SGS-CSTC
StandardsTechnical Services
(Shanghai)Co., Ltd.

No. 588 West Jindu Road, Songjiang District, Shanghai, China

Telephone: +86 (0) 21 6191 5666
Fax: +86 (0) 21 6191 5655
ee.shanghai@sgs.com

EMC TEST REPORT

Application No.: SHEMO09120141602

Applicant: Zhejiang Aike Appliances Co.,Ltd.

Equipment Under Test (EUT):

NOTE: The following sample(s) submitted was/were identified on behalf of the client as

EUT Name: Hand Dryer
Model No.: AK2630(T), AK2800,AK2630T-K,AK2630T,AK2630-K
Serial No.: Not supplied by client

Standards: EN 55014-1: 2006
EN 55014-2: 1997+A1: 2001+A2:2008
EN 61000-3-2: 2006
EN 61000-3-3: 2008

Date of Receipt: Dec. 23, 2009

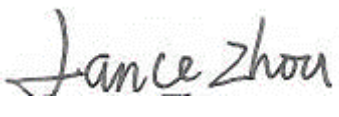
Date of Test: Feb. 01, 2010

Date of Issue: Sept 06, 2011

Test Result :	**PASS**

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

CE



Tony Wu
E&E Section Manager
SGS-CSTC(Shanghai) Co., Ltd.

Lance Zhou
E&E Project Engineer
SGS-CSTC(Shanghai)Co.,Ltd

2 Test Summary

Test	Test Requirement	Test Method	Class / Severity	Result
Conducted Emission (150K to 30MHz)	EN 55014-1: 2006	EN 55014-1: 2006	N/A	PASS
Radiated Power 30MHz to 300MHz	EN 55014-1: 2006	EN 55014-1: 2006	N/A	PASS
Discontinuous Disturbance	EN 55014-1: 2006	EN 55014-1: 2006	N/A	PASS
Harmonic Current Emission on AC, up to 2kHz	EN 61000-3-2: 2006	EN 61000-3-2: 2006	Clause 7 of EN61000-3-2	PASS
Voltage Fluctuation and Flicker on AC	EN 61000-3-3: 2008	EN 61000-3-3: 2008	Clause 5 of EN61000-3-3	PASS
ESD	EN 55014-2: 1997+A1: 2001+A2:2008	EN 61000-4-2: 2009	Contact ±4 kV Air ±8 kV	PASS
Radio frequency electromagnetic fields, 80MHz to 1 GHz	EN 55014-2: 1997+A1: 2001+A2:2008	EN 61000-4-3: 2006+A1:2008+A2:2010	3V/m 80%, 1kHz, AM	N/A
Electrical Fast Transients (EFT) on AC	EN 55014-2: 1997+A1: 2001+A2:2008	EN 61000-4-4: 2004+A1:2010	AC ± 1.0kV	PASS
Surges on AC	EN 55014-2: 1997+A1: 2001+A2:2008	EN 61000-4-5: 2006	±1kV D.M.† ±2kV C.M.†	PASS
Injected Currents on AC, 150kHz to 230MHz	EN 55014-2: 1997+A1: 2001+A2:2008	EN 61000-4-6: 2009	3Vrms (emf), 80%, 1kHz Amp. Mod.	PASS
Voltage Dips and Interruptions on AC	EN 55014-2: 1997+A1: 2001+A2:2008	EN 61000-4-11: 2004	0 % U_T* for 0.5per 40 % U_T* for10per 70 % U_T* for 25per	PASS

Remark: * U_T is the nominal supply voltage.

† D.M. – Differential Mode.

† C.M. – Common Mode.

Ψ N/A –Not Applicable

Note: Ψ Because the working frequency of the EUT is not higher than 15MHz, there is no need to do the Radio frequency electromagnetic fields test.

There are two models mentioned in this report, and they are the same in electrical and electronic characters. So we just have the model AK2630(T) tested.

Note : The models mentioned in this report are the same as the models AK2630(T), AK2630(T) in Electronic and Electrical characters. The model has been mentioned in the report SHEMO09120141601 issued by SGS-CSTC. According to the validated standards,the models are deemed to fulfil the EMC requirement without testing.

3 Contents

Page

4 General Information

4.1 Client Information

Applicant:	Zhejiang Aike Appliances Co.,Ltd.
Address of Applicant:	Industry zone Yong An,Xianju, Zhejiang, China
Manufacturer:	Zhejiang Aike Appliances Co.,Ltd.
Address of Manufacturer:	Industry zone Yong An,Xianju, Zhejiang, China

4.2 General Description of E.U.T.

EUT Name:	Hand Dryer
Model No.:	AK2630(T), AK2800,AK2630T-K,AK2630T,AK2630-K
Trade mark:	Not supplied by client
Serial No.:	Not supplied by client

4.3 Details of E.U.T.

Power Supply:	220-240VAC, 6.3-6.9A, 1400-1650W, IPX4
Power Cord:	About 1.2m

4.4 Description of Support Units

Name / Function	Model No.	Remark
N/A	N/A	N/A

4.5 Standards Applicable for Testing

The customer requested EMC tests for Hand Dryer.

The standards used were EN 55014-1: 2006, EN 61000-3-2: 2006, EN 61000-3-3: 2008 and EN 55014-2: 1997+A1: 2001+A2:2008.

Table 1 : Tests Carried Out Under EN 55014-1: 2006

Standard		Status
EN 55014-1: 2006	Conducted Emissions on AC	√
EN 55014-1: 2006	Radiated Power	√
EN 55014-1: 2006	Discontinuous Disturbance	√

× Indicates that the test is not applicable
√ Indicates that the test is applicable

Table 2: Tests Carried Out Under EN 61000-3-2: 2006 & EN 61000-3-3: 2008

Standard		Status
EN 61000-3-2: 2006	Harmonic Emissions on AC	√
EN 61000-3-3: 2008	Flicker Emissions on AC	√

× Indicates that the test is not applicable
√ Indicates that the test is applicable

Table 3: Tests carried out under EN 55014-2: 1997+A1: 2001+A2:2008

Standard		Status
EN 61000-4-2: 2009	Electrostatic discharge test	√
EN 61000-4-3: 2006+A1:2008+A2:2010	Radiated, radio-frequency electromagnetic field electromagnetic field test	×
EN 61000-4-4: 2004+A1:2010	Electrical fast transients/burst test	√
EN 61000-4-5: 2006	Surges	√
EN 61000-4-6: 2009	Immunity to conducted disturbances, induced by radio-frequency fields	√
EN 61000-4-11: 2004	Voltage dips and interruptions test	√

× Indicates that the test is not applicable
√ Indicates that the test is applicable

Note The EUT does not contain any component which is susceptible from the magnetic field.

4.6 Deviation from Standards

None.

4.7 Abnormalities from Standard Conditions

None.

4.8 Monitoring of EUT for All Immunity Test

Visual:

4.9 Test Location

All the tests were performed at:
SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.
No.588 West Jindu Road, Songjiang District, Shanghai, China. 201612.
Tel: +86 21 6191 5666 Fax: +86 21 6191 5655

4.10 Test Facility

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

- **CNAS (No. CNAS L0599)**

CNAS has accredited SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing. Date of expiry: 2014-07-26.

- **FCC – Registration No.: 402683**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered and fully described in a report filed with the Federal Communications Commission (FCC). The acceptance letter from the FCC is maintained in our files. Registration No.: 402683, Expiry Date: 2012-03-17.

- **Industry Canada (IC) – IC Assigned Code: 8617A**

The 3m Semi-anechoic chamber of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 8617A. Expiry Date: 2011-09-29.

- **VCCI (Member No.: 3061)**

The 3m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-3172 and C-3514 respectively. Date of Registration: 2009-11-30. Date of Expiry: 2012-03-17.

4.11 Measurement Uncertainty

According to CISPR 16-4-2.

Test Item	Frequency Range	Measurement Uncertainty
Conducted Emission	150KHz – 30MHz	3.5dB
Radiated Emission	30MHz – 1000MHz	4.0dB

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

5 Equipments Used during Test

Conducted Emission

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due date
1	EMI test receiver	Rohde & Schwarz	ESCS30	100086	2011-06-02	2012-06-01
2	Line impedance stabilization network	SCHWARZBECK	NSLK8127	8127-490	2011-05-06	2012-05-05

Radiated Power

Item	Test Equipment	Manufacturer	Model No.	Series No.	Cal. Date	Cal. Due date
1	Absorbing clamp	LUTHI	MDS-21	3583	2011-06-26	2012-06-25
2	EMI test receiver	Rohde & Schwarz	ESCS 30	100086	2011-06-02	2012-06-01

Clicks

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due date
1	Click analyzer	SCHAFFNER	DIA1512D	100/05/428	2011-04-19	2012-04-18

Harmonic &Flicker

Item	Test Equipment	Manufacturer	Model No.	Series No.	Cal. Date	Cal. Due date
1	Single phase harmonics&flicker analyzer	EM test	DPA500	V0507100125	2011-06-02	2012-06-01
2	AC SOURCE 6KVA	EM test	ACS500	V0507100126	2011-06-02	2012-06-01

Electrostatic Discharge Test

Item	Test Equipment	Manufacturer	Model No.	Series No.	Cal. Date	Cal. Due date
1	Electrostatic Discharge Simulator	KIKUSUI	KES4021	LL004261	2011-07-25	2012-07-24

EFT Test

Item	Test Equipment	Manufacturer	Model No.	Series No.	Cal. Date	Cal. Due date
1	Ultra-compact simulator	EM test	UCS500M4	V0507100122	2011-06-02	2012-06-01

Surge Test

Item	Test Equipment	Manufacturer	Model No.	Series No.	Cal. Date	Cal. Due date
1	Ultra-compact simulator	EM test	UCS500M4	V0507100122	2011-06-02	2012-06-01

Voltage dips and Interruption Test

Item	Test Equipment	Manufacturer	Model No.	Series No.	Cal. Date	Cal. Due date
1	Ultra-compact simulator	EM test	UCS500M4	V0507100122	2011-06-02	2012-06-01
2	Motorised Variac	EM test	MV2616	V0507100123	2011-06-02	2012-06-01

Injected Currents Test

Item	Test Equipment	Manufacturer	Model No.	Series No.	Cal. Date	Cal.Due date
1	AM/FM signal generator	AEROFLEX	2023A	202306/528	2011-04-20	2012-04-19
2	PAMP Conducted RF test system	HAEFFLY	PAMP250	151708	2011-04-20	2012-04-19
3	CDN impedance and K-factor	LUTHI	L-801 M2/M3	2117	/	/

General Equipment

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal.Due date
1	Digital pressure meter	YONGZHI	DYM3-01	101012	2010-11-19	2011-11-18
2	Digital Multimeter	FLUKE	17B	10560713	2010-09-08	2011-09-07
3	Temperature& humidity recorder	ShangHai weather meter work	ZJ 1-2B	0805126	2011-07-30	2012-07-29
4	Digital illuminance meter	TES electrical electronic Corp.	TES-1330A	050602219	2010-10-20	2011-10-19

6 Emission Test Results

6.1 Conducted Emissions Mains Terminals, 150kHz to 30MHz

Test Requirement: EN 55014-1: 2006

Test Method: EN 55014-1: 2006

Test Date: Feb. 01, 2010

Frequency Range: 150KHz to 30MHz

Class / Severity: N/A

Detector: Peak for pre-scan (9kHz Resolution Bandwidth for 0.15-30MHz)
Quasi-Peak if maximised peak within 10dB of Quasi-Peak limit

Operating Environment:

6.1.1 E.U.T. Operation

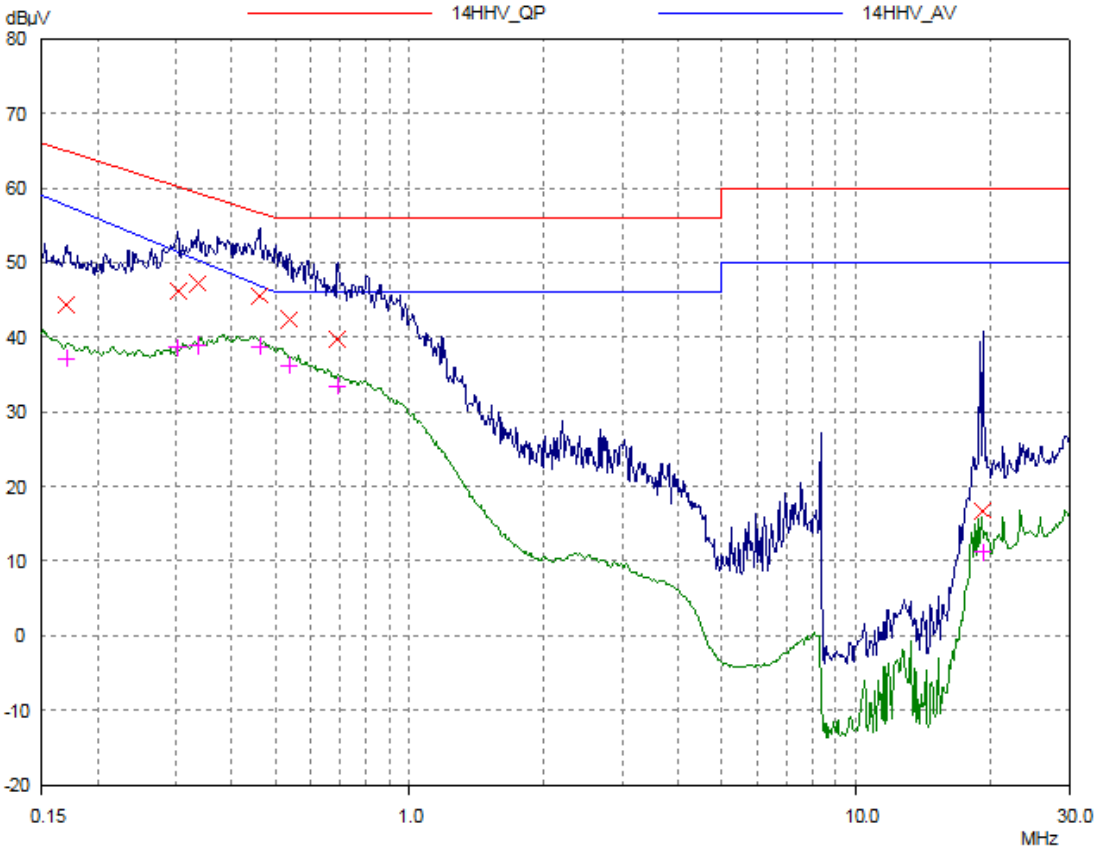
Temperature:21.0°C Humidity:48% RH Atmospheric Pressure:1006mbar

EUT Operation: Test the EUT with full function according to standard.

6.1.2 Measurement Data

An initial pre-scan was performed on the live and neutral lines with peak detector.
Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

L line

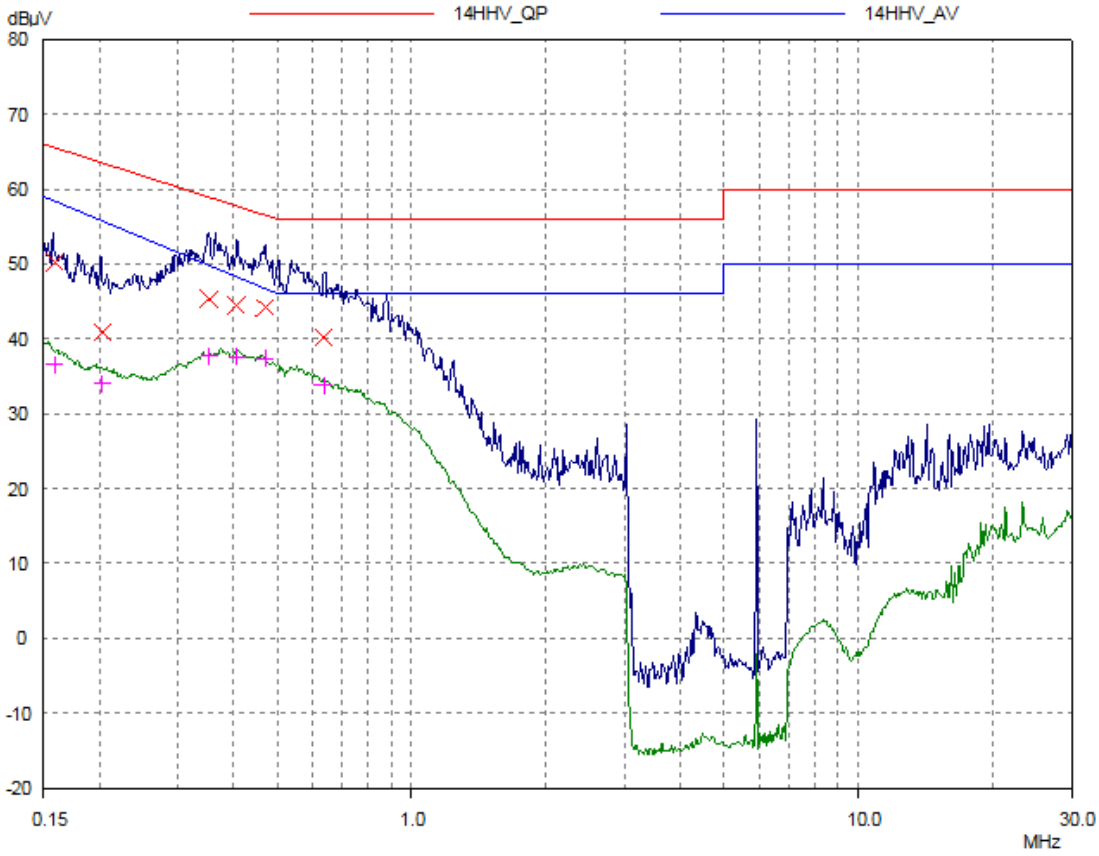


Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB
0.17039	44.38	64.94	20.56
0.30242	46.22	60.18	13.96
0.33543	47.15	59.32	12.17
0.46134	45.52	56.67	11.15
0.53675	42.36	56.00	13.64
0.68715	39.75	56.00	16.25
19.21123	16.72	60.00	43.28

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB
0.17039	37.13	57.62	20.49
0.30242	38.63	51.43	12.80
0.33543	38.86	50.31	11.45
0.46134	38.74	46.87	8.13
0.53675	36.18	46.00	9.82
0.68715	33.49	46.00	12.51
19.21123	11.18	50.00	38.82

N line



Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB
0.1586	50.23	65.54	15.31
0.20304	40.80	63.49	22.69
0.35185	45.34	58.92	13.58
0.40612	44.44	57.73	13.29
0.46875	44.23	56.54	12.31
0.63452	40.21	56.00	15.79

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB
0.1586	36.50	58.40	21.90
0.20304	34.03	55.73	21.70
0.35185	37.70	49.79	12.09
0.40612	37.61	48.25	10.64
0.46875	37.31	46.70	9.39
0.63452	33.83	46.00	12.17

6.2 Radiated Power

Test Requirement:	EN 55014-1: 2006
Test Method:	EN 55014-1: 2006
Test Date:	Feb. 01, 2010
Frequency Range:	30 to 300MHz
Class:	N/A
Detector:	Peak for pre-scan (120kHz resolution bandwidth for requency range 30-1000MHz) Quasi-Peak if maximised peak within 6dB of limit

6.2.1 E.U.T. Operation

Operating Environment:

Temperature: 21.0℃ Humidity:49%RH Atmospheric Pressure: 1004mbar

EUT Operation: Test the EUT with full function according to standard.

6.2.2 Measurement Data

An initial pre-scan was performed in peak detection mode. Quasi-Peak was performed at the frequencies with maximized peak emission were detected.

The following quasi-peak measurements were performed on the EUT on Feb. 01, 2010.

Final Measurement Results

Frequency MHz	QP Level dBpW	QP Limit dBpW	QP Delta dB
30.48288	33.37	45.07	11.70
31.09744	34.02	45.16	11.14
49.80842	19.07	47.20	28.13
52.25253	18.19	47.41	29.22
111.56109	26.89	50.70	23.81
117.50356	30.92	50.93	20.01

Frequency MHz	AV Level dBpW	AV Limit dBpW	AV Delta dB
30.48288	29.23	35.07	5.84
31.09744	29.91	35.16	5.25
49.80842	14.01	37.20	23.19
52.25253	13.08	37.41	24.33
111.56109	10.75	40.70	29.95
117.50356	12.15	40.93	28.78

6.3 Discontinuous Disturbance, 150kHz to 30MHz

Test Requirement:	EN 55014-1: 2006
Test Method:	EN 55014-1: 2006
Test Date:	Feb. 01, 2010
Frequency Range:	150KHz to 30MHz
Class / Severity:	N/A
Result:	**PASS**

6.3.1 E.U.T. Operation

Temperature: 21.0 °C Humidity: 48%RH Atmospheric Pressure: 1006mbar

EUT Operation: Test the EUT with full function according to standard.

Appliances which fulfil the following conditions:

– the click rate is not more than 5,

– none of the caused clicks has a duration longer than 20 ms,

– 90 % of the caused clicks have a duration less than 10 ms,

shall be deemed to comply with the limits.

6.4 Harmonics Test Results

Test Requirement: EN 61000-3-2: 2006

Test Method: EN 61000-3-2: 2006

Frequency Range: Up to 2kHz

Test Class: Class A

Test Date Feb. 01, 2010

Average harmonic current results

Hn	Ieff [A]	Ieff [%]	Limit [A]	Result
1	3.876	100.000		
2	69.746E-3	1.800	1.08	PASS
3	1.231	31.755	2.30	PASS
4	46.839E-3	1.208	430.00E-3	PASS
5	573.268E-3	14.791	1.14	PASS
6	29.945E-3	0.773	300.00E-3	PASS
7	200.717E-3	5.179	770.00E-3	PASS
8	18.302E-3	0.472	230.00E-3	PASS
9	112.033E-3	2.891	400.00E-3	PASS
10	13.728E-3	0.354	184.00E-3	PASS
11	35.128E-3	0.906	330.00E-3	PASS
12	11.202E-3	0.289	153.33E-3	PASS
13	51.988E-3	1.341	210.00E-3	PASS
14	8.615E-3	0.222	131.43E-3	PASS
15	50.739E-3	1.309	150.00E-3	PASS
16	6.798E-3	0.175	115.00E-3	PASS
17	45.283E-3	1.168	132.35E-3	PASS
18	5.860E-3	0.151	102.22E-3	PASS
19	28.579E-3	0.737	118.42E-3	PASS
20	4.893E-3	0.126	92.00E-3	PASS
21	20.033E-3	0.517	160.71E-3	PASS
22	4.571E-3	0.118	83.64E-3	PASS
23	14.085E-3	0.363	146.74E-3	PASS
24	4.051E-3	0.105	76.66E-3	PASS
25	14.195E-3	0.366	135.00E-3	PASS
26	3.789E-3	0.098	70.77E-3	PASS
27	12.482E-3	0.322	124.99E-3	PASS
28	3.604E-3	0.093	65.71E-3	PASS
29	12.239E-3	0.316	116.39E-3	PASS
30	3.362E-3	0.087	61.33E-3	PASS
31	10.873E-3	0.281	108.87E-3	PASS
32	3.266E-3	0.084	57.50E-3	PASS
33	10.014E-3	0.258	102.27E-3	PASS
34	3.210E-3	0.083	54.12E-3	PASS
35	8.630E-3	0.223	96.44E-3	PASS
36	3.016E-3	0.078	51.11E-3	PASS
37	7.726E-3	0.199	91.21E-3	PASS
38	2.754E-3	0.071	48.42E-3	PASS
39	6.515E-3	0.168	86.53E-3	PASS
40	2.866E-3	0.074	46.00E-3	PASS

Maximum harmonic current results

Hn	Ieff [A]	Ieff [%]	Limit [A]	Result
1	8.401	100.000		
2	223.513E-3	2.661	1.62	PASS
3	2.376	28.281	3.45	PASS
4	139.208E-3	1.657	645.00E-3	PASS
5	1.065	12.675	1.71	PASS
6	89.475E-3	1.065	450.00E-3	PASS
7	357.435E-3	4.255	1.15	PASS
8	55.572E-3	0.662	345.00E-3	PASS
9	183.078E-3	2.179	600.00E-3	PASS
10	42.088E-3	0.501	276.00E-3	PASS
11	80.715E-3	0.961	495.00E-3	PASS
12	32.911E-3	0.392	229.99E-3	PASS
13	87.011E-3	1.036	315.00E-3	PASS
14	24.272E-3	0.289	197.15E-3	PASS
15	97.685E-3	1.163	225.00E-3	PASS
16	19.908E-3	0.237	172.50E-3	PASS
17	90.145E-3	1.073	198.52E-3	PASS
18	16.686E-3	0.199	153.33E-3	PASS
19	51.348E-3	0.611	177.63E-3	PASS
20	13.992E-3	0.167	138.00E-3	PASS
21	32.680E-3	0.389	160.71E-3	PASS
22	12.949E-3	0.154	125.46E-3	PASS
23	22.341E-3	0.266	146.74E-3	PASS
24	11.935E-3	0.142	114.99E-3	PASS
25	22.838E-3	0.272	135.00E-3	PASS
26	10.749E-3	0.128	106.16E-3	PASS
27	20.376E-3	0.243	124.99E-3	PASS
28	10.172E-3	0.121	98.57E-3	PASS
29	20.492E-3	0.244	116.39E-3	PASS
30	9.663E-3	0.115	92.00E-3	PASS
31	17.521E-3	0.209	108.87E-3	PASS
32	9.173E-3	0.109	86.25E-3	PASS
33	17.349E-3	0.207	102.27E-3	PASS
34	8.858E-3	0.105	81.18E-3	PASS
35	14.074E-3	0.168	96.44E-3	PASS
36	8.357E-3	0.099	76.66E-3	PASS
37	12.191E-3	0.145	91.21E-3	PASS
38	7.717E-3	0.092	72.63E-3	PASS
39	9.574E-3	0.114	86.53E-3	PASS
40	7.737E-3	0.092	69.00E-3	PASS

6.5 Flicker Test Result

Test Requirement:	EN 61000-3-3:2008
Test Method:	EN 61000-3-3:2008
Test Date:	Feb. 01, 2010
Class/Severity:	Clause 5 of EN 61000-3-3
Measurement Time:	2h
Detector:	As per EN 61000-3-3

6.5.1 Test Results: Pass

Maximum Flicker results

	EUT values	Limit	Result
Pst	0.042	1.00	PASS
Plt	0.028	0.65	PASS
dc [%]	0.005	3.30	PASS
dmax [%]	0.077	4.00	PASS
dt [s]	0.002	0.50	PASS

7 Immunity Test Results

7.1 Performance Criteria Description in Clause 6 of EN 55014-2

Criterion A: The apparatus shall continue to operate as intended during the test. No degradation of performance or loss of function is allowed below a performance level (or permissible loss of performance) specified by the manufacturer, when the apparatus is used as intended. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and from what the user may reasonably expect from the apparatus if used as intended.

Criterion B: The apparatus shall continue to operate as intended after the test. No degradation of performance or loss of function is allowed below a performance level (or permissible loss of performance) specified by the manufacturer, when the apparatus is used as intended. During the test, degradation of performance is allowed, however. No change of actual operating state or stored data is allowed. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and from what the user may reasonably expect from the apparatus if used as intended.

Criterion C: Temporary loss of function is allowed, provided the function is self-recoverable or can be restored by the operation of the controls by the user or by any operation specified in the instructions for use.

7.2 ESD

Test Requirement:	EN 55014-2: 1997+A1: 2001+A2:2008	
Test Method:	EN 61000-4-2 :2009	
Test Date:	Feb. 01, 2010	
Discharge Impedance:	330 Ω / 150 pF	
Discharge Voltage:	Air Discharge:	±8 kV
	Contact Discharge:	±4 kV
	HCP:	±4 kV
	VCP:	±4 kV
Polarity:	Positive & Negative	
Number of Discharge:	Minimum 10 times at each test point for Contact and HCP&VCP Discharge;Minimum 10 times at each test point for Air Discharge	
Discharge Mode:	Single Discharge	
Discharge Period:	1 second minimum	

7.2.1 E.U.T. Operation

Operating Environment:

Temperature: 23.0 °C Humidity: 50% RH Atmospheric Pressure: 1003 mbar

EUT Operation: Test the EUT with full function according to standard.

7.2.2 Direct Application Test Results

Observations: Test Point:

1. All insulated enclosure & seams around EUT.
2. All touchable metal material of EUT

Direct Application			Test Results	
Discharge Level (kV)	**Polarity (+/-)**	**Test Points**	**Contact Discharge**	**Air Discharge**
8	+/-	1	N/A	A
4	+/-	2	A	N/A

Indirect Application Test Results

Observations: Test points: Test Point: 1. All sides.

Indirect Application			Test Results	
Discharge Level (kV)	**Polarity (+/-)**	**Test Point**	**Horizontal Coupling**	**Vertical Coupling**
4	+/-	1	A	A

Results:

N/A: Not applicable (not required in the standard or floor mounted the EUT)

7.3 Electrical Fast Transients (EFT)

Test Requirement:	EN 55014-2: 1997+A1: 2001+A2:2008
Test Method:	EN 61000-4-4: 2004+A1:2010
Test Date:	Feb. 01, 2010
Test Level:	±1.0kV on AC
Polarity:	Positive & Negative
Repetition Frequency:	100kHz
Burst Period:	300ms
Test Duration:	2 minute per level & polarity

7.3.1 E.U.T. Operation

Operating Environment:

Temperature: 21 ℃ Humidity: 40% RH Atmospheric Pressure: 1002 mbar

EUT Operation: Test the EUT with full function according to standard.

7.3.2 Test Results On AC Supply:

Lead under Test	Level (±kV)	Coupling Direct/Clamp	EUT operating mode	Observations (Performance Criterion)
L,N,PE	± 1.0	Direct	On working mode	(A)

A: No loss of function was observed.

7.4 Surge

Test Requirement:	EN 55014-2: 1997+A1: 2001+A2:2008
Test Method:	EN 61000-4-5 :2006
Test Date:	Feb. 01, 2010
Test Level:	±1kV Line to Neutral, ±2kV Line to PE
Polarity:	Positive & Negative
Generator source impedance:	2Ω Line to Neutral, 12Ω Line to PE
Trigger Mode:	Internal
No. of surges:	5 positive, 5 negative at 0°, 90°, 180°, 270°.

7.4.1 E.U.T. Operation

Operating Environment:

Temperature: 22.0 °C Humidity: 50 % RH Atmospheric Pressure: 1017 mbar

EUT Operation: Test the EUT with full function according to standard.

7.4.2 Test Results: Pass

Pulse No	Line-Line	Level (kV)	Surge Interval	Phase (deg)	Observation (Performance Criterion)
1–5	L-N	+1	60s	0°	No loss of performance (A)
6–10	L-N	-1	60s	0°	(A)
11–15	L-N	+1	60s	90°	(A)
16–20	L-N	-1	60s	90°	(A)
21–25	L-N	+1	60s	180°	(A)
26–30	L-N	-1	60s	180°	(A)
31–35	L-N	+1	60s	270°	(A)
36–40	L-N	-1	60s	270°	(A)
1–5	L-PE	+2	60s	0°	(A)
6–10	L-PE	-2	60s	0°	(A)
11–15	L-PE	+2	60s	90°	(A)
16–20	L-PE	-2	60s	90°	(A)
21–25	L-PE	+2	60s	180°	(A)
26–30	L-PE	-2	60s	180°	(A)
31–35	L-PE	+2	60s	270°	(A)
36–40	L-PE	-2	60s	270°	(A)
1–5	N-PE	+2	60s	0°	(A)
6–10	N-PE	-2	60s	0°	(A)
11–15	N-PE	+2	60s	90°	(A)
16–20	N-PE	-2	60s	90°	(A)
21–25	N-PE	+2	60s	180°	(A)
26–30	N-PE	-2	60s	180°	(A)
31–35	N-PE	+2	60s	270°	(A)
36–40	N-PE	-2	60s	270°	(A)

7.5 Injected Currents

Test Requirement: EN 55014-2: 1997+A1: 2001+A2:2008

Test Method: EN 61000-4-6 :2009

Test Date: Feb. 01, 2010

Frequency Range: 0.15MHz to 230MHz

Test level: 3V rms on AC Ports (unmodulated emf into 150 Ω)

Modulation: 80%, 1kHz Amplitude Modulation

7.5.1 E.U.T. Operation

Operating Environment:

Temperature: 22 ℃ Humidity: 50 % RH Atmospheric Pressure: 1017 mbar

EUT Operation: Test the EUT with full function according to standard.

7.5.2 Test Results:

Frequency	Line	Test Level	Modulation	Step Size	Dwell Time	Observation (Performance Criterion)
150kHz to 230MHz	3 Wire AC Supply Cable	3Vrms	80%, 1kHz Amp. Mod.	1%	3S	No Loss of Function (A)

7.6 Voltage Dips and Interruptions

Test Requirement: EN 55014-2: 1997+A1: 2001+A2:2008

Test Method: EN 61000-4-11 :2004

Test Date: Feb. 01, 2010

Test Level: 0% of U_T (Supply Voltage) for 0.5 Periods
40% of U_T (Supply Voltage) for 10 Periods
70 % of U_T (Supply Voltage) for 25 Periods

No. of Dips / Interruptions: 6 per Level

7.6.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C Humidity: 50% RH Atmospheric Pressure: 1017 mbar

EUT Operation: Test the EUT with full function according to standard.

7.6.2 Test Results:

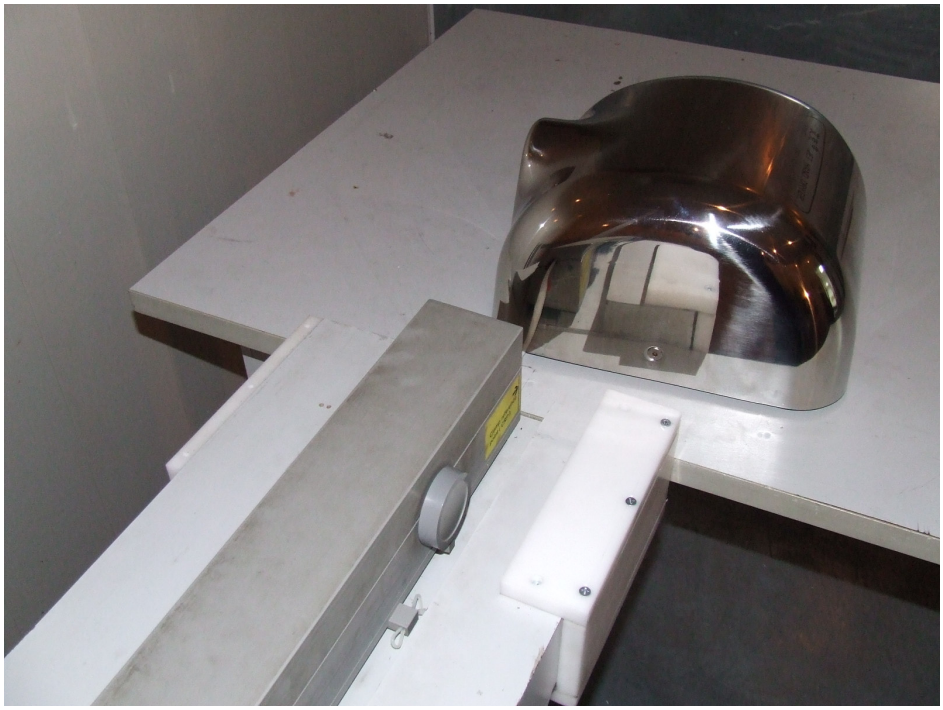
EUT operating mode	Dropout % U_T	Phase	Duration of dropout in Periods	No of dropout	Time between dropout	Observations (Performance Criterion)
On mode	100	0°	0.5	3	10s	(A)
On mode	100	180°	0.5	3	10s	(A)
On mode	60	0°	10	3	10s	(B)
On mode	60	180°	10	3	10s	(B)
On mode	30	0°	25	3	10s	(B)
On mode	30	180°	25	3	10s	(B)

Performance C is within the acceptable criterion for Voltage Dips and Interruption test.

8 Photographs

8.1 Conducted Emission Test Setup

8.2 Disturbance Power Test Setup



8.3 Discontinuous Disturbance Test Setup

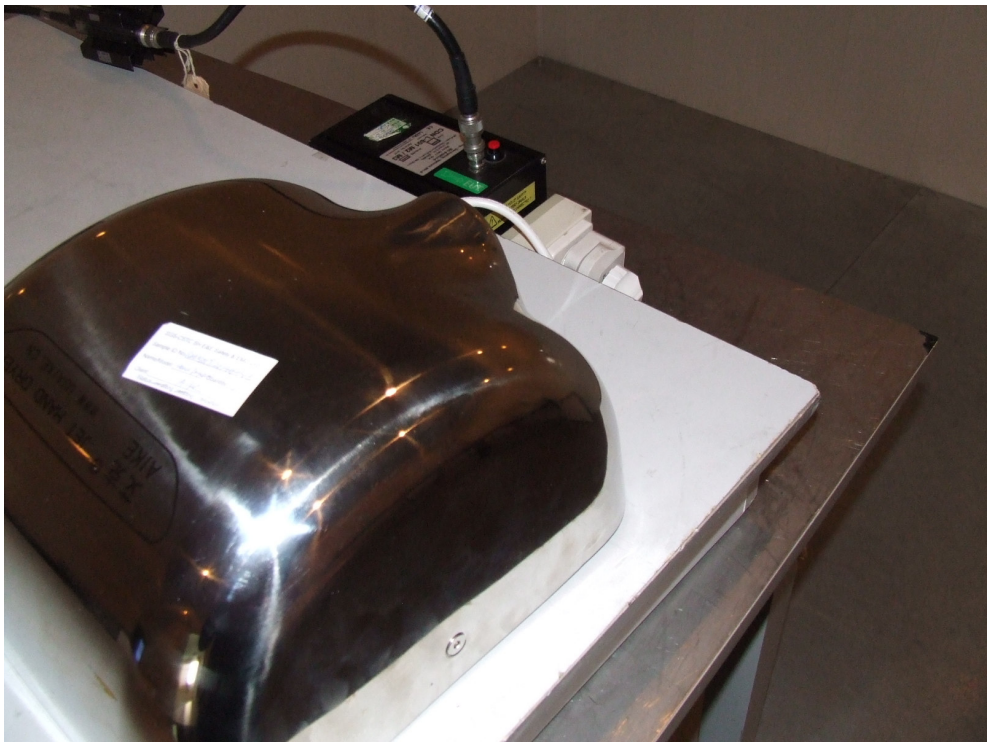
8.4 Harmonic and Flicker Test Setup

8.5 ESD Test Setup

8.6 Surge/ Voltage Dips And Interruptions Test Setup

8.7 EFT Test Setup

8.8 Injected Currents Test Setup



8.9 EUT Constructional Details

The end of report