



EMC

Measurement and Test Report

For

ONU MALL CO., LIMITED

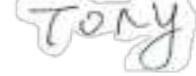
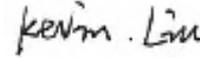
**Rm 2505, SUN MATE Group, NO.188, Rd Heping East, Longhua Baoan District,
Shenzhen, China**

Prepared by

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TEST REPORT**EN 55014-1 / EN 55014-2****Electromagnetic compatibility – Requirements for household appliances, electric tools and similar apparatus.****Part 1: Emission / Part 2: Immunity – Product family standard****Report Reference No.....: STA20200420012EC-R**Compiled by
(position+printed name+signature)..: File administrators Tony LISupervised by
(position+printed name+signature)..: Project Engineer Kevin LiuApproved by
(position+printed name+signature)..: Manager Eric Jing

Date of issue.....: April 24, 2020

Testing Laboratory Name.....: Shenzhen STA Testing Co., LtdAddress.....: Room 204, Fuyong chamber of commerce information building,
Road 6348,Baoan District,Shenzhen,ChinaTesting location/ procedure.....: Full application of Harmonised standards
Partial application of Harmonised standards
Other standard testing methods **Applicant's name.....: Shanghai babetty InfoTech Co., Ltd**Address.....: Room 323, floor 3, building 2, No. 588, Zixing Road, Minhang
District, Shanghai**Test specification:**Standard.....: **EN 55014-1: 2017+A2: 2011**
EN 55014-2: 2015
EN 61000-3-2: 2014
EN 61000-3-3: 2013

Non-standard test method.....: /

TRF Originator.....: Shenzhen STA Testing Co., Ltd

Master TRF.....: Dated 2018-06

Shenzhen STA Testing Co., Ltd

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Test item description.....: UV air purifier

Trade Mark.....: /

Models.....: HF-JH-0128

Listed Models: /

Ratings.....: 5V DC

Result.....: **Positive**

EMC -- TEST REPORT

Test Report No. :	STA20200420012EC-R	April 10, 2020
		Date of issue

Equipment under Test : UV air purifier

Model No. : HF-JH-0128

Listed Models : /

Applicant : ONU MALL CO., LIMITED

Address : Rm 2505, SUN MATE Group, NO.188, Rd Heping East, Longhua
Baoan District, Shenzhen, China

Manufacturer : ONU MALL CO., LIMITED

Address : Rm 2505, SUN MATE Group, NO.188, Rd Heping East, Longhua
Baoan District, Shenzhen, China

Test Result according to the standards on page 8:	Positive
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The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

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1 TEST STANDARDS

The tests were performed according to following standards:

[EN 55014-1:2017+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, electric tools and similar apparatus -- Part 2: Immunity - Product family standard

[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

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2 SUMMARY

2.1 General Remarks

Date of receipt of test sample : April 7, 2020

Testing commenced on : April 7, 2020

Testing concluded on : April 10, 2020

2.2 Equipment Under Test

Power supply system utilised

Power supply voltage : 230V / 50 Hz 115V / 60Hz
 12 V DC 24 V DC
 Other (specified in blank below)

DC 5 V

2.3 Short description of the Equipment under Test (EUT)

The EUT is a Toilet disinfectant .

Serial number: UVXD-1801

EUT operation mode

The equipment under test was operated during the measurement under the following conditions:

Test program (customer specific)

Emissions tests.....: According to EN 55014-1, searching for the highest disturbance.

Immunity tests: According to EN 55014-2, searching for the highest susceptibility.

Harmonic current..... : According to EN 61000-3-2, searching for the highest disturbance.

Voltage fluctuation..... : According to EN 61000-3-3, searching for the highest disturbance.

EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

- - supplied by the manufacturer
- - supplied by the lab

2.4 Performance level

The test results shall be classified in terms of the loss of function or degradation of performance of the equipment under test, relative to a performance level defined by its manufacturer or the requestor of the test, or agreed between the manufacturer and the purchaser of the product.

Definition related to the performance level:

- based on the used product standard
- based on the declaration of the manufacturer, requestor or purchaser

Criterion A:

Definition: normal performance within limits specified by the manufacturer, requestor or purchaser:

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

Criterion B:

Definition: temporary loss of function or degradation of performance which ceases after the disturbance ceases, and from which the equipment under test recovers its normal performance, without operator intervention:

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

Criterion C:

Definition: temporary loss of function or degradation of performance, the correction of which requires operator intervention:

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.

3 TEST ENVIRONMENT

3.1 Address of the test laboratory

CCIC Southern Electronic Product Testing (Shenzhen) Co., Ltd

Electronic detection of building, Shahe West Road, Xili Town, Nanshan, Shenzhen, China.

There is one 3m semi-anechoic chamber and two line conducted labs for final test.

The Test Sites meet the requirements in documents ANSI C63.4 and CISPR 22/EN 55022 requirements.

3.2 Test Facility

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

IC Registration No.: 7631A

The 3m alternate test site of CCIC Southern Electronic Product Testing (Shenzhen) Co., Ltd EMC Laboratory has been registered by Certification and Engineer Bureau of Industry Canada for the performance of with Registration NO.: 126111 on March, 2011.

FCC-Registration No.: 338263

CCIC Southern Electronic Product Testing (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 338263, March 24, 2008.

3.3 Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature: 15-35 ° C

Humidity: 30-60 %

Atmospheric pressure: 900-1050mbar

3.4 Test Description

Emission Measurement		
Conducted Disturbance	EN 55014-1: 2017+A2:2011	N/A
Radiated Emission	EN 55014-1: 2017+A2:2011	PASS
Click Test	EN 55014-1: 2017+A2:2011	N/A
Power Clamp Radiation	EN 55014-1: 2017+A2:2011	N/A
Harmonic Current	EN 61000-3-2: 2014	N/A
Voltage Fluctuation and Flicker	EN 61000-3-3: 2013	N/A
Immunity Measurement		
Electrostatic Discharge	EN 55014-2: 2015 EN 61000-4-2:2009	PASS
RF Field Strength Susceptibility	EN 55014-2: 2015 EN 61000-4-3:2006+A2:2010	N/A
Electrical Fast Transient/Burst Test	EN 55014-2: 2015 EN 61000-4-4:2012	N/A
Surge Test	EN 55014-2: 2015	N/A

	EN 61000-4-5:2014	
Conducted Susceptibility Test	EN 55014-2: 2015 EN 61000-4-6:2014	N/A
Power frequency magnetic field	EN 55014-2: 2015 EN 61000-4-8:2010	N/A
Voltage Dips and Interruptions Test	EN 55014-2: 2015 EN 61000-4-11:2004	N/A

Remark: N/A means “not applicable”.

The measurement uncertainty is not included in the test result.

3.5 Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 „Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements“ and is documented in the CCIC Southern Electronic Product Testing (Shenzhen) Co., Ltd quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar

to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for SET laboratory is reported:

Test	Range	Measurement Uncertainty	Notes
Conducted Disturbance	0.15~30MHz	3.22dB	(1)
Radiated Emission	30~1000MHz	4.10dB	(1)

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

3.6 Equipments Used during the Test

Harmonic Current/ Voltage Fluctuation and Flicker					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Purified Power Source	MToni	PHF 5010	N/A	2019/05
2	Harmonic And Flicker Analyzer	Voltech	PM6000	N/A	2019/05

Radiated Emission					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	ULTRA-BROADBAND ANTENNA	Sunol Sciences Corp.	JB1 Antenna	A061713	2019/05
2	EMI TEST RECEIVER	ROHDE & SCHWARZ	ESPI	1164.6407.07	2019/05
3	RF TEST PANEL	ROHDE & SCHWARZ	TS / RSP	335015/ 0017	2019/05

4	Controller	EM Electronics	Controller EM 1000	N/A	2019/05
5	EMI SOFTWARE TEST	ROHDE & SCHWARZ	ESK1	N/A	2019/05

Conducted Emission

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	1166.5950.03	2019/05
2	LISN	ROHDE & SCHWARZ	ENV216	101034	2019/05
4	EMI Test Software	ROHDE & SCHWARZ	ESK1	N/A	2019/05

RF Field Strength Susceptibility

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	SIGNAL GENERATOR	IFR	2032	203002/100	2019/05
2	AMPLIFIER	AR	150W1000	301584	2019/05
3	DUAL DIRECTIONAL COUPLER	AR	DC6080	301508	2019/05
4	POWER HEAD	AR	PH2000	301193	2019/05
5	POWER METER	AR	PM2002	302799	2019/05

Electrical Fast Transient/Surge/Dips

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Ultra Compact Simulator	HAEFELY	ECOMPACT4	174887	2019/05

Electrostatic Discharge

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	ESD Simulator	SKYLARK	ESD-2000	0220K10251	2019/05

Magnetic Field Emission

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	1166.5950.03	2019/05
2	Triple-Loop Antenna	EVERFINE	LLA-2	1008002	2019/05
4	EMI Test Software	ROHDE & SCHWARZ	ESK1	N/A	2019/05

Power Frequency Magnetic Field Susceptibility

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	ULTRA COMPACT SIMULATOR	EM TEST	UCS500M6	202304/060	2019/05
2	MOTOR DRIVEN VOLTAGE TRANSFORMER	EM TEST	MV2616	302205	2019/05

3	CURRENT TRANSFORMER	EM TEST	MC2630	302389	2019/05
4	MAGNETIC COIL	EM TEST	MS100	0010230A	2019/05

Mark: The cal. Due is 1 year.

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4 TEST CONDITIONS AND RESULTS

4.1 Conducted disturbance

For test instruments and accessories used see section 3.6.

4.1.1 Description of the test location

Test location: Shielded room no. 3

4.1.2 Limits of disturbance

Frequency Range (MHz)	Limits (dBuV)	
	Quasi-Peak	Average
0.150~0.500	66~56	59~46
0.500~5.000	56	46
5.000~30.000	60	50

Note: (1) The tighter limit shall apply at the edge between two frequency bands.

4.1.3 Description of the test set-up

According to clause 5.2.2.2 in EN 55014-1: 2017+A2:2011 “the general principle to be followed in the application of the artificial hand is that the metal foil shall be wrapped around all handles” and “when the casing of the appliance is of insulating material, metal foil shall be wrapped round the handles”, application of the artificial hand is used.

4.1.3.1 Operating Condition

The EUT is turned on during the test, and the maximum emanating results are recorded.

4.1.4 Test result

The test is not applicable

4.2 Radiated Emission

For test instruments and accessories used see section 3.6.

4.2.1 Description of the test location

Test location: Shielded room No. 2

4.2.2 Limits of disturbance(EN55022 B)

Frequency (MHz)	Distance (Meters)	Field Strengths Limits (dB μ V/m)
30 ~ 230	3	40
230 ~ 1000	3	47

Note: (1) The tighter limit shall apply at the edge between two frequency bands.

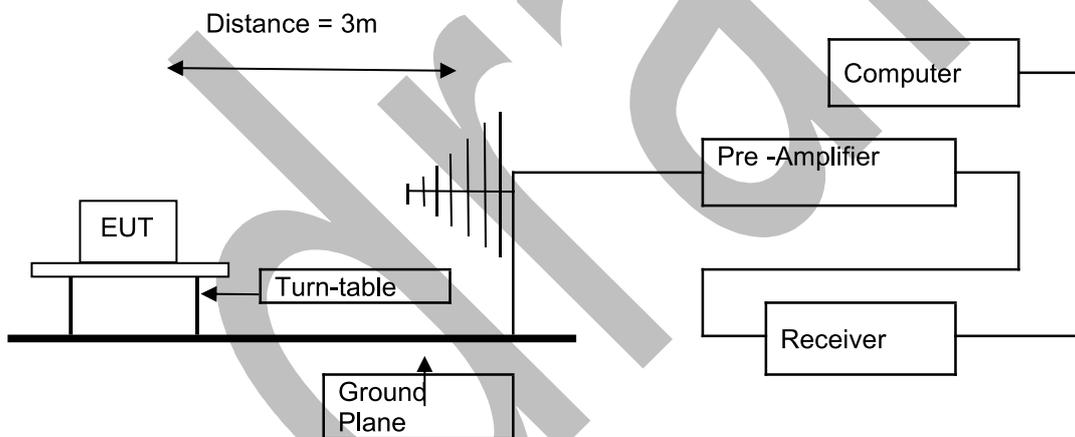
(2) Distance refers to the distance in meters between the test instrument antenna and the closest point of any part of the E.U.T.

4.2.3 Description of the test set-up

4.2.3.2 Operating Condition

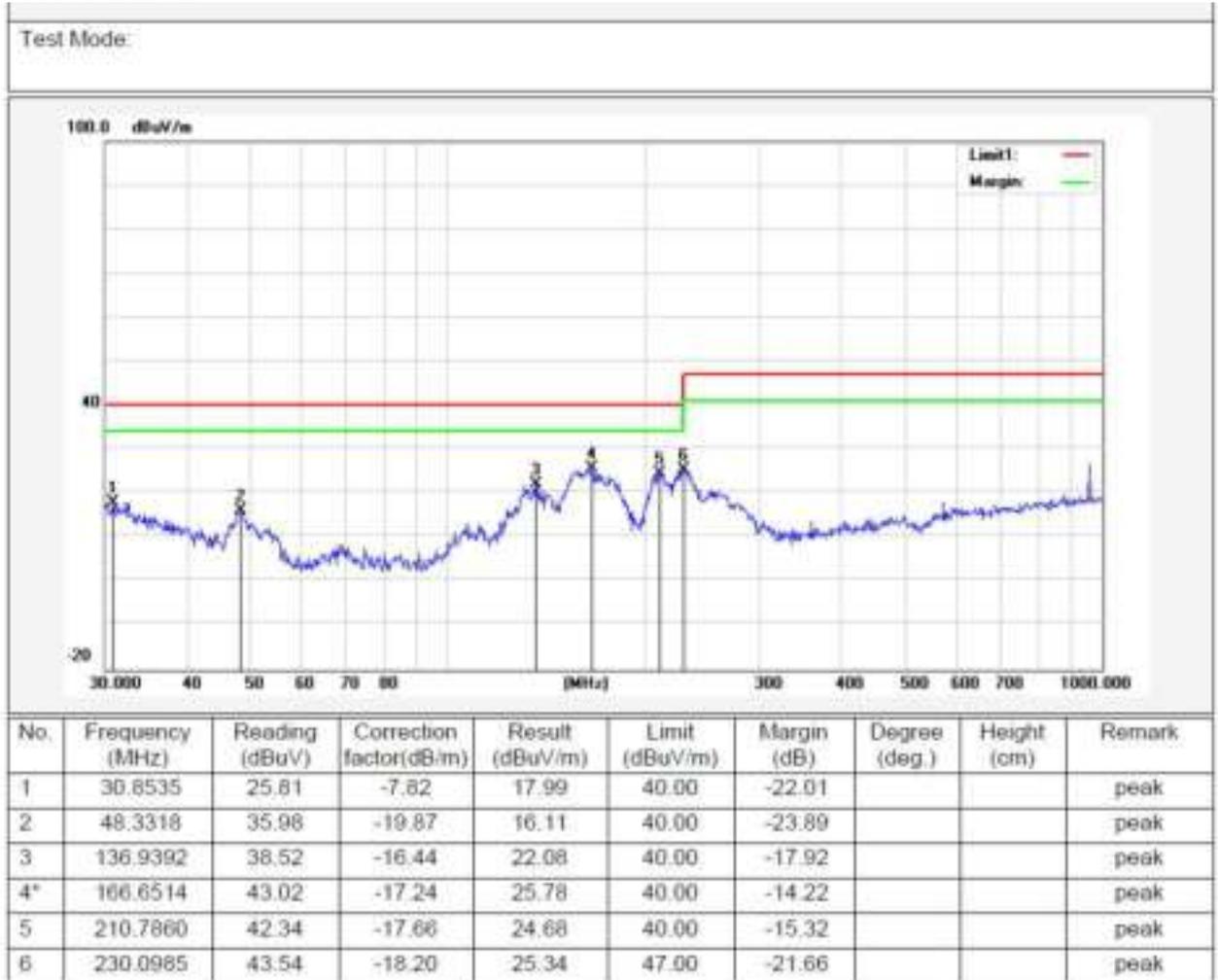
The EUT is set to work shall be carried out with full load mode during the test, and the maximum emanating results are recorded.

4.2.3.2 Configuration of test setup



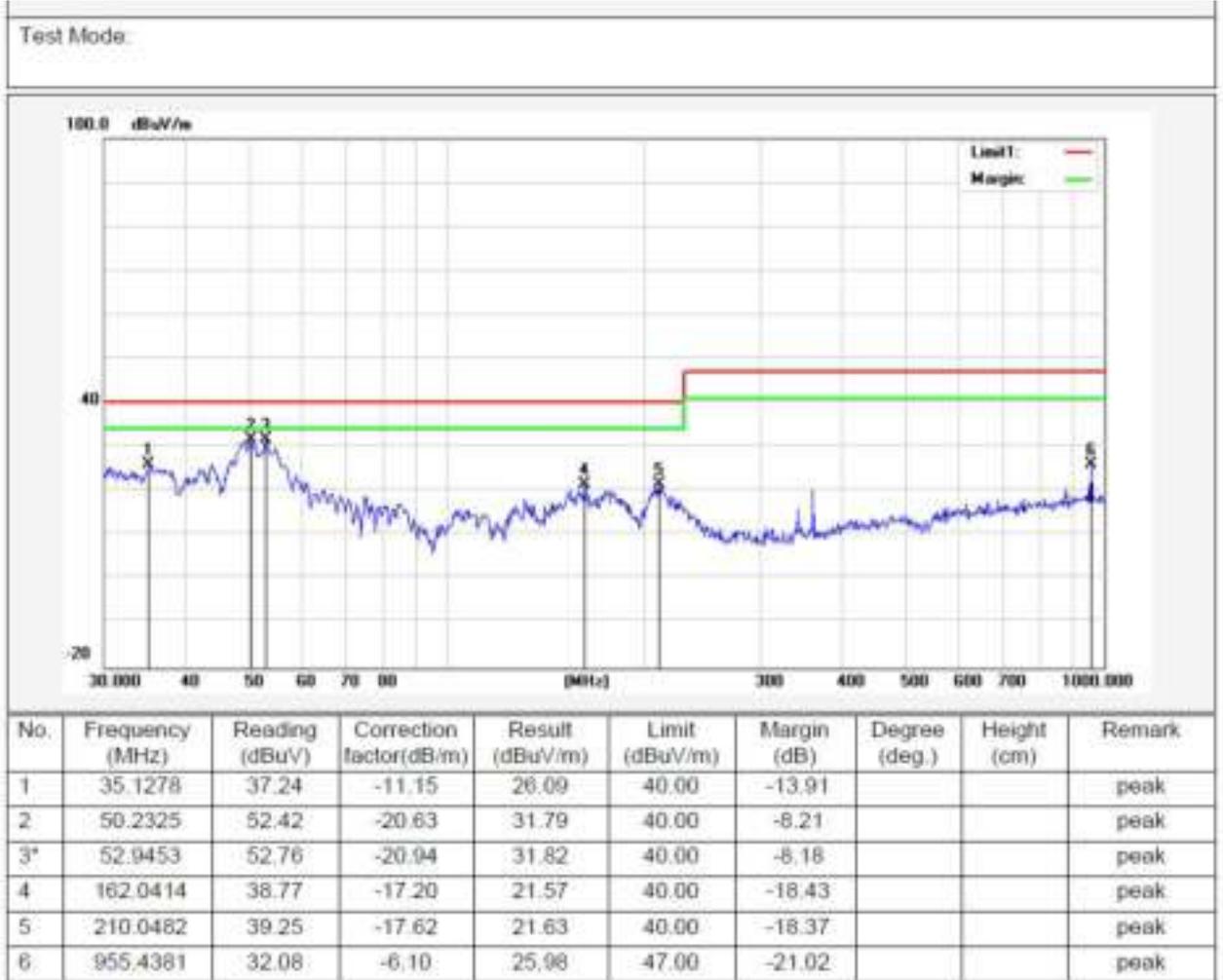
4.2.4 Test result

Probe : Horizontal



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Probe : Vertical



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4.3 Disturbance power

For test instruments and accessories used see section 3.6.

4.3.1 Description of the test location

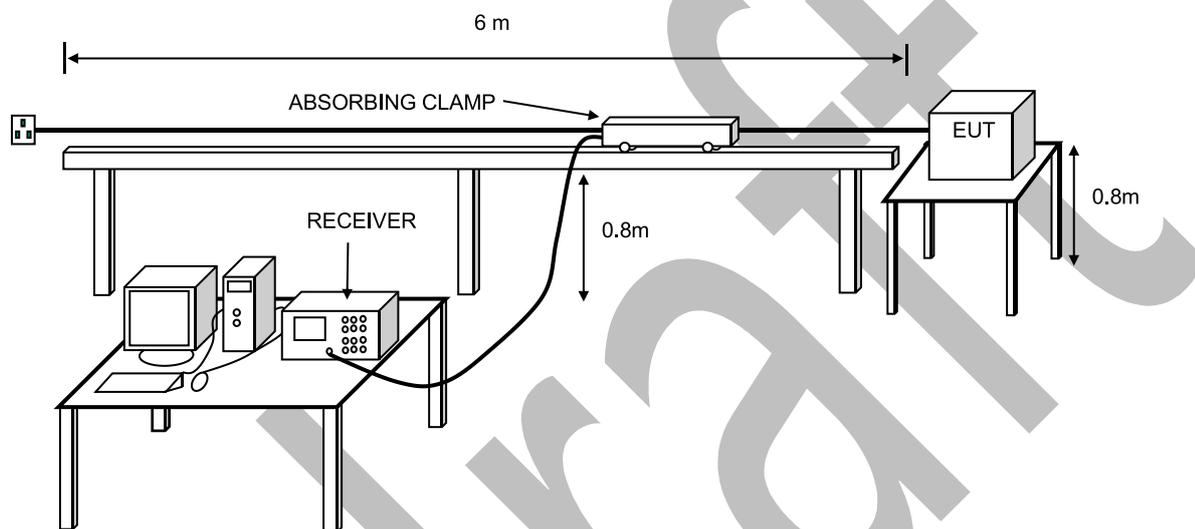
Test location: Shielded room No. 3

4.3.2 Limits of disturbance

Frequency Range (MHz)	Limits (dBpW)	
	Quasi-Peak	Average
30~300	45~55	35~45

Note: (1) The limit line is a linear line.

4.3.3 Description of the test set-up



4.3.4 Test result

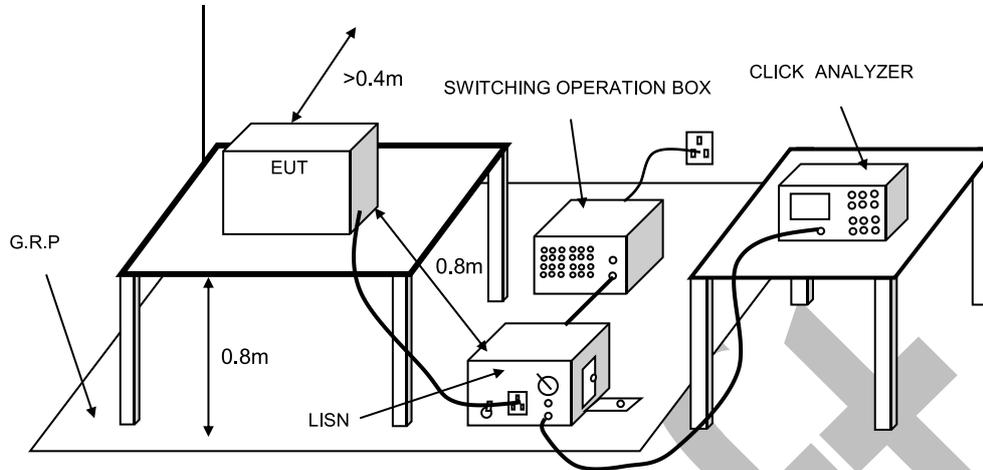
The test is not applicable.

4.4 Click

4.4.1 Description of the test location

Test location: Shielded room no. 2

4.4.2 Diagram of Test Setup



4.4.3 Test Description

4.4.3.2 Operating Condition of EUT

The operation mode of EUT is same as Section 2.4.3, except the test setup.

4.4.3.2 Test Configuration and Procedure

Test Configuration and Procedure see clause 7.4.2 of standard EN 55014-1

4.4.4 Test Results

The test is not applicable

4.5 Harmonic current

Not applicable. The EUT is less than 75w.

4.6 Voltage fluctuations and flicker

For test instruments and accessories used see section 3.6.

4.6.1 Description of the test location

Test location: Shielded room No. 3

4.6.2 Limits of Voltage Fluctuation and Flicker

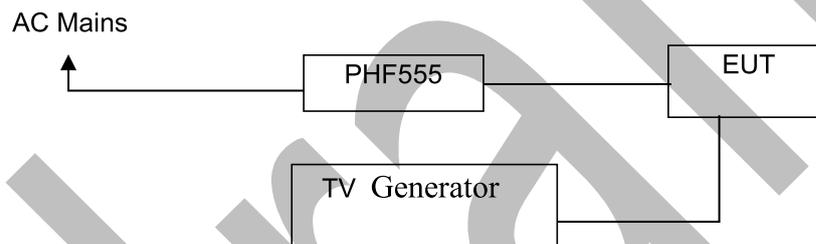
Test configuration and procedure see clause 5 of standard EN 61000-3-3: 2013.

4.6.3 Description of the test set-up

4.6.3.1 Operating Condition

The EUT is set to work shall be carried out with Play mode during the test, and the maximum emanating results are recorded.

4.6.3.2 Configuration of test setup



4.6.4 Test result

The test is not applicable

4.7 Electrostatic discharge

For test instruments and accessories used see section 3.6.

4.7.1 Description of the test location and date

Test location: Shielded room No. 3

Date of test: April 8, 2020

Operator: Sandy

4.7.2 Severity levels of electrostatic discharge

4.7.3.2 Severity level: Contact Discharge at $\pm 4\text{KV}$ Air Discharge at $\pm 8\text{KV}$

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

4.7.3.2 Performance criterion: **B**

4.7.3 Description of the test set-up

4.7.3.2 Operating Condition

The EUT is on mode during the test, and the results of the maximum susceptibility are recorded.

4.7.3.2 Test Configuration and Procedure:

Air Discharge:

- This test is done on a non-conductive surfaces. The round discharge tip of the Electrostatic Discharge simulator shall be approached as fast as possible then to touch the EUT. After each discharge, the simulator shall be removed from the EUT. The simulator 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

Contact Discharge:

- All the procedure shall be same as air discharge, except using the acute discharge tip. The top end of the Electrostatic Discharge simulator is touch the EUT all the time when the simulator is re-triggered for a new single discharge and repeated 10 times for each pre-selected test point.

Indirect Discharge:

- The vertical coupling plane(VCP) is placed 0.1m away from EUT. The top end of Electrostatic Discharge simulator should aim at the center of one border of the VCP for at least 10 times discharge.
- The top end of Electrostatic Discharge simulator should place at the point 0.1m away from EUT on the horizontal coupling plane(HCP). At least 10 times discharge should be done for every pre-selected point around EUT.

Record any performance degradation of the EUT during the test and judge the test result according to performance criterion.

4.7.4 Test specification:Contact discharge voltage:

■ 2 kV ■ 4 kV

Air discharge voltage:

■ 2 kV ■ 4 kV ■ 8 kV

Events(every polarity) /per point:

■ 10

Time between events:

■ 1 s

Type of discharge:

Direct discharge

■ Air discharge

■ Contact discharge

Indirect discharge

■ Contact discharge

Polarity:

■ Positive

■ Negative

Discharge location:

■ all external locations accessible by hand

■ horizontal coupling plane (HCP)

■ vertical coupling plane (VCP)

4.7.5 Test resultThe requirements are **Fulfilled**Performance Criterion: **B****Remarks:** During the test no deviation was detected to the selected operation mode(s).

4.8 RF Field Strength Susceptibility

The test is not applicable.

4.9 Electrical fast transients / Burst

The test is not applicable

4.10 Surge

The test is not applicable

4.11 Conducted disturbances induced by radio-frequency fields

The test is not applicable

4.12 Magnetic Field Immunity

The test is not applicable

4.13 Voltage dips and short interruptions

The test is not applicable

draft

5 Photos of the EUT



.....End of Report.....

Certificate of Conformity

Certificate No. : STA20200420012EC

Certificate's Holder : ONU MALL CO., LIMITED
Address : Rm 2505, SUN MATE Group, NO.188, Rd Heping East,
Longhua Baoan District, Shenzhen, China

Manufacturer : ONU MALL CO., LIMITED
Address : Rm 2505, SUN MATE Group, NO.188, Rd Heping
East, Longhua Baoan District, Shenzhen, China

Product Name : UV air purifier
Model(s) : HF-JH-0128; HF-JH-0515; HF-JH-0516; HF-JH-0718;
HF-JH-0719; HF-JH-0720; HF-JH-0901; HF-JH-0902; HF-
JH-0903; HF-JH-0904
: /

Trade Mark : /

Test Report Number(s) : STA20200420012EC-R

Test Standard : EN 55014-1: 2017+A2: 2011
EN 55014-2: 2015
EN 61000-3-2: 2014
EN 61000-3-3: 2013

The submitted products have been tested by us with the above standards and found in compliance with the following European Directives:

EMC Directive : 2014/30/EC

Note:

This certificate is only valid for the equipment and configuration described, and in conjunction with the test data detailed above. The CE mark as show joined can be used, under the responsibility of the manufacturer or the importer, after completion of the CE Declaration of Conformity and in accordance with the above directives.

Issuing Date: April 24, 2020

