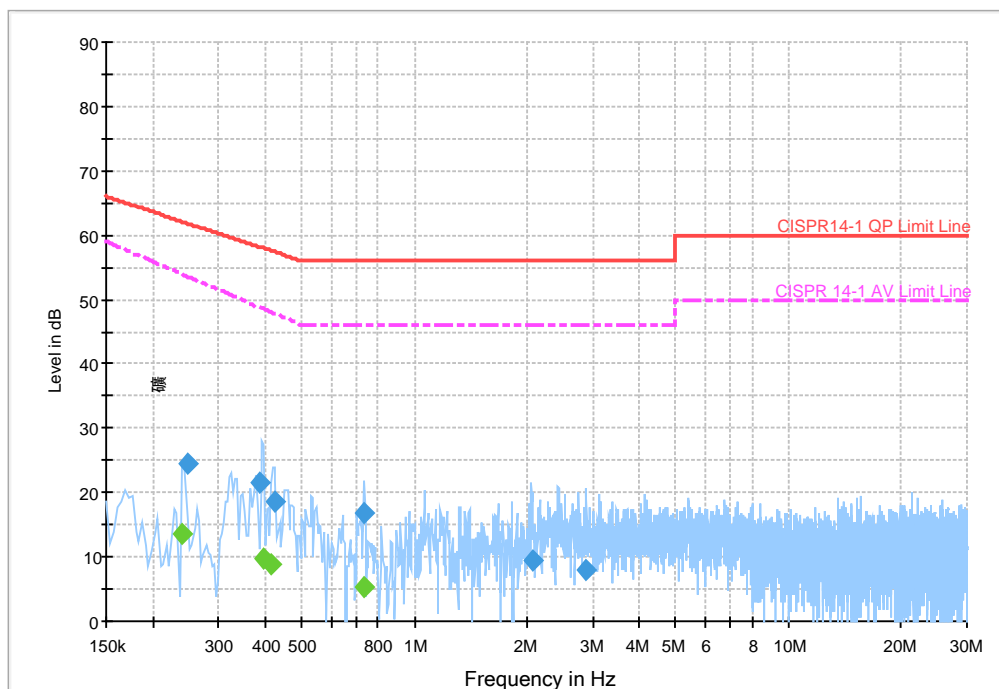
4.5.1 Diagram 001

HOUS EMI_ENV216 LISN Auto Test

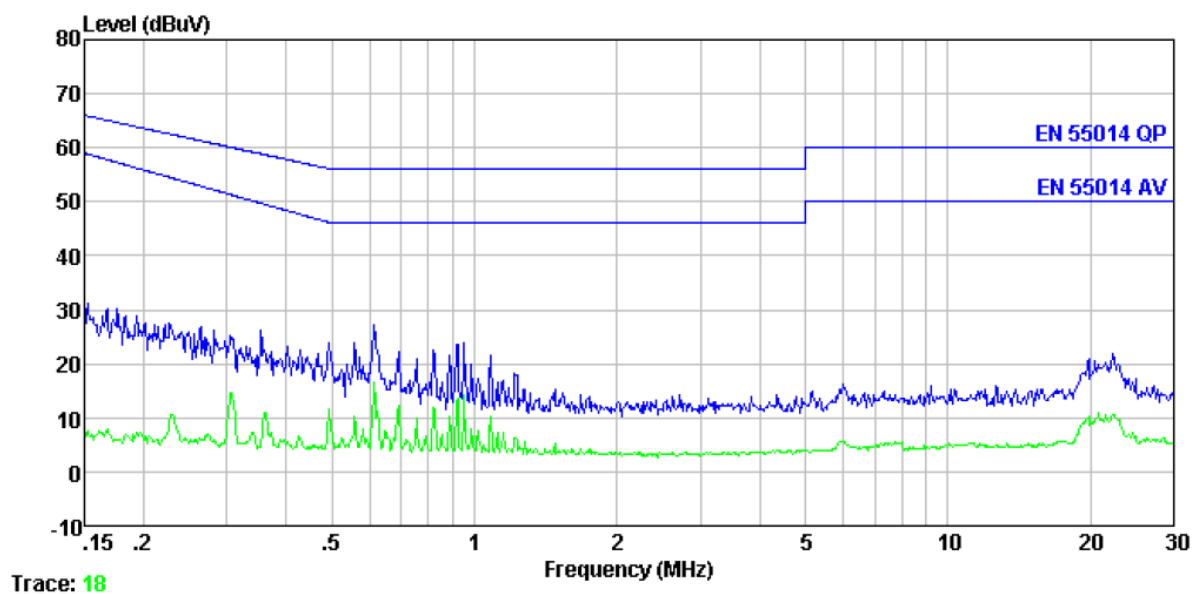


4.5.2 Diagram 002

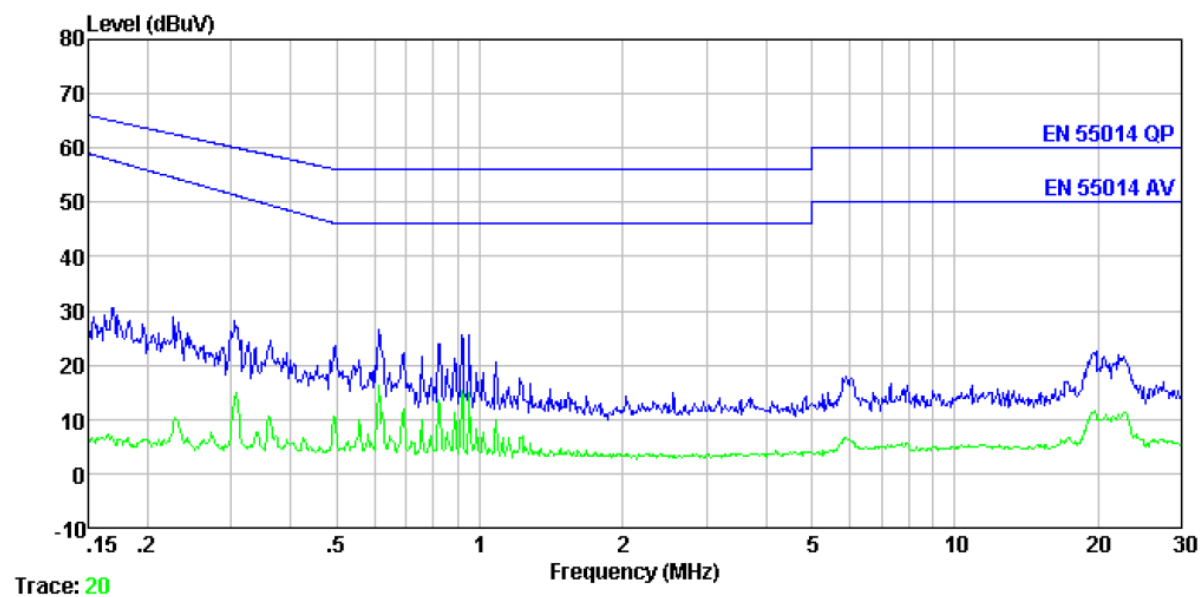
HOUS EMI_ENV216 LISN Auto Test



4.5.3 Diagram 003



4.5.4 Diagram 004



5 Measurement of Disturbance Power

5.1 Standards

Generic standard	/
Product or product family standard	EN55014-1:2017
Limit class	Table 7 of EN 55014-1:2017
Basic standard	CISPR 16-2-3
Date of testing	2010-07-07, 2012-02-01

5.2 Measurement equipment

Equipment in N:

	Equipment	Calibration due	Type	Serial No.	Manufacturer
<input checked="" type="checkbox"/>	EMI test receiver	2020-01-14	ESCI	100658	R&S
<input checked="" type="checkbox"/>	Absorbing Clamp	2020-01-14	MDS-21	100298	R&S

Equipment in GTS:

	Equipment	Calibration due	Type	Equipment No.	Manufacturer
<input checked="" type="checkbox"/>	Shielding Room	Jul. 04 2019	7.0(L)x3.0(W)x3.0(H)	GTS252	ZhongYu Electron
<input checked="" type="checkbox"/>	EMI Test Receiver	Jul. 04 2019	ESCS30	GTS223	Rohde & Schwarz
<input checked="" type="checkbox"/>	10dB Pulse Limita	Jul. 04 2019	N/A	GTS224	Rohde & Schwarz
<input checked="" type="checkbox"/>	Absorbing clamp	Jul. 05 2019	MDS21	GTS229	Elektronik-Feinmechanik
<input checked="" type="checkbox"/>	Coaxial Cable	Apr. 01 2019	N/A	GTS228	GTS

5.3 Test set-up

Annex B-2 with a photo or a rough figure of the test set-up is attached.

The test has been performed as following:

The distance between the clamp test set-up (the appliance, the lead to be measured and the absorbing clamp) and any other conductive objects (including persons, walls and ceiling, but excluding the floor) shall be at least 0,8 m. The appliance to be tested shall be placed on a non-metallic support table parallel to the floor. The lead to be measured is placed in a straight line for a distance sufficient to accommodate the absorbing clamp, and to permit the necessary measuring adjustment of position for tuning.

A test at about 50 MHz shall be made over a range of 0,9 to 1,1 times the rated voltage in order to check whether the level of disturbance varies considerably with the supply voltage; in which case, the measurements are to be made at the voltage that causes maximum disturbance.

If an appliance has a rated voltage range, the multipliers 0,9 and 1,1 apply to the lowest and highest, most common nominal supply voltages that fall within the rated voltage range that is specified by the manufacturer.

If an appliance has more than one rated voltage the multipliers 0,9 and 1,1 apply to the rated voltage that causes maximum disturbance.

With a frequency range of 50 Hz to 60 Hz, a test at about 50 MHz shall be made using supply frequencies of 50 Hz and 60 Hz at the above determined supply voltage, in order to check whether the level of disturbance varies considerably with the supply frequency; in which case, the measurements

are to be made at the supply frequency which causes maximum disturbance.

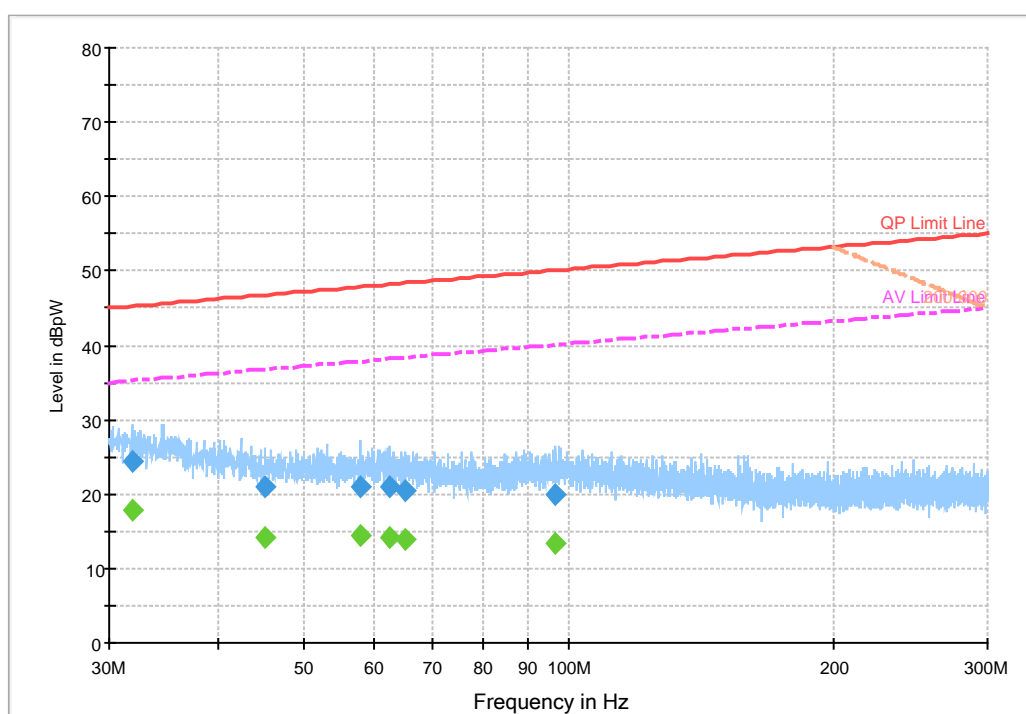
5.4 Test result

Mode	Diagram	Model	Description	Result
TM1	005	RC-16A	AC Mains Power line	Pass
TM1	006	RC-45	AC Mains Power line	Pass
Remark:	Only the worst test result diagram list in report and if the reading value is too lower then only list the test diagram. 264V 50Hz is the worst mode for test.			

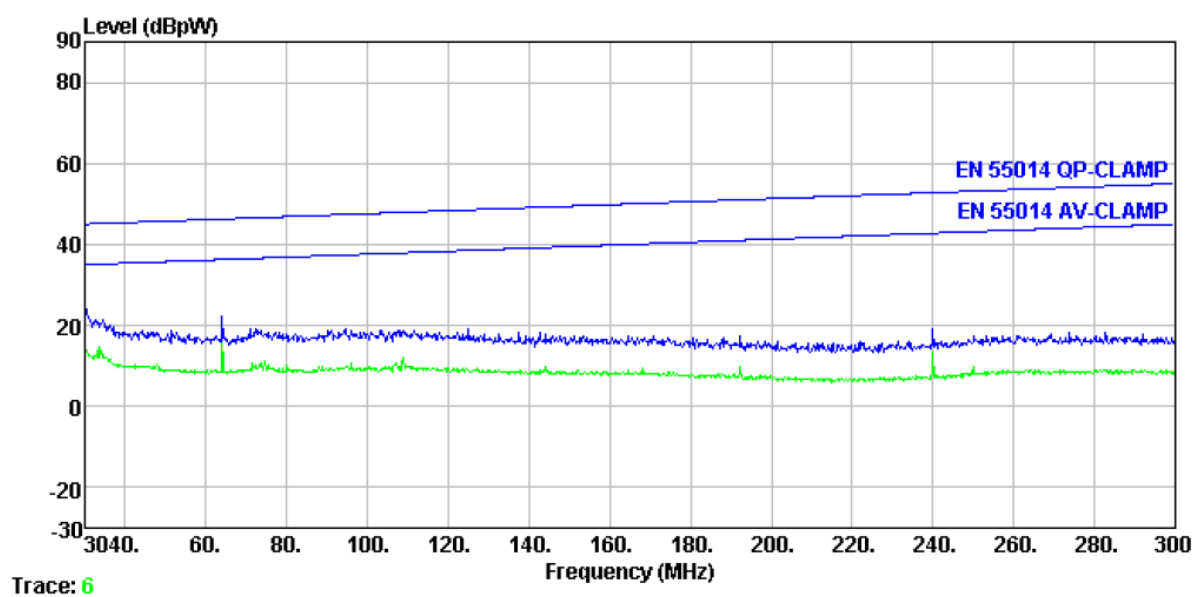
5.5 Diagrams and tables

5.5.1 Diagram 005

New Standard EMI_Power MSD21 Auto Test



5.5.2 Diagram 006



6 Measurement of Discontinuous Disturbance

6.1 Standards

Generic standard	/
Product or product family standard	EN55014-1:2017
Limit class	Clause 4.4 of CISPR14-1
Basic standard	CISPR 16-2-1
Date of testing	2010-07-08

6.2 Measurement equipment

	Equipment	Calibration due	Type	Equipment No.	Manufacturer
<input checked="" type="checkbox"/>	Click Analyzer	2020-01-14	CL55C	55040744142	AFJ
<input checked="" type="checkbox"/>	Artificial Mains Network	2020-01-14	LS16C	16010744219	AFJ

6.3 Test set-up

Annex B-3 with a photo or a rough figure of the test set-up is attached.

The test has been performed as following:

The discontinuous interference on AC mains in the frequency range from 0.15 to 30MHz was measured in accordance to EN 55014-1. The measurement setup was made in a shielded room. The clicks were measured at the frequency of 0.15MHz, 0.5 MHz, 1.4MHz and 30MHz according to Clause 7.4.2.5 of EN 55014-1 respectively.

In accordance with the EN 55014-1, Appliances which have a click rate N of not more than five and the duration of each click is less than 20ms and the duration of 90% click is less than 10ms, shall be deemed to comply with the limits, independent of the amplitude of the clicks.

The cooking mode is ended manually and the click measurement is started at the time of the first operation of the thermostat, which controls the "keep warm" temperature.

6.4 Test result

Mode	Table	Model	Description	Result
TM1	007	RC-16A	AC Mains Power line	Pass

6.5 Table

6.5.1 Table 007



AFJ CL55c Click Analyser ver 6.00

Test Report - Printed 08-07-2010 14:36:41

Title Test# 1
 Date 08/07/2010 14:25:39 Time 120:02.333
 Required
 Executed by Harry
 Description Rice Cooker
 Model RC-16
 SN
 Type
 Report

Pass
 Mode: Switch Op ☐ f= 1.00 Click Rate ☒

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

Remote	Input Offset	External Attenuator
NONE	0.0	0 dB

Att. Rx1 150kHz	Att. Rx2 500kHz	Att. Rx3 1.4MHz	Att. Rx4 30MHz
25dB	15dB	15dB	20dB

ClickMeter for Windows

c:\Data\Default\Test036411 - Analysis print n#: 1

First Pass		Rx1 150kHz	Rx2 500kHz	Rx3 1.4MHz	Rx4 30MHz
CISPR 14-1	Short	2	2	2	0
	Long	0	0	0	0
	Fast Long	0	0	0	0
	Total Clicks	2	2	2	0
Continuous Int.	Events	0	0	0	0
Correction	TIME (s)	0.00	0.00	0.00	0.00
Manual	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	0.02	0.02	0.02	0.02

Limit dBuV

Allowed Clicks

Second Pass		Short	Long	Fast Long	Total Clicks
Preview	Short	0	0	0	0
	Long	0	0	0	0
	Total Clicks	0	0	0	0
	Continuous Int.	Events	0	0	0
	TIME (s)	0.00	0.00	0.00	0.00
	2 Click	0	0	0	0
PASS		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Peak Clipping		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

7 Harmonic Current

7.1 Standard

Generic standard

EN 61000-3-2:2014

Limit class

Class A

Date of testing

2010-07-07, 2012-02-01

7.2 Measurement equipment

Equipment in N:

	Equipment	Calibration due	Type	Serial No.	Manufacturer
<input checked="" type="checkbox"/>	AC Power Source	2020-01-14	NSG1007	57877	SCHAFFNER
<input checked="" type="checkbox"/>	Harmonic and Flick test system	2020-01-14	CCN1000-1	72538	SCHAFFNER

Equipment in GTS:

	Equipment	Calibration due	Type	Equipment No.	Manufacturer
<input checked="" type="checkbox"/>	Power Analyzer	Jul. 04 2019	DPA500	GTS235	EMTEST
<input checked="" type="checkbox"/>	AC Power Source	Jul. 04 2019	ACS500	GTS236	EMTEST
<input checked="" type="checkbox"/>	Test software	N/A	ACS	N/A	EMTEST

7.3 Test set-up

Devices with an active input power
of $P < 75 \text{ W}$

☐

Balanced three-phase equipment and all other
equipment, except that stated in one of the
following classes

Class A

☒

Portable tools

Class B

☐

Lightning equipment, including dimming devices

Class C

☐

Equipment having an input current with a "special
wave shape" as defined in figure 1 in the
standard and an active input power, $P \leq 600 \text{ W}$
and motor driven with phase angle control

Class D

☐

The power cord of the EUT is connected to the output of the test systems, Turn on the power of the EUT and use the test system to test the harmonic current level. Observation time: 150s

If Harmonic current less than 0.6% of the input current measured under the test condition, or less than 5mA, then whichever is greater, are disregarded.

7.4 Test results

Mode	Tables	Model	Power	Result
TM2	008	RC-16A	1018.9W	Pass
TM2	009	RC-45	2692.7W	Pass

7.5 Tables

7.5.1 Table 008

Harmonics – Class-A per Ed. 3.0 (2005-11)(Run time)

EUT: Rice Cooker

Tested by: Harry Zhao

Test category: Class-A per Ed. 3.0 (2005-11) (European limits)

Test Margin: 100

Test date: 7/7/2010

Start time: 4:55:17 PM

End time: 4:57:58 PM

Test duration (min): 2.5

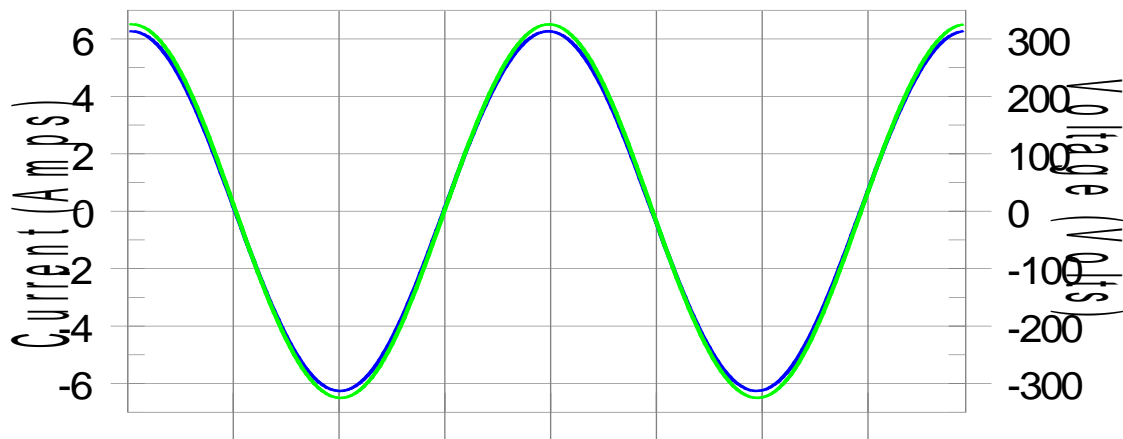
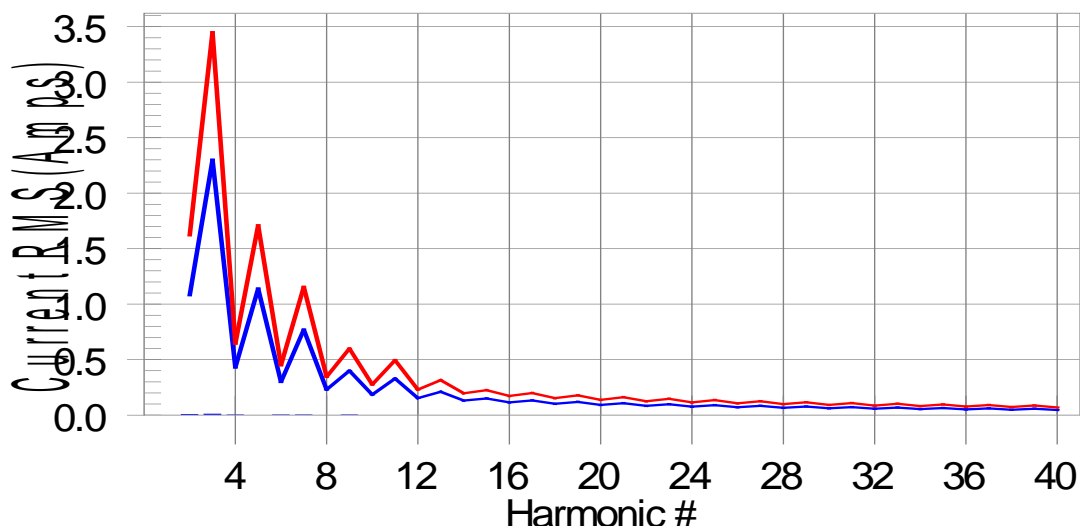
Data file name: H-001222.cts_data

Comment: RC-16A

Customer: New Nanfang Electrical Appliance Co., Ltd.

Test Result: Pass

Source qualification: Normal

Current & voltage waveformsHarmonics and Class A limit lineEuropean Limits**Test result: Pass Worst harmonic was #39 with 0.58% of the limit.**

Current Test Result Summary (Run time)

EUT: Rice Cooker Tested by: Harry Zhao
 Test category: Class-A per Ed. 3.0 (2005-11) (European limits) Test Margin: 100
 Test date: 7/7/2010 Start time: 4:55:17 PM End time: 4:57:58 PM
 Test duration (min): 2.5 Data file name: H-001222.cts_data
 Comment: RC-16A
 Customer: New Nanfang Electrical Appliance Co., Ltd.

Test Result: Pass Source qualification: Normal
 THC(A): 0.01 I-THD(%): 0.21 POHC(A): 0.001 POHC Limit(A): 0.251

Highest parameter values during test:

V_RMS (Volts):	230.11	Frequency(Hz):	50.00
I_Peak (Amps):	6.269	I_RMS (Amps):	4.432
I_Fund (Amps):	4.430	Crest Factor:	1.415
Power (Watts):	1018.9	Power Factor:	0.999

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.002	1.080	0.2	0.003	1.620	0.21	Pass
3	0.008	2.300	0.4	0.009	3.450	0.27	Pass
4	0.001	0.430	0.3	0.002	0.645	0.27	Pass
5	0.000	1.140	0.0	0.001	1.710	0.03	Pass
6	0.001	0.300	0.3	0.001	0.450	0.25	Pass
7	0.001	0.770	0.2	0.002	1.155	0.13	Pass
8	0.001	0.230	0.2	0.001	0.345	0.19	Pass
9	0.001	0.400	0.2	0.001	0.600	0.17	Pass
10	0.001	0.184	0.3	0.001	0.276	0.27	Pass
11	0.001	0.330	0.3	0.001	0.495	0.21	Pass
12	0.000	0.153	0.2	0.000	0.230	0.19	Pass
13	0.001	0.210	0.4	0.001	0.315	0.31	Pass
14	0.000	0.131	0.2	0.000	0.197	0.16	Pass
15	0.000	0.150	0.3	0.001	0.225	0.27	Pass
16	0.000	0.115	0.2	0.000	0.173	0.25	Pass
17	0.000	0.132	0.3	0.000	0.199	0.23	Pass
18	0.000	0.102	0.3	0.000	0.153	0.24	Pass
19	0.001	0.118	0.5	0.001	0.178	0.41	Pass
20	0.000	0.092	0.4	0.001	0.138	0.38	Pass
21	0.001	0.107	0.5	0.001	0.161	0.42	Pass
22	0.000	0.084	0.1	0.000	0.125	0.16	Pass
23	0.001	0.098	0.5	0.001	0.147	0.44	Pass
24	0.000	0.077	0.2	0.000	0.115	0.16	Pass
25	0.000	0.090	0.4	0.000	0.135	0.32	Pass
26	0.000	0.071	0.2	0.000	0.106	0.16	Pass
27	0.000	0.083	0.3	0.000	0.125	0.32	Pass
28	0.000	0.066	0.2	0.000	0.099	0.19	Pass
29	0.000	0.078	0.6	0.001	0.116	0.45	Pass
30	0.000	0.061	0.2	0.000	0.092	0.15	Pass
31	0.000	0.073	0.7	0.001	0.109	0.50	Pass
32	0.000	0.058	0.2	0.000	0.086	0.17	Pass
33	0.000	0.068	0.5	0.000	0.102	0.46	Pass
34	0.000	0.054	0.2	0.000	0.081	0.18	Pass
35	0.000	0.064	0.5	0.000	0.096	0.44	Pass
36	0.000	0.051	0.2	0.000	0.077	0.17	Pass
37	0.000	0.061	0.5	0.000	0.091	0.46	Pass
38	0.000	0.048	0.2	0.000	0.073	0.15	Pass
39	0.000	0.058	0.8	0.001	0.087	0.58	Pass
40	0.000	0.046	0.4	0.000	0.069	0.35	Pass

Voltage Source Verification Data (Run time)

EUT: Rice Cooker Tested by: Harry Zhao
 Test category: Class-A per Ed. 3.0 (2005-11) (European limits) Test Margin: 100
 Test date: 7/7/2010 Start time: 4:55:17 PM End time: 4:57:58 PM
 Test duration (min): 2.5 Data file name: H-001222.cts_data
 Comment: RC-16A
 Customer: New Nanfang Electrical Appliance Co., Ltd.

Test Result: Pass Source qualification: Normal

Highest parameter values during test:

Voltage (Vrms):	230.11	Frequency(Hz):	50.00
I_Peak (Amps):	6.269	I_RMS (Amps):	4.432
I_Fund (Amps):	4.430	Crest Factor:	1.415
Power (Watts):	1018.9	Power Factor:	0.999

Harm#	Harmonics V-rms	Limit V-rms	% of Limit	Status
2	0.161	0.460	35.00	OK
3	0.495	2.070	23.91	OK
4	0.089	0.460	19.27	OK
5	0.061	0.920	6.60	OK
6	0.059	0.460	12.77	OK
7	0.048	0.690	6.96	OK
8	0.033	0.460	7.23	OK
9	0.029	0.460	6.28	OK
10	0.039	0.460	8.37	OK
11	0.026	0.230	11.20	OK
12	0.022	0.230	9.71	OK
13	0.026	0.230	11.11	OK
14	0.017	0.230	7.43	OK
15	0.012	0.230	5.28	OK
16	0.021	0.230	9.05	OK
17	0.013	0.230	5.62	OK
18	0.019	0.230	8.37	OK
19	0.016	0.230	7.14	OK
20	0.029	0.230	12.54	OK
21	0.014	0.230	6.01	OK
22	0.012	0.230	5.17	OK
23	0.013	0.230	5.75	OK
24	0.010	0.230	4.20	OK
25	0.011	0.230	4.60	OK
26	0.008	0.230	3.46	OK
27	0.013	0.230	5.52	OK
28	0.010	0.230	4.13	OK
29	0.010	0.230	4.48	OK
30	0.007	0.230	3.25	OK
31	0.007	0.230	3.26	OK
32	0.006	0.230	2.75	OK
33	0.008	0.230	3.50	OK
34	0.007	0.230	3.07	OK
35	0.006	0.230	2.76	OK
36	0.005	0.230	2.34	OK
37	0.008	0.230	3.61	OK
38	0.006	0.230	2.54	OK
39	0.009	0.230	3.73	OK
40	0.013	0.230	5.46	OK

7.5.2 Table 009

Average harmonic current results

Hn	I _{eff} [A]	% of Limit	Limit [A]	Result
1	4.657			
2	178.247E-6	0.059	1.08	PASS
3	794.825E-6	0.035	2.30	PASS
4	279.870E-6	0.065	430.00E-3	PASS
5	391.733E-6	0.034	1.14	PASS
6	202.291E-6	0.067	300.00E-3	PASS
7	579.488E-6	0.075	770.00E-3	PASS
8	233.607E-6	0.102	230.00E-3	PASS
9	885.959E-6	0.221	400.00E-3	PASS
10	223.163E-6	0.121	184.00E-3	PASS
11	1.031E-3	0.312	330.00E-3	PASS
12	197.425E-6	0.129	153.33E-3	PASS
13	842.477E-6	0.401	210.00E-3	PASS
14	206.307E-6	0.157	131.43E-3	PASS
15	575.909E-6	0.384	150.00E-3	PASS
16	156.316E-6	0.136	115.00E-3	PASS
17	260.174E-6	0.197	132.35E-3	PASS
18	146.740E-6	0.144	102.22E-3	PASS
19	434.565E-6	0.367	118.42E-3	PASS
20	140.633E-6	0.153	92.00E-3	PASS
21	758.165E-6	0.472	160.71E-3	PASS
22	145.097E-6	0.173	83.64E-3	PASS
23	1.363E-3	0.929	146.74E-3	PASS
24	148.647E-6	0.194	76.66E-3	PASS
25	1.113E-3	0.825	135.00E-3	PASS
26	138.473E-6	0.196	70.77E-3	PASS
27	785.049E-6	0.628	124.99E-3	PASS
28	156.936E-6	0.239	65.71E-3	PASS
29	280.091E-6	0.241	116.39E-3	PASS
30	147.819E-6	0.241	61.33E-3	PASS
31	472.960E-6	0.434	108.87E-3	PASS
32	225.299E-6	0.392	57.50E-3	PASS
33	918.376E-6	0.898	102.27E-3	PASS
34	141.310E-6	0.261	54.12E-3	PASS
35	1.068E-3	1.108	96.44E-3	PASS
36	142.512E-6	0.279	51.11E-3	PASS
37	940.934E-6	1.032	91.21E-3	PASS
38	148.381E-6	0.306	48.42E-3	PASS
39	494.555E-6	0.572	86.53E-3	PASS
40	133.740E-6	0.291	46.00E-3	PASS

Maximum harmonic current results

Hn	I _{eff} [A]	% of Limit	Limit [A]	Result
1	3.525			
2	504.880E-6	0.031	1.62	PASS
3	1.104E-3	0.032	3.45	PASS
4	388.632E-6	0.060	645.00E-3	PASS
5	520.693E-6	0.030	1.71	PASS
6	311.245E-6	0.069	450.00E-3	PASS
7	678.767E-6	0.059	1.15	PASS
8	304.761E-6	0.088	345.00E-3	PASS
9	965.708E-6	0.161	600.00E-3	PASS
10	289.645E-6	0.105	276.00E-3	PASS
11	1.119E-3	0.226	495.00E-3	PASS
12	278.990E-6	0.121	229.99E-3	PASS
13	932.228E-6	0.296	315.00E-3	PASS
14	306.442E-6	0.155	197.15E-3	PASS
15	657.379E-6	0.292	225.00E-3	PASS
16	199.630E-6	0.116	172.50E-3	PASS
17	351.352E-6	0.177	198.52E-3	PASS
18	202.159E-6	0.132	153.33E-3	PASS
19	513.063E-6	0.289	177.63E-3	PASS
20	191.123E-6	0.138	138.00E-3	PASS
21	830.570E-6	0.517	160.71E-3	PASS
22	186.047E-6	0.148	125.46E-3	PASS
23	1.902E-3	1.296	146.74E-3	PASS
24	212.835E-6	0.185	114.99E-3	PASS
25	1.210E-3	0.896	135.00E-3	PASS
26	190.063E-6	0.179	106.16E-3	PASS
27	876.535E-6	0.701	124.99E-3	PASS
28	218.596E-6	0.222	98.57E-3	PASS
29	368.621E-6	0.317	116.39E-3	PASS
30	193.409E-6	0.210	92.00E-3	PASS
31	593.183E-6	0.545	108.87E-3	PASS
32	434.866E-6	0.504	86.25E-3	PASS
33	1.016E-3	0.993	102.27E-3	PASS
34	201.843E-6	0.249	81.18E-3	PASS
35	1.169E-3	1.212	96.44E-3	PASS
36	199.045E-6	0.260	76.66E-3	PASS
37	1.046E-3	1.147	91.21E-3	PASS
38	241.879E-6	0.333	72.63E-3	PASS
39	598.559E-6	0.692	86.53E-3	PASS
40	198.998E-6	0.288	69.00E-3	PASS

Maximum harmonic voltage results

Hn	Ueff [V]	Ueff [%]	Limit [%]	Result
1	231.93	100.839		
2	44.74E-3	0.019	0.2	PASS
3	84.72E-3	0.037	0.9	PASS
4	20.85E-3	0.009	0.2	PASS
5	33.64E-3	0.015	0.4	PASS
6	17.15E-3	0.007	0.2	PASS
7	24.90E-3	0.011	0.3	PASS
8	13.10E-3	0.006	0.2	PASS
9	60.06E-3	0.026	0.2	PASS
10	17.98E-3	0.008	0.2	PASS
11	85.54E-3	0.037	0.1	PASS
12	19.05E-3	0.008	0.1	PASS
13	82.47E-3	0.036	0.1	PASS
14	12.25E-3	0.005	0.1	PASS
15	56.83E-3	0.025	0.1	PASS
16	10.09E-3	0.004	0.1	PASS
17	13.35E-3	0.006	0.1	PASS
18	8.36E-3	0.004	0.1	PASS
19	43.90E-3	0.019	0.1	PASS
20	9.72E-3	0.004	0.1	PASS
21	69.87E-3	0.030	0.1	PASS
22	8.71E-3	0.004	0.1	PASS
23	86.78E-3	0.038	0.1	PASS
24	9.87E-3	0.004	0.1	PASS
25	76.98E-3	0.033	0.1	PASS
26	11.34E-3	0.005	0.1	PASS
27	49.35E-3	0.021	0.1	PASS
28	9.99E-3	0.004	0.1	PASS
29	14.38E-3	0.006	0.1	PASS
30	9.04E-3	0.004	0.1	PASS
31	44.87E-3	0.020	0.1	PASS
32	8.91E-3	0.004	0.1	PASS
33	68.07E-3	0.030	0.1	PASS
34	9.59E-3	0.004	0.1	PASS
35	72.35E-3	0.031	0.1	PASS
36	8.77E-3	0.004	0.1	PASS
37	59.40E-3	0.026	0.1	PASS
38	8.18E-3	0.004	0.1	PASS
39	33.28E-3	0.014	0.1	PASS
40	9.28E-3	0.004	0.1	PASS

8 Voltage fluctuations and flicker

8.1 Standard

Basic standard

EN 61000-3-3:2013

Date of testing

2010-07-07, 2012-02-01

8.2 Measurement equipment

Equipment in N:

	Equipment	Calibration due	Type	Serial No.	Manufacturer
<input checked="" type="checkbox"/>	AC Power Source	2020-01-14	NSG1007	57877	SCHAFFNER
<input checked="" type="checkbox"/>	Harmonic and Flick test system	2020-01-14	CCN1000-1	72538	SCHAFFNER

Equipment in GTS:

	Equipment	Calibration due	Type	Equipment No.	Manufacturer
<input checked="" type="checkbox"/>	Power Analyzer	2019-07-04	DPA500	GTS235	EMTEST
<input checked="" type="checkbox"/>	AC Power Source	2019-07-04	ACS500	GTS236	EMTEST
<input checked="" type="checkbox"/>	Test software	N/A	ACS	N/A	EMTEST

8.3 Test set-up

Annex B-4 with a photo or a rough figure of the test set-up is attached.

The power cord of the EUT is connected to the output of the test systems, Turn on the power of the EUT and use the test system to test the voltage fluctuation and flicker.

Test duration (min): 10

8.4 Test results

Mode	Tables	Model	Remarks	Result
TM2	010	RC-16A	AC Input port	Pass
TM2	011	RC-45	AC Input port	Pass

8.5 Tables

8.5.1 Table 010

Flicker Test Summary per EN/IEC61000-3-3 (Run time)

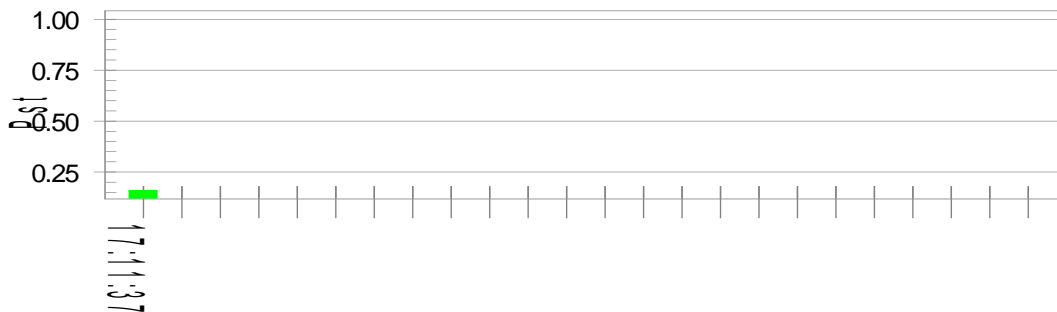
EUT: Rice Cooker
Test category: dt,dmax,dc and Pst (European limits)
Test date: 7/7/2010 Start time: 5:01:17 PM End time: 5:11:38 PM
Test duration (min): 10 Data file name: F-001223.cts_data
Comment: RC-16A
Customer: New Nanfang Electrical Appliance Co., Ltd.

Test Result: Pass

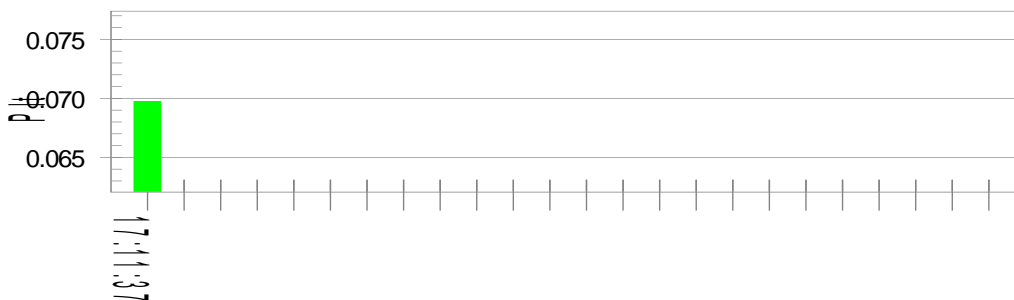
Status: Test Completed

Pst_i and limit line

European Limits



Plt and limit line



Parameter values recorded during the test:

Vrms at the end of test (Volt):	228.38		
Highest dt (%):	0.00	Test limit (%):	3.30 Pass
Time(mS) > dt:	0.0	Test limit (mS):	500.0 Pass
Highest dc (%):	0.00	Test limit (%):	3.30 Pass
Highest dmax (%):	0.00	Test limit (%):	4.00 Pass
Highest Pst (10 min. period):	0.160	Test limit:	1.000 Pass

8.5.2 Table 011

	EUT values	Limit	Result
Pst	0.031	1.00	PASS
Plt	0.031	0.65	PASS
dc [%]	0.010	3.30	PASS
dmax [%]	0.120	4.00	PASS
dt [s]	0.000	0.50	PASS

Annex A

EUT / technical data

Port	Label	Description		
Enclosure	GH	Plastic Enclosure		
Mains input AC	NAC.E	220-240V~ 50-60Hz, Cl.I		
Mains input DC	NDC.E	N.A		
Mains output AC	NAC.E	N.A		
Mains output DC	NAC.A	N.A		
Process measurement and control ports	PMS.E/A	N.A		
I/O and communication ports	SD.E/A	N.A		
Protective earth connection	EA	YES		
Interface Cables	Length	Shielded	Type	Special
	1.5m	<input type="checkbox"/>	Round	<input type="checkbox"/>



Figure A-1 External photo of EUT (RC-16A)



Figure A-2 External photo of EUT (RC-16A)



Figure A-3 Pot Photo for RC-16A



Figure A-4 Pot Taken Out Photo of RC-16A



Figure A-5 Electrical Circuit Photo of RC-16A



Figure A-6 External photo of EUT (RC-45)



Figure A-7 External photo of EUT (RC-45)

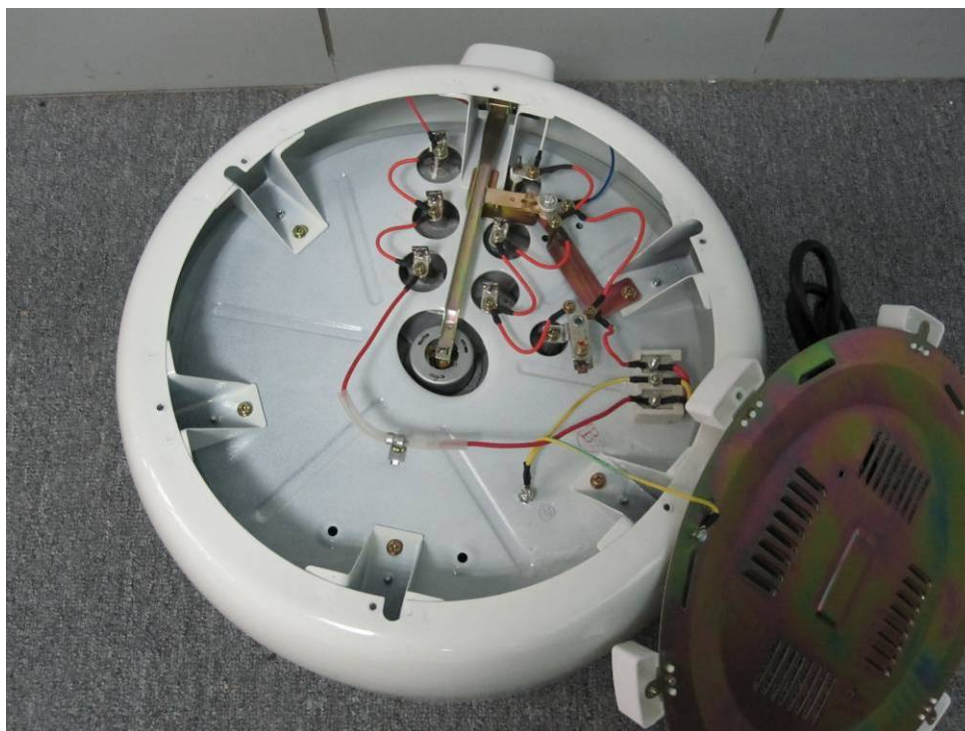


Figure A-8 Internal photo of EUT (RC-45)

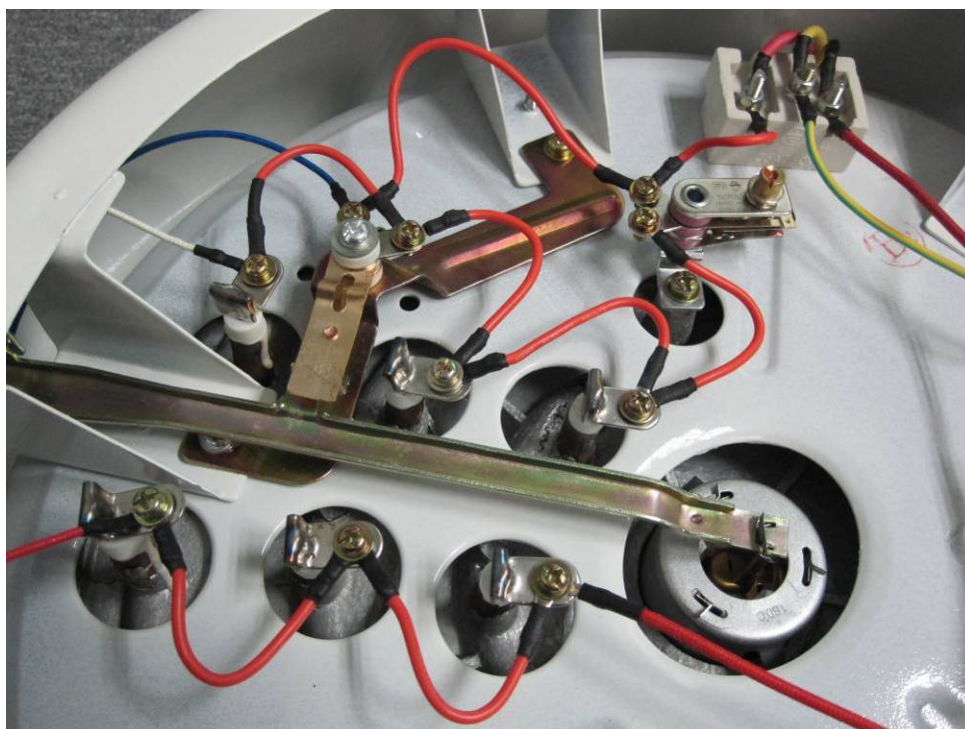


Figure A-9 Internal photo of EUT (RC-45)

Annex B

EUT set-up -details-

Test setup in N Shanghai:

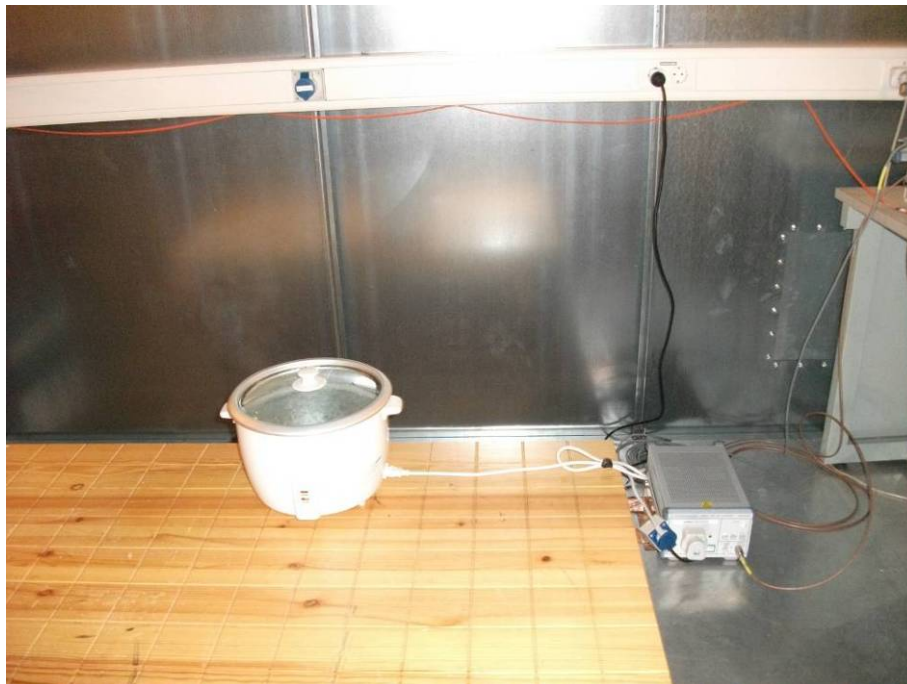


Figure B-1 Setup for conducted emission

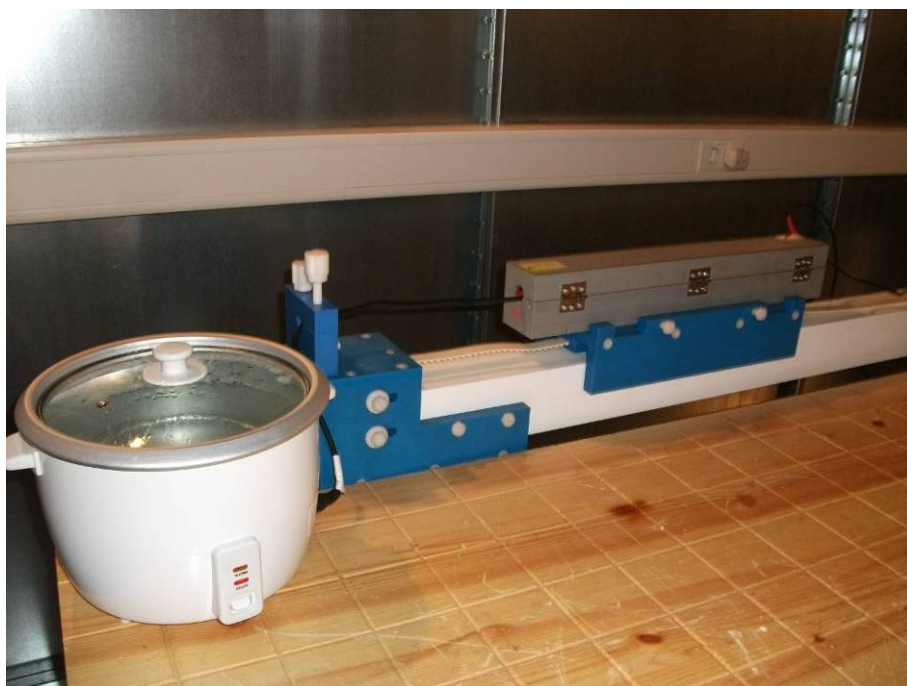


Figure B-2 Setup for disturbance power



Figure B-3 Setup for Click



Figure B-4 Setup for Harmonic current emission and Voltage fluctuations and flicker

Test setup in GTS:



Figure B-5 Setup for conducted emission



Figure B-6 Setup for disturbance power

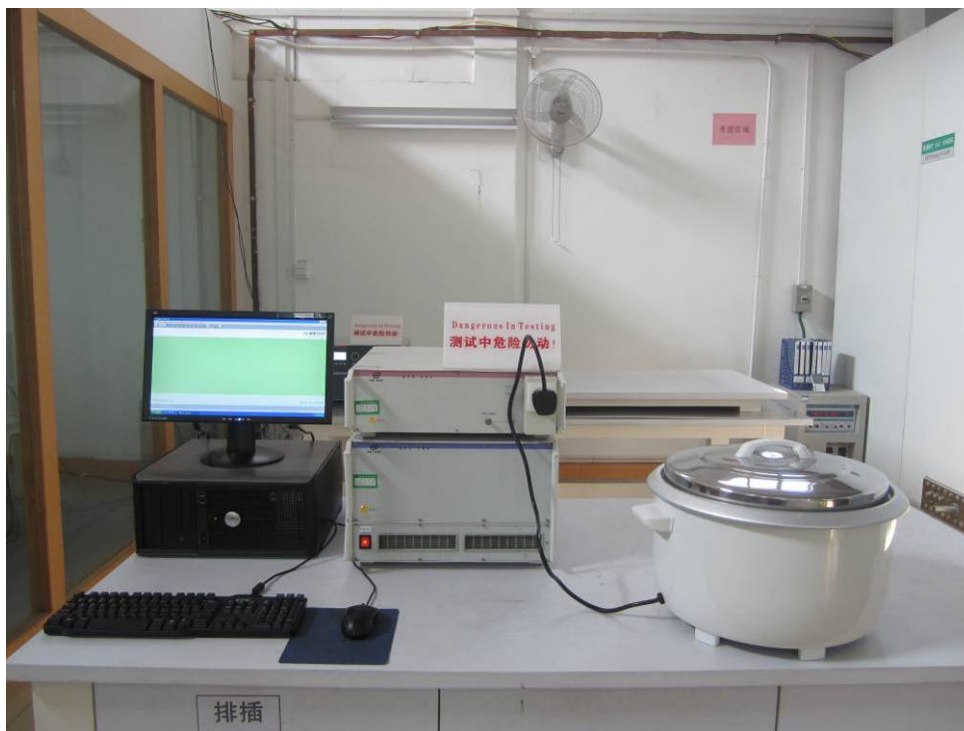


Figure B-7 Setup for Harmonic current and Voltage fluctuations and flicker

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