

Test Verification of Conformity

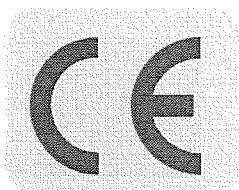
On the basis of the referenced test report(s), the sample(s) of the below product has been found to comply with the relevant harmonized standard(s) to the directive(s) listed on this verification at the time the tests were carried out. The manufacturer may indicate compliance to only the said directives by signing a DoC himself and may affix the CE marking to products identical to the tested sample(s) if the product complies with all CE marking directives that has the product in their scope. In addition, the manufacturer shall file and keep the documentation according to the rules of the applicable directive(s) and shall consider changes of the standards as they may occur. Additional requirements, additional directives and local laws may be applicable.

Applicant Name & Address	: Hisense Ronshen (Guangdong) Refrigerator Co., Ltd. No.8 Ronggang Road, Ronggui, Shunde, Foshan, Guangdong, P. R. China
Product(s) Tested	: Refrigerator
Ratings and principal characteristics	: Refer to Annex to Test Verification of Conformity
Model(s)	: Refer to Annex to Test Verification of Conformity
Brand name	: --
Relevant Standard(s) / Specification(s) / Directive(s)	: EN 55014-1: 2006+A1: 2009+A2: 2011/ Electromagnetic compatibility – Requirements for household appliances, electric tools and similar apparatus – Part 1: Emission EN 61000-3-2: 2006+ A1: 2009+ A2: 2009/ Electromagnetic compatibility (EMC) – Part 3-2: Limits – Limits for harmonic current emissions (equipment input current ≤ 16 A per phase) EN 61000-3-3: 2008/ Electromagnetic compatibility (EMC) – Part 3-3: Limits – Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection EN 55014-2: 1997+A1: 2001+A2: 2008/ Electromagnetic compatibility – Requirements for household appliances, electric tools and similar apparatus – Part 2: Immunity – Product family standard EMC Directive 2004/108/EC
Verification Issuing Office Name & Address	: Same as Legal Entity
Verification/Report Number(s)	: GZ12120124-1R1 / GZ12120124-1R1

Note 1 : This verification is part of the full test report(s) and should be read in conjunction with it.

This Verification is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Verification. Only the Client is authorized to copy or distribute this Verification. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results referenced from this Verification are relevant only to the sample tested. This Verification by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.

Note 2: This verification supersedes previous verification with Verification number GZ12120124-1 dated 26 February 2013.




Signature

Name: Jack Dai
Position: Project Engineer
Date: 30 May 2013

Annex to Test Verification of Conformity

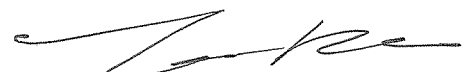
This is an Annex to Test Verification of Conformity with Verification/Report Number(s): GZ12120124-1R1 / GZ12120124-1R1. The issuing office is Intertek Testing Services Shenzhen Ltd. Guangzhou Branch (Address: Block E, No, 7-2 Guang Dong Software Science Park, Caipin Road Guangzhou Science City, GETDD Guangzhou).

Ratings and principal characteristics	: 220-240V~, 50Hz, Class I, R600a: 46g; Defrosting power: 120W; Climatic class: SN, N, ST, T; 0,4 A for models with suffix "2"; 0,5 A for models with suffix "1"
Model(s)	: RL475NASS2, RS-47WL4SIA/CSA2, RL475N4AS2, RL475NBIS2, RS-47WL4SIA/CLA2, RL475NBHW2, RS-47WL4SIA/CPA2, RS-47WL4SBA/CLA2, RL475N4BC2, RS-47WL4S2, RL475NASS1, RL475NBIS1, RL475NBHW1, RS-47WL4SIA/CSA1, RL475N4AS1, RS-47WL4SBA/CLA1, RL475N4BC1, RS-47WL4S1, RS-47WL4SIA/CLA1

Note 1: This annex is part of the Test Verification of Conformity and should be read in conjunction with it.

This Verification is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Verification. Only the Client is authorized to copy or distribute this Verification. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results referenced from this Verification are relevant only to the sample tested. This Verification by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.

Note 2: This annex to verification supersedes previous annex to verification with Verification number GZ12120124-1 dated 26 February 2013.



Signature

Name: Jack Dai
Position: Project Engineer
Date: 30 May 2013


TEST REPORT

Applicant Name & Address : Hisense Ronshen (Guangdong) Refrigerator Co., Ltd.
No.8 Ronggang Road, Ronggui, Shunde, Foshan, Guangdong, P. R. China
Manufacturing Site : Same as applicant
Sample Description :
Product : Refrigerator
Model No. : RL475NASS2, RS-47WL4SIA/CSA2, RL475N4AS2, RL475NBIS2,
RS-47WL4SIA/CLA2, RL475NBHW2, RS-47WL4SIA/CPA2,
RS-47WL4SBA/CLA2, RL475N4BC2, RS-47WL4S2, RL475NASS1,
RL475NBIS1, RL475NBHW1, RS-47WL4S1, RS-47WL4SIA/CSA1,
RL475N4AS1, RS-47WL4SBA/CLA1, RL475N4BC1, RS-47WL4SIA/CLA1
Electrical Rating : 220-240V~, 50Hz, Class I, R600a: 46g;
Defrosting power: 120W; Climatic class: SN, N, ST, T;
0,4 A for models with suffix "2"; 0,5 A for models with suffix "1"
Date Received : 26 March 2013
Date Test Conducted : 27 March 2013-09 April 2013
Test standards : EN 55014-1: 2006+A1:2009+A2: 2011
EN 61000-3-2: 2006+ A1:2009+ A2:2009
EN 61000-3-3: 2008
EN 55014-2: 1997+A1: 2001+A2: 2008
Test Result : Pass
Conclusion : The submitted samples complied with the above EMC standards.
Remark : None.

*****End of Page*****

Prepared and Checked By:**Approved By:**


Paul Pang
Engineer
Intertek Guangzhou


Jack Dai
Project Engineer
Intertek Guangzhou
30 May 2013 **Date**

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program. The test report only allows to be revised within three years from its original issued date unless further standard or the requirement was noticed.

Intertek Testing Services Shenzhen Ltd. Guangzhou Branch
Block E, No.7-2 Guang Dong Software Science Park, Caipin Road, Guangzhou Science City, GETDD Guangzhou, China
Tel / Fax: 86-20-8213 9688/86-20-3205 7538

CONTENT

TEST REPORT	1
CONTENT	2
1 TEST RESULTS SUMMARY	3
2 EMC RESULTS CONCLUSION	4
3 LABORATORY MEASUREMENTS	6
4 HARMONIC OF CURRENT	7
4.1 USED TEST EQUIPMENT	7
4.2 BLOCK DIAGRAM OF TEST SETUP	7
4.3 TEST SETUP AND PROCEDURE	7
4.4 TEST DATA	8
4.5 MEASUREMENT UNCERTAINTY	9
5 FLICKER	10
5.1 USED TEST EQUIPMENT	10
5.2 BLOCK DIAGRAM OF TEST SETUP	10
5.3 TEST SETUP AND PROCEDURE	10
5.3.1 Definition	10
5.3.2 Test condition	10
5.4 TEST DATA	11
5.5 MEASUREMENT UNCERTAINTY	11
6 APPENDIX I - PHOTOS OF TEST SETUP	12
7 APPENDIX II - PHOTOS OF EUT	13

1

TEST RESULTS SUMMARY

Test Item	Standard	Result
Harmonic of current	EN 61000-3-2: 2006+ A1:2009+ A2:2009	Pass
Flicker	EN 61000-3-3: 2008	Pass

Remark: 1. The symbol “N/A” in above table means Not Applicable.

2. When determining the test results, measurement uncertainty of tests has been considered.

2

EMC Results Conclusion (with Justification)

RE: EMC Testing Pursuant to EMC Directive 2004/108/EC Performed on the Refrigerator, Models: RL475NASS2, RS-47WL4SIA/CSA2, RL475N4AS2, RL475NBIS2, RS-47WL4SIA/CLA2, RL475NBHW2, RS-47WL4SIA/CPA2, RS-47WL4SBA/CLA2, RL475N4BC2, RS-47WL4S2, RL475NASS1, RL475NBIS1, RL475NBHW1, RS-47WL4S1, RS-47WL4SIA/CSA1, RL475N4AS1, RS-47WL4SBA/CLA1, RL475N4BC1, RS-47WL4SIA/CLA1.

This report is the revision of the previous test report GZ12120124-1 dated 26 February 2013 and shall be used together with it.

This report was issued because of the following changes:

1. Add 3 new models RL475N4AS2, RS-47WL4SBA/CLA2 and RL475N4BC2 which are the same as the original model RS-47WL4S2 except model name and internal configuration.
2. Add 5 new models RS-47WL4SIA/CLA1, RS-47WL4SIA/CSA1, RL475N4AS1, RS-47WL4SBA/CLA1, RL475N4BC1 which are the same as the original model RL475NBIS1 except model name and internal configuration.
3. All models which contain suffix "1" in model name use the new compressor "PZ59E1C" and other models which with suffix "2" use the original compressor "NE1080Y".
4. Add alternative components such as plugs, power cord, X capacitors and etc. for all models.

Based on the above changes, we selected "Harmonic of current test" and "Flicker test" to conduct.

We tested the Refrigerator, Model: RS-47WL4S1, to determine if it was in compliance with the relevant EN standards as marked on the Test Results Summary. We found that the unit met the requirements of EN 55014-1, EN 61000-3-2 and EN 61000-3-3 standards when tested as received. The worst case's test data was presented in this test report.

The production units are required to conform to the initial sample as received when the units are placed on the market.

Standards against which no testing has been conducted of the captioned model and the engineering judgement is stated as follows:

EN55014-2: This product contains no electronic control circuitry. It is classified to Category I of the standard and is therefore deemed to fulfil the relevant immunity requirements without testing.

Model difference:

All models are the same except model name, material of door panel, energy consumption level and different optional part such as wine rack, handle and etc. Refer to below table for details:

Differences between all models as below:

Model	energy consumption	Door panel	Internal part configuration	Door Handle	LED light location	Compressor and rated current
RL475NASS2, RS-47WL4SIA/CSA2, RL475N4AS2	A++	stainless steel	High-class	Laborsaving	Top+back 2W + 1W	NE1080Y / 0,4A
RL475NBIS2, RS-47WL4SIA/CLA2	A++	Imitating stainless steel	Normal	Normal	Top+back 2W + 1W	NE1080Y / 0,4A
RL475NBHW2, RS-47WL4SIA/CPA2	A++	White paint	Normal	Normal	Top+back 2W + 1W	NE1080Y / 0,4A
RS-47WL4SBA/CLA2, RL475N4BC2, RS-47WL4S2	A++	Silver grey steel	Normal	Normal	Top 1W	NE1080Y / 0,4A
RL475NASS1	A+	Imitating stainless steel	High-class	Laborsaving	Top 1W	PZ59E1C / 0,5A
RL475NBIS1	A+	Imitating stainless steel	Normal	Normal	Top 1W	PZ59E1C / 0,5A
RL475NBHW1	A+	White paint	Normal	Normal	Top 1W	PZ59E1C / 0,5A
RS-47WL4SIA/CSA1, RL475N4AS1	A+	stainless steel	High-class	Laborsaving	Top+back 2W + 1W	PZ59E1C / 0,5A
RS-47WL4SBA/CLA1, RL475N4BC1, RS-47WL4S1	A+	Silver grey steel	Normal	Normal	Top 1W	PZ59E1C / 0,5A
RS-47WL4SIA/CLA1	A+	Silver grey steel	Normal	Normal	Top 1W	PZ59E1C / 0,5A

Remark:

- Models which contain the suffix "1" in model name use the new compressor "PZ59E1C" and other models with suffix "2" use the original compressor "NE1080Y".
- Rated current input in rating label, 0.4 A for A++ series and 0,5A for A+ series.

3

LABORATORY MEASUREMENTS**Configuration Information**

Equipment Under Test (EUT):	Refrigerator
Model:	RS-47WL4S1
Serial No.	Not Labeled
Support Equipment:	N/A
Rated Voltage:	220-240V~, 50Hz
Condition of Environment:	Temperature : 22~28°C Relative Humidity: 35~60% Atmosphere Pressure 86~106kPa

Notes:

The EMI measurements had been made in the operating mode produced the largest emission in the frequency band being investigated consistent with normal applications.

An attempt had been made to maximize the emission by varying the configuration of the EUT.

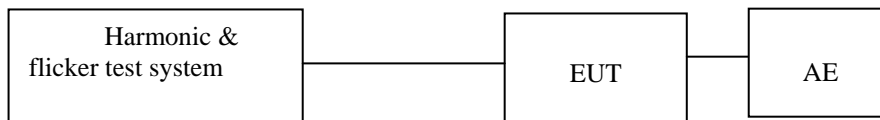
4 Harmonic of Current

Test Result: Pass

4.1 Used Test Equipment

Equip. No.	Equipment	Model	Manufacturer
EM001-02	Harmonic & Flicker Test System	5001IX-CTS-400-413	California Instrument

4.2 Block Diagram of Test Setup



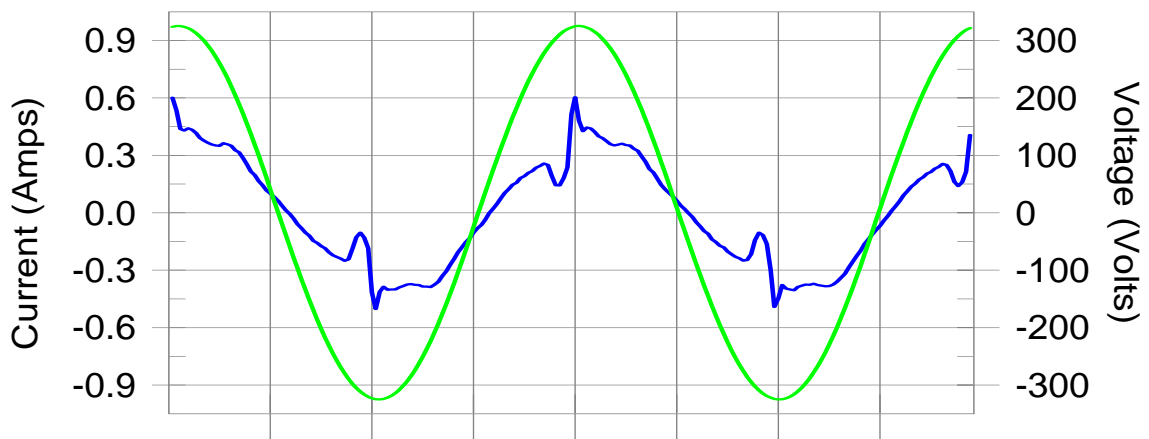
4.3 Test Setup and Procedure

Harmonics of the fundamental current were measured up to 40 order harmonics using a digital power meter with an analogue output and frequency analyser which was integrated in the harmonic & flicker test system. The measurements were carried out under steady conditions.

4.4 Test Data

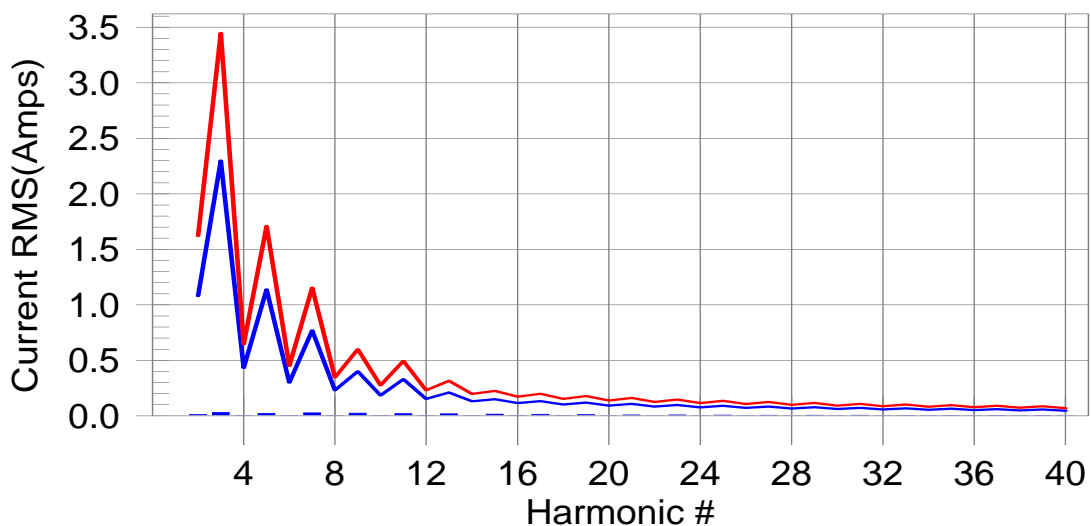
Harmonics – Class-A per Ed. 3.0 (incl. inter-harmonics)

Current & voltage waveforms



Harmonics and Class A limit line

European Limits



Test result: Pass Worst harmonic was #15 with 10.47% of the limit

Current Test Result Summary (Run time)

Test Result: Pass

Source qualification: Normal

Highest parameter values during test:

V_RMS (Volts):	230.09	Frequency(Hz):	50.00
I_Peak (Amps):	0.645	I_RMS (Amps):	0.278
I_Fund (Amps):	0.385	Crest Factor:	2.419
Power (Watts):	60.2	Power Factor:	0.950

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.011	1.080	1.0	0.012	1.620	0.76	Pass
3	0.027	2.300	1.2	0.032	3.450	0.92	Pass
4	0.004	0.430	0.0	0.005	0.645	0.75	Pass
5	0.020	1.140	1.7	0.022	1.710	1.31	Pass
6	0.003	0.300	0.0	0.004	0.450	0.80	Pass
7	0.027	0.770	3.4	0.028	1.155	2.39	Pass
8	0.002	0.230	0.0	0.003	0.345	0.85	Pass
9	0.024	0.400	6.0	0.025	0.600	4.12	Pass
10	0.002	0.184	0.0	0.003	0.276	0.94	Pass
11	0.019	0.330	5.7	0.020	0.495	3.95	Pass
12	0.002	0.153	0.0	0.003	0.230	1.11	Pass
13	0.018	0.210	8.4	0.018	0.315	5.76	Pass
14	0.002	0.131	0.0	0.002	0.197	1.22	Pass
15	0.016	0.150	10.5	0.016	0.225	7.17	Pass
16	0.002	0.115	0.0	0.002	0.173	1.34	Pass
17	0.013	0.132	9.9	0.014	0.199	6.89	Pass
18	0.002	0.102	0.0	0.002	0.153	1.38	Pass
19	0.011	0.118	8.9	0.011	0.178	6.30	Pass
20	0.002	0.092	0.0	0.002	0.138	1.43	Pass
21	0.008	0.107	7.7	0.009	0.161	5.58	Pass
22	0.002	0.084	0.0	0.002	0.125	1.53	Pass
23	0.007	0.098	7.1	0.007	0.147	5.05	Pass
24	0.002	0.077	0.0	0.002	0.115	1.66	Pass
25	0.006	0.090	7.0	0.007	0.135	4.85	Pass
26	0.002	0.071	0.0	0.002	0.106	1.80	Pass
27	0.006	0.083	7.3	0.006	0.125	4.98	Pass
28	0.002	0.066	0.0	0.002	0.099	1.93	Pass
29	0.006	0.078	7.4	0.006	0.116	5.15	Pass
30	0.002	0.061	0.0	0.002	0.092	2.00	Pass
31	0.005	0.073	7.2	0.005	0.109	4.97	Pass
32	0.001	0.058	0.0	0.002	0.086	2.09	Pass
33	0.005	0.068	0.0	0.005	0.102	4.65	Pass
34	0.001	0.054	0.0	0.002	0.081	2.13	Pass
35	0.004	0.064	0.0	0.004	0.096	4.20	Pass
36	0.001	0.051	0.0	0.002	0.077	2.13	Pass
37	0.003	0.061	0.0	0.003	0.091	3.67	Pass
38	0.001	0.048	0.0	0.002	0.073	2.17	Pass
39	0.003	0.058	0.0	0.003	0.087	3.12	Pass
40	0.001	0.046	0.0	0.001	0.069	2.13	Pass

4.5 Measurement Uncertainty

The measurement uncertainty for harmonic test is under consideration according to CISPR 16-4-2:2003.

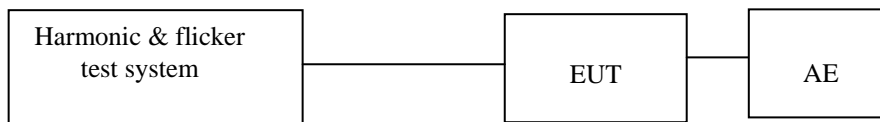
5 Flicker

Test Result: Pass

5.1 Used Test Equipment

Equip. No.	Equipment	Model	Manufacturer
EM001-02	Harmonic & Flicker Test System	5001IX-CTS-400-413	California Instrument

5.2 Block Diagram of Test Setup



5.3 Test Setup and Procedure

5.3.1 Definition

Flicker:	impression of unsteadiness of visual sensation induced by a lighting stimulus whose luminance or spectral distribution fluctuates with time.
Pst:	Short-term flicker indicator The flicker severity evaluated over a short period (in minutes); Pst=1 is the conventional threshold of irritability
Plt:	long-term flicker indicator; the flicker severity evaluated over a long period (a few hours). Using successive Pst value.
dc:	the relative steady-state voltage change
dmax:	the maximum relative voltage change
d(t):	the value during a voltage change

5.3.2 Test condition

The EUT was set to produce the most unfavourable sequence of voltage changes.

5.4 Test Data

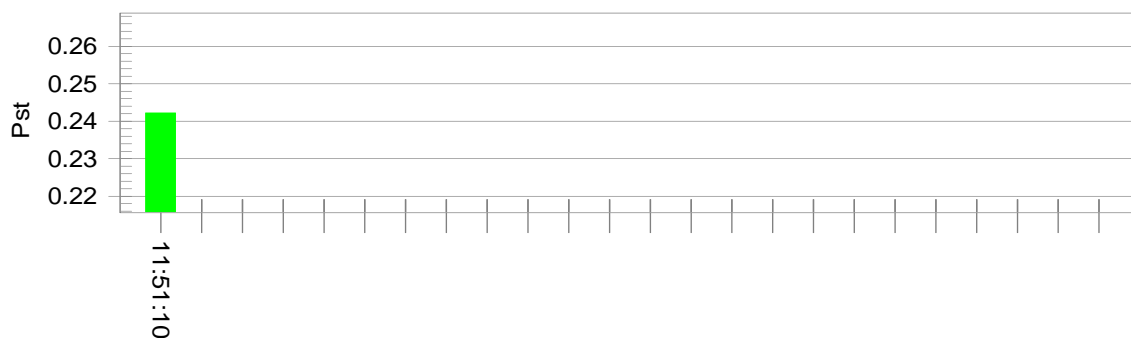
Flicker Test Summary (Run time)

Test Result: Pass

Status: Test Completed

Pst_i and limit line

European Limits



Time is too short for Plt plot

Parameter values recorded during the test:

Vrms at the end of test (Volt): 229.83			
Highest dt (%):	1.37	Test limit (%):	3.30 Pass
Time(mS) > dt:	0.0	Test limit (mS):	500.0 Pass
Highest dc (%):	0.17	Test limit (%):	3.30 Pass
Highest dmax (%):	1.45	Test limit (%):	4.00 Pass

5.5 Measurement Uncertainty

Measurement uncertainty for voltage fluctuation and flicker is under consideration according to CISPR 16-4-2:2003.

6 Appendix I - Photos of test setup

Harmonics and Flicker



7 Appendix II - Photos of EUT

Front view



Back view



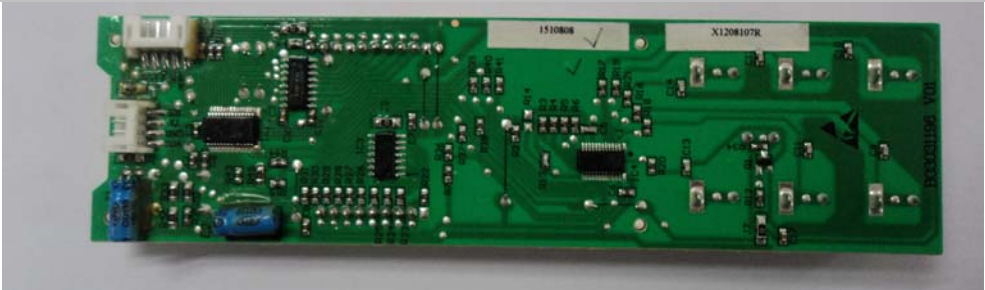
Control panel view



PCB view of control panel



PCB view of control panel



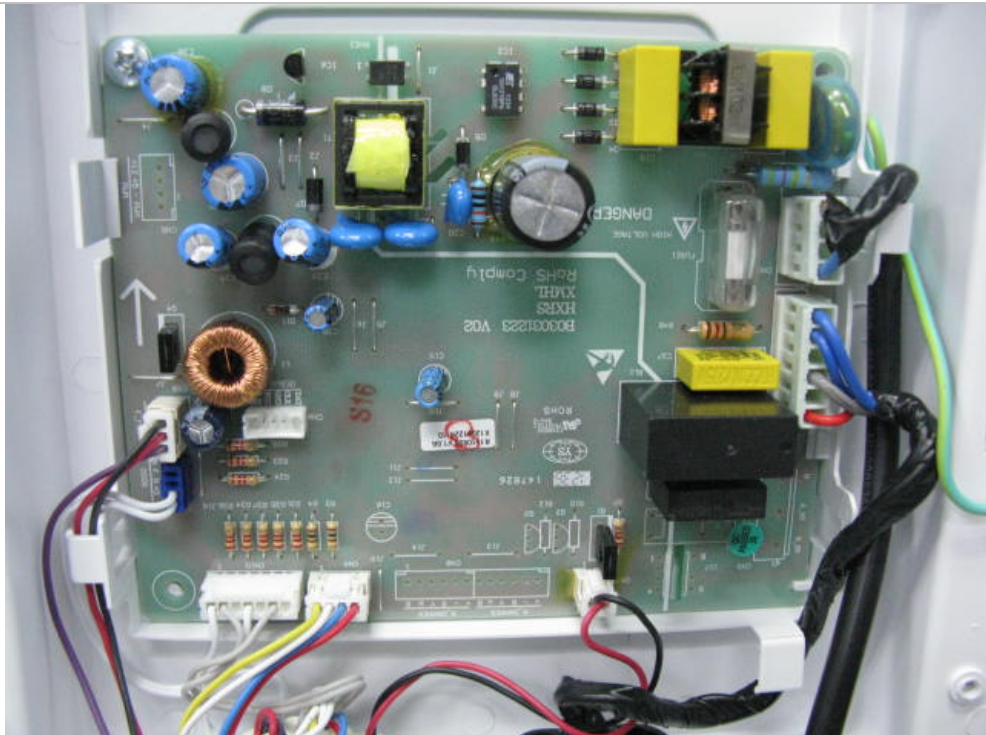
Inner view



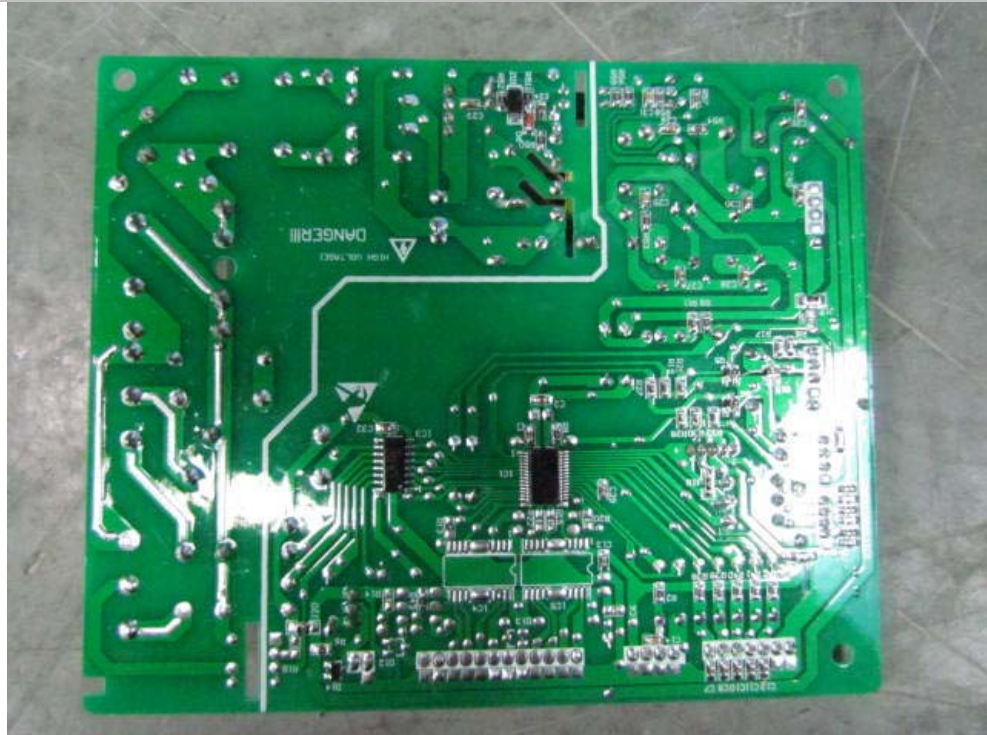
Mains power board view



PCB view of mains power board



PCB view of mains power board



Transformer view of mains power board



Transformer view of mains power board



Compressor view

