TEST REPORT

Reference No.	:	WTN17N1298457E
Applicant	:	CIXI RUNSUN ELECTRICAL APPLIANCE CO LTD
Address	:	LONGTOUCHANG INUSTRIAL PARK, LONGSHANG TOWN, CIXI CITY, NINGBO CHINA
Manufacturer	:	The same as above
Address	:	The same as above
Product Name	:	TWIN TUB WASHING MACHINE
Model No	:	XPB25-800S, XPB28-800S, XPB32-800S, XPB36-800S, XPB42-800S, XPB48-800S, XPB52-800S, XPB58-800S, XPB60-800S, XPB68-800S, XPB72-800S, XPB78-800S, XPB80-800S
Standards	:	EN 55014-1:2006+A1:2009+A2:2011 EN 55014-2:2015 EN 61000-3-2:2014 EN 61000-3-3:2013
Date of Receipt sample	:	2017-12-18
Date of Test	:	2017-12-21 to 2018-01-04
Date of Issue	:	2018-01-09
Test Report Form No.	:	WEH-55014A-02A
Test Result	:	**Pass**

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

Prepared By:
Waltek Services (Foshan) Co., Ltd.
Address: No. 13-19, 2/F, 2nd Building, Sunlink International Machinery City, Chencun Town, Shunde District, Foshan, Guangdong, China.

Tel:+86-757-23811398
Fax:+86-757-23811381

Compiled by:

Dean Su / Project Engineer

Approved by:

Jack Jiang / Manager

1 Test Summary

EMISSION			
Test Item	**Test Standard**	**Class / Severity**	**Result**
Mains Terminal Disturbance Voltage, 148.5kHz to 30MHz	EN 55014 -1:2006+A1:2009+A2:2011	Clause 4.1.1	Pass
Disturbance Power, 30MHz to 300MHz	EN 55014 -1:2006+A1:2009+A2:2011	Clause 4.1.2	Pass
Discontinuous Disturbance (Click)	EN 55014 -1:2006+A1:2009+A2:2011	Clause 4.2.2	Pass
Radiated Emission, 30MHz to 1000MHz	EN 55014 -1:2006+A1:2009+A2:2011	Clause 4.1.2	N/A
Harmonic Current emission	EN 61000-3-2:2014	Class A	Pass
Voltage Fluctuation and Flicker	EN61000-3-3:2013	Clause 5	Pass
IMMUNITY（EN 55014-2:2015）			
Test Item	**Test Method**	**Performance Criteria**	**Result**
Immunity Test	EN 55014-2:2015	---	Pass

Remark:

Pass	Test item meets the requirement
Fail	Test item does not meet the requirement
N/A	Test case does not apply to the test object

2 Contents

3 General Information

3.1 General Description of E.U.T.

Product Name ..... : TWIN TUB WASHING MACHINE

Model No. ..... : XPB25-800S, XPB28-800S, XPB32-800S, XPB36-800S, XPB42-800S, XPB48-800S, XPB52-800S, XPB58-800S, XPB60-800S, XPB68-800S, XPB72-800S, XPB78-800S, XPB80-800S

Protection Class ..... : Class I

Remark..... :
1. The EUT (equipment under test) is an ordinary TWIN TUB WASHING MACHINE for household appliances and similar use. For the further information, refer to the user's manual.
2. For details information, refer to the section 3.2.
3. For the test results, the EUT had been tested with the condition of rated input. But only the worst case was shown in test report.

3.2 Details of E.U.T.

Technical Data.....

No.	Model	Rated Input	Rated Power	Wash Motor	Spin Motor
1	XPB25-800S	AC 220-240V, 50/60Hz	360	XPD-90	XTD-30
2	XPB28-800S	AC 220-240V, 50/60Hz			
3	XPB32-800S	AC 220-240V, 50/60Hz			
4	XPB36-800S	AC 220-240V, 50/60Hz			
5	XPB42-800S	AC 220-240V, 50/60Hz	440	XPD-120	XTD-45
6	XPB48-800S	AC 220-240V, 50/60Hz			
7	XPB52-800S	AC 220-240V, 50/60Hz			
8	XPB58-800S	AC 220-240V, 50/60Hz			
9	XPB60-800S	AC 220-240V, 50/60Hz	660W	XPD-150	XTD-60
10	XPB68-800S	AC 220-240V, 50/60Hz			
11	XPB72-800S	AC 220-240V, 50/60Hz			
12	XPB78-800S	AC 220-240V, 50/60Hz			
13	XPB80-800S	AC 220-240V, 50/60Hz			

3.3 Description of Support Units

The EUT has been tested as an independent unit. XPB36-800S, XPB58-800S and XPB80-800S are the test samples. The DV, DP, Click tests were performed in the condition of AC 220-240(±10%), 50Hz input. The other tests were performed in the condition of AC 230V, 50Hz input.

3.4 Standards Applicable for Testing

The tests were performed according to following standards:

EN 55014-1:2006+A1:2009 +A2:2011	Electromagnetic compatibility-Requirements for household appliances, electric tools and similar apparatus-Part 1:Emission
EN 55014-2:2015	Electromagnetic compatibility Requirements for household appliances, Part 2: Immunity Product family.
EN 61000-3-2:2014	Electromagnetic compatibility (EMC) -- Part 3-2: Limits - Limits for harmonic current emissions (equipment input current up to and including 16 A per phase).
EN 61000-3-3:2013	Electromagnetic compatibility (EMC) -- Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection.

3.5 Test Facility

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

- **IC – Registration No.: 7760A**

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

- **FCC – Registration No.: 880581**

Waltek Services (Shenzhen) Co., Ltd. has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 880581, May 26, 2011.

3.6 Subcontracted

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

☐ Yes ☒ No

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

Test items:---

Lab information:---

3.7 Abnormalities from Standard Conditions

None.

4 Equipment Used during Test

Mains Terminal Disturbance Voltage (Conducted Emission)					
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Status**
1.	EMI Test Receiver	R&S	ESCI	101406	Valid
2.	LISN	R&S	ENV216	101208	Valid
Disturbance Power					
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Status**
1.	EMI Test Receiver	R&S	ESCI	101406	Valid
2.	Absorbing Clamp	Schwarzbeck	MDS21B	4272	Valid
Discontinuous Disturbance					
Item	**Item**	**Item**	**Item**	**Item**	**Item**
1.	Click Analyzer	AFJ	CL55C	55041313185	Valid
2.	LISN	AFJ	LS16C	16011328327	Valid
Harmonics and Flicker Measuring System					
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Status**
1.	Harmonics /Flicker Analyzer	Kikusui	KHA1000	TL002966	Valid
2.	AC Power Supply	Kikusui	PCR4000LE	TL003094	Valid
3.	Line Impedance Network	Kikusui	LIN40MA-PCR-L	TM001297	Valid

4.1 Measurement Uncertainty

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

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

5 Emission Test Results

5.1 Mains Terminals Disturbance Voltage, 148.5kHz to 30MHz

Test Requirement..... : EN 55014-1

Test Method..... : EN 55014-1

Test Result..... : Pass

Frequency Range..... : 148.5kHz to 30MHz

Class/Severity..... : Table 1 of EN55014-1

5.1.1 E.U.T. Operation

Operating Environment:

Temperature ..... : 22°C

Humidity..... : 51%RH

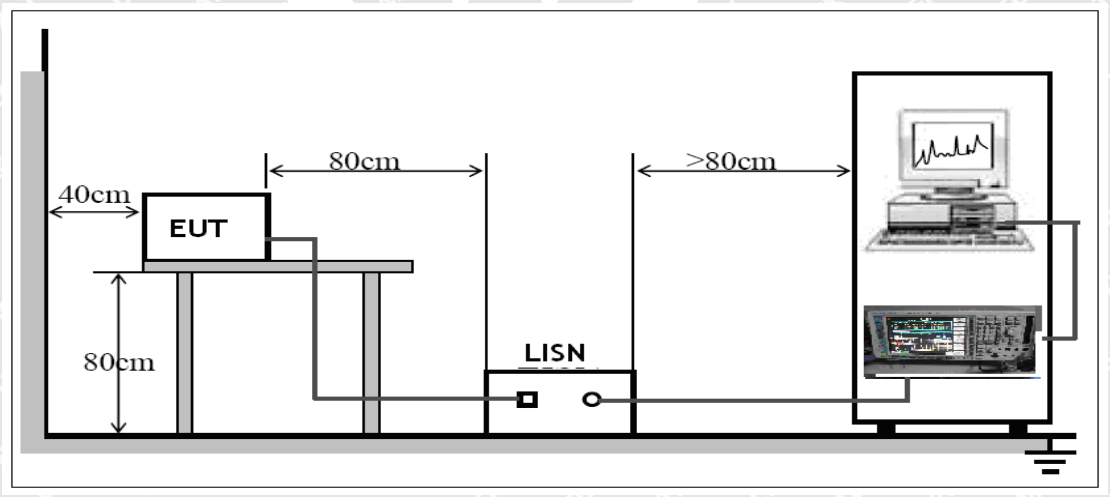
EUT Operation:

Input Voltage ..... : AC 230V, 50Hz

Operating Mode..... : spinning+washing mode

5.1.2 Block Diagram of Test Setup

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

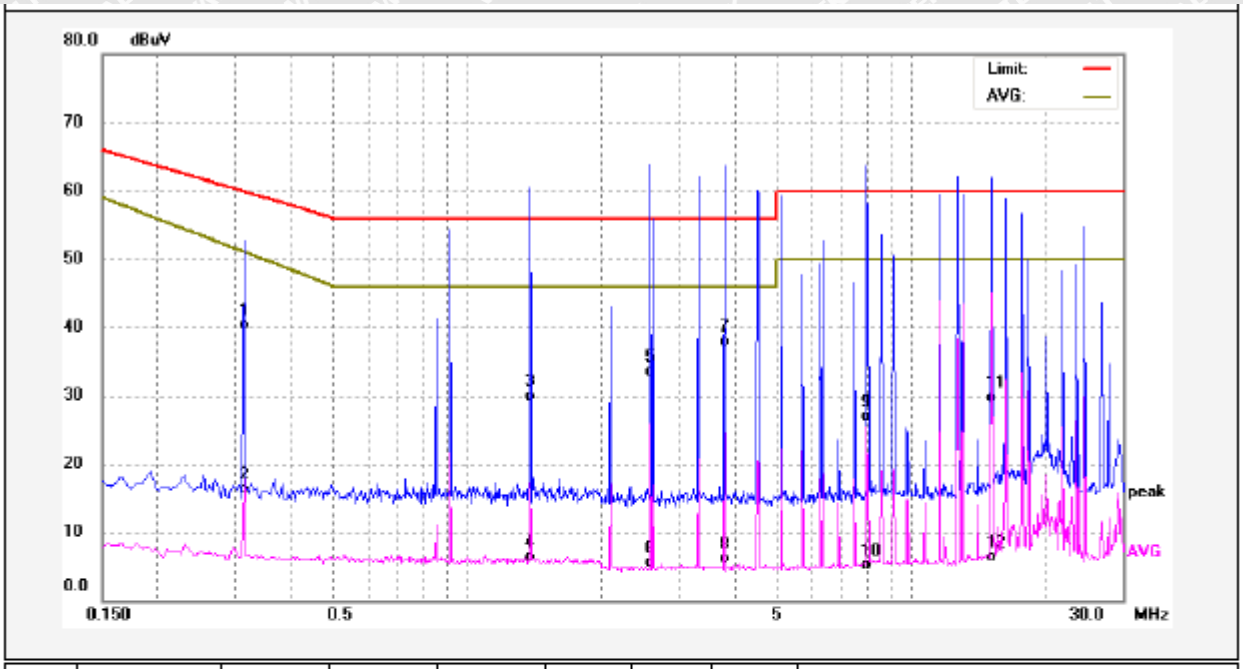


5.1.3 Measurement Data

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

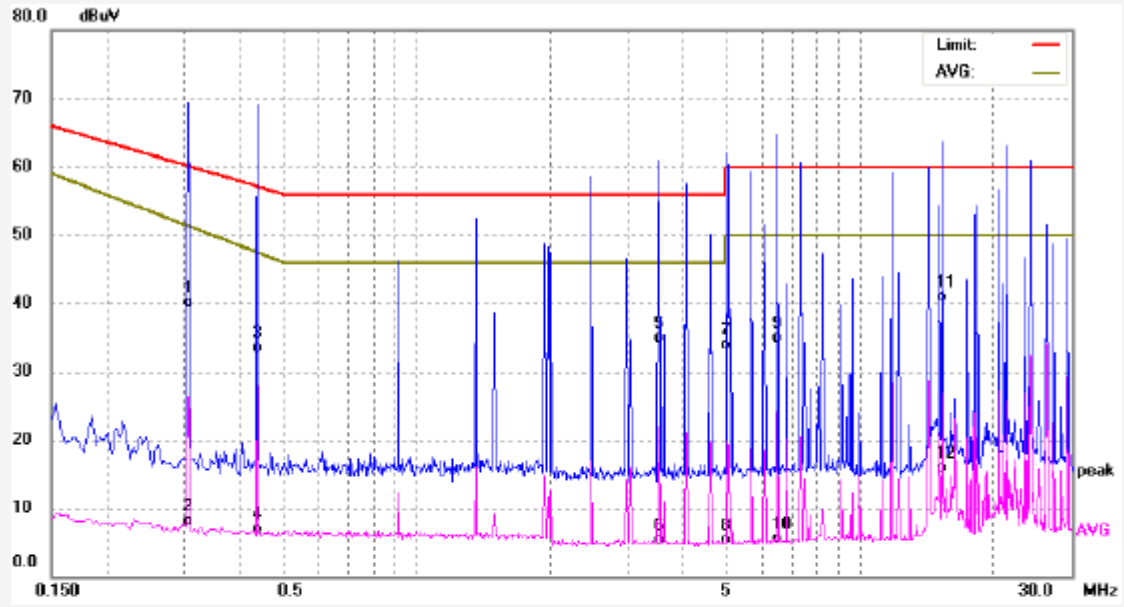
5.1.4 Mains Terminals Disturbance Voltage Test Data

Live Line, XPB36-800S



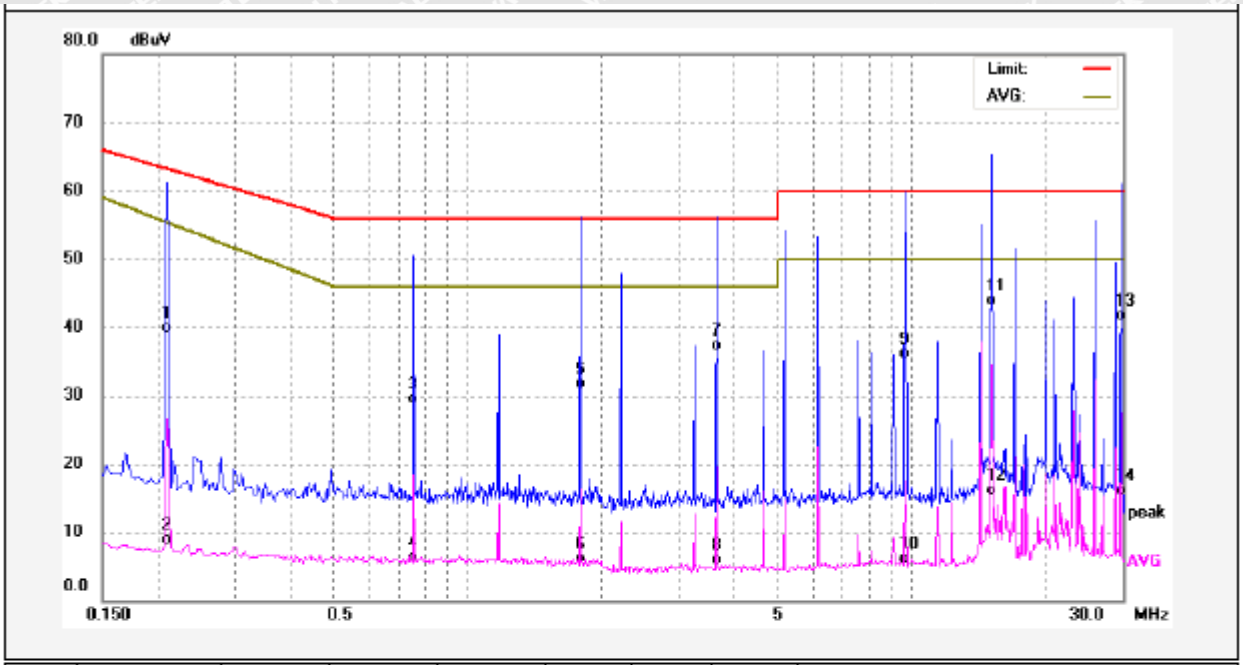
No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.3140	30.65	9.73	40.38	59.86	-19.48	QP	
2	0.3140	6.50	9.73	16.23	51.02	-34.79	AVG	
3	1.3860	20.18	9.65	29.83	56.00	-26.17	QP	
4	1.3860	-3.41	9.65	6.24	46.00	-39.76	AVG	
5	2.5900	23.97	9.63	33.60	56.00	-22.40	QP	
6	2.5900	-4.06	9.63	5.57	46.00	-40.43	AVG	
7	3.8180	28.18	9.64	37.82	56.00	-18.18	QP	
8	3.8180	-3.51	9.64	6.13	46.00	-39.87	AVG	
9	7.9700	17.12	9.71	26.83	60.00	-33.17	QP	
10	7.9700	-4.59	9.71	5.12	50.00	-44.88	AVG	
11	15.1860	19.88	9.85	29.73	60.00	-30.27	QP	
12	15.1860	-3.45	9.85	6.40	50.00	-43.60	AVG	

Neutral Line, XPB36-800S



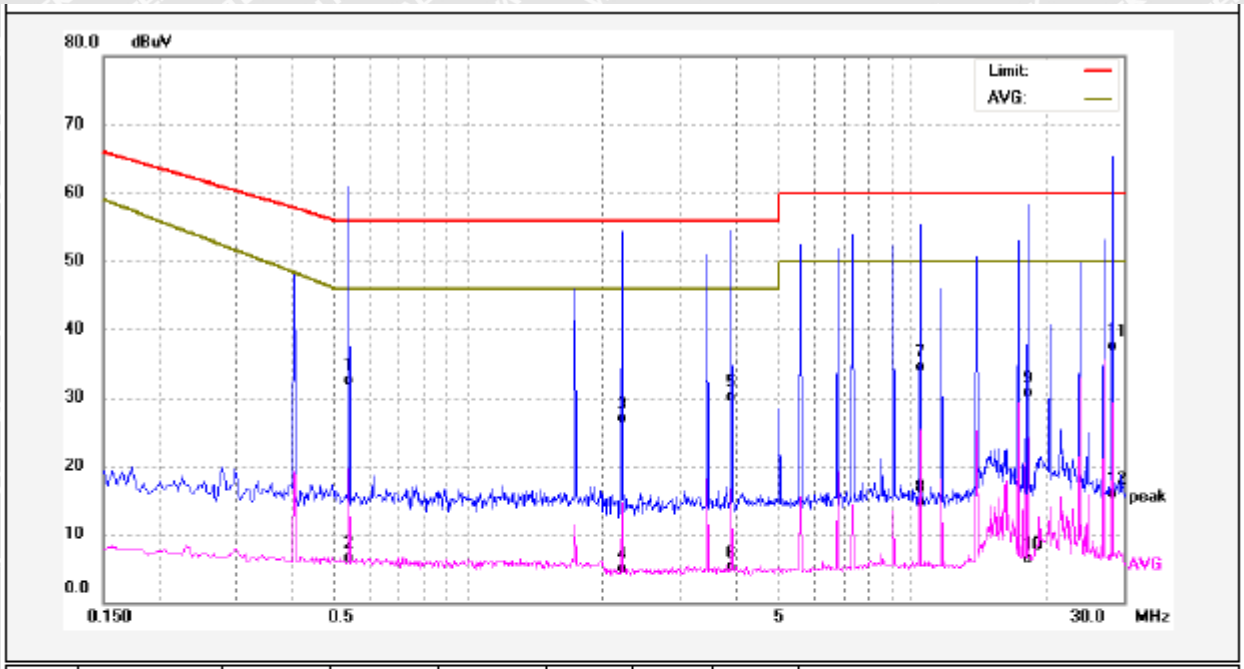
No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.3060	30.30	9.75	40.05	60.08	-20.03	QP	
2	0.3060	-1.67	9.75	8.08	51.30	-43.22	AVG	
3	0.4380	23.75	9.77	33.52	57.10	-23.58	QP	
4	0.4380	-2.92	9.77	6.85	47.43	-40.58	AVG	
5	3.5220	25.34	9.66	35.00	56.00	-21.00	QP	
6	3.5220	-4.27	9.66	5.39	46.00	-40.61	AVG	
7	4.9980	24.20	9.66	33.86	56.00	-22.14	QP	
8	4.9980	-4.32	9.66	5.34	46.00	-40.66	AVG	
9	6.4940	25.14	9.68	34.82	60.00	-25.18	QP	
10	6.4940	-4.18	9.68	5.50	50.00	-44.50	AVG	
11	15.3820	30.92	9.89	40.81	60.00	-19.19	QP	
12	15.3820	6.02	9.89	15.91	50.00	-34.09	AVG	

Live Line, XPB58-800S



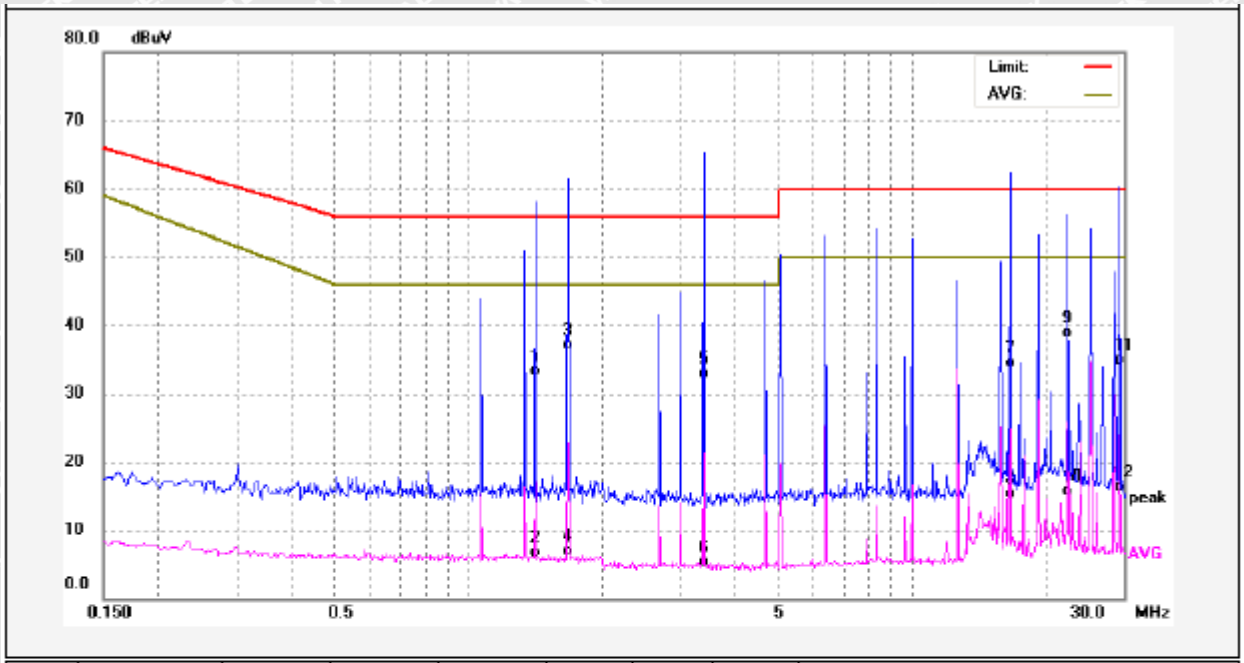
No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.2100	30.30	9.69	39.99	63.20	-23.21	QP	
2	0.2100	-0.73	9.69	8.96	55.36	-46.40	AVG	
3	0.7580	19.75	9.73	29.48	56.00	-26.52	QP	
4	0.7580	-3.38	9.73	6.35	46.00	-39.65	AVG	
5	1.7940	21.99	9.64	31.63	56.00	-24.37	QP	
6	1.7940	-3.56	9.64	6.08	46.00	-39.92	AVG	
7	3.6580	27.59	9.64	37.23	56.00	-18.77	QP	
8	3.6580	-3.65	9.64	5.99	46.00	-40.01	AVG	
9	9.7020	26.32	9.78	36.10	60.00	-23.90	QP	
10	9.7020	-3.62	9.78	6.16	50.00	-43.84	AVG	
11	15.1620	34.12	9.85	43.97	60.00	-16.03	QP	
12	15.1620	6.32	9.85	16.17	50.00	-33.83	AVG	
13	29.8180	31.65	10.07	41.72	60.00	-18.28	QP	
14	29.8180	6.10	10.07	16.17	50.00	-33.83	AVG	

Neutral Line, XPB58-800S



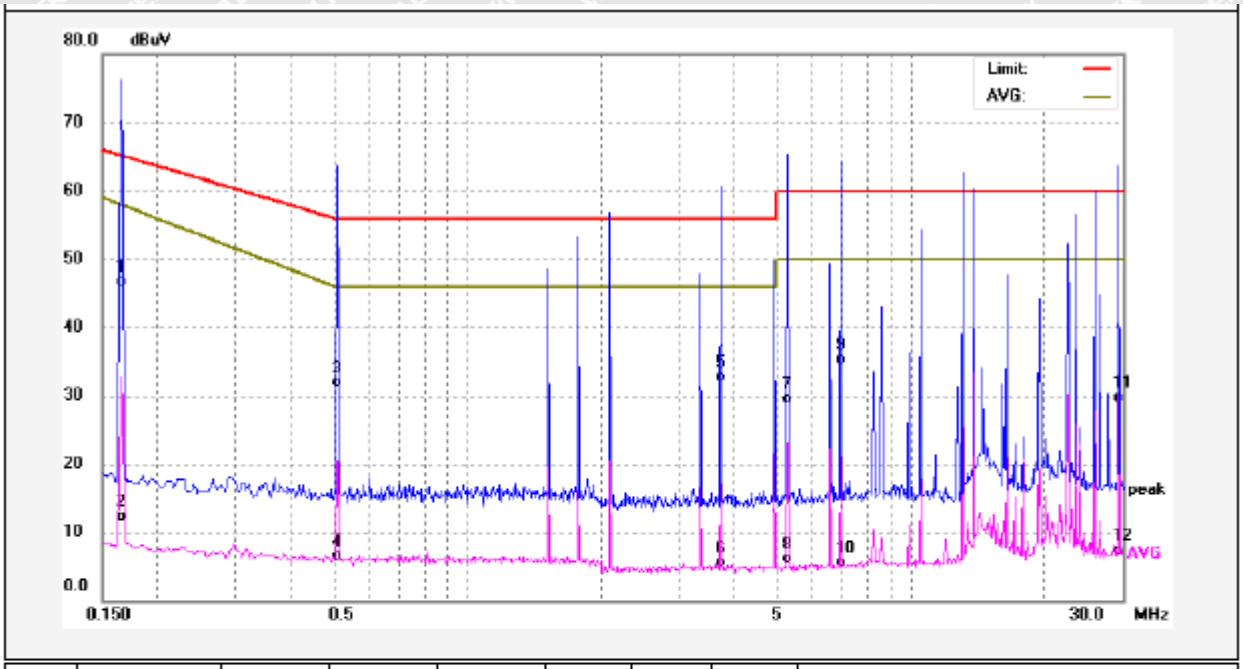
No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.5380	22.71	9.78	32.49	56.00	-23.51	QP	
2	0.5380	-3.19	9.78	6.59	46.00	-39.41	AVG	
3	2.2220	17.22	9.63	26.85	56.00	-29.15	QP	
4	2.2220	-4.67	9.63	4.96	46.00	-41.04	AVG	
5	3.9180	20.54	9.64	30.18	56.00	-25.82	QP	
6	3.9180	-4.63	9.64	5.01	46.00	-40.99	AVG	
7	10.4220	24.67	9.79	34.46	60.00	-25.54	QP	
8	10.4220	4.96	9.79	14.75	50.00	-35.25	AVG	
9	18.2700	20.76	9.92	30.68	60.00	-29.32	QP	
10	18.2700	-3.71	9.92	6.21	50.00	-43.79	AVG	
11	28.1740	27.37	10.10	37.47	60.00	-22.53	QP	
12	28.1740	5.74	10.10	15.84	50.00	-34.16	AVG	

Live Line, XPB80-800S



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	1.4180	23.57	9.66	33.23	56.00	-22.77	QP	
2	1.4180	-3.05	9.66	6.61	46.00	-39.39	AVG	
3	1.6740	27.40	9.66	37.06	56.00	-18.94	QP	
4	1.6740	-2.78	9.66	6.88	46.00	-39.12	AVG	
5	3.3980	23.22	9.65	32.87	56.00	-23.13	QP	
6	3.3980	-4.33	9.65	5.32	46.00	-40.68	AVG	
7	16.6460	24.66	9.92	34.58	60.00	-25.42	QP	
8	16.6460	5.34	9.92	15.26	50.00	-34.74	AVG	
9	22.4340	28.80	10.07	38.87	60.00	-21.13	QP	
10	22.4340	5.59	10.07	15.66	50.00	-34.34	AVG	
11	29.3500	24.68	10.20	34.88	60.00	-25.12	QP	
12	29.3500	6.12	10.20	16.32	50.00	-33.68	AVG	

Neutral Line, XPB80-800S



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.1660	36.89	9.80	46.69	65.15	-18.46	QP	
2	0.1660	2.60	9.80	12.40	57.90	-45.50	AVG	
3	0.5100	22.19	9.77	31.96	56.00	-24.04	QP	
4	0.5100	-3.22	9.77	6.55	46.00	-39.45	AVG	
5	3.7220	23.04	9.66	32.70	56.00	-23.30	QP	
6	3.7220	-4.19	9.66	5.47	46.00	-40.53	AVG	
7	5.2699	19.90	9.66	29.56	60.00	-30.44	QP	
8	5.2699	-3.56	9.66	6.10	50.00	-43.90	AVG	
9	6.9379	25.61	9.69	35.30	60.00	-24.70	QP	
10	6.9379	-4.12	9.69	5.57	50.00	-44.43	AVG	
11	29.2900	19.47	10.20	29.67	60.00	-30.33	QP	
12	29.2900	-2.90	10.20	7.30	50.00	-42.70	AVG	

5.2 Disturbance Power, 30MHz to 300MHz

Test Requirement..... : EN 55014-1

Test Method..... : EN 55014-1

Test Result..... : Pass

Frequency Range..... : 30MHz to 300MHz

Class/Severity..... : Table 2 of EN55014-1

5.2.1 E.U.T. Operation

Operating Environment:

Temperature ..... : 22°C

Humidity..... : 51%RH

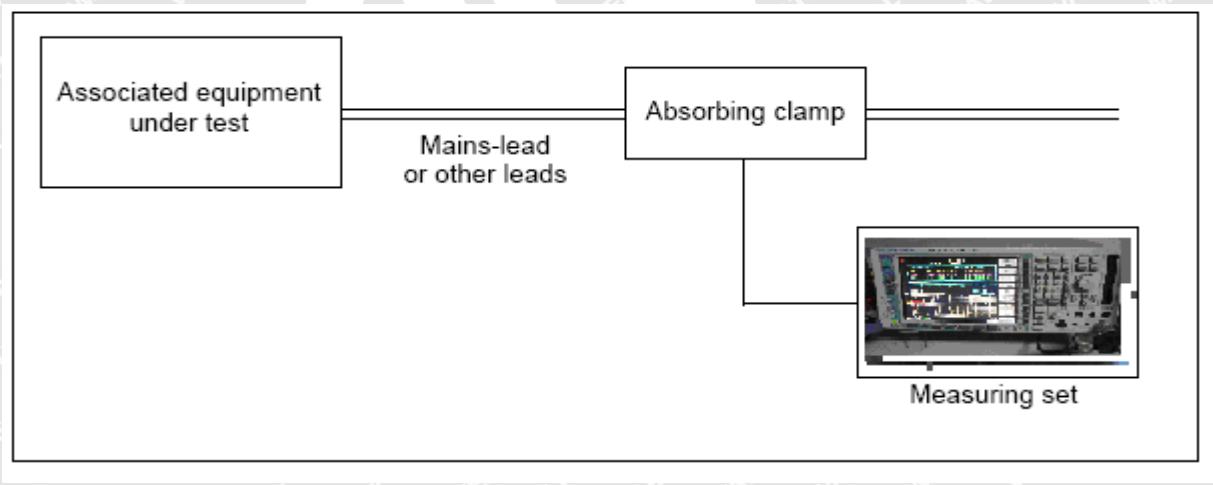
EUT Operation:

Input Voltage ..... : AC 230V, 50Hz

Operating Mode..... : spinning+washing mode

5.2.2 Block Diagram of Test Setup

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

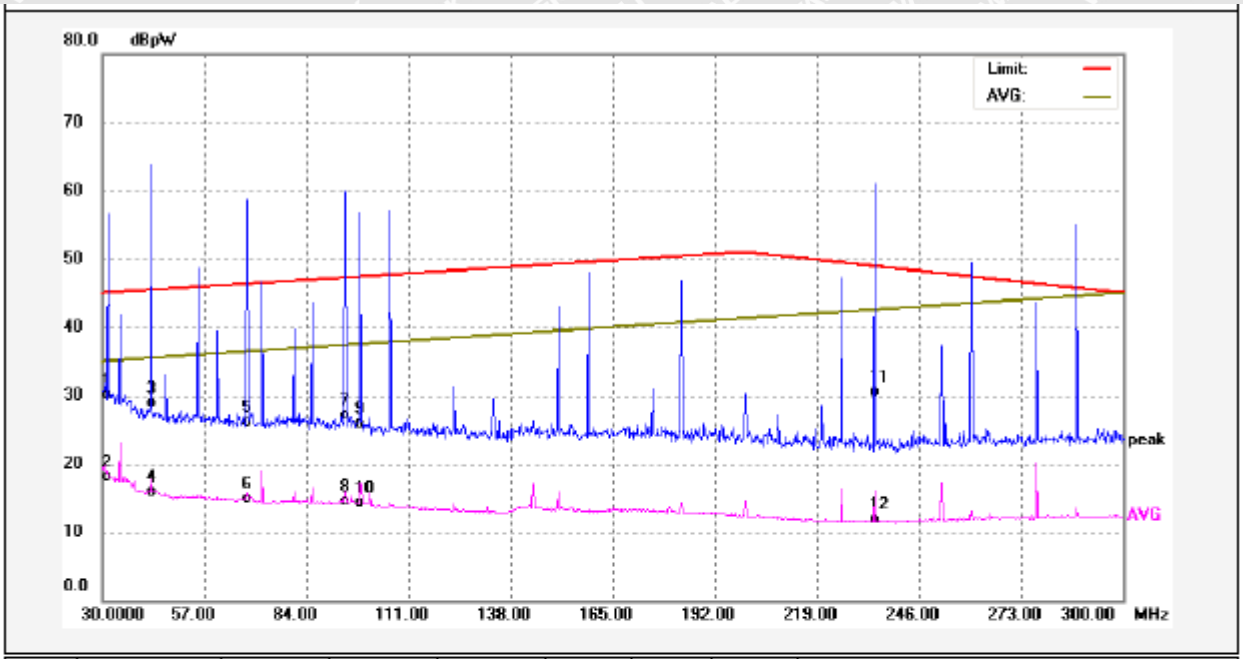


5.2.3 Measurement Data

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

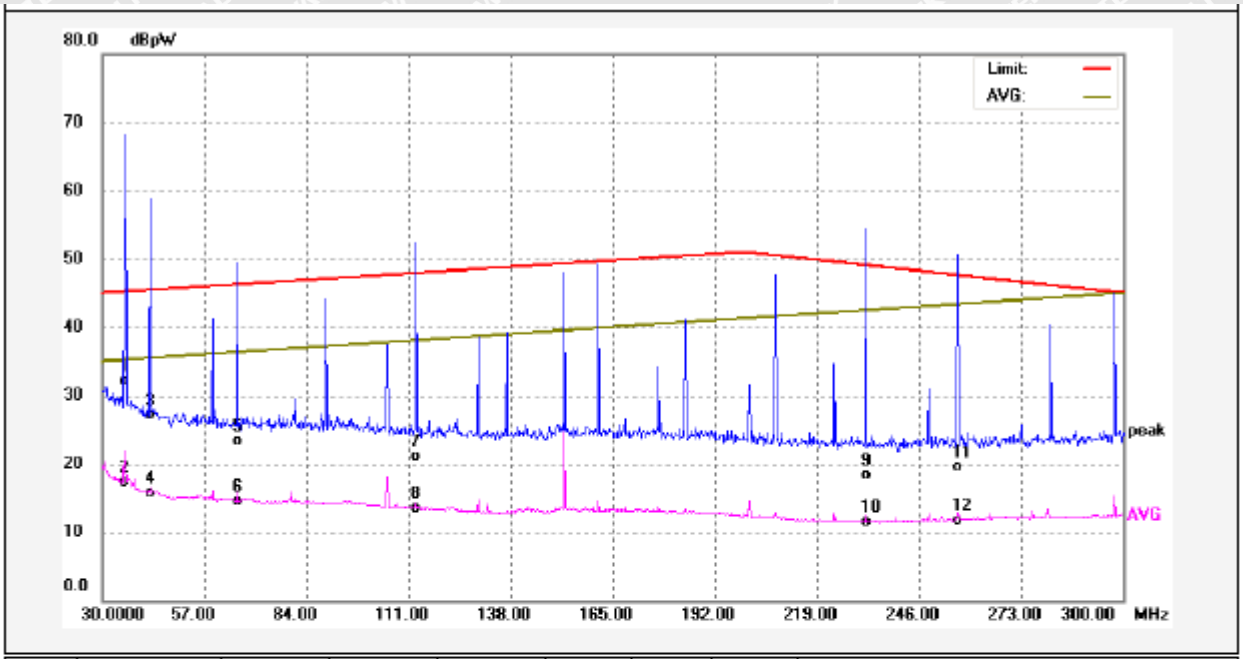
According to the Clause 4.1.2.3, if both of the following conditions (1) and (2) are fulfilled: 1) all emission readings from the equipment under test shall be lower than the applicable limits (Table 2a) reduced by the margin (Table 2b); 2) the maximum clock frequency shall be less than 30 MHz. The Appliances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

5.2.4 Disturbance Power Test Results on AC Line, XPB36-800S



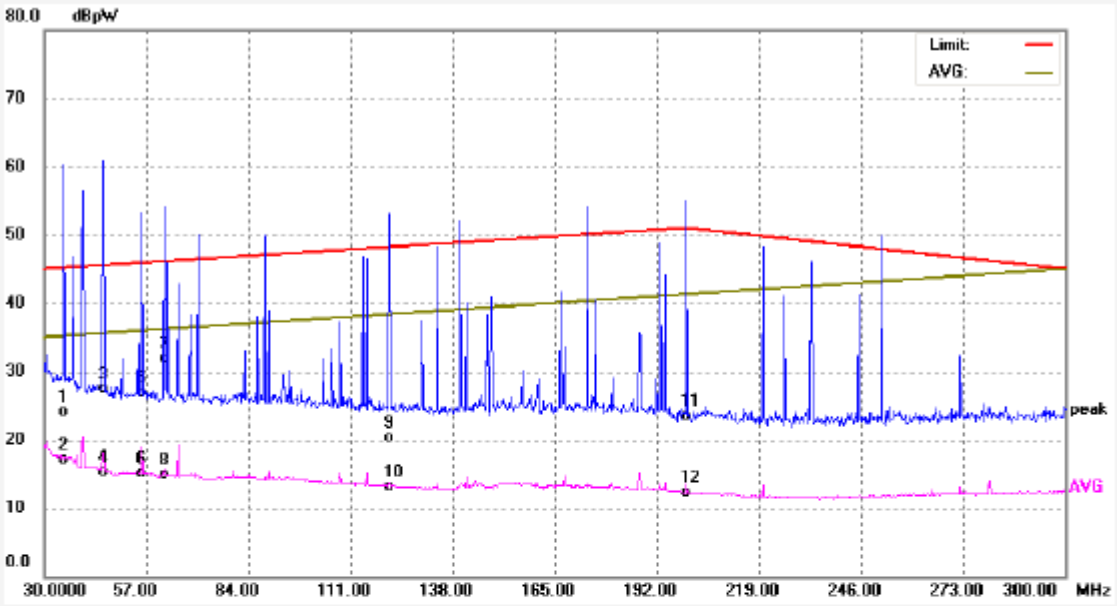
No.	Freq. (MHz)	Reading (dBpW)	Factor (dB)	Result (dBpW)	Limit (dBpW)	Margin (dB)	Detector	Remark
1	31.6800	2.95	27.20	30.15	45.06	-14.91	QP	
2	31.6800	-9.06	27.20	18.14	35.06	-16.92	AVG	
3	42.9600	3.48	25.50	28.98	45.46	-16.48	QP	
4	42.9600	-9.57	25.50	15.93	35.48	-19.55	AVG	
5	68.5199	2.34	23.81	26.15	46.36	-20.21	QP	
6	68.5199	-8.95	23.81	14.86	36.43	-21.57	AVG	
7	94.4400	3.30	23.82	27.12	47.27	-20.15	QP	
8	94.4400	-9.36	23.82	14.46	37.39	-22.93	AVG	
9	98.4600	2.19	23.69	25.88	47.42	-21.54	QP	
10	98.4600	-9.33	23.69	14.36	37.54	-23.18	AVG	
11	234.3000	9.61	20.96	30.57	48.94	-18.37	QP	
12	234.3000	-9.03	20.96	11.93	42.57	-30.64	AVG	

5.2.5 Disturbance Power Test Results on AC Line, XPB58-800S



No.	Freq. (MHz)	Reading (dBpW)	Factor (dB)	Result (dBpW)	Limit (dBpW)	Margin (dB)	Detector	Remark
1	36.3600	5.59	26.56	32.15	45.22	-13.07	QP	
2	36.3600	-9.23	26.56	17.33	35.24	-17.91	AVG	
3	42.7800	1.53	25.50	27.03	45.45	-18.42	QP	
4	42.7800	-9.74	25.50	15.76	35.47	-19.71	AVG	
5	65.7000	-0.21	23.59	23.38	46.26	-22.88	QP	
6	65.7000	-9.18	23.59	14.41	36.32	-21.91	AVG	
7	112.9800	-2.16	23.33	21.17	47.93	-26.76	QP	
8	112.9800	-9.91	23.33	13.42	38.07	-24.65	AVG	
9	232.0200	-2.62	20.94	18.32	49.08	-30.76	QP	
10	232.0200	-9.49	20.94	11.45	42.48	-31.03	AVG	
11	256.4400	-1.88	21.37	19.49	47.61	-28.12	QP	
12	256.4400	-9.63	21.37	11.74	43.39	-31.65	AVG	

5.2.6 Disturbance Power Test Results on AC Line, XPB80-800S



No.	Freq. (MHz)	Reading (dBpW)	Factor (dB)	Result (dBpW)	Limit (dBpW)	Margin (dB)	Detector	Remark
1	35.2200	-2.53	26.72	24.19	45.18	-20.99	QP	
2	35.2200	-9.67	26.72	17.05	35.19	-18.14	AVG	
3	45.7200	2.53	25.06	27.59	45.55	-17.96	QP	
4	45.7200	-9.72	25.06	15.34	35.58	-20.24	AVG	
5	55.8600	2.45	24.44	26.89	45.91	-19.02	QP	
6	55.8600	-9.39	24.44	15.05	35.96	-20.91	AVG	
7	62.1000	7.83	23.99	31.82	46.13	-14.31	QP	
8	62.1000	-9.10	23.99	14.89	36.19	-21.30	AVG	
9	121.3200	-2.81	23.09	20.28	48.22	-27.94	QP	
10	121.3200	-10.03	23.09	13.06	38.38	-25.32	AVG	
11	199.9200	2.37	21.19	23.56	51.00	-27.44	QP	
12	199.9200	-8.93	21.19	12.26	41.29	-29.03	AVG	

5.3 Discontinuous Disturbance (Click)

Test Requirement..... : EN 55014-1

Test Method..... : EN 55014-1

Test Result..... : Pass

Frequency Range..... : 150kHz to 30MHz

Class/Severity..... : Clause 4.2.2 of EN55014-1

5.3.1 E.U.T. Operation

Operating Environment:

Temperature ..... : 22°C

Humidity..... : 51%RH

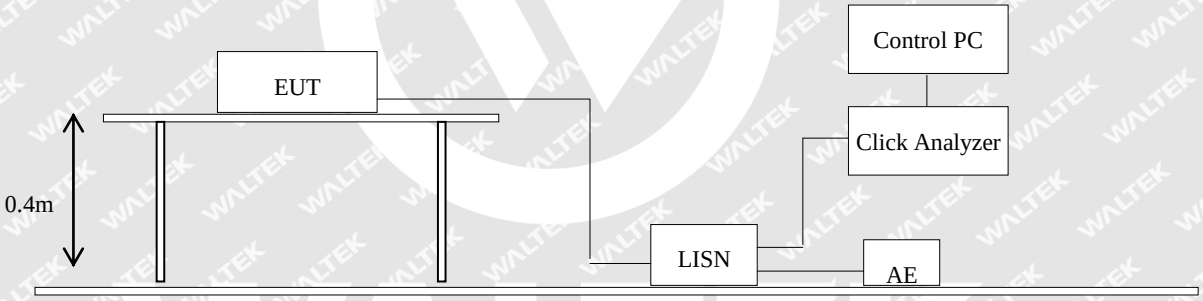
EUT Operation :

Input Voltage ..... : AC 230V, 50Hz

Operating Mode..... : spinning+washing mode

5.3.2 Block Diagram of Setup

The discontinuous disturbance test was performed in accordance with EN55014-1.



5.3.3 Measurement Data

If none of the caused clicks has a duration longer than 20ms, 90% of the caused clicks have a duration less than 10ms， and the click rate is not more than 5, then the product is deemed to comply with the click requirements of EN55014-1. See Clause 5.3.4 of EN55014-1 for further details.

5.3.4 Discontinuous Disturbance(Click) Test Results, XPB36-800S

Run A **Observation time T1=** 120 minutes and 2 seconds

Frequency	150kHz	500kHz	1.4MHz	30MHz
Limit value (L)(dBuV)	66	56	56	60
Short clicks	0	0	0	0
Long clicks	0	0	0	0
Total (short + long) n	0	0	0	0
Click rate	0.00	0.00	0.00	0.00
Continuous Interference (max)	0.00sec	0.00sec	0.00sec	0.00sec

Switching operations: s= 0

Click rate formula: N= n / T1

Click rate used in calculating Run B limit : N1= --- **N2**= --- (used for 0.5MHz to 30MHz)

Run B **Observation time T2=** 0

Frequency	150kHz	500kHz	1.4MHz	30MHz
Limit value (L)(dBuV) Lq = L + 20 log 30/N (max L + 44)	66	56	56	60
Short clicks	0	0	0	0
Long clicks	0	0	0	0
Total (short + long) n	0	0	0	0
% > Lq (max 25%) (total Run B clicks as percentage of Run A)	0	0	0	0

5.3.5 Discontinuous Disturbance(Click) Test Results, XPB58-800S

Run A **Observation time T1=** 120 minutes and 2 seconds

Frequency	150kHz	500kHz	1.4MHz	30MHz
Limit value (L)(dBuV)	66	56	56	60
Short clicks	0	0	0	0
Long clicks	0	0	0	0
Total (short + long) n	0	0	0	0
Click rate	0.00	0.00	0.00	0.00
Continuous Interference (max)	0.00sec	0.00sec	0.00sec	0.00sec

Switching operations: s= 0

Click rate formula: N= n / T1

Click rate used in calculating Run B limit : N1= --- **N2**= --- (used for 0.5MHz to 30MHz)

Run B **Observation time T2=** 0

Frequency	150kHz	500kHz	1.4MHz	30MHz
Limit value (L)(dBuV) Lq = L + 20 log 30/N (max L + 44)	66	56	56	60
Short clicks	0	0	0	0
Long clicks	0	0	0	0
Total (short + long) n	0	0	0	0
% > Lq (max 25%) (total Run B clicks as percentage of Run A)	0	0	0	0

5.3.6 Discontinuous Disturbance(Click) Test Results, XPB80-800S

Run A **Observation time T1=** 120 minutes and 2 seconds

Frequency	150kHz	500kHz	1.4MHz	30MHz
Limit value (L)(dBuV)	66	56	56	60
Short clicks	0	0	0	0
Long clicks	0	0	0	0
Total (short + long) n	0	0	0	0
Click rate	0.00	0.00	0.00	0.00
Continuous Interference (max)	0.00sec	0.00sec	0.00sec	0.00sec

Switching operations: s= 0

Click rate formula: N= n / T1

Click rate used in calculating Run B limit : N1= --- **N2**= --- (used for 0.5MHz to 30MHz)

Run B **Observation time T2=** 0

Frequency	150kHz	500kHz	1.4MHz	30MHz
Limit value (L)(dBuV) Lq = L + 20 log 30/N (max L + 44)	66	56	56	60
Short clicks	0	0	0	0
Long clicks	0	0	0	0
Total (short + long) n	0	0	0	0
% > Lq (max 25%) (total Run B clicks as percentage of Run A)	0	0	0	0

Remark:

1) The click rate N shall be determined at 150kHz for the frequency range 150kHz to 500kHz and at 500kHz for the frequency 500kHz to 30MHz.
2) During RUN A, the click rate is not more than 5 and there is no long click. RUN B is unnecessary.

5.4 Harmonics Current Emission

Test Requirement..... : EN61000-3-2

Test Method..... : EN61000-3-2

Test Result..... : Pass

Class/Severity..... : Class A

5.4.1 E.U.T. Operation

Operating Environment:

Temperature ..... : 21.5°C

Humidity..... : 33%RH

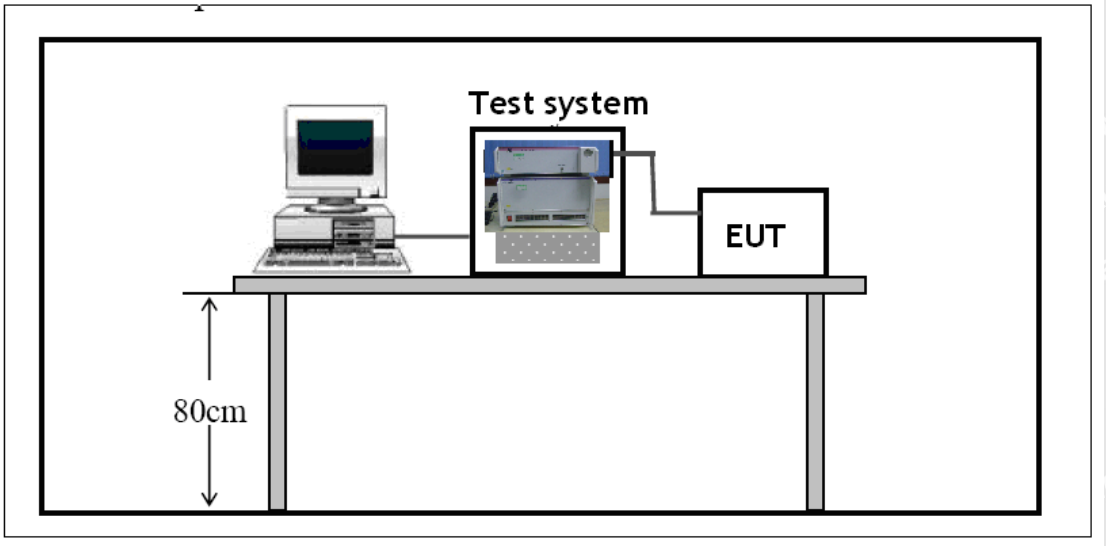
EUT Operation:

Input Vlotage ..... : AC 230V, 50Hz

Operating Mode..... : spinning+washing mode

5.4.2 Block Diagram of Setup

The Harmonics test was performed in accordance with the EN 61000-3-2.



5.4.3 Harmonics Test Data, XPB36-800S

Final Test Result	Pass	Tobs	Quasi-Stationary
Voltage	230.06 V	THC	0.1420 A
Current	1.8930 A	POHC/Limit	0.0030 A / ---- *4
Power	327.41 W	Nominal	230 V / 50 Hz
Power Factor	0.7727	Fundamental Current	1.8870 A
Apparent Power	435.5 VA	Measuring Period	150 s
THD (max)	7.85 %	Margin	100 %

Order	Limit1(A rms)	Limit2(A rms)	Ave(A rms)	Max(A rms)	Limit Over(s)	Judge
1	-----	-----	1.5295	1.8870	0.0	N/A
2	1.0800	2.1600	0.0049	0.0200	0.0	Pass
3	2.3000	4.6000	0.1002	0.1410	0.0	Pass
4	0.4300	0.8600	0.0035	0.0150	0.0	Pass
5	1.1400	2.2800	0.0131	0.0200	0.0	Pass
6	0.3000	0.6000	0.0022	0.0080	0.0	N/A
7	0.7700	1.5400	0.0050	0.0080	0.0	N/A
8	0.2300	0.4600	0.0017	0.0050	0.0	N/A
9	0.4000	0.8000	0.0026	0.0050	0.0	N/A
10	0.1840	0.3680	0.0013	0.0030	0.0	N/A
11	0.3300	0.6600	0.0020	0.0030	0.0	N/A
12	0.1533	0.3066	0.0012	0.0020	0.0	N/A
13	0.2100	0.4200	0.0012	0.0020	0.0	N/A
14	0.1314	0.2628	0.0011	0.0030	0.0	N/A
15	0.1500	0.3000	0.0011	0.0020	0.0	N/A
16	0.1150	0.2300	0.0010	0.0020	0.0	N/A
17	0.1324	0.2648	0.0010	0.0020	0.0	N/A
18	0.1022	0.2044	0.0010	0.0020	0.0	N/A
19	0.1184	0.2368	0.0010	0.0020	0.0	N/A
20	0.0920	0.1840	0.0010	0.0020	0.0	N/A
21	0.1071	0.2142	0.0010	0.0020	0.0	N/A
22	0.0836	0.1672	0.0010	0.0010	0.0	N/A
23	0.0978	0.1956	0.0010	0.0010	0.0	N/A
24	0.0767	0.1534	0.0010	0.0010	0.0	N/A
25	0.0900	0.1800	0.0010	0.0010	0.0	N/A
26	0.0708	0.1416	0.0010	0.0010	0.0	N/A
27	0.0833	0.1666	0.0010	0.0010	0.0	N/A
28	0.0657	0.1314	0.0010	0.0010	0.0	N/A
29	0.0776	0.1552	0.0010	0.0010	0.0	N/A
30	0.0613	0.1226	0.0010	0.0010	0.0	N/A
31	0.0726	0.1452	0.0010	0.0010	0.0	N/A
32	0.0575	0.1150	0.0010	0.0010	0.0	N/A
33	0.0682	0.1364	0.0010	0.0010	0.0	N/A
34	0.0541	0.1082	0.0010	0.0010	0.0	N/A
35	0.0643	0.1286	0.0010	0.0010	0.0	N/A
36	0.0511	0.1022	0.0010	0.0010	0.0	N/A
37	0.0608	0.1216	0.0010	0.0010	0.0	N/A
38	0.0484	0.0968	0.0010	0.0010	0.0	N/A
39	0.0577	0.1154	0.0010	0.0010	0.0	N/A
40	0.0460	0.0920	0.0010	0.0010	0.0	N/A

N/A : Not Apply

5.4.4 Harmonics Test Data, XPB58-800S

Final Test Result	Pass	Tobs	Quasi-Stationary
Voltage	230.06 V	THC	0.1980 A
Current	1.8290 A	POHC/Limit	0.0040 A / ---- *4
Power	371.58 W	Nominal	230 V / 50 Hz
Power Factor	0.8965	Fundamental Current	1.8170 A
Apparent Power	420.7 VA	Measuring Period	150 s
THD (max)	11.08 %	Margin	100 %

Order	Limit1(A rms)	Limit2(A rms)	Ave(A rms)	Max(A rms)	Limit Over(s)	Judge
1	-----	-----	1.5213	1.8170	0.0	N/A
2	1.0800	2.1600	0.0064	0.0290	0.0	Pass
3	2.3000	4.6000	0.1378	0.1940	0.0	Pass
4	0.4300	0.8600	0.0045	0.0180	0.0	Pass
5	1.1400	2.2800	0.0197	0.0380	0.0	Pass
6	0.3000	0.6000	0.0024	0.0090	0.0	N/A
7	0.7700	1.5400	0.0077	0.0100	0.0	N/A
8	0.2300	0.4600	0.0018	0.0060	0.0	N/A
9	0.4000	0.8000	0.0037	0.0060	0.0	N/A
10	0.1840	0.3680	0.0014	0.0040	0.0	N/A
11	0.3300	0.6600	0.0030	0.0050	0.0	N/A
12	0.1533	0.3066	0.0012	0.0030	0.0	N/A
13	0.2100	0.4200	0.0016	0.0030	0.0	N/A
14	0.1314	0.2628	0.0011	0.0020	0.0	N/A
15	0.1500	0.3000	0.0011	0.0020	0.0	N/A
16	0.1150	0.2300	0.0010	0.0020	0.0	N/A
17	0.1324	0.2648	0.0010	0.0020	0.0	N/A
18	0.1022	0.2044	0.0010	0.0020	0.0	N/A
19	0.1184	0.2368	0.0010	0.0020	0.0	N/A
20	0.0920	0.1840	0.0010	0.0020	0.0	N/A
21	0.1071	0.2142	0.0010	0.0020	0.0	N/A
22	0.0836	0.1672	0.0010	0.0020	0.0	N/A
23	0.0978	0.1956	0.0010	0.0020	0.0	N/A
24	0.0767	0.1534	0.0010	0.0020	0.0	N/A
25	0.0900	0.1800	0.0010	0.0010	0.0	N/A
26	0.0708	0.1416	0.0010	0.0010	0.0	N/A
27	0.0833	0.1666	0.0010	0.0010	0.0	N/A
28	0.0657	0.1314	0.0010	0.0010	0.0	N/A
29	0.0776	0.1552	0.0010	0.0010	0.0	N/A
30	0.0613	0.1226	0.0010	0.0010	0.0	N/A
31	0.0726	0.1452	0.0010	0.0010	0.0	N/A
32	0.0575	0.1150	0.0010	0.0010	0.0	N/A
33	0.0682	0.1364	0.0010	0.0020	0.0	N/A
34	0.0541	0.1082	0.0010	0.0020	0.0	N/A
35	0.0643	0.1286	0.0010	0.0010	0.0	N/A
36	0.0511	0.1022	0.0010	0.0010	0.0	N/A
37	0.0608	0.1216	0.0010	0.0010	0.0	N/A
38	0.0484	0.0968	0.0010	0.0010	0.0	N/A
39	0.0577	0.1154	0.0010	0.0010	0.0	N/A
40	0.0460	0.0920	0.0010	0.0010	0.0	N/A

N/A : Not Apply

5.4.5 Harmonics Test Data, XPB80-800S

Final Test Result	Pass	Tobs	Quasi-Stationary
Voltage	230.04 V	THC	0.2080 A
Current	1.7460 A	POHC/Limit	0.0030 A / ---- *4
Power	384.69 W	Nominal	230 V / 50 Hz
Power Factor	0.9657	Fundamental Current	1.7320 A
Apparent Power	401.6 VA	Measuring Period	150 s
THD (max)	12.25 %	Margin	100 %

Order	Limit1(A rms)	Limit2(A rms)	Ave(A rms)	Max(A rms)	Limit Over(s)	Judge
1	-----	-----	1.5049	1.7320	0.0	N/A
2	1.0800	2.1600	0.0053	0.0240	0.0	Pass
3	2.3000	4.6000	0.1405	0.2030	0.0	Pass
4	0.4300	0.8600	0.0032	0.0140	0.0	Pass
5	1.1400	2.2800	0.0218	0.0450	0.0	Pass
6	0.3000	0.6000	0.0018	0.0070	0.0	N/A
7	0.7700	1.5400	0.0069	0.0090	0.0	N/A
8	0.2300	0.4600	0.0015	0.0050	0.0	N/A
9	0.4000	0.8000	0.0046	0.0070	0.0	N/A
10	0.1840	0.3680	0.0012	0.0030	0.0	N/A
11	0.3300	0.6600	0.0051	0.0080	0.0	N/A
12	0.1533	0.3066	0.0011	0.0020	0.0	N/A
13	0.2100	0.4200	0.0023	0.0030	0.0	N/A
14	0.1314	0.2628	0.0010	0.0020	0.0	N/A
15	0.1500	0.3000	0.0010	0.0020	0.0	N/A
16	0.1150	0.2300	0.0010	0.0020	0.0	N/A
17	0.1324	0.2648	0.0010	0.0020	0.0	N/A
18	0.1022	0.2044	0.0010	0.0010	0.0	N/A
19	0.1184	0.2368	0.0010	0.0010	0.0	N/A
20	0.0920	0.1840	0.0010	0.0010	0.0	N/A
21	0.1071	0.2142	0.0010	0.0010	0.0	N/A
22	0.0836	0.1672	0.0010	0.0010	0.0	N/A
23	0.0978	0.1956	0.0010	0.0010	0.0	N/A
24	0.0767	0.1534	0.0010	0.0010	0.0	N/A
25	0.0900	0.1800	0.0010	0.0010	0.0	N/A
26	0.0708	0.1416	0.0010	0.0010	0.0	N/A
27	0.0833	0.1666	0.0010	0.0010	0.0	N/A
28	0.0657	0.1314	0.0010	0.0010	0.0	N/A
29	0.0776	0.1552	0.0010	0.0010	0.0	N/A
30	0.0613	0.1226	0.0010	0.0010	0.0	N/A
31	0.0726	0.1452	0.0010	0.0010	0.0	N/A
32	0.0575	0.1150	0.0010	0.0010	0.0	N/A
33	0.0682	0.1364	0.0010	0.0010	0.0	N/A
34	0.0541	0.1082	0.0017	0.0020	0.0	N/A
35	0.0643	0.1286	0.0010	0.0010	0.0	N/A
36	0.0511	0.1022	0.0010	0.0010	0.0	N/A
37	0.0608	0.1216	0.0010	0.0010	0.0	N/A
38	0.0484	0.0968	0.0010	0.0010	0.0	N/A
39	0.0577	0.1154	0.0010	0.0010	0.0	N/A
40	0.0460	0.0920	0.0010	0.0010	0.0	N/A

N/A : Not Apply

5.5 Voltage Fluctuation and Flicker

Test Requirement..... : EN 61000-3-3

Test Method..... : EN 61000-3-3

Test Result..... : Pass

5.5.1 E.U.T. Operation

Operating Environment:

Temperature ..... : 22°C

Humidity..... : 54%RH

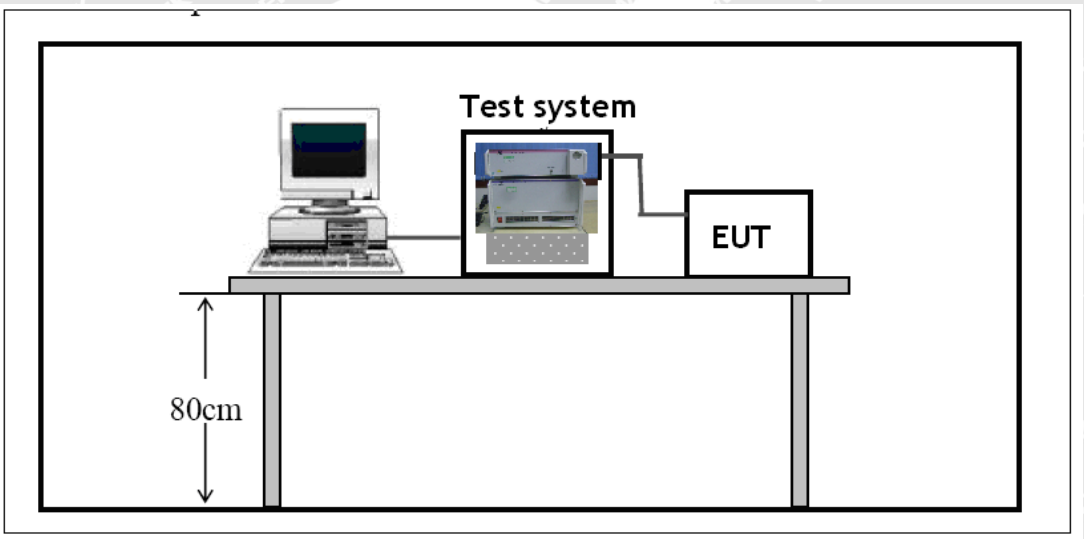
EUT Operation:

Input Voltage ..... : AC 230V, 50Hz

Operating Mode..... : spinning+washing mode

5.5.2 Block Diagram of Setup

The Harmonics test was performed in accordance with the EN 61000-3-3.



5.5.3 Voltage Fluctuation and Flicker Test Data, XPB36-800S

	d_c	d_{max} (average)	d(t)	P_{st}	P_{lt}
Limits	3.3%	4%	3.3%/500ms	1.0	0.65
Result	0.235%	0.591%	0.00%	0.352	0.154

5.5.4 Voltage Fluctuation and Flicker Test Data, XPB58-800S

	d_c	d_{max} (average)	d(t)	P_{st}	P_{lt}
Limits	3.3%	4%	3.3%/500ms	1.0	0.65
Result	0.226%	0.691%	0.00%	0.423	0.185

5.5.5 Voltage Fluctuation and Flicker Test Data, XPB80-800S

	d_c	d_{max} (average)	d(t)	P_{st}	P_{lt}
Limits	3.3%	4%	3.3%/500ms	1.0	0.65
Result	0.213%	0.696%	0.00%	0.394	0.172

6 Immunity Test Results

6.1 Performance Criteria

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

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

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

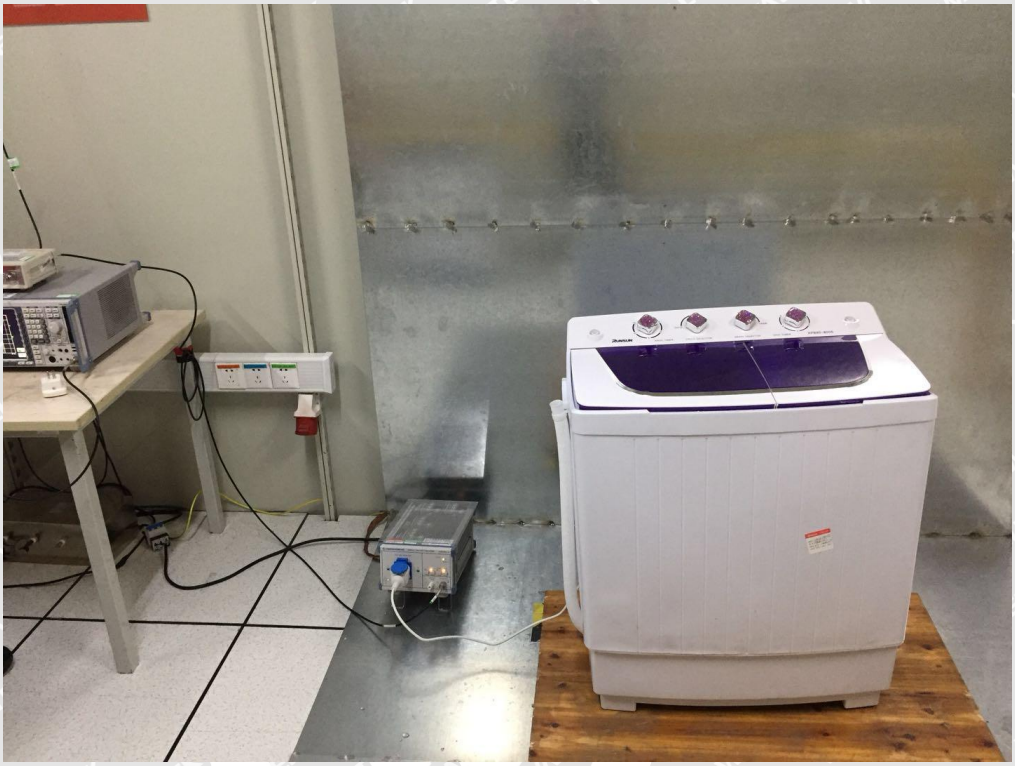
For further details, please refer to EN 55014-2.

6.2 Test Results

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

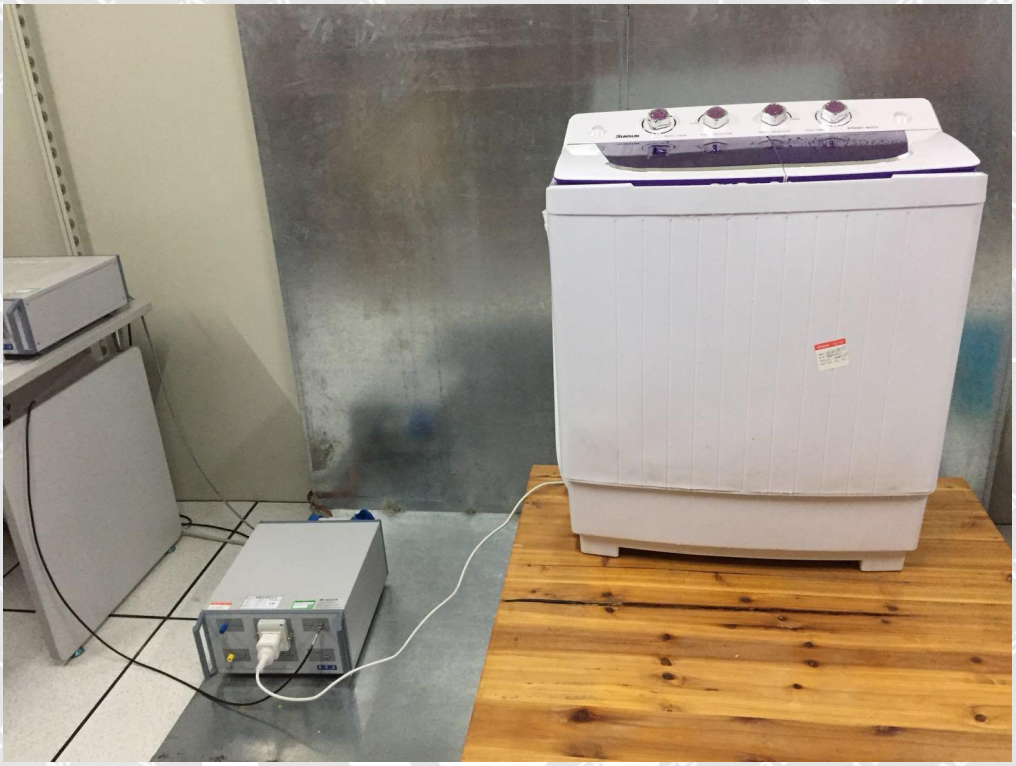
7 Photographs – Test Setup

7.1 Photograph – Mains Terminal Disturbance Voltage Test Setup

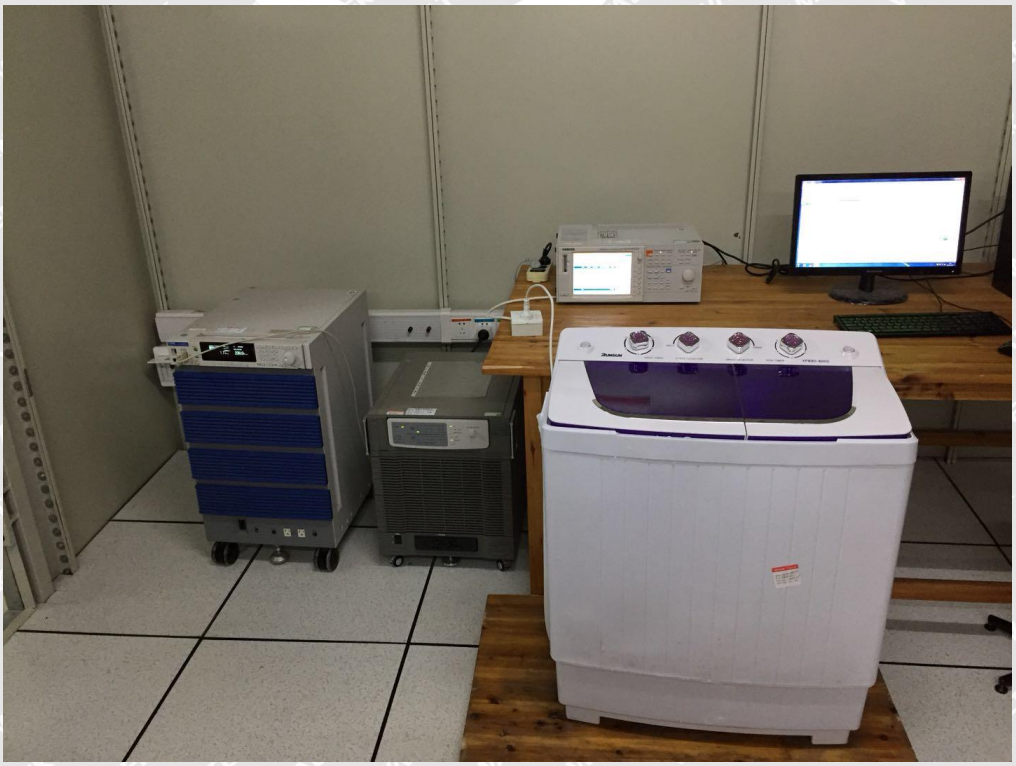


7.2 Photograph – Disturbance Power Test Setup

7.3 Photograph – Discontinuous Disturbance (Click) Test Setup



7.4 Photograph – Voltage Fluctuation and Flicker Test Setup



8 Photographs – Constructional Details

8.1 EUT – Appearance View, XPB36-800S

8.2 EUT – Appearance View, XPB58-800S

8.3 EUT – Appearance View, XPB80-800S

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