

FCC SDOC TEST REPORT

Product Name : ozone purifier

Trade Mark : N/A

Main Model : WT1200

Additional Model : WT1200L, WT1200H

Report No. : UNIA20102208ER-01

Prepared for

SHENZHEN VANSU TECHNOLOGY CO.,LTD

ROOM 1008, 10TH FLOOR, WANGCHENG BUILDING, LONGGUAN EAST
ROAD, LONGHUA STREET, LONGHUA DISTRICT, SHENZHEN CHINA 518109

Prepared by

Shenzhen United Testing Technology Co., Ltd.

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Community, Xixiang Str, Bao'an District, Shenzhen, China

TEST RESULT CERTIFICATION

Applicant : SHENZHEN VANSU TECHNOLOGY CO.,LTD
 Address : ROOM 1008, 10TH FLOOR, WANGCHENG BUILDING,
 LONGGUAN EAST ROAD, LONGHUA STREET, LONGHUA
 DISTRICT, SHENZHEN CHINA 518109

Manufacturer : SHENZHEN VANSU TECHNOLOGY CO.,LTD
 Address : ROOM 1008, 10TH FLOOR, WANGCHENG BUILDING,
 LONGGUAN EAST ROAD, LONGHUA STREET, LONGHUA
 DISTRICT, SHENZHEN CHINA 518109

Product description

Product Name : ozone purifier

Trade Mark : N/A

Model Name : WT1200, WT1200L, WT1200H

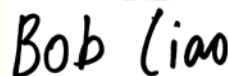
Test Methods : FCC Part 15 Subpart B
 ANSI C63.4:2014

This device described above has been tested by Shenzhen United Testing Technology Co., Ltd., and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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Date of Test :
 Date (s) of performance of tests : Oct. 22, 2020 ~ Nov. 04, 2020
 Date of Issue : Dec. 10, 2020
 Test Result : Pass

Prepared by:



Bob liao/Editor

Reviewer:



Kahn yang/Supervisor

Approved & Authorized Signer:



Liuze/Manager

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1 TEST SUMMARY

1.1 TEST PROCEDURES AND RESULTS

EMC Emission			
Standard	Test Item	Limit	Result
FCC Part 15 Subpart B ANSI C63.4:2014	Conducted Emission	Class B	PASS
	Radiated Emission	Class B	PASS

Note: 1. "N/A" denotes test is not applicable in this test report.
2. For client's request and manual description, the test will not be executed.

1.2 TEST FACTORY

Test Firm : Shenzhen United Testing Technology Co., Ltd.

Address :2F, Annex Bldg, Jiahuangyuan Tech Park, #365 Baotian 1 Rd,Tiegang
Community, Xixiang Str, Bao'an District, Shenzhen, China

The testing quality ability of our laboratory meet with "Quality Law of People's Republic of China" Clause 19.The testing quality system of our laboratory meets with ISO/IEC-17025 requirements. This approval result is accepted by MRA of APLAC.

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

A2LA Certificate Number: 4747.01

The EMC Laboratory has been accredited by A2LA, and in compliance with ISO/IEC 17025:2017 General Requirements for testing Laboratories.

FCC Registration Number: 674885

The EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications commission.

IC Registration Number: 21947

The EMC Laboratory has been registered and fully described in a report filed with the (IC) Industry Canada.

1.3 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95%.

A. Conducted Measurement:

Test Site	Method	Measurement Frequency Range	U, (dB)	NOTE
UNI	ANSI	9kHz ~ 150kHz	2.96	
		150kHz ~ 30MHz	2.44	

B. Radiated Measurement:

Test Site	Method	Measurement Frequency Range	U, (dB)	NOTE
UNI	ANSI	9kHz ~ 30MHz	2.50	
		30MHz ~ 1000MHz	4.80	
		1000MHz ~ 6000MHz	4.13	

2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Product Name:	ozone purifier				
Trade Mark:	N/A				
Main Model:	WT1200				
Additional Model:	WT1200L, WT1200H				
Model Difference:	All model's the function, software and electric circuit are the same, only with a product color and model named different. Test sample model: WT1200.				
Product Description:	<p>The EUT is an aozone purifier.</p> <table border="1"> <tr> <td>Operating frequency:</td><td>N/A</td></tr> <tr> <td>Connecting I/O port:</td><td>N/A</td></tr> </table> <p>Based on the application, features, or specification exhibited in User's Manual, more details of EUT technical specification, please refer to the User's Manual.</p>	Operating frequency:	N/A	Connecting I/O port:	N/A
Operating frequency:	N/A				
Connecting I/O port:	N/A				

2.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

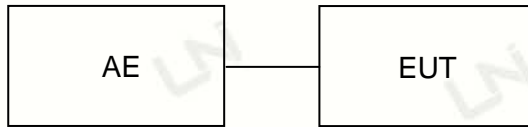
Pretest Mode	Description
Mode 1	Running

For Conducted Test	
Pretest Mode	Description
Mode 1	Running

For Radiated Test	
Pretest Mode	Description
Mode 1	Running

Note: The test modes were carried out for all operation modes(include link and idle).

2.3 DESCRIPTION OF TEST SETUP



Note: The EUT tested system was configured as upper figure, unless otherwise a special operating condition is specified in the following during the testing.

2.4 DESCRIPTION TEST PERIPHERAL AND EUT PERIPHERAL

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	Note
E-1	ozone purifier	N/A	WT1200	EUT

Item	Shielded Type	Ferrite Core	Length	Note

Note:

1. The support equipment was authorized by Declaration of Confirmation.
2. For detachable type I/O cable should be specified the length in cm in 『Length』 column.
3. “YES” is means “shielded” “with core”; “NO” is means “unshielded” “without core”.

2.5 MEASUREMENT INSTRUMENTS LIST

Item	Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
Conduction Emissions Measurement					
1	Conducted Emission Test Software	EZ-EMC	Ver.CCS-3A1-CE	N/A	N/A
2	AMN	Schwarzbeck	NNLK8121	8121370	2021.10.15
3	AMN	ETS	3810/2	00020199	2021.10.15
4	AAN	TESEQ	T8-Cat6	38888	2021.10.15
5	Pulse Limiter	CYBRTEK	EM5010	E115010056	2021.05.20
6	EMI Test Receiver	Rohde&Schwarz	ESCI	101210	2021.10.15
Radiated Emissions Measurement					
1	Radiated Emission Test Software	EZ-EMC	Ver.CCS-03A1	N/A	N/A
2	Horn Antenna	Sunol	DRH-118	A101415	2021.10.18
3	Broadband Hybrid Antenna	Sunol	JB1	A090215	2022.03.01
4	PREAMP	HP	8449B	3008A00160	2021.10.21
5	PREAMP	HP	8447D	2944A07999	2021.05.20
6	EMI Test Receiver	Rohde&Schwarz	ESR3	101891	2021.10.15
7	MXA Signal Analyzer	Keysight	N9020A	MY51110104	2021.10.15
8	Active Loop Antenna	Com-Power	AL-310R	10160009	2021.05.20
9	Horn Antenna	Schwarzbeck	BBHA9120D	9120D-1680	2021.05.20
10	Horn Antenna	A-INFOMW	LB-180400-KF	J211060660	2021.10.23
11	Loop Antenna	Beijing daze Technology	ZN30401	13015	2021.10.15
12	EM Clamp	Schwarzbeck	MDS21	03350	2021.10.20

3 CONDUCTED EMISSIONS MEASUREMENT

3.1 TEST LIMIT

Frequency (MHz)	Maximum RF Line Voltage(dB μ V)			
	CLASS A		CLASS B	
	Q.P.	Ave.	Q.P.	Ave.
0.15~0.50	79	66	66~56*	56~46*
0.50~5.00	73	60	56	46
5.00~30.0	73	60	60	50

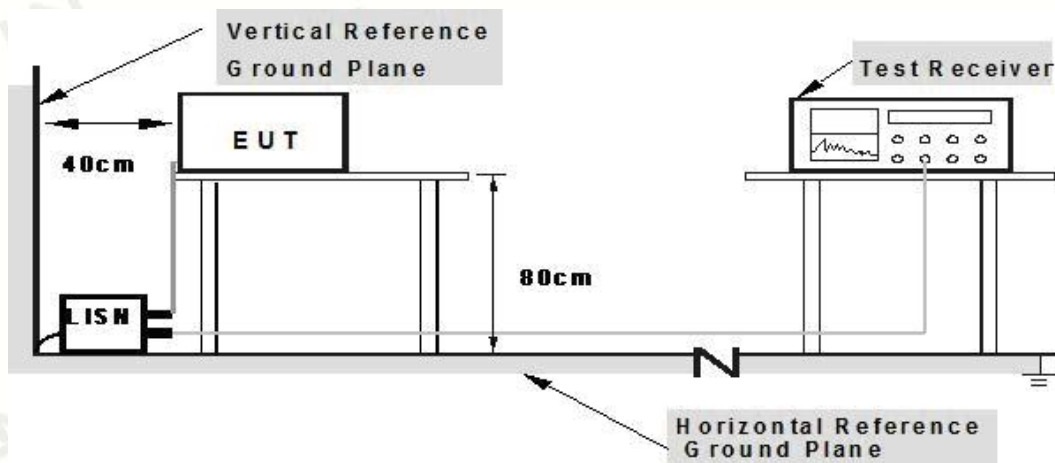
Note:

1. The tighter limit applies at the band edges.
2. The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver:

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

3.2 TEST SETUP



- Note: 1.Support units were connected to second LISN.**
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

3.3 TEST PROCEDURE

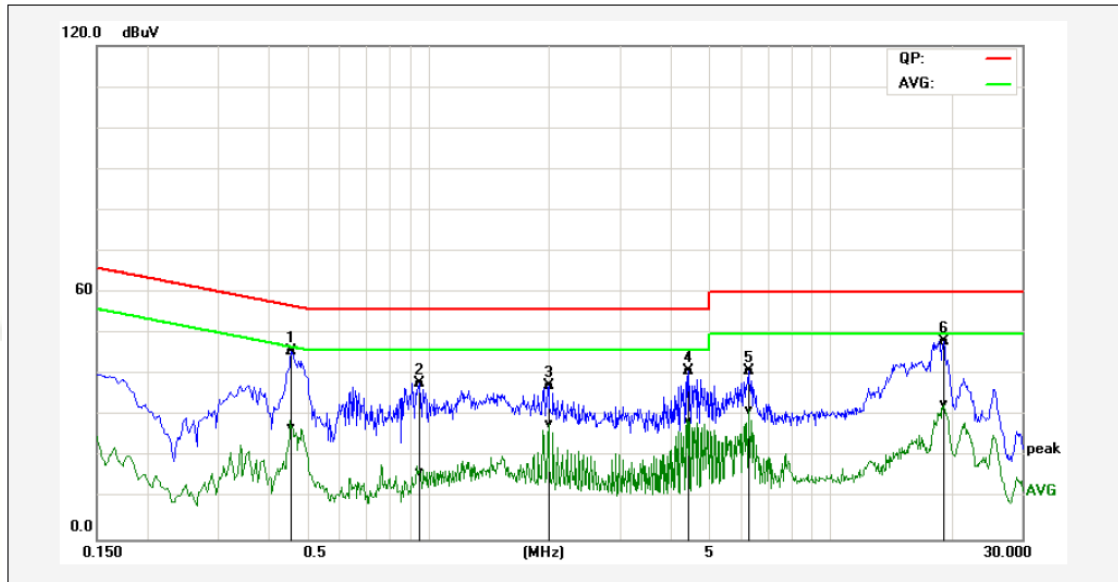
- 1.The EUT was placed 0.4 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
2. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- 3.I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- 4.For the actual test configuration, please refer to the related Item EUT Test Photos.

3.4 TEST RESULT

PASS

Note: All modes were tested at AC 120V and 240V, only the worst result of AC 120V was reported.

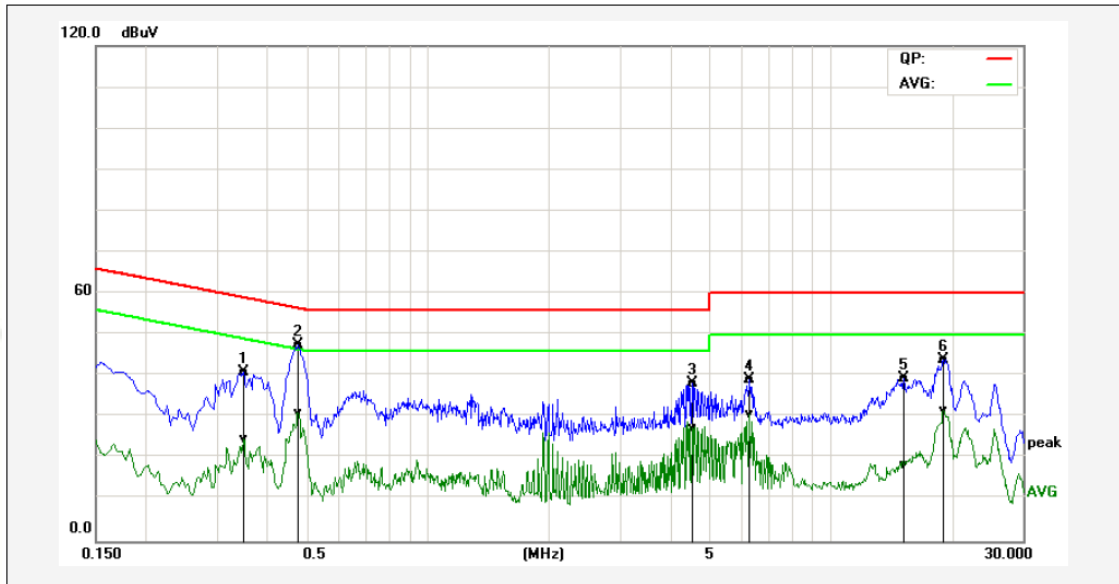
Temperature:	24°C	Relative Humidity:	48%
Test Mode:	Running	Pressure:	1010hPa
Phase:	Line		



No.	Frequency (MHz)	QuasiPeak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	QuasiPeak result (dBuV)	Average result (dBuV)	QuasiPeak limit (dBuV)	Average limit (dBuV)	QuasiPeak margin (dB)	Average margin (dB)	Remark
1*	0.4580	36.04	17.49	9.80	45.84	27.29	56.73	46.73	-10.89	-19.44	Pass
2P	0.9500	28.19	6.54	9.85	38.04	16.39	56.00	46.00	-17.96	-29.61	Pass
3P	1.9940	27.38	18.04	9.88	37.26	27.92	56.00	46.00	-18.74	-18.08	Pass
4P	4.4340	30.99	18.84	9.94	40.93	28.78	56.00	46.00	-15.07	-17.22	Pass
5P	6.2580	30.87	21.56	9.94	40.81	31.50	60.00	50.00	-19.19	-18.50	Pass
6P	19.1660	47.62	32.32	0.51	48.13	32.83	60.00	50.00	-11.87	-17.17	Pass

Remark: Factor = Insertion Loss + Cable Loss, Result=Reading + Factor, Margin=Result – Limit.

Temperature:	24°C	Relative Humidity:	48%
Test Mode:	Running	Pressure:	1010hPa
Phase:	Neutral		



No.	Frequency (MHz)	QuasiPeak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	QuasiPeak result (dBuV)	Average result (dBuV)	QuasiPeak limit (dBuV)	Average limit (dBuV)	QuasiPeak margin (dB)	Average margin (dB)	Remark
1P	0.3500	31.04	14.88	9.83	40.87	24.71	58.96	48.96	-18.09	-24.25	Pass
2*	0.4780	37.70	21.28	9.80	47.50	31.08	56.37	46.37	-8.87	-15.29	Pass
3P	4.5420	28.20	17.63	9.94	38.14	27.57	56.00	46.00	-17.86	-18.43	Pass
4P	6.3140	29.22	20.69	9.95	39.17	30.64	60.00	50.00	-20.83	-19.36	Pass
5P	15.1740	29.35	8.29	10.02	39.37	18.31	60.00	50.00	-20.63	-31.69	Pass
6P	19.0540	33.88	21.31	10.22	44.10	31.53	60.00	50.00	-15.90	-18.47	Pass

Remark: Factor = Insertion Loss + Cable Loss, Result=Reading + Factor, Margin=Result – Limit.

4 RADIATED EMISSION MEASUREMENT

4.1 TEST LIMIT

For unintentional device, according to § 15.109(a), except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

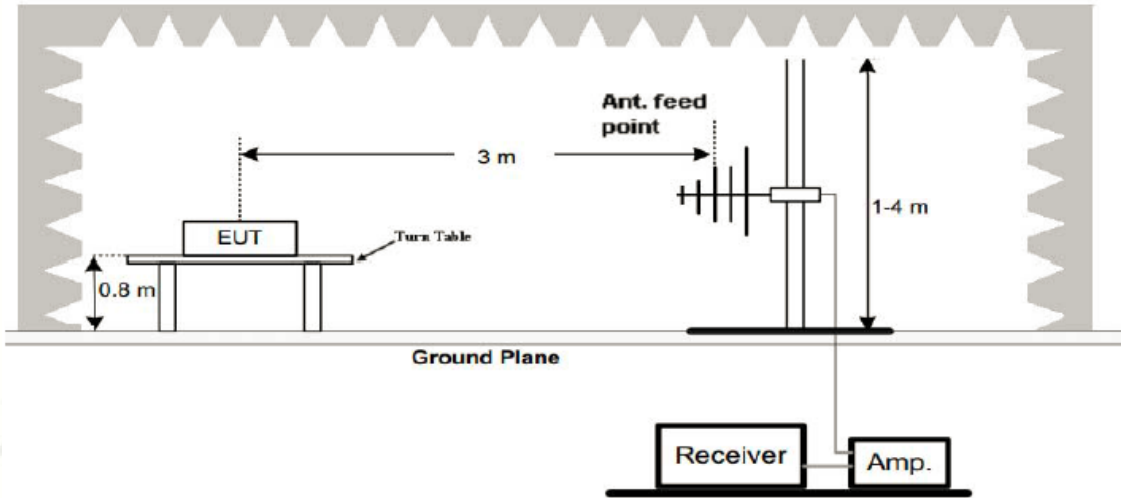
Frequency (MHz)	Class A (at 10m)	Class B (at 3m)
	dBuV/m	dBuV/m
30-88	39.0	40.0
88-216	43.5	43.5
216-960	46.5	46.0
Above 960	49.5	54.0

Notes:

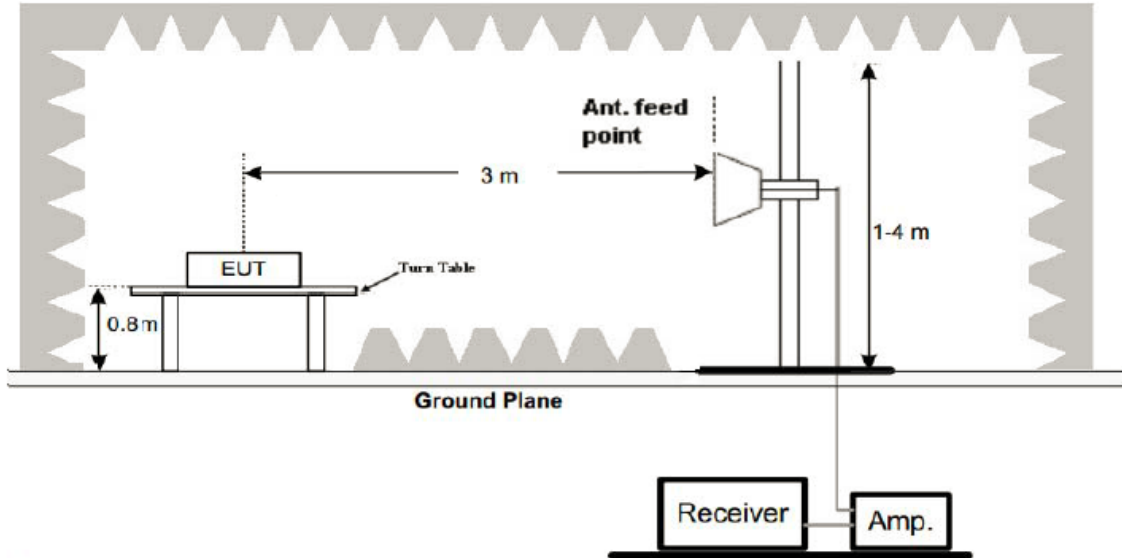
1. The limit for radiated test was performed according to as following: FCC PART 15B /ICES-003.
2. The tighter limit applies at the band edges.
3. Emission level (dBuV/m)=20log Emission level (uV/m).

4.2 TEST SETUP

1. Radiated Emission Test Set-Up Frequency Below 1000MHz



2. Radiated Emission Test Set-Up Frequency Above 1000MHz



4.3 TEST PROCEDURE

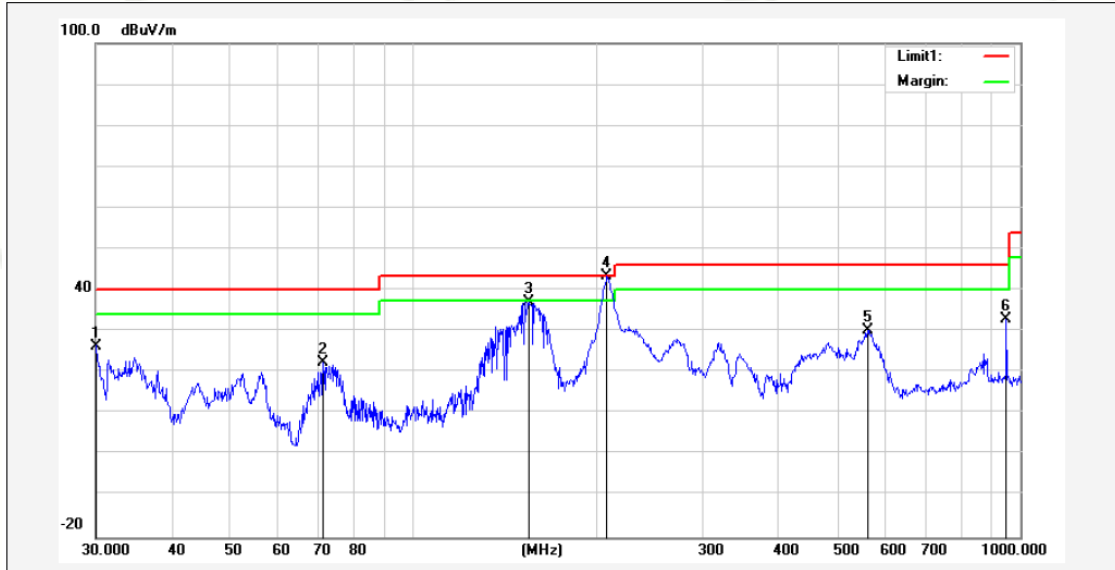
1. The measuring distance of at 10 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
2. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 10 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
3. The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured, above 1G Average detector mode will be instead.
5. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP(AV) Limits and then no additional QP Mode measurement performed.
6. For the actual test configuration, please refer to the related Item EUT Test Photos.

4.4 TEST RESULT

PASS

Below 1000MHz Test Results:

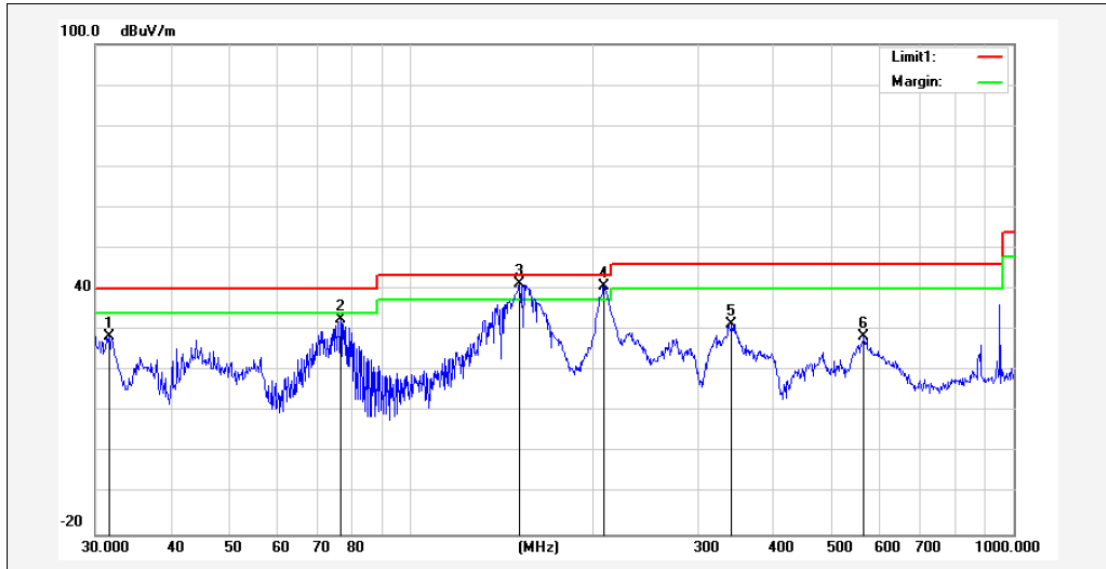
Temperature:	24°C	Relative Humidity:	48%
Test Mode:	Running	Pressure:	1010hPa
Polarization:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1	30.0000	33.65	-7.15	26.50	40.00	-13.50			peak
2	71.0803	43.61	-21.27	22.34	40.00	-17.66			peak
3	155.3644	54.38	-17.28	37.10	43.50	-6.40			peak
4*	208.5803	61.03	-17.54	43.49	43.50	-0.01			peak
5	560.6928	41.11	-10.72	30.39	46.00	-15.61			peak
6	948.7610	39.09	-6.15	32.94	46.00	-13.06			peak

Remark: Absolute Level= Reading Level+ Factor, Margin= Absolute Level – Limit
Factor=Ant. Factor + Cable Loss – Pre-amplifier

Temperature:	24°C	Relative Humidity:	48%
Test Mode:	Running	Pressure:	1010hPa
Polarization:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1	31.6202	36.80	-8.41	28.39	40.00	-11.61			peak
2	76.5121	54.11	-21.48	32.63	40.00	-7.37			peak
3*	151.5972	58.85	-17.37	41.48	43.50	-2.02			peak
4!	209.3129	58.45	-17.59	40.86	43.50	-2.64			peak
5	340.7817	45.84	-14.49	31.35	46.00	-14.65			peak
6	564.6389	39.09	-10.61	28.48	46.00	-17.52			peak

Remark: Absolute Level= Reading Level+ Factor, Margin= Absolute Level – Limit
Factor=Ant. Factor + Cable Loss – Pre-amplifier

Above 1 GHz Test Results:

Temperature:	24°C	Relative Humidity:	48%
Test Voltage:	N/A	Pressure:	1010hPa
Test Mode:	N/A	Polarization:	N/A

Note: 1. N/A denotes test is not applicable in this test report.
2. There was not any unintentional transmission in standby mode.

5PHOTO OF EUT



PHOTO 01



PHOTO 02

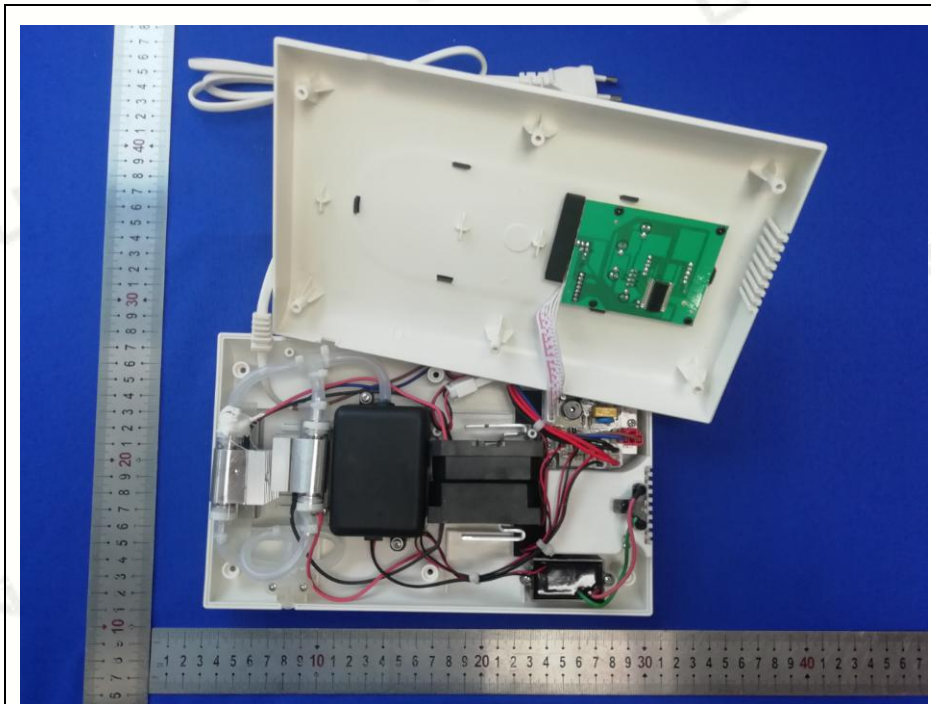


PHOTO 03

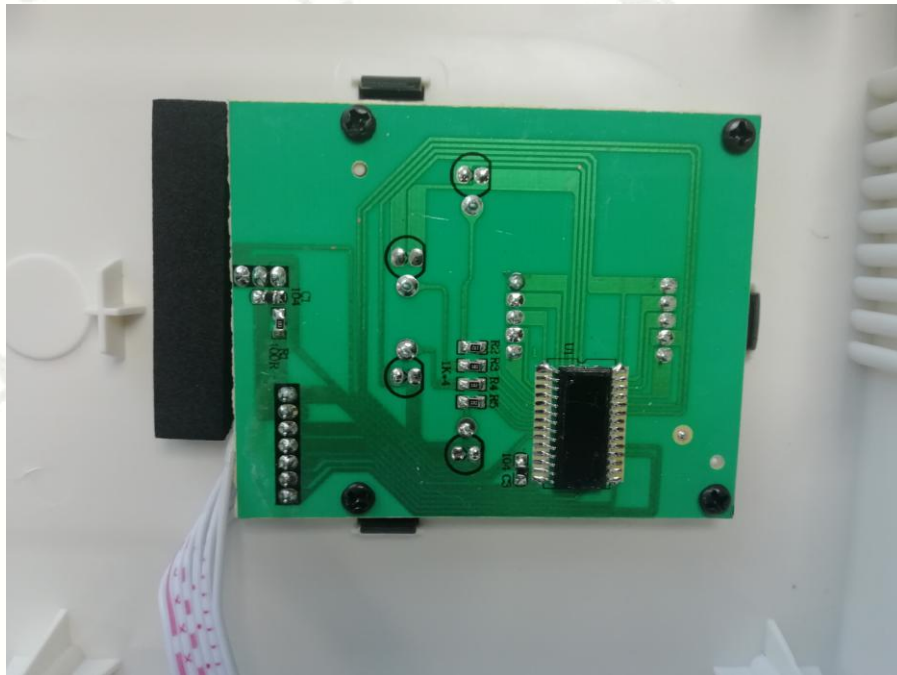


PHOTO 04

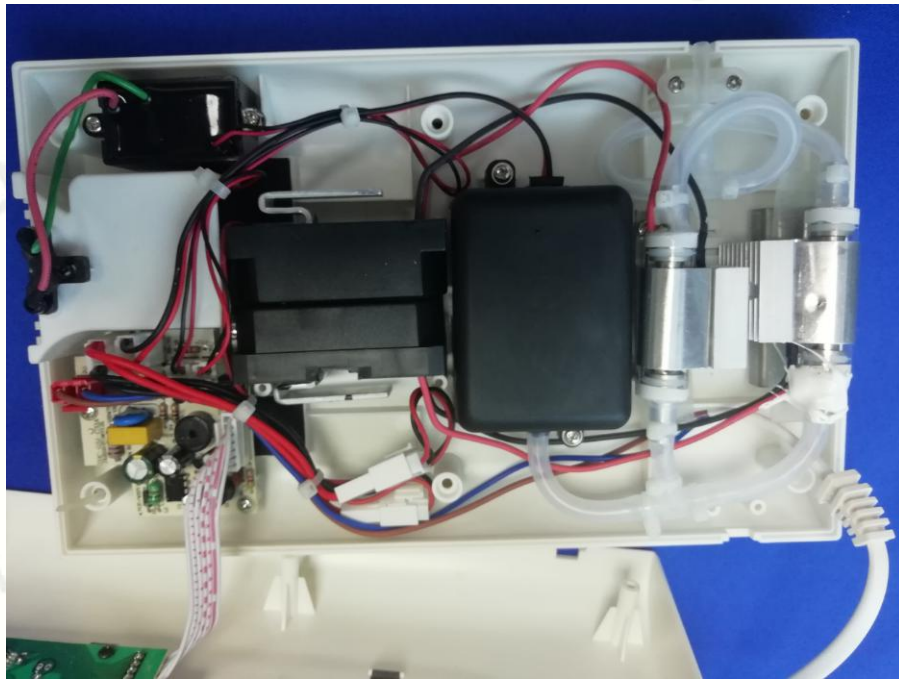


PHOTO 05

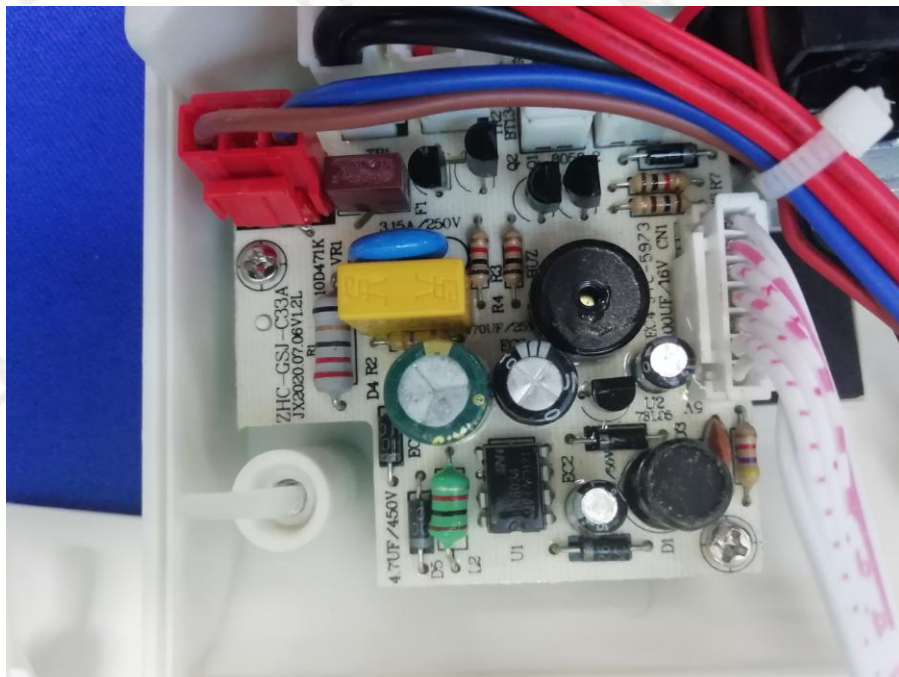


PHOTO 06

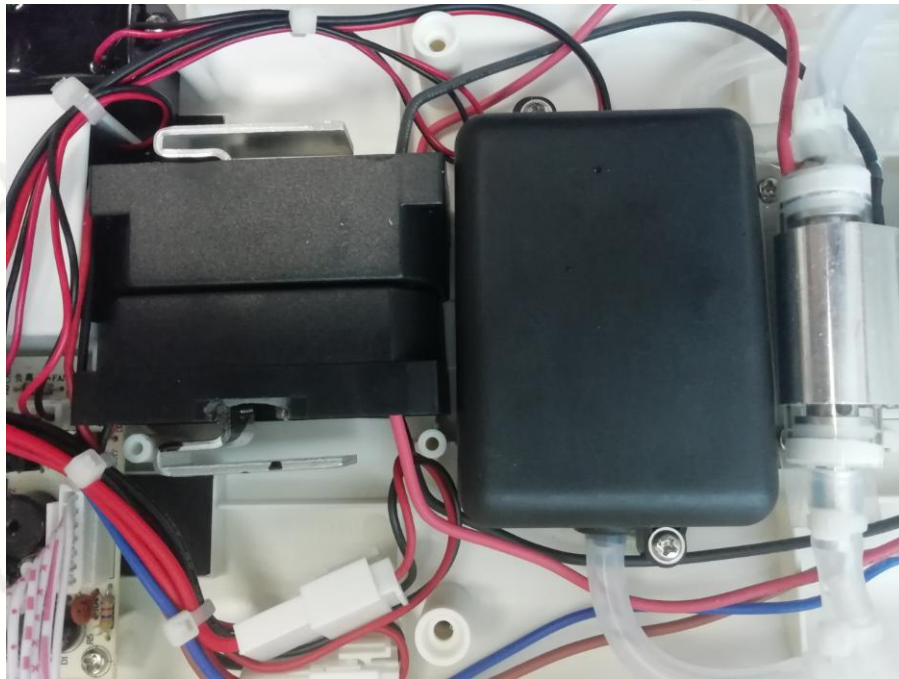


PHOTO 07



PHOTO 08

6PHOTO OF TEST

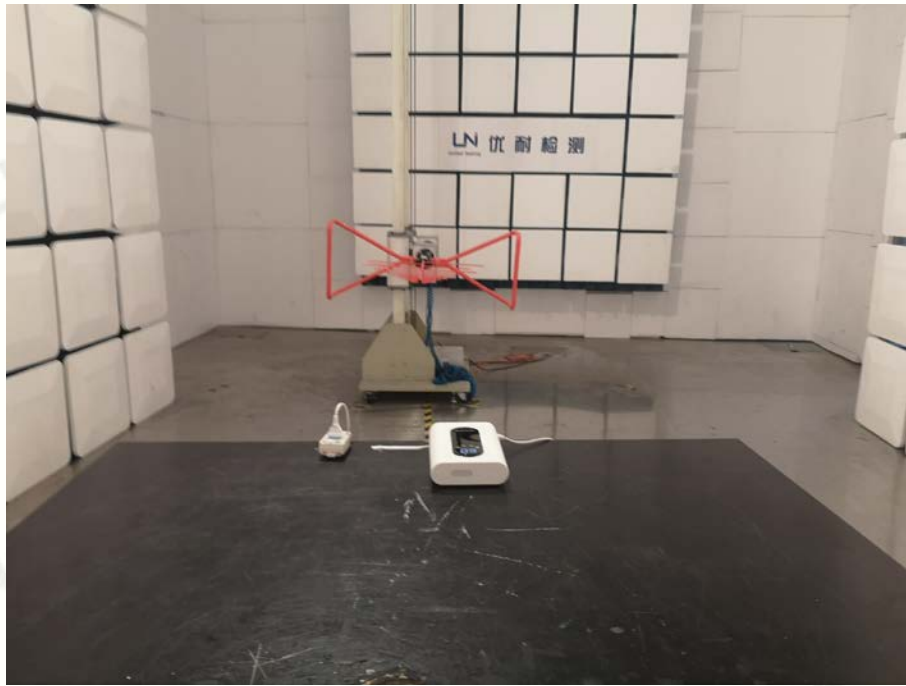


PHOTO 01



PHOTO 02

End of Report