EMC TEST REPORT

For CE-EMC

Report No.	:	SSP24100142-1E
Applicant	:	Shenzhen Fengzhaowei Technology Co., Ltd.
Product Name	:	Alcohol Tester
Test Standard	:	EN IEC 55014-1 :2021 EN IEC 55014-2 :2021 EN IEC 61000-3-2 :2019+A1 :2021 EN 61000-3-3 :2013+A2 :2021
Date of Issue	:	2024-10-29

Shenzhen CCUT Quality Technology Co., Ltd.

1F, Building 35, Changxing Technology Industrial Park, Yutang Street, Guangming District, Shenzhen, Guangdong, China; (Tel.:+86-755-23406590 website: www.ccuttest.com)

Test Report Basic Information

Applicant.....:	Shenzhen Fengzhaowei Technology Co., Ltd.
Address of Applicant.....:	2/F, NO. A4 BUILDING, HEKAN INDUSTRIALAREA, WUHE ROAD, BANTIAN TOWN LONGGANG DISTRICT SHENZHEN, GUANGDONG, CHINA
Manufacturer.....:	Shenzhen Fengzhaowei Technology Co., Ltd.
Address of Manufacturer.....:	2/F, NO. A4 BUILDING, HEKAN INDUSTRIALAREA, WUHE ROAD, BANTIAN TOWN LONGGANG DISTRICT SHENZHEN, GUANGDONG, CHINA
Product Name.....:	Alcohol Tester
Brand Name.....:	-
Series Models.....:	-
Test Standard.....:	EN IEC 55014-1 :2021 EN IEC 55014-2 :2021 EN IEC 61000-3-2 :2019+A1 :2021 EN 61000-3-3 :2013+A2 :2021
Date of Test .....:	2024-10-17 to 2024-10-18
Test Result.....:	PASS

Tested By .....:	Choco Qiu	(Choco Qiu)
Reviewed By.....:	Lieber Ouyang	(Lieber Ouyang)
Authorized Signatory.....:	Lahm Peng	(Lahm Peng)

Shenzhen CCUT Quality Technology Co., Ltd. APPROVED

Note : This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by Shenzhen CCUT Quality Technology Co., Ltd.. All test data presented in this test report is only applicable to presented test sample.

CONTENTS

Revision History

Revision	Issue Date	Description	Revised By
V1.0	2024-10-29	Initial Release	Lahm Peng

1. General Information

1.1 Product Information

Product Name:	Alcohol Tester
Trade Name:	-
Main Model:	
Series Models:	-
Rated Voltage:	DC 3.7V by battery or DC 5V by charging
Highest Clock Frequency:	☐ No Clock ☒ <15MHz ☐ 15MHz~200MHz ☐ >200MHz
Classification of apparatus:	☐ Category I ☐ Category II ☒ Category III ☐ Category IV ☐ Category V
Note 1: The test data is gathered from a production sample, provided by the manufacturer.	

1.2 Test Setup Information

List of Test Modes		
Test Mode	Description	Remark
TM1	Charging	AC 230V/50Hz
TM2	Working	-
TM3	-	-
TM4	-	-

List and Details of Auxiliary Cable			
Description	Length (cm)	Shielded/Unshielded	With/Without Ferrite
-	-	-	-
-	-	-	-
-	-	-	-

List and Details of Auxiliary Equipment			
Description	Manufacturer	Model	Serial Number
Adapter	HUAWEI	HW-110600C02	JL28L4P2D06114
-	-	-	-
-	-	-	-

The equipment under test (EUT) was configured to measure its highest possible emission and immunity level. The test modes were adapted according to the operation manual for use.

1.3 Compliance Standards

Compliance Standards	
EN IEC 55014-1:2021	Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 1: Emission
EN IEC 55014-2:2021	Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 2: Immunity - Product family standard
EN IEC 61000-3-2:2019/A1:2021	Electromagnetic compatibility (EMC) - Part 3-2: Limits -Limits for harmonic current emissions (equipment input current k 16 A per phase)
EN 61000-3-3:2013+A2:2021	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
All measurements contained in this report were conducted with all above standards	
According to standards for test methodology	
EN IEC 55014-1:2021	Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 1: Emission
EN IEC 55014-2:2021	Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 2: Immunity - Product family standard
EN IEC 61000-3-2:2019/A1:2021	Electromagnetic compatibility (EMC) - Part 3-2: Limits -Limits for harmonic current emissions (equipment input current k 16 A per phase)
EN 61000-3-3:2013+A11:2021	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
IEC 61000-4-2:2008	Electromagnetic compatibility (EMC) - Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test
IEC 61000-4-3:2020	Electromagnetic compatibility (EMC) - Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test
IEC 61000-4-4:2012	Electromagnetic compatibility (EMC) - Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test
IEC 61000-4-5:2017	Electromagnetic compatibility (EMC) - Part 4-5: Testing and measurement techniques - Surge immunity test
IEC 61000-4-6:2013	Electromagnetic compatibility (EMC) - Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields
IEC 61000-4-11:2020	Electromagnetic compatibility (EMC) - Part 4-11: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests
Note 1: this test report is only applicable to presented test sample. Note 2: The test methods in this report are based on above test standard and no other test standard or non-standard methods are used. Note 3: Any modification of the product, which result is lowering the emission, should be checked to ensure compliance has been maintained; Maintenance of compliance is the responsibility of the manufacturer or applicant.	

1.4 Performance Criteria for EMS

All the test data has been collected and analyzed within this report in accordance with Immunity requires the following as specific performance criteria:	
A	The apparatus shall continue to operate as intended during the test. No degradation of performance or loss of function is allowed below a performance level (or permissible loss of performance) specified by the manufacturer, when the apparatus is used as intended. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and from what the user may reasonably expect from the apparatus if used as intended.
B	The apparatus shall continue to operate as intended after the test. No degradation of performance or loss of function is allowed below a performance level (or permissible loss of performance) specified by the manufacturer, when the apparatus is used as intended. During the test, degradation of performance is allowed, however no change of actual operating state or stored data is allowed to persist after the test. 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.
C	Temporary loss of function is allowed, provided the function is self-recoverable or can be restored by the operation of the controls, or by any operation specified in the instructions for use.

1.5 Test Facilities

Laboratory Name:	**Shenzhen CCUT Quality Technology Co., Ltd.** 1F, Building 35, Changxing Technology Industrial Park, Yutang Street, Guangming District, Shenzhen, Guangdong, China
CNAS Laboratory No.:	L18863
A2LA Certificate No.:	6893.01
FCC Registration No:	583813
ISED Registration No.:	CN0164
All measurement facilities used to collect the measurement data are located at 1F, Building 35, Changxing Technology Industrial Park, Yutang Street, Guangming District, Shenzhen, Guangdong, China.	

1.6 Measurement Uncertainty

Parameter	Conditions	Uncertainty
Conducted Disturbance	9kHz ~30MHz	±1.64 dB
Radiated Disturbance	30MHz ~ 1GHz	±3.32 dB

1.7 List of Measurement Instruments

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Conducted Emissions					
AMN	ROHDE&SCHWARZ	ENV216	101097	2024-08-07	2025-08-06
EMI Test Receiver	ROHDE&SCHWARZ	ESPI	100242	2024-08-07	2025-08-06
EMI Test Software	FARA	EZ-EMC	EMEC-3A1+	N/A	N/A
Radiated Emissions					
EMI Test Receiver	ROHDE&SCHWARZ	ESPI	100154	2024-08-07	2025-08-06
Spectrum Analyzer	KEYSIGHT	N9020A	MY48030972	2024-08-07	2025-08-06
Amplifier	SCHWARZBECK	BBV 9743B	00251	2024-08-07	2025-08-06
Broadband Antenna	SCHWARZBECK	VULB 9168	01320	2024-08-03	2025-08-02
EMI Test Software	FARA	EZ-EMC	FA-03A2 RE+	N/A	N/A
Harmonics and Flicker					
Harmonics Analyzer	EMC Partner	HARMONICS 1000	170	2024-08-07	2025-08-06
EMS Testing					
ESD Generator	Shanghai LIONCEL	ESD-202B	0220104	2024-08-03	2025-08-02
CS Generator	Shanghai LIONCEL	RIS-6091	6091-0220601	2024-08-07	2025-08-06
Surges Test System	Shanghai LIONCEL	LCG-5411	5411-0220303	2024-08-07	2025-08-06
Voltage Regulator	Shanghai LIONCEL	MVR-16	--	2024-08-07	2025-08-06
Signal Generator	Aglient	N5181A	MY46240904	2024-08-07	2025-08-06
Amplifier 80M-1GHz	SKET	HAP_80M01G-250W	N/A	2024-08-07	2025-08-06
Amplifier 1GHz-3GHz	SKET	HAP_01G03G-75W	N/A	2024-08-07	2025-08-06
Amplifier 3GHz-6GHz	SKET	HAP_03G06G-75W	N/A	2024-08-07	2025-08-06
Forward Power Meter	R&S	NRP-Z11	138.3004.02-11610	2024-08-07	2025-08-06
Reverse Power Meter	R&S	NRP-Z11	138.3004.02-11694	2024-08-07	2025-08-06
Log-periodic Antenna	SKET	STLP 9129 Plus	N/A	2024-08-07	2025-08-06
EMS Software	SKET	EZ-EMC	EEMC-3A1	N/A	N/A

2. Summary of Test Results

Standards	Description of Test Items	Result
EN IEC 55014-1:2021	Conducted Emissions	Passed
	Radiated Emissions	Passed
EN IEC 61000-3-2:2019+A1:2021	Harmonic Current Emission	Passed
EN 61000-3-3:2013+A2:2021	Voltage Fluctuation and Flicker	Passed
EN IEC 55014-2:2021	Electrostatic Discharge Immunity	Passed
	Continuous Radiated Disturbances Immunity	Passed
	Electrical Fast Transient Immunity	Passed
	Surges Immunity	Passed
	Continuous Conducted Disturbances Immunity	Passed
	Voltage Dips and Interruptions Immunity	N/A
Passed: The EUT complies with the essential requirements in the standard Failed: The EUT does not comply with the essential requirements in the standard N/A: Not applicable		

3. Conducted Emissions

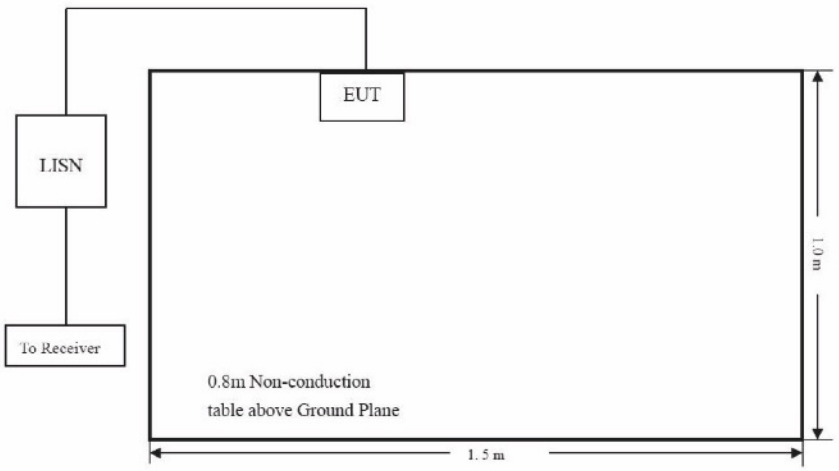
3.1 Standard and Limit

According to the standard EN 55014-1 Clause 4.3.3, Table 5, Limits for conducted emissions for mains power port as below:

Frequency range	Mains ports		Associated ports			
	Disturbance voltage		Disturbance voltage		Disturbance current	
1	2	3	4	5	6	7
MHz	Quasi-peak dBμV	Average dBμV	Quasi-peak dBμV	Average dBμV	Quasi-peak dBμA	Average dBμA
0,15 to 0,50	Decreasing linearly with the logarithm of the frequency from:		80	70	Decreasing linearly with the logarithm of the frequency from:	
	66 to 56	59 to 46			40 to 30	30 to 20
0,50 to 5	56	46	74	64	30	20
5 to 30	60	50	74	64		
The lower limit applies at the transition frequencies. The test report shall state which test method was used and which limits were applied.						

3.2 Test Procedure

Test is conducting under the description of EN55014-1 Clause 5, conducted emissions set-up and measurements.



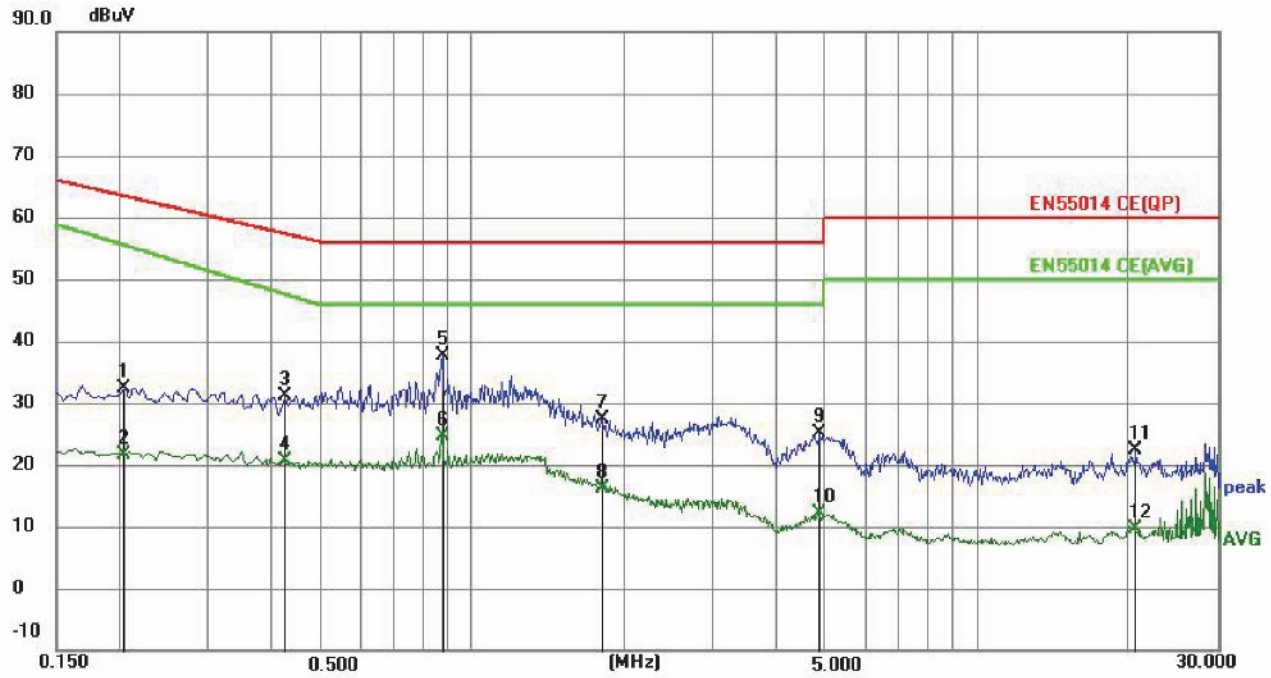
Test Setup Block Diagram

3.3 Test Data and Results

Based on all tested data, the EUT complied with the EN 55014-1 standard limit for a household appliance, and with the worst case as below:

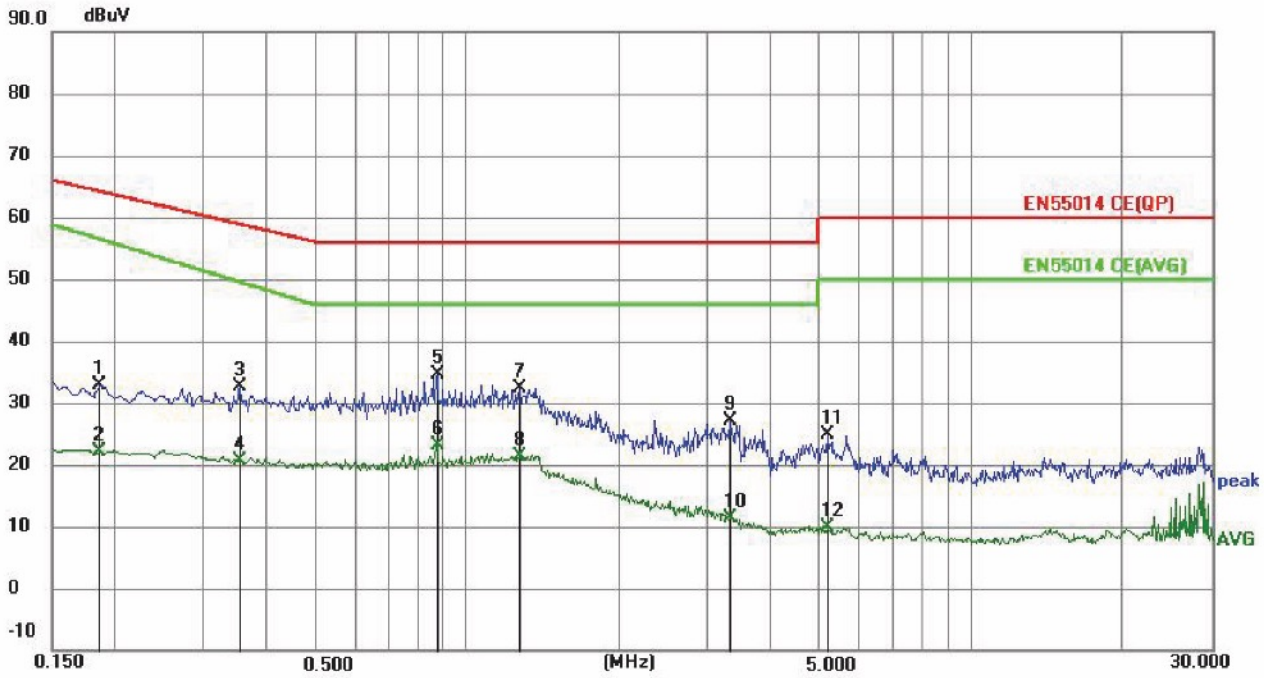
Remark: Level = Reading + Factor, Margin = Level - Limit

Test Plots and Data of Conducted Emissions	
Tested Model:	
Test Mode:	TM1
Test Voltage:	AC 230V/50Hz
Test Power Line:	Neutral
Remark:	



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.2040	23.04	9.22	32.26	63.45	-31.19	peak	P	
2	0.2040	12.42	9.22	21.64	55.68	-34.04	AVG	P	
3	0.4245	21.73	9.38	31.11	57.36	-26.25	peak	P	
4	0.4245	11.35	9.38	20.73	47.77	-27.04	AVG	P	
5 *	0.8745	28.15	9.38	37.53	56.00	-18.47	peak	P	
6	0.8745	15.30	9.38	24.68	46.00	-21.32	AVG	P	
7	1.8150	17.82	9.46	27.28	56.00	-28.72	peak	P	
8	1.8150	6.67	9.46	16.13	46.00	-29.87	AVG	P	
9	4.8840	15.50	9.57	25.07	56.00	-30.93	peak	P	
10	4.8840	2.50	9.57	12.07	46.00	-33.93	AVG	P	
11	20.6250	12.44	10.00	22.44	60.00	-37.56	peak	P	
12	20.6250	-0.44	10.00	9.56	50.00	-40.44	AVG	P	

Test Plots and Data of Conducted Emissions	
Tested Model:	
Tested Mode:	TM1
Test Voltage:	AC 230V/50Hz
Test Power Line:	Live
Remark:	



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1860	23.50	9.40	32.90	64.21	-31.31	peak	P	
2	0.1860	12.63	9.40	22.03	56.68	-34.65	AVG	P	
3	0.3525	22.99	9.58	32.57	58.90	-26.33	peak	P	
4	0.3525	10.95	9.58	20.53	49.77	-29.24	AVG	P	
5 *	0.8745	24.95	9.57	34.52	56.00	-21.48	peak	P	
6	0.8745	13.63	9.57	23.20	46.00	-22.80	AVG	P	
7	1.2705	22.71	9.63	32.34	56.00	-23.66	peak	P	
8	1.2705	11.76	9.63	21.39	46.00	-24.61	AVG	P	
9	3.3135	17.40	9.70	27.10	56.00	-28.90	peak	P	
10	3.3135	1.77	9.70	11.47	46.00	-34.53	AVG	P	
11	5.1810	15.17	9.76	24.93	60.00	-35.07	peak	P	
12	5.1810	0.00	9.76	9.76	50.00	-40.24	AVG	P	

4. Radiated Disturbance

4.1 Standard and Limit

According to the standard EN 55014-1 Clause 4.3.4, Table 9, limit of radiated emissions for main operation and battery operation as below:

Table 9 – Radiated disturbance limits and testing methods – 30 MHz to 1 000 MHz

Testing method	Basic standard	Frequency range MHz	Limit [a] Quasi-peak dBμV/m	Remarks
OATS or SAC [b]	CISPR 16-2-3	30 to 230 230 to 1 000	30 37	Measurement distance 10 m
FAR [c]	CISPR 16-2-3	30 to 230 230 to 1 000	42 to 35 [d] 42	Measurement distance 3 m
FAR [c]	IEC 61000-4-22	30 to 230 230 to 1 000	42 to 35 [d] 42	Measurement distance 3 m
TEM-Waveguide [e]	IEC 61000-4-20	30 – 230 230 – 1 000	30 37	–

a The lower limit is applies at the transition frequency.

b Measurements may be made at closer distance, down to 3 m. An inverse proportionality factor of 20 dB per decade shall be used to normalize the measured data to the specified distance for determining the limit. in this case the recommendations of the CISPR basic standards shall be considered when testing large EUT at frequency approaching 30 MHz, due to near field effects.

c All equipment shall be measured within the test volume as described in 5.3.4.3 and shown in Figures 12 to 19.

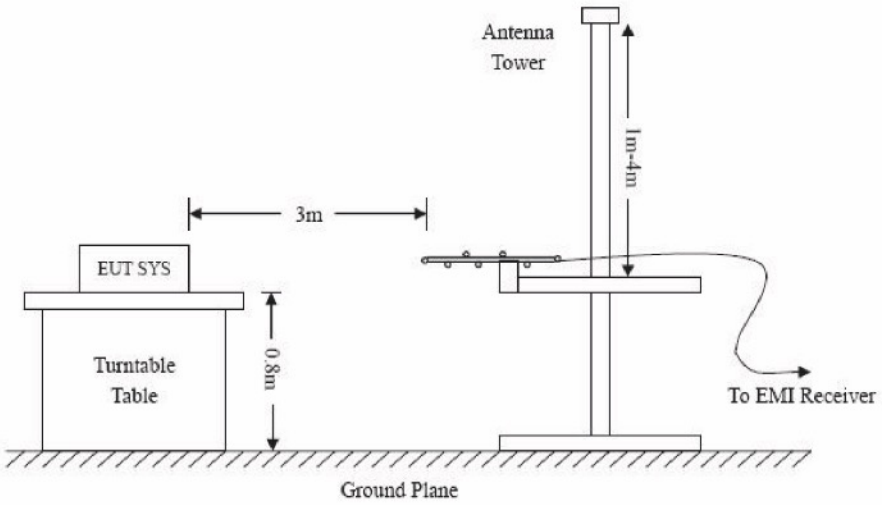
d Decreasing linearly with the logarithm of the frequency.

e The TEM waveguide method shall be limited to battery operated EUT without cables attached and with a maximum size according to 6.2 of IEC 61000-4-20:2010 (the largest dimension of the enclosure is equal to the wavelength at the maximum measurement frequency, 300 mm at 1 GHz).

The test report shall state which test method was used and which limits were applied.

4.2 Test Procedure

Test is conducting under the description of EN55014-1 Clause 5, radiated emissions set-up and measurements.



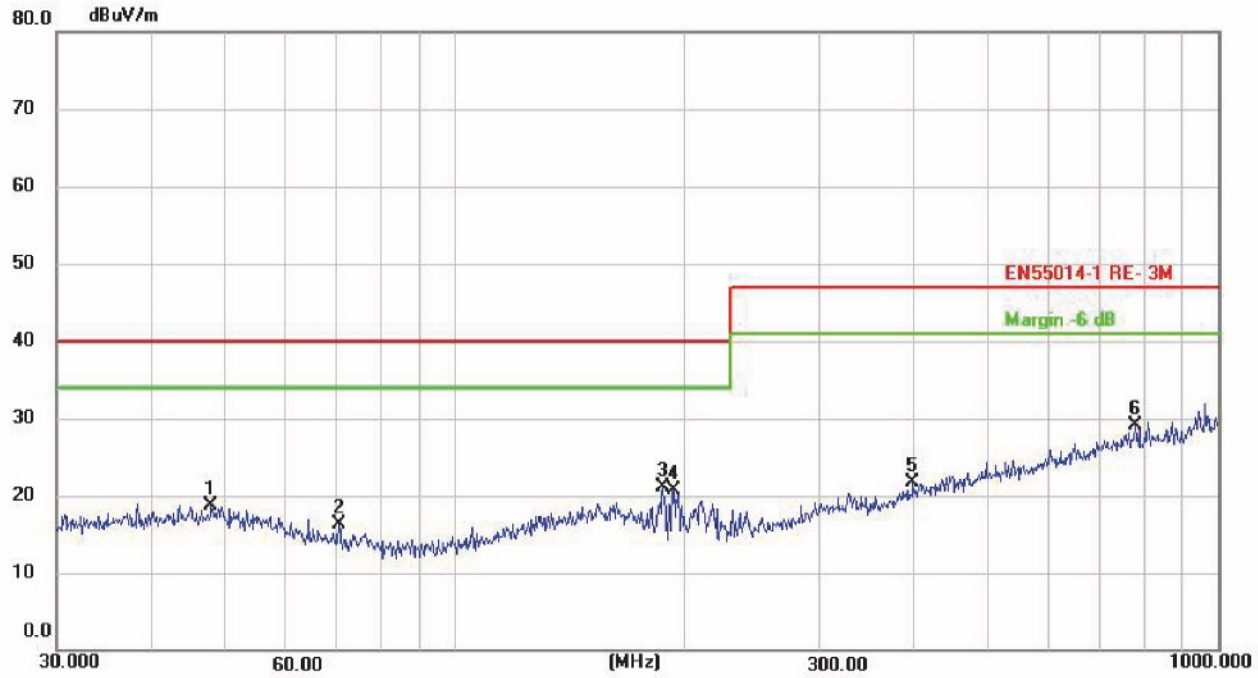
Test Setup Block Diagram

4.3 Test Data and Results

Based on all tested data, the EUT complied with the EN 55014-1 standard limit for a household appliance, and with the worst case as below:

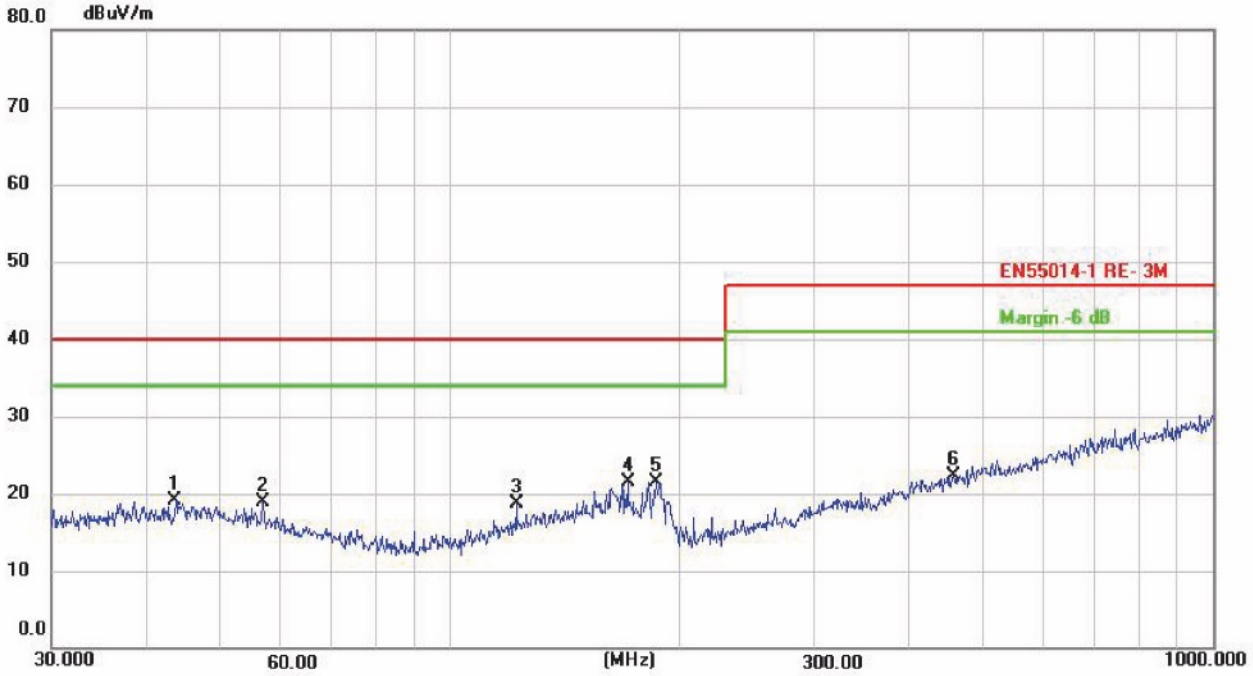
Remark: Level = Reading + Factor, Margin = Level - Limit

Test Plots and Data of Radiated Emissions	
Tested Model:	
Tested Mode:	TM1
Test Voltage:	AC 230V/50Hz
Test Antenna Polarization:	Horizontal
Remark:	



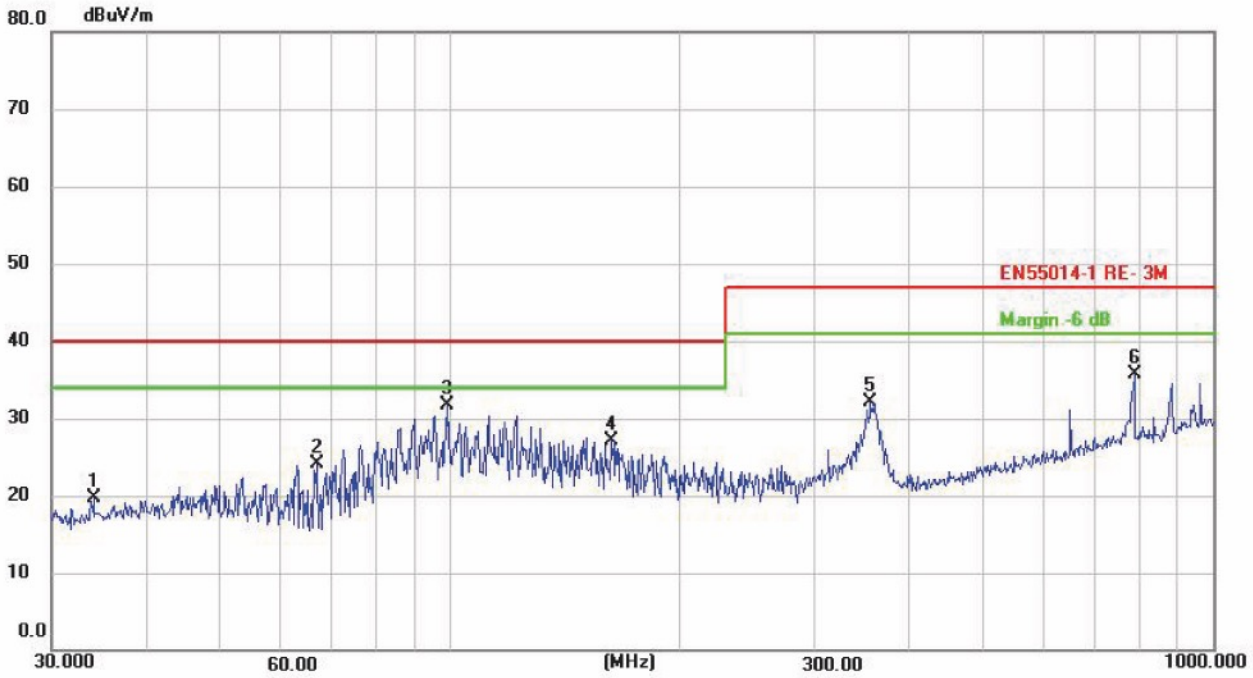
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	47.8260	27.03	-8.33	18.70	40.00	-21.30	peak	100	21	P	
2	70.3365	28.07	-11.75	16.32	40.00	-23.68	peak	100	348	P	
3	187.0958	32.02	-10.99	21.03	40.00	-18.97	peak	100	5	P	
4	193.0945	32.06	-11.44	20.62	40.00	-19.38	peak	100	348	P	
5	397.6334	27.29	-5.66	21.63	47.00	-25.37	peak	100	21	P	
6 *	776.8778	27.95	1.22	29.17	47.00	-17.83	peak	100	186	P	

Test Plots and Data of Radiated Emissions	
Tested Model:	
Tested Mode:	TM1
Test Voltage:	AC 230V/50Hz
Test Antenna Polarization:	Vertical
Remark:	



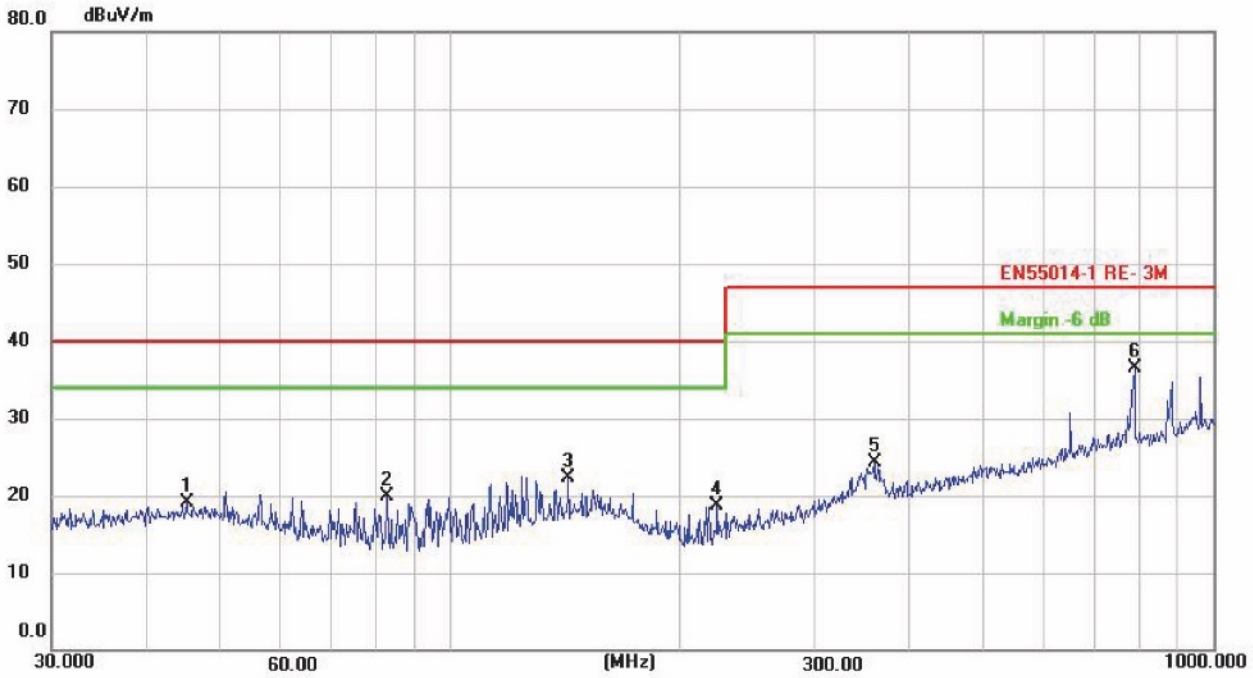
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	43.6584	27.35	-8.27	19.08	40.00	-20.92	peak	100	37	P	
2	56.7917	28.40	-9.44	18.96	40.00	-21.04	peak	100	320	P	
3	121.9755	28.25	-9.56	18.69	40.00	-21.31	peak	100	186	P	
4 *	170.7926	30.45	-8.90	21.55	40.00	-18.45	peak	100	37	P	
5	186.4409	32.41	-10.96	21.45	40.00	-18.55	peak	100	37	P	
6	457.5073	26.59	-4.34	22.25	47.00	-24.75	peak	100	131	P	

Test Plots and Data of Radiated Emissions	
Tested Model:	
Tested Mode:	TM2
Test Voltage:	DC 3.7V
Test Antenna Polarization:	Horizontal
Remark:	



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	34.0365	28.69	-9.06	19.63	40.00	-20.37	peak	200	10	P	
2	66.7325	35.19	-11.13	24.06	40.00	-15.94	peak	200	10	P	
3 *	99.1797	43.94	-12.28	31.66	40.00	-8.34	peak	200	10	P	
4	162.6106	35.11	-8.10	27.01	40.00	-12.99	peak	200	10	P	
5	355.4273	39.28	-7.19	32.09	47.00	-14.91	peak	100	81	P	
6	787.8513	34.30	1.36	35.66	47.00	-11.34	peak	200	37	P	

Test Plots and Data of Radiated Emissions	
Tested Model:	
Tested Mode:	TM2
Test Voltage:	DC 3.7V
Test Antenna Polarization:	Vertical
Remark:	



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	45.0583	27.34	-8.26	19.08	40.00	-20.92	peak	100	10	P	
2	82.6482	32.73	-12.92	19.81	40.00	-20.19	peak	100	10	P	
3	142.8243	30.41	-8.08	22.33	40.00	-17.67	peak	100	10	P	
4	223.7334	30.22	-11.55	18.67	40.00	-21.33	peak	100	10	P	
5	359.1860	31.34	-7.05	24.29	47.00	-22.71	peak	100	58	P	
6 *	787.8513	35.09	1.36	36.45	47.00	-10.55	peak	100	24	P	

5. Harmonic Current Emissions

5.1 Standard and Limit

According to the standard EN IEC 61000-3-2 Clause 7.1, limits for class B equipment.

5.2 Test Procedure

Test is conducting under the description of EN IEC 61000-3-2.

5.3 Test Data and Results

According to Clause 7 of EN IEC 61000-3-2, the rated power of the EUT is less than 75W, belong to equipment with a rated power of 75W or less, therefore limits are not specified in this edition of the standards. It is deem to full fit the requirements of the standards.

6. Voltage Fluctuation and Flicker

6.1 Standard and Limit

According to the standard EN 61000-3-3 Clause 5.

6.2 Test Procedure

Test is conducting under the description of EN 61000-3-3.

6.3 Test Data and Results

According to clause 6.1 of EN 61000-3-3, tests need not be made on equipment which is unlikely to produce significant voltage fluctuations or flicker.

7. Electrostatic Discharges (ESD)

7.1 Standard and Limit

According to the standard EN 55014-2 Clause 5.1, Table 1, Limit as below:

Test Specifications	Test Level	Performance Criterion
Air Discharge	8kV	B
Contact Discharge	4kV	B

7.2 Test Procedure

According to the standard EN 55014-2 Clause 5.1, Test is conducting under the description of IEC 61000-4-2.

7.3 Test Results

Air Discharge	Test Level (kV)							
Test Points	-2	+2	-4	+4	-8	+8	-15	+15
Buttons	A	A	A	A	A	A	-	-
Slots	A	A	A	A	A	A	-	-
LED	A	A	A	A	A	A	-	-
Type-C Port	A	A	A	A	A	A	-	-
Screen	A	A	A	A	A	A	-	-
Contact Discharge	Test Level (kV)							
Test Points	-2	+2	-4	+4	-6	+6	-8	+8
HCP	A	A	A	A	-	-	-	-
VCP	A	A	A	A	-	-	-	-

8. Continuous Radiated Disturbances (RS)

8.1 Standard and Limit

According to the standard EN 55014-2 Clause 5.5, Table 11, Limit as below:

Test Specifications	Test Level	Performance Criterion
80MHz-6000MHz	3V/m	A

8.2 Test Procedure

According to the standard EN 55014-2 Clause 5.5, Test is conducting under the description of IEC 61000-4-3.

8.3 Test Results

Frequency step: 1% of fundamental
Dwell time: 1 second
Modulation: AM by 1kHz sine wave with 80% modulation depth

Frequency Range	EM Field	Polarization	Front	Rear	Left	Right
80MHz-1GHz	3V/m	Horizontal	A	A	A	A
80MHz-1GHz	3V/m	Vertical	A	A	A	A

9. Electrical Fast Transients (EFT)

9.1 Standard and Limit

According to the standard EN 55014-2 Clause 5.2, Table 3 and 4, Limit as below:

Test Specifications	Test Level (5/50ns)	Performance Criterion
AC Power Port	1kV	B
DC Power Port	0.5kV	B

9.2 Test Procedure

According to the standard EN 55014-2 Clause 5.2, Test is conducting under the description of IEC 61000-4-4.

9.3 Test Results

Test Port		Test Level (kV)					
		+0.5	-0.5	+1.0	-1.0	+2.0	-2.0
Power Port (AC Power Supply)	L (Live)	A	A	B	B	-	-
	N (Neutral)	A	A	B	B	-	-
	G (Ground)	-	-	-	-	-	-
	L + N	A	A	B	B	-	-
	L + G	-	-	-	-	-	-
	N + G	-	-	-	-	-	-
	L + N + G	-	-	-	-	-	-
Power Port (DC Power Supply)	P (Positive)	-	-	-	-	-	-
	N (Negative)	-	-	-	-	-	-
	P + N	-	-	-	-	-	-

10. Surges

10.1 Standard and Limit

According to the standard EN 55014-2 Clause 5.6, Table 12, Limit as below:

Test Specifications	Test Level (1.2/50us)	Performance Criterion
Line to Line	1kV	B
Line to Ground	2kV	B

10.2 Test Procedure

According to the standard EN 55014-2 Clause 5.6, Test is conducting under the description of IEC 61000-4-5.

10.3 Test Results

Surges Test Port		Test Level (kV)					
		+0.5	-0.5	+1.0	-1.0	+2.0	-2.0
AC Power Port	L – N	A	A	A	A	-	-
	L – G	-	-	-	-	-	-
	N – G	-	-	-	-	-	-

11. Continuous Conducted Disturbances (CS)

11.1 Standard and Limit

According to the standard EN 55014-2 Clause 5.3 and clause 5.4, Table 6, 7, 9 and 10 for DC and AC ports, Limit as below:

Test Specifications	Test Port	Test Level	Performance Criterion
0.15MHz-230MHz	DC Port	1V	A
	AC Port	3V	A
0.15MHz-80MHz	DC Port	1V	A
	AC Port	3V	A

11.2 Test Procedure

According to the standard EN 55014-2 Clause 5.3 and clause 5.4, Test is conducting under the description of IEC 61000-4-6.

11.3 Test Results

Sweep frequency range: 150 kHz - 80 MHz
Frequency step: 1% of fundamental
Dwell time: 1 second

Test Port	Test Level	Modulation	Result
AC Power Port	3V	1kHz, 80% AM	A
DC Power Port	1V	1kHz, 80% AM	-

12. Voltage Dips and Interruptions

12.1 Standard and Limit

According to the standard EN 55014-2 Clause 5.7, Table clause 4.2 and 4.3, Limit as below:

Voltage Dips in % U_T	Number of Cycles for 50Hz	Performance Criterion
100	0.5	C
60	10	C
30	25	C

12.2 Test Procedure

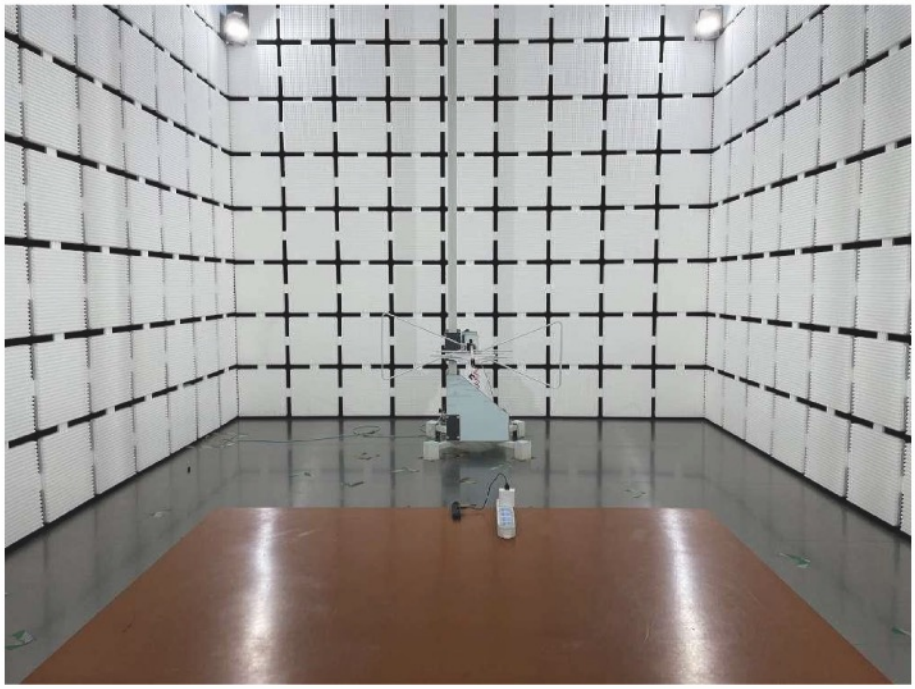
According to the standard EN 55014-2 Clause 5.7, Test is conducting under the description of IEC 61000-4-11.

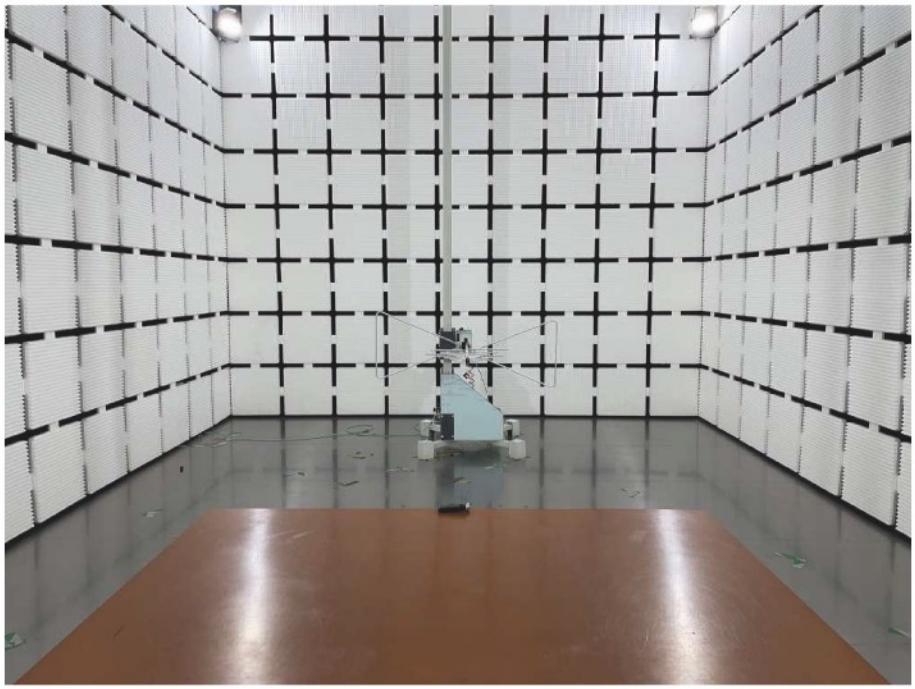
12.3 Test Results

Not applicable

Annex A. Test Photos

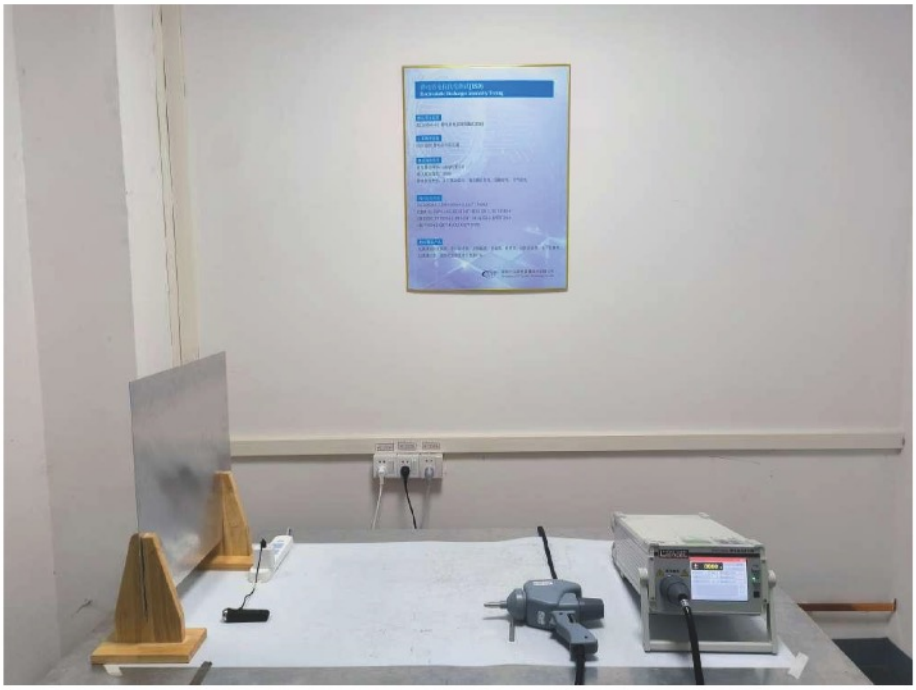
Radiated Emission Test View



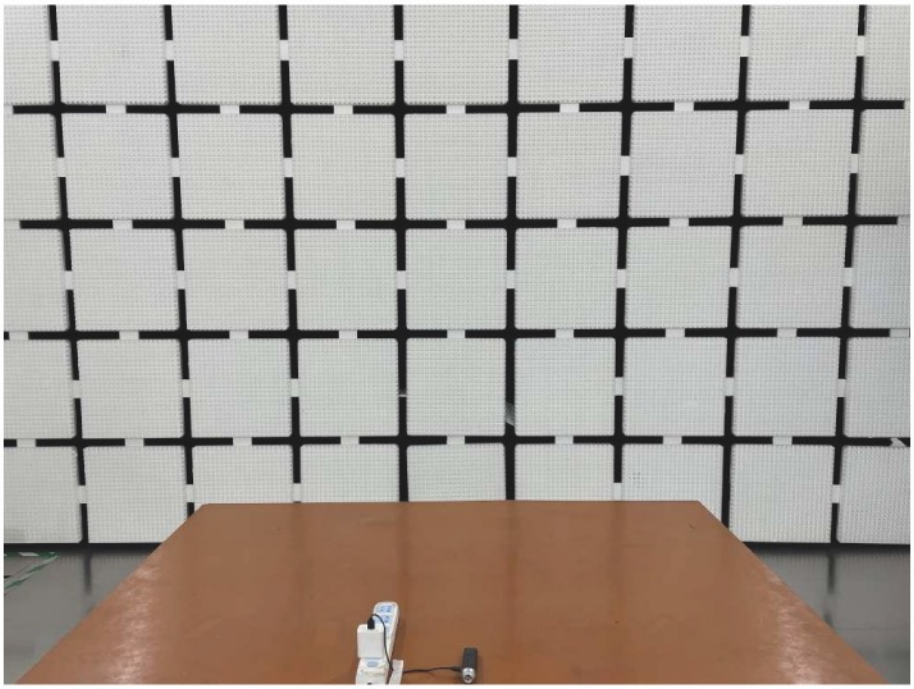


Conducted Emission Test View

ESD Test View

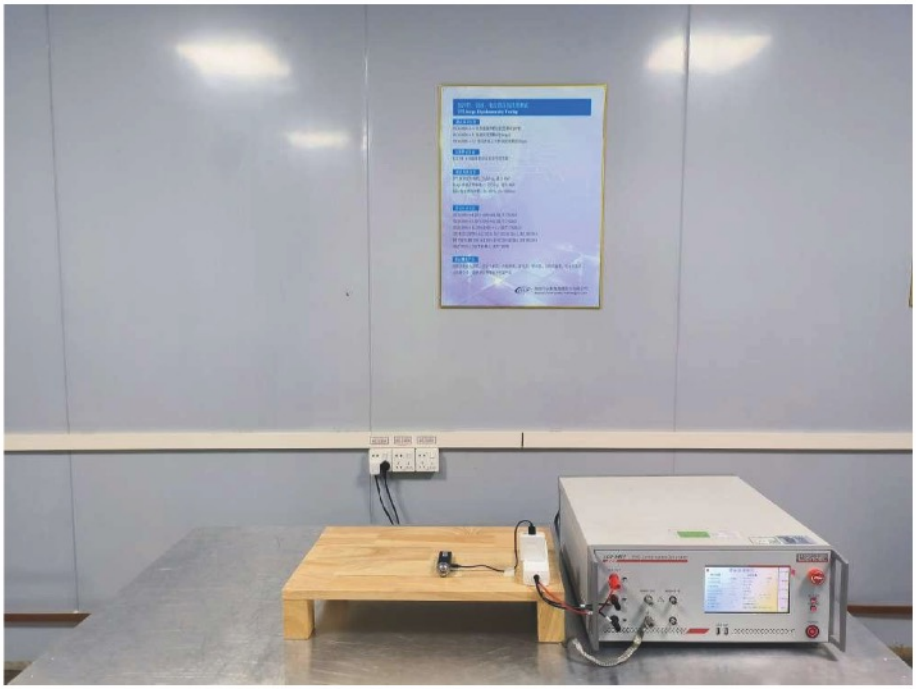


RS Test View



CS Test View

EFT/Surge Test View

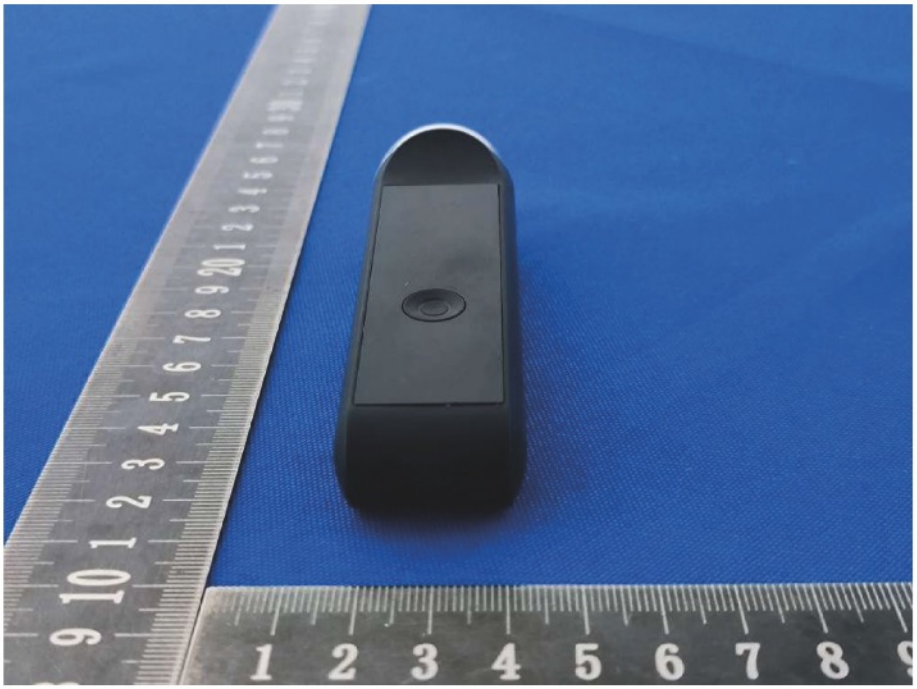


Annex B. EUT Photos

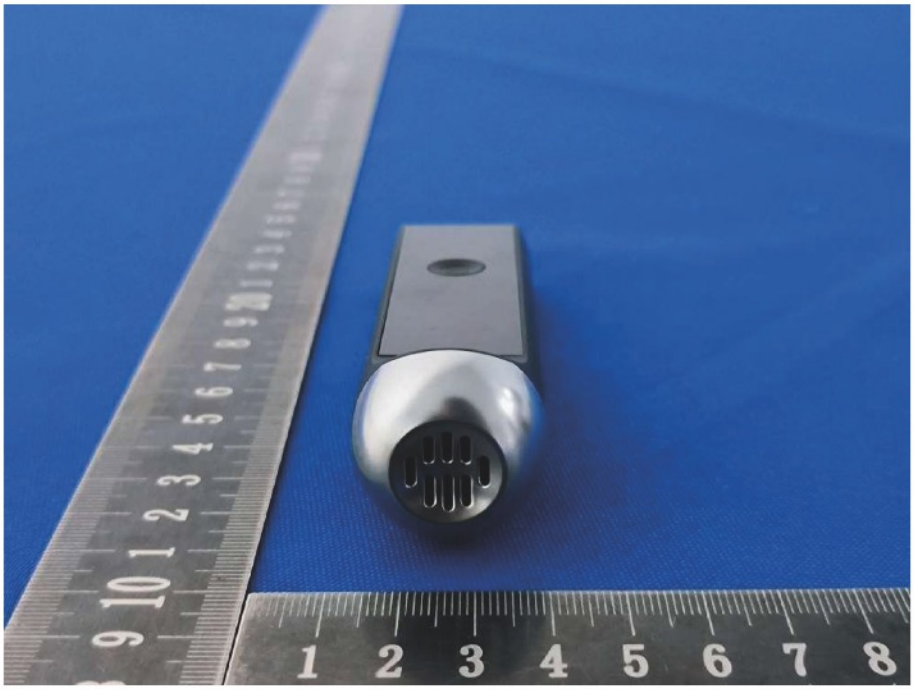
EUT View 1

EUT View 2

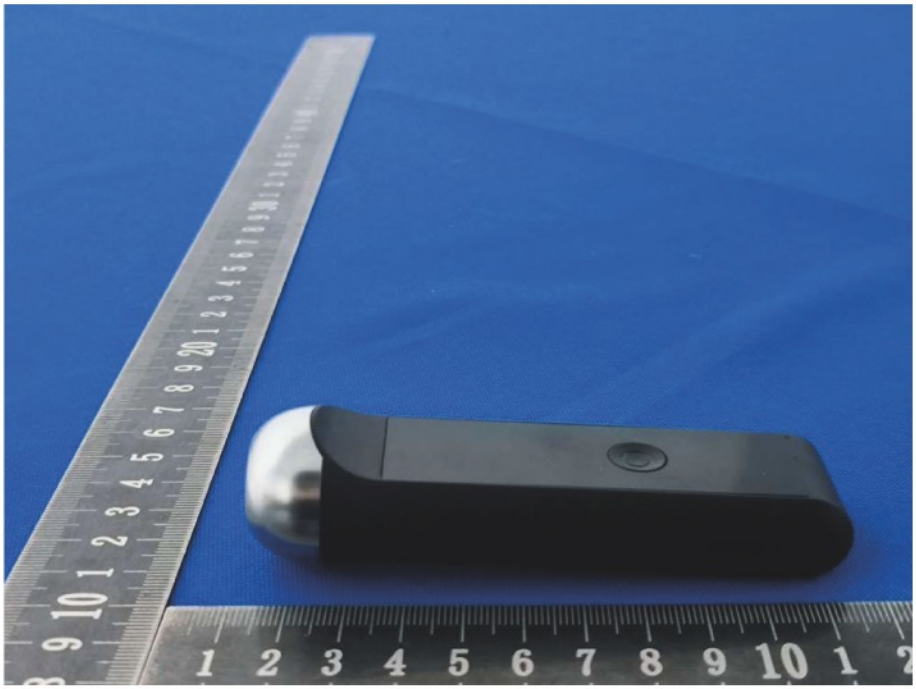
EUT View 3



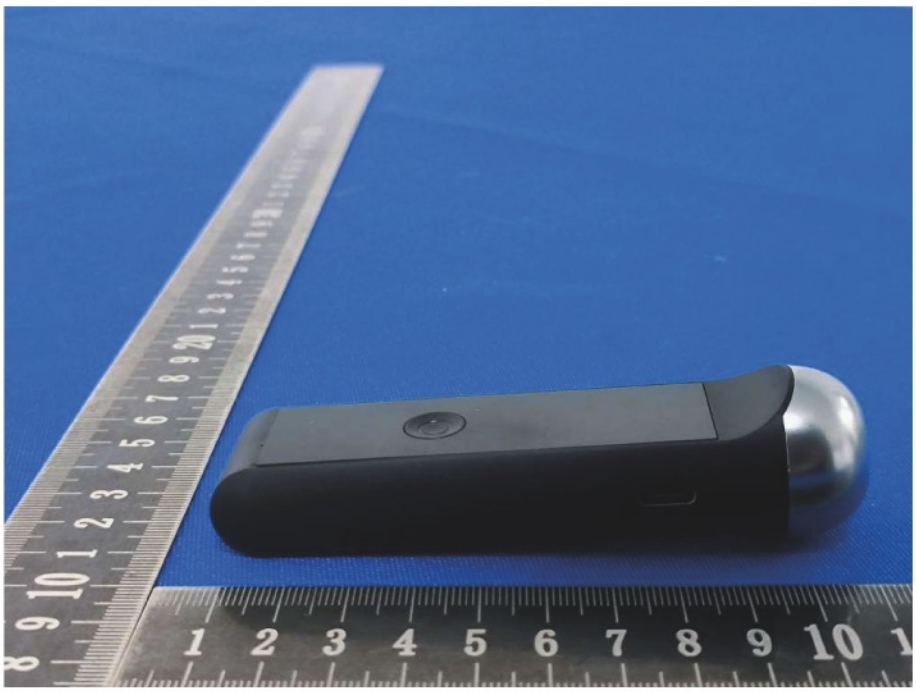
EUT View 4



EUT View 5



EUT View 6



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