EMC TEST REPORT

For

Dongguan ULUO Electronic Co.,Ltd

SMOKE PURIFICATION SYSTEM

Model No. : UL-9071,UL-9072,UL-9073,UL-9075,UL-9076,UL-3600,UL-4500, UL-A001,UL-A002

Prepared for : Dongguan ULUO Electronic Co.,Ltd
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Report No. : ECT2018E05071-Y6

Date of Test : May .09-16.2018

Date of Rep. : May .16.2018

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TEST REPORT DECLARATION

Applicant	:	Dongguan ULUO Electronic Co.,Ltd
Manufacturer	:	Dongguan ULUO Electronic Co.,Ltd
EUT Description	:	SMOKE PURIFICATION SYSTEM

(A) Model No.	:	UL-9071
(B) Serial No.	:	N/A
(C) Power Supply	:	AC 220-240V

Test Procedure Used:
EMI: EN 55014-1:2017,
EN 61000-3-2:2014, EN61000-3-3:2013

EMS: EN 55014-2:2015 (EN61000-4-2: 2009, EN61000-4-4: 2012,
EN61000-4-5: 2014, EN61000-4-6: 2014,
EN61000-4-11: 2004)

The devices described above have been tested by **Shenzhen ECT Testing Technology Co., Ltd** to determine the maximum emission levels emanating from the device, the severe levels that the device can endure and EUT'S performance criterion. The test results are contained in this test report. **Shenzhen ECT Testing Technology Co., Ltd** is assumed of full responsibility for the accuracy and completeness of these tests. Also, this report shows that the EUT is technically compliant with the EN55014-1, EN61000-3-2, EN61000-3-3 and EN55014-2 requirements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of **Shenzhen ECT Testing Technology Co., Ltd**.

Date of Test: May .09-16.2018

Prepared by: Eris
Project Engineer

Reviewed by: SHENZHEN ECT TESTING TECHNOLOGY CO., LTD. APPROVED
Project Manager

Approved by: Jessica
Technical Director

1. GENERAL INFORMATION

1.1.Description of Device (EUT)

Description	:	SMOKE PURIFICATION SYSTEM
Model No.	:	UL-9071,UL-9072,UL-9073,UL-9075,UL-9076,UL-3600,UL-4500,UL-A001,UL-A002
Applicant	:	Dongguan ULUO Electronic Co.,Ltd No.70 Xida road shatou industrial zone Chang'an town Dongguan city Guangdong China
Manufacturer	:	Dongguan ULUO Electronic Co.,Ltd
Address	:	No.70 Xida road shatou industrial zone Chang'an town Dongguan city Guangdong China
Date of Test	:	May .09-16.2018

1.2. Test Summary

Test Items	Standards	Status
Power line conducted emission test	EN55014-1:2017	Complied
power Disturbance test	EN55014-1:2017	Complied
Harmonic Current Emission test	EN61000-3-2:2014	Complied
Voltage fluctuations & flicker test	EN61000-3-3:2013	Complied
Electrostatic discharge Test	EN61000-4-2: 2009	Complied
RF Field strength susceptibility Test	EN61000-4-3: 2006+A1:2008+A2:2010	N/A
Electrical fast transient/Burst Test	EN61000-4-4: 2012	Complied
Surge Test	EN61000-4-5: 2014	Complied
Injected currents susceptibility test	EN61000-4-6: 2014	Complied
Voltage dips and interruptions test	EN61000-4-11: 2004	Complied

1.3. Test Facility

Test Firm : Shenzhen ECT Testing Technology Co., Ltd.
Address : Room 1106,Era Innovation Center,Xixiang Gushu Second Road,Baoan District, Shenzhen City, China
Tel : (86) 755-23062275
Fax : (86) 755-26609102

1.4. Test Uncertainty

Conducted Emission Uncertainty = ±2.66dB

Radiated Emission Uncertainty = ±4.26dB

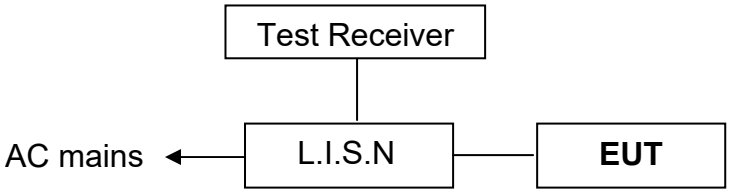
2. TEST INSTRUMENT USED

No.	Equipment	Manufacturer	Model No.	S/N	Cal. Date	Next Cal. Date
1	ESD TESTER	HAEFELY	PESD1610	H401552	2017.11.16	2018.11.15
2	MAGNETIC FIELD TESTER	HAEFELY	MAG100	150577	2017.11.16	2018.11.15
3	5kVA AC POWER SOURCE	CALIFORNIA INSTRUMENTS	5001ix-400	55692	2017.11.16	2018.11.15
4	HARMONICS/FLICKER TEST ANALYZER	CALIFORNIA INSTRUMENTS	PACS-1	72254	2017.11.16	2018.11.15
5	50Ω COAXIAL SWITCH	ANRITSU	MP59B	6200283933	2017.11.16	2018.11.15
6	CONICAL HOUSING	ATC	N/A	N/A	N/A	N/A
7	VOLTAGE PROBE	SCHWARZBECK	TK9416	N/A	2017.11.16	2018.11.15
8	RF CURRENT PROBE	ROHDE& SCHWARZ	EZ-17	100048	2017.11.16	2018.11.15
9	BILOG ANTENNA	SCHWARZBECK	VULB9163	194	2017.11.16	2018.11.15
10	SPECTRUM ANALYZER	ANRITSU	MS2651B	N/A	2017.11.16	2018.11.15
11	PRE-AMPLIFIER	AGILENT	8447D	294A10619	2017.11.16	2018.11.15
12	RF COAXIAL CABLE(844 CHAMBER)	SCHWARZBECK	N-5m	NO.1	2017.11.16	2018.11.15
13	THERMO-HYGROMETER	OREGON SCIENTIFIC	JB913R	GZ-WS004	2017.11.16	2018.11.15
14	1# SHIELDING ROOM	CHANGZHOU ZHONGYU	843	N/A	N/A	N/A
15	2# SHIELDING ROOM	CHANGZHOU ZHONGYU	843	N/A	N/A	N/A
16	3m Semi-ANECHOIC CHAMBER	CHANGZHOU ZHONGYU	844	N/A	N/A	N/A
17	ANTENNA/TURNTABLE CONTROLLER	INNCO	CO2000	CO2000/077/ 7301203/L	N/A	N/A
18	101 LCR METER	YANGZHI	YD2810B	20101170	2017.11.16	2018.11.15
19	RF COAXIAL CABLE(844 CHAMBER)	NTGS8017	N-1m	NO.6	2017.11.16	2018.11.15
20	RF COAXIAL CABLE(844 CHAMBER)	NTGS8017	N-1m	NO.7	2017.11.16	2018.11.15
21	AUDIO GENERATOR	GW	GAG-809	EG835424	N/A	N/A
22	THERMO-HYGROMETER	OREGON SCIENTIFIC	JB913R	GZ-WS002	2017.11.16	2018.11.15

No.	Equipment	Manufacturer	Model No.	S/N	Cal. Date	Next Cal. Date
23	EMCPRO SYSTEM (IMMUNITY TESTER)	THERMO	PRO-BASE	0403271	2017.11.16	2018.11.15
24	CAPACITIVE CLAMP (EFT)	THERMO	PRO-CCL	0403272	2017.11.16	2018.11.15
25	COUPLER DECOUPLER FOR TELECOM LINES	THERMO	CM-TEL-CD	0403273	2017.11.16	2018.11.15
26	L.I.S.N.	ROHDE& SCHWARZ	ESH3-Z5	100305	2017.11.16	2018.11.15
27	EMI TEST RECEIVER	ROHDE& SCHWARZ	ESPI-3	100396/003	2017.11.16	2018.11.15
28	SIGNAL GENERATOR	ROHDE& SCHWARZ	SML01	101161	2017.11.16	2018.11.15
29	EMI TEST RECEIVER	ROHDE& SCHWARZ	ESPI-3	101526/003	2017.11.16	2018.11.15
30	SPECTRUM ANALYZER	AGILENT	E7405A	MY45115511	2017.11.16	2018.11.15
31	L.I.S.N.	SCHWARZBECK	NSLK8126	8126431	2017.11.16	2018.11.15
32	PULSE LIMITER (FOR ESPI3)	ROHDE& SCHWARZ	ESH3-Z2	100815	2017.11.16	2018.11.15
33	PRE-AMPLIFIER	ROHDE& SCHWARZ	CBLU1183540-01	3791	2017.11.16	2018.11.15
34	50Ω COAXIAL SWITCH	ANRITSU	MP59B	6200506474	2017.11.16	2018.11.15
35	BILOG ANTENNA	SCHWARZBECK	VULB9163	9163-323	2017.11.16	2018.11.15
36	HORN ANTENNA	SCHWARZBECK	BBHA9120D	9120D-655	2017.11.16	2018.11.15
37	HORN ANTENNA	SCHWARZBECK	BBHA9170	9170-359	N/A	N/A
38	LOOP ANTENNA	SCHWARZBECK	FMZB1516	1516131	2017.11.16	2018.11.15
39	ULTRA COMPACT SIMULATOR	EM TEST	UCS 500 N5	V0928104968	2017.11.16	2018.11.15
40	CAPACITIVE CLAMP	EM TEST	HFK	0509-34	2017.11.16	2018.11.15
41	Transformer	EM TEST	V4780S2	0109-44	N/A	N/A
42	Conducted Immunity Test System	FRANKONIA	CIT-10	126B1121	2017.11.16	2018.11.15
43	CDN	FRANKONIA	CDN-M2/3	A3027020	2017.11.16	2018.11.15
44	EM Injection Clamp	FCC	F-203I-23mm	091824	2017.11.16	2018.11.15
45	LISN	AFJ	LS16C	16010946249	2017.11.16	2018.11.15
46	CLICK METER	AFJ	CL55C	55040947164	2017.11.16	2018.11.15

3. POWER LINE CONDUCTED EMISSION TEST

3.1. Block Diagram of Test Setup



(EUT: SMOKE PURIFICATION SYSTEM)

3.2. Conducted Emission Test Standard

EN 55014-1:2017

3.3. Conducted Emission Test Limit

Frequency Range MHz			Limits (dB(μV))	
			Quasi-peak	Average
0.15	~	0.50	66 ~ 56[a]	56 ~ 46[a]
0.50	~	5[b]	56	46
5	~	30	60	50

Notes:
1. [a] Decreasing linearly with logarithm of frequency.
2. [b] The lower limit shall apply at the transition frequencies.

3.4. EUT Configuration on Test

The following equipments are installed on conducted emission test to meet EN 55014-1 requirement and operating in a manner that tends to maximize its emission characteristics in a normal application.

3.4.1. SMOKE PURIFICATION SYSTEM (EUT)

(A) Model No. : UL-9071
(B) Serial No. : N/A
(C) Manufacturer : Dongguan ULUO Electronic Co.,Ltd

3.5. Operating Condition of EUT

3.5.1. Setup the EUT as shown in section 3.1.

3.5.2. Turn on the power of all equipments.

3.5.3. Let the EUT work in test mode and measure it.

3.6. Test Procedure

The EUT is put on the plane ground by insulating support and connected to the AC mains through an Artificial Mains Network (A.M.N.). This provided a 50 ohms coupling impedance for the tested equipments. Both sides of A.C. line are checked to find out the maximum conducted emission according to EN55014-1 regulations during conducted emission test.

The bandwidth of the field strength meter (R&S Test Receiver ESCI) is set at 120 KHz.

The frequency range from 150 KHz to 30 MHz is investigated. The test data are listed in the Section 3.7 and the scanning waveform are attached within Appendix I.

3.7. Power Line Conducted Test Results

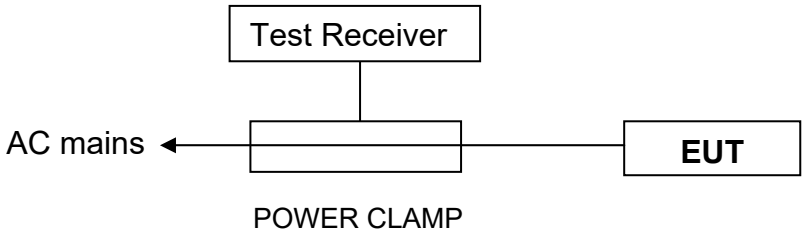
PASS.

The frequency spectrum from 150 KHz to 30 MHz is investigated.

Detailed information, please see the appendix (I) file.

4. POWER DISTURBANCE TEST

4.1. Block Diagram of Test Setup



(EUT: SMOKE PURIFICATION SYSTEM)

4.2. Power Disturbance Test Standard

EN 55014-1:2017

4.3. Power Disturbance Test Limit

All emanations from devices or system including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified below:

Frequency MHz	Interference Power Limits (dBpW)	
	Quasi-peak Value	Average Value
30 ~ 300	45 Increasing Linearly with Frequency to 55	35 Increasing Linearly with Frequency to 45

4.4. EUT Configuration on Test

The EN55014-1 regulations test method must be used to find the maximum emission during power disturbance test. The configuration of EUT is same as used in conducted test. Please refer to section 3.4.

4.5. Operating Condition of EUT

4.5.1. Setup the EUT as shown in section 4.1.

4.5.2. Turn on the power of all equipments.

4.5.3. Let the EUT work in test mode and measure it.

4.6. Test Procedure

The EUT is placed on the plane ground by insulating support and away from other metallic surface at least 0.4m. It is connected to the power mains through an extension cord of 6m min. The absorber clamp clamps the cord and moves from the far end to EUT to measure the disturbing energy emitted from the cord.

The bandwidth of the field strength meter (Test Receiver ESCI) is set at 120 KHz.

The frequency spectrum from 30 MHz to 300 MHz is investigated. The test data are listed in the Section 4.7 and the scanning waveform are attached within Appendix II.

4.7. Disturbance Power Test Result

PASS.

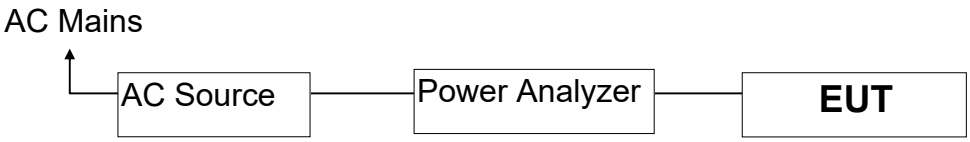
The frequency spectrum from 30 MHz to 300 MHz is investigated.

Detailed information, please see the appendix (II) file.

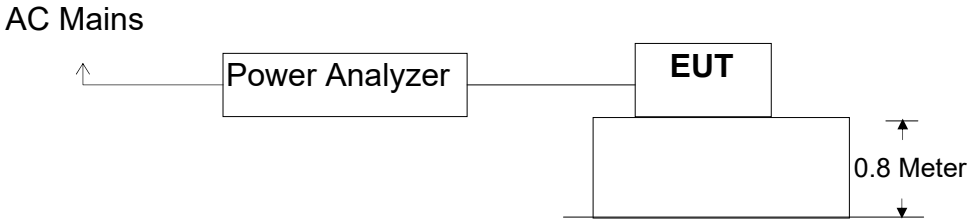
5. HARMONIC CURRENT EMISSION TEST

5.1. Block Diagram of Test Setup

5.1.1. Block Diagram of connection between EUT and simulation



5.1.2. Block Diagram of Test Setup



(EUT: SMOKE PURIFICATION SYSTEM)

5.2. Test Standard

EN61000-3-2: 2014

5.3. Operating Condition of EUT

5.3.1. Setup the EUT as shown in Section 5.1.

5.3.2. Turn on the power of all equipments.

5.3.3. Let the EUT work in test mode (ON) and test it.

5.4. Test Results

PASS.

6. VOLTAGE FLUCTUATIONS & FLICKER TEST

6.1. Block Diagram of Test Setup

Same as Section 5.1

6.2. Test Standard

EN61000-3-3: 2013

6.3. Operating Condition of EUT

Same as Section 5.3

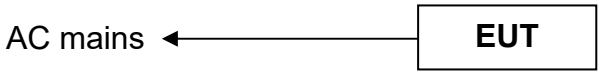
6.4. Test Results

PASS.

7. ELECTROSTATIC DISCHARGE TEST

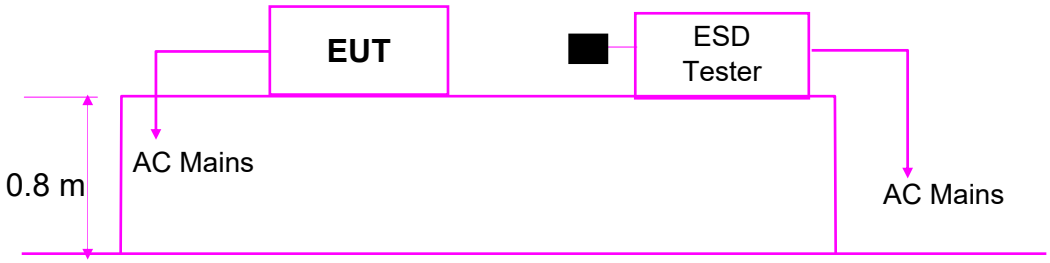
7.1. Block Diagram of Test Setup

7.1.1. Block Diagram of the EUT



(EUT: SMOKE PURIFICATION SYSTEM)

7.1.2. ESD Test Setup



Remark: ■ is Discharge Electrode

7.2. Test Standard

EN 55014-2:2015 (EN61000-4-2: 2009)

7.3. Severity Levels and Performance Criterion

Severity Level**:**
Air Discharge: Level 3, **8KV**; Contact Discharge: Level 2, **4KV**

Level	Test Voltage Contact Discharge (KV)	Test Voltage Air Discharge (KV)
1.	2	2
2.	**4**	4
3.	6	**8**
4.	8	15
X	Special	Special

Performance criterion**: B**

7.4. EUT Configuration

The configuration of EUT is listed in section 3.4.

7.5. Operating Condition of EUT

7.5.1. Setup the EUT as shown in section 7.1.

7.5.2. Turn on the power of all equipments.

7.5.3. Let the EUT work in test mode and measure it.

7.6. Test Procedure

7.6.1. Air Discharge**:**

This test is done on a non-conductive surface. The round discharge tip of the discharge electrode shall be approached as fast as possible to touch the EUT. After each discharge, the discharge electrode shall be removed from the EUT. The generator is then re-triggered for a new single discharge and repeated 10 times for each pre-selected test point. This procedure shall be repeated until all the air discharge completed

7.6.2. Contact Discharge**:**

All the procedure shall be same as section 7.6.1 except that the tip of the discharge electrode shall touch the EUT before the discharge switch is operated.

7.6.3. Indirect discharge for horizontal coupling plane

At least 20 single discharges shall be applied to the horizontal coupling plane, at points on each side of the EUT. The discharge electrode position is vertically at a distance of 0.1m from the EUT and with the discharge electrode touching the coupling plane.

7.6.4. Indirect discharge for vertical coupling plane

At least 20 single discharges shall be applied to the center of one vertical edge of the coupling plane. The coupling plane, of dimensions 0.5m X 0.5m, is placed parallel to, and positioned at a distance of 0.1m from the EUT. Discharges shall be applied to the coupling plane, with this plane in sufficient different positions that the four faces of the EUT are completely illuminated.

7.7. Test Results

PASS.
Please refer to the following pages.

Electrostatic Discharge T/est Results

EUT: SMOKE PURIFICATION SYSTEM M/N: UL-9071 Power Supply: AC 220-240V	Temperature: 25℃ Humidity: 55% Test Mode: ON

Air Discharge: ±8KV
Contact: ±4KV # For each point positive 10 times and negative 10 times discharge

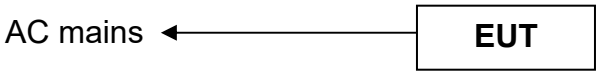
Location	Kind A-Air Discharge C-Contact Discharge	Result
Slot	A	PASS
Button	A	PASS
HCP	C	PASS
VCP	C	PASS

Remark: Discharge should be considered on Contact and Air and Horizontal Coupling Plane (HCP) and Vertical Coupling Plane (VCP).	**Test Equipment:** See Clause 2.

8. ELECTRICAL FAST TRANSIENT/BURST TEST

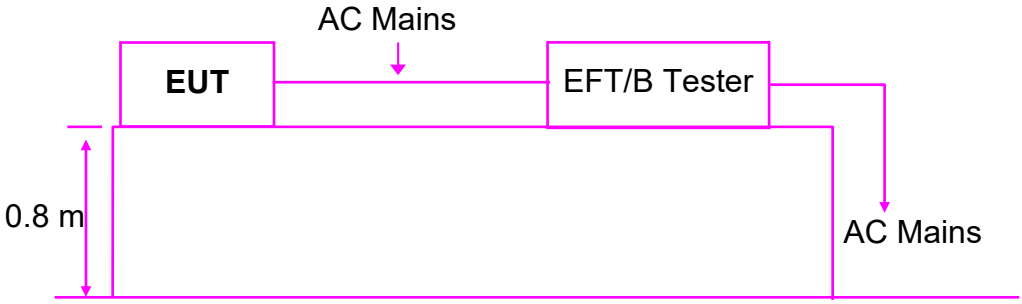
8.1. Block Diagram of Test Setup

8.1.1. Block Diagram of the EUT



(EUT: SMOKE PURIFICATION SYSTEM)

8.1.2. Block Diagram of Test Setup



8.2. Test Standard

EN55014-2:2015 (EN61000-4-4: 2012)

8.3. Severity Levels and Performance Criterion

Severity Level, Level 2**:** 1KV

Open Circuit Output Test Voltage ±10%		
Level	On Power Supply Lines	On I/O (Input/Output) Signal data and control lines
1.	0.5 KV	0.25 KV
2.	1 KV	0.5 KV
3.	2 KV	1 KV
4.	4 KV	2 KV
X	Special	Special

Performance criterion: **B**

8.4. EUT Configuration

The configuration of EUT is listed in section 3.4.

8.5. Operating Condition of EUT

8.5.1. Setup the EUT as shown in section 8.1.

8.5.2. Turn on the power of all equipments.

8.5.3. Let the EUT work in test mode and measure it.

8.6. Test Procedure

EUT shall be placed 0.8m high (Indoor Unit) and 0.1m high (Outdoor Unit) above the ground reference plane that is a min. 1m*1m metallic sheet with 0.65mm minimum thickness. This reference ground plane shall project beyond the EUT by at least 0.1m on all sides and the minimum distance between EUT and all other conductive structure, except the ground plane beneath the EUT, shall be more than 0.5m.

8.6.1. For input and output AC power ports**:**

The EUT is connected to the power mains by using a coupling device that couples the EFT interference signal to AC power lines. Both polarities of the test voltage should be applied during compliance test and the duration of the test is 2 minutes.

8.6.2. For signal lines and control lines ports**:**

It's not I/O ports. It‘s unnecessary to measure.

8.6.3. For DC input and DC output power ports**:**

It's not DC ports. It‘s unnecessary to measure.

8.7. Test Result

PASS.

Please refer to the following pages.

Electrical Fast Transient/Burst Test Results

EUT: SMOKE PURIFICATION SYSTEM M/N: UL-9071 Power Supply: AC 220-240V	Temperature: 25℃ Humidity: 55% Test Mode: ON

Inject Place:

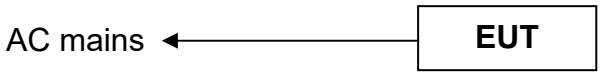
Inject Line	Voltage KV	Inject Time(s)	Inject Method	Results
L	±1	120	Direct	**Pass**
N	±1	120	Direct	**Pass**
L-N	±1	120	Direct	**Pass**

Remark:	Test Equipment: See Clause 2.

9. SURGE TEST

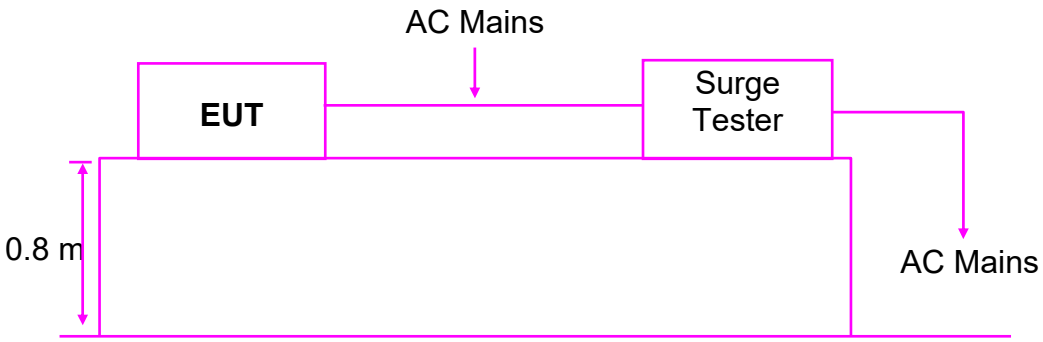
9.1. Block Diagram of Test Setup

9.1.1. Block Diagram of the EUT



(EUT: SMOKE PURIFICATION SYSTEM)

9.1.2. Block Diagram of Test Setup



9.2. Test Standard

EN55014-2:2015 (EN61000-4-5:2006)

9.3. Severity Levels and Performance Criterion

Severity Level**:** Line to Line: Level 2, 1KV

Severity Level	Open-Circuit Test Voltage (KV)
1	0.5
2	1.0
3	2.0
4	4.0
*	Special

Performance criterion: **B**

9.4. EUT Configuration

The configuration of EUT is listed in section 3.4.

9.5. Operating Condition of EUT

9.5.1. Setup the EUT as shown in section 9.1.

9.5.2. Turn on the power of all equipments.

9.5.3. Let the EUT work in test mode and measure it.

9.6. Test Procedure

9.6.1. Set up the EUT and test generator as shown on section 9.1.

9.6.2. For line to line coupling mode, provide a 1KV 1.2/50us voltage surge (at open-circuit condition) and 8/20us current surge to EUT selected points.

9.6.3. At least 5 positive and 5 negative (polarity) tests with a maximum 1/min repetition rate are conducted during test.

9.6.4. Different phase angles are done individually.

9.6.5. Repeat procedure 2) to 4) except the open-circuit test voltage change from 1KV to 2KV for line to earth coupling mode test.

9.6.6. Record the EUT operating situation during compliance test and decide the EUT immunity criterion for above each test.

9.7. Test Result

PASS.

Please refer to the following pages.

Surge Immunity Test Results

EUT: SMOKE PURIFICATION SYSTEM M/N: UL-9071 Power Supply: AC 220-240V	Temperature: 25℃ Humidity: 55% Test Mode: ON

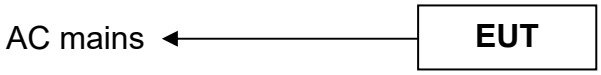
Location	Phase Angle	No of Pulse	Pulse Voltage (KV)	Result
L-N	90	5	±1	**Pass**
	270	5	±1	**Pass**

Remark:	Test Equipment: See Clause 2.

10. INJECTED CURRENTS SUSCEPTIBILITY TEST

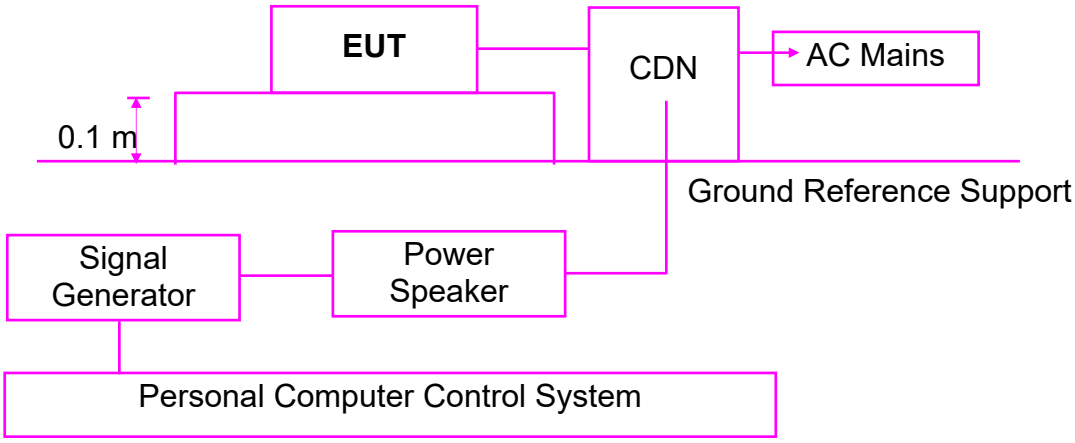
10.1. Block Diagram of Test Setup

10.1.1. Block Diagram of the EUT



(EUT: SMOKE PURIFICATION SYSTEM)

10.1.2. AC Mains Test Setup



10.2. Test Standard

EN55014-2:2015 (EN61000-4-6: 2014)

10.3. Severity Levels and Performance Criterion

Severity Level**:** 3V (rms), 0.15MHz ~ 230MHz

Level	Field Strength V/m
1.	1
2.	3
3.	10
X	Special

Performance criterion**: A**

10.4. EUT Configuration

The configuration of EUT is listed in section 3.4.

10.5. Operating Condition of EUT

10.5.1. Setup the EUT as shown in section 10.1.

10.5.2. Turn on the power of all equipments.

10.5.3. Let the EUT work in test mode and measure it.

10.6. Test Procedure

10.6.1. Set up the EUT, CDN and test generators as shown on section 10.1.

10.6.2. Let Outdoor and Indoor units work in test mode and measure.

10.6.3. The EUT and supporting equipments are placed on an insulating support 0.1m high above a ground reference plane. CDN (coupling and decoupling device) is placed on the ground plane at above 0.1-0.3m from EUT. Cables between CDN and EUT are as short as possible, and their height above the ground reference plane shall be between 30 and 50 mm (where possible).

10.6.4. The disturbance signal described below is injected to EUT through CDN.

10.6.5. The EUT operates within its operational mode(s) under intended climatic conditions after power on.

10.6.6. The frequency range is swept from 150KHz to 230MHz using 3V signal level, and with the disturbance signal 80% amplitude modulated with a 1KHz sine wave.

10.6.7. The rate of sweep shall not exceed $1.5*10^{-3}$decades/s. Where the frequency is swept incrementally, the step size shall not exceed 1% of the start and thereafter 1% of the preceding frequency value.

10.6.8. Recording the EUT operating situation during compliance testing and decide the EUT immunity criterion.

10.7. Test Results

PASS.

Please refer to the following pages.

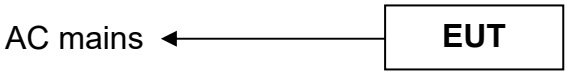
Injected Currents Susceptibility Test Results

EUT: SMOKE PURIFICATION SYSTEM M/N: UL-9071 Power Supply: AC 220-240V			Temperature: 25℃ Humidity: 55% Test Mode: ON	
Frequency Range	Injected Position	Strength	Criterion	Result
0.15MHz ~ 80MHz		3V(rms),	A	**Pass**
Remark: 1. Modulation Signal: 1KHz 80% AM 2. Standard Applied : EN 61000-4-6: 2009		Test Equipment: See Clause 2.		

11. VOLTAGE DIPS AND INTERRUPTIONS TEST

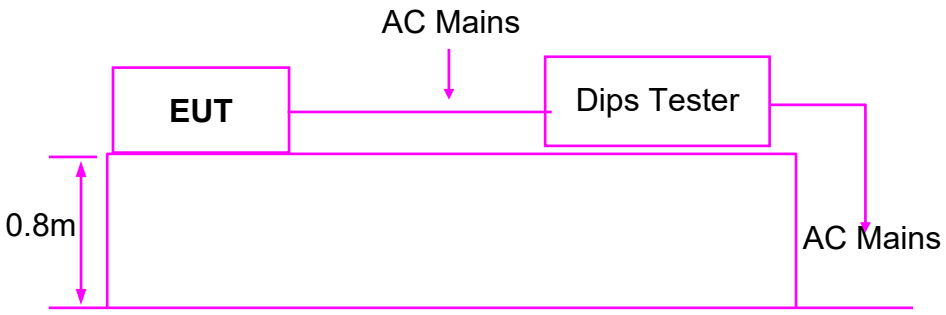
11.1. Block Diagram of Test Setup

11.1.1. Block Diagram of the EUT



(EUT: SMOKE PURIFICATION SYSTEM)

11.1.2. Voltage Dips and Interruptions Test Setup



Remark: Combination wave generator and decoupling network are included in test generator.

11.2. Test Standard

EN55014-2:2015 (EN61000-4-11: 2004)

11.3. Severity Levels and Performance Criterion

Severity level: 100%, 0.5 period; 70%, 50 periods; 40%, 10 periods

Test Level %UT	Voltage dip and short interruptions %UT	Duration (in period)
0	100	0.5 1
40	60	5 25
70	30	50 *

Performance criterion**: B**

11.4. EUT Configuration

The configuration of EUT is listed in section 3.4.

11.5. Operating Condition of EUT

11.5.1. Setup the EUT as shown in section 11.1.

11.5.2. Turn on the power of all equipments.

11.5.3. Let the EUT work in test mode and measure it.

11.6. Test Procedure

11.6.1. Set up the EUT and test generator as shown on section 11.1.

11.6.2. The interruption is introduced at selected phase angles with specified duration. There is a 3mins minimum interval between each test event.

11.6.3. After each test a full functional check is performed before the next test.

11.6.4. Repeat procedures 2 & 3 for voltage dips, only the test level and duration is changed.

11.6.5. Record any degradation of performance.

11.7. Test Result

PASS.

Please refer to the following pages.

Voltage Dips and Interruptions Test Results

EUT: SMOKE PURIFICATION SYSTEM M/N: UL-9071 Power Supply: AC 220-240V	Temperature: 25℃ Humidity: 55% Test Mode: ON
☒ Single Test Voltage	☐ Dual Test Voltage
Test Model: ON	

Test Level % U_T	Voltage Dips & Short Interruptions % U_T	Duration (in period)	Phase Angle	Criterion	Result
70	30	50P	/	C	**Pass**
40	60	10P	/	C	**Pass**
0	100	0.5P	/	C	**Pass**

Remark: U_T is the rated voltage for the equipment.	Test Equipment: See Clause 2.

12.PHOTOGRAPHS OF TEST SETUP

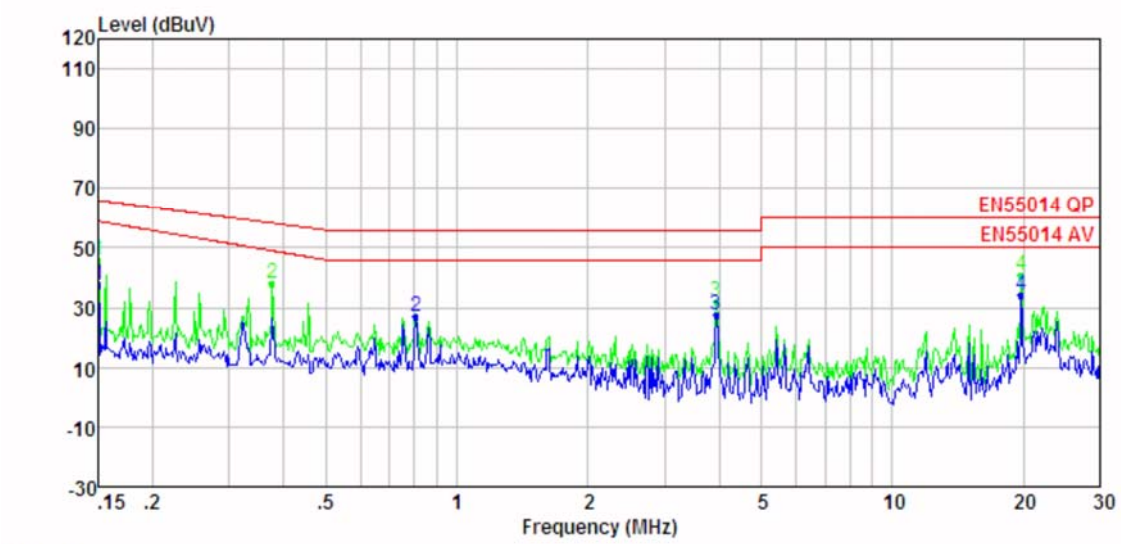
12.1.Photo of Radiated Emission Test

APPENDIX I

Power Line Conduction Emission Test Data

Power Line Conduction Emission

Engineer : Wil	
EUT : SMOKE PURIFICATION SYSTEM	**Time : 2018/05/09**
Limit : EN55014-1	**Comment : 25℃/55％**
Manu. : UL-9071	



Site :
Condition:
: RBW:9.000KHz VBW:30.000KHz

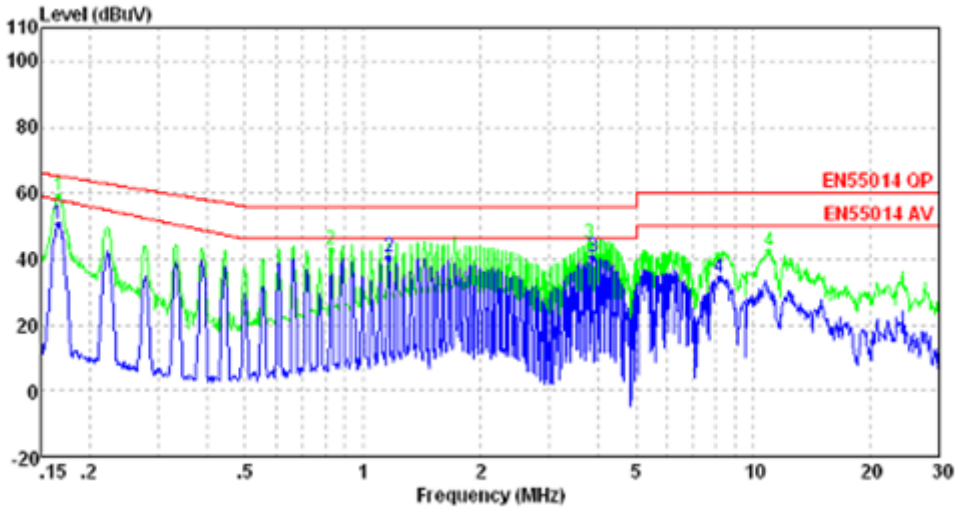
	Freq	Level	Limit Line	Over Limit	Remark	Pol/Phase
	MHz	dBuV	dBuV	dB		
1	0.15	37.50	59.00	-21.50	Average	LINE
2	0.80	26.84	46.00	-19.16	Average	LINE
3	3.94	27.34	46.00	-18.66	Average	LINE
4 max	19.74	34.10	50.00	-15.90	Average	LINE

Site :
Condition:
: RBW:9.000KHz VBW:30.000KHz

	Freq	Level	Limit Line	Over Limit	Remark	Pol/Phase
	MHz	dBuV	dBuV	dB		
1	0.15	45.73	66.00	-20.27	Peak	LINE
2	0.38	38.16	58.34	-20.18	Peak	LINE
3	3.94	31.77	56.00	-24.23	Peak	LINE
4 max	19.74	41.11	60.00	-18.89	Peak	LINE

Power Line Conduction Emission

Engineer : Wil	
EUT : SMOKE PURIFICATION SYSTEM	**Time : 2018/05/09**
Limit : EN55014-1	**Comment : 25℃/55％**
Manu. : UL-9071	



Site :
Condition:
: RBW:9.000KHz VBW:30.000KHz

	Freq	Level	Limit Line	Over Limit	Remark	Pol/Phase
	MHz	dBuV	dBuV	dB		
1 Max	0.17	50.47	57.91	-7.44	Average	NEUTRAL
2	1.17	40.34	46.00	-5.66	Average	NEUTRAL
3	3.88	40.22	46.00	-5.78	Average	NEUTRAL
4	8.19	34.40	50.00	-15.60	Average	NEUTRAL

Site :
Condition:
: RBW:9.000KHz VBW:30.000KHz

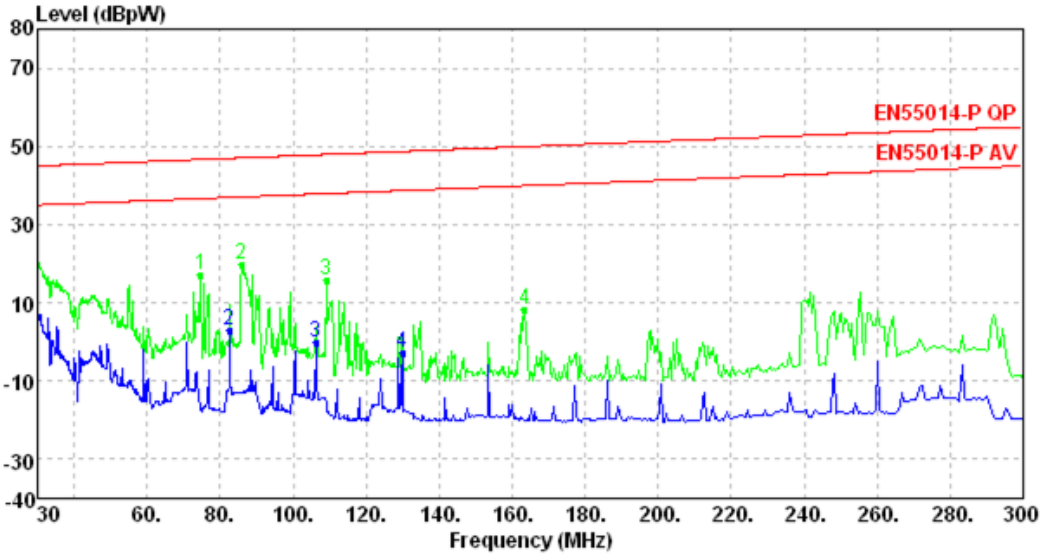
	Freq	Level	Limit Line	Over Limit	Remark	Pol/Phase
	MHz	dBuV	dBuV	dB		
1 Max	0.17	59.07	65.12	-6.05	Peak	NEUTRAL
2	0.83	43.02	56.00	-12.98	Peak	NEUTRAL
3	3.82	44.89	56.00	-11.11	Peak	NEUTRAL
4	11.02	42.48	60.00	-17.52	Peak	NEUTRAL

APPENDIX II

Disturbance Power Test Data

Disturbance Power

Engineer : Wil	
EUT : SMOKE PURIFICATION SYSTEM	**Time : 2018/05/09**
Limit : EN55014-1	**Comment : 25℃/55％**
Manu. : UL-9071	



Site :
Condition:
: RBW:120.000KHz VBW:300.000KHz

	Freq	Level	Limit Line	Over Limit	Remark
	MHz	dBpW	dBpW	dB	
1	30.35	6.38	35.02	-28.64	Average
2 Max	82.63	2.94	36.96	-34.02	Average
3	106.20	-0.35	37.83	-38.18	Average
4	130.05	-3.02	38.72	-41.74	Average

Site :
Condition:
: RBW:120.000KHz VBW:300.000KHz

	Freq	Level	Limit Line	Over Limit	Remark
	MHz	dBpW	dBpW	dB	
1	74.67	17.34	46.66	-29.32	Peak
2 Max	85.93	19.98	47.08	-27.10	Peak
3	109.17	15.74	47.94	-32.20	Peak
4	163.35	8.09	49.95	-41.86	Peak

APPENDIX III

Photographs of the EUT

FIGURE 1

FIGURE 2