CE

Declaration of Conformity

We, the undersigned, certify and declare under our sole responsibility that the product designated in this Declar ation complies with the follow ing specifications and bears CE mark in accordance with the provisions of the Electromagnetic Compatibility (EMC) Directive 2004/108/EC based on the following specifications:

Test Standards:
EN 55014-1: 2006/A1:2009/A2:2011
EN 61000-3-2:2014
EN 61000-3-3: 2013
EN 55014-2: 1997/A2:2008 Category II

IEC 61000-4-2:2008
IEC 61000-4-4:2012
IEC 61000-4-5:2014
IEC 61000-4-6:2013
IEC 61000-4-11:2004

Applicant	:	**Franke L.L.C.**
Address	:	P.O. Box 14511 | RAKIA-Al Hamra Industrial Zone | Ras Al Khaimah | United Arab Emirates (U.A.E.)
Declaration Product	:	Hand Dryer
Model Number	:	STRX220, EXOS220X, DRYX220
Product Series	:	N/A
Issue Date	:	24-FEB-2016

Representative's Name : Jennefer S. Reyes **/ Title :** Product Manager
Franke L.L.C.

Signature and Stamp :

Franke L.L.C.
فرانكي ش.ذ.م.م
FRANKE
P.O. Box 14511, RAK Industrial Zone, Phase 1, Ras Al Khaimah, U.A.E.

CERTIFICATION

Applicant	:	Franke L.L.C.
Address	:	P.O. Box 14511 | RAKIA-Al Hamra Industrial Zone | Ras Al Khaimah | United Arab Emirates (U.A.E.)
Manufacturer	:	Hokwang Industries Co., Ltd.
Address	:	No.131, Dingping Road, Ruifang Industries Area, Ruifang District, New Taipei City 224, Taiwan, R.O.C.
Description of EUT	:	Hand Dryer
Trade Name	:	
Model Number	:	STRX220, EXOS220X, DRYX220
Product Series	:	N/A
Type of Test	:	**EMC Directive 2004/108/EC for CE Marking**
Technical Standard	:	**Emission**
		EN 55014-1:2006/A1:2009/A2:2011
		EN 61000-3-2:2014
		EN 61000-3-3:2013
		Immunity
		EN 55014-2:1997/A2:2008 Category II
		IEC 61000-4-2:2008 / IEC 61000-4-6:2013
		IEC 61000-4-4:2012 / IEC 61000-4-11:2004
		IEC 61000-4-5:2014
Report Number	:	HA150435-CE
Receipt Date	:	20-FEB-2016
Issued Date	:	24-FEB-2016
Test Result	:	**Compliance**

The above equipment was tested by *HongAn TECHNOLOGY CO., LTD.*, for compliance with the requirement set forth in EMC Directive 2004/108/EC and the technical standards mentioned above.

Note :

1. The results of the test report relate only to the sample tested.

2. The test report shall not be reproduced without the written approval of *HongAn TECHNOLOGY CO., LTD.*

Approved by: Adam Yang

Adam Yang / Section Manager

CE

HongAn TECHNOLOGY CO., LTD.

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BSMI Registration No. : SL2-IN-E-0023,SL2-IS-E-0023, SL2-A1-E-0023,SL2-R1-E-0023, SL2-R2-E-0023,SL2-L1-E-0023

FCC Designation No. : TW1071

TAF Accreditation No. : 1163

VCCI Registration No. : R-2156, C-2329, T-219, G-696

EMC COMFTLIANCE TEST REFTORT

Technical Statement of Conformity

in accordance with the council directive 2004/108/EC

The Product

Equipment Under Test	:	Hand Dryer
Model Number	:	STRX220, EXOS220X, DRYX220
Product Series	:	N/A
Report Number	:	HA150435-CE
Issue Date	:	24-Feb-2016
Test Result	:	Compliance

is produced by

Franke L.L.C.

P.O. Box 14511 | RAKIA-Al Hamra Industrial Zone | Ras Al Khaimah | United Arab Emirates (U.A.E.)

HongAn TECHNOLOGY CO., LTD.

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FCC Designation No.：TW1071
TAF Accreditation No.：1163
VCCI Registration No.：R-2156, C-2329, T-219, G-696

Contents

Verification

Applicant： Franke L.L.C.

Manufacturer： Hokwang Industries Co., Ltd.

Equipment Under Test： Hand Dryer

Model No.： STRX220, EXOS220X, DRYX220

Product Series： N/A

Sample Received Date： 24-FEB-2016

Test Standards：

Emission:	Immunity:
☒ EN 55014-1:2006 +A1:2009 +A2:2011	☒ EN 55014-2:1997 +A1:2001 +A2:2008
☒ EN 61000-3-2:2014	☒ IEC 61000-4-2:2008
☒ EN 61000-3-3:2013	☒ IEC 61000-4-4:2012
	☒ IEC 61000-4-5:2014
	☒ IEC 61000-4-6:2013
	☒ IEC 61000-4-11:2004

Remark:

This report details the results of the testing carried out on one sample. This report shows the EUT is technically compliant with the EN 55014-1 and EN 55014-2 official requirements. This report applies to the above sample only and shall not be reproduced in part without written approval of *HongAn Technology Co., Ltd.*

Documented by: Mei Cheng **Date:** 24-FEB-2016

Mei Cheng / ADM. Dept. Staff

Tested by: Ray Hang **Date:** 24-FEB-2016

Ray Hang / ENG. Dept. Staff

Approved by: Adam Yang **Date:** 24-FEB-2016

Adam Yang / SEC. Manager

Summary of Test Result

Emission			
Test Standard	**Test Item**	**Test Result**	**Remark**
EN 55014-1	Continuous Disturbance (Terminal Voltages)	Pass	Highest Emission L: 0.55MHz, A.V.35.02dBuV, Margin -10.98 dB N: 0.16MHz, Q.P.56.52dBuV, Margin -8.82 dB
EN 55014-1	Continuous Disturbance – Disturbance Power Frequency range 30MHz to 300MHz (Note 1)	Pass	Highest Emission(30 to 300MHz) 86.52MHz, Q.P.30.37dBpW, Margin -19.23 dB Absorbing Clamp Position: 1.2 m
			Highest Emission(200 to 300MHz) 214.10MHz, Q.P.30.17dBpW, Margin -14.83 dB Absorbing Clamp Position: 1.1 m
EN 55014-1	Radiated Disturbance	N/A	According to manufacturer's choice, absorbing clamp measurement of 30MHz to 300MHz has been performed.
EN 61000-3-2	Harmonic	Pass	Refer to Page 22
EN 61000-3-3	Flicker	Pass	Refer to Page 24
Note 1: The EUT is deemed to comply in the frequency range from 30MHz to 1000MHz without testing Radiated Disturbance, since the manufacturer chose to perform absorbing clamp measurement of 30MHz to 300MHz, and fulfill all adequate conditions.			

Measurement Uncertainty – Emission

The following measurement uncertainty has been calculated for Emission Tests performed on the EUT as specified in CISPR 16-4-2:

Test Item	Uncertainty
Conducted Emission	± 4.20dB
Disturbance Power	± 4.57dB
Radiated Disturbance	± 5.39dB

This reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor of k = 2, providing a level of confidence of approximately 95%.

Summary of Test Result – Immunity

Immunity Classification of EUT based on EN55014-2: Category II				
Test Standard	**Test Item**	**Performance Criteria**	**Observed Result Class**	**Test Result**
IEC 61000-4-2	Electrostatic Discharge	B	A	Pass
IEC 61000-4-4	Electrical Fast Transient	B	A	Pass
IEC 61000-4-5	Surge	B	A	Pass
IEC 61000-4-6	Conducted Susceptibility	A	A	Pass
IEC 61000-4-11	Voltage Dips and Interruption	Dips 60% C	A	Pass
		Dips 30% C	A	
		Interruptions 100% C	B	

Measurement Uncertainty – Immunity

It has been demonstrated that the test equipments for the above Immunity Tests meet the specified requirements in the standard with at least a 95% confidence.

1 General Description

1.1 Description of EUT

Equipment Under Test	:	Hand Dryer
Model Number	:	STRX220, EXOS220X, DRYX220
Product Series	:	N/A
Applicant	:	Franke L.L.C.
Address of Applicant	:	P.O. Box 14511 | RAKIA-Al Hamra Industrial Zone | Ras Al Khaimah | United Arab Emirates (U.A.E.)
Manufacturer	:	Hokwang Industries Co., Ltd.
Address of Manufacturer	:	No.131, Dingping Road, Ruifang Industries Area, Ruifang District, New Taipei City 224, Taiwan, R.O.C.
Power Supply	:	AC 220-240V, 50/60Hz, 4.2-4.5A, 1000W
I/O Port	:	N/A
Data Cable	:	N/A
Description of EUT	:	**Dimensions :** 24 cm (L) X 15 cm (W) X 9 cm (H) **Position :** ☒Table-top / ☐Floor-standing **Highest Clock Frequency：**less than 30MHz. **Intended Function :** The EUT is a Hand Dryer.

1.2 Test Facility

All the Conducted and Radiated Emission Tests and Immunity Tests are performed at No. 15-1, Cweishuh Keng, Cweipin Village, Linkou, New Taipei City, Taiwan, R.O.C.

1.3 Test Instruments

1.3.1 Instruments Used for Emission Measurement

Instrument Name	Manufacture Mode	Model Number	Serial Number	Last Cal. Date	Next Cal. Date	Test Item
LISN	EMCO	3810/2NM	9702-1818	20-Mar-2015	20-Mar-2016	Conducted Emission
LISN	EMCO	3810/2NM	9702-1821	18-Aug-2015	18-Aug-2016	Conducted Emission
LISN	Rolf Heine Hochfrequenztechnik	NNB-4/32T	00001	18-Mar-2015	18-Mar-2016	Conducted Emission
RF Current Probe	FCC	F-33-4	53	29-May-2015	29-May-2016	Conducted Emission
Impedance Stabilization Network (ISN)	Schaffner	ISN T400	16832	01-Jun-2015	01-Jun-2016	Conducted Emission
EMI Receiver	R&S	ESCI	100931	17-Jul-2015	17-Jul-2016	Conducted Emission, Radiation Emission Disturbance Power
Spectrum	HP	8594EM	3746A00299	20-Aug-2015	20-Aug-2016	Disturbance Power
Absorbing Clamp	FCC	F-201-23MM	14	02-Jun-2015	02-Jun-2016	Disturbance Power
Spectrum Analyzer	ADVANTEST	R3172	101202158	08-Aug-2015	08-Aug-2016	Radiated Emission
Preamplifier	CHASE	CPA 9231A	0405	23-Aug-2015	23-Aug-2016	Radiated Emission
Bilog Antenna	TESEQ	CBL6111D	25769	25-Feb-2015	25-Feb-2016	Radiated Emission
Bilog Antenna	TESEQ	CBL6111D	38521	04-Jun-2015	04-Jun-2016	Radiated Emission
Harmonics /Flicker Module	EMC PARTNER	Harmonics-1000	HAR1000-38	19-Mar-2015	19-Mar-2016	Harmonics

※ The test equipments used are calibrated and can be traced to National ITRI and International Standards.

1.3.2 Instruments Used for Immunity Measurement

Instrument Name	Manufacture Mode	Model Number	Serial Number	Last Cal. Date	Next Cal. Date	Test Item
ESD Simulator	KeyTek	MZ-15/EC	9805460	30-Jul-2015	30-Jul-2016	ESD
Power Generator, Mains Coupler/ Decoupler	KeyTek	EMC Pro	0002255	24-Feb-2016	24-Feb-2017	EFT. Surge, Magnetic Field, Dip
Wide Band Amplifier	ifi	CMX50	D019-0200	17-Feb-2016	17-Feb-2017	RS,CS
Signal Generator	HP	HP8648C	3623A03457	11-Feb-2016	11-Feb-2017	RS,CS
Bilog Antenna	EMCO	3142	9710-1221	19-Feb-2016	19-Feb-2017	RS
CDN	FCC	FCC-801-M3-32A	2019	11-Feb-2016	11-Feb-2017	CS
CDN	FCC	FCC-801-M3-32A	20116	11-Feb-2016	11-Feb-2017	CS
EM Injection clamp	FCC	F-2031-23mm	337	12-Feb-2016	12-Feb-2017	CS
Magnetic Field Immunity Loop	FCC	F-1000-4-819 /10-L-1M	9953	24-Feb-2016	24-Feb-2017	MF

※ The test equipments used are calibrated and can be traced to National ITRI and International Standards.

1.4 Test Methodology

All Emission Tests were performed according to the procedures specified in EN 55014-1.

All Immunity Tests were performed according to the procedures specified in EN 55014-2.

1.5 Auxiliary Equipments

1.5.1 Provided by HongAn Technology Co., Ltd.

No.	Equipment	Model No.	Serial No.	EMC Approved	Brand	Description	
						Data Cable	Power Cable
01	Battery	WP12-12	N/A	CE Mark	KUNG LONG	N/A	N/A

1.5.2 Provided by the Manufacturer

N/A

1.6 Block Diagram

1.7 Identifying the Final Test Mode

1. Operation Mode

Note: After pre-test, we identified that the Operation Mode was most likely to cause maximum disturbance and most likely to be susceptible to disturbance. Therefore, the Final EMC Assessment was performed for the worst case.

1.8 Final Test Mode

Operation Mode

1.9 Condition of Power Supply

AC 230 V; 50 Hz

1.10 EUT Configuration

1. Setup the EUT as shown in Sec.1.6 Block Diagram
2. Turn on the power of all equipments.
3. Activate the selected Final Test Mode shown in Sec. 1.8.

1.11 Immunity Performance Criteria

1.11.1 Classification of EUT: Category II

1.11.2 Performance Criteria

Performance Criteria	Description
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.
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 or actual operating state or stored data is allowed.
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.

1.11.3 Performance Level specified by the manufacturer: N/A.

2 Continuous Disturbance – Terminal Voltages

2.1 Test Instruments

Refer to Sec. 1.3 Test Instruments.

2.2 Test Configurationand Procedure

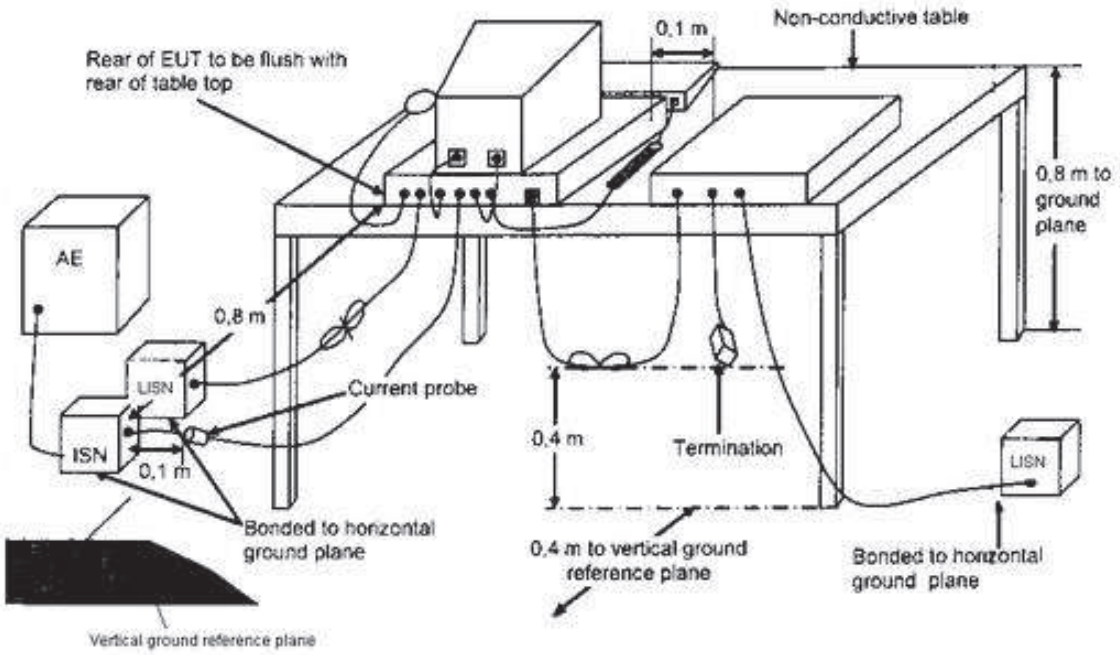


Table-top Equipment

- The EUT was placed on a non-conductive table which was 80 cm above the horizontal coupling plane. The rear of the EUT was 40 cm from the vertical coupling plane.
- The excess interface cables were folded at the cable center into a bundle no longer than 40 cm, so that the bundles were on the table.
- The EUT was connected to the main power through a L.I.S.N. This set up provided 50 ohm / 50 μH coupling impedance for the measuring equipment.
- All auxiliary equipment received power from a second L.I.S.N.
- The conducted emissions were measured between the Line Phase and the PE ground and between the Neutral Phase and the PE ground using an EMI Receiver.
- The values were recorded.

2.3 Terminal Voltage Limits for the Frequency Range 148.5kHz to 30MHz

Household Appliances and Equipment Causing Similar Disturbances and Regulating Controls Incorporating Semiconductor Devices

Frequency (MHz)	Mains Terminal		Load Terminal and Additional Terminals	
	Quasi-Peak dB(uV)	Average dB(uV)	Quasi-Peak dB(uV)	Average dB(uV)
0.15 to 0.50	66 to 56	59 to 46	80	70
0.50 to 5.0	56	46	74	64
5.0 to 30	60	50	74	64

Mains Terminals of Tools

Frequency (MHz)	☐ Rated Motor Power Not Exceeding 700W		☐ Rated Motor Power 700W-1000W		☐ Rated Motor Power Above 1000W	
	Quasi-Peak dB(uV)	Average dB(uV)	Quasi-Peak dB(uV)	Average dB(uV)	Quasi-Peak dB(uV)	Average dB(uV)
0.15 to 0.50	66 to 59	59 to 49	70 to 63	63 to 53	76 to 69	69 to 59
0.50 to 5.0	59	49	63	53	69	59
5.0 to 30	64	54	68	58	74	64

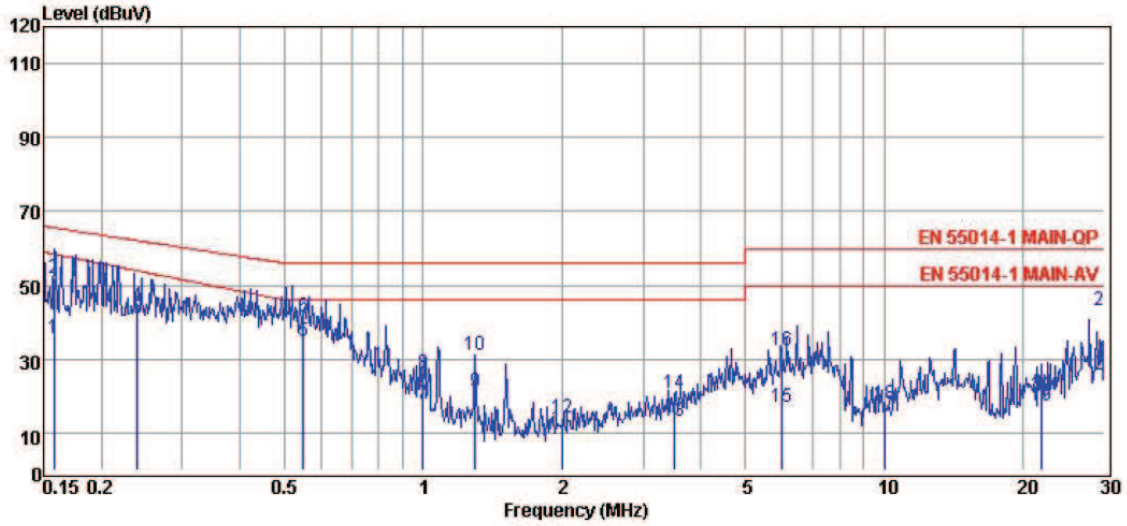
2.4 Test Result

PASS.

The final tests data are shown on following page(s).

Terminal Voltage Test Data

Test Date	:	24-FEB-2016	Power Line	:	Line
Temperature	:	25℃	Humidity	:	45%

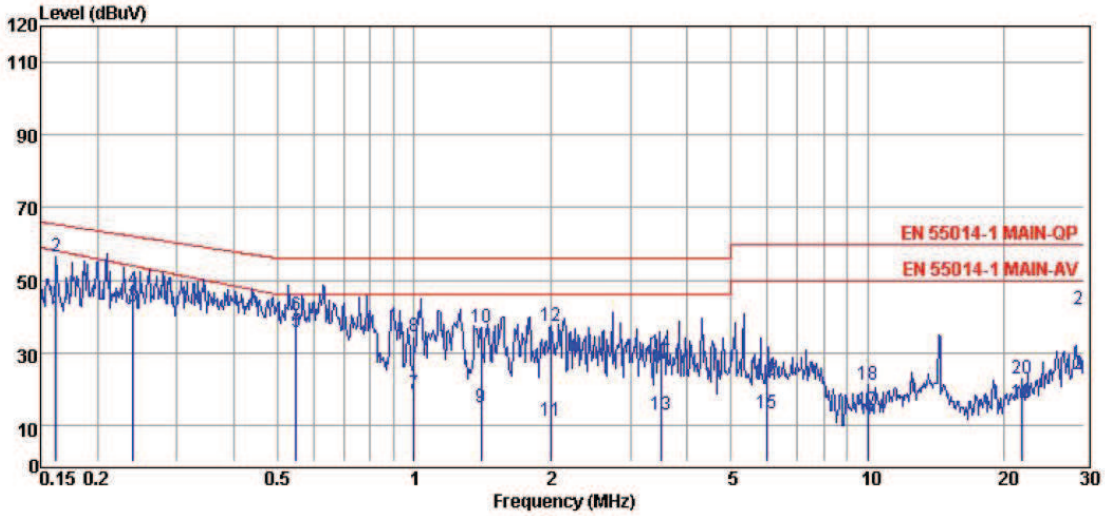


No.	Freq MHz	Reading dBµV	C.F dB	Result dBµV	Limit dBµV	Margin dB	Power Line	Remark
1	0.16	25.86	9.98	35.84	58.43	-22.59	LINE	Average
2	0.16	41.90	9.98	51.88	65.56	-13.68	LINE	QP
3	0.24	31.18	9.95	41.13	53.91	-12.78	LINE	Average
4	0.24	34.50	9.95	44.45	62.08	-17.63	LINE	QP
5	0.55	25.06	9.96	35.02	46.00	-10.98	LINE	Average
6	0.55	31.57	9.96	41.53	56.00	-14.47	LINE	QP
7	1.00	8.01	9.94	17.95	46.00	-28.05	LINE	Average
8	1.00	16.13	9.94	26.07	56.00	-29.93	LINE	QP
9	1.30	11.06	9.97	21.03	46.00	-24.97	LINE	Average
10	1.30	21.16	9.97	31.13	56.00	-24.87	LINE	QP
11	2.00	1.04	10.01	11.05	46.00	-34.95	LINE	Average
12	2.00	3.96	10.01	13.97	56.00	-42.03	LINE	QP
13	3.51	2.99	10.23	13.22	46.00	-32.78	LINE	Average
14	3.51	10.72	10.23	20.95	56.00	-35.05	LINE	QP
15	5.99	6.65	10.48	17.13	50.00	-32.87	LINE	Average
16	5.99	22.07	10.48	32.55	60.00	-27.45	LINE	QP
17	10.02	4.35	10.72	15.07	50.00	-34.93	LINE	Average
18	10.02	7.11	10.72	17.83	60.00	-42.17	LINE	QP
19	21.95	6.12	11.35	17.47	50.00	-32.53	LINE	Average
20	21.95	8.76	11.35	20.11	60.00	-39.89	LINE	QP
21	30.00	12.87	12.70	25.57	50.00	-24.43	LINE	Average
22	30.00	30.38	12.70	43.08	60.00	-16.92	LINE	QP

Remark：All readings are Quasi-Peak and Average values.

Terminal Voltage Test Data

Test Date	:	24-FEB-2016	Power Line	:	Neutral
Temperature	:	25℃	Humidity	:	45%



No.	Freq MHz	Reading dBµV	C.F dB	Result dBµV	Limit dBµV	Margin dB	Power Line	Remark
1	0.16	29.31	9.97	39.28	58.14	-18.86	NEUTRAL	Average
2	0.16	46.55	9.97	56.52	65.34	-8.82	NEUTRAL	QP
3	0.24	32.80	9.95	42.75	53.91	-11.16	NEUTRAL	Average
4	0.24	37.50	9.95	47.45	62.08	-14.63	NEUTRAL	QP
5	0.55	25.69	9.96	35.65	46.00	-10.35	NEUTRAL	Average
6	0.55	30.18	9.96	40.14	56.00	-15.86	NEUTRAL	QP
7	1.00	8.85	9.93	18.78	46.00	-27.22	NEUTRAL	Average
8	1.00	24.72	9.93	34.65	56.00	-21.35	NEUTRAL	QP
9	1.40	5.15	9.96	15.11	46.00	-30.89	NEUTRAL	Average
10	1.40	27.10	9.96	37.06	56.00	-18.94	NEUTRAL	QP
11	2.00	1.06	10.00	11.06	46.00	-34.94	NEUTRAL	Average
12	2.00	27.45	10.00	37.45	56.00	-18.55	NEUTRAL	QP
13	3.51	2.80	10.21	13.01	46.00	-32.99	NEUTRAL	Average
14	3.51	19.82	10.21	30.03	56.00	-25.97	NEUTRAL	QP
15	5.99	2.65	10.44	13.09	50.00	-36.91	NEUTRAL	Average
16	5.99	11.96	10.44	22.40	60.00	-37.60	NEUTRAL	QP
17	10.02	3.46	10.65	14.11	50.00	-35.89	NEUTRAL	Average
18	10.02	10.69	10.65	21.34	60.00	-38.66	NEUTRAL	QP
19	21.95	5.19	11.17	16.36	50.00	-33.64	NEUTRAL	Average
20	21.95	11.77	11.17	22.94	60.00	-37.06	NEUTRAL	QP
21	30.00	11.64	12.45	24.09	50.00	-25.91	NEUTRAL	Average
22	30.00	29.69	12.45	42.14	60.00	-17.86	NEUTRAL	QP

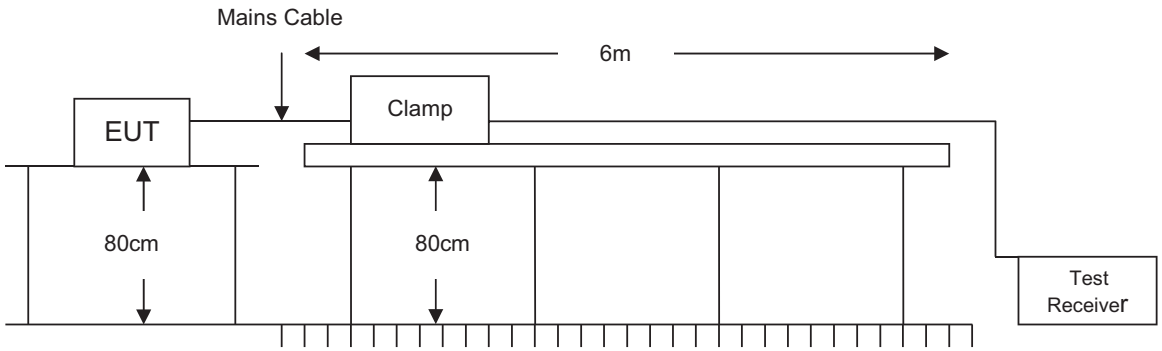
Remark：All readings are Quasi-Peak and Average values.

3 Continuous Disturbance - Disturbance Power

3.1 Test Instruments

Refer to Sec. 1.3 Test Instruments.

3.2 Test Configurationand Procedure



- The EUT was placed on a non-conductive table which was at least 40 cm away from other metallic objects and the lead to be measured on is stretched in a straight line for a distance sufficient to accommodate the absorbing clamp, and to permit the necessary measuring adjustment of position for tuning. The clamp is placed around the lead so as to measure a quantity proportional to the disturbance power on the lead.
- The clamp was moved along the lead until the maximum value was found between a position adjacent to the appliance and a distance of about a half-wavelength from it.
- The straight portion of the lead to be measured on was extended to about 6 m long, in order to allow at any time the positioning of the absorbing clamp and a possible second clamp for additional isolation.

3.3 Disturbance Power Limit for the Frequency Range 30MHz to 300MHz

	☒ Household and Similar Appliances		Tools					
Frequency			☐ Rated Motor Power Not Exceeding 700W		☐ Rated Motor Power 700W-1000W		☐ Rated Motor Power Above 1000W	
MHz	Quasi-Peak dB(pW)	Average dB(pW)	Quasi-Peak dB(pW)	Average dB(pW)	Quasi-Peak dB(pW)	Average dB(pW)	Quasi-Peak dB(pW)	Average dB(pW)
30 to 300	45 to 55	35 to 45	45 to 55	35 to 45	49 to 59	39 to 49	55 to 65	45 to 55

3.4 Margin when Performing Disturbance Power Measurement in the Frequency Range 200MHz to 300MHz

	☒ Household and Similar Appliances		Tools					
Frequency			☐ Rated Motor Power Not Exceeding 700W		☐ Rated Motor Power 700W-1000W		☐ Rated Motor Power Above 1000W	
MHz	Quasi-Peak dB(pW)	Average dB(pW)	Quasi-Peak dB(pW)	Average dB(pW)	Quasi-Peak dB(pW)	Average dB(pW)	Quasi-Peak dB(pW)	Average dB(pW)
200 to 300	0 to 10dB	-	0 to 10dB	-	0 to 10dB	-	0 to 10dB	-
Note 1 This table only applies if specified in EN55014-1 Clause 4.1.2.3.2. Note 2 The measured result at a particular frequency shall be less than the relevant limit minus the corresponding margin (at that frequency).								

3.5 Test Result

PASS.

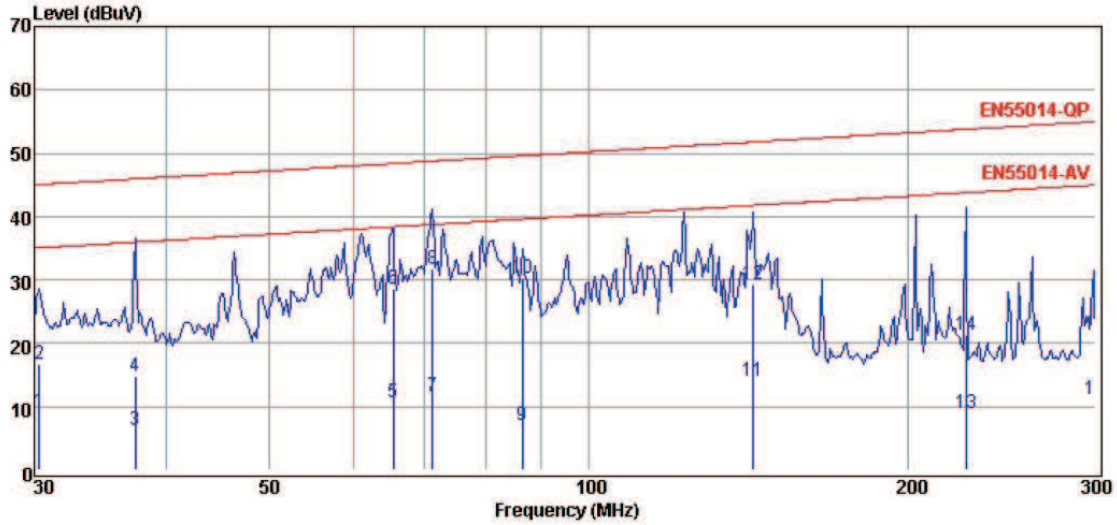
The final tests data are shown on following page(s).

NOTE: The Appliance is deemed to comply in the frequency range from 300MHz to 1000MHz, since both of the following conditions (1) and (2) are fulfilled:

1. All emission readings from the EUT are lower than the applicable limits(Clause 3.3) reduced by the margin (Clause 3.4).
2. The maximum clock frequency is less than 30MHz.

Disturbance Power Test Data

Test Date	:	24-FEB-2016	Frequency	:	30MHz to 300MHz
Temperature	:	25℃	Humidity	:	45%

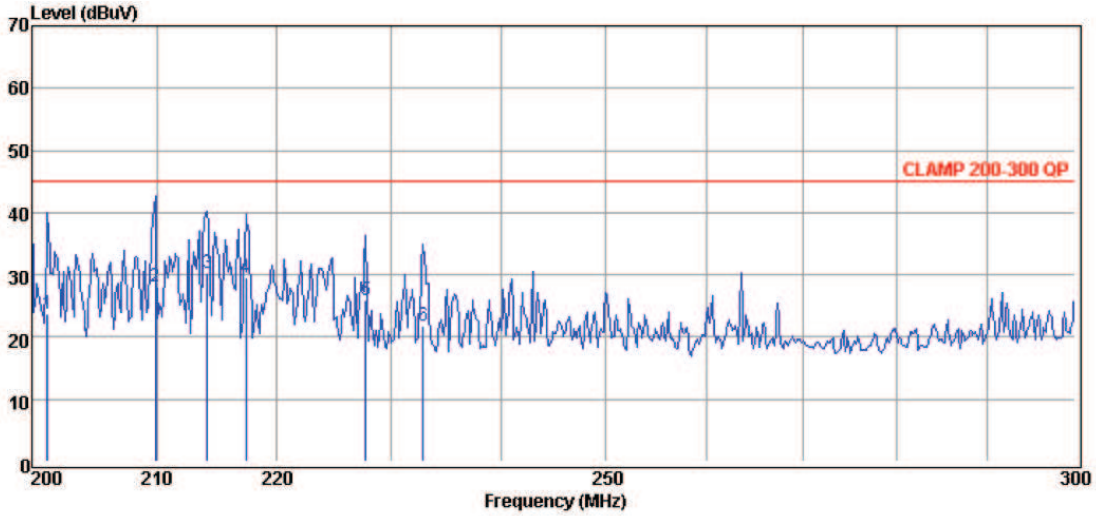


No.	Freq	Reading	C.F	Result	Limit	Margin	Distance	Remark
	MHz	dBμV	dB	dBpW	dBpW	dB	m	
1	30.35	4.39	4.79	9.18	35.05	-25.87	4.5	Average
2	30.35	11.89	4.79	16.68	45.05	-28.37	4.5	QP
3	37.34	2.62	3.79	6.41	35.95	-29.54	3.6	Average
4	37.34	10.98	3.79	14.77	45.95	-31.18	3.6	QP
5	65.33	8.03	2.73	10.76	38.38	-27.62	2.5	Average
6	65.33	25.87	2.73	28.60	48.38	-19.78	2.5	QP
7	71.14	9.67	1.89	11.56	38.75	-27.19	1.9	Average
8	71.14	29.82	1.89	31.71	48.75	-17.04	1.9	QP
9	86.52	4.55	2.60	7.15	39.60	-32.45	1.2	Average
10	86.52	27.77	2.60	30.37	49.60	-19.23	1.2	QP
11	142.93	12.95	1.12	14.07	41.78	-27.71	1.1	Average
12	142.93	28.23	1.12	29.35	51.78	-22.43	1.1	QP
13	226.53	8.47	0.60	9.07	43.78	-34.71	0.8	Average
14	226.53	20.72	0.60	21.32	53.78	-32.46	0.8	QP
15	300.00	10.22	0.81	11.03	45.00	-33.97	0.2	Average
16	300.00	20.49	0.81	21.30	55.00	-33.70	0.2	QP

Remark：All readings are Quasi-Peak values.

Disturbance Power with Additional Margin Test Data

Test Date	:	24-FEB-2016	Frequency	:	200MHz to 300MHz
Temperature	:	25℃	Humidity	:	45%



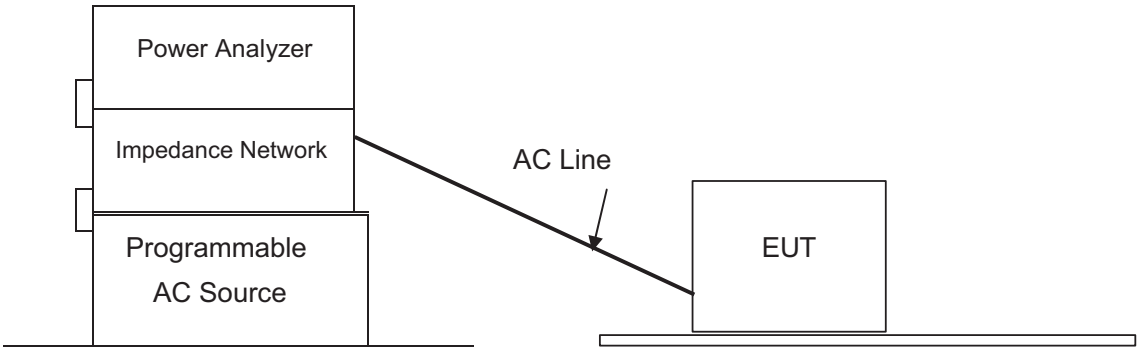
No.	Freq	Reading	C.F	Result	Limit	Margin	Distance	Remark
	MHz	dBµV	dB	dBpW	dBpW	dB	m	
1	201.22	23.00	0.75	23.75	45.00	-21.25	2.2	QP
2	209.80	27.47	0.70	28.17	45.00	-16.83	1.5	QP
3	214.10	29.49	0.68	30.17	45.00	-14.83	1.1	QP
4	217.34	28.93	0.66	29.59	45.00	-15.41	1.8	QP
5	227.71	25.45	0.58	26.03	45.00	-18.97	0.9	QP
6	232.84	21.26	0.53	21.79	45.00	-23.21	0.6	QP

4 Harmonic Current Emission Measurement

4.1 Test Instruments

Refer to Sec. 1.3 Test Instruments.

4.2 Test Configuration and Procedure



- The EUT was set in series with the Power Analyzer through an Impedance Network for the measurement of harmonic currents.
- The supply voltage and frequency setting on the Programmable AC Source was programmed as the rated voltage and frequency of the EUT.
- Classify the EUT class in accordance with the IEC61000-3-2 for the purpose of harmonic current limitation. The measurement was automatically performed by test software. The test result was collected and analyzed by the computer.

4.3 EUT Operation Condition

Environment Condition

Temperature	Humidity	Atmospheric Pressure
25℃	45%RH	1008mbar

4.4 Test Limit

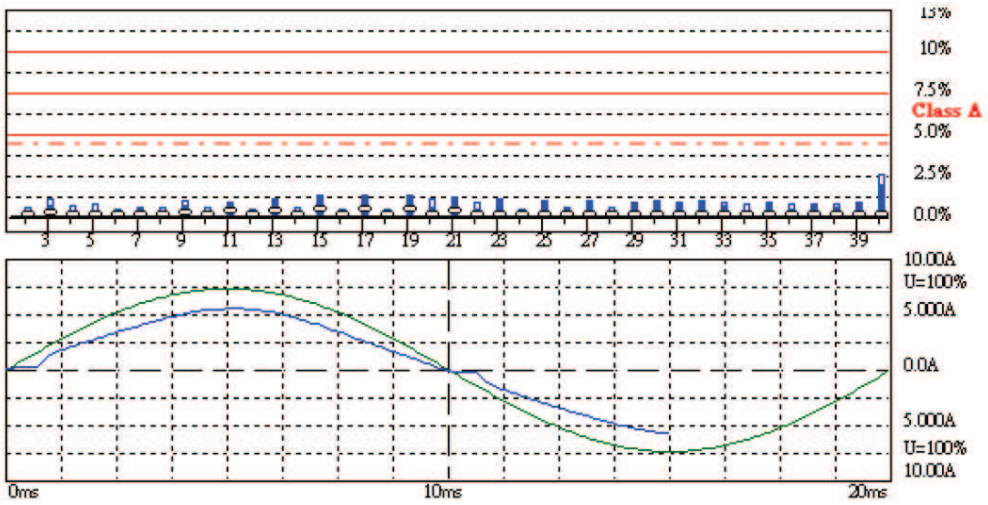
Class A Equipment

Harmonic Order (n)	Maximum permissible harmonic current (A)
Odd harmonics	
3	2.30
5	1.14
7	0.77
9	0.40
11	0.33
13	0.21
15 ≤ n ≤ 39	0.15 * 15 / n
Even harmonics	
2	1.08
4	0.43
6	0.30
8 ≤ n ≤ 40	0.23 * 8 / n

4.5 Test Result

PASS.

The measured result is shown on following page(s).



Urms =	227.0V	Freq =	50.000	Range:	10 A
Irms =	3.696A	Ipk =	5.747A	cf =	1.555
P =	836.6W	S =	838.9VA	pf =	0.997
THDi =	7.92 %	THDu =	0.10 %	Class A	

Test - Time : 10min (100 %)

Test completed, Result: PASSED

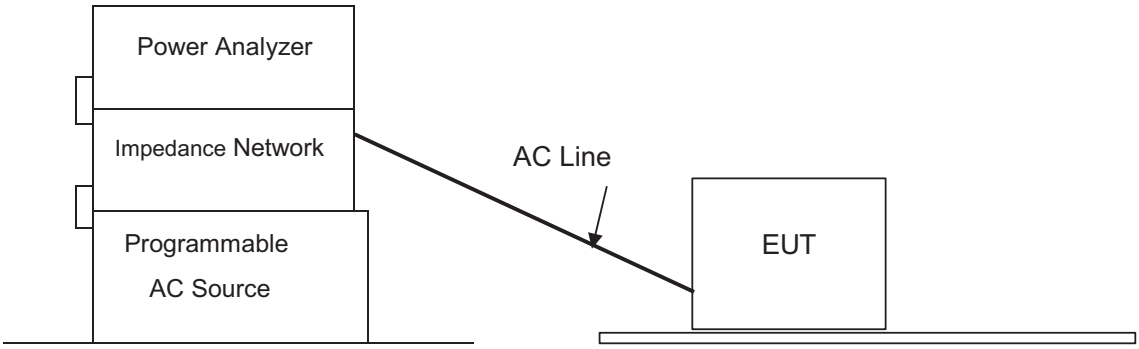
Order	Freq. [Hz]	Iavg [A]	Irms [A]	Imax [A]	Limit [A]	Status
1	50	1.2001	3.6847	3.7012		
2	100	0.0060	0.0134	0.0952	1.0800	
3	150	0.0956	0.2594	0.4803	2.3000	
4	200	0.0011	0.0037	0.0531	0.4300	
5	250	0.0209	0.0574	0.1447	1.1400	
6	300	0.0001	0.0031	0.0183	0.3000	
7	350	0.0155	0.0458	0.0830	0.7700	
8	400	0.0001	0.0043	0.0232	0.2300	
9	450	0.0155	0.0476	0.0739	0.4000	
10	500	0.0000	0.0049	0.0177	0.1840	
11	550	0.0142	0.0458	0.0476	0.3300	
12	600	0.0000	0.0049	0.0110	0.1533	
13	650	0.0118	0.0403	0.0409	0.2100	
14	700	0.0000	0.0049	0.0122	0.1314	
15	750	0.0103	0.0354	0.0354	0.1500	
16	800	0.0000	0.0049	0.0085	0.1150	
17	850	0.0090	0.0311	0.0317	0.1324	
18	900	0.0000	0.0055	0.0073	0.1022	
19	950	0.0076	0.0275	0.0281	0.1184	
20	1000	0.0000	0.0073	0.0183	0.0920	
21	1050	0.0060	0.0238	0.0238	0.1071	
22	1100	0.0001	0.0061	0.0128	0.0836	
23	1150	0.0005	0.0195	0.0201	0.0978	
24	1200	0.0000	0.0049	0.0055	0.0767	
25	1250	0.0004	0.0165	0.0171	0.0900	
26	1300	0.0000	0.0043	0.0055	0.0708	
27	1350	0.0002	0.0134	0.0140	0.0833	
28	1400	0.0000	0.0037	0.0067	0.0657	
29	1450	0.0001	0.0116	0.0122	0.0776	
30	1500	0.0000	0.0098	0.0116	0.0613	
31	1550	0.0001	0.0104	0.0104	0.0726	
32	1600	0.0000	0.0092	0.0098	0.0575	
33	1650	0.0000	0.0085	0.0098	0.0682	
34	1700	0.0000	0.0031	0.0073	0.0541	
35	1750	0.0000	0.0085	0.0092	0.0643	
36	1800	0.0000	0.0037	0.0067	0.0511	
37	1850	0.0000	0.0079	0.0085	0.0608	
38	1900	0.0000	0.0037	0.0067	0.0484	
39	1950	0.0000	0.0079	0.0092	0.0577	
40	2000	0.0004	0.0171	0.0226	0.0460	

5 Voltage Fluctuations and Flicker Measurement

5.1 Test Instruments

Refer to Sec. 1.3 Test Instruments.

5.2 Test Configuration and Procedure



- The EUT was set in series with the Power Analyzer through an Impedance Network for the measurement of Flicker Voltage.
- The supply voltage and frequency setting on the Programmable AC Source was programmed as the rated voltage and frequency of the EUT.
- The measurement was automatically performed by test software. The test result was collected and analyzed by the computer.

5.3 EUT Operation Condition

Environment Condition

Temperature	Humidity	Atmospheric Pressure
25℃	45%RH	1008mbar

5.4 Test Limit

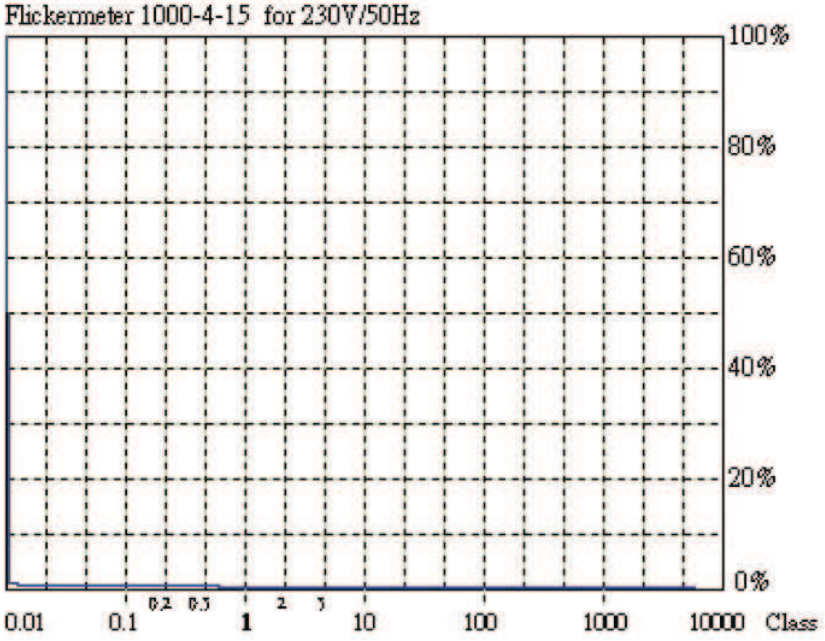
Test Item	Limit	Remark
P_{st}	1.0	P_{st} means short-term flicker indicator. T_p=10 min
P_{lt}	0.65	P_{lt} means long-term flicker indicator. T_p=2 hrs
d_t (%)	3.3	For more than 500ms
d_{max} (%)	4	d_{max} means relative maximum voltage change.
d_c (%)	3.3	d_c means relative steady-state voltage change.

5.5 Test Result

PASS.

The measured result is shown on following page(s).

Flickermeter 1000-4-15 for 230V/50Hz



Actual Flicker (Fli):	**0.00**
Short-term Flicker (Pst):	**0.23**
Limit (Pst):	1.00
Long-term Flicker (Plt):	**0.23**
Limit (Plt):	0.65
Maximum Relative Volt. Change (dmax):	**1.21%**
Limit (dmax):	4.00%
Relative Steady-state Voltage Change (dc):	**0.77%**
Limit (dc):	3.30%
Maximum Interval exceeding 3.30% (dt):	**0.00ms**
Limit (dt>Lim):	500ms

```
Urms =  225.2V  Freq =  50.000  Range:  10 A
Irms =  3.667A  Ipk  =  5.708A  cf    =  1.557
P    =  823.1W  S    =  825.8VA pf    =  0.997

Test - Time :   1 x 10min = 10min       ( 100 %)

LIN (Line Impedance Network) :   L: 0.24ohm +j0.15ohm N: 0.16ohm +j0.10ohm

Limits :        Plt  :  0.65    Pst   : 1.00
                dmax :  4.00 %  dc    : 3.30 %
                dtLim:  3.30 %  dt>Lim: 500ms

Test completed, Result: PASSED

Plt  =  0.227

        Pst     dmax    dc      dt>Lim
                [%]     [%]     [ms]
1       0.227   1.210   0.770   0.000
```

6 Electrostatic Discharge Immunity Test

6.1 Test Instruments

Refer to Sec. 1.3 Test Instruments.

6.2 Test Configuration and Procedure

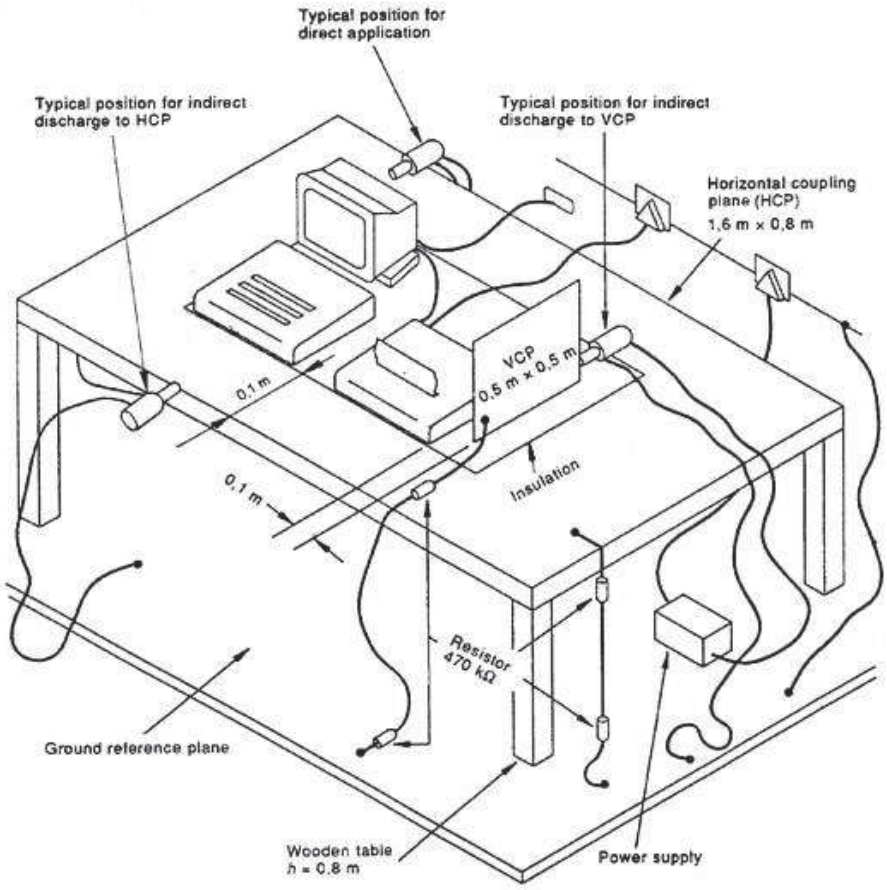


Table-top Equipment

- The EUT was located on a 0.8 m high wooden table standing on the ground reference plane with a 1.6 * 0.8 m horizontal coupling plane on the top. The EUT and cables was isolated from the coupling plane by an insulating support 0.5 mm thick.
- In Contact Discharge, the EUT was exposed to minimum 200 discharges, 100 each at negative and positive polarity on the selected test points (the selected test points were marked with red labels on the EUT)
- In Air Discharge, the EUT exposed to minimum of 10 single discharges on the selected test points.
- The result was observed and analyzed.

6.3 Test Result

6.3.1 Environment Condition

Temperature	Humidity	Atmospheric Pressure
25℃	45%RH	1008mbar

6.3.2 Observation of Direct Discharge

Test Points: 1. Surface of Case. 2. Junction of Case.

Type of Discharge	Test Specifications				Performance Required by EN55014-2	Observed Result	Verdict
	Test Level	Polarity	Test Point	Number of discharge			
Air Discharge	8 (kV)	±	1~2	20/ per point	B	A	Pass
Contact Discharge	4 (kV)	±	1~2	20/ per point	B	A	Pass
Remark	1. No temporary degradation or less of function has been observed throughout the entire time interval of air discharge. 2. No temporary degradation or less of function has been observed throughout the entire time interval of contact discharge.						
Note	The selected points were marked with red labels on the EUT.						

6.3.3 Observation of Indirect Discharge

Test Points: 1. Front Side. 2. Rear Side. 3. Left Side. 4. Right Side.

Type of Discharge	Test Specifications				Performance Required by EN55014-2	Observed Result	Verdict
	Test Level	Polarity	Test Point	Number of discharge			
HCP Application	4 (kV)	±	1~4	20/ per point	B	A	Pass
VCP Application	4 (kV)	±	1~4	20/ per point	B	A	Pass
Remark	1. No temporary degradation or less of function has been observed throughout the entire time interval of HCP application. 2. No temporary degradation or less of function has been observed throughout the entire time interval of VCP application.						
Note	The selected points were marked with red labels on the EUT.						

PASS

The test result shows that the EUT compliant with the test requirement specified in EN 55014-2.

7 Electrical Fast Transient/ Burst Immunity Test

7.1 Test Instruments

Refer to Sec. 1.3 Test Instruments.

7.2 Test Configuration and Procedure

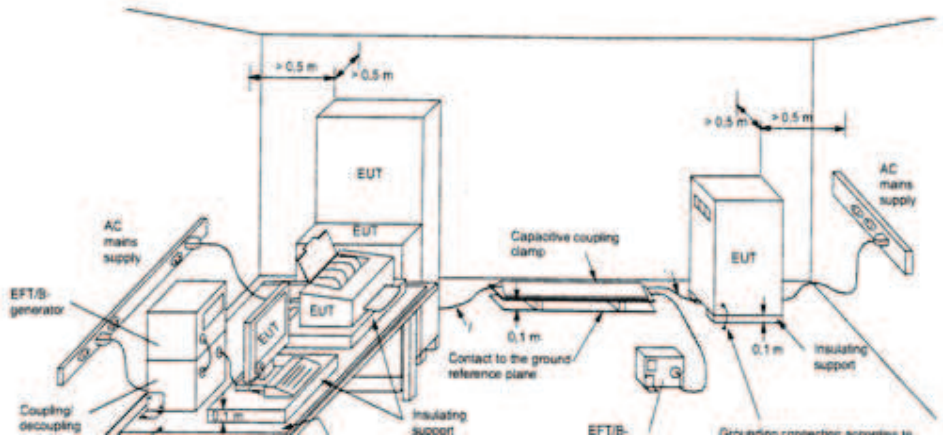


Table-top Equipment

- The EUT was placed on a table of 0.8 m height above the 1 * 1 m metallic ground reference plane, which projected beyond the EUT by at least 0.1 m on all sides.
- The ground plane was connected to the protective earth.
- The distance between the EUT and all other conductive structures, except the ground plane beneath the EUT was more than 0.5 m.
- The length of the signal and power lies between the coupling device and the EUT was 0.5 m.
- All cables to the EUT were placed on the insulation support 0.1 m above the ground reference plane.
- The EUT was connected to the power mains through a coupling device that directly coupled the EFT interference signal. Each of the Line, Neutral and Protective Earth conductors was injected with burst for 1 minute. The test time was broken down into six 10 s bursts separated by a 10 s pause for avoiding synchronization. Both voltage polarities were applied for each test level.
- Operating condition was shown on the monitor and observed.

7.3 Test Result

7.3.1 Environment Condition

Temperature	Humidity	Atmospheric Pressure
25℃	45%RH	1008mbar

7.3.2 Observation of A.C Power Port

Coupling Selection	Test Specifications				Performance Required by EN55014-2	Observed Result	Verdict
	Voltage (kV)	Test Duration (Sec)	Repetition Rate (kHz)	Tr/ Td (nS)			
L	±1	120	5	5/50	B	A	Pass
N	±1	120	5	5/50	B	A	Pass
PE	±1	120	5	5/50	B	A	Pass
L + N	±1	120	5	5/50	B	A	Pass
L + PE	±1	120	5	5/50	B	A	Pass
N + PE	±1	120	5	5/50	B	A	Pass
L + N +PE	±1	120	5	5/50	B	A	Pass
Remark	No temporary degradation or loss of function has been observed throughout the entire test.						

7.3.3 Observation of I/O, communication ports (Applicable only to cable length >3m)

There is no I/O and communication cable greater than 3 meters long; therefore, no test has been required.

PASS

The test result shows that the EUT compliant with the test requirement specified in EN 55014-2.

8 Surge Immunity Test

8.1 Test Instruments

Refer to Sec. 1.3 Test Instruments.

8.2 Test Configuration and Procedure

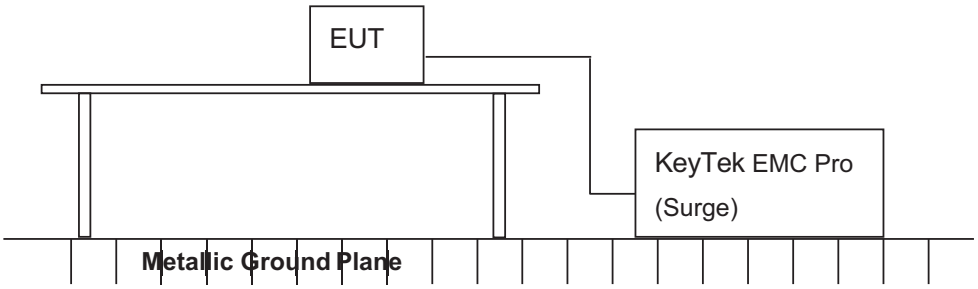


Table-top Equipment

- The EUT was placed on a table of 0.8 m height above the 1 * 1 m metallic ground reference plane, which projected beyond the EUT by at least 0.1 m on all sides.
- The ground plane was connected to the protective earth.
- The length of power cord between the coupling device and the EUT is less than 2 m (provided by the manufacturer).
- The EUT was connected to the power mains through a coupling device that directly couples the Surge interference signal. The surge noise was applied synchronized to the voltage phase at the zero crossing and the peak value of the AC voltage wave (positive and negative).
- The surges were applied line to line and line(s) to earth. When testing line to earth the test voltage was applied successively between each of the lines and earth. Steps up to the test level specified increased the test voltage. All lower levels including the selected test level were tested. The polarity of each surge level included positive and negative test pulses.
- Operating condition was shown on the monitor and observed.

8.3 Test Result

8.3.1 Environment Condition

Temperature	Humidity	Atmospheric Pressure
25℃	45%RH	1008mbar

8.3.2 Observation of Power Supply Port

Coupling Selection	Test Specifications			Performance Required by EN55014-2	Observed Result	Verdict
	Voltage (kV)	Min. of Surge at Each Polarity	Repetition Rate (per min)			
L ▶ N	±1	5	1	B	A	Pass
L ▶ PE	± 2	5	1	B	A	Pass
N ▶PE	± 2	5	1	B	A	Pass
Remark	No temporary degradation or loss of function has been observed throughout the entire test.					
Note	The Voltage changes occur at 0º crossover point(Phase Shifting:0º,180º,360º)					

PASS

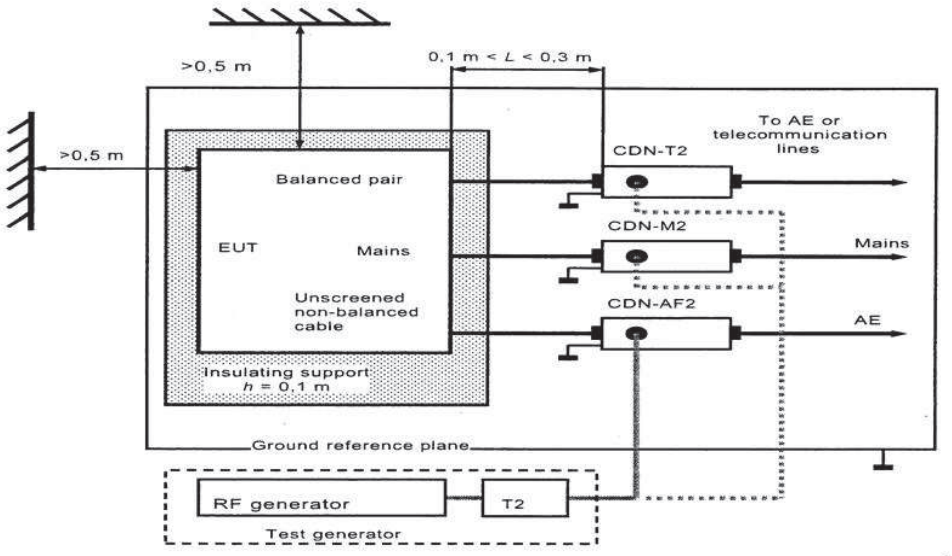
The test result shows that the EUT compliant with the test requirement specified in EN 55014-2.

9 Radio-frequency, Conducted Disturbances Immunity Test

9.1 Test Instruments

Refer to Sec. 1.3 Test Instruments.

9.2 Test Configuration and Procedure



- The EUT was placed on an insulating support of 0.1 m height above a ground reference plane. All cables exiting the EUT was supported at a height of 30 mm above the ground reference plane.
- The EUT was connected to the power mains through a Coupling and Decoupling Networks (CDN).
- The CDN was located 0.3 m from the EUT as indicated in the diagram above.
- The test was performed with the test generator connected to each of the CDN in turn while the other non-excited RF input ports of the coupling devices were terminated by a 50 ∧ terminator.
- The conducted disturbance was applied on the EUT from 150 kHz to 80 MHz using the signal levels established during the setting process. .
- Operating condition was shown on the monitor and observed.

9.3 Test Result

9.3.1 Environment Condition

Temperature	Humidity	Atmospheric Pressure
25℃	45%RH	1008mbar

9.3.2 Observation of Test on A.C. Power Port

Type of Modulation	Test Specifications			Performance Required by EN55014-2	Observed Result	Verdict
	Voltage Level (emf) U_0	Frequency Range	Modulation			
Amplitude Modulation	3V/ 130dBμV	0.15 to 230 MHz	80%, 1kHz, sinusoidal	A	A	Pass
Remark	No temporary degradation or loss of function has been observed throughout the entire test.					

9.3.3 Observation of I/O, communication ports (Applicable only to cable length >3m)

There was no I/O and communication cable longer than 3 meter; therefore, no test has been required.

PASS

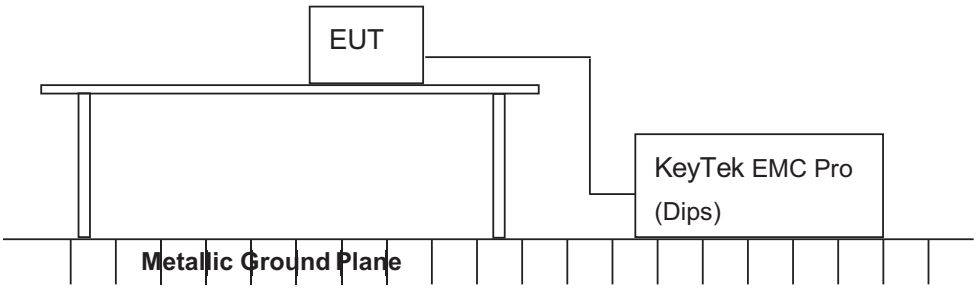
The test result shows that the EUT compliant with the test requirement specified in EN 55014-2.

10 Voltage Dips, Short Interruptions Immunity Test

10.1 Test Instruments

Refer to Sec. 1.3 Test Instruments.

10.2 Test Configuration and Procedure



- The EUT was tested with (Ⅰ) >95% voltage dip of supplied voltage with a duration of 10 ms (Ⅱ) 30% voltage dip of supplied voltage with duration 500 ms (Ⅲ) A 95% voltage interruption of supplied voltage with duration of 5000 ms,
- For each selected combination of test level and duration with a sequence of three dips / interruptions with intervals of 10 s.
- For Voltage Dips, changes in supply voltage occurred at zero crossings of the voltage.
- For Short Interruptions, changes in supply voltage also occurred at zero crossings of the voltage.
- The performance of the EUT was monitored and recorded.

10.3 Test Result

10.3.1 Environment Condition

Temperature	Humidity	Atmospheric Pressure
25℃	45%RH	1008mbar

10.3.2 Observation of Power Supply Port

Voltage Dips

Voltage Reduction (%)	Test Specifications			Performance Required by EN 55014-2	Observed Result	Verdict
	No. of Periods	No. of Reductions at Each Duration	Interval between Duration (sec.)			
60	10	3	≥ 10	C	A	Pass
30	25	3	≥ 10	C	A	Pass
Remarks	1. No temporary degradation or loss of function has been observed throughout the entire test. 2. No temporary degradation or loss of function has been observed throughout the entire test.					

Voltage Interruptions

Voltage Reduction (%)	Test Specifications			Performance Required by EN 55014-2	Observed Result	Verdict
	No. of Periods	No. of Reductions at Each Duration	Interval between Duration (sec.)			
100	0.5	3	≥ 10	C	B	Pass
Remark	When testing Interruption on all phase shifting, the EUT temporarily lost its function. After testing, it was self-recoverable.					

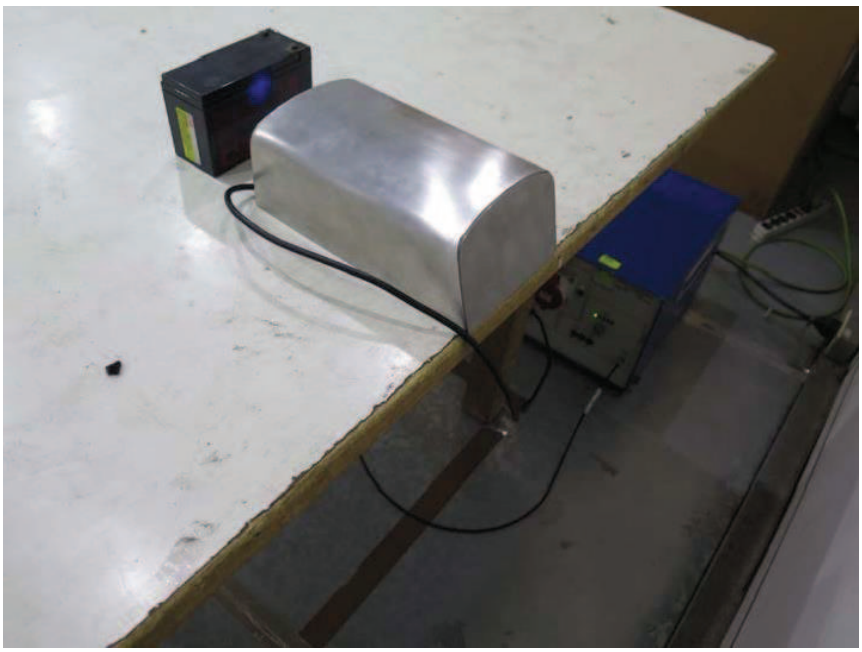
PASS

The test result shows that the EUT compliant with the test requirement specified in EN 55014-2.

11 Photographs of Test

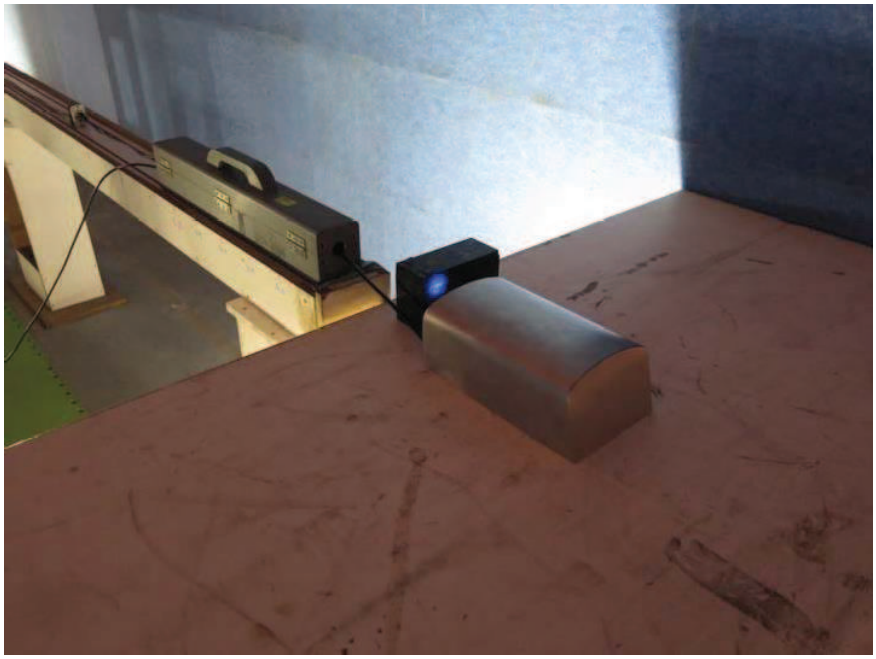
11.1 Continuous Disturbance – Terminal Voltages Test

Front View



Rear View

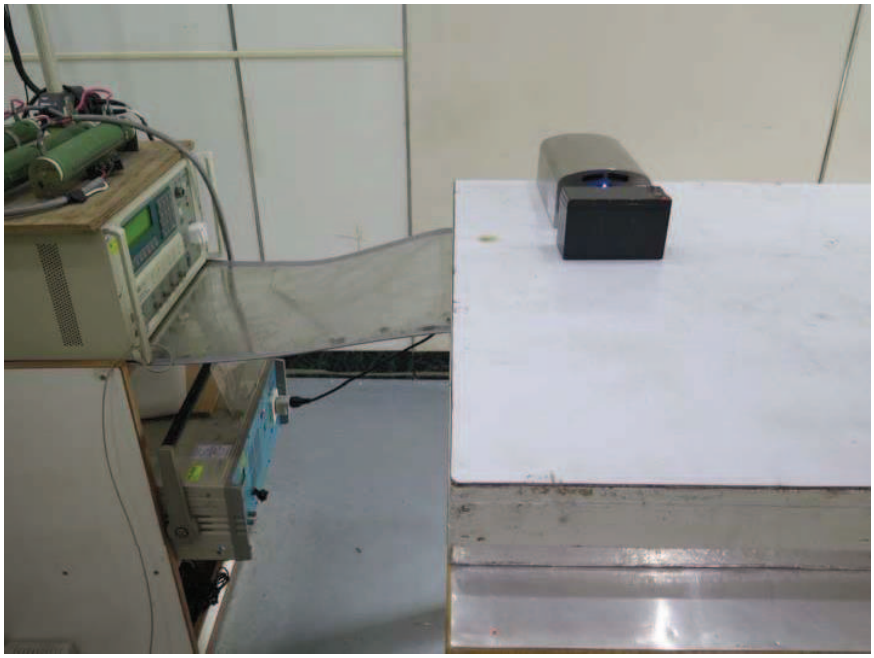
11.2 Continuous Disturbance – Disturbance Power



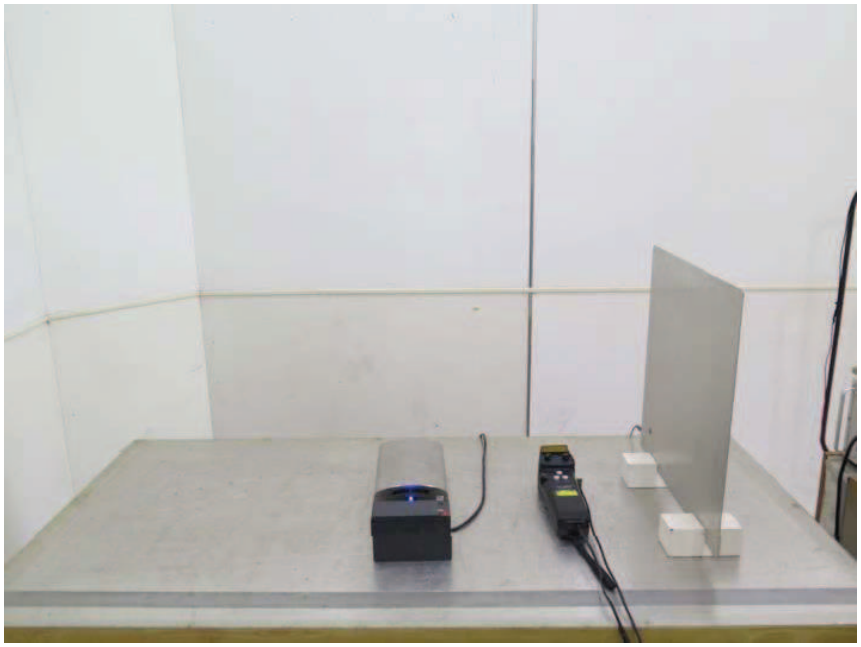
Front View

Rear View

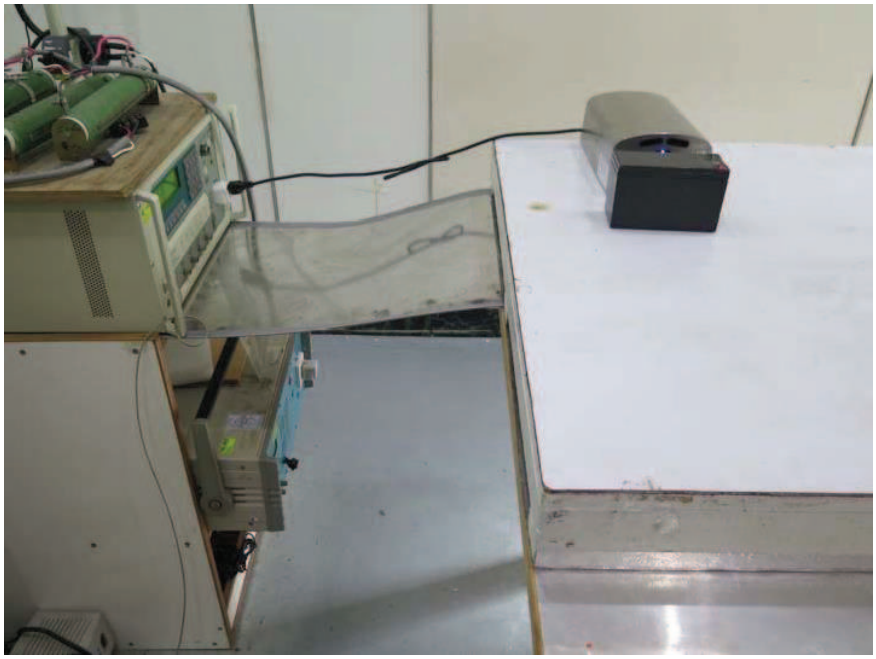
11.3 Harmonic Current & Voltage Fluctuations and Flicker Measurement



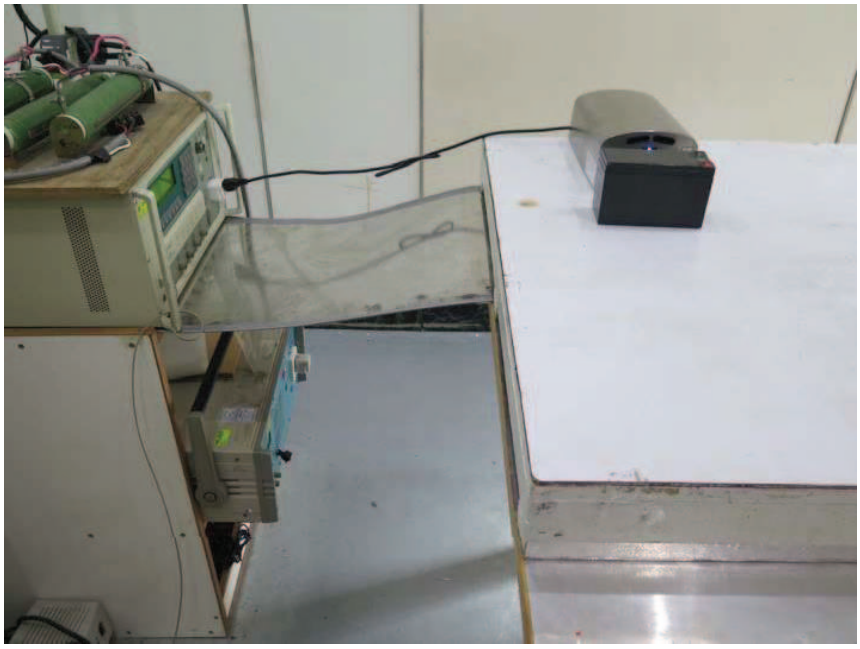
11.4 Electrostatic Discharge Immunity Test



11.5 Electrical Fast Transient / Burst Immunity Test

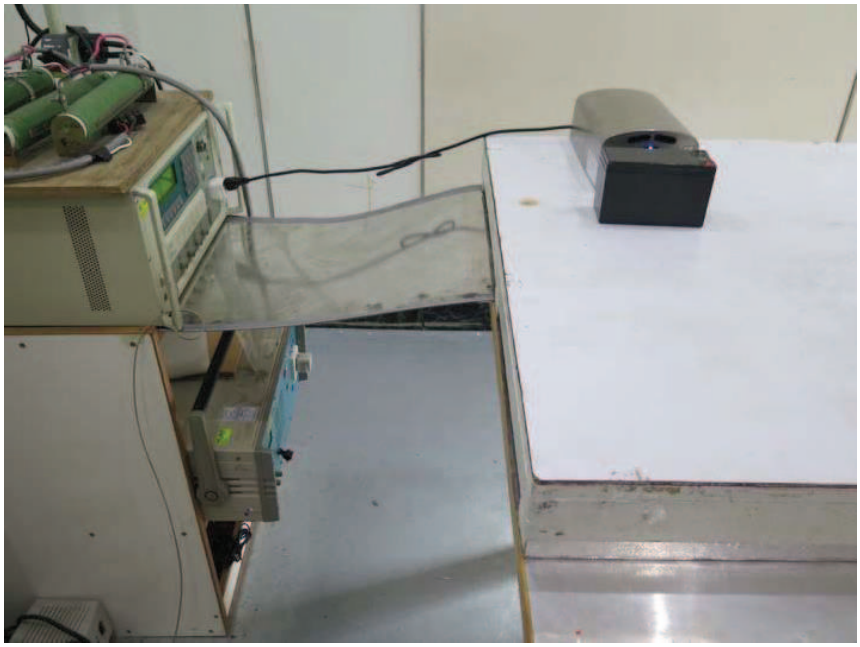


11.6 Surge Immunity Test



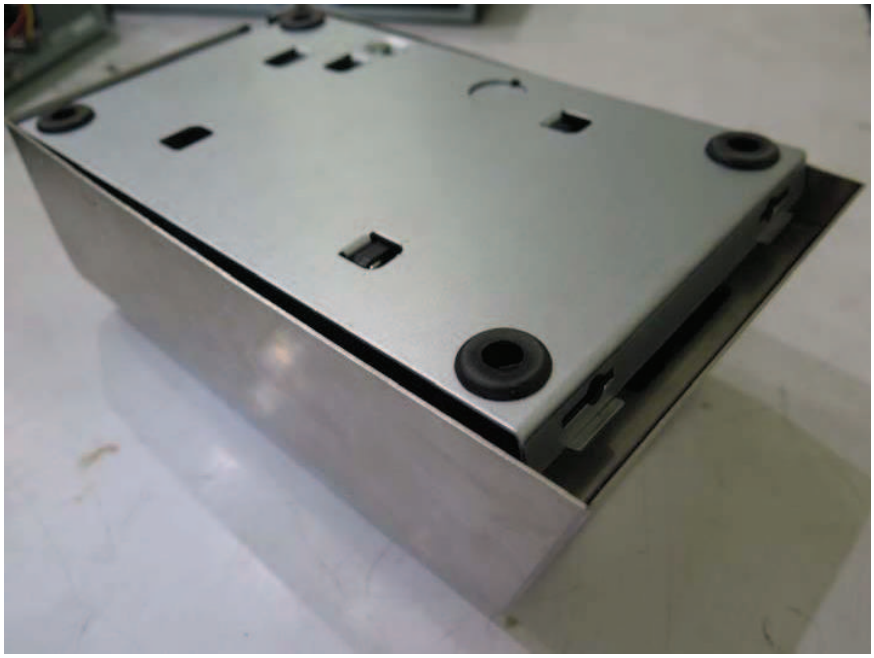
11.7 Radio-frequency, Conducted Disturbances Immunity Test

11.8 Voltage Dips, Short Interruptions Immunity Test



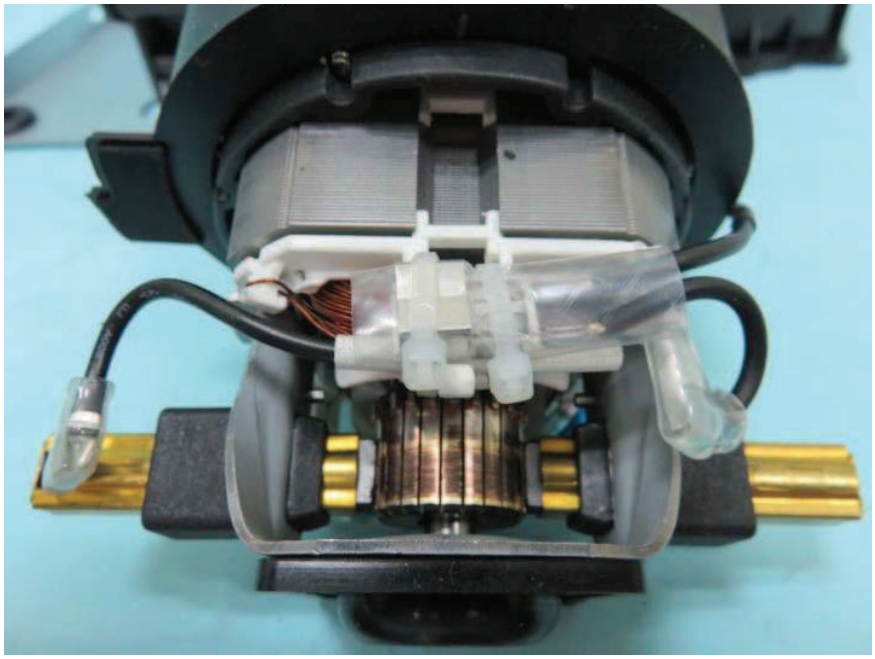
12 Photographs of EUT

Front View of the EUT



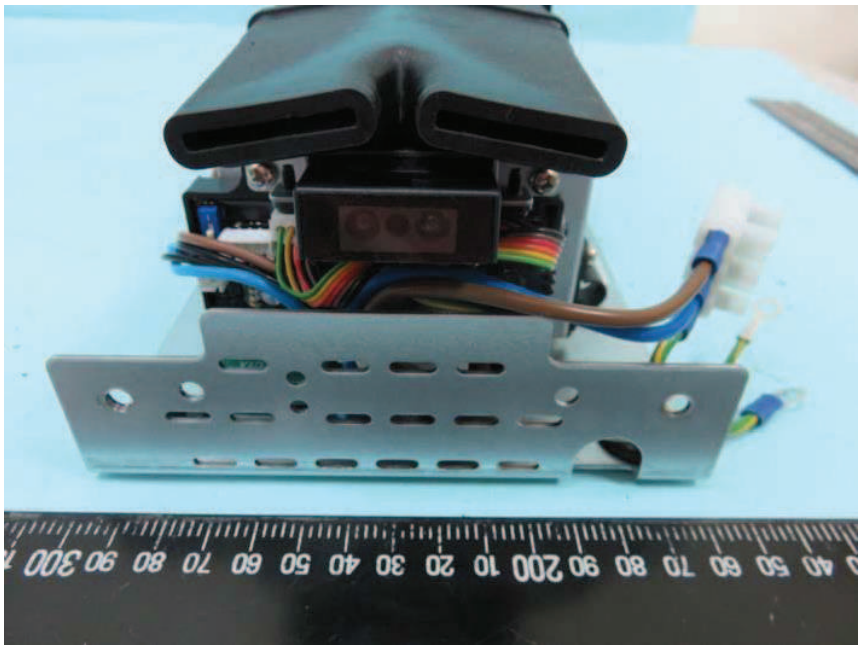
Rear View of the EUT

Inside View of the EUT-1

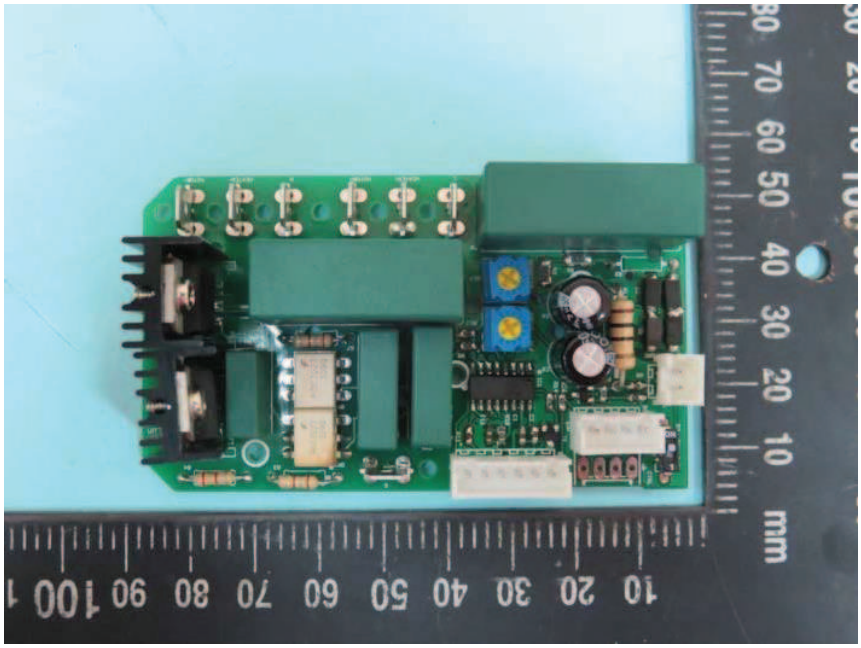


Inside View of the EUT-2

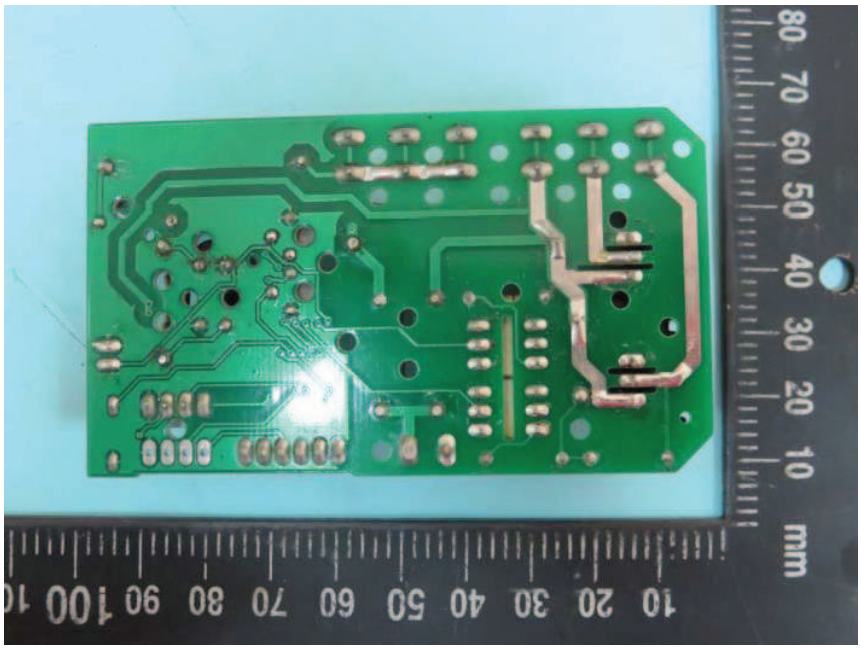
Inside View of the EUT-3



Inside View of the EUT-4



Front View of the PCB



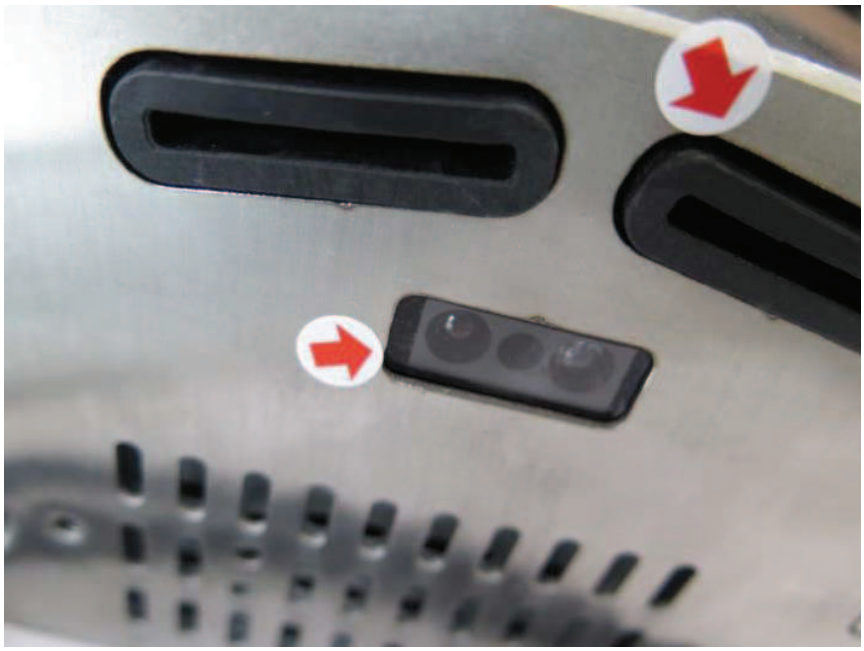
Rear View of the PCB

Front View of STRX220

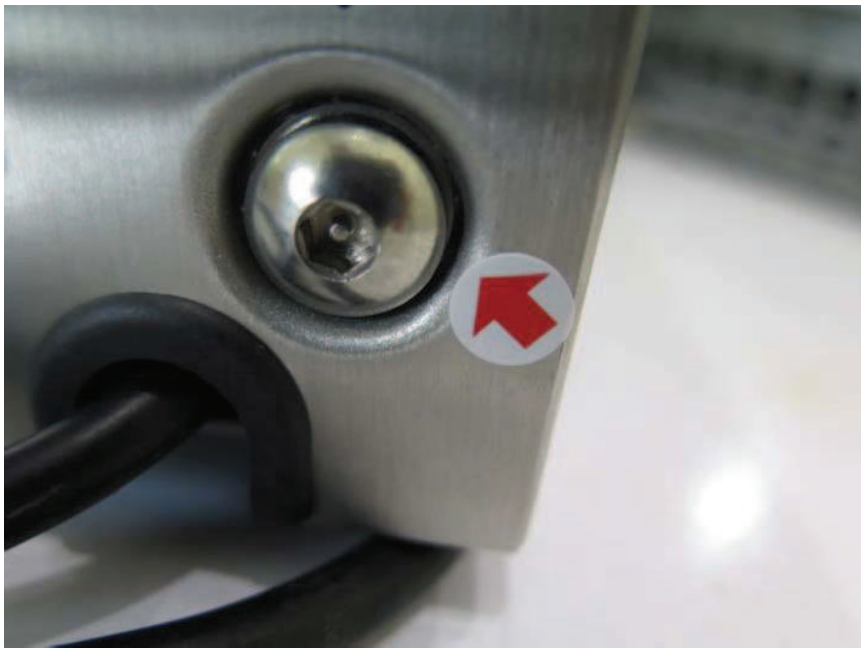
Front View of EXOS220X

Front View of DRYX220

13 Photographs of ESD Test Points



View of ESD Test Points



View of ESD Test Points

Verification

of Test Report No.: IL160219335

CE

Product.....: Hand Dryer

Model No.....: STRX220, EXOS220X, DRYX220

Applicant.....: Franke L.L.C.

P.O. Box 14511 | RAKIA-Al Hamra Industrial Zone | Ras Al Khaimah |

United Arab Emirates (U.A.E.)

Issue Date.....: Feb.18, 2016

A sample of the equipment has been tested for CE marking
according to the EC Low Voltage Directive 2006/95/EC.
Standard(s) used for showing compliance with essential requirments of the directive.

Standard:

EN 60335-1: 2012 &

EN 60335-2-23: 2003 +A1:2008 +A11:2010

Household and similar electrical appliances -Safety-

Part 1: General requirements

Part 2-23: Particular requirements for appliances or skin or hair care

The referred test report(s) show that the product fulfills the requirement in the EC Low Voltage Directive for CE marking. On the basis, together with the manufacturer's own documented production control, the manufacturer (or his European authorized representative) can in his EC Declaration of Conformity verify with the EC Low Voltage Directive.
This verification shall be accompanied with test report.

Approved by:
(Managing Director) Roven Ma

Test site: Integrity EnE Lab Inc.
12F, No.27-1, Ln. 169, Kangning St., Xizhi Dist., New Taipei City 221, Taiwan. (R.O.C.)
Tel: +886-2-2695-6367 Fax:+886-2-8695-1713

Test Report

EN 60335-1 and EN 60335-2-23

Household and similar electrical appliances – Safety –

Part 1: General requirements

Part 2-23: Particular requirements for appliances or skin or hair care

Report reference No ..... : IL160219335

Reported by (printed name and signature) .... : Alan Huang (Engineer)

Reviewed by (printed name and signature) .... : Daniel Lin (Project Engineer)

Date of issue ..... : Feb 19, 2016

Testing Laboratory:

Name ..... : Integrity EnE Lab Inc.

Address .....: 12F, No.27-1, Ln. 169, Kangning St., Xizhi Dist., New Taipei City 221, Taiwan. (R.O.C.)

Applicant:

Name ..... : Franke L.L.C.

Address ..... : P.O. Box 14511 | RAKIA-Al Hamra Industrial Zone | Ras Al Khaimah | United Arab Emirates (U.A.E.)

Manufacture:

Name ..... : Hokwang Industries Co Ltd

Address ..... : No.131, Dingping Road, Ruifang Industries Area, Ruifang District, New Taipei City 224, Taiwan (R.O.C.)

Test specification

Standard ..... : EN 60335-1: 2012
EN 60335-2-23: 2003 +A1:2008 +A11:2010

Test item:

Product ..... : Hand Dryer

Trademark ..... :

Model and/or type reference ..... : STRX220

Series number ..... : EXOS220X, DRYX220

Rating(s)..... : 220-240VAC, 50/60Hz, 1000W

Particulars: test item vs. test requirements

Equipment mobility ..... : movable / hand-held / stationary / fixed / permanent connection / direct plug-in / for building-in

Class of equipment ..... : Class I / Class II / Class III

Protection against ingress of water ..... : IP21

Test case verdicts

Test case does not apply to the test object. : N/A

Test item does meet the requirement ..... : P(ass)

Test item does not meet the requirement….: F(ail)

Testing

Date of receipt of test item ..... : Feb. 19, 2016

Date(s) of performance of test ..... : Jan 20, 2016 – Feb.19, 2016

General remarks:

The test result presented in this report relate only to the object(s) tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

”(see Enclosure #)" refers to additional information appended to the report.
"(see appended table)" refers to a table appended to the report.

Copy of marking plate:

Hand Dryer
Model No.: STRX220
Input: AC220-240V~ 50/60Hz
Amps: 4.0A
Watts: 1000W
Motor: 460W
Drip proof: IP21
CE

General product information:

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EN 60335-2-23			
Clause	**Requirement - Test**	**Result-Remark**	**Verdict**
6	**Classification**		-
6.1	Appliances shall be of one of the following classes with respect to protection against electric SHOCK:		-
	- hairdryers, curling irons, facial saunas appliances shall be class II or class III.		N/A
	- fixed hairdryers intended to be permanently connected to fixed wiring, helmet-type hairdryers for hairdressers and steam-producing or spray-producing appliances for hairdressers may be class I;		N/A
	- other appliances shall be class I, class II or class III.	Class I	P
6.2	Appliance shall protection against harmful ingress of water.		P
	Hand dryers shall be at least IPX1.	IP21	P
	Curling rollers of permanent-wave appliances shall be at least IPX4.		N/A
7	**Marking and instructions**		-
7.1	Appliances shall be marked with the		-
	- rated voltage or rated voltage range;	220-240V	P
	- symbol for nature of supply, unless the rated frequency is marked;	50/60Hz	P
	- rated power input in watts or rated current;	1000W	P
	- name, trade mark or identification mark;		P
	- model or type reference;	STRX220	P
	- symbol for Class II appliances;		N/A
	- IP number, other than IPX0;	IP21	P
	- Symbol IEC 60417-5180, for class III appliances, unless	No such part	N/A
	the appliance is operated by batteries only		N/A
	Symbol IEC 60417-5036, for the enclosure of electrically-operated water valves in external hosesets for connection of an appliance to the water mains	No such part	N/A
	Portable hairdryers, curling irons and similar appliances shall be marked with symbol IEC 60417-5582 combined with the prohibition sign of ISO 3864-1	No such part	N/A

EN 60335-2-23			
Clause	**Requirement - Test**	**Result-Remark**	**Verdict**
	WARNING: Do not use this appliance near water		
7.2	Stationary appliances for multiple supply shall be marked with the following:		-
	Warning: Before obtaining access to terminals, all supply circuits must be disconnected.		N/A
	This warning shall be placed in the vicinity of the terminal cover.		N/A
7.3	Appliances having a range of rated values and which can be operated without adjustment throughout the range shall be marked with	220-240V	P
7.4	Appliance can be adjusted for different rated voltage shall be clearly discernible.		N/A
	Requirement met if frequent changes are not required and the rated voltage to which the appliance is to be adjusted is determined from a wiring diagram		N/A
7.5	Appliances with more than one rated voltage or one or more rated voltage ranges, marked with rated input or rated current for each rated voltage or range, unless	1000W	P
	the power input is related to the arithmetic mean value of the rated voltage range		N/A
	Relation between marking for upper and lower limits of rated power input or rated current and voltage is clear		N/A
7.6	Correct symbols used		P
	Suitable for use in a bath or shower. 		N/A
7.7	Appliances for multiple supply shall have a connection diagram fixed to them.		N/A
7.8	Except for type Z attachment, terminal connected to the supply mains shall be indicated as follows:		-
	- terminals intended exclusively for the neutral conductor shall be indicated by the letter N.	"N"	P
	- protective earthing terminals shall be indicated by symbol 5019 of IEC 60417		P
	Marking not place on removable parts		P
7.9	Switches shall be marked so as to indicate which part of the appliance they control.	No such part	N/A
7.10	The different positions of switches on stationary appliances and controls on all appliances shall be	No such part	N/A

EN 60335-2-23			
Clause	**Requirement - Test**	**Result-Remark**	**Verdict**
	indicated by figures, letters or other visual means.		
	This applies also to switches which are part of a control		N/A
	If figures are used, the off position indicated by the figure 0		N/A
	The figure 0 indicates only OFF position, unless no confusion with the OFF position		N/A
7.11	Controls intended to be adjusted during installation or in normal use shall be provided with an indication for the direction of adjustment.		N/A
7.12	Instructions for use shall be provided with the appliance		P
	Details concerning precautions during user maintenance		P
	The instructions state that:		-
	- the appliance is not to be used by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction		P
	- children being supervised not to play with the appliance		P
	For a part of class III construction supplied from a detachable power supply unit, the instructions state that the appliance is only to be used with the unit provided		N/A
	Instructions for class III appliances state that it must only be supplied at SELV, unless		N/A
	it is a battery-operated appliance, the battery being charged outside the appliance		N/A
	Portable hairdryers shall include the substance of the following:		-
	-used in a bathroom,		N/A
	-for additional protection, a residual current device (RCD) having a rated residual operating current not exceeding 30mA.		N/A
	If symbol IEC 60417-5582 is used, the meaning shall be explained		N/A
	WARNING: Do not use this appliance near bathtubs,		N/A

EN 60335-2-23			
Clause	**Requirement - Test**	**Result-Remark**	**Verdict**
	showers, basins or other vessels containing water.		
7.12.1	Appropriate details shall be given to take precautions during installation.		P
	For an appliance intended to be permanently connected to the water mains and not connected by a hose-set, this is stated		N/A
	For fixed hairdryers intended for use in bathroom shall include the substance of the following:		N/A
	This hairdryer must be fixed out of reach of a person taking a bath or shower.		N/A
7.12.2	Stationary appliances not fitted with means for disconnection from the supply mains having a contact separation in all poles that provide full disconnection under overvoltage category III, the instructions state that means for disconnection must be incorporated in the fixed wiring in accordance with the wiring rules		N/A
7.12.3	Insulation of the fixed wiring in contact with parts exceeding 50 K during clause11; instruction stating that the fixed wiring must be protected.		N/A
7.12.4	The instructions for built-in appliances shall include information with	Not built-in appliances	N/A
	- dimensions of the space to be provided for the appliance		N/A
	- dimensions and position of the means for supporting and fixing the appliance within this space		N/A
	- min distances between the various parts of the appliance and the surrounding structure		N/A
	- min dimensions of ventilating openings and their correct arrangement		N/A
	- connection of the appliance to the supply mains and the interconnection of any separate components		N/A
	- necessity to have the plug accessible after installation, unless the appliance incorporates a switch complying with 24.3		N/A
7.12.5	The instructions shall contain the substance of the following:		-
	Replacement cord instructions, type X attachment with a specially prepared cord		N/A

EN 60335-2-23			
Clause	**Requirement - Test**	**Result-Remark**	**Verdict**
	Replacement cord instructions, type Y attachment		N/A
	Replacement cord instructions, type Z attachment		N/A
7.12.6	Caution in the instructions for appliances incorporating a non-self-resetting thermal cut-out that is reset by disconnection of the supply mains, if this cut-out is required to comply with the standard		N/A
7.12.7	The instruction for fixed appliances shall state how the appliance is to be fixed to its support.	Statement in instruction	P
7.12.8	The instructions for appliances connected to the water mains shall state		N/A
7.13	Instructions and other text required shall be written in the official language(s).	Marking label and installation instruction in English. Versions of other languages will be provided when submitted for national approval.	P
7.14	Marking shall be clearly legible and durable.	The label was subjected to the permanence of marking test. The label was rubbed by cloth soaked with water for 15s and then again for 15s with cloth soaked with petroleum spirit. After this test there was no damage to the label. The marking on the label did not fade, there was neither curling nor lifting of the label edge.	P
	Circle superimposed on symbol IEC 60417-5582 shall be at least 10mm.		N/A
7.15	The markings specified in 7.1 to 7.5 shall be on a main part of the appliances.		P
	Marking clearly discernible from the outside, if necessary after removal of a cover		N/A
	For portable appliance, cover can be removed or opened without a tool		N/A
	For stationary appliances, name, trademark or identification mark and model or type reference visible after installation		N/A
	For fixed appliances, name, trademark or identification mark and model or type reference visible after installation according to the instructions	Fixed appliances	P

EN 60335-2-23			
Clause	**Requirement - Test**	**Result-Remark**	**Verdict**
	Indications for switches and controls placed on or near the components. Marking not on parts which can be positioned or repositioned in such a way that the marking is misleading		N/A
7.16	If depends upon the operation of a replaceable thermal link or fuse link, the reference number shall be marked.	No such part	N/A
8	**Protection against access to live parts**		-
8.1	Appliances shall be so enclosed that there is adequate protection against accidental contact with live parts.	Enclosure enclosed live parts	P
8.1.1	When appliance is operated as in normal use, and after the removal of detachable parts shall comply 8.1	No detachable parts used	P
	During insertion or removal of lamps protection against contact with live parts of the lamp cap shall be ensured.	No such parts	N/A
	Test probe B and probe 18 of EN 61032 being in every possible position, the force on the probe in the straight position is increased to 20 N when probe B is used or 10 N when probe 18 is used.		P
	It shall not be possible to touch live parts or live parts protected only by lacquer, enamel, ordinary paper, cotton oxide film, beads, or sealing compound except self-hardening resins, with the probe		P
8.1.2	Use of test probe 13 of IEC 61032 through openings, in class 0 appliances, class II appliances and class II constructions, it shall not be possible to touch live parts.		N/A
	Test probe 13 also applied through openings in earthed metal enclosures having a non-conductive coating, it shall not be possible to touch live parts.		P
8.1.3	Not applicable.		N/A
8.1.4	An accessible part is not considered to be live if:		-
	- the parts is supplied at safety-extra-low voltage		N/A
	- the part is separated from live parts by protective impedance.		N/A
	If protective impedance is used, the current between the parts and the supply source shall not exceed 2 mA for d.c., its peak value shall not exceed 0.7mA for a.c.		N/A

EN 60335-2-23			
Clause	**Requirement - Test**	**Result-Remark**	**Verdict**
8.1.5	Live parts of built-in appliances and fixed appliances shall be protected at least by basic insulation before installation or assembly.	Fixed appliances	P
8.2	Class II appliances and constructions constructed so that there is adequate protection against accidental contact with basic insulation and metal parts separated from live parts by basic insulation only	Class I appliances	N/A
	Only possible to touch parts separated from live parts by double or reinforced insulation		N/A
	Test probe B and probe 18 of EN 61032 are applied to built-in appliances and fixed appliances only after installation		N/A
9	**Starting of motor-operated appliances**		-
	Requirements and tests are specified in part 2 when necessary.		N/A
10	**Power input and current**		-
10.1	If an appliance is marked with the rated power input, it shall not deviate from the rated power input by more than the deviation shown in table 1.	Rated: 1000W Measured: 960W Deviation not exceed +5% and -10%	P
10.2	If an appliance is marked with rated current, it shall not deviate from the rated current by more than deviation shown in table 2.		N/A
11	**Heating**		-
11.1	Appliances and their surroundings shall not attain excessive temperatures in normal use.		P
	Appliance incorporating a swivel connection, compliance is also checked by the test of 11.101.	No such part	N/A
11.2	Hand-held appliances are held in their normal position of use.		N/A
	Built-in appliances are installed in accordance with the instructions.		N/A
	Other heating appliances and other combined appliances are placed in a test corner		P
	Other motor-operated appliances are positioned		N/A
	For appliances provided with an automatic cord reel.		N/A

EN 60335-2-23			
Clause	**Requirement - Test**	**Result-Remark**	**Verdict**
	Used on a stand or attached to a support are placed to give the most unfavourable results.	EUT is so placed according to the instruction	P
11.3	Temperature rises are determined by thermocouples.	Type J	P
11.4	Heating appliances are operated under normal operation and at 1,15 times rated power input.	1150W	P
	Temperature rise limits are exceeded, the power input is lower than the rated power input, the appliance supplied at 1,06 times rated voltage.		N/A
11.5	Motor-operated appliances are operated under normal operation and between 0.94 and 1.06 times the rated voltage.		N/A
11.6	Combined appliances are operated as heating appliances.		P
11.7	Appliances without a timer are operated		-
	- heating appliances for 30min		N/A
	- in cycles of 30s on and 5s off until steady conditions are established		P
	- until steady conditions are established, for other appliances		N/A
	Appliances incorporating a timer are operated in cycles until steady conditions are established. Each cycle consists of the maximum operating time of the timer followed by a rest period of 5 s.		N/A
11.8	Temperature rises monitored continuously and not exceeding the values in table 3 .....:		P
	If the temperature rise of a motor winding exceeds the value of table 3, or	Not exceed	N/A
	if there is doubt with regard to classification of insulation,		N/A
	tests of Annex C are carried out		N/A
	Sealing compound does not flow out		N/A
	Protective devices do not operate, except	Protective devices do not operated	P
	components in protective electronic circuits tested for the number of cycles specified in 24.1.4		P
	The temperature rise of the handles of curling irons heated by a heater for detachable curlers		N/A

EN 60335-2-23			
Clause	**Requirement - Test**	**Result-Remark**	**Verdict**
	incorporating a timer is determined at the end of the first cycle.		
	Parts / Temperature rise (K)		-
	Windings:		-
	- of Class 105 (A) / 75(65)	33.9 (Motor)	P
	- of Class 120 (E) / 90(80)		N/A
	- of Class 130 (B) / 95(85)		N/A
	- of Class 155 (F) / 115		N/A
	- of Class 180 (H) / 140		N/A
	Pins of appliance inlets		-
	- for hot conditions / 95		N/A
	- for cold conditions / 45		N/A
	Terminals / 60	3.9 (Terminal block)	P
	Ambient of switches, thermostats and temperature limiters		-
	- without T-marking / 30		N/A
	- with T-marking / T-25	29.9 (Motor thermostat) 38.9 (Heater thermostat)	P
	Insulation of internal and external wiring :		-
	- without temperature rating / 50[4)]		N/A
	- with temperature rating(T) / T-25	1.9 (Input wire) 16.9 (Heater wire) 20.4 (Motor wire)	P
	Cord sheaths used as supplementary insulation / 35		N/A
	Sliding contacts of cord reels / 65		N/A
	Rubber used for gaskets or other parts, the deterioration of which could affect safety:		-
	- when used as supplementary insulation or / 40		N/A
	- in other cases / 50		N/A
	Lampholders with T-marking / T-25		N/A
	Lampholders without T-marking / 55		N/A
	Material used as insulation, other than windings:		-
	- impregnated or varnished textile or paper / 70		N/A
	- laminates bonded with:		N/A
	• melamine-formaldehyde, phenol-furfural / 85(175)		N/A

EN 60335-2-23				
Clause	**Requirement - Test**		**Result-Remark**	**Verdict**
	resins or phenol-formaldehyde			
	• urea-formaldehyde resin	65(150)		N/A
	- printed circuit boards bonded with epoxy resin	120	0.9 (OK1)	P
	- mouldings of:			-
	• phenol-formaldehyde with cellulose fillers	85(175)		N/A
	- silicone rubber	145		N/A
	- thermoplastic material[7)]	-	24.4 (Inside plastic)	P
	Wood	65	0.9	P
	Outer surface of capacitors:			-
	-With marking of maximum operating temperature (T)	T-25	0.9 (C6)	P
	-Without marking of maximum operating temperature (T)			N/A
	• small ceramic capacitors for radio and television interference suppression	50		N/A
	• capacitors complying with IEC 60384-14	50	2.4 (C3)	P
	• other capacitors	20		N/A
	External enclosure of motor-operated appliances	-		-
	- of bare metal	50		N/A
	- of coated metal	60		N/A
	- of glass and ceramic	65		N/A
	- of plastic having a thickness exceeding 0,3 mm	75	24.4	P
	Surface of handles, knobs, grips and similar parts for continuously held			-
	- of metal	30		N/A
	- of porcelain or vitreous material	40		N/A
	- of moulded material, rubber or wood	50		N/A
	Surface of handles, knobs, grips and similar parts for short periods:			N/A
	- of metal	35	11.4	P
	- of porcelain or vitreous material	45		N/A
	- of moulded material, rubber or wood	60	8.9	P
	Parts in contact with oil having a flash-point of t ℃	t-50		N/A
11.101	Appliances incorporating a swivel connection are positioned with their major axis horizontal. A pull force of 1 N is applied to the supply cord			N/A

EN 60335-2-23						
Clause	**Requirement - Test**				**Result-Remark**	**Verdict**
	The appliance is supplied at rated voltage, the current being 1,25 times the rated current.					N/A
	Sliding contacts shall not exceed 65 K					N/A
12	**Void**					N/A
13	**Leakage current and electric strength at operating temperature**					-
13.1	The leakage current of the appliance shall not be excessive and its electric strength shall be adequate at operating temperature.					P
	Heating appliances are operated at 1.15 times for rated power input.					P
	Motor-operated appliances and combined appliances are supplied at 1.06 times the rated voltage.					N/A
13.2	The leakage current is measured between any pole of the supply and :					-
	- accessible metal parts and metal foil.				Both	P
	the leakage current shall not exceed the following values :					-
	· for Class II appliances			0.25mA peak		N/A
	· for Class 0, Class 0I and Class III appliances			0.7mA peak		N/A
	· for Class 0I appliances			0.5mA		N/A
	· for portable Class I appliances			0.75mA		N/A
	· for stationary class I motor-operated appliances			3.5mA		N/A
	· for stationary Class I heating appliances			0.75mA or 0,75 mA per kW	0.4mA	P
13.3	The insulation other than that of motors is subjected for 1 min to a voltage.					-
	Insulation	*Test voltage (V)*				-
		Rated voltage				-
		SELV	≤ 150 V	>150 V and < 250 V		
	Basic insulation;	500	1000	1000	Between live parts and accessible metal	P

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Clause	**Requirement - Test**				**Result-Remark**	**Verdict**
					parts	
	Supplementary insulation;	-	1250	1750		N/A
	Reinforced insulation.	-	2500	3000	Between live parts and accessible non-metallic parts with metal foil	P
	No breakdown during the tests					P
14	**Transient overvoltages**					-
	Appliances shall withstand the transient overvoltages to which to which they may be subjected.				Complies with table16	N/A
	Clearances having a value less than specified in table 16 subjected to an impulse voltage test, the test voltage specified in table 6.					N/A
	No flashover during the test, unless of functional insulation.					N/A
	In case of flashover of functional insulation, the appliance complies with clause 19 with the clearance short circuited.					N/A
15	**Moisture resistance**					-
15.1	The enclosure of the appliance shall provide the degree of protection against moisture.				IP21	P
15.1.1	Appliances other than those classified IPX0 are subjected to test of IEC 60529.				IP21	P
	Water valves containing live parts are subjected to the tests for IPX7 appliances					N/A
15.1.2	Hand-held appliances are turned continuously through the most unfavorable positions during the test.					N/A
	Built-in appliances are installed in accordance with the instructions.					N/A
	Appliances with an automatic cord reel are tested with the cord in the most unfavourable position					N/A
	Appliances placed or used on the floor or table placed on a horizontal unperforated support					N/A
	Appliances normally fixed to a wall and appliances with pins for insertion into socket-outlets are mounted on a wooden board.					N/A

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Clause	**Requirement - Test**	**Result-Remark**	**Verdict**
	Wall-mounted appliances, take into account the distance to the floor stated in the instructions.		P
	Appliances with type X attachment fitted with a flexible cord as described.		N/A
15.2	Appliances subject to spillage of liquid does not affect their electrical insulation.		N/A
	Appliances with type X attachment fitted with a flexible cord as described		N/A
	Appliances incorporating an appliance inlet tested with or without an connector, whichever is most unfavourable		N/A
	Detachable parts are removed		N/A
	Overfilling test with additional amount of water, over a period of 1 min (l) .....:		N/A
	The appliance withstands the electric strength test of 16.3		N/A
	No trace of water on insulation that can result in a reduction of clearances or creepage distances below values specified in clause 29		N/A
15.3	Appliances shall be proof against humid conditions that may occur in normal use.		P
	The humidity test is carried out with a relative humidity of 93 ± 3%.	93%	P
	The temperature is maintained between 20 ℃ and 30 ℃.	25℃	P
	The sample is kept in the cabinet for 48h.	48h	P
	The appliance withstands the tests of clause 16.		P
16	**Leakage current and electric strength**		-
16.1	The leakage current of the appliance shall not be excessive and its electric strength shall be adequate.		P
16.2	An a.c. test voltage is applied between live parts and accessible parts:		-
	- accessible metal parts and metal foil.	Both	P
	Single-phase appliances: test voltage 1.06 times rated voltage		P

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Clause	**Requirement - Test**				**Result-Remark**	**Verdict**
	Three-phase appliances: test voltage 1.06 times rated voltage divided by √3 ,					N/A
	the leakage current shall not exceed the following values :					-
	· for Class II appliances			0.25mA		N/A
	· for Class 0, Class 0I and Class III appliances			0.5mA		N/A
	· for portable Class I appliances			0.75mA		N/A
	· for stationary class I motor-operated appliances			3.5mA		N/A
	· for stationary Class I heating appliances			0.75mA	0.4mA	P
16.3	Immediately after the test of 16.2, the insulation is subjected for 1 min to a voltage.					-
	Insulation	*Test voltage (V)*				-
		Rated voltage				-
		SELV	≤ 150 V	>150 V and ≤ 250 V		
	Basic insulation;	500	1250	1250	Between live parts and accessible metal parts	P
	Supplementary insulation;	-	1250	1750		N/A
	Reinforced insulation.	-	2500	3000	Between live parts and accessible non-metallic parts with metal foil	P
	No breakdown during the tests					P
17	**Overload protection of transformers and associated circuits**					-
	Appliances incorporating a transformer shall be constructed so that in the event of short circuits excessive temperatures do not occur.					N/A
18	**Endurance**					-
	Requirements and tests are specified in part 2 when necessary.					N/A

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Clause	**Requirement - Test**	**Result-Remark**	**Verdict**
19	**Abnormal operation**		-
19.1	Appliances shall be so designed that the risk of fire, mechanical damage impairing safety or protection against electric shock as a result of abnormal or careless operation is obviated as far as is practicable.	1. Vents blocked 2. Locking the rotor of motor	P
	Hairdryers are also subjected to the tests of 19.101 and 19.102.		N/A
19.2	Test of appliances with heating elements with restricted heat dissipation; test voltage (V): power input of 0.85 times rated power input		P
	Restricted heat dissipation is obtained as follows:		-
	-motors are disconnected;	Thermostat protected	P
	-hand-held hairdryers are places on the floor		N/A
	-filled with water are operated empty		N/A
	Hairdryers having a flexible hood attachment are also tested with the motor operating		N/A
	Heaters for detachable curlers are places on a piece of low-density		N/A
19.3	The test of 19.2 is repeated but with a supply voltage 1.24 times of rated power input.		P
19.4	The test of Sub-clause 11 is repeated, any control that limits the temperature during the test of Clause 11 short-circuited.	Temperature stabilized	P
19.5	The test of 19.4 is repeated on class 0I and class I appliances incorporating tubular sheathed or embedded heating elements.		N/A
	The test repeated with reversed polarity and the other end of the heating element connected to sheath.		N/A
	The test is not carried out on appliances intended to be permanently connected to fixed wiring and on appliances where an all-pole disconnection occurs during the test of 19.4.		N/A
19.6	Appliances with PTC heating elements, the working voltage of the PTC heating element is increased by 5% and the appliance is operated until steady conditions are re-established.	No such part	N/A
	The voltage is then increased in similar steps until 1,5 times working voltage is reached, or until the PTC heating element ruptures.		N/A

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Clause	**Requirement - Test**	**Result-Remark**	**Verdict**
19.7	The appliance is operated under stalled conditions		P
	Appliances incorporating motors and having capacitors in the circuit of an auxiliary winding, are operated with the rotor locked, the capacitors being open-circuited and short-circuited.		N/A
	The test is carried out for 5 min except for		-
	- hand-held appliances;		N/A
	- appliances that have to be kept switched on by hand;		N/A
	- incorporating a timer		N/A
19.8	One phase of appliances incorporating three-phase motors is disconnected.		N/A
19.9	Not applicable.		N/A
19.10	Series motor operated at 1.3 times rated voltage for 1 min (V) .....:	No such part	N/A
	During the test, parts not being ejected from the appliance		N/A
	The test is carried out with the heating elements disconnected or switched off.		N/A
19.11	Electronic circuits are checked by evaluation of the fault conditions.		P
19.11.1	Before applying the fault conditions a) to f) in 19.11.2, it is checked if circuits or parts of circuit meet both of the following conditions:		-
	- the electronic circuit is a low-power circuit, that is, the maximum power at low-power points does not exceed 15 W according to the tests specified		N/A
	- the protection against electric shock, fire hazard, mechanical hazard or dangerous malfunction in other parts of the appliance does not rely on the correct functioning of the electronic circuit		N/A
19.11.2	Fault conditions applied one at a time, the appliance operated under conditions specified in cl. 11, but supplied at rated voltage, the duration of the tests as specified:		-
	a) short circuit of functional insulation if clearances or creepage distances are less than the values specified in 29		N/A

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Clause	**Requirement - Test**	**Result-Remark**	**Verdict**
	b) open circuit at the terminals of any component		P
	c) short circuit of capacitors, unless they comply with IEC 60384-14		P
	d) short circuit of any two terminals of an electronic component, other than integrated circuits. This fault condition is not applied between the two circuits of an optocoupler		P
	e) failure of triacs in the diode mode		P
	f) failure of an integrated circuit		P
19.11.3	If the appliance incorporates a protective electronic circuit which operates to ensure compliance with clause 19, the relevant test is repeated with a single fault simulated, as indicated in a) to f) of 19.11.2		N/A
19.11.4	Appliances having a switch with an off position obtained by electronic disconnection, or		N/A
	a device that can be placed in the stand-by mode,		P
	subjected to the tests of 19.11.4.1 to 19.11.4.7		P
	Appliances incorporating a protective electronic circuit subjected to the tests of 19.11.4.1 to 19.11.4.7, except that		P
	appliances operated for 30 s or 5 min during the test of 19.7 are not subjected to the tests for electromagnetic phenomena.		N/A
19.11.4.1	The appliance is subjected to electrostatic discharges in accordance with IEC 61000-4-2, test level 4		P
19.11.4.2	The appliance is subjected to radiated fields in accordance with IEC 61000-4-3, test level 3		P
19.11.4.3	The appliance is subjected to fast transient bursts in accordance with IEC 61000-4-4, test level 3 or 4 as specified		P
19.11.4.4	The power supply terminals of the appliance subjected to voltage surges in accordance with IEC 61000-4-5, test level 3 or 4 as specified		P
	Earthed heating elements in class I appliances disconnected		P
19.11.4.5	The appliance is subjected to injected currents in accordance with IEC 61000-4-6, test level 3		P
19.11.4.6	The appliance is subjected to the Class 3 voltage dips and interruptions in accordance with IEC 61000-4-11		P

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Clause	**Requirement - Test**		**Result-Remark**	**Verdict**
19.11.4.7	The appliance is subjected to mains signals in accordance with IEC 61000-4-13, test level class 2			P
19.11.4.8	The appliance is supplied at rated voltage and operated under normal operation. After 60s the power supply is reduces to a level such that the appliance ceases to respond or a programmable component cease to operate.			N/A
	The appliance continues to operate normally or requires a manual operation to restart			N/A
19.12	If the appliance depends upon the operation of a miniature fuse-link			N/A
19.13	During the tests the appliance shall not emit flames, molten metal, or poisonous or ignitable gas in hazardous amounts			P
	Temperature rises not exceeding the values shown in table 9.			P
	After the tests, compliance with Clause 8 shall not be impaired			P
	Appliance shall comply with 20.2 if it can still be operated.			P
	After the tests, the insulation of appliances shall withstand an electric strength test as :			-
	Insulation	Test voltage (V)		-
	Basic insulation;	1000 V	Between live parts and accessible metal parts	P
	Supplementary insulation;	1750 V		N/A
	Reinforced insulation.	3000 V	Between live parts and accessible non-metallic parts with metal foil	P
	The appliance shall not undergo a dangerous malfunction and there shall be no failure of protective electronic circuits if the appliance is still operable.			P
	Appliances with an electronic switch in the off position or in the stand-by mode shall not become operable.			-
	- not become operation, or			P
	- if the become operation, not result in a dangerous			N/A

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Clause	**Requirement - Test**	**Result-Remark**	**Verdict**
	malfunction during or after the tests of 19.11.4		
19.14	Any contactor or relay contact that operates under the conditions of Clause 11 is short-circuited.	No such parts	N/A
	If a relay or contactor with more than one contact is used, all contacts are short circuited at the same time.	No such parts	N/A
19.15	For appliances with a mains voltage selector switch, the switch is set to the lowest rated voltage position and the highest value of rated voltage is applied		N/A
19.101	Hairdryers are operated as specified in Clause 11 until steady conditions are established		N/A
	The voltage is decreased at		N/A
	- 1 V per minute, for motors having a working voltage not exceeding 30 V		N/A
	- 5 V per minute, for motors having a working voltage exceeding 30V		N/A
	The appliance is then operated until steady conditions are established.		N/A
19.102	Portable hair dryers are operated under normal operation at 1,15 times rated power input.		N/A
	Repeated with the airflow directed horizontally.		N/A
20	**Stability and mechanical hazards**	EUT intended to be fixed on wall	-
20.1	Appliances, intended to be used on a surface such as the floor or a table shall have adequate stability.		N/A
	Tilting test through an angle of 10°, appliance placed on an inclined plane/horizontal support, not connected to the supply mains; appliance does not overturn		N/A
	For appliances with heating elements, the test is then Repeated with the angle of tilt increased to 15˚.		N/A
	During this test, temperature rises shall not exceed the values shown in the table of Sub-clause 19.13.		N/A
20.2	Moving parts of appliances shall, be so enclosed as to provide, adequate protection against personal injury.		N/A
	This requirement does not apply to parts of an appliance that necessarily have to be exposed to allow the appliance to perform its working function.		N/A

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Clause	**Requirement - Test**	**Result-Remark**	**Verdict**
	For appliances having dangerous movable parts, due to their main function,		N/A
	Protective enclosures, guards and similar parts are non-detachable, and		N/A
	It shall not be possible to touch dangerous moving parts with this test probe B and test probe 18 of EN 61032.		N/A
21	**Mechanical strength**		-
21.1	Appliances shall have adequate mechanical strength.		P
	The appliance is rigidly supported and three blows, have an impact energy of 0.5 J are applied to every point of the enclosure		P
	If necessary, the blows are also applied to handles, levers, knobs and similar parts and to signal lamps and their covers		P
	After the test, the sample shall show no damage that could impair compliance with this standard and compliance with 8.1, 15.1, 16.3 and clause 29		P
	Hand-held appliances are also subjected to the test of 21.101	Fixed appliances	N/A
21.2	Accessible parts of solid insulation shall have sufficient strength to prevent penetration by sharp implements.		P
21.101	It is pulled from the surface by its supply cord and allowed to drop freely.	Not supply cord provided	N/A
22	**Construction**		-
22.1	If the appliance is marked with the first numeral of the IP system	IP21	P
22.2	For stationary appliances, means shall be provided to ensure all-pole disconnection from the supply mains, the following means being available:	Terminal block	P
	- a supply cord fitted with a plug;		N/A
	- a switch complying with 24.3;		N/A
	- a statement in the instructions that a disconnection incorporated in the fixed wiring is to be provided;		N/A
	- an appliance inlet		N/A

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Clause	**Requirement - Test**	**Result-Remark**	**Verdict**
	Singe-pole switches and single-pole protective devices for the disconnection of heating elements in single-phase, permanently connected class 01 and class I appliances, connected to the phase conductor		N/A
22.3	Appliances with pins for insertion into socket-outlets shall not impose undue strain of these socket-outlets.	No such part	N/A
	Applied torque not exceeding 0.25 Nm.		N/A
	Pull force of 50N to each pin after the appliance has being placed in the heating cabinet for 1 h at 70℃; when cooled to room temperature the pins are not displaced by more than 1mm.		N/A
	Each pin subjected to a torque of 0.4Nm; the pins are not rotating unless rotating does not impair compliance with the standard.		N/A
22.4	Appliances for heating liquids shall not be provided with pins.	No such part	N/A
22.5	Appliances intended to connect the supply mains by means of a plug shall be no risk of electric shock when the pins of the plug are touched.		N/A
	One second after disconnection, the voltage between the pins of the plug shall not exceed 34 V.		N/A
22.6	Appliances shall be so constructed that their electrical Insulation cannot be affected by liquid.		N/A
22.7	Appliances containing liquid or gases in normal used or having steam-producing devices shall incorporate adequate safeguards against the risk of excessive pressure.	No such parts	N/A
22.8	For appliances having compartments to which access can be gained without the aid of a tool and that are likely to be cleaned in normal use.	No such parts	N/A
22.9	Insulation ,internal wiring, windings, and insulation are not exposed to oil, grease or similar substances		N/A
22.10	Not possible to reset voltage-maintained non-self resetting thermal cut-outs by the operation of an automatic switching device incorporated within the appliance	No such part	N/A
	Non-self resetting thermal motor protectors have a trip-free action unless they are voltage maintained		N/A
	Reset buttons of non-self-resetting controls shall be		N/A

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Clause	**Requirement - Test**	**Result-Remark**	**Verdict**
	so protected.		
22.11	Non-detachable parts that protect against access to live parts shall be fixed in a reliable manner.		P
22.12	Handles, knobs, shall be fixed in a reliable manner so that they will not work loose in normal use, the force is:		-
	15 N, if an axial pull is unlikely to be applied;		N/A
	30 N, if and axial pull is likely to be applied;		N/A
22.13	Appliances shall be constructed so that when handles are gripped in normal used,		N/A
22.14	Appliances shall have no ragged or sharp edges that could create a hazard for the user in normal use.		P
22.15	Storage hooks and the like for flexible cords smooth and well rounded	No such part	N/A
22.16	Automatic cord reels shall be not cause	No such part	N/A
	- undue abrasion or damage to the sheath of the flexible cord;		N/A
	- breakage of conductor strands;		N/A
	- undue wear of contacts.		N/A
	Cord reel tested with 6000 operations, as specified		N/A
	Electric strength test of 16.3, voltage of 1000V applied.		N/A
22.17	Spacers not removable from the outside by hand or by means of a screwdriver or a spanner.		N/A
22.18	Current-carrying parts shall be resistant to corrosion.		P
22.19	Driving belts shall not be relied upon to ensure electric insulation.		N/A
22.20	Direct contact between live parts and thermal insulation		N/A
22.21	Wood, cotton, ordinary paper shall not be used as insulation.	No such part	P
	This requirement does not apply to magnesium oxide and mineral ceramic fibres used for the electrical insulation of heating elements		P
22.22	Appliances shall not contain asbestos.	No such part	P
22.23	Oils containing polychlorinated biphenyl shall not be used in appliances.		N/A
22.24	Bare heating elements shall be supported so that the	Heater is contained	P

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Clause	**Requirement - Test**	**Result-Remark**	**Verdict**
	heating conductor is unlikely to come into contact with accessible metal parts if they rupture.	inside thermoplastic housing	
	Heating element shall also be unlikely to come into contact with the skin or hair if it ruptures.	Not accessible with skin or hair	P
22.25	Sagging of heating conductors cannot make accessible metal		P
22.26	The insulation between parts operating at safety extra-low voltage and live parts shall be double insulated.	No SELV circuit used	N/A
22.27	Parts connected by protective impedance shall be separated by double insulation.	No such parts used	N/A
22.28	For Class II appliances connected to the gas mains or to the water mains, metal parts shall be separated from live parts by double insulation or reinforced insulation.	Class I appliance	N/A
22.29	Class II appliances intended to be permanently connected to fixed wiring so constructed that the required degree of access to live parts is maintained after installation.	Class I appliance	N/A
22.30	Parts of Class II construction which serve as supplementary insulation or reinforced insulation shall either :		-
	- be fixed in such a way;		N/A
	- be so designed that they cannot be replaced.		N/A
22.31	Clearances and creepage distances over supplementary insulation and reinforced insulation cannot below the values, as a result of wear.		P
22.32	Supplementary insulation and reinforced insulation are not likely to be impaired by deposition of dirt, or by dust.		P
	Parts of natural or synthetic rubber used as supplementary		N/A
	Insulating material in which heating conductors are embedded is considered to be basic insulation and not reinforced insulation		N/A
	Supplementary insulation and reinforced insulation in class II curling irons shall be resistant to aging.		N/A
	The samples shall show no cracks and shall withstand the electric strength		P

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Clause	**Requirement - Test**	**Result-Remark**	**Verdict**
22.33	Conductive liquids may become accessible in normal use shall not be in direct contact with live parts.		N/A
22.34	Shafts of operating knobs, handles, levers and similar parts shall not be live.		N/A
22.35	Handles, levers and knobs which are held in normal use shall not become live in the event of an insulation fault.		N/A
22.36	Handles which are continuously held in the hand in normal use shall be constructed not likely to touch metal parts unless they are separated from live parts by double insulation or reinforced insulation.		N/A
	For class I appliances, other than hand dryers and face dryers, metal parts that could be in contact with skin or hair in normal use shall be separated		N/A
22.37	For Class II appliances, capacitors shall not be connected to accessible metal parts.	Class I appliances	N/A
22.38	Capacitors shall not be connected between the contacts of a thermal cut-out.	No such part	N/A
22.39	Lampholders shall be used only for the connection of lamps.	No such part	N/A
22.40	Motor-operated appliances and combined appliances which are intended to be moved while in operation	Fixed appliances	N/A
	Unless the appliance can operate continuously, automatically or remotely without giving rise to a hazard, appliances for remote operation being fitted with a switch. The actuating member of the switch being easily visible and accessible.		N/A
	The switch in the off-position shall disconnect electronic circuits, unless compliance with Claude 19 does not depend on the operation of a self-resetting thermal cut-out		N/A
22.41	Appliances shall not incorporate components containing liquid mercury.	No such part	P
22.42	Protective impedance shall consist of at least two separate components		N/A
	Resistors checked by the test of 14.1 a) in IEC 60065		N/A
	Capacitors checked by the tests for class Y capacitors in IEC 60384-14		N/A

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Clause	**Requirement - Test**	**Result-Remark**	**Verdict**
22.43	Appliances which can be adjusted for different voltages.		N/A
22.44	Appliances shall not have an enclosure that is shaped or decorated like a toy.		P
22.45	When air is used as reinforced insulation, the appliance shall be constructed so that clearances		N/A
22.46	For programmable protective electronic circuits used to ensure compliance with the standard, the software contains measures to control the fault/error conditions in table R.1		N/A
	Software that contains measures to control the fault/error conditions specified in table R.2 is to be specified in parts 2 for particular constructions or to address specific hazards		N/A
	These requirements are not applicable to software used for functional purpose or compliance with clause 11		N/A
22.47	Appliances connected to the water mains withstand the water pressure expected in normal use		N/A
22.48	Appliances connected to the water mains constructed to prevent backsiphonage of non-potable water		N/A
22.49	For remote operation, the duration of operation shall be set before the appliance can be started unless the appliance switches off automatically or can operate continuously without hazard		N/A
22.50	Controls incorporated in the appliance take priority over controls actuated by remote operation		N/A
22.51	A control on the appliance shall be manually adjusted to the setting for remote operation		N/A
22.52	Socket-outlets on appliances accessible to the user in accordance with the socket-outlet system used in the country in which the appliance is sold		N/A
22.101	Steam-producing or spray-producing devices shall be constructed so that there is no spillage or unintentional burst of steam or water that is likely to cause a hazard.		N/A
22.102	Curling rollers of permanent-wave appliances having integral heating elements shall be supplied with		N/A

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Clause	**Requirement - Test**	**Result-Remark**	**Verdict**
	safety extra-low voltage not exceeding 24V.		
23	**Internal wiring**		-
23.1	Wireways shall be smooth and free from sharp edges.		P
	Wires shall be protected against contact with burrs, cooling fins ect.	Supply cord entry	P
	Holes in metal shall have smooth well-rounded surfaces.		P
	Wiring shall prevented from coming into contact with moving parts.		P
23.2	Beads and similar ceramic insulators on live wires shall be fixed	Mica board for fixing heating conductor	P
23.3	Wiring shall not be exposed to undue stress.		P
	If flexible metallic tubes are used.		N/A
	Open-coil springs shall not be used.		N/A
	Only flexed when the appliance is stored is 5000.		N/A
23.4	Bare internal wiring shall be rigid and fixed so that clearances or creepage distances cannot be reduced.		P
23.5	The insulation of internal wiring shall withstand the electrical stress likely to occur in normal use.		P
23.6	Sleeving is used as supplementary insulation shall be retained in position by positive means.		P
23.7	Conductors identified by the colour combination green/yellow shall be connected to earthing terminals.		P
23.8	Aluminium wires shall not be used for internal wiring.		N/A
23.9	Stranded conductors shall not be consolidated by lead-tin soldering where they are subjected to contact pressure.		P
23.10	The insulation and sheath of internal wiring, incorporated in external hoses for the connection of an appliance to the water mains, at least equivalent to that of light polyvinyl chloride sheathed flexible cord (60227 IEC 52)		N/A
24	**Components**		-
24.1	Components shall comply with the safety		P

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Clause	**Requirement - Test**	**Result-Remark**	**Verdict**
	requirements specified in the relevant IEC standards.		
24.1.1	Capacitors likely to be permanently subjected to the supply voltage and used for radio interference suppression or for voltage dividing, complying with IEC 60384-14	VDE	P
	If the capacitors have to be tested, they are tested according to Annex F		N/A
24.1.2	Safety isolating transformers complying with IEC 61558-2-6		N/A
	If they have to be tested, they are tested according to Annex G		N/A
24.1.3	Switches complying with IEC 61058-1, the number of cycles of operation being at least 10 000		N/A
	Switches incorporated in hand dryers are subjected to 50 000 cycles of operation.		N/A
24.1.4	Automatic controls complying with IEC 60730-1 with the relevant part 2. The number of cycles of operation being at least:	VDE	P
24.1.5	Appliance couplers complying with IEC 60320-1		N/A
24.1.6	Small lamp holders similar to E10 lampholders complying with IEC 60238, the requirements for E10 lampholders being applicable		N/A
24.1.7	For remote operation of the appliance via a telecommunication network, the relevant standard for the telecommunication interface circuitry in the appliance is IEC 62151		N/A
24.1.8	The relevant standard for thermal links is IEC 60691	VDE	P
24.1.9	Contactors and relays, other than motor starting relays, tested as part of the appliance		N/A
24.2	Appliances shall not be fitted with :		-
	- switches or automatic controls in flexible cables		P
	- devices which cause the protective device in the fixed wiring		P
	- thermal cut-outs which can be reset by a soldering operation.		P

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Clause	**Requirement - Test**	**Result-Remark**	**Verdict**
	Helmet-type hairdryers and permanent-wave incorporate a switch in a flexible cord.		N/A
24.3	Switches intended to ensure all-pole disconnection of stationary appliances, as required in 22.2,	No such part	N/A
24.4	Plugs and socket-outlets for extra-low voltage circuits, shall not be interchangeable with plugs and socket-outlets complying with IEC 60083 or IEC 60906-1.		N/A
24.5	Capacitors in auxiliary windings of motors shall be marked with their rated voltage and capacitance		N/A
	For capacitors connected in series with a motor winding, the voltage across the capacitor does not exceed 1.1 times the rated voltage of the capacitor.		N/A
24.6	The working voltage of motors directly connected to the supply mains and have basic insulation that is inadequate for the rated voltage		N/A
24.7	Hose-sets for the connection of appliances to the water mains		N/A
24.8	Motor running capacitors in appliances for which 30.2.3 is applicable and that are permanently connected in series with a motor winding, not causing a hazard in event of a failure		N/A
24.Z1	For motor running capacitors (IEC 60252-1 type P2) with a metallic enclosure having an overpressure fuse the flame testing of internal plastic parts supporting current carrying connections as required in 30.2.2 and 30.2.3.1 is not necessary.		N/A
25	**Supply connection and external flexible cords**		-
25.1	Appliances, other than permanently connected to fixed wiring, shall be provided with one of the following means for connection to the supply mains:		-
	- supply cord fitted with a plug;		P
	- an appliance inlet;		N/A
	- pins for insertion into socket-outlets.		N/A
25.2	Appliances, other than stationary appliances for multiple supply, shall not be provided with more than one means of connection to the supply mains.		N/A

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Clause	**Requirement - Test**	**Result-Remark**	**Verdict**
25.3	Appliances intended to be permanently connected to fixed wiring	Terminal block	P
	- a set of terminals allowing the connection of a flexible cord		P
	- a fitted supply cord		N/A
	- a set of supply leads accommodated in a suitable compartment		N/A
	- a set of terminals for the connection of cables of fixed wiring, cross-sectional areas specified in 26.6, and the appliance allows the connection of the supply conductors after the appliance has been fixed to its support		N/A
	- a set of terminals and cable entries, conduit entries, knock-outs or glands, allowing connection of appropriate types of cable or conduit, and the appliance allows the connection of the supply conductors after the appliance has been fixed to its support		N/A
	For a fixed appliance constructed so that parts can be removed to facilitate easy installation, this requirement is met if it is possible to connect the fixed wiring without difficulty after a part of the appliance has been fixed to its support		N/A
25.4	For appliances intended to be permanently connected to the fixed wiring and having a rated current not exceeding 16A, cable and conduit entries shall be suitable		N/A
25.5	Supply cords shall be one of the following methods:		-
	- type X attachment;		N/A
	- type Y attachment;		N/A
	- type Z attachment		N/A
	Type X attachment, other than those with a specially prepared cord, not used for flat twin tinsel cords		N/A
	For multi-phase appliances supplied with a supply cord and that are intended to be permanently connected to fixed wiring, the supply cord is		N/A

EN 60335-2-23			
Clause	**Requirement - Test**	**Result-Remark**	**Verdict**
	assembled to the appliance by type Y attachment		
	Type Z attachment is allowed for:		-
	- hand-held appliances;		N/A
	- hairdryers with a flexible hood attachment;		N/A
	- heaters for detachable curlers having not more than 10 curlers.		N/A
25.6	Plugs shall not be fitted with more than one flexible cord.		N/A
	Supply cords of single-phase portable appliances having a rated current not exceeding 16A shall be fitted with a plug		N/A
25.7	Supply cords shall not be lighter than:	The supply cord not provided with appliance.	-
	- Rubber sheathed (at least 60245 IEC 53)		N/A
	- Polychloroprene sheathed (at least 60245 IEC 57)		N/A
	- Cross-linked polyvinyl chloride sheathed (at least 60245 IEC 88)		N/A
	- Polyvinyl chloride sheathed.		N/A
	• light polyvinyl chloride sheathed cord (60227 IEC 52), for appliances having a mass not exceeding 3 kg;		N/A
	• ordinary polyvinyl chloride sheathed cord (60227 IEC 53), for appliances having a mass exceeding 3 kg.		N/A
	- Heat resistant polyvinyl chloride sheathed.		N/A
	• heat-resistant light polyvinyl chloride sheathed cord (code designation 60227 IEC 56), for appliances having a mass not exceeding 3 kg		N/A
	• heat-resistant polyvinyl chloride sheathed cord (code designation 60227 IEC 57), for other appliances.		N/A
	- Halogen-free thermoplastic compound sheathed.		N/A
	Supply cords for class III appliances adequately insulated		N/A
	Light polyvinyl chloride sheathed cords are allowed regardless of the mass of the appliance.		N/A
25.8	Conductors of supply cords shall have a nominal		-

EN 60335-2-23					
Clause	**Requirement - Test**			**Result-Remark**	**Verdict**
	cross-sectional area not less than that shown in the following table:				
	Rated current of appliance (A)	Nominal cross-sectional area (mm^2)			-
	≦0.2	Tinsel cord			-
	＞0.2 and ≦3	0.5			N/A
	＞3 and ≦6	0.75			N/A
	＞6 and ≦10	1.0			N/A
	＞10 and ≦16	1.5			N/A
25.9	Supply cords shall not be in contact with sharp points or edges of the appliance.				N/A
25.10	The supply cord of class I appliances shall have a green/yellow core.			The supply cord not provided with appliance.	N/A
25.11	Conductors of supply cords shall not be consolidated by lead-tin soldering.				N/A
25.12	The insulation of the supply cords shall not be damaged when moulding the cord to part of the enclosure.				N/A
25.13	Inlet openings for supply cords shall be constructed so that the sheath of the supply cord can be introduced without of damage.				P
25.14	Appliances provided with a supply cord that are moved while in operation shall be constructed				N/A
	The force applied to the supply cord of appliance provided with a swivel connection				N/A
25.15	Appliances provided with a supply cord shall have a cord anchorage.				N/A
	It shall not be possible to push the cord into the appliance.				N/A
	The test is conducted 25 times, each time for a duration of 1 s				N/A
	After the tests, the power supply cord shall not have been longitudinally displaced by more than 2mm				N/A
	Mass of the equipment kg	Pull force N	Torque Nm		-
	M＜1	30	0.1		N/A
	1＜M＜4	60	0.25		N/A
	M＞4	100	0.35		N/A

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Clause	**Requirement - Test**	**Result-Remark**	**Verdict**
	The swivel connection is not locked during the tests		N/A
25.16	Cord anchorages for type X attachments shall be so designed that:		-
	- replacement of the cord is easily possible;		N/A
	- it is clear how the relief from strain;		N/A
	- they are suitable for the different types of supply cord;		N/A
	- the cord cannot touch the clamping screws;		N/A
	- the cord is not clamped by a metal screws;		N/A
	- at least on part of the cord anchorage securely fixed to the appliance, unless parts of a specially prepared cord;		N/A
	- screws which have to be operated when replacing the cord do not fix any other component, if applicable;		N/A
	- if labyrinths can be bypassed the test of 25.15 is nevertheless withstood;		N/A
	- for Class 0, 0I and I appliance; they are of insulating material or are provided with an insulating lining;		N/A
	- for Class II appliance; they are of insulating material or if of metal, they are insulated from accessible metal parts by supplementary insulating.		N/A
25.17	For type Y attachment and type Z attachment, cord anchorages shall be adequate.		N/A
25.18	Cord anchorages shall be arranged so that the cord can only be fitted with the aid of a tool.	Terminal block	P
25.19	For type X attachment, glands shall not be used as cord anchorages in portable appliances.		N/A
	Tying the cord into a knot or tying the cord with string is not allowed.		N/A
25.20	For type Y and type Z attachment, the insulated conductors of the supply cord shall be additionally insulated from accessible metal parts		P
25.21	The space for the connection of supply cords having type X attachment, or for the connection of fixed wiring, shall be constructed:		-
	- shall be so designed as to permit checking;		N/A
	- covers can be fitted without risk of damage to the		N/A

EN 60335-2-23			
Clause	**Requirement - Test**	**Result-Remark**	**Verdict**
	conductors or their insulation;		
	- for portable appliances, so that the uninsulated end of a conductor become free from the terminal, cannot come into contact with accessible metal parts.		N/A
25.22	Appliance inlets shall:	No such part	-
	- be so enclosed that live parts are not accessible during insertion or removal of the connector;		N/A
	Requirement not applicable to appliance inlets complying with IEC 60320-1		N/A
	- be so located that the connector can be inserted without difficulty;		N/A
	- be so located that the appliance is not supported by the connector		N/A
	- not be an appliance inlet for cold conditions		N/A
25.23	Interconnection cords shall comply with the requirements for the supply cord.		N/A
25.24	Interconnection cords shall not be detachable without the aid of a tool	No such parts	N/A
25.25	The dimensions of pins of appliances that are inserted into socket-outlets shall be compatible with the dimensions of the relevant socket-outlet.	No such parts	N/A
25.101	Swivel connections shall be adequate for normal use of the appliance.	No such parts	N/A
26	**Terminals for external conductors**		-
26.1	Appliances shall be provided with terminals or equally effective devices for the connection	Pillar screw terminals	P
	The terminals shall be accessible after the removal of a non-detachable cover.		P
26.2	Appliances having type X attachment shall be provided with terminals in which the connections are made by means of screws, nuts or similar devices.		N/A
	If soldered connections are used, the conductor shall be positioned so that reliance is not placed upon the soldering alone to maintain it in position.		N/A
26.3	Terminals for type X attachment and those for connection to fixed wiring shall be fixed so that when the clamping means is tightened or loosened		-

EN 60335-2-23				
Clause	**Requirement - Test**		**Result-Remark**	**Verdict**
	- the terminal does not become loosen;			P
	- internal wiring is not subjected to stress;			P
	- creepage distances and clearances are not reduced below the values specified in 29.1			P
26.4	Terminals for type X attachment shall not require special preparation of the conductor.			N/A
	Terminals cannot slip out when clamping screws or nuts are tightened.			N/A
26.5	Terminals for type X attachment shall be located or shielded so that no risk of accidental connection to			N/A
26.6	Terminals for type X attachment and connection to fixed wiring shall allow the connection of conductors as shown in the following table:			-
	Rated current of appliance (A)	*Nominal cross-sectional area (mm^2)*		-
		Flexible cords		-
	≦3	*0.5 to 0.75*		N/A
	>3 and ≦6	*0.75 to 1.0*	The wiring specified 14AWG.	P
	>6 and ≦10	*1.0 to 1.5*		N/A
	>10 and ≦16	*1.5 to 2.5*		N/A
26.7	Terminals for type X attachment shall be accessible after removal of a cover or part of the enclosure.			N/A
26.8	Terminals for the connection of fixed wiring, including the earthing terminal, shall be located close to each other.			P
26.9	Terminals of the pillar type shall be constructed and located			P
26.10	Terminals with screw clamping and screwless terminals shall not be used for connection of the conductors of flat twin tinsel cords.			P
	Applying a pull of 5N to the connection that shall show no damage.			P
	Terminals with screw clamping and screwless terminals shall not be used for type X attachments in appliances incorporating a swivel connection,			N/A
26.11	For appliances having type Y attachment or type Z		Pillar screw terminals	P

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Clause	**Requirement - Test**	**Result-Remark**	**Verdict**
	attachment, solder, welded, crimped or similar connections may be used for the connection of external conductors.		
27	**Provision for earthing**		-
27.1	Accessible metal parts of class 0I and Class I appliances, shall be permanently and reliably connected to an earthing terminal.		P
	Earthing terminals shall not be electrically connected to the neutral terminal.		P
	Class 0, Class II and Class III appliances shall have no provision for earthing.	Class I appliances	N/A
27.2	The clamping means of earthing terminals shall be adequately secured against accidental loosening.		P
	It shall not be possible to loosen the conductors without the aid of a tool.		P
27.3	For detachable parts that are plugged into another part of the appliance, and having an earth connection, the earth connection made before and separated after current-carrying connections when removing the part	Not provided with a supply cord	N/A
	For appliances with supply cords shall be such that the current-carrying conductors become taut before the earthing conductor.		N/A
27.4	All parts of the earthing terminal intended for connection of external conductors shall be no risk of corrosion resulting.		P
27.5	The connection between the earthing terminal or earthing contact and earthed metal parts shall be have low resistance.		P
	An a.c. or d.c. source having a no-load voltage not exceeding 12 V and 25 A, is passed between the earthing terminal and each of the accessible metal parts in turn.	12V, 25A	P
	The resistance calculated from the current and this voltage drop shall not exceed 0.1 Ω.	0.065Ω	P
27.6	The printed conductors of printed circuit boards shall not be used to provide earthing continuity in hand-held appliances.		N/A

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Clause	**Requirement - Test**	**Result-Remark**	**Verdict**
28	**Screws and connections**		-
28.1	Screwed connections, electrical or otherwise, shall withstand the mechanical stresses.		P
28.2	Electrical connections shall be so designed that contact pressure is not transmitted through insulating material.		P
28.3	Space-threaded (sheet metal) screws shall only be used for electrical connections if they clamp the parts together.		N/A
	Thread-cutting (self-tapping) screws shall only be used for electrical connections if they generate a full form standard machine screw thread.		N/A
	Thread-cutting and space-threaded screws may be used to provided earthing continuity.		N/A
28.4	Screws which make a mechanical connection shall be secured against loosening if they make electrical connections.		P
	Rivets used for electrical connections shall.		N/A
29	**Clearances, creepage distances and solid insulation**		-
	Appliances shall be constructed so that the clearances, creepage distances and solid insulation are adequate to withstand the electrical stresses		P
29.1	Clearances shall not be less than the values specified in Table 16, taking into account the rated impulse voltage for the overvoltage categories of Table 15.		P
	Rated impulse voltage V / Minimum clearance [a] mm		-
	500 / 0.5 [b, c]		N/A
	1500 / 0.5 [b, c]		N/A
	2500 / 1.5		P
	4000 / 3.0		N/A
29.1.1	Clearances of basic insulation withstand the overoltages, taking into account the rated impulse voltage. The values of Table 16, or the impulse voltage test of clause 14, are applicable.	>1.5mm Between live parts and accessible metal parts	P
29.1.2	Clearances of supplementary insulation shall be not less than those specified for basic insulation in table		N/A

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Clause	**Requirement - Test**		**Result-Remark**	**Verdict**
	16.			
29.1.3	The reinforced insulation shall be not less than above table but using the next higher step for rated impulse voltage as a reference.		>3.0mm Between live parts and accessible non-metallic parts	P
29.1.4	For functional insulation, the values of table 16 are applicable.		>2.0mm Between live parts of different polarity	P
29.1.5	Appliances having higher working voltage than rated voltage, the voltage used for determining clearances from table 16 is the sum of the rated impulse voltage and the difference between the peak value of the working voltage and the peak value of the rated voltage.			N/A
29.2	Appliances shall be constructed so that creepage distances are not less than those appropriate for the working voltage, taking into account the material group and the pollution degree.			P
	Pollution degree 2 applies			P
	Working voltage V	Creepage distance mm		-
	≦50	1.2		N/A
	＞50 and ≦125	1.5		N/A
	＞125 and ≦250	2.5		P
	＞250 and ≦400	4.0		N/A
	＞400 and ≦500	5.0		N/A
	＞500 and ≦800	6.3		N/A
29.2.1	Creepage distances of basic insulation shall not be less than those specified in table 17.		>2.5mm Between live parts and accessible metal parts	P
29.2.2	Creepage distances of supplementary insulation at least as specified for basic insulation in table 17.			N/A
29.2.3	Creepage distances of reinforced insulation at least as specified for basic insulation in table 17.		>5.0mm Between live parts and accessible non-metallic parts	P
29.2.4	Creepage distances of functional insulation not less than specified in table 18.		>2.0mm Between live parts of	P

EN 60335-2-23			
Clause	**Requirement - Test**	**Result-Remark**	**Verdict**
		different polarity	
29.3	Supplementary and reinforced insulation having adequate thickness, or a sufficient number of layers, to withstand the electrical stresses		P
29.3.1	The thickness of the insulation shall be at least		-
	- 1 mm for supplementary insulation;		N/A
	- 2 mm for reinforced insulation		N/A
29.3.2	Each layer of material shall withstand the electric strength test		N/A
	Supplementary insulation consisting of at least 2 layers		N/A
	Reinforced insulation consisting of at least 3 layers		N/A
29.3.3	The insulation is subjected to the dry heat test		N/A
29.3.4	Thickness of accessible parts of reinforced insulation consisting of a single layer not less than specified in table 19 .....:		N/A
29.3Z1	Appliance shall be constructed so that if there is a possibility of damaging the insulation during installation, the insulation shall withstand the scratch and penetration test of 21.2		N/A
	For curling irons, the distance through insulation between metal parts separated by supplementary insulation may be reduced to 0.6mm, provided that the distance through basic insulation is at least 1 mm		N/A
30	**Resistance to heat and fire**		-
30.1	External parts of insulating material shall be sufficiently resistant to heat.		P
	The test is carried out at a temperature of 40℃±2℃ plus the maximum temperature rise determined during the test of clause 11, but it shall be at least		-
	- 75℃ ±2℃, for external parts;	Controller plastic	P
	- 125℃±2℃, for parts supporting live parts.	Terminal block	P
	After 1 h, the diameter of the impression caused by the ball is measured and shall not exceed 2 mm.		P
	For hand dryers and hairdryers, the temperature rise occurring during the tests of Clause 19 are not taken into account.		P

EN 60335-2-23			
Clause	**Requirement - Test**	**Result-Remark**	**Verdict**
30.2	Parts of non-metallic material shall be resistant to ignition and spread of fire.		P
	For heaters for detachable curlers, 30.2.3 is applicable. For other appliances, 30.2.2 is applicable.		N/A
30.2.1	Glow-wire test of IEC 60695-2-11 at 550 ° C, unless		P
	The material is classified at least HB40 according to IEC 60695-11-10		N/A
	Parts for which the glow-wire test cannot be carried out meet the requirements in ISO 9772 for category HBF material		N/A
30.2.2	Appliances operated while attended, parts of insulating material supporting current-carrying connections and parts within a distance of 3mm subjected to the glow-wire test of IEC 60695-2-11 at a temperature of:	Terminal block: 750℃	P
30.2.3	Appliances operated while unattended, tested as specified in 30.2.3.1 and 30.2.3.2		N/A
30.2.3.1	Parts of insulating material supporting connections carrying a current exceeding 0.2A during normal operation, and		N/A
	having a glow-wire flammability index of at least 850 ° C according to IEC 60695-2-12		N/A
30.2.3.2	Parts of insulating material supporting current-carrying connections, and		N/A
	subjected to glow-wire test of IEC 60695-2-11		N/A
	Test not carried out on material having a glow-wire ignition temperature according to IEC 60695-2-13 as specified		N/A
	Glow-wire test of IEC 60695-2-11, the temperature being:		N/A
	-750 ° C, for connections carrying a current exceeding 0,2A during normal operation		N/A
	-650 ° C, for other connections		N/A
	Parts that during the test produce a flame persisting longer than 2 s, tested as specified		N/A
	If a flame persists longer than 2 s during the test, parts above the connection, as specified, subjected to the needle-flame test of annex E, unless		N/A
	The material is classified as V-0 or V-1 according to		N/A

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Clause	**Requirement - Test**	**Result-Remark**	**Verdict**
	IEC 60695-11-10		
30.2.4	Base material of printed circuit boards subjected to needle-flame test of annex E		P
30.101	Helmet-type Hairdryers shall be resistant to fire.		N/A
31	**Resistance to rusting**		-
31.1	Ferrous parts, the rusting of which might cause the appliance to fail to comply with this standard, shall be adequately protected against rusting.		P
32	**Radiation, toxicity and similar hazards**		-
32.1	Appliances shall not emit harmful radiation, or present a toxic or similar hazard.		P

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Critical Components

Object / part No.	manufacturer / trademark	Type / model	technical data	mark(s) of conformity[1])
Enclosure	Various	Various	Painted metal enclosure, ventilation openings on sides.	-
Terminal block	Heavy Power Co., Ltd.	PA10	30A, 300V	VDE 40019247
Plastic material of sensor	TORAY INDUSTRIES INC	Lumirror	VTM-2, 105℃	UL E86511
Internal wire of motor	YI HUAN PRECISION INDUSTRY CO LTD	1015	600V, 105℃, 18AWG	UL E250011
Internal wire of heater	GREAT LEOFLON INDUSTRIAL CO LTD	1332	300V, 200℃, 22AWG	UL E208889
Internal wire to main PCB	KAIBO WIRE & CABLE MFG CO LTD	1015	300V, 105℃, 20AWG	UL E210567
Internal wire of sensor	REI HSING WIRE CO LTD	1007	300V, 80℃, 26AWG	UL E108485
Blow housing	TOSOH CORP POLYMERS DIV	GS-40(c)	V-0, 130℃	UL E102861
Heater	SILVER KOHKI	EcoSlender_heater	ϕ0.4mm nichel - chrome alloy wire. Overall 5mm OD 220VAC, 450W	-
- Thermal cut-off	NEC SCHOTT Components Corporation	SF139E	250V~, 10A, 142℃	VDE 40006568
- Thermostat	Sensata Technologies	YS10	16A, 250V, 85℃	ENEC
- Mica	COGEBI SA	505.3	V-0, 200℃, T:1.5mm	UL E67143

Critical Components

Object / part No.	manufacturer / trademark	Type / model	technical data	mark(s) of conformity[1])
AC Motor	FASTDRY	E0128-0002/92D-H	220-240V, 50/60Hz, 460W	-
- Material of motor carbon brush holder	Nan Ya Plastics Corp Plastics 4th Div.	2210G9	HB, 120℃	UL E130155
- Thermostat	Sensate Technolongies Holland, B.V.	3MP	6A, 250V, T105	ENEC05 2014531.07
- Bobbin	E I Dupont De Nemours & Co.	FR50	V-0, 130℃	UL E41938
- Tube	Chang Chun Plastics Co., Ltd.	4130	V-0, 120℃	UL E59481
Major component on Main PCB				
EPOXY	FLYING DRAGON MATERIAL INDUSTRIAL CO LTD	FLYGON 5940	V-0, 90℃	UL E101381
Timer assembly box	CHI MEI CORPORATION	PA-765(+)	Molded plastic, filled by seal compound. V-0, 80℃	UL E56070
PCB	COFAN ELECTRONIC CO LTD	CTE001	V-0, 130℃	UL E202216
X1 capacitor (C4)	Cheng Tung Industrial Co., Ltd.	CTX	0.047μF, 250V	VDE 40022642
X1 capacitor (C8)	Cheng Tung Industrial Co., Ltd.	CTX	0.68μF, 250V	VDE 40022642
X1 capacitor (C3)	Cheng Tung Industrial Co., Ltd.	CTX	1.0μF, 250V	VDE 40022642
Electrolytic capacitor (C6,C9)	Various	Various	470μF, 10V, 105℃	-

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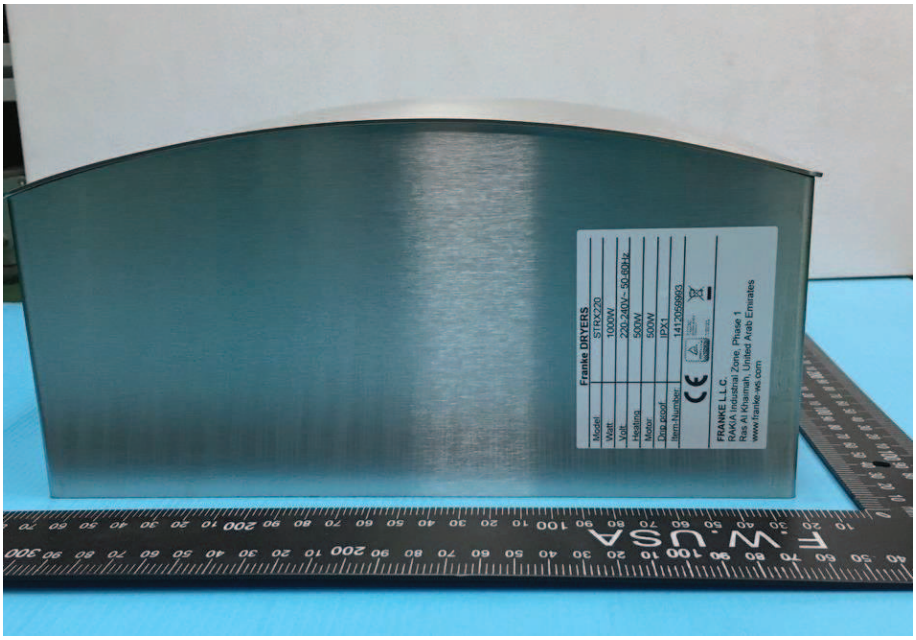
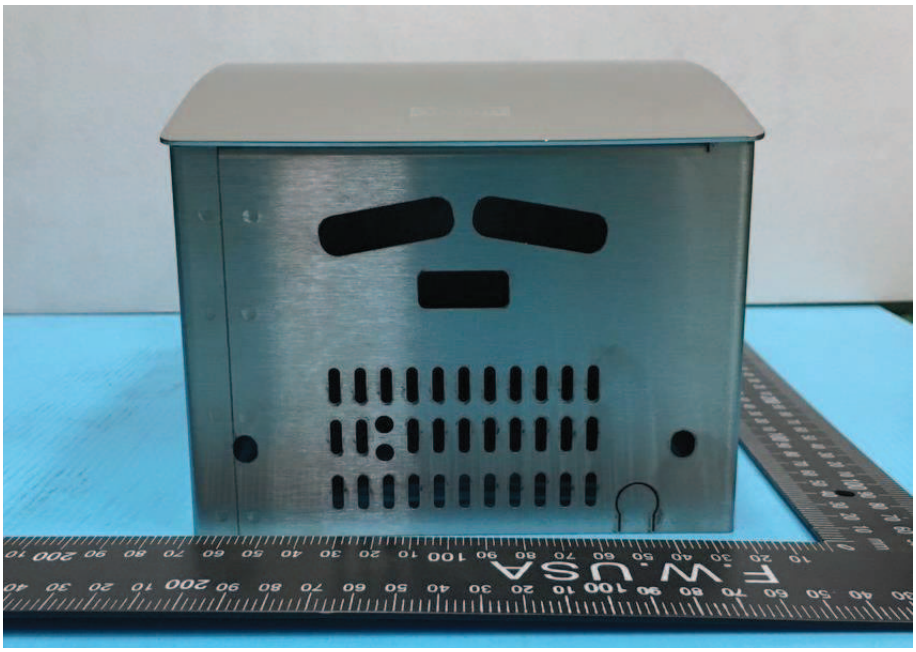
Photos

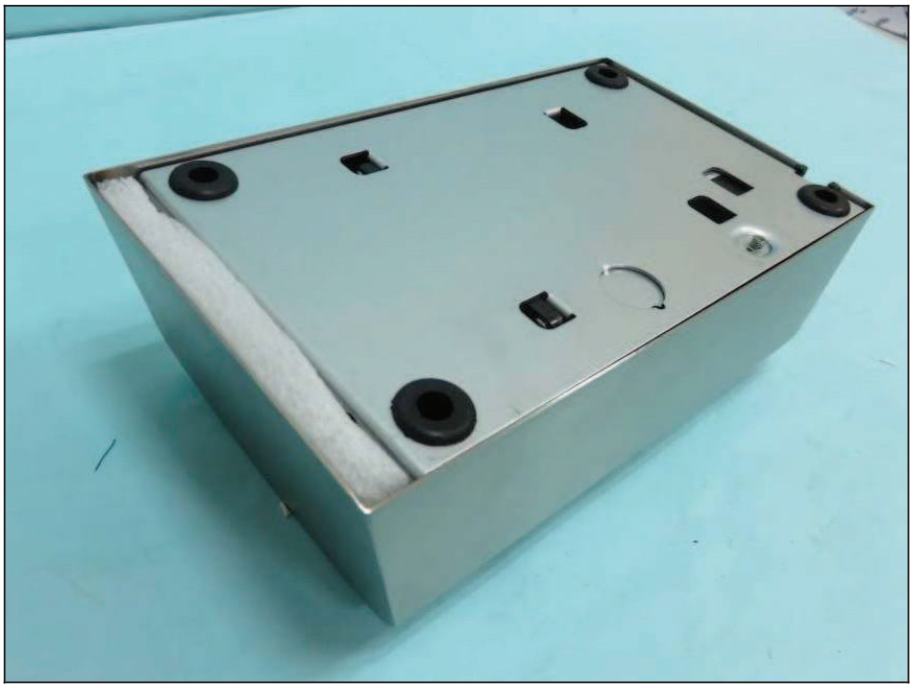
E.U.T. Hand Dryer, Model STRX220



Photos

E.U.T. Hand Dryer, Model STRX220



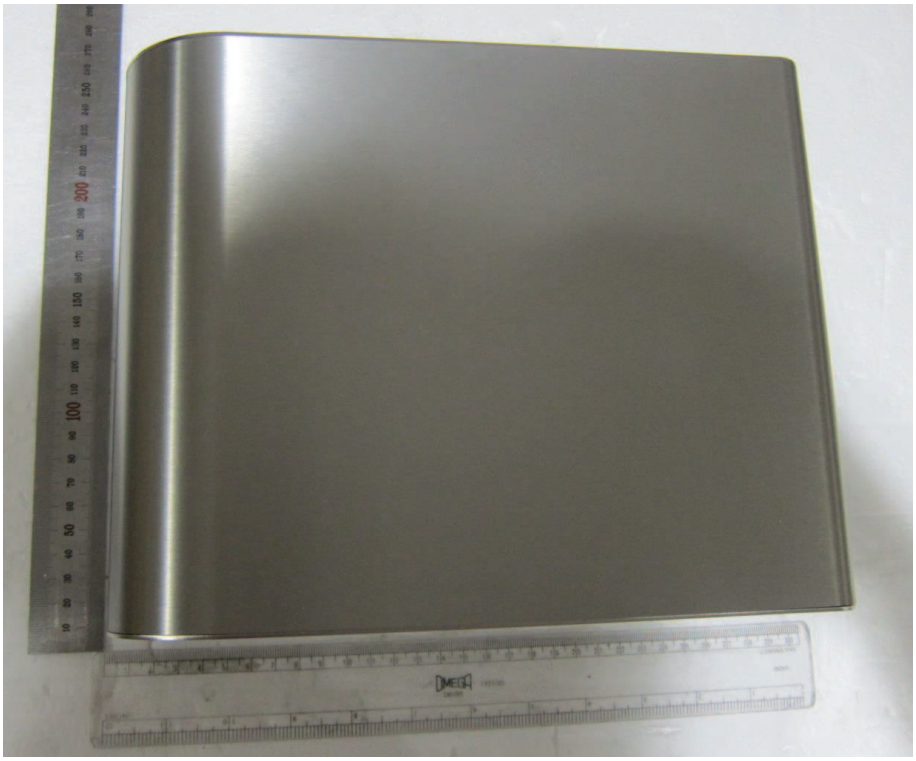


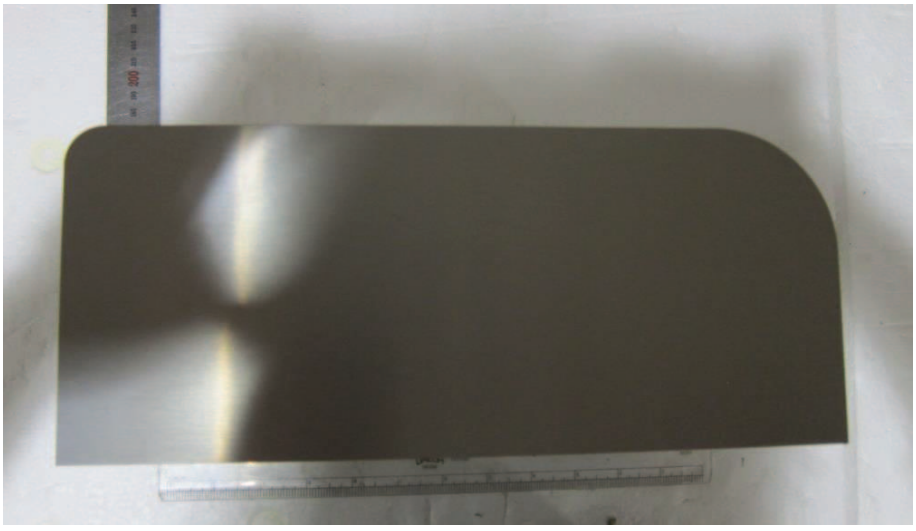
Photos

E.U.T. Hand Dryer, Model EXOS220X

Photos

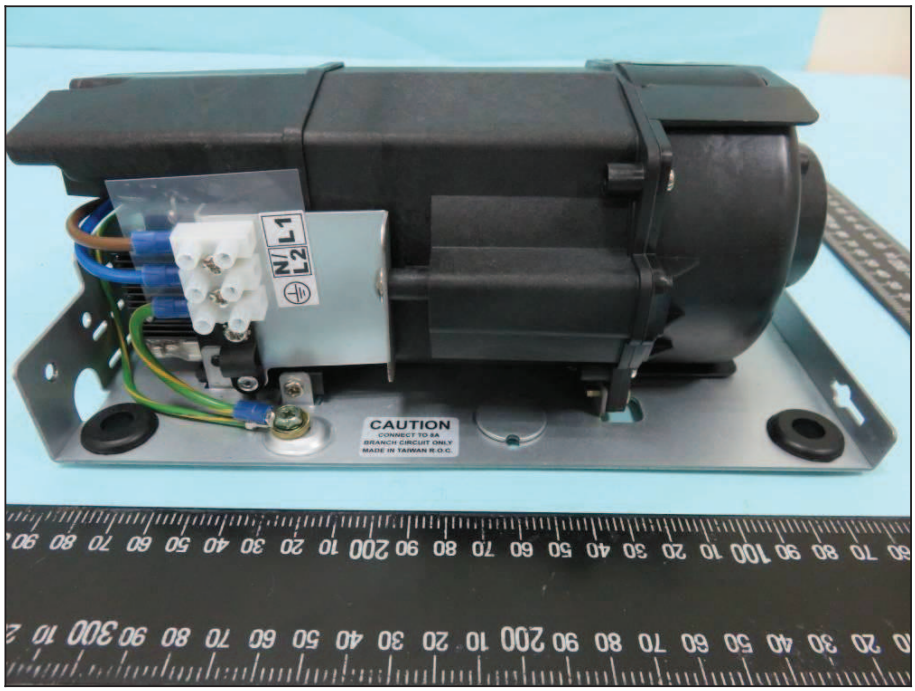
E.U.T. Hand Dryer, Model DRYX220

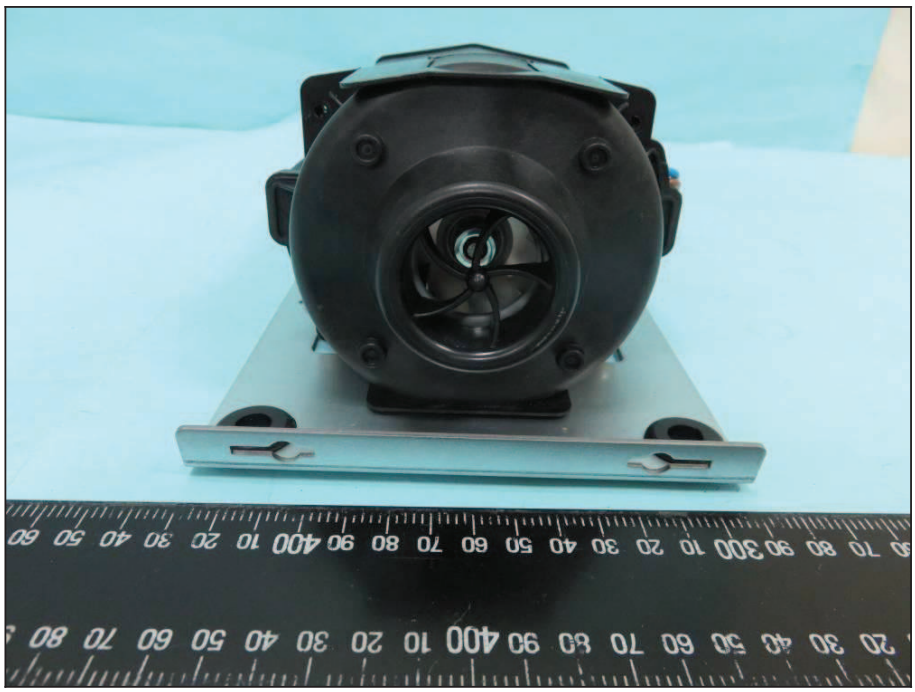




Photos

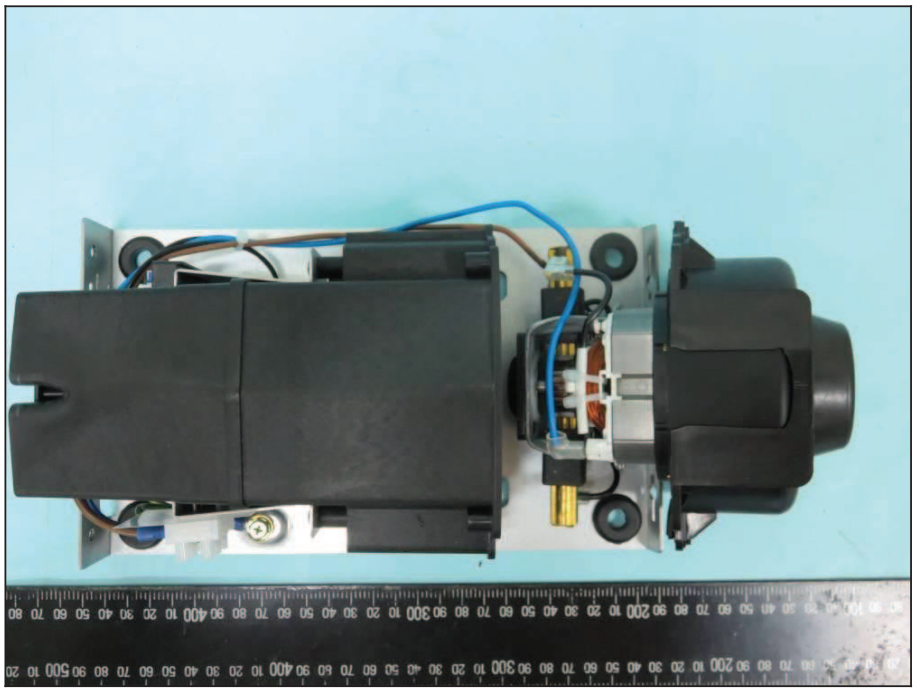
E.U.T. Hand Dryer, Model STRX220

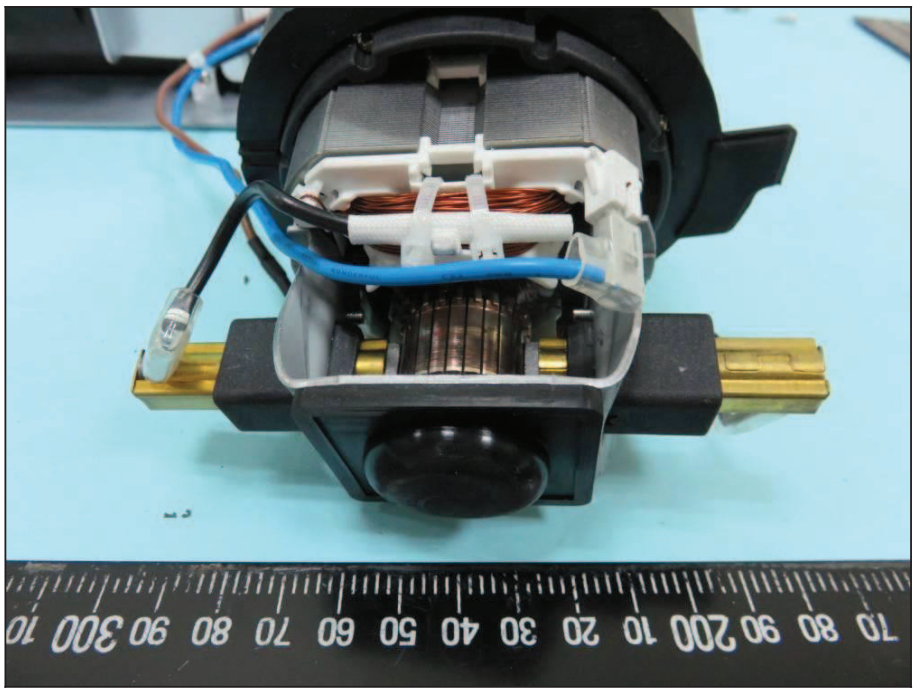




Photos

E.U.T. Hand Dryer, Model STRX220





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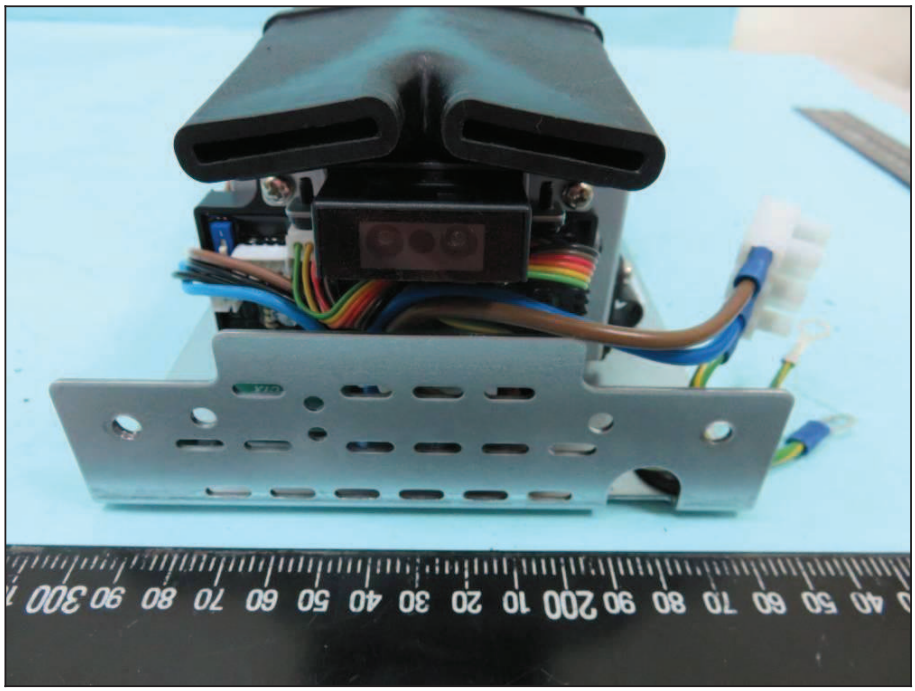

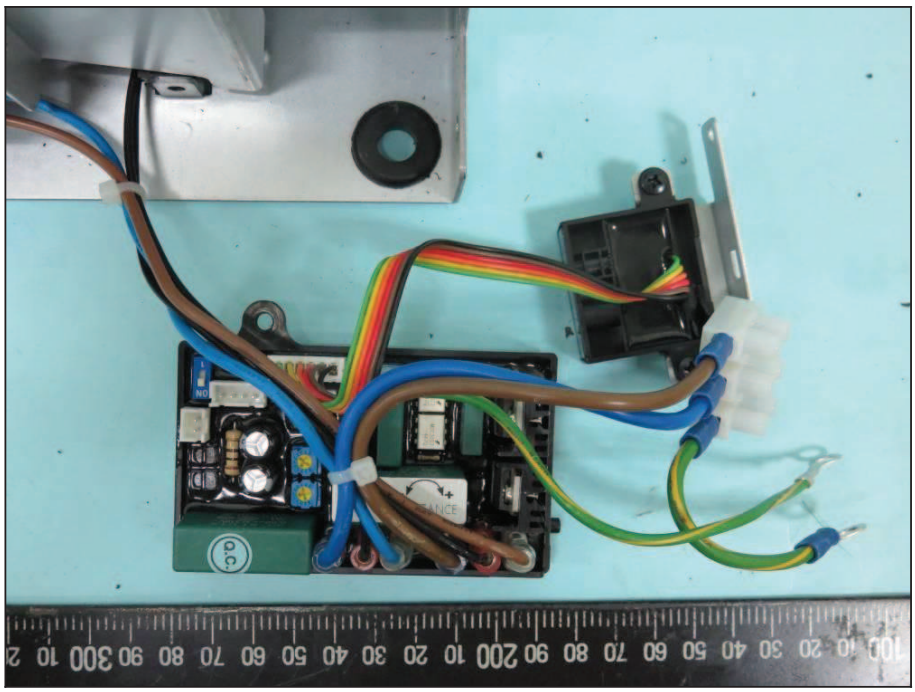

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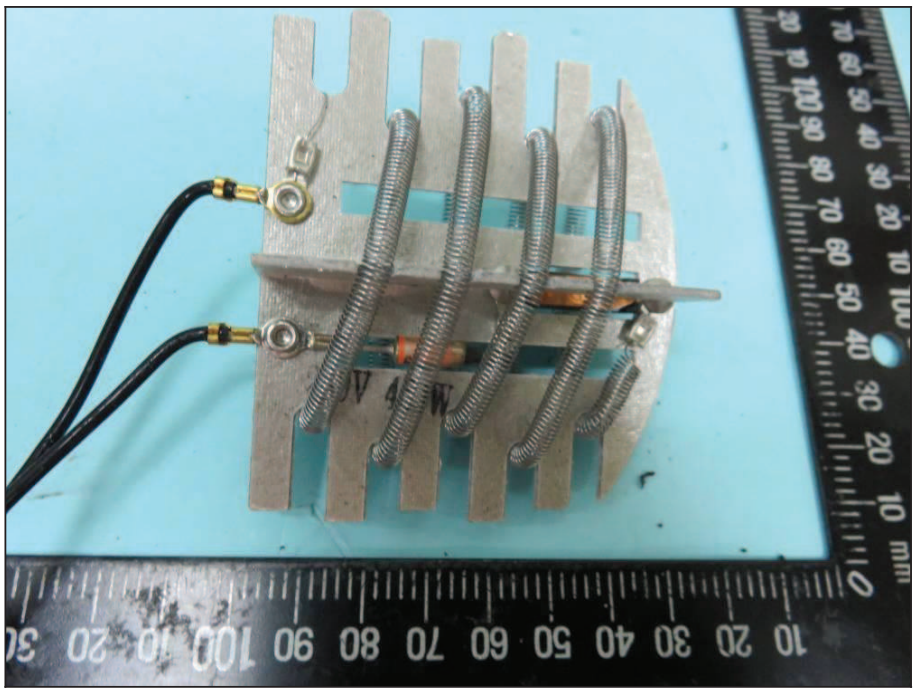

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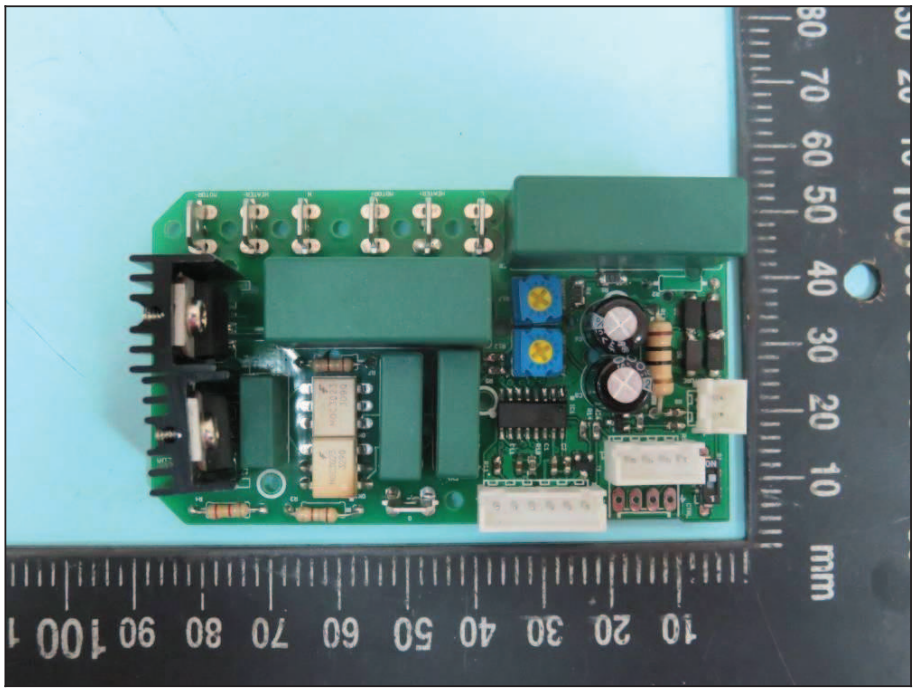
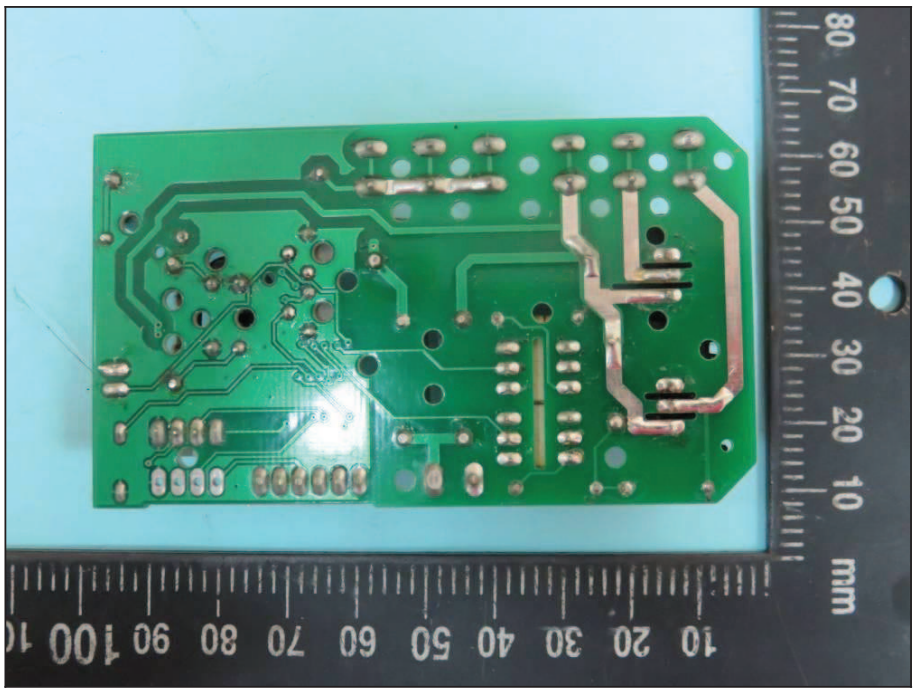
E.U.T. Hand Dryer, Model STRX220





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