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YUCAU HOME APPLIANCES CO.,LTD.

TEST REPORT

SCOPE OF WORK
EMC TESTING–See Page 5

REPORT NUMBER
150626030GZU-001

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22-September-2015 [22-January-2018]

PAGES
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DOCUMENT CONTROL NUMBER
EN 55014+A2:2011 (With electronics)-b

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TEST REPORT

Applicant Name & Address	:	YUCAU HOME APPLIANCES CO.,LTD. Songyuanzui Industrial Zone, Dubi Village, Duruan Town, Jiangmen City, Guangdong Province, P.R.China
Manufacturing Site	:	Same as Applicant
Intertek Report No:		150626030GZU-001 Amendment 3

Test standards

EN 55014-1:2006+A1:2009+A2:2011
EN 61000-3-2:2014
EN 61000-3-3:2013
EN 55014-2:2015

Sample Description

Product	:	Electric Fan
Model No.	:	See page 5
Electrical Rating	:	See page 5
Serial No.		Not Labeled
Date Received	:	26 December 2017
Date Test Conducted	:	15 January 2018-18 January 2018

Prepared and Checked By

Doctang Tang

Engineer

Intertek Guangzhou

Approved By:

Maggie Xie

Sr. Project Engineer

Intertek Guangzhou

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CONTENT

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1. TEST RESULTS SUMMARY

Test Item	Standard	Result
Continuous conducted disturbance voltage	EN 55014-1:2006+A1:2009+A2:2011	Pass
Discontinuous conducted disturbance voltage	EN 55014-1:2006+A1:2009+A2:2011	Pass
Radiated disturbance power	EN 55014-1:2006+A1:2009+A2:2011	Pass
Radiated disturbance	EN 55014-1:2006+A1:2009+A2:2011 Reference: CISPR 16-2-3:2006	N/A
Harmonic of current	EN 61000-3-2:2014	Pass
Flicker	EN 61000-3-3:2013	Pass
ESD immunity	EN 55014-2: 2015 Reference: EN 61000-4-2:2009	Pass
Radiated EM field immunity	EN 55014-2:2015 Reference: EN 61000-4-3:2006+A1:2008+A2:2010	N/A
EFT immunity	EN 55014-2:2015 Reference: EN 61000-4-4:2012	Pass
Surge immunity	EN 55014-2:2015 Reference: EN 61000-4-5:2014	Pass
Inject current immunity	EN 55014-2:2015 Reference: EN 61000-4-6:2014	Pass
Voltage dips and interruption immunity	EN 55014-2:2015 Reference: EN 61000-4-11:2004	Pass

Remark:

1. The symbol "N/A" in above table means Not Applicable.

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

TEST REPORT

2. EMC RESULTS CONCLUSION

RE: EMC Testing Pursuant to EMC Directive 2014/30/EU Performed on the Electric Fan,

Models:
YH-40D, YH-40D1, YH-40D1-1, YH-30D, YH-30D1, YH-30D2, YH-30D1-1, YH-23D, YH-23D1, YH-23D1-1, YH-15D, YH-15D1, YH-15C, YH-15C1, YH-40A3, YH-40A3-1, YH-40A3-2, YH-40A3-0, YH-40A3-1-0, YH-40A3--2-0, YH-40I, YH-40I-0, YH-40A1, YH-40A1-1, YH-40A1-2, YH-40A1-0, YH-40A1-1-0, YH-40A1--2-0, YH-40A2, YH-40A2-1, YH-40A2-2, YH-40A2-0, YH-40A2-1-0, YH-40A2--2-0, YH-40I1, YH-40I1-0, YH-40R1-0, YH-40R1-1, YH-40R1-2, YH-40R-0, YH-40R-1, YH-40R-2, YH-40J-0, YH-40J-1, YH-40J-2, YH-40LK-0, YH-40LK-1, YH-40LK-2, YH-40D2, YH-30D3, YH-40x-y
(For model YH-40x-y: Variable x= A, B, C, E, F, S, S1, H; Variable y= 0, 1 or 2;
Variables x stand for the shape of control box, variable y stand for the construction of stand base.)

Ratings:
220-240V~ or 230V~, 50Hz, Class II;
60W for YH-40D1-1, YH-40A3, YH-40A3-1, YH-40A3-2, YH-40A3-0, YH-40A3-1-0, YH-40A3--2-0, YH-40I, YH-40I-0;
40W for YH-40x-y, YH-30D1-1, YH-40D, YH-40D1, YH-40A1, YH-40A1-1, YH-40A1-2, YH-40A1-0, YH-40A1-1-0, YH-40A1--2-0, YH-40A2, YH-40A2-1, YH-40A2-2, YH-40A2-0, YH-40A2-1-0, YH-40A2--2-0, YH-40I1, YH-40I1-0, YH-40R1-0, YH-40R1-1, YH-40R1-2, YH-40R-0, YH-40R-1, YH-40R-2, YH-40J-0, YH-40J-1, YH-40J-2, YH-40LK-0, YH-40LK-1, YH-40LK-2, YH-40D2;
35W for YH-30D, YH-30D1, YH-30D2, YH-30D3;
20W for YH-23D, YH-23D1, YH-23D1-1;
15W for YH-15D, YH-15D1, YH-15C, YH-15C1

Amendment 3:
This report is the revision of the previous test report 150626030GZU-001 amendment 2: 17 May 2017 and shall be used together with it. This report is issued because of the following changes.
1) Add fourteen new models YH-40R1-0, YH-40R1-1, YH-40R1-2, YH-40R-0, YH-40R-1, YH-40R-2. YH-40J-0, YH-40J-1, YH-40J-2, YH-40LK-0, YH-40LK-1, YH-40LK-2, YH-40D2 and YH-30D3.

a) YH-40R1-0, YH-40R1-1 and YH-40R1-2 are electronic control type and equipped with synchronous motor and they are same except for stand base.

b) YH-40R-0, YH-40R-1 and YH-40R-2 are the same as YH-40R1-0, YH-40R1-1 and YH-40R1-2 respectively except the former don't equipped with synchronous motor.

c) YH-40J-0, YH-40J-1 and YH-40J-2 are same with model YH-40A-y except for appearance and speed switch.

d) YH-40LK-0, YH-40LK-1 and YH-40LK-2 are same with model YH-40A-y except for appearance.

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e) YH-40D2 is same with model YH-40D1 except appearance and speed switch.

f) YH-30D3 is same with model YH-30D1 except appearance and speed switch.

2) Adding alternative appearance for model YH-15D1.

3) Adding alternative wiring connection construction for speed switch, while the original is soldering connection.

4) Adding alternative fan motor “6614-1” for models which equipped with the original fan motor “6614”. The fan blade quantity may be different for the fan equipping different fan motor.

5) Adding alternative plug, supply cord and PVC tube

6) Adding three cross shape stand bases and a square shape stand base for alternative.

7) Adding two alternative fan motor covers for all stand fans and table fans.

8) Deleted the P0 capacitor.

9) Adding alternative marking plate with rated voltage 230V which is all the same with marking plate with rated voltage 220-240V

10) Updated standard EN 55014-2 from EN 55014-2: 1997+A1: 2001+A2: 2008 to EN 55014-2:2015

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The details for all models:

Model	Rated power	Motor	Timer	Shape of stand type	Fan type	Fan blade quantity
YH-40A-0	40	6614, 6614-1	No	Cross shape	Stand fan	3 or 5***
YH-40A-1	40	6614, 6614-1	No	Square shape	Stand fan	3 or 5***
YH-40A-2	40	6614, 6614-1	No	Circle shape	Stand fan	3 or 5***
YH-40B-0	40	6614, 6614-1	No	Cross shape	Stand fan	3 or 5***
YH-40B-1	40	6614, 6614-1	No	Square shape	Stand fan	3 or 5***
YH-40B-2	40	6614, 6614-1	No	Circle shape	Stand fan	3 or 5***
YH-40C-0	40	6614, 6614-1	No	Cross shape	Stand fan	3 or 5***
YH-40C-1	40	6614, 6614-1	No	Square shape	Stand fan	3 or 5***
YH-40C-2	40	6614, 6614-1	No	Circle shape	Stand fan	3 or 5***
YH-40E-0	40	6614, 6614-1	Yes	Cross shape	Stand fan	3 or 5***
YH-40E-1	40	6614, 6614-1	Yes	Square shape	Stand fan	3 or 5***
YH-40E-2	40	6614, 6614-1	Yes	Circle shape	Stand fan	3 or 5***
YH-40F-0	40	6614, 6614-1	No	Cross shape	Stand fan	3 or 5***
YH-40F-1	40	6614, 6614-1	No	Square shape	Stand fan	3 or 5***
YH-40F-2	40	6614, 6614-1	No	Circle shape	Stand fan	3 or 5***
YH-40S-0	40	6614, 6614-1	No	Cross shape	Stand fan	3 or 5***
YH-40S-1	40	6614, 6614-1	No	Square shape	Stand fan	3 or 5***
YH-40S-2	40	6614, 6614-1	No	Circle shape	Stand fan	3 or 5***
YH-40H-0	40	6614, 6614-1	No	Cross shape	Stand fan	3 or 5***
YH-40H-1	40	6614, 6614-1	No	Square shape	Stand fan	3 or 5***
YH-40H-2	40	6614, 6614-1	No	Circle shape	Stand fan	3 or 5***
YH-40D	40	6614, 6614-1	No	Circle shape	Table fan	3 or 5***
YH-40D1	40	6614, 6614-1	No	Circle shape	Table fan	3 or 5***
YH-40D1-1	60	7118	No	Circle shape	Table fan	5
YH-30D	35	6612	No	Circle shape	Table fan	3
YH-30D1	35	6612	No	Circle shape	Table fan	3
YH-30D1-1	40	6614, 6614-1	No	Circle shape	Table fan	5

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YH-30D2	35	6612	No	Circle shape	Table fan	3
YH-23D	20	6016	No	Circle shape	Table fan	3
YH-23D1	20	6016	No	Circle shape	Table fan	3
YH-23D1-1	20	6016	No	Circle shape	Table fan	5
YH-15D	15	4815	No	Circle shape	Table fan	3
YH-15D1	15	4815	No	Circle shape	Table fan	3
YH-15C	15	4815	No	Clip	Clip fan	3
YH-15C1	15	4815	No	Clip	Clip fan	3
YH-40S1-0	40	6614, 6614-1	No	Cross shape	Stand fan	3 or 5***
YH-40S1-1	40	6614, 6614-1	No	Square shape	Stand fan	3 or 5***
YH-40S1-2	40	6614, 6614-1	No	Circle shape	Stand fan	3 or 5***
YH-40A1	40	6614, 6614-1	No	Cross shape	Stand fan	3 or 5***
YH-40A1-1	40	6614, 6614-1	No	Square shape	Stand fan	3 or 5***
YH-40A1-2	40	6614, 6614-1	No	Circle shape	Stand fan	3 or 5***
YH-40A1-0	40	6614, 6614-1	No	Cross shape	Stand fan	3 or 5***
YH-40A1-1-0	40	6614, 6614-1	No	Circle shape	Stand fan	3 or 5***
YH-40A1--2-0	40	6614, 6614-1	No	Circle shape	Stand fan	3 or 5***
YH-40A2	40	6614, 6614-1	No	Cross shape	Stand fan	3 or 5***
YH-40A2-1	40	6614, 6614-1	No	Square shape	Stand fan	3 or 5***
YH-40A2-2	40	6614, 6614-1	No	Circle shape	Stand fan	3 or 5***
YH-40A2-0	40	6614, 6614-1	No	Cross shape	Stand fan	3 or 5***
YH-40A2-1-0	40	6614, 6614-1	No	Square shape	Stand fan	3 or 5***
YH-40A2--2-0	40	6614, 6614-1	No	Circle shape	Stand fan	3 or 5***
YH-40I1	40	6614, 6614-1	No	Circle shape	Stand fan	3 or 5***
YH-40I1-0	40	6614, 6614-1	No	Circle shape	Stand fan	3 or 5***
YH-40A3	60	7118	No	Cross shape	Stand fan	5
YH-40A3-1	60	7118	No	Square shape	Stand fan	5
YH-40A3-2	60	7118	No	Circle shape	Stand fan	5
YH-40A3-0	60	7118	No	Cross shape	Stand fan	5
YH-40A3-1-0	60	7118	No	Square shape	Stand fan	5

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YH-40A3--2-0	60	7118	No	Circle shape	Stand fan	5
YH-40I	60	7118	No	Circle shape	Stand fan	5
YH-40I-0	60	7118	No	Circle shape	Stand fan	5
YH-40R-0	40	6614, 6614-1	No	Cross shape	Stand fan	3 or 5***
YH-40R-1	40	6614, 6614-1	No	Square shape	Stand fan	3 or 5***
YH-40R-2	40	6614, 6614-1	No	Circle shape	Stand fan	3 or 5***
YH-40R1-0	40	6614, 6614-1	No	Cross shape	Stand fan	3 or 5***
YH-40R1-1	40	6614, 6614-1	No	Square shape	Stand fan	3 or 5***
YH-40R1-2	40	6614, 6614-1	No	Circle shape	Stand fan	3 or 5***
YH-40J-0	40	6614, 6614-1	No	Cross shape	Stand fan	3 or 5***
YH-40J-1	40	6614, 6614-1	No	Square shape	Stand fan	3 or 5***
YH-40J-2	40	6614, 6614-1	No	Circle shape	Stand fan	3 or 5***
YH-40LK-0	40	6614, 6614-1	No	Cross shape	Stand fan	3 or 5***
YH-40LK-1	40	6614, 6614-1	No	Square shape	Stand fan	3 or 5***
YH-40LK-2	40	6614, 6614-1	No	Circle shape	Stand fan	3 or 5***
YH-40D2	40	6614, 6614-1	No	Circle shape	Table fan	3 or 5***
YH-30D3	35	6612	No	Circle shape	Table fan	3

Remark:
1. Models YH-40R1-0, YH-40R1-1 and YH-40R1-2 are equipped with synchronous motor, while the other models are not equipped.
2. Models YH-40R1-0, YH-40R1-1 and YH-40R1-2 are electronic control type, while the other models are mechanical control type.
3. Mass is less than 3kg for all models except the stand fans with square shape or circle shape stand base.
***: the quantity of fan blade is ‘3’ or ‘5’ for fan motor ‘6614-1’, but only ‘3’ for fan motor ‘6614’.

YH-40R1-0, YH-40R1-1 and YH-40R1-2 are electronic control type and equipped with synchronous motor and they are same except for stand base.

Models YH-40R1-0, YH-40R1-1 and YH-40R1-2 are electronic control type, while the other models are mechanical control type.

Base up difference model YH-40R1-0 with new motor (6614-1) was selected to performed full test.

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We tested the Electric Fan, Model: YH-40R1-0, to determine if it was in compliance with the relevant EN standards as marked on the Test Results Summary. We found that the unit met the requirements of EN 55014-1, EN 61000-3-2, EN 61000-3-3, EN 55014-2 (EN 61000-4-2), EN 55014-2 (EN 61000-4-4), EN 55014-2 (EN 61000-4-6), EN 55014-2 (EN 61000-4-5), & EN 55014-2 (EN 61000-4-11) standards when tested as received. The worst case's test data was presented in this test report.

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

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3. LABORATORY MEASUREMENTS

Configuration Information

Support Equipment:	N/A
Rated Voltage and frequency under test:	220-240V~ or 230V~, 50Hz
Condition of Environment:	Temperature: 22~28°C Relative Humidity:35~60% Atmosphere Pressure:86~106kPa

Notes:

1. The EMI measurements had been made in the operating mode produced the largest emission in the frequency band being investigated consistent with normal applications. An attempt had been made to maximize the emission by varying the configuration of the EUT.

2. The EMS measurements had been made in the frequency bands being investigated, with the EUT in the most susceptible operating mode consistent with normal applications. The configuration of the test sample had been varied to achieve maximum susceptibility.

3. Test Location:
Intertek Testing Services Shenzhen Ltd. Guangzhou Branch
All tests were performed at:
Block E, No.7-2 Guang Dong Software Science Park, Caipin Road, Guangzhou Science City, GETDD Guangzhou, China
Except Radiated Disturbance and Radiated Susceptibility were performed at:
Room102/104, No 203, KeZhu Road, Science City, GETDD Guangzhou, China

4. Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Conduction Emission (9 kHz-150 kHz)	2.51 dB
2	Conduction Emission (150 kHz-30 MHz)	2.69 dB
3	Disturbance Power (30 MHz-300 MHz)	3.21 dB
4	Radiated Emission (30 MHz-1 GHz)	4.79 dB
5	Radiated Emission (1 GHz-6 GHz)	5.02 dB
6	Radiated Emission (6 GHz-18 GHz)	5.17 dB

The measurement uncertainty describes the overall uncertainty of the given measured value during the operation of the EUT.
Measurement uncertainty is calculated in accordance with CISPR16-4-2:2011
The measurement uncertainty is given with a confidence of 95%, k=2.

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4. EQUIPMENT USED DURING TEST

Conducted Disturbance-Mains Terminal(1)

Equipment No.	Equipment	Model	Manufacturer	Cal. Due date (DD-MM-YYYY)	Calibration Interval
EM080-05	EMI receiver	ESCI	R&S	24/07/2018	1Y
EM006-05	LISN	ENV216	R&S	04/06/2018	1Y
SA047-79	Digital Temperature-Humidity Recorder	RC-HT601A	HATAIKE	07/06/2018	1Y
EM004-04	EMC shield Room	8m×3m×3m	Zhongyu	07/01/2019	1Y

Click(1)

Equipment No.	Equipment	Model	Manufacturer	Cal. Due date (DD-MM-YYYY)	Calibration Interval
EM008-01	Click Tester	DIA1512D	SCHAFFNER	24/07/2018	1Y
EM006-06	LISN	ENV216	R&S	14/09/2018	1Y
SA047-78	Digital Temperature-Humidity Recorder	RC-HT601A	HATAIKE	07/06/2018	1Y
EM004-03	EMC shield Room	8m×4m×3m	Zhongyu	07/01/2019	1Y

Disturbance Power

Equipment No.	Equipment	Model	Manufacturer	Cal. Due date (DD-MM-YYYY)	Calibration Interval
EM080-05	EMI receiver	ESCI	R&S	24/07/2018	1Y
EM081-04	Absorb Power Clamp	MDS-21	R&S	14/03/2018	1Y
SA047-79	Digital Temperature-Humidity Recorder	RC-HT601A	HATAIKE	07/06/2018	1Y
EM004-04	EMC shield Room	8m×3m×3m	Zhongyu	07/01/2019	1Y

Electrostatic Discharge(1)

Equipment No.	Equipment	Model	Manufacturer	Cal. Due date (DD-MM-YYYY)	Calibration Interval
EM077-04	ESD Simulator	NSG437	TESEQ	17/04/2018	1Y
SA047-110	Digital Temperature-Humidity Recorder	RS210	YIJIE	03/11/2018	1Y

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Electrical Fast Transient/Burst(2)

Equipment No.	Equipment	Model	Manufacturer	Cal. Due date (DD-MM-YYYY)	Calibration Interval
EM005-10	EFT Generator	NSG3025	TESEQ	03/12/2018	1Y
EM005-10-01	Capacitive Coupling Clamp	CDN8014	TESEQ	06/04/2018	1Y
SA047-77	Digital Temperature-Humidity Recorder	RC-HT601A	HATAIKE	07/06/2018	1Y

Surge(3)

Equipment No.	Equipment	Model	Manufacturer	Cal. Due date (DD-MM-YYYY)	Calibration Interval
EM005-09	Surge/DIP Generator	NSG3040	TESEQ	25/05/2018	1Y
SA047-77	Digital Temperature-Humidity Recorder	RC-HT601A	HATAIKE	07/06/2018	1Y

Conducted Susceptibility(2)

Equipment No.	Equipment	Model	Manufacturer	Cal. Due date (DD-MM-YYYY)	Calibration Interval
EM019-01	Conducted Immunity Testing System	NSG4070-75	Teseq GmbH	14/09/2018	1Y
EM019-01-01	Current Electromagnetic injection clamp	KEMZ801S	Teseq GmbH	14/09/2018	1Y
EM019-01-02	Coupling&Decoupling Network	CDNM016	Teseq GmbH	14/09/2018	1Y
EM019-01-03	6dB Attenuator	ATN6075	Teseq GmbH	14/09/2018	1Y
EM019-03	Current Clamp	CIP 9136A	Teseq GmbH	30/07/2018	1Y
SA047-77	Digital Temperature-Humidity Recorder	RC-HT601A	HATAIKE	07/06/2018	1Y

Voltage Dips and Interruptions(2)

Equipment No.	Equipment	Model	Manufacturer	Cal. Due date (DD-MM-YYYY)	Calibration Interval
EM005-09	Surge/DIP Generator	NSG3040	TESEQ	25/05/2018	1Y
EM005-09-01	Voltage Regulator	INA6501	TESEQ	25/05/2018	1Y
SA047-77	Digital Temperature-Humidity Recorder	RC-HT601A	HATAIKE	07/06/2018	1Y

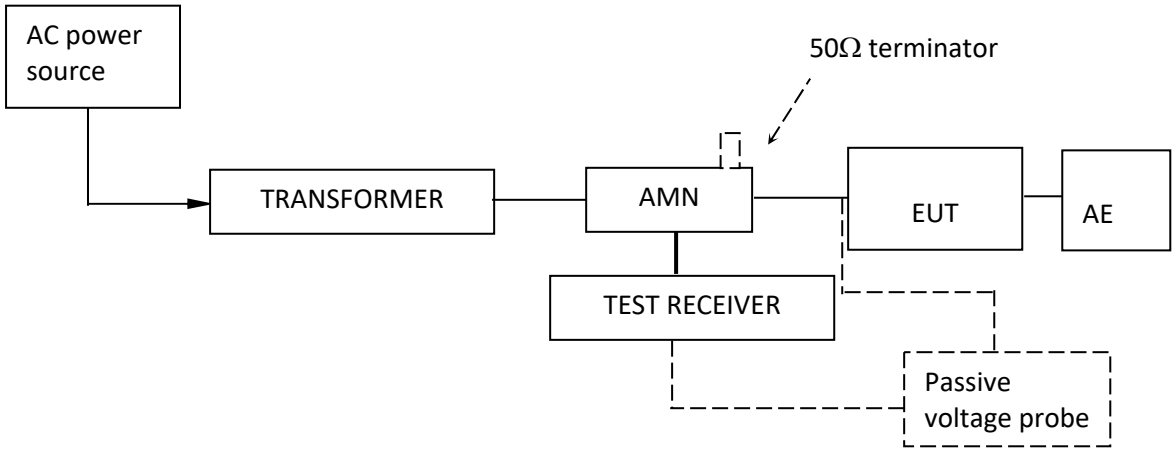
TEST REPORT

5. EMI TEST

5.1 EN 55014-1 Continuous Conducted Disturbance Voltage Test

Test Result: Pass

5.1.1 Block Diagram of Test Setup



5.1.2 Test Setup and Procedure

The EUT was set to achieve the maximum emission level. The mains terminal disturbance voltage was measured with the EUT in a shielded room. The EUT was connected to AC power source through an Artificial Mains Network which provides a 50Ω linear impedance Artificial hand is used if appropriate (for handheld apparatus). The load/control terminal disturbance voltage was measured with passive voltage probe if appropriate.

The table-top EUT was placed on a 0.4m high non-metallic table above earthed ground plane(Ground Reference Plane).And for floor standing EUT, was placed on a 0.1m high non-metallic supported on GRP. The EUT keeps a distance of at least 0.8m from any other of the metallic surface. The Artificial Mains Network is situated at a distance of 0.8m from the EUT.

During the test, mains lead of EUT excess 0.8m was folded back and forth parallel to the lead so as to form a horizontal bundle with a length between 0.3m and 0.4m.

The bandwidth of test receiver was set at 9 kHz. The frequency range from 150 kHz to 30MHz was checked.

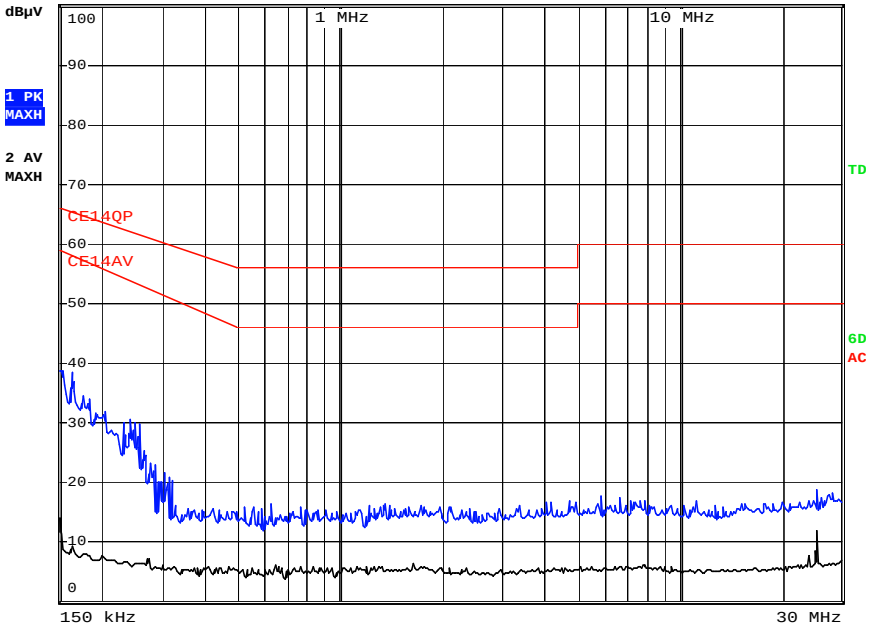
When measurements of disturbance are being made, the appliance shall be operated under the conditions defined in clause 7.

TEST REPORT

5.1.3 Test Data and curve

At mains terminal:

Tested Wire: Live **Operation Mode: EUT ON**

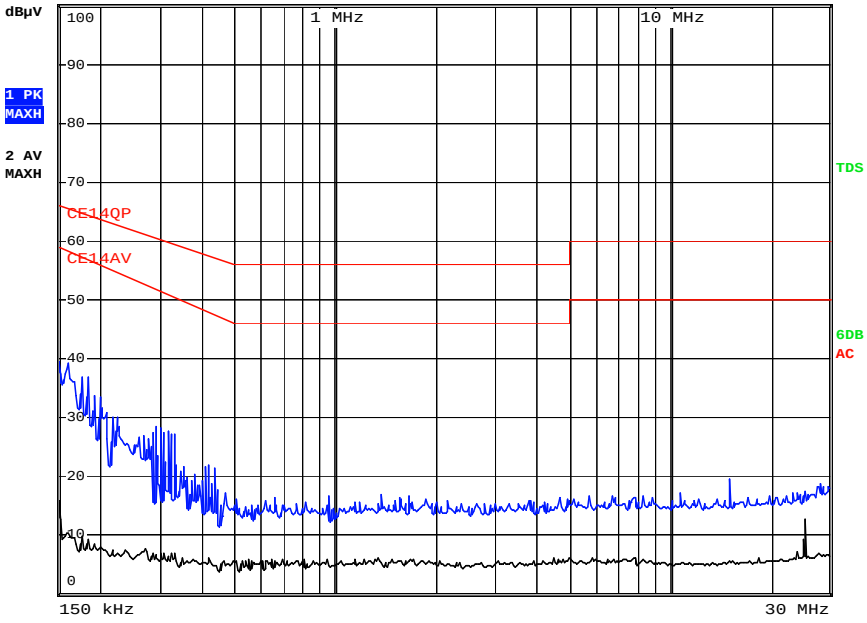


All emission levels are more than 10 dB below the limit.

Remark:
1. Corr. (dB) = LISN Factor (dB) + Cable Loss (dB)
2. Level (dBµV) = Corr. (dB) + Read Level (dBµV)
3. Delta Limit (dB) = Level (dBµV)-Limit (dBµV)

TEST REPORT

Tested Wire: Neutral **Operation Mode: EUT ON**



All emission levels are more than 10 dB below the limit.

At load/control terminal:

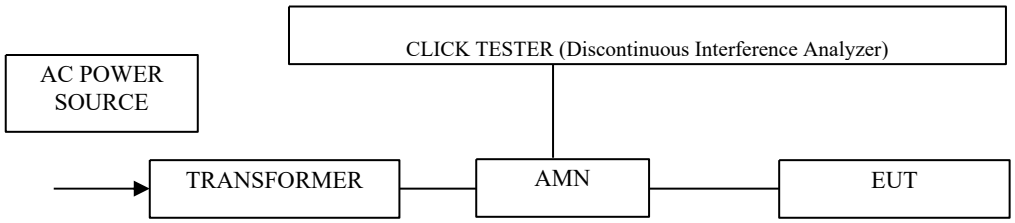
Not Applicable.

TEST REPORT

5.2 EN 55014-1 Discontinuous Conducted Disturbance Voltage

Test Result: Pass

5.2.1 Block Diagram of Test Setup



5.2.2 Test Setup and Procedure

The EUT was placed on a 0.8m high non-metallic table in shielded room, the wall of shielded room used as Ground Reference Plane (GRP), and keeps a distance of at least 0.8m from any of the other metallic surface.
The EUT was connected to an artificial mains network and at a distance of 0.8m from it, the excess lead of EUT was bundled with a length of 0.3m to 0.4m parallel to the main lead.
The number of counted clicks above the permitted limit for continuous interference and their duration, spacing and rate were measured during the observation time. When relevant, a permitted(relaxed) limit for clicks was calculated and a second measurement was performed. Determination of compliance with the permitted limit according to the upper quartile method was applied. The frequency 150kHz, 500 kHz, 1.4 MHz and 30 MHz was checked.

When measurements of disturbance are being made, the appliance shall be operated under the conditions defined in clause 7.

TEST REPORT

5.2.3 Test Data and curve

Frequency (MHz)	0.15	0.50	1.40	30.00
Permitted limit for continuous interference (dBμV)	66	56	56	60
Short Clicks [T<10ms]	0	0	0	0
Mid. Clicks [10ms<T<20ms]	0	0	0	0
Long Clicks [T>20ms]	0	0	0	0
Total clicks (number)	0	0	0	0
Switching operation (number)	--			
Factor	--			
Observation time (min.)	120			
Click rate, N	0.00	0.00	0.00	0.00
Value to be added (dB)	--	--	--	--
Counted clicks allowed to exceed the permitted limit (number)	--	--	--	--
Permitted limit for clicks (dBμV)	--	--	--	--
Counted clicks exceeding the limit (number)	--	--	--	--
Complies with the limit (Pass/Fail)	Pass	Pass	Pass	Pass

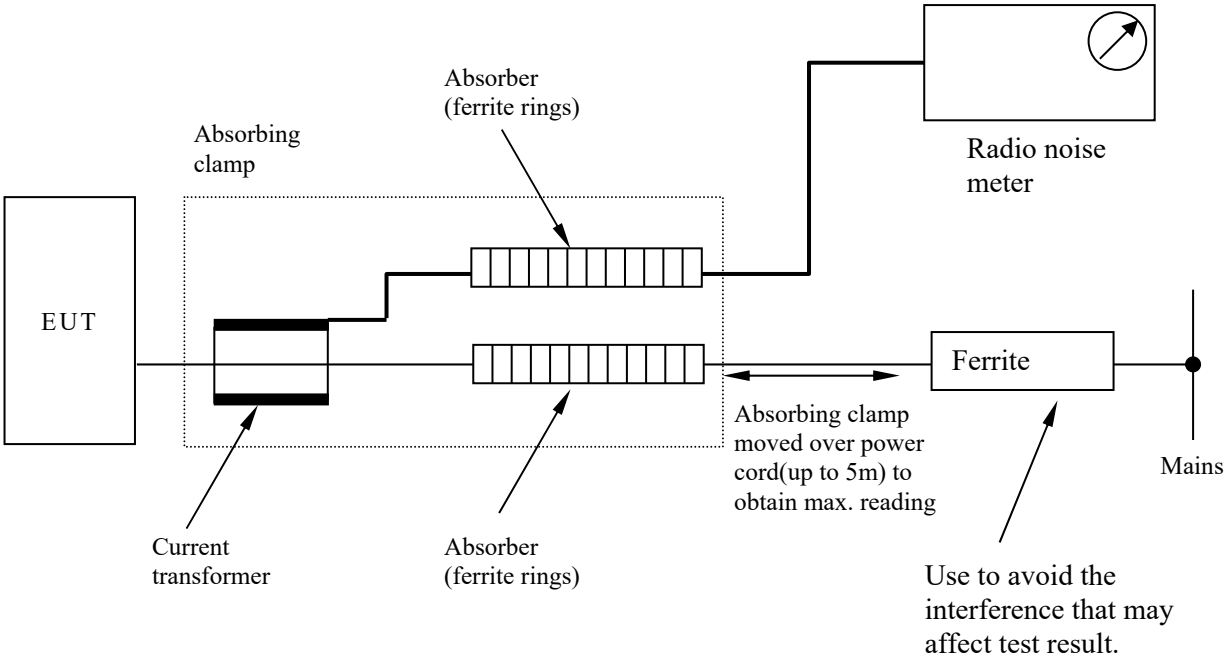
The appliance was deemed to comply with the limits if fulfilling the three conditions below:
– the click rate is not more than 5.
– none of the caused clicks has a duration longer than 20 ms.
– 90 % of the caused clicks have a duration less than 10 ms.

TEST REPORT

5.3 EN 55014-1 Radiated Disturbance Power

Test Result: Pass

5.3.1 Block Diagram of Test Setup



Note: ——— : power line

——— : signal lime

TEST REPORT

5.3.2 Test Setup and Procedure

The disturbance power was measured with the EUT in a shielded room. The height of the table shall be 0,1 m $\pm$ 0,025 m for appliances primarily intended to be positioned on the floor in normal use, and 0,8 m $\pm$ 0,05 m for other appliances. The EUT was placed on a non-metallic table at least 0.8m from other metallic surface and the mains lead of EUT was extended to about 6m long. The auxiliary lead longer than 0.25m but shorter than twice length of absorbing clamp was extend to twice length of clamp and those longer than twice length was extend to 6 meters.

The absorbing clamp was moved along the lead to obtain maximum disturbance. The EUT was set to achieve the maximum emission level, and for each point which appears a relevant high emission level, the absorbing clamp was moved around the lead to get the maximum disturbance value.

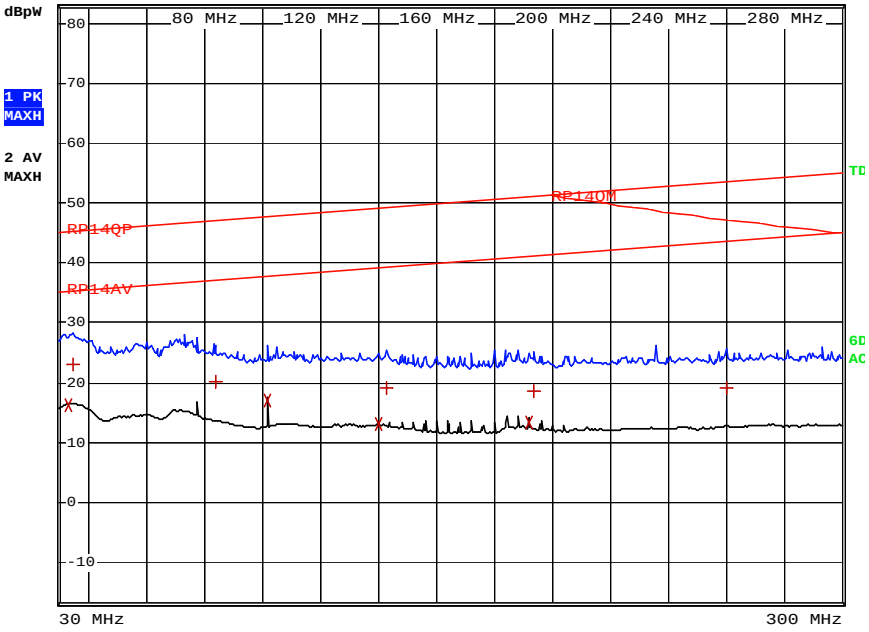
The bandwidth of test receiver was set at 120 kHz. The frequency range from 30MHz to 300MHz was checked.

When measurements of disturbance are being made, the appliance shall be operated under the conditions defined in clause 7.

TEST REPORT

5.3.3 Test Data and curve

Tested Port: mains **Operation Mode: EUT ON**



Trace1:	RP14QP
Trace2:	RP14AV
Trace3:	---

TRACE	FREQUENCY	LEVEL dBpW	DELTA LIMIT dB
2 Average	33 MHz	16.16 L1	-18.94
1 Quasi Peak	34.84 MHz	22.92 L1	-22.25
1 Quasi Peak	84.16 MHz	20.01 L1	-26.99
2 Average	101.72 MHz	17.05 L1	-20.60
2 Average	140.12 MHz	13.12 L1	-25.94
1 Quasi Peak	143 MHz	19.05 L1	-30.13
2 Average	192 MHz	13.32 L1	-27.67
1 Quasi Peak	193.8 MHz	18.63 L1	-32.43
1 Quasi Peak	259.88 MHz	19.17 L1	-34.34

The measurement quasi-peak data of disturbance power is lower than applicable limit reduced by the margin (0 to 10dB) at frequency range 200 to 300 MHz and the maximum clock frequency is less than 30MHz

TEST REPORT

5.4 EN 55014-1 Radiated Disturbance

Test Result: Not Applicable
Remark:
☒ Radiated disturbance shall not be conducted, if the measurement quasi-peak data of disturbance power is lower than applicable limit reduced by the margin (0 to 10dB) at frequency range 200 to 300 MHz and the maximum clock frequency is less than 30MHz,.

☐ Radiated disturbance (300-1000MHz) shall be conducted, if the measurement quasi-peak data of disturbance power is between the limit and limit reduced by the margin (0 to 10dB) at frequency range 200 to 300 MHz or the maximum clock frequency is not less than 30MHz.

☐Radiated disturbance(30-1000MHz) is applied to battery-operated appliance

6. Harmonics of current

Test Result: Pass

Remark:

☒This product is not defined as lighting equipment, and rated power is less than 75W, therefore, no limit applies according to EN 61000-3-2.

7. Flicker

Test Result: Pass

Remark:

☒This product is unlikely to produce significant voltage fluctuations and flicker by examination of the circuit diagram and specification of it. Therefore, it is deemed to fulfill the relevant standard without testing.

TEST REPORT

8. EMS TEST

Performance Criteria:

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 permission loss of performance) specified by the manufacturer, when the apparatus is used as intended. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation and from what the user may reasonably expect from the apparatus if used as intended.

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

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

Note: "N/A" means Not Applicable in below text.

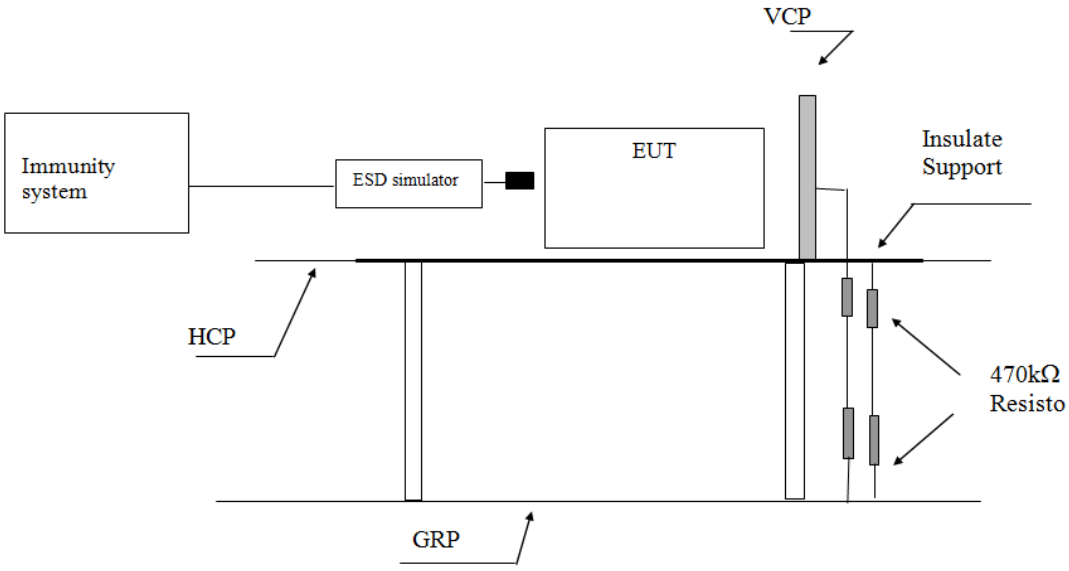
TEST REPORT

8.1 EN 61000-4-2(Pursuant to EN 55014-2) Electrostatic Discharge Immunity

Performance criterion: B

Test Result: Pass

8.1.1 Block Diagram of Test Setup



Note: HCP means Horizontal Coupling Plane,

VCP means Vertical Coupling Plane

GRP means Ground Reference Plane

8.1.2 Test Setup and Procedure

The EUT was put on a 0.8m high wooden table 0.1m high for floor standing equipment standing on the ground reference plane (GRP) 3m by 2m in size, made by iron 1.0 mm thick.

A horizontal coupling plane(HCP) 1.6m by 0.8m in size was placed on the table, and the EUT with its cables were isolated from the HCP by an insulating support thick than 0.5mm. The VCP 0.5m by 0.5m in size & HCP were constructed from the same material type & thickness as that of the GRP, and connected to the GRP via a 470kΩ resistor at each end.

The distance between EUT and any of the other metallic surface excepted the GRP, HCP & VCP was greater than 1m.

The EUT was arranged and connected according to its functional requirements.

Direct static electricity discharges were applied only to those points and surface which were accessible to personnel during normal usage.

TEST REPORT

On each preselected points 10 times of each polarity single discharge were applied. The time interval between successive single discharges was at least 1s.

The ESD generator was held perpendicular to the surface to which the discharge was applied. The discharge return cable of the generator was kept at a distance of 0.2m whilst the discharge was being applied. During the contact discharges, the tip of the discharge electrode was touched the EUT before the discharge switch was operated. During the air discharges, the round discharge tip of the discharge electrode was approached as fast as possible to touch the EUT.

Indirect discharge was conducted to objects placed near the EUT, simulated by applying the discharges of the ESD generator to a coupling plane, in the contact discharge mode.

After each discharge, the ESD generator was removed from the EUT, the generator was then retriggered for a new single discharge. For ungrounded product, a grounded carbon fibre brush with bleeder resistors (2×470 kΩ) in the grounding cable was used after each discharge to remove remnant electrostatic voltage.

For air discharge, a minimum of 10 single air discharges were applied to the selected test point for each such area.

TEST REPORT

8.1.3 Test Result

Direct Application of ESD

Direct Contact Discharge

Applied Voltage (kV)	No. of Discharge for each point	Result (Pursuant to EN 55014-2)	Discharged Points
4	20	Pass	Accessible metal parts of the EUT Conductive substrate with coating which is not declared to be insulating

Direct Air Discharge

Applied Voltage (kV)	No. of Discharge for each point	Result (Pursuant to EN 55014-2)	Discharged Points
2, 4, 8	20	Pass	All accessible points where contact discharge cannot be applied such as Displays, Indicators light, Keyboard, Button, Switch, Knob, Air gap, Slots, Hole and so on

Indirect Application of ESD

Horizontal Coupling Plane under the EUT

Applied Voltage (kV)	No. of Discharge for each point	Result (pursuant to EN 55014-2)	Discharged Point
4	20	N/A	At the front edge of each HCP opposite the centre point of each unit of the EUT

Vertical Coupling Plane beside the EUT

Applied Voltage (kV)	No. of Discharge for each point	Result (pursuant to EN 55014-2 criterion B)	Discharged Point
4	20	Pass	The centre of the vertical edge of the coupling plane

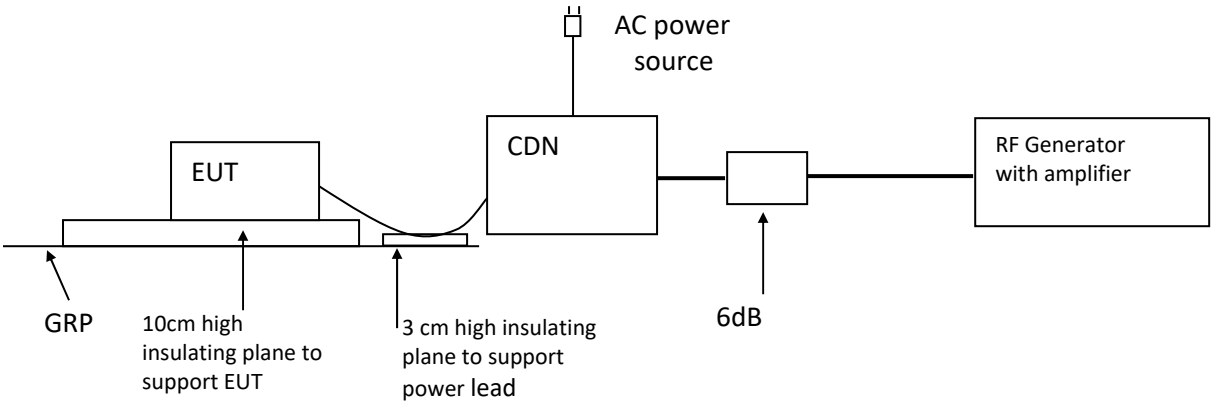
TEST REPORT

8.2 EN 61000-4-6(Pursuant to EN 55014-2) Injected Current (0.15 MHz to 230 MHz)

Performance criterion: A

Test Result: Pass

8.2.1 Block Diagram of Test Setup



8.2.2 Test Setup and Procedure

The EUT was placed on an insulating support of 0.1m height above a ground reference Plane, arranged and connected to satisfy its functional requirement.

All relevant cables were provided with the appropriate coupling and decoupling devices at a distance between 0.1m and 0.3m from the projected geometry of the EUT on an insulating support of 0.03m height above the ground reference plane.

Test voltage was verified before each testing though power meter combined in the RF generator with AMP.

Dwell time was set to 3s and step was set as 1% to keep sufficient response time for EUT. The frequency from 0.15MHz to 230MHz was checked.

8.2.3 Test Result

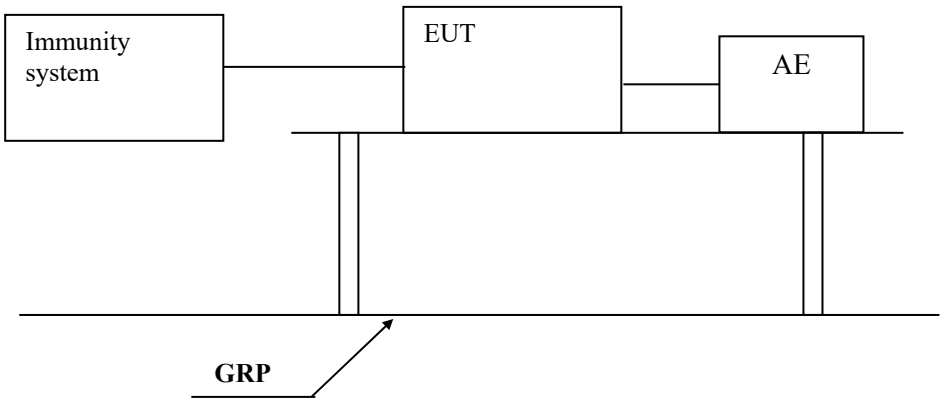
Port:	Frequency (MHz)	Level (Pursuant to EN55014-2)	Result
A.C. Power Lines	0.15 to 230	3V (r.m.s.)	Pass
D.C. Power Lines	0.15 to 230	1V (r.m.s.)	N/A
Signal Lines	0.15 to 230	1V (r.m.s.)	N/A
Control Lines	0.15 to 230	1V (r.m.s.)	N/A

8.3 EN 61000-4-4(Pursuant to EN 55014-2) Electrical Fast Transient/Burst

Performance criterion: B

Test Result: Pass

8.3.1 Block Diagram of Test Setup



8.3.2 Test Setup and Procedure

The EUT was placed on a 0.1m high wooden table, standing on the ground reference plane 3m by 2m in size, made by steel 1mm thick.

The distance between the EUT and any other of the metallic surface except the GRP was greater than 0.5m.

The mains lead excess than 0.5m was folded to avoid a flat coil and situated at a distance of 0.1m above the ground reference plane to insure the distance between the coupling device and the EUT was 0.5m.

The EUT was arranged and connected to satisfy its functional requirement and supplied by the coupling-decoupling network.

TEST REPORT

8.3.3 Test Result

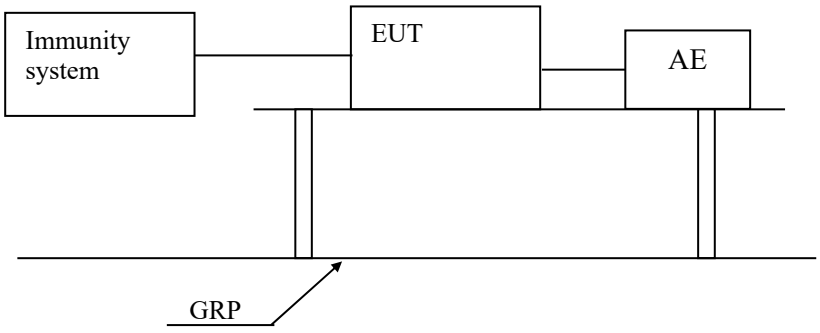
Level (Pursuant to EN55014-2)	Polarity	A.C. Power supply line and protective earth terminal	D.C. Power Lines, Signal Line & Control Line
0.5kV	+	N/A	N/A
0.5kV	-	N/A	N/A
1kV	+	Pass	N/A
1kV	-	Pass	N/A

8.4 EN 61000-4-5(Pursuant to EN 55014-2) Surge Immunity

Performance criterion: B

Test Result: Pass

8.4.1 Block Diagram of Test Setup



8.4.2 Test Setup and Procedure

The surge was applied to the EUT power supply terminals via the capacitive coupling network.

Decoupling networks were required in order to avoid possible adverse effects on equipment not under test that might be powered by the same lines and to provide sufficient decoupling impedance to the surge wave so that the specified wave might be developed on the lines under test.

The EUT was arranged and connected according to its functional requirements.

The EUT was placed on a 0.1m high wooden support above the GRP), supplied by the coupling-decoupling network, and arranged and connected to satisfy its functional requirement. The power cord between the EUT and the coupling/decoupling network was less than 2 meters.

TEST REPORT

8.4.3 Test Result

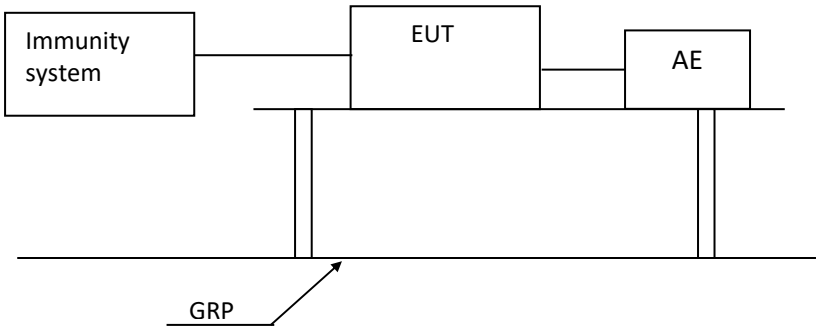
Level (Pursuant to EN 55014-2)	Result
Between Phase And Phase: 1kV	N/A
Between Phase And Neutral: 1kV	Pass
Between Phase And Earth: 2kV	N/A
Between Neutral And Earth: 2kV	N/A

8.5 EN 61000-4-11(Pursuant to EN 55014-2) Voltage Dips and Interruptions

Performance criterion: C

Test Result: Pass

8.5.1 Block Diagram of Test Setup



8.5.2 Test Setup and Procedure

The EUT was placed on an insulating support of 0.8m height, standing on a ground reference plane, and arranged and connected to satisfy its functional requirement

The test was performed with the EUT connected to the test generator with the shortest power supply cable as specified by the EUT manufacturer.

The EUT was tested for each selected combination of test level and duration with a sequence of three dips/interruptions with intervals of 10 s minimum. Each representative mode of operation was tested.

Abrupt changes in supply voltage was occur at zero crossings of the voltage.

TEST REPORT

8.5.3 Test Result

Test condition (Pursuant to EN 55014-2)				
Test Level in %U_T	50 Hz		60 Hz	
	Duration	Result	Duration	Result
0	0.5	Pass	0.5	N/A
40	10	Pass	12	N/A
70	25	Pass	30	N/A

Remark: UT is the rated voltage for the equipment.

8.6 EN 61000-4-3(Pursuant to EN 55014-2) Radiated Electromagnetic Field Immunity

Performance criterion: A

Test Result: Not Applicable

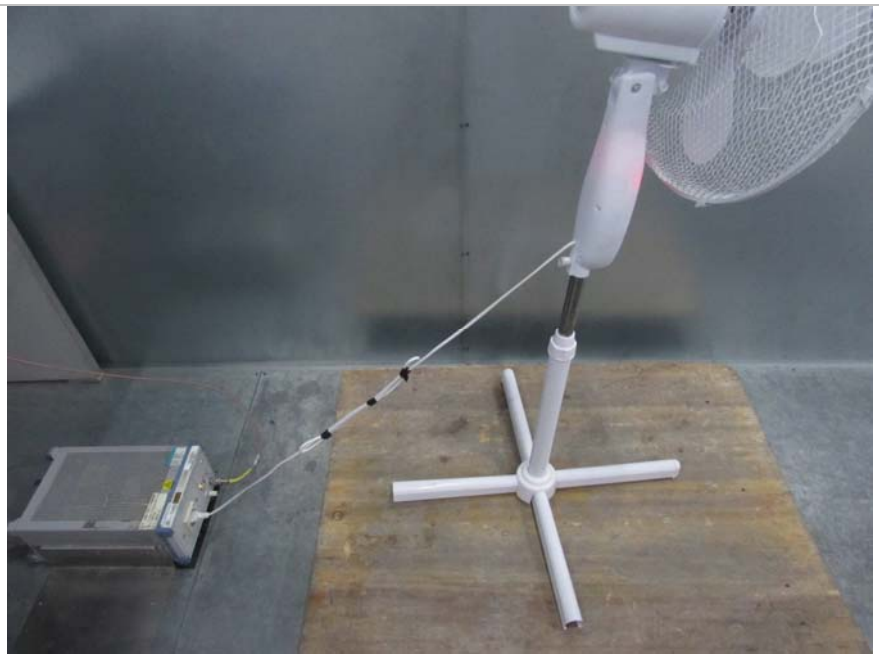
Remark:

Containing electronic control circuitry with no internal clock frequency or oscillator frequency higher than 15 MHz.

TEST REPORT

9 APPENDIX I - PHOTOS OF TEST SETUP

Conducted Emission



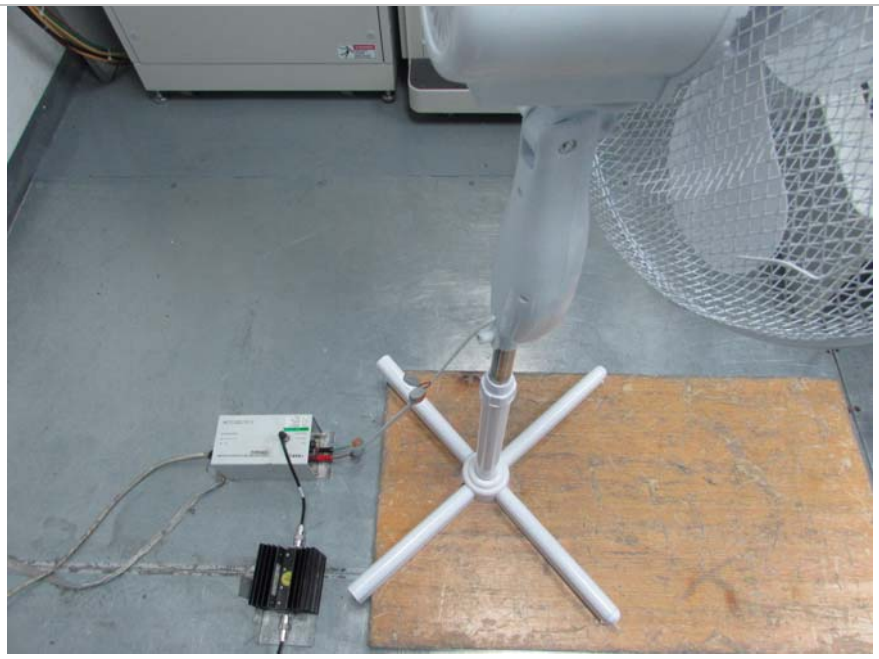
Radiated Power

TEST REPORT

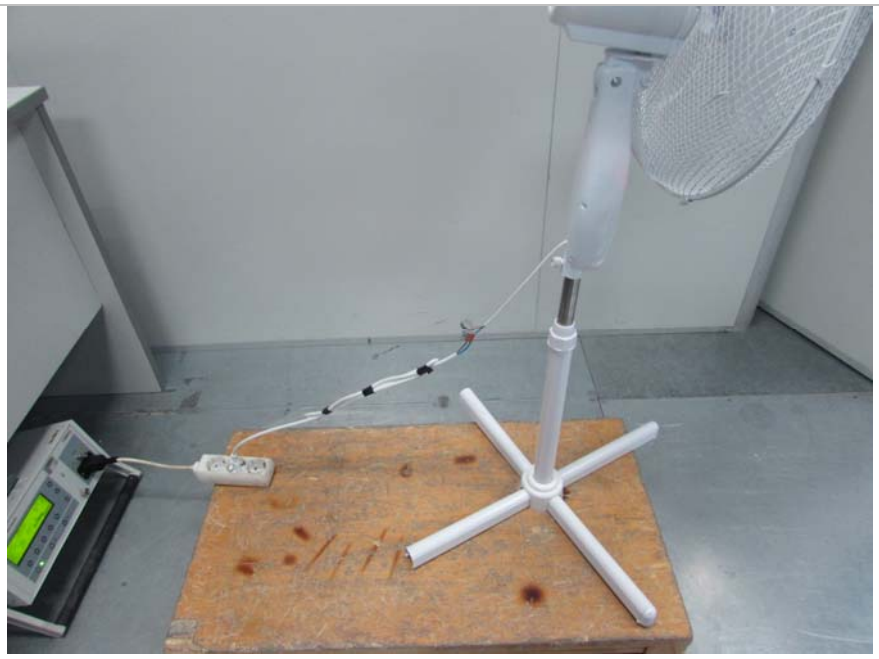
Clicks

ESD Immunity


TEST REPORT

Inject current immunity

Surge and DIP Immunity


TEST REPORT

EFT Immunity


TEST REPORT

10 APPENDIX II – PHOTOS OF EUT

Photos for YH-15 series:

Front view of YH-15D1

Front view of YH-15D

Side view

TEST REPORT


Side view

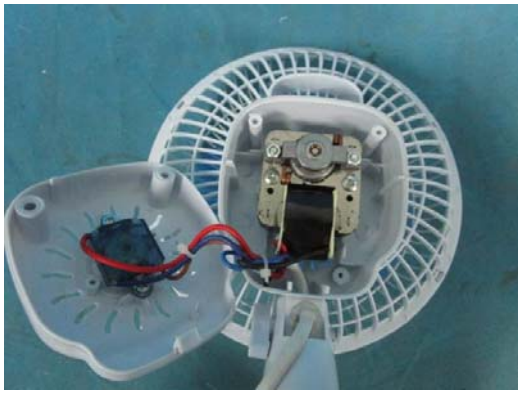

Back view

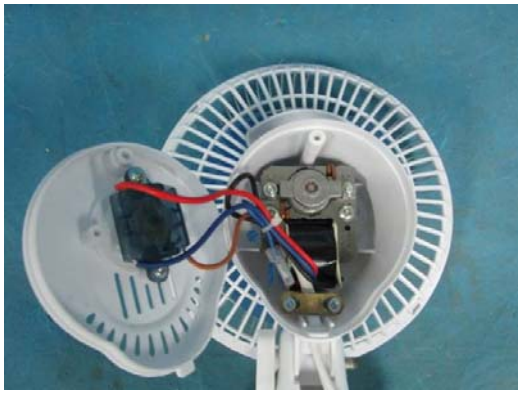
TEST REPORT

Speed switch knob

Front view of YH-15C

Front view of YH-15C1

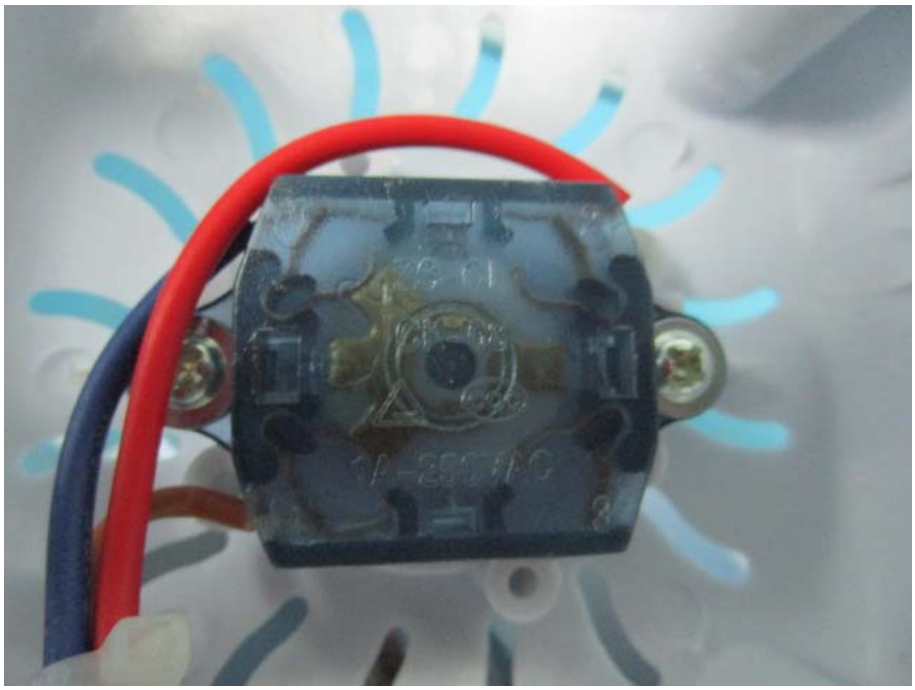




Internal view

TEST REPORT

Cord inlet and cord anchorage for YH-15D1 and YH-15C1



Speed switch

TEST REPORT

Photos for YH23 series

Front view

View for YH-23D1-1

Remark: The other part of YH-23D1-1 was the same as YH-23D1.

TEST REPORT

Photos for YH-30 series

Front view of YH-30D

Front view of YH-30D1

Front view of YH-30D1-1

Remark: The other part of YH-30D1-1 was the same as YH-30D1, except the fan motor and fan blade quantity.

TEST REPORT

Front view of YH-40D

Front view of YH-40D1

Side view

TEST REPORT

Photos for YH-40x-y

Front view of YH-40E-0

Side view

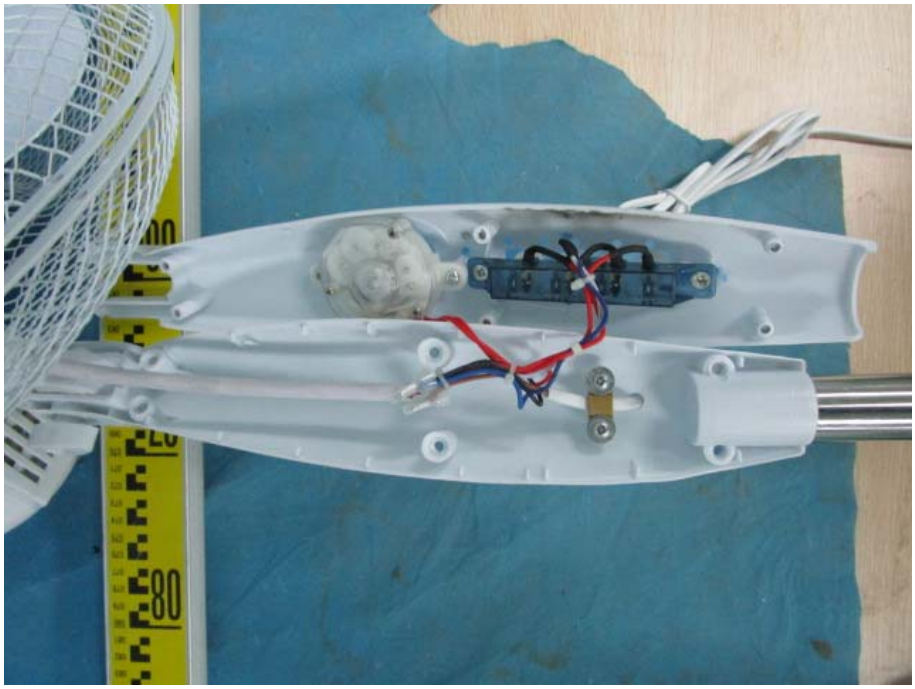
TEST REPORT

Back view

Fan motor cover

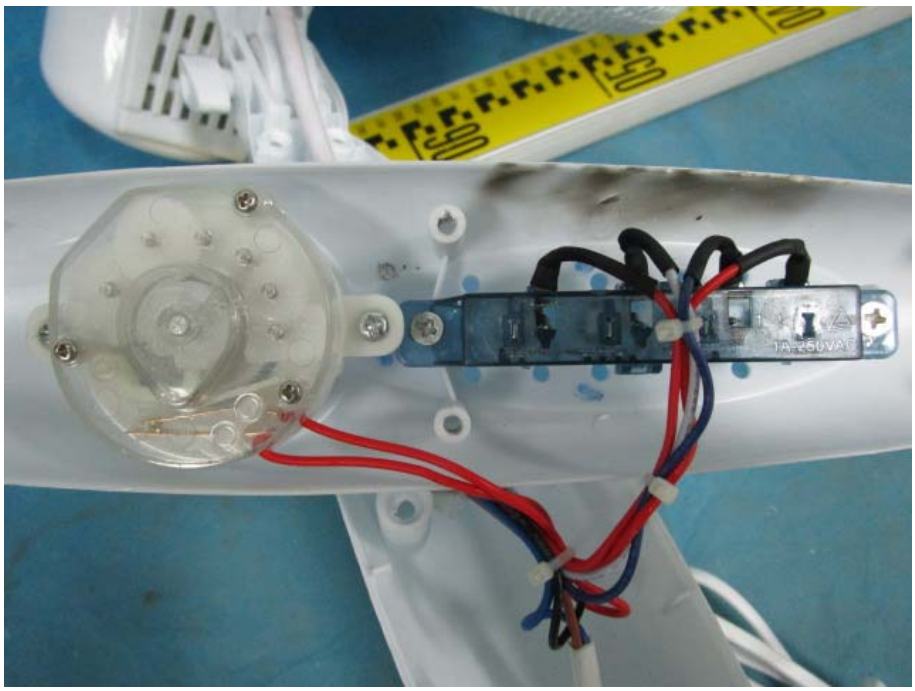
TEST REPORT

Cord inlet and adjustor

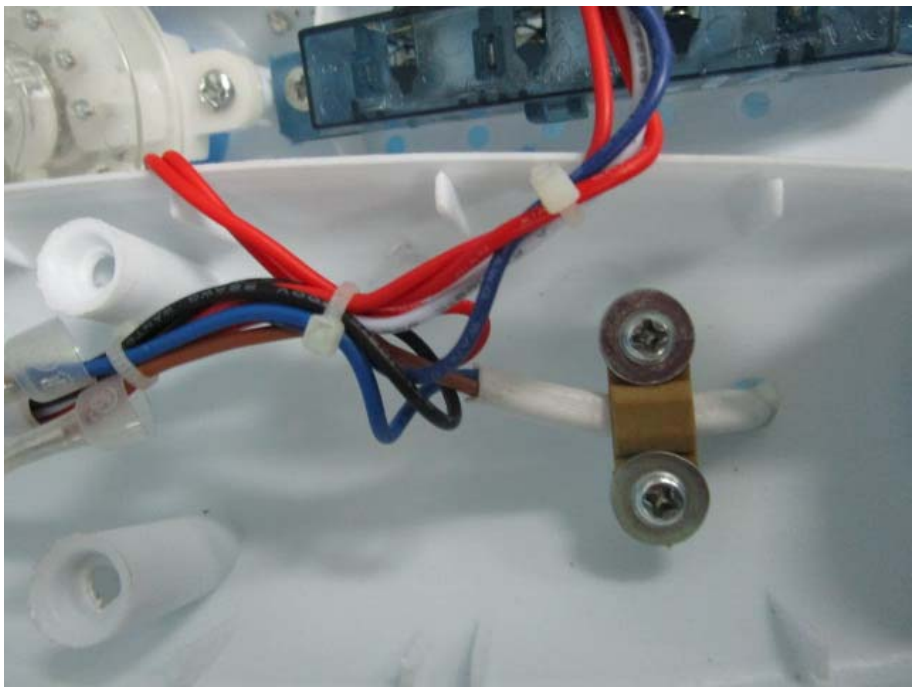


Internal view

TEST REPORT



Timer and speed switch



Internal wire and cord anchorage

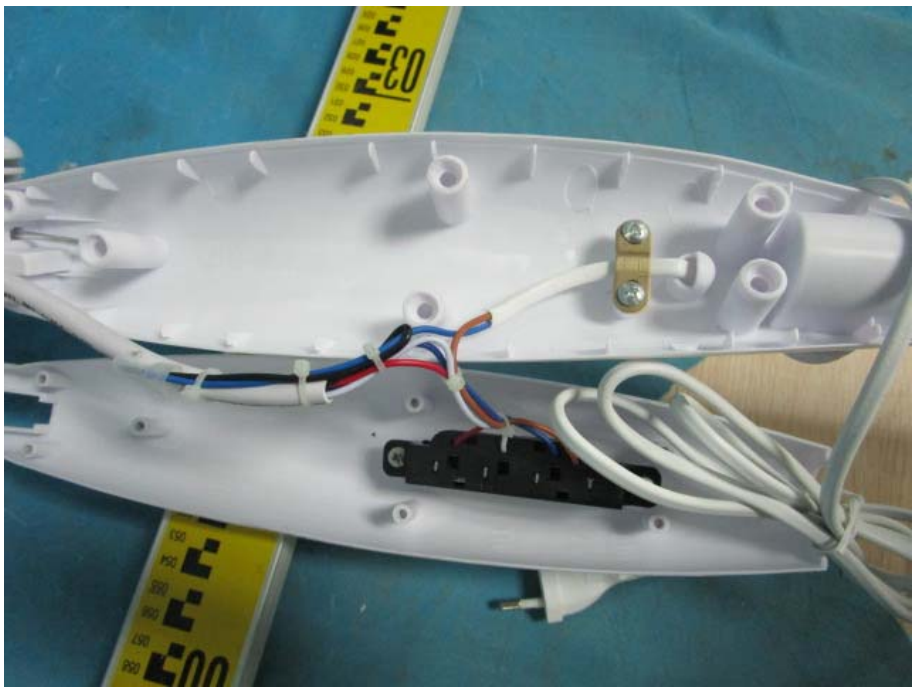
TEST REPORT

Control panel

Remark: The construction for other models of YH-40x-y is the same as YH-40E-0, except the control panel and the other models have no timer.

Control pane for YH-40A-y

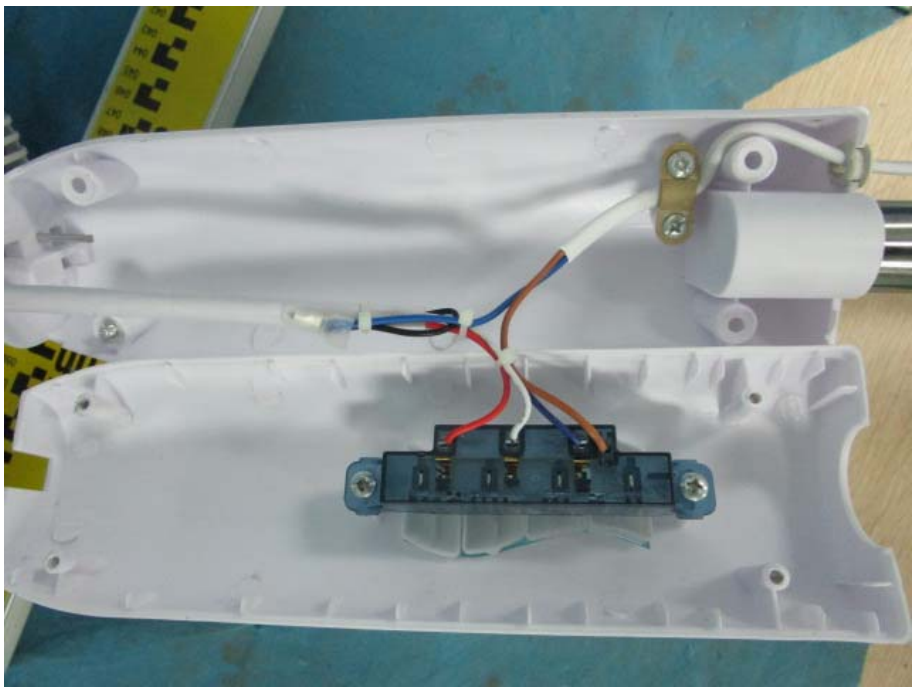
TEST REPORT



Internal view of YH-40A-y

Control panel of YH40B-y

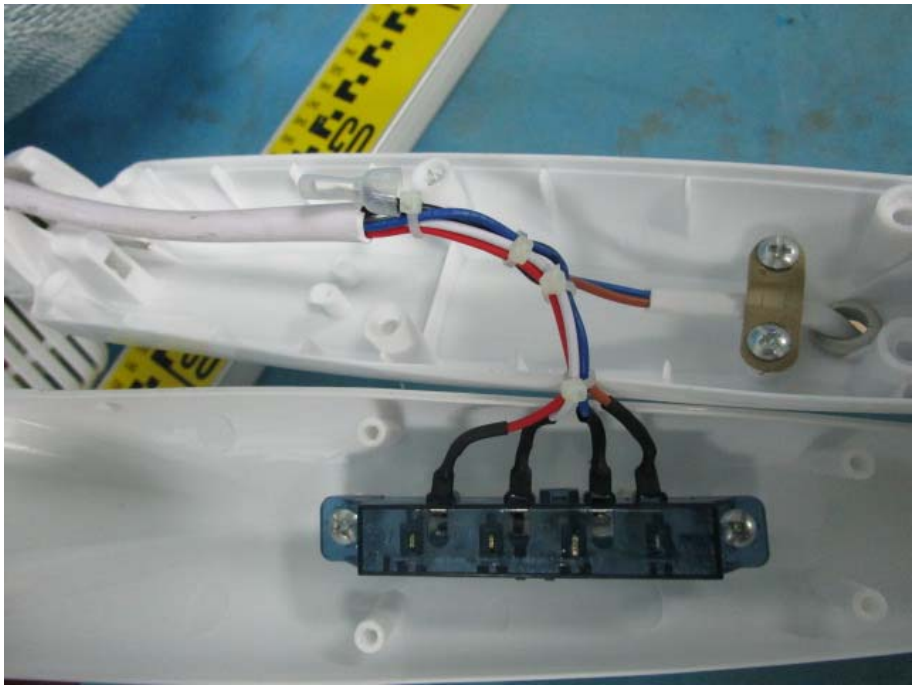
TEST REPORT



Internal view of YH-40B-y

Control panel of YH-40C-y

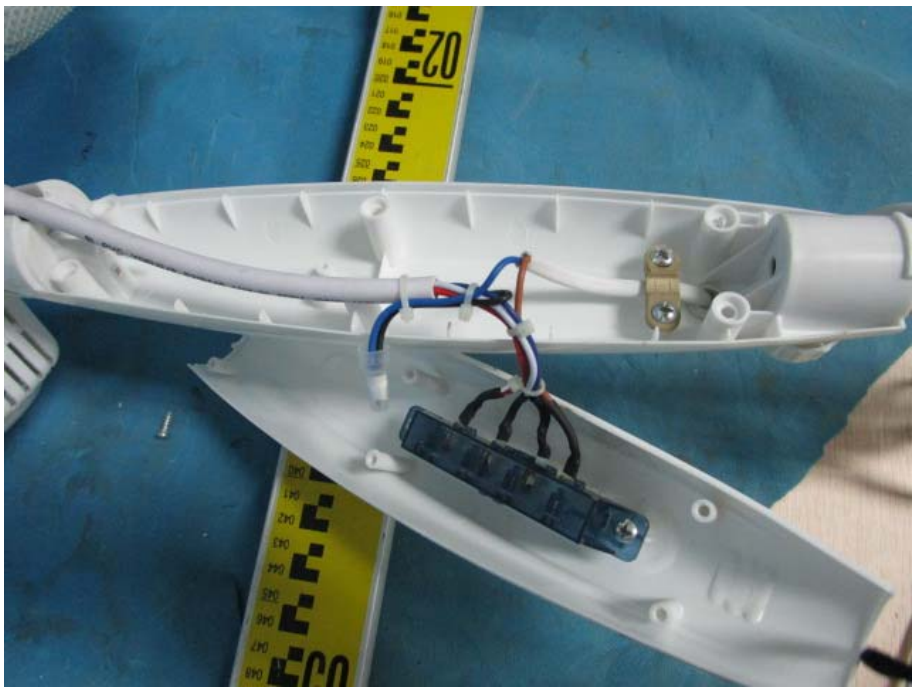
TEST REPORT



Internal view of YH-40C-y

Control panel of YH-40F-y

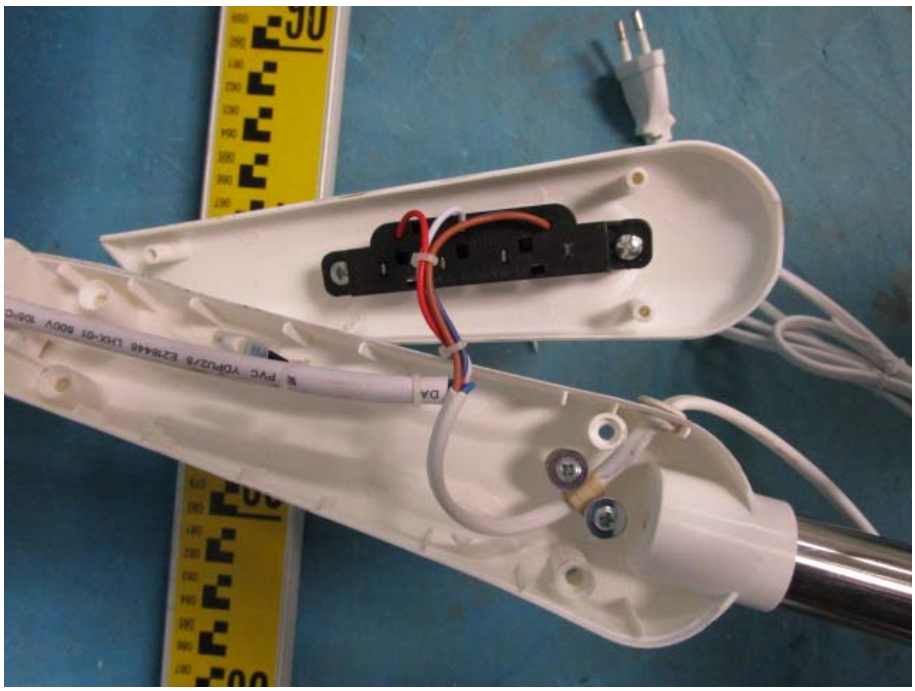
TEST REPORT



Internal view of YH-40F-y

Control panel of YH-40H-y

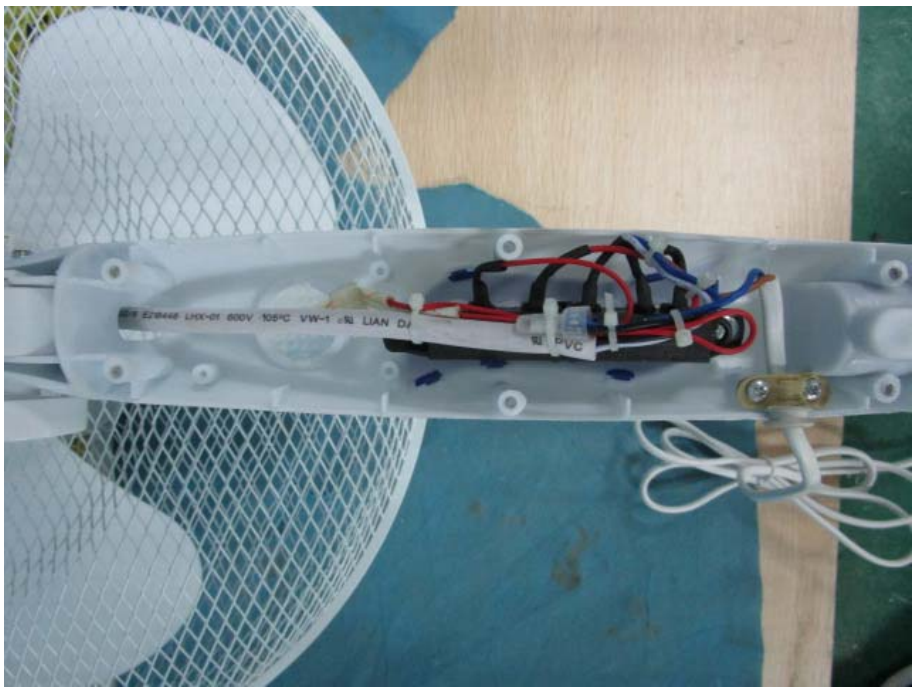
TEST REPORT



Internal view of YH-40H-y

Control panel of YH-40S-y

TEST REPORT

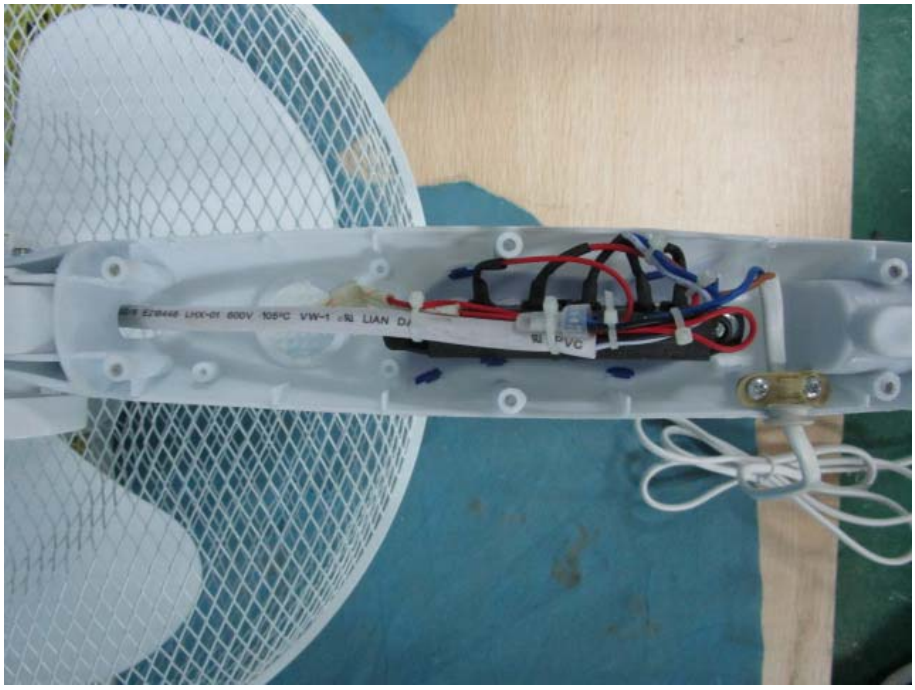


Internal view of YH-40S-y

LED lamp of YH-40S-y

TEST REPORT

Control panel of YH-40S1-y



Internal view of YH-40S1-y

TEST REPORT

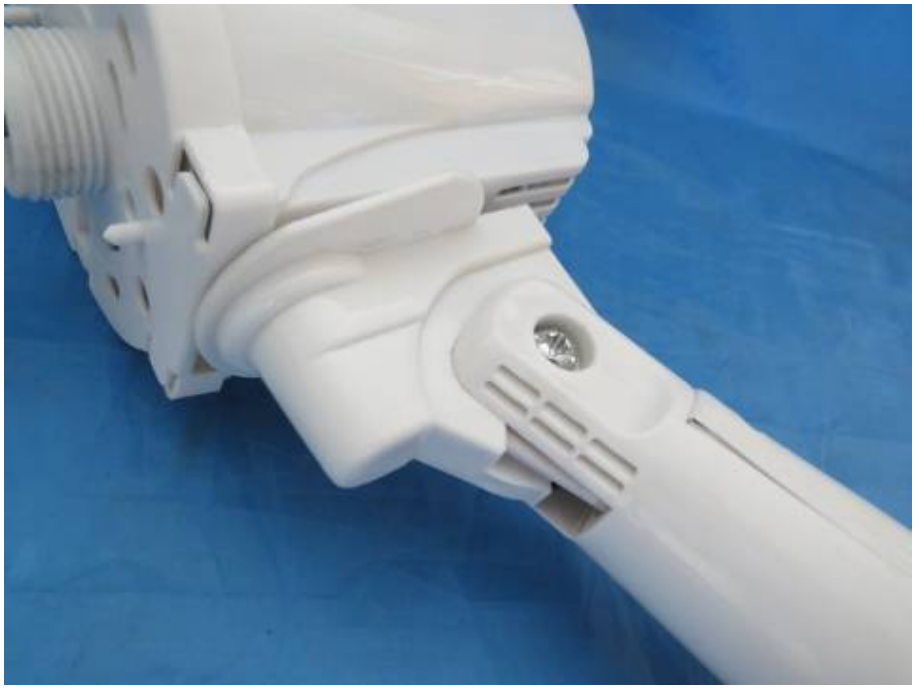
The following photos are for models YH-40x-y

Switch knob for swing

Rotor box view

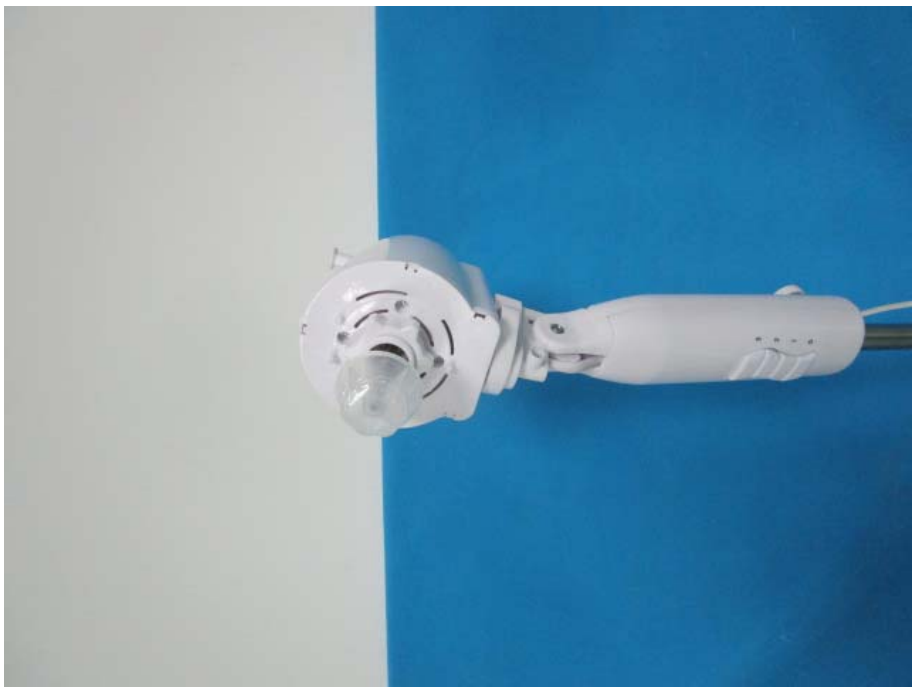
TEST REPORT

Fan motor and motor capacitor



Neck view

TEST REPORT



Main body view

Base for YH-40x-y

TEST REPORT

Fan guard for all models

Remark: The two types of fan guard are for all models but with different size.

TEST REPORT

The following photos are for emanant type fan guard
Clip type:

Clip for fan guard

Clip for fan guard

TEST REPORT

Screw for fan guard

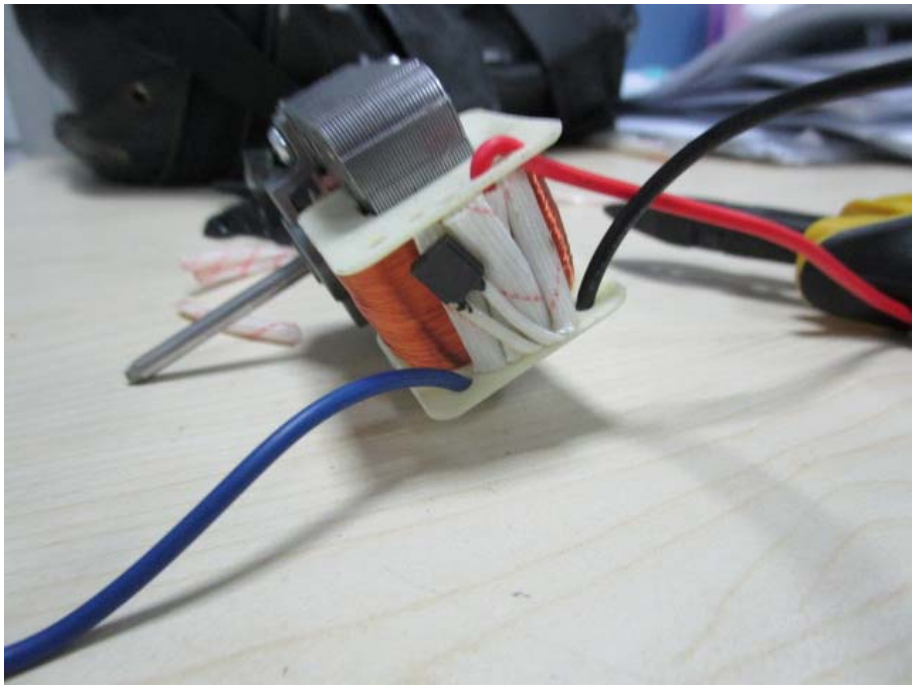
Remark: The same clips for rhombus type fan guard.

Hoop type:

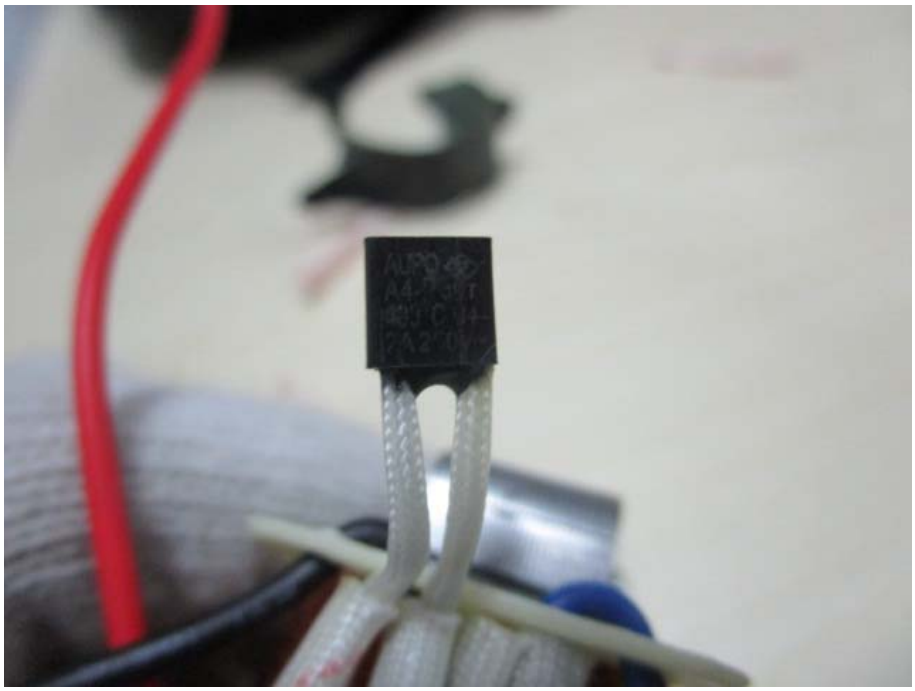
Screw for fan guard

TEST REPORT

The following photos are for motors:
Fan motor 4815



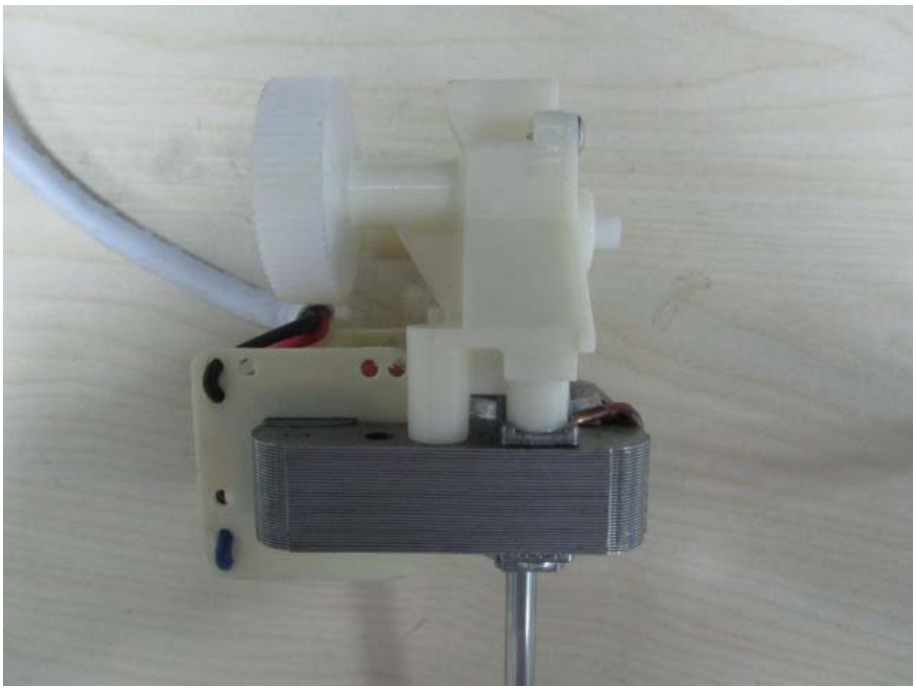
Fan motor view



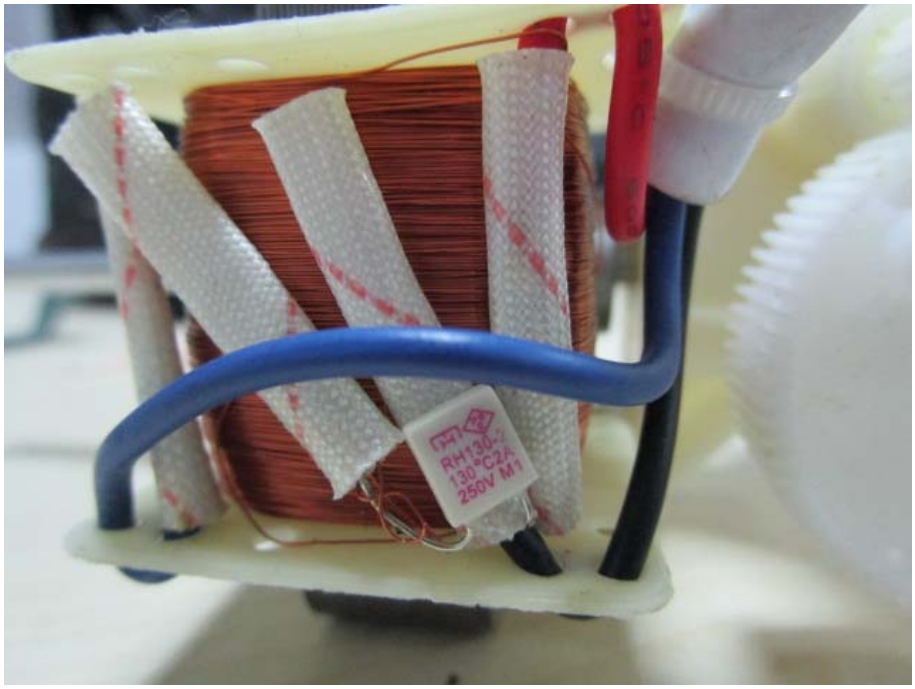
Thermal-link view

TEST REPORT

Fan motor 6016



Fan motor view

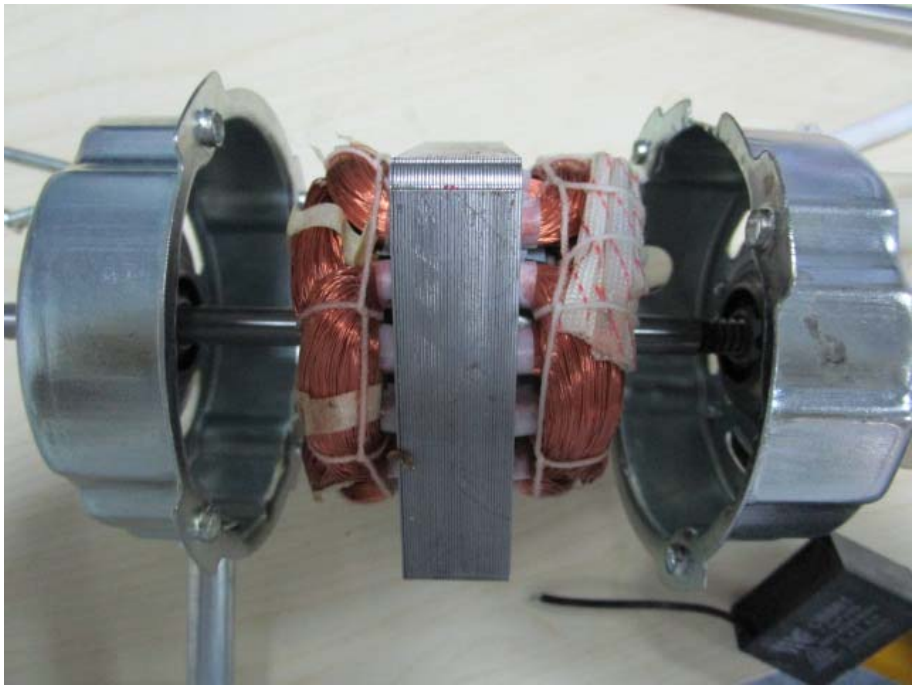


Thermal-link view

TEST REPORT

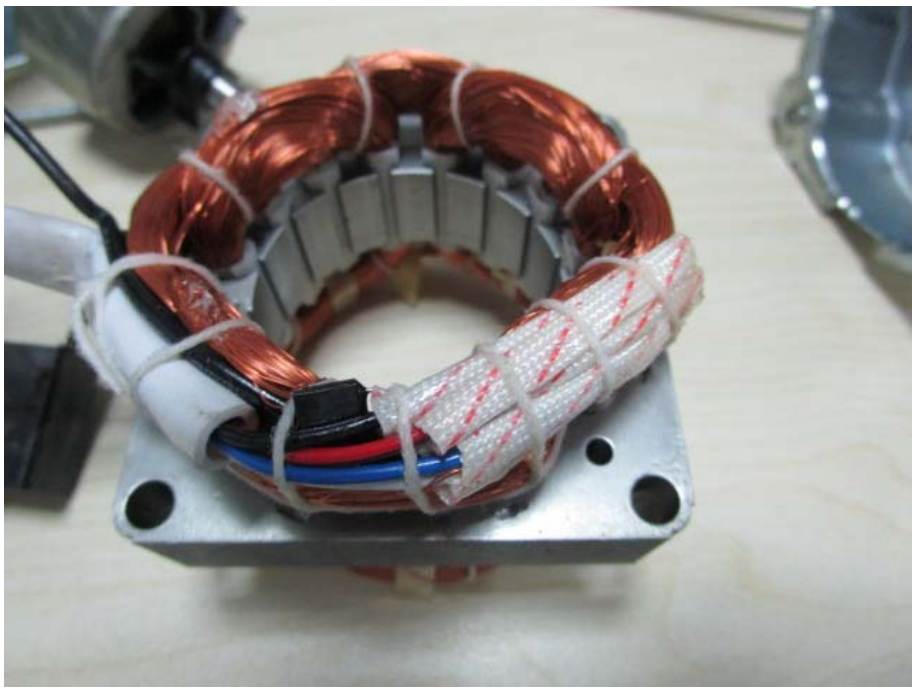
Fan motor 6612, 6614, 7118, 6614-1

Fan motor view



Internal view

TEST REPORT



Internal view

Remark:
The construction of fan motor 6612, 6614 and 7118 are similar, except winding quantity.
Fan motor 6614 and 6614-1 are similar, except the former is aluminum winding and the latter is copper winding.

TEST REPORT

The photo of other models:

The control panel for YH-40A1 series

TEST REPORT

The control panel for YH-40A2 series and YH-40A3 series

The control panel for YH-40I series and YH-40I1 series

TEST REPORT

Fan motor cover for YH-40A2 series and YH-40A3 series

Fan motor cover for YH-40A2 series and YH-40A3 series

TEST REPORT

Fan motor cover for YH-40A1 series, YH-40S1-y, YH-40I series and YH-40I1 series

Fan motor cover for YH-40A1 series, YH-40S1-y, YH-40I series and YH-40I1 series

TEST REPORT

YH-40A1

YH-40A1-0

YH-40A1-1

YH-40A1-1-0

TEST REPORT

YH-40A1-2

YH-40A1--2-0

YH-40A2

YH-40A2-0

TEST REPORT

YH-40A2-1

YH-40A2-1-0

YH-40A2-2

YH-40A2--2-0

TEST REPORT

YH-40A3

YH-40A3-0

YH-40A3-1

YH-40A3-1-0

TEST REPORT

YH-40A3-2

YH-40A3--2-0

YH-40I

YH-40I1

TEST REPORT

YH-40I1-0

YH-40I-0

TEST REPORT

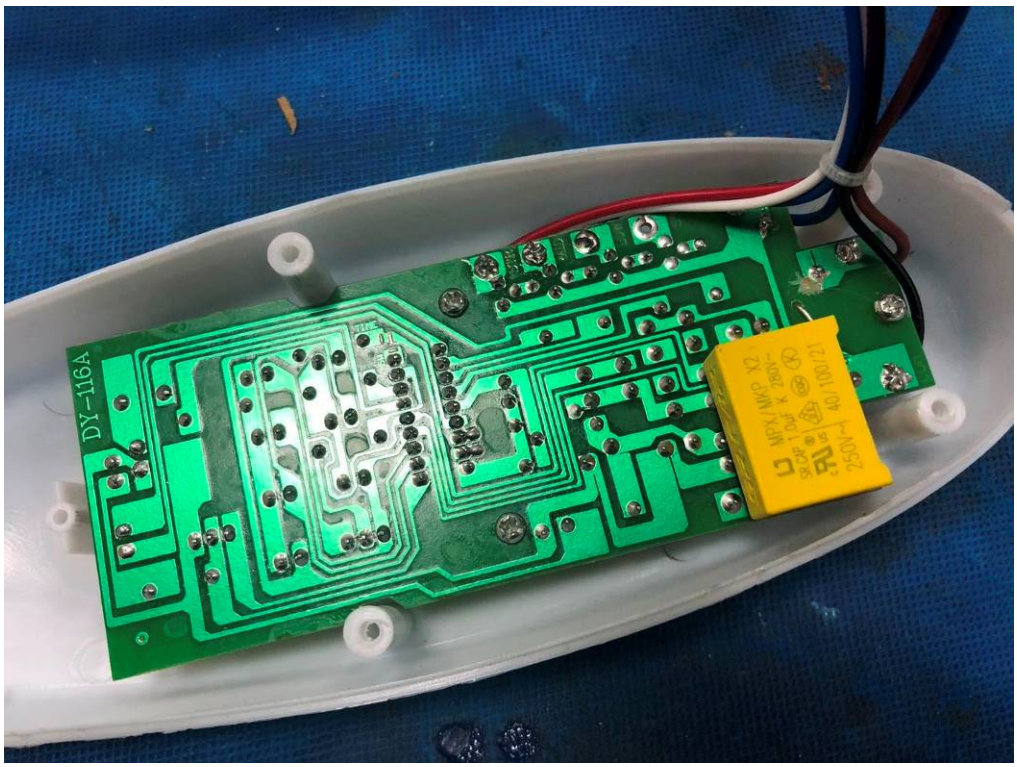
The following photos are for YH-40R1 series models:

Front view(YH-40R1-0)

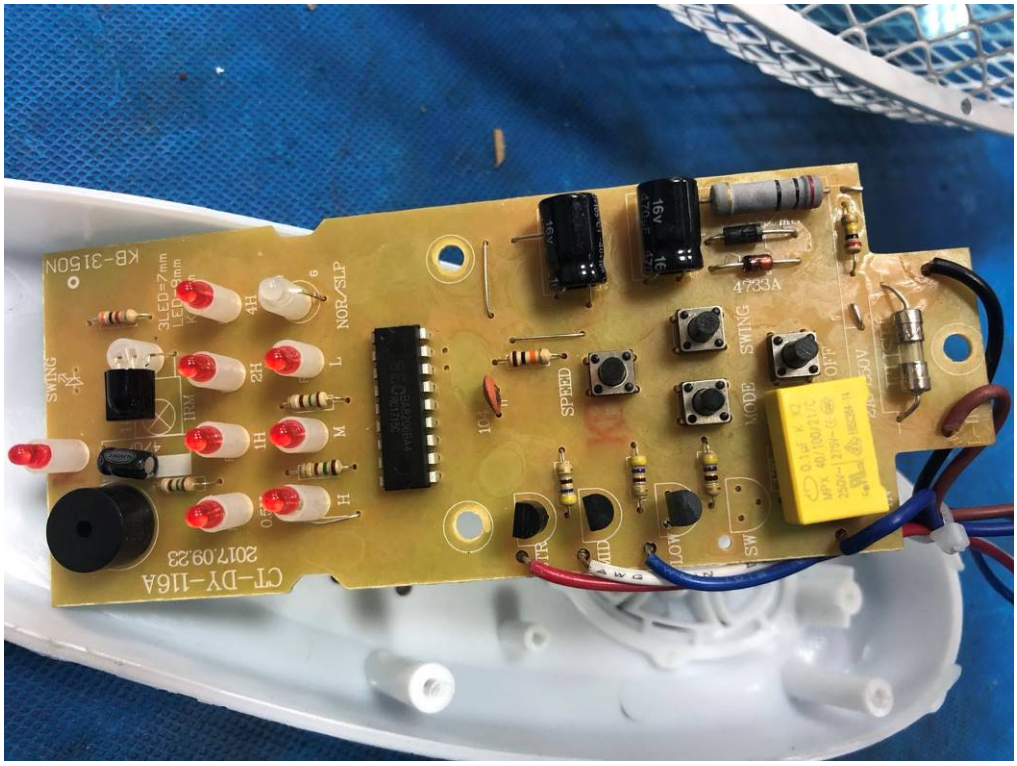
Rear view(YH-40R1-0)

Control panel

TEST REPORT



PCB board bottom view



PCB board top view

TEST REPORT

Internal view

TEST REPORT

The following photos are for YH-40R1 series models:

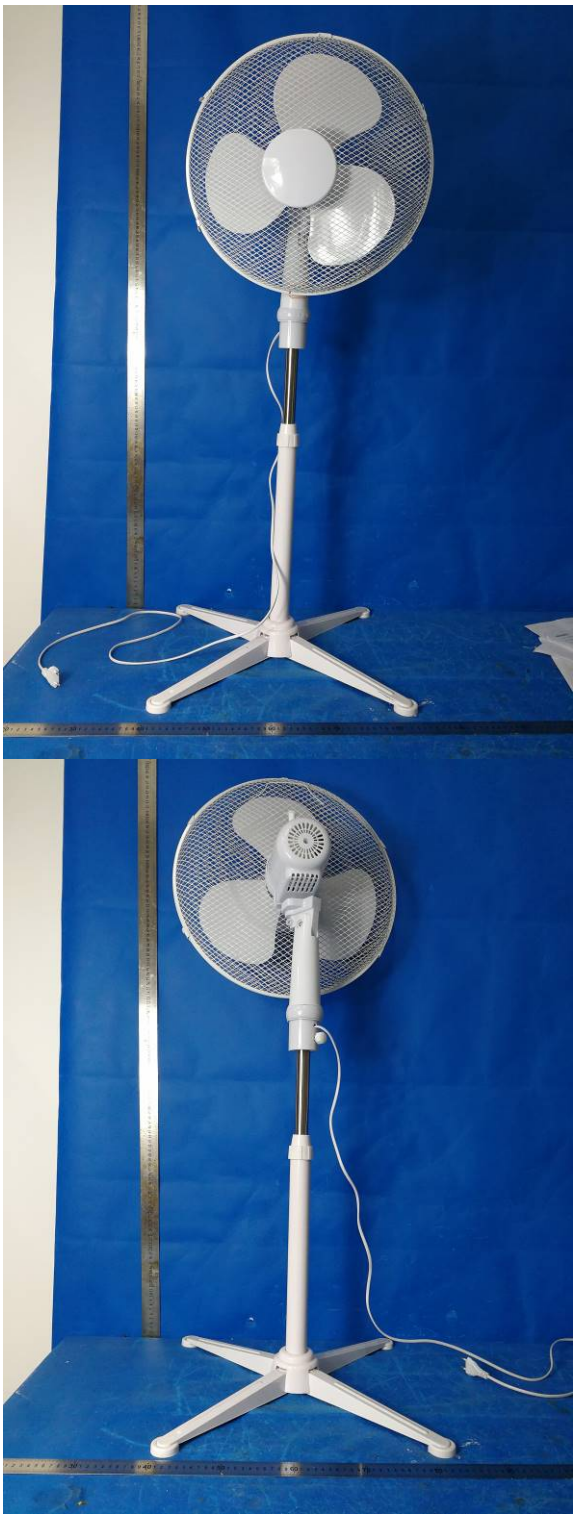
Front view(YH-40R-0)

Rear view(YH-40R-0)

Internal view

TEST REPORT

The following photos are for YH-40J series models:



Front view(YH-40J-0)

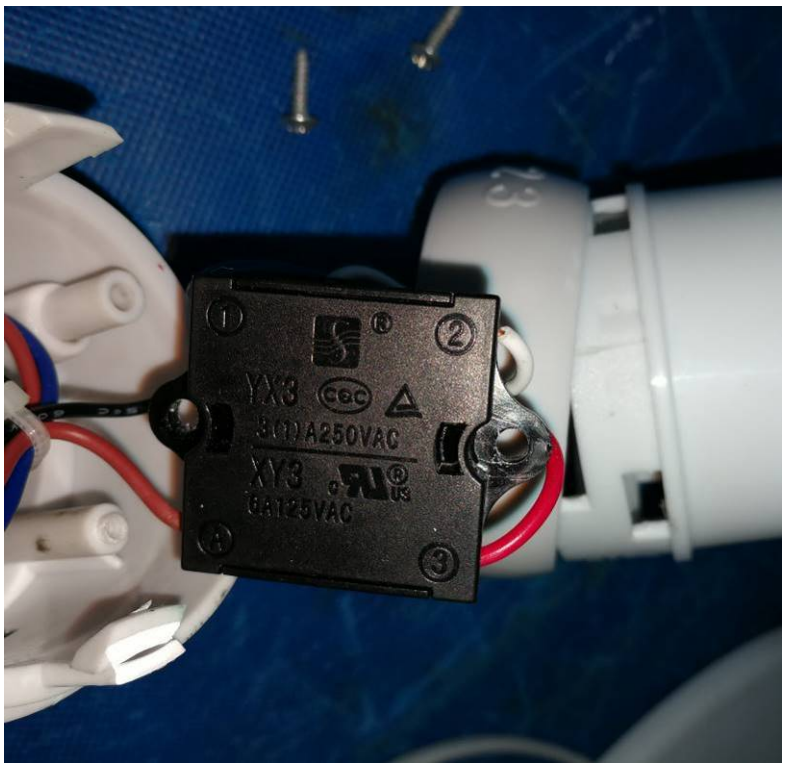
Rear view(YH-40J-0)

TEST REPORT

Control panel

Internal view of speed switch

TEST REPORT



Speed switch

TEST REPORT

The following photos are for YH-40LK series models:

Front view(YH-40LK-0)

Rear view(YH-40LK-0)

TEST REPORT

The following photos are for other models:

Front view(YH-40D2)

Rear view(YH-40D2)

Control panel(YH-40D2)

TEST REPORT

Front view(YH-30D3)

Rear view(YH-30D3)

Control panel(YH-30D3)

TEST REPORT

YH-15D1 with alternative appearance

Alternative cross shape stand base for stand fan

TEST REPORT

Alternative circle shape stand base for stand fan

Fan blade (five blades) for stand fan

TEST REPORT

Alternative fan motor cover for all stand fans and table fans

TEST REPORT

Alternative fan motor cover for all stand fans and table fans

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