



TEST REPORT

Reference No. : WTF15F0122711R1E
Applicant :
Address :
Manufacturer :
Address :
Product Name : Blender
Model No : ABC-015-1,ABC-015-3,ABC-014A-3,ABC-015,ABC-014,ABC-014A,ABC-014B-3, ABC-014C-3,ABC-015A-3
Standards : EN 55014-1:2006+A1:2009+A2:2011
EN 55014-2:1997+A1:2001+A2:2008
EN 61000-3-2:2014
EN 61000-3-3:2013
Date of Receipt sample : ---
Date of Test : ---
Date of Issue : 2016-03-28
Test Report Form No. : WEH-55014A-01A
Test Result : Pass

Remarks:

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

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1 Test Summary

EMISSION			
Test Item	Test Standard	Class / Severity	Result
Mains Terminal Disturbance Voltage, 148.5kHz to 30MHz	EN 55014-1:2006+A1:2009+A2:2011	Clause 4.1.1	Pass
Disturbance Power, 30MHz to 300MHz	EN 55014-1:2006+A1:2009+A2:2011	Clause 4.1.2	Pass
Discontinuous Disturbance (Click)	EN 55014-1:2006+A1:2009+A2:2011	Clause 4.2.2	N/A**
Radiated Emission, 30MHz to 1000MHz	EN 55014-1:2006+A1:2009+A2:2011	Clause 4.1.2	N/A
Harmonic Current emission	EN 61000-3-2:2014	Class A	Pass***
Voltage Fluctuation and Flicker	EN61000-3-3:2013	Clause 5	Pass
IMMUNITY (EN 55014-2:1997+A1:2001+A2:2008)			
Test Item	Test Method	Performance Criteria	Result
Immunity Test	EN 55014-2:1997+A1:2001+A2:2008	---	Pass*

Remark:

Pass

Test item meets the requirement

Fail

Test item does not meet the requirement

N/A

Test case does not apply to the test object

*

According to EN55014-2, the EUT contains no electronic control circuit, it is a category I appliance, so it is deemed to fulfil the relevant immunity requirements without testing.

**

According to the electrical characteristics and usage of the equipment, the EUT does not produce discontinuous radio interference voltages on AC Mains. Therefore this test item has been skipped.

According to EN61000-3-2, Kitchen machines as listed in the scope of IEC 60335-2-14 are deemed to conform to the harmonic current limits of this standard without further testing, so it is deemed to fulfil the harmonic current emission test requirements without testing.



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3 General Information

3.1 General Description of E.U.T.

Product Name : Blender
Model No. : ABC-015-1,ABC-015-3,ABC-014A-3,ABC-015,ABC-014,ABC-014A,ABC-014B-3, ABC-014C-3,ABC-015A-3
Remark..... : All models are identical product except for their appearance, therefore model ABC-014A-3 can represent other models to perform EMC tests.

3.2 Details of E.U.T.

Technical Data..... : AC 220-240V, 50/60Hz, 350W

3.3 Description of Support Units

The EUT has been tested as an independent unit. ABC-014A-3 is the test sample. The DV,DP tests were performed In the condition of AC264V/50Hz input. The other tests were performed in the condition of AC 230V/50Hz input.

3.4 Standards Applicable for Testing

The tests were performed according to following standards:

EN55014-1:2006+A1:2009 +A2:2011	Electromagnetic compatibility-Requirements for household appliances, electric tools and similar apparatus-Part 1:Emission
EN55014-2:1997+A1:2001 +A2:2008	Electromagnetic compatibility Requirements for household appliances, Part 2: Immunity Product family.
EN 61000-3-2:2014	Electromagnetic compatibility (EMC) -- Part 3-2: Limits - Limits for harmonic current emissions (equipment input current up to and including 16 A per phase).
EN 61000-3-3:2013	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.



3.5 Test Facility

The test facility has a test site registered with the following organizations:

- **IC – Registration No.: 7760A**

Waltek Services (Shenzhen) Co., Ltd. has been registered and fully described in a report filed with the Industry Canada. The acceptance letter from the Industry Canada is maintained in our files. Registration 7760A, August 03, 2010.

- **FCC – Registration No.: 880581**

Waltek Services (Shenzhen) Co., Ltd. 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 880581, May 26, 2011.

3.6 Subcontracted

Whether parts of tests for the product have been subcontracted to other labs:

☐ Yes ☒ No

If Yes, list the related test items and lab information:

Test items: ---

Lab information:---

3.7 Abnormalities from Standard Conditions

None.

3.8 Other

This report is based on Project No. WTF15F0122711E for updating standards and adding new models, the new models are identical products with the original models only their appearance, they do not affect the EMC test items. Therefore the EUT is deemed to fulfill all the requirements and no further test has been performed.

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4 Equipment Used during Test

Mains Terminal Disturbance Voltage (Conducted Emission)					
Item	Equipment	Manufacturer	Model No.	Serial No.	Calibration Status
1.	EMI Test Receiver	R&S	ESCI	101178	Valid
2.	LISN	R&S	ENV216	101215	Valid
3.	LISN	SCHWARZBECK	NSLK 8128	8128-289	Valid
4.	Cable	HUBER+SUHNER	CBL2-NN-3M	2230300	Valid
5.	Switch	ESE	RSU/M2	---	Valid
Disturbance Power					
Item	Equipment	Manufacturer	Model No.	Serial No.	Calibration Status
1.	EMI Test Receiver	R&S	ESCI	101178	Valid
2.	Absorbing Clamp	LUTHI	MDS21	4067	Valid
3.	Cable	HUBER+SUHNER	CBL2-NN-9M	2230900	Valid
4.	Switch	ESE	RSU/M2	---	Valid
Harmonics and Flicker Measuring System					
Item	Equipment	Manufacturer	Model No.	Serial No.	Calibration Status
1.	Harmonics and Flicker Measuring System	TESEQ	PROFLINE210 5-400	1133A014 98	Valid

4.1 Measurement Uncertainty

Test Item	Frequency Range	Uncertainty	Note
Conducted Emission	150kHz~30MHz	±2.66dB	(1)
Disturbance Power	30MHz~300MHz	±3.21dB	(1)
Radiated Emission	30MHz~1GHz	±5.03dB	(1)

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



5 Emission Test Results

5.1 Mains Terminals Disturbance Voltage, 148.5 kHz to 30MHz

Test Requirement..... : EN 55014-1
Test Method..... : EN 55014-1
Test Result..... : Pass
Frequency Range..... : 148.5kHz to 30MHz
Class/Severity..... : Table 1 of EN55014-1

5.1.1 E.U.T. Operation

Operating Environment:

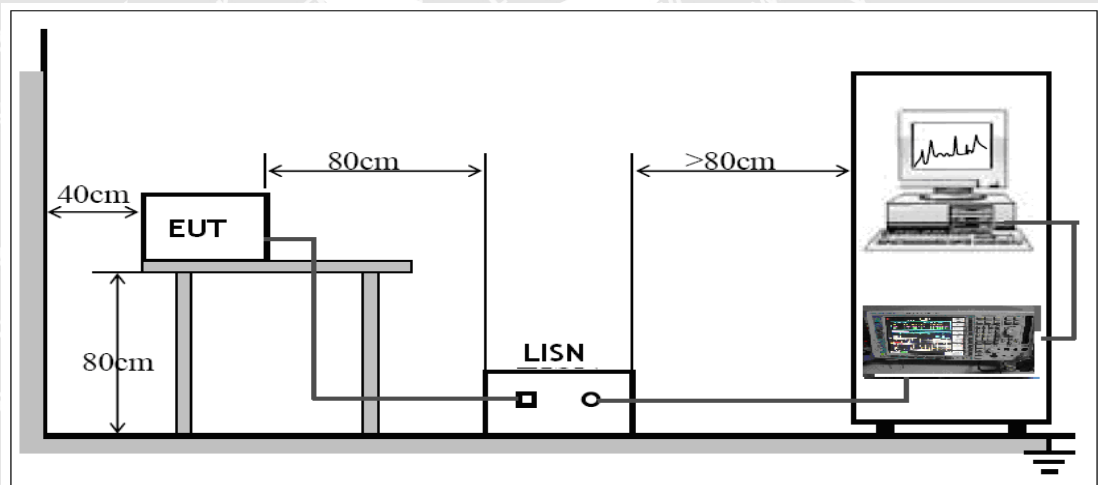
Temperature : 23.1°C
Humidity..... : 42.0%RH
Atmospheric Pressure..... : 101.2kPa

EUT Operation:

Input Voltage : AC 264V/50Hz
Operating Mode..... : On mode

5.1.2 Block Diagram of Test Setup

The Mains Terminals Disturbance Voltage tests were performed in accordance with the EN 55014-1.



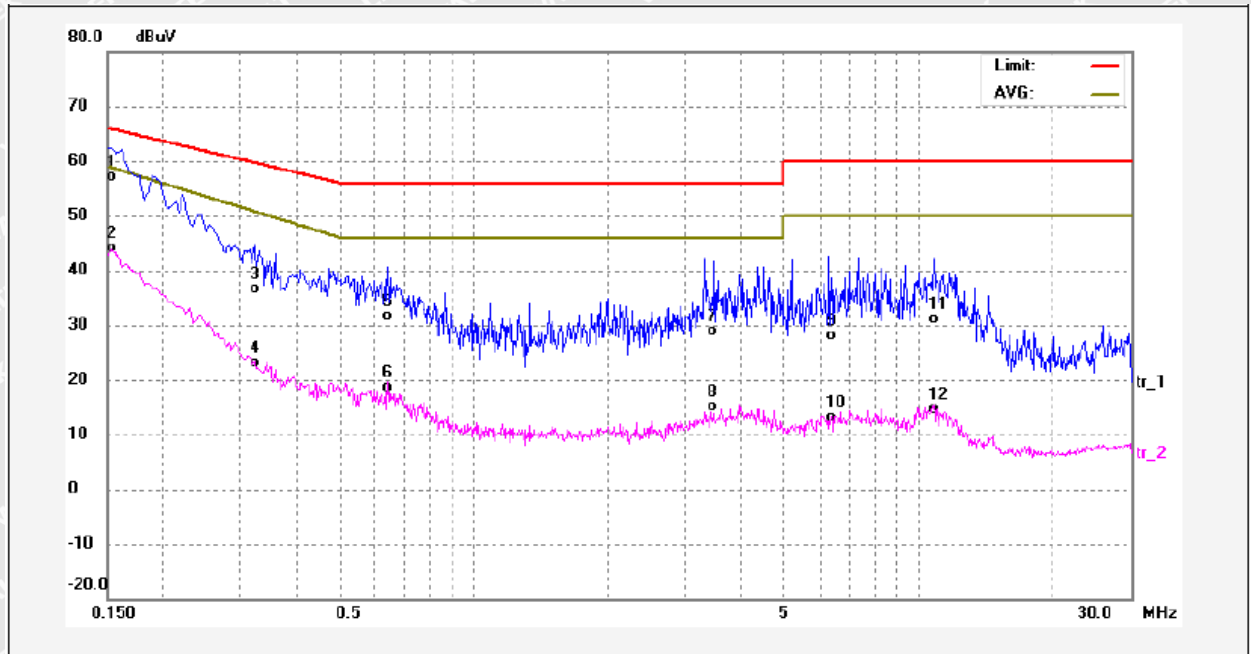


5.1.3 Measurement Data

The maximised peak emissions from the EUT was scanned and measured for both the Live and Neutral Lines. Quasi-peak & average measurements were performed if peak emissions were within 6dB of the average limit line.

5.1.4 Mains Terminals Disturbance Voltage Test Data

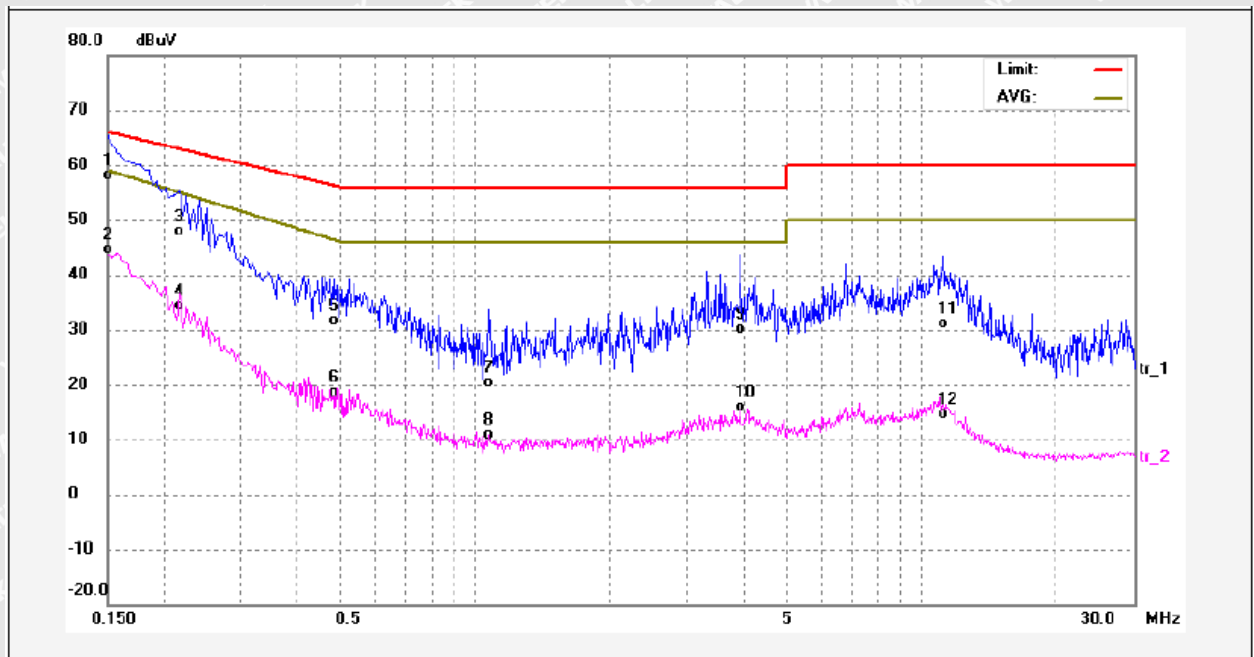
Live Line :



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.1524	46.58	9.61	56.19	65.86	-9.67	QP	
2	0.1524	33.63	9.61	43.24	58.82	-15.58	AVG	
3	0.3220	26.04	9.62	35.66	59.65	-23.99	QP	
4	0.3220	12.50	9.62	22.12	50.75	-28.63	AVG	
5	0.6419	21.10	9.64	30.74	56.00	-25.26	QP	
6	0.6419	7.87	9.64	17.51	46.00	-28.49	AVG	
7	3.4820	18.30	9.70	28.00	56.00	-28.00	QP	
8	3.4820	4.47	9.70	14.17	46.00	-31.83	AVG	
9	6.2900	17.41	9.75	27.16	60.00	-32.84	QP	
10	6.2900	2.30	9.75	12.05	50.00	-37.95	AVG	
11	10.8220	20.26	9.86	30.12	60.00	-29.88	QP	
12	10.8220	3.67	9.86	13.53	50.00	-36.47	AVG	



Neutral Line :



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Remark
1	0.1500	47.42	9.61	57.03	65.99	-8.96	QP	
2	0.1500	34.10	9.61	43.71	58.99	-15.28	AVG	
3	0.2180	37.23	9.62	46.85	62.89	-16.04	QP	
4	0.2180	23.83	9.62	33.45	54.96	-21.51	AVG	
5	0.4820	20.91	9.64	30.55	56.30	-25.75	QP	
6	0.4820	7.89	9.64	17.53	46.40	-28.87	AVG	
7	1.0740	9.77	9.65	19.42	56.00	-36.58	QP	
8	1.0740	0.21	9.65	9.86	46.00	-36.14	AVG	
9	3.9420	19.44	9.72	29.16	56.00	-26.84	QP	
10	3.9420	5.08	9.72	14.80	46.00	-31.20	AVG	
11	11.1980	20.15	9.87	30.02	60.00	-29.98	QP	
12	11.1980	3.76	9.87	13.63	50.00	-36.37	AVG	



5.2 Disturbance Power, 30MHz to 300MHz

Test Requirement.....	: EN 55014-1
Test Method.....	: EN 55014-1
Test Result.....	: Pass
Frequency Range.....	: 30MHz to 300MHz
Class/Severity.....	: Table 2 of EN55014-1

5.2.1 E.U.T. Operation

Operating Environment:

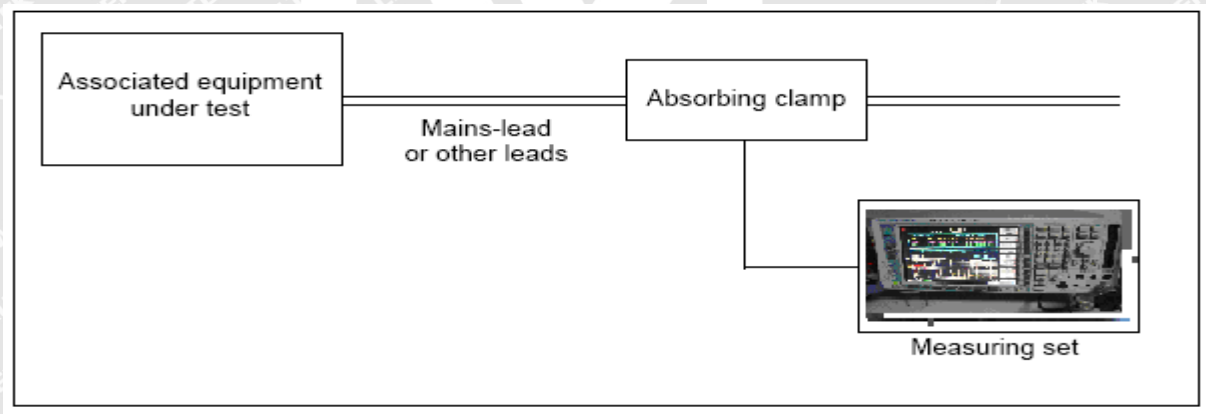
Temperature	: 23.1°C
Humidity.....	: 42.0%RH
Barometric Pressure.....	: 101.2kPa

EUT Operation:

Input Voltage	: AC 264V/50Hz
Operating Mode.....	: On mode

5.2.2 Block Diagram of Test Setup

The Disturbance Power test was performed in accordance with the EN 55014-1.



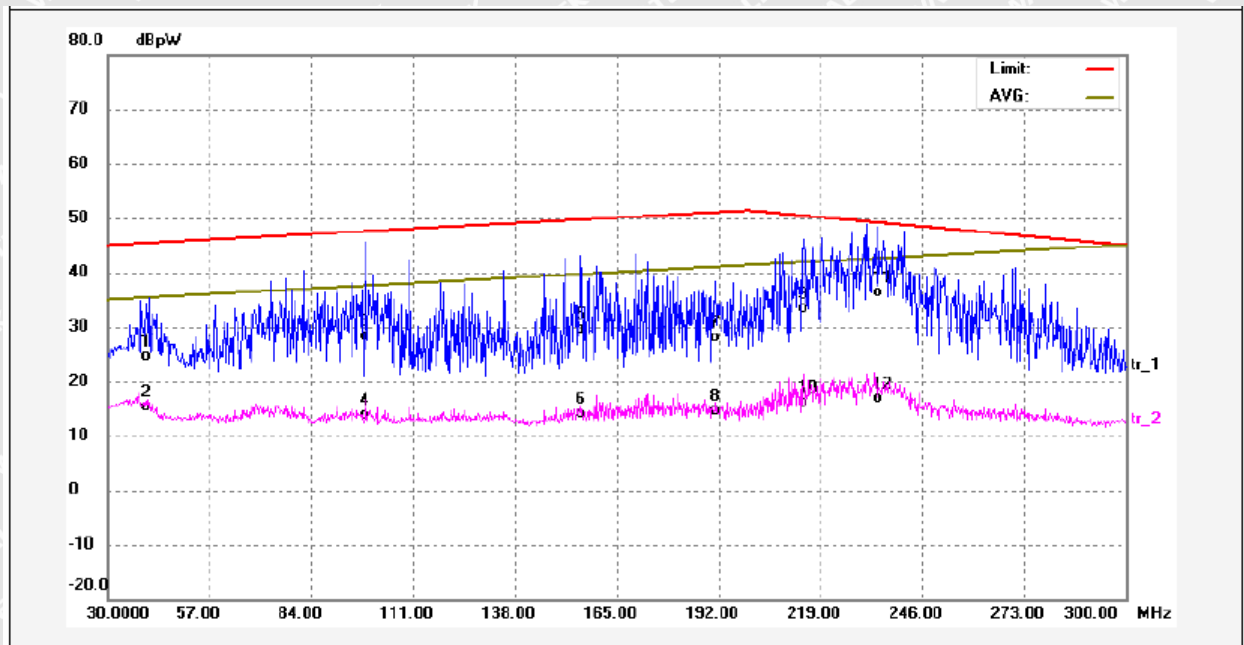


5.2.3 Measurement Data

Extending the cable to 6 meters, performed quasi-peak & average measurements since peak emissions from the EUT were detected within 15dB of the limit line. Average measurements were only performed if the quasi-peak measurements were within 15dB of the average limit line.

According to the Clause 4.1.2.3, if both of the following conditions (1) and (2) are fulfilled: 1) all emission readings from the equipment under test shall be lower than the applicable limits (Table 2a) reduced by the margin (Table 2b); 2) the maximum clock frequency shall be less than 30 MHz. The Appliances are deemed to comply in the frequency range from 300 MHz to 1 000 MHz

5.2.4 Disturbance Power Test Results on AC Line



No.	Freq. (MHz)	Reading (dBpW)	Factor (dB)	Result (dBpW)	Limit (dBpW)	Margin (dB)	Detector	Remark
1	41.2800	16.98	6.55	23.53	45.42	-21.89	QP	
2	41.2800	7.86	6.55	14.41	35.42	-21.01	AVG	
3	98.4400	22.65	4.77	27.42	47.54	-20.12	QP	
4	98.4400	8.00	4.77	12.77	37.53	-24.76	AVG	
5	155.5600	24.52	4.10	28.62	49.65	-21.03	QP	
6	155.5600	8.91	4.10	13.01	39.65	-26.64	AVG	
7	191.3200	22.77	4.42	27.19	50.98	-23.79	QP	
8	191.3200	9.27	4.42	13.69	40.97	-27.28	AVG	
9	214.6400	28.62	3.74	32.36	50.38	-18.02	QP	
10	214.6400	11.44	3.74	15.18	41.84	-26.66	AVG	
11	234.5200	32.53	2.80	35.33	49.13	-13.80	QP	
12	234.5200	13.18	2.80	15.98	42.57	-26.59	AVG	



5.3 Voltage Fluctuation and Flicker

Test Requirement : EN 61000-3-3
Test Method : EN 61000-3-3
Test Result : Pass

5.3.1 E.U.T. Operation

Operating Environment:

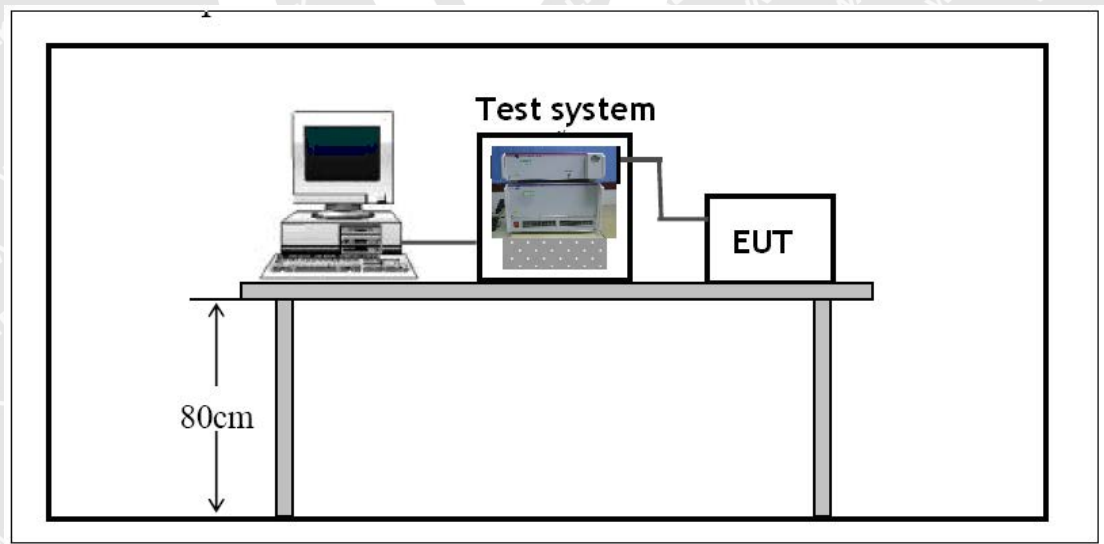
Temperature : 23.1°C
Humidity : 42.0%RH
Barometric Pressure : 101.2kPa

EUT Operation:

Input Voltage : AC 230V/50Hz
Operating Mode : On mode

5.3.2 Block Diagram of Setup

The Voltage Fluctuation and Flicker test was performed in accordance with the EN 61000-3-3.





5.3.3 Voltage Fluctuation and Flicker Test Data

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

EUT: Bender ABC-014A-3
Test category: 24 x dmax Test
Test date: 2015/1/30
Test duration (min): 30
Comment: on mode

Tested by: Roy
Test Margin: 100
Start time: 17:23:48
End time: 17:31:23
Data file name: F-000468.cts_data

Test Result: Pass

Status: Test Completed

European Limits

Parameter values recorded during the test:

Vrms at the end of test (Volt): 230.01

Average dmax (%): 0.94 Test limit (%): 7.00

Test Number	Dmax	
1	0.988	Lowest dmax (Disregarded)
2	0.875	
3	0.962	
4	0.906	
5	1.005	Highest dmax (Disregarded)
6	0.996	
7	0.914	
8	0.902	
9	0.900	
10	0.974	
11	0.901	
12	0.973	
13	0.926	
14	0.960	
15	0.958	
16	0.899	
17	0.893	
18	0.937	
19	0.966	
20	0.950	
21	0.939	
22	0.877	
23	0.983	
24	0.923	
Average of 22 Dmax		0.937
Lowest Dmax		0.875
Highest Dmax		1.005



6 Immunity Test Results

6.1 Performance Criteria

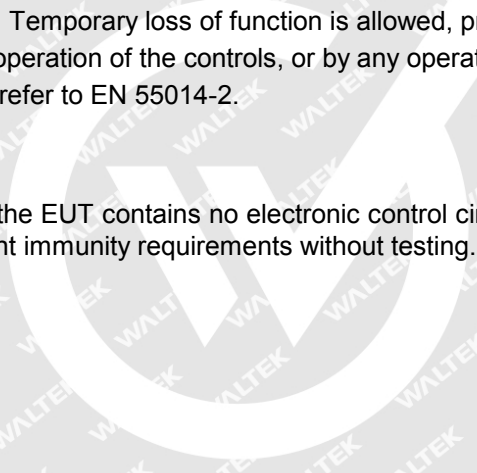
Performance criterion A: The apparatus shall continue to operate as intended during the test. No degradation of performance or loss of function is allowed below a performance level (or permissible loss of performance) specified by the manufacturer, when the apparatus is used as intended. If the minimum 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.

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 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.

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. For further details, please refer to EN 55014-2.

6.2 Test Results

According to EN55014-2, the EUT contains no electronic control circuit, it is a category I appliance, so it is deemed to fulfil the relevant immunity requirements without testing.



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7 Photographs – Test Setup

7.1 Photograph – Mains Terminal Disturbance Voltage Test Setup



7.2 Photograph – Disturbance Power Test Setup





7.3 Photograph – Voltage Fluctuation and Flicker Test Setup



8 Photographs – Constructional Details

8.1 EUT – Front View





8.2 EUT – Back View



===== End of Report =====

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