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Report No.: SHEM170500298101

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TEST REPORT

Application No.: SHEM1705002981TX
Applicant: Suzhou Armocon Technology Co., Ltd
Address of Applicant: NO. 77 Suhong Middle Road Suzhou Industry Park
Manufacturer: Suzhou Armocon Technology Co., Ltd
Address of Manufacturer: NO. 77 Suhong Middle Road Suzhou Industry Park
Factory: Suzhou Armocon Technology Co., Ltd
Address of Factory: NO. 77 Suhong Middle Road Suzhou Industry Park
Equipment Under Test (EUT):
EUT Name: Handheld Massager
Model No.: Smart Wand (Medium)
Trade mark: LELO
Standards: EN 55014-1:2006 +A1:2009 +A2:2011, EN 61000-3-2:2014
EN 61000-3-3:2013, EN 55014-2:2015
Date of Receipt: 2017-05-27
Date of Test: 2017-05-26 to 2017-05-31
Date of Issue: 2017-06-06

Test Result :	Pass*
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* In the configuration tested, the EUT complied with the standards specified above.

The CE mark as shown below can be used, under the responsibility of the manufacturer, after completion of an EU Declaration of Conformity and compliance with all relevant EU Directives.



Parlam Zhan
E&E Section Manager



The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.

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Revision Record				
Version	Chapter	Date	Modifier	Remark
00		2017-06-06		Original

Authorized for issue by:			
Tested By		2017-05-26	
	Leo_xu /Project Engineer	Date	
Checked By		2017-06-03	
	Zenger_zhang /Reviewer	Date	



2 Test Summary

Emission Part				
Item	Standard	Method	Requirement	Result
Conducted Disturbance at Mains Terminals(150kHz-30MHz)	EN 55014-1:2006 +A1:2009 +A2:2011	CISPR 16-2-1	N/A	Pass
Radiated Disturbance(30MHz-1GHz)	EN 55014-1:2006 +A1:2009 +A2:2011	CISPR 16-2-3	N/A	Pass
Harmonic Current Emission	EN 61000-3-2:2014	EN 61000-3-2:2014	Class A	N/A*
Voltage Fluctuations and Flicker	EN 61000-3-3:2013	EN 61000-3-3:2013	Clause 5 of EN 61000-3-3	Pass
Immunity Part				
Item	Standard	Method	Requirement	Result
Electrostatic Discharge	EN 55014-2:2015	EN 61000-4-2:2009	4kV Contact Discharge 8kV Air Discharge	Pass
Radiated Immunity(80MHz-1GHz)	EN 55014-2:2015	EN 61000-4-3:2006+A1:2008+A2:2010	3V/m, 80%, 1kHz Amp. Mod.	Pass
Electrical Fast Transients/Burst at Power Port	EN 55014-2:2015	EN 61000-4-4:2012	1kV 5/50ns Tr/Td 5kHz Repetition Frequency	Pass
Surge at Power Port	EN 55014-2:2015	EN 61000-4-5:2014	1.2/50µs Tr/Td 1kV Line to Line 2kV Line to Ground	Pass
Voltage Dips and Interruptions	EN 55014-2:2015	EN 61000-4-11:2004	For 50Hz: 0 % UT for 0.5per 40 % UT for 10per 70 % UT for 25per For 60Hz: 0 % UT for 0.5per 40 % UT	Pass
Conducted Immunity at Power Port(150kHz-230MHz)	EN 55014-2:2015	EN 61000-4-6:2014	3Vrms (emf),80%,1kHz Amp. Mod.	Pass

N/A: Not applicable

N/A*: Please refer to Section 6.3 of this report for details.



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4 General Information

4.1 Details of E.U.T.

Power supply:	Adaptor: STC-A22050I700C35-C Input: 100-240V~, 50/60Hz, 200mA, Output: DC5V, 700mA
Test voltage:	AC 230V
Cable:	DC cable 1.6m

4.2 Description of Support Units

None.

4.3 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Conducted Emission at mains port using AMN	3.2dB (9kHz to 150kHz)
		3.0dB (150kHz to 30MHz)
	Conducted Emission at mains port using VP	1.9 dB(9kHz to 30MHz)
	Conducted Emission at telecommunication port using AAN	2.4 dB(150kHz to 30MHz)
2	Radiated Power	3.5dB
3	Radiated emission	4.4dB (30MHz-1GHz)
		4.6dB (1GHz-6GHz)
4	Radiated Immunity	1.64dB
5	Conducted Immunity	0.96dB
6	ESD	6 %
7	EFT (Electrical Fast Transients)	5 %
8	Surge Immunity	5 %
9	Voltage Dips and Interruptions	4 %
10	20 system	1.5dB
11	Temperature test	1 °C
12	Humidity test	3%
13	DC power test	0.5 %



4.4 Standards Applicable for Testing

Table 1 : Tests Carried Out Under EN 55014-1:2006 +A1:2009 +A2:2011

Item	Status
Conducted Disturbance at Mains Terminals(9kHz-30MHz)	×
Conducted Disturbance at Mains Terminals(150kHz-30MHz)	✓
Conducted Disturbance at Load Terminals and Additional Terminals	×
Discontinuous Disturbance(150kHz-30MHz)	×
Disturbance Power	×
Radiated Disturbance(30MHz-1GHz)	✓
Radiated Disturbance (Magnetic field Induced Current)(9kHz-30MHz)	×

Table 2 : Tests Carried Out Under EN 61000-3-2:2014

Item	Status
Harmonic Current Emission	×

Table 3 : Tests Carried Out Under EN 61000-3-3:2013

Item	Status
Voltage Fluctuations and Flicker	✓

Table 4 : Tests Carried Out Under EN 55014-2:2015

Item	Status
Electrostatic Discharge	✓
Radiated Immunity(80MHz-1GHz)	✓
Electrical Fast Transients/Burst at Power Port	✓
Electrical Fast Transients/Burst at Signal Port	×
Surge at Power Port	✓
Conducted Immunity at Power Port(150kHz-80MHz)	×
Conducted Immunity at Signal Port(150kHz-80MHz)	×
Voltage Dips and Interruptions	✓
Conducted Immunity at Power Port(150kHz-230MHz)	✓
Conducted Immunity at Signal Port(150kHz-230MHz)	×
Electrical Fast Transients/Burst at DC port	×
Conducted Immunity at DC Port(150kHz-80MHz)	×

× Indicates that the test is not applicable
✓ Indicates that the test is applicable



4.5 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. E&E Lab

588 West Jindu Road, Xinqiao, Songjiang, 201612 Shanghai, China

Tel: +86 21 6191 5666

Fax: +86 21 6191 5678

No tests were sub-contracted.

4.6 Test Facility

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

- **CNAS (No. CNAS L0599)**

CNAS has accredited SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

- **FCC – Registration No.: 402683**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered and fully described in a report filed with the Federal Communications Commission (FCC). The acceptance letter from the FCC is maintained in our files. Registration No.: 402683.

- **Industry Canada (IC) – IC Assigned Code: 8617A**

The 3m Semi-anechoic chamber of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 8617A-1.

- **VCCI (Member No.: 3061)**

The 3m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-3868,C-4336,T-2221,G-830 respectively.

4.7 Deviation from Standards

None

4.8 Abnormalities from Standard Conditions

None

4.9 Monitoring of EUT for All Immunity Test

Visual: working status



5 Equipment List

Conducted Disturbance at Mains Terminals(150kHz-30MHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
EMI test receiver	Rohde & Schwarz	ESR7	SHEM162-1	2016-12-29	2017-12-28
Line impedance stabilization network	SCHWARZBECK	NSLK8127	SHEM061-1	2016-12-29	2017-12-28
Line impedance stabilization network	EMCO	3816/2	SHEM019-1	2016-12-29	2017-12-28
Pulse limiter	Rohde & Schwarz	ESH3-Z2	SHEM029-1	2016-08-12	2017-08-11
Shielding Room	ZHONGYU	8*4*3M	SHEM079-2	2016-08-17	2017-08-16

Radiated Disturbance(30MHz-1GHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
EMI test receiver	Rohde & Schwarz	ESU40	SHEM051-1	2016-08-12	2017-08-11
CONTROLLER	INNCO	CO200	SHEM047-1	N/A	N/A
ANTENNA MAST	INNCO	MA400-EP	SHEM047-2	N/A	N/A
TURN DEVICE	INNCO	DE 3600-RH	SHEM047-3	N/A	N/A
Broadband UHF-VHF ANTENNA	SCHWARZBECK	VULB9168	SHEM048-1	2016-12-29	2017-12-28
Low Frequency Amplifier	CLAVIO	BDLNA-0001-412010	SHEM164-1	2016-08-12	2017-08-11
Semi/Fully Anechoic	ST	11*6*6M	SHEM078-2	2016-08-17	2017-08-16

Voltage Fluctuations and Flicker					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Harmonic&Flicker analyzer	AMETEK	PACS-1	SHEM024-2	2016-09-06	2017-09-05
AC Power Source 5KVA	AMETEK	5001iX	SHEM025-2	2016-09-06	2017-09-05

Electrostatic Discharge					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Electrostatic Discharge Simulator	TESEQ	NSG 437	SHEM041-1	2016-08-15	2017-08-14



Radiated Immunity(80MHz-1GHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Signal generator	Rohde & Schwarz	SMJ100A	SHEM141-1	2016-12-29	2017-12-28
Power Meter	Rohde & Schwarz	NRP	SHEM057-1	2016-12-29	2017-12-28
Power meter sensor	Rohde & Schwarz	NRP-Z91	SHEM057-2	2016-12-29	2017-12-28
Antenna	SCHWARZBECK	STLP9128D	SHEM130-1	N/A	N/A
Amplifier	MILMEGA	AS0840-55-55	SHEM133-1	N/A	N/A
Power meter sensor	Rohde & Schwarz	NRP-Z22	SHEM136-1	2016-08-12	2017-08-11
ElectroMagnetic Field Probe	ETS-Lindgren	HI-6113	SHEM134-1	2016-08-12	2017-08-11
Semi/Fully Anechoic	ST	11*6*6M	SHEM078-2	2016-08-17	2017-08-16

Electrical Fast Transients/Burst at Power Port					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Immunity Test System	EMC PARTNER	TRA3000 F-S-D-V	SHEM163-1	2016-12-29	2017-12-28
Matching resistors for EFT/burst generators	EM test	KW50	SHEM026-4	2016-12-29	2017-12-28
Matching resistors for EFT/burst generators	EM test	KW1000	SHEM026-5	2016-12-29	2017-12-28

Surge at Power Port					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Immunity Test System	EMC PARTNER	TRA3000 F-S-D-V	SHEM163-1	2016-12-29	2017-12-28

Voltage Dips and Interruptions					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Immunity Test System	EMC PARTNER	TRA3000 F-S-D-V	SHEM163-1	2016-12-29	2017-12-28

Conducted Immunity at Power Port(150kHz-230MHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Signal generator	Rohde & Schwarz	SMJ100A	SHEM141-1	2016-12-29	2017-12-28
PAMP Conducted RF test system	HAEFFLY	PAMP250	SHEM023-1	2016-12-29	2017-12-28
6dB Attenuator	HUAXIANG	TST-150-761	SHEM151-1	N/A	N/A
CDN impedance and K-factor	LUTHI	L-801 M1	SHEM023-5	2016-12-29	2017-12-28
CDN impedance and K-factor	LUTHI	L-801 M2/M3	SHEM023-6	2017-01-14	2018-01-13
Shielding Room	ZHONGYU	5*5*3M	SHEM079-6	2016-08-17	2017-08-16



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General used equipment					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Digital pressure meter	YONGZHI	DYM3-01	SHEM082-1	2017-03-03	2018-03-02
Temperature&humidity recorder	ShangHai weather meter work	ZJ 1-2B	SHEM042-1~6	2016-08-19	2017-08-18
Digital Multimeter	FLUKE	17B	SHEM043-5	2016-08-15	2017-08-14
Autoformer regulator	Guangzhou bao de	TDGC2-5KVA	SHEM150-1	N/A	N/A
Multi-purpose tong tester	FLUKE	316	SHEM001-1	2017-01-29	2018-01-28

6 Emission Test Results

6.1 Conducted Disturbance at Mains Terminals(150kHz-30MHz)

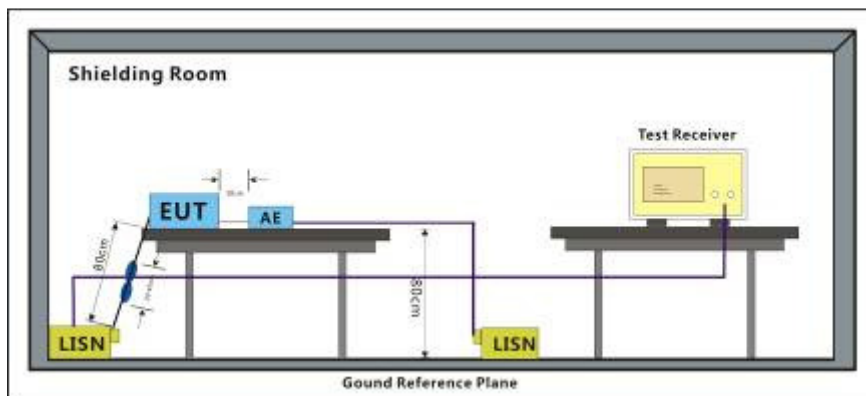
Test Requirement:	EN 55014-1:2006 +A1:2009 +A2:2011
Test Method:	CISPR 16-2-1
Frequency Range:	150kHz to 30MHz
Limit:	
0.15M-0.5MHz	66dB(μV)-56dB(μV) quasi-peak, 59dB(μV)-46dB(μV) average
0.5M-5MHz	56dB(μV) quasi-peak, 46dB(μV) average
5M-30MHz	60dB(μV) quasi-peak, 50dB(μV) average
Detector:	Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz

6.1.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C Humidity: 50 % RH Atmospheric Pressure: 1001 mbar
Test mode: a:Charging mode: keep EUT charging with adaptor

6.1.2 Test Setup Diagram

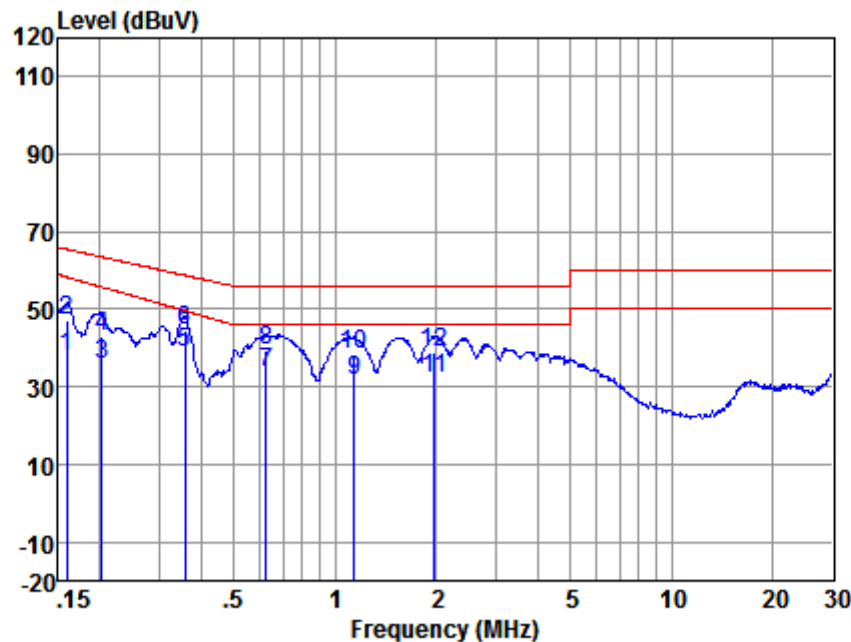


6.1.3 Measurement Data

An initial pre-scan was performed with peak detector. Quasi-Peak or Average measurement were performed at the frequencies with maximized peak emission were detected.



Mode:a:Live Line:

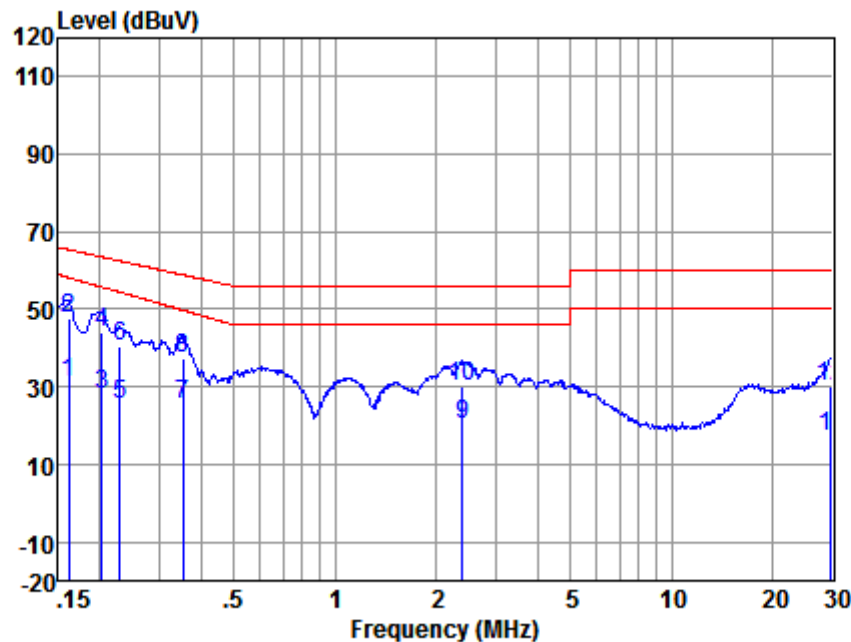


Site : chamber
Condition : LISN-L-2016
EUT/Project No: 2981TX
Test mode : a

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.159	28.02	0.06	9.81	37.89	58.37	-20.48	Average
2	0.159	37.38	0.06	9.81	47.25	65.52	-18.27	QP
3	0.202	25.70	0.09	9.81	35.60	55.80	-20.20	Average
4	0.202	33.33	0.09	9.81	43.23	63.54	-20.31	QP
5	0.358	29.15	0.09	9.81	39.05	49.62	-10.57	Average
6	0.358	34.75	0.09	9.81	44.65	58.78	-14.13	QP
7	0.624	23.79	0.10	9.82	33.71	46.00	-12.29	Average
8	0.624	29.72	0.10	9.82	39.64	56.00	-16.36	QP
9	1.141	21.82	0.08	9.84	31.74	46.00	-14.26	Average
10	1.141	28.51	0.08	9.84	38.43	56.00	-17.57	QP
11	1.980	22.00	0.08	9.85	31.93	46.00	-14.07	Average
12	1.980	28.82	0.08	9.85	38.75	56.00	-17.25	QP



Mode:a: Neutral Line:



Site : chamber
Condition : LISN-N-2016
EUT/Project No: 2981TX
Test mode : a

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.162	21.28	0.05	9.81	31.14	58.20	-27.06	Average
2	0.162	37.75	0.05	9.81	47.61	65.38	-17.77	QP
3	0.202	18.38	0.05	9.81	28.24	55.80	-27.56	Average
4	0.202	34.43	0.05	9.81	44.29	63.54	-19.25	QP
5	0.229	15.59	0.05	9.81	25.45	54.42	-28.97	Average
6	0.229	30.33	0.05	9.81	40.19	62.48	-22.29	QP
7	0.352	15.40	0.04	9.81	25.25	49.79	-24.54	Average
8	0.352	27.40	0.04	9.81	37.25	58.91	-21.66	QP
9	2.396	10.22	0.08	9.85	20.15	46.00	-25.85	Average
10	2.396	20.20	0.08	9.85	30.13	56.00	-25.87	QP
11	29.841	6.52	0.58	10.15	17.25	50.00	-32.75	Average
12	29.841	19.27	0.58	10.15	30.00	60.00	-30.00	QP

6.2 Radiated Disturbance(30MHz-1GHz)

Test Requirement:	EN 55014-1:2006 +A1:2009 +A2:2011
Test Method:	CISPR 16-2-3
Frequency Range:	30MHz to 1GHz
Measurement Distance:	3m
Limit:	
30MHz-230MHz	40 dB(μ V/m) quasi-peak
230MHz-1GHz	47 dB(μ V/m) quasi-peak
Detector:	Peak for pre-scan (120kHz resolution bandwidth) 30M to 1000MHz

6.2.1 E.U.T. Operation

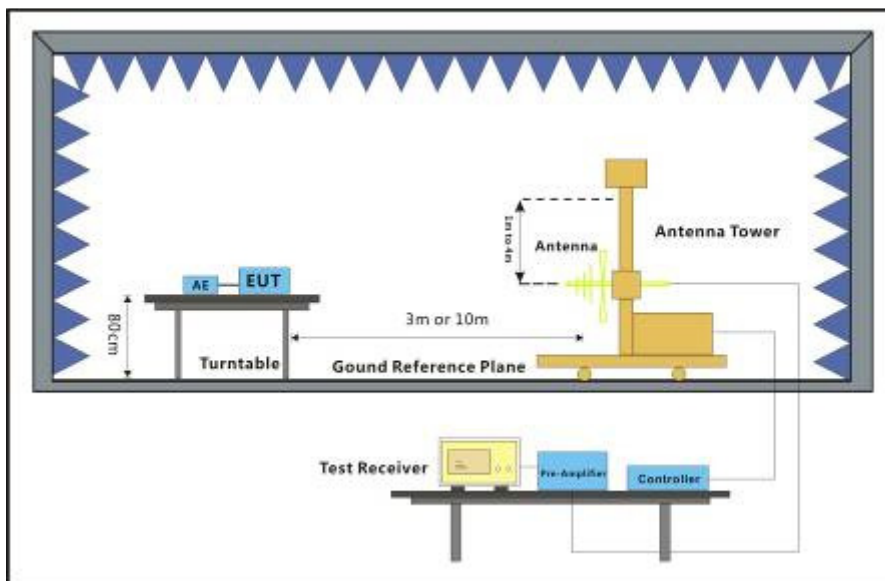
Operating Environment:

Temperature: 22 °C Humidity: 50 % RH Atmospheric Pressure: 1001 mbar

Test mode: a:Charging mode: keep EUT charging with adaptor

b:Running mode: keep EUT running.

6.2.2 Test Setup Diagram

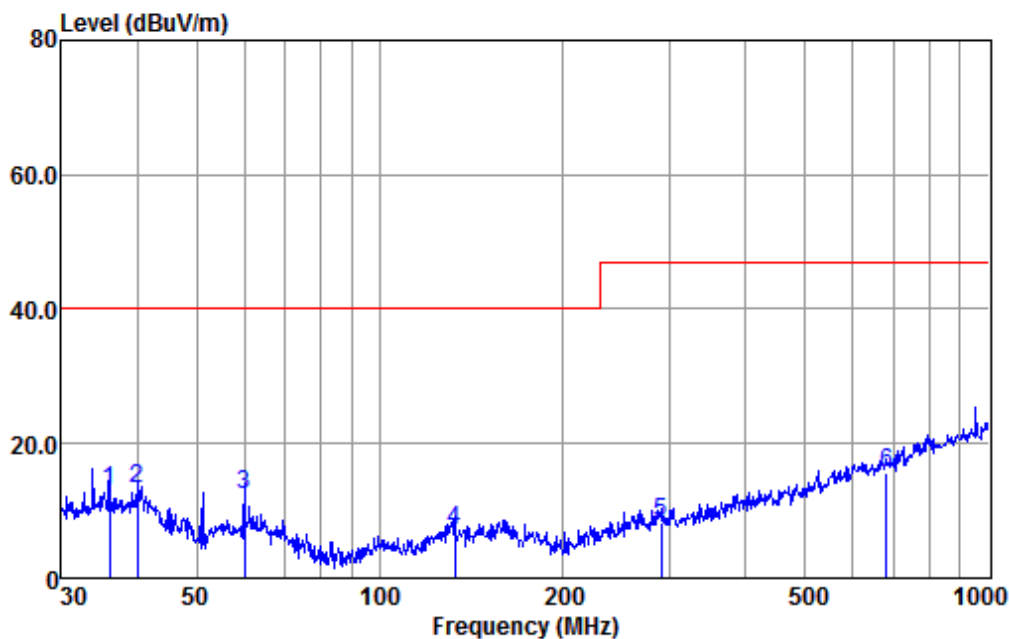


6.2.3 Measurement Data

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities.



Mode:a; Polarization:Horizontal

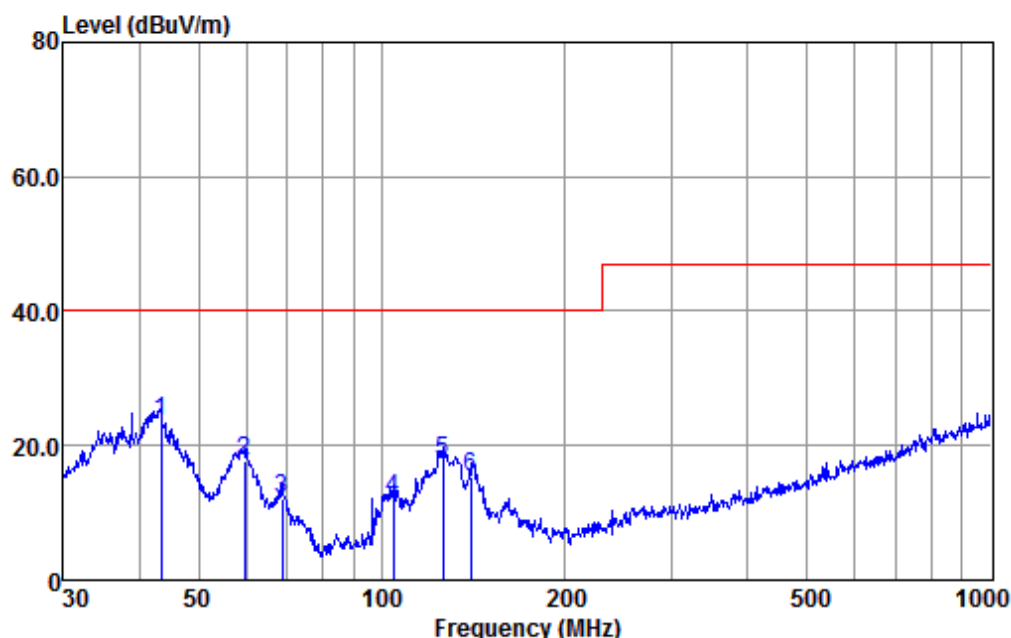


Condition : HORIZONTAL
EUT/Project: 2981TX
Test Mode : a

	Freq	ReadAntenna	Cable	Preamp		Limit	Over	
		Level	Factor	Loss	Factor	Level	Line	Limit
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	36.00	25.32	15.93	0.21	28.36	13.10	40.00	-26.90 QP
2 q	39.99	25.10	16.30	0.22	28.34	13.28	40.00	-26.72 QP
3	60.07	27.62	12.60	0.30	28.26	12.26	40.00	-27.74 QP
4	132.69	22.66	12.37	0.59	28.55	7.07	40.00	-32.93 QP
5	290.02	21.85	12.87	0.83	27.26	8.29	47.00	-38.71 QP
6	679.96	22.48	20.05	1.61	28.47	15.67	47.00	-31.33 QP



Mode:a; Polarization:Vertical



Condition : VERTICAL

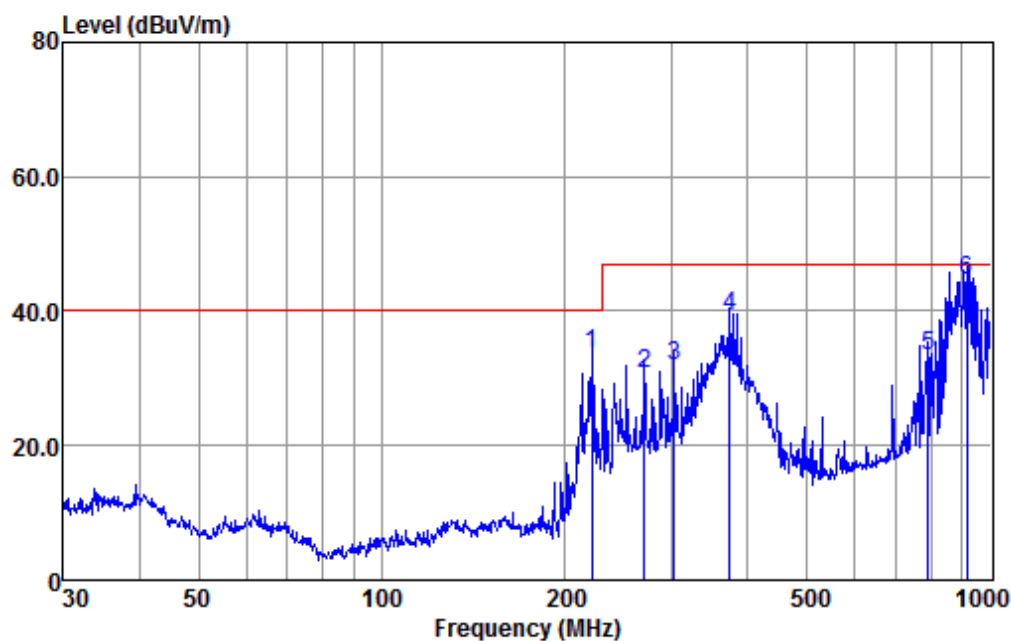
EUT/Project: 2981TX

Test Mode : a

		ReadAntenna		Cable Preamp			Limit	Over	
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1 q	43.51	37.58	14.16	0.23	28.33	23.64	40.00	-16.36	QP
2	59.44	33.10	12.48	0.30	28.26	17.62	40.00	-22.38	QP
3	68.63	28.52	11.56	0.33	28.22	12.19	40.00	-27.81	QP
4	104.54	30.23	9.55	0.47	28.21	12.04	40.00	-27.96	QP
5	126.33	33.89	11.83	0.56	28.52	17.76	40.00	-22.24	QP
6	140.34	31.84	11.33	0.60	28.50	15.27	40.00	-24.73	QP



Mode:b; Polarization:Horizontal



Condition : HORIZONTAL

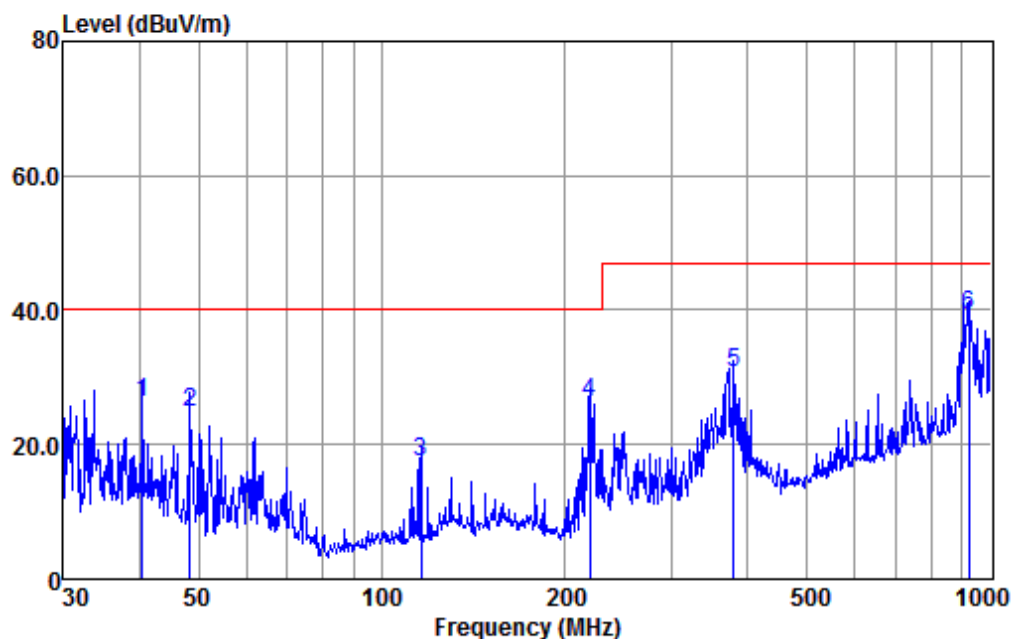
EUT/Project: 2981TX

Test Mode : b

	Freq	ReadAntenna	Cable	Preamp		Limit	Over	
		Level	Factor	Loss	Factor	Level	Line	Limit
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	221.39	49.91	10.35	0.73	27.39	33.60	40.00	-6.40 QP
2	270.37	44.86	12.22	0.80	27.19	30.69	47.00	-16.31 QP
3	302.48	45.32	13.25	0.84	27.42	31.99	47.00	-15.01 QP
4	373.31	51.50	14.64	0.95	27.72	39.37	47.00	-7.63 QP
5	790.62	37.76	21.77	2.05	28.27	33.31	47.00	-13.69 QP
6 q	916.07	47.25	22.88	2.49	28.07	44.55	47.00	-2.45 QP



Mode:b; Polarization:Vertical



Condition : VERTICAL

EUT/Project: 2981TX

Test Mode : b

	Freq	ReadAntenna	Cable	Preamp		Limit	Over	
		Level	Factor	Loss	Factor	Level	Line	Limit
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	40.42	38.34	16.03	0.22	28.34	26.25	40.00	-13.75 QP
2	48.50	41.43	11.40	0.25	28.31	24.77	40.00	-15.23 QP
3	116.13	35.51	9.85	0.52	28.38	17.50	40.00	-22.50 QP
4	219.84	42.63	10.28	0.72	27.39	26.24	40.00	-13.76 QP
5	378.58	42.70	14.73	0.96	27.79	30.60	47.00	-16.40 QP
6 q	922.52	41.91	22.96	2.49	28.07	39.29	47.00	-7.71 QP



6.3 Harmonic Current Emission

Test Requirement: EN 61000-3-2:2014

Test Method: EN 61000-3-2:2014

Frequency Range: 100Hz to 2kHz

There is no need for Harmonics test to be performed on this product (rated power is less than 75W) in accordance with EN 61000-3-2:2014.

For further details, please refer to Clause 7 of EN 61000-3-2 which states:

"For the following categories of equipment, limits are not specified in this standard.- equipment with a rated power of 75W or less, other than lighting equipment."

6.4 Voltage Fluctuations and Flicker

Test Requirement: EN 61000-3-3:2013

Test Method: EN 61000-3-3:2013

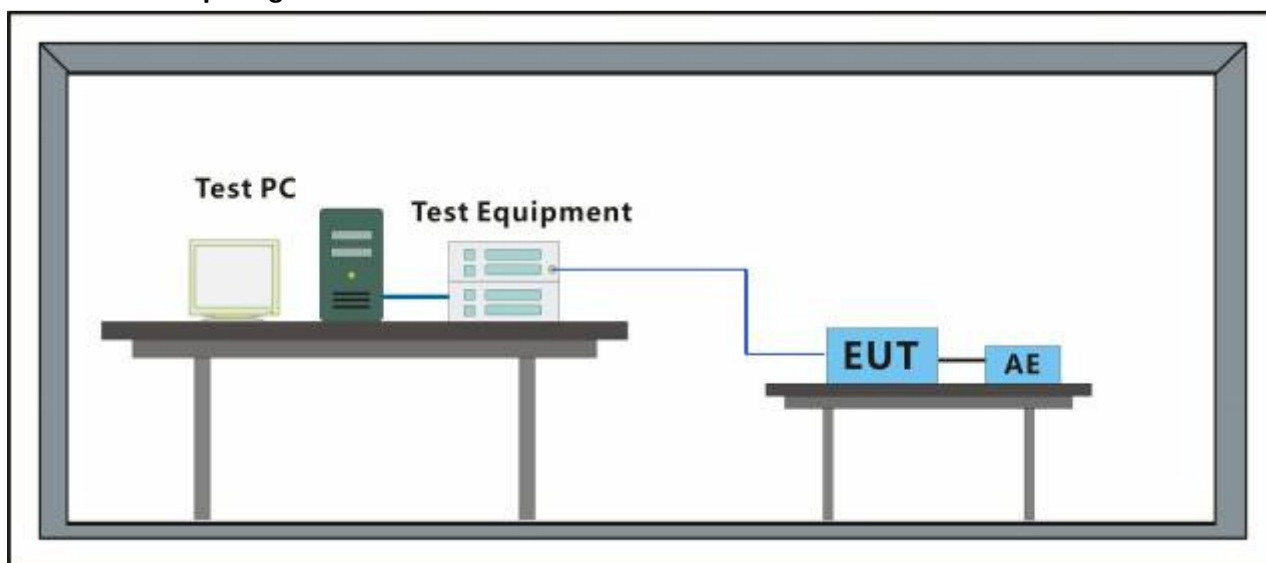
6.4.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C Humidity: 50 % RH Atmospheric Pressure: 1001 mbar

Test mode: a:Charging mode: keep EUT charging with adaptor

6.4.2 Test Setup Diagram



6.4.3 Measurement Data

Mode:a

Parameter values recorded during the test:

Vrms at the end of test (Volt):	229.84		
T-max (mS):	0	Test limit (mS):	500.0 Pass
Highest dc (%):	0.00	Test limit (%):	3.30 Pass
Highest dmax (%):	0.00	Test limit (%):	4.00 Pass
Highest Pst (10 min. period):	0.011	Test limit:	1.000 Pass
Highest Plt (2 hr. period):	0.008	Test limit:	0.650 Pass



7 Immunity Test Results

7.1 Performance Criteria Description in EN 55014-2:2015

Criterion A

The apparatus shall continue to operate as intended during the test. No degradation of performance or loss of function is allowed below a performance level (or 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

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.

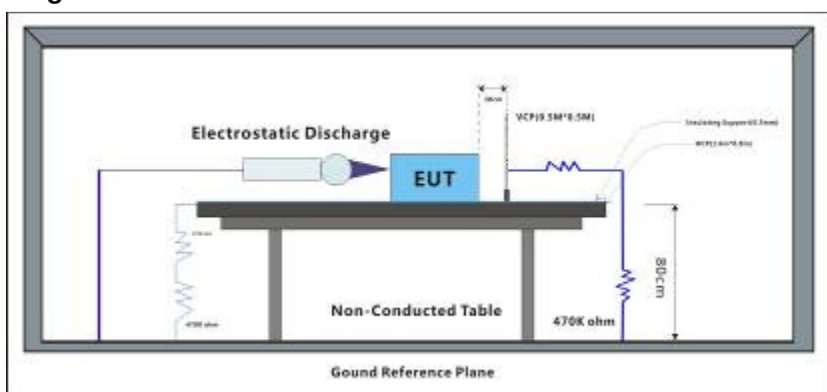
Criterion C

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.

7.2 Electrostatic Discharge

Test Requirement: EN 55014-2:2015
Test Method: EN 61000-4-2:2009
Performance Criterion: B
Discharge Impedance: 330Ω/150pF
Number of Discharge: Minimum 10 times at each test point
Discharge Mode: Single Discharge
Discharge Period: 1 second minimum

7.2.1 Test Setup Diagram



7.2.2 E.U.T. Operation

Operating Environment:

Temperature: 22 °C Humidity: 52 % RH Atmospheric Pressure: 1004 mbar
Test mode: a:Charging mode: keep EUT charging with adaptor
b:Running mode: keep EUT running.

7.2.3 Test Results:

Observations:

Test Point:

1. All insulated enclosure and seams.
2. All accessible metal parts of the enclosure.
3. All side

Discharge type	Level (kV)	Polarity	Test Point	Result / Observations
Air Discharge	8	+	1	A
Air Discharge	8	-	1	A
Contact Discharge	4	+	2	A
Contact Discharge	4	-	2	A
Horizontal Coupling	4	+	3	A
Horizontal Coupling	4	-	3	A
Vertical Coupling	4	+	3	A
Vertical Coupling	4	-	3	A

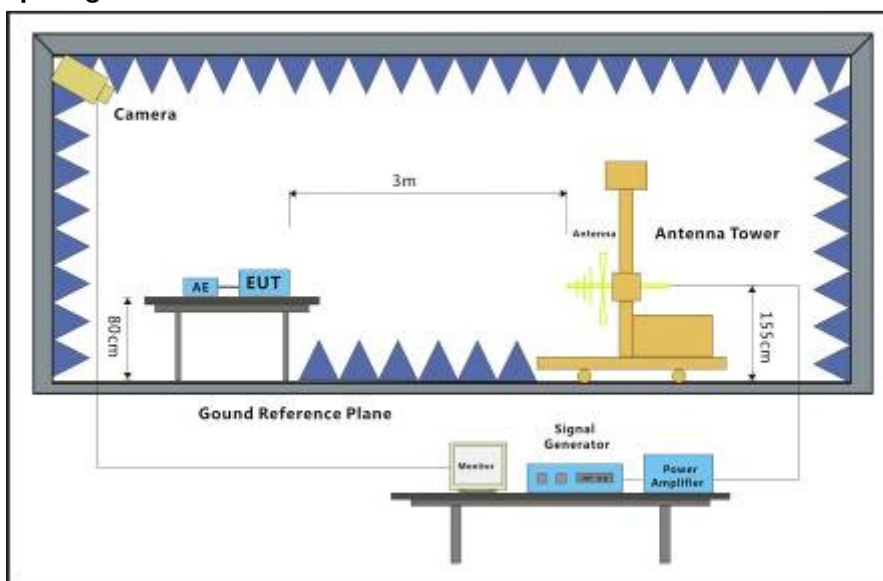
Results:

A: No degradation in the performance of the EUT was observed.

7.3 Radiated Immunity(80MHz-1GHz)

Test Requirement: EN 55014-2:2015
Test Method: EN 61000-4-3:2006+A1:2008+A2:2010
Performance Criterion: A
Frequency Range: 80MHz to 1GHz
Antenna Polarisation: Vertical and Horizontal
Modulation 1kHz,80% Amp. Mod,1% increment

7.3.1 Test Setup Diagram



7.3.2 E.U.T. Operation

Operating Environment:

Temperature: 22 °C Humidity: 50 % RH Atmospheric Pressure: 1001 mbar

Test mode: a:Charging mode: keep EUT charging with adaptor
b:Running mode: keep EUT running.

7.3.3 Test Results:

Frequency	Level (V/m)	EUT Face	Dwell time	Result / Observations
80MHz-1GHz	3	Front	2s	A
80MHz-1GHz	3	Back	2s	A
80MHz-1GHz	3	Left	2s	A
80MHz-1GHz	3	Right	2s	A
80MHz-1GHz	3	Top	2s	A
80MHz-1GHz	3	Underside	2s	A

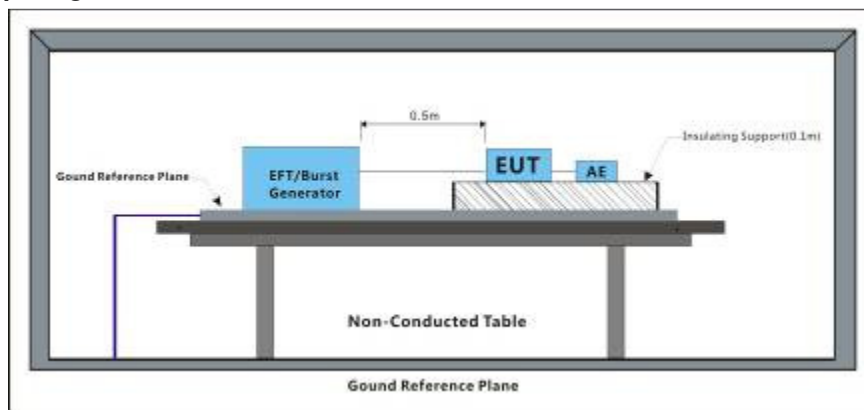
Results:

A: No degradation in the performance of the EUT was observed.

7.4 Electrical Fast Transients/Burst at Power Port

Test Requirement: EN 55014-2:2015
Test Method: EN 61000-4-4:2012
Performance Criterion: B
Repetition Frequency: 5kHz
Burst Period: 300ms
Test Duration: 2 minute per level & polarity

7.4.1 Test Setup Diagram



7.4.2 E.U.T. Operation

Operating Environment:

Temperature: 22 °C Humidity: 52 % RH Atmospheric Pressure: 1004 mbar

Test mode:
a: Charging mode: keep EUT charging with adaptor
b: Running mode: keep EUT running.

7.4.3 Test Results:

Test Line	Level (kV)	Polarity	CDN/Clamp	Result / Observations
AC power port	1	+	CDN	A
AC power port	1	-	CDN	A

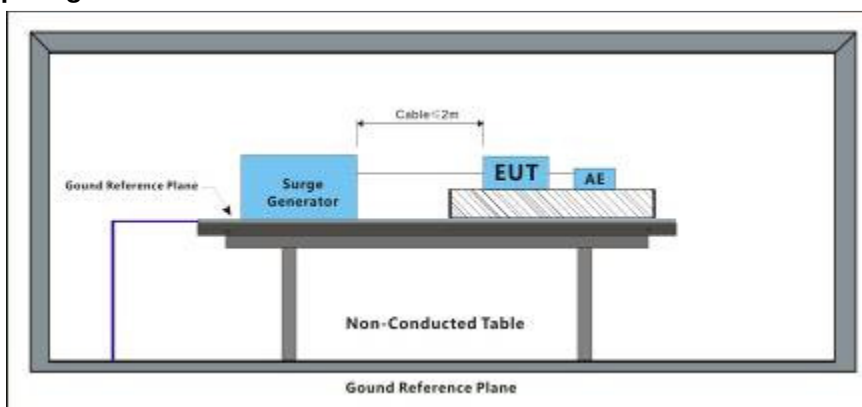
Results:

A: No degradation in the performance of the EUT was observed.

7.5 Surge at Power Port

Test Requirement: EN 55014-2:2015
Test Method: EN 61000-4-5:2014
Performance Criterion: B
Interval: 60s between each surge
No. of surges: 5 positive at 90°, 5 negative at 270°.

7.5.1 Test Setup Diagram



7.5.2 E.U.T. Operation

Operating Environment:

Temperature: 22 °C Humidity: 52 % RH Atmospheric Pressure: 1004 mbar

Test mode: a:Charging mode: keep EUT charging with adaptor
b:Running mode: keep EUT running.

7.5.3 Test Results:

Test Line	Level (kV)	Polarity	Phase (deg)	Result / Observations
L-N	1	+	90°	A
L-N	1	-	270°	A

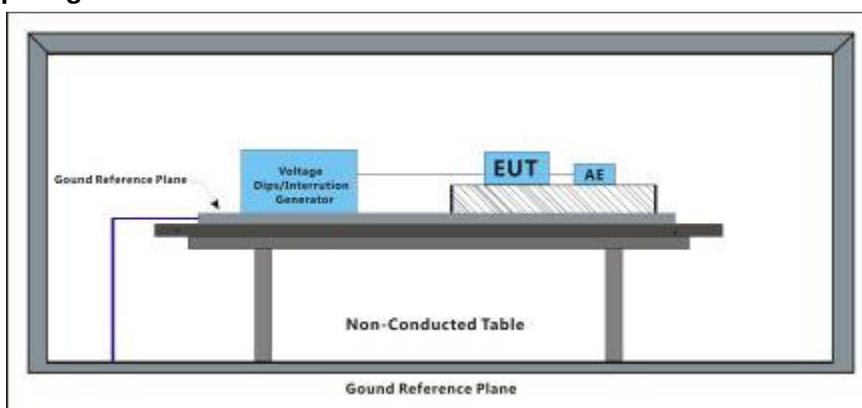
Results:

A: No degradation in the performance of the EUT was observed.

7.6 Voltage Dips and Interruptions

Test Requirement: EN 55014-2:2015
Test Method: EN 61000-4-11:2004
Performance Criterion: 0% of UT (Supply Voltage) for 0.5 Periods: C; 40% of UT for 10 Periods: C;
70% of UT for 25 Periods: C
No. of Dips / Interruptions: 3 per Level
Time between dropout 10s

7.6.1 Test Setup Diagram



7.6.2 E.U.T. Operation

Operating Environment:
Temperature: 22 °C Humidity: 52 % RH Atmospheric Pressure: 1004 mbar
Test mode: a:Charging mode: keep EUT charging with adaptor
b:Running mode: keep EUT running.

7.6.3 Test Results:

Level % UT	Phase (deg)	Duration	No. of Dips / Interruptions	Result / Observations
0	0°	0.5 Cycles	3	A
0	180°	0.5 Cycles	3	A
40	0°	10 Cycles	3	A
40	180°	10 Cycles	3	A
70	0°	25 Cycles	3	A
70	180°	25 Cycles	3	A

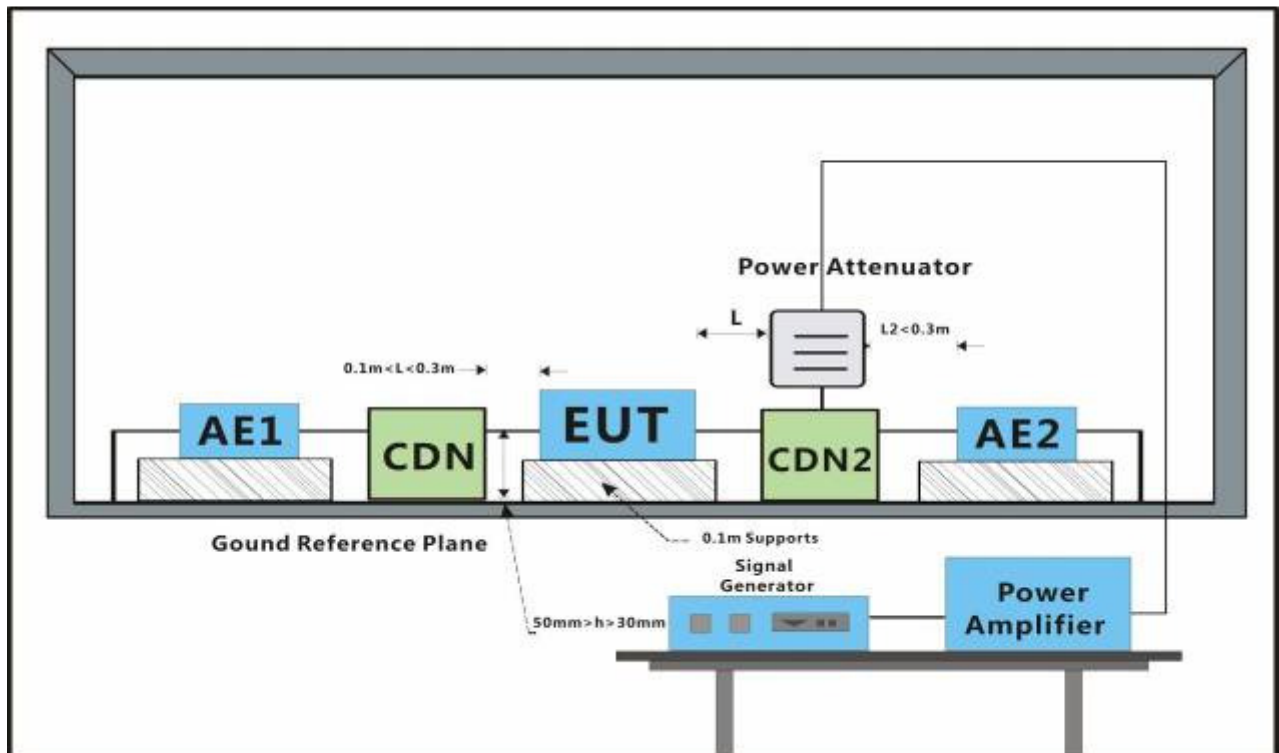
Results:

A: No degradation in the performance of the EUT was observed.

7.7 Conducted Immunity at Power Port(150kHz-230MHz)

Test Requirement: EN 55014-2:2015
Test Method: EN 61000-4-6:2014
Performance Criterion: A
Modulation: 80%, 1kHz Amplitude Modulation
Step Size 1%
Performance Criterion: A
Frequency Range: 0.15MHz to 230MHz
Modulation: 80%, 1kHz Amplitude Modulation
Step Size 1%

7.7.1 Test Setup Diagram



7.7.2 E.U.T. Operation

Operating Environment:

Temperature: 22 °C Humidity: 50 % RH Atmospheric Pressure: 1002 mbar

Test mode: a:Charging mode: keep EUT charging with adaptor
b:Running mode: keep EUT running.

7.7.3 Test Results:

Cable port	Level (Vrms)	CDN/Clamp	Dwell time	Result / Observations
AC power port	3	CDN	2s	A

Results:

A: No degradation in the performance of the EUT was observed.

8 Photographs

8.1 Conducted Disturbance at Mains Terminals(150kHz-30MHz) Test Setup



8.2 Radiated Disturbance(30MHz-1GHz) Test Setup





8.3 Voltage Fluctuations and Flicker Test Setup



8.4 Electrostatic Discharge Test Setup





8.5 Radiated Immunity(80MHz-1GHz) Test Setup



8.6 Electrical Fast Transients/Burst at Power Port Test Setup



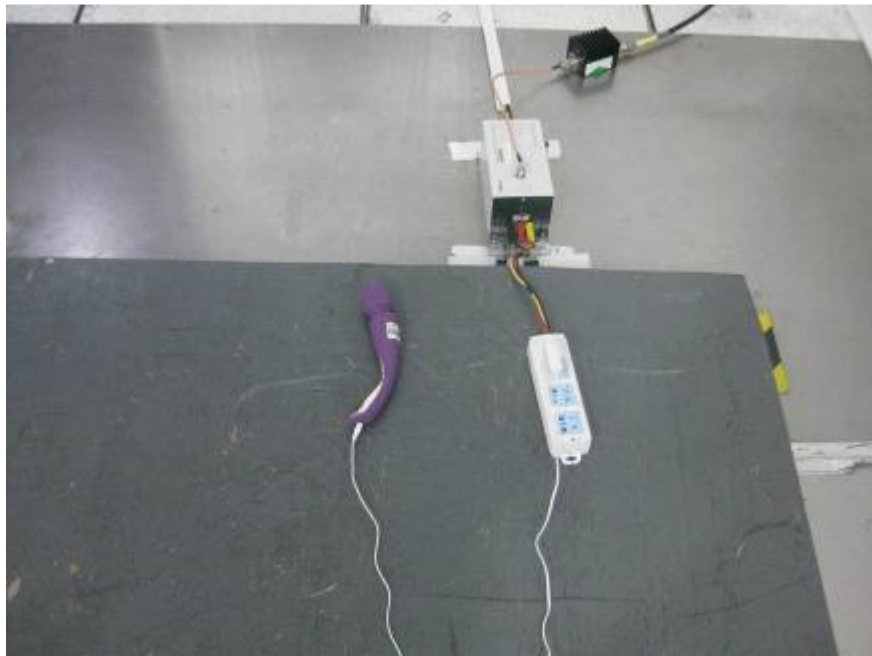
8.7 Surge at Power Port Test Setup



8.8 Voltage Dips and Interruptions Test Setup

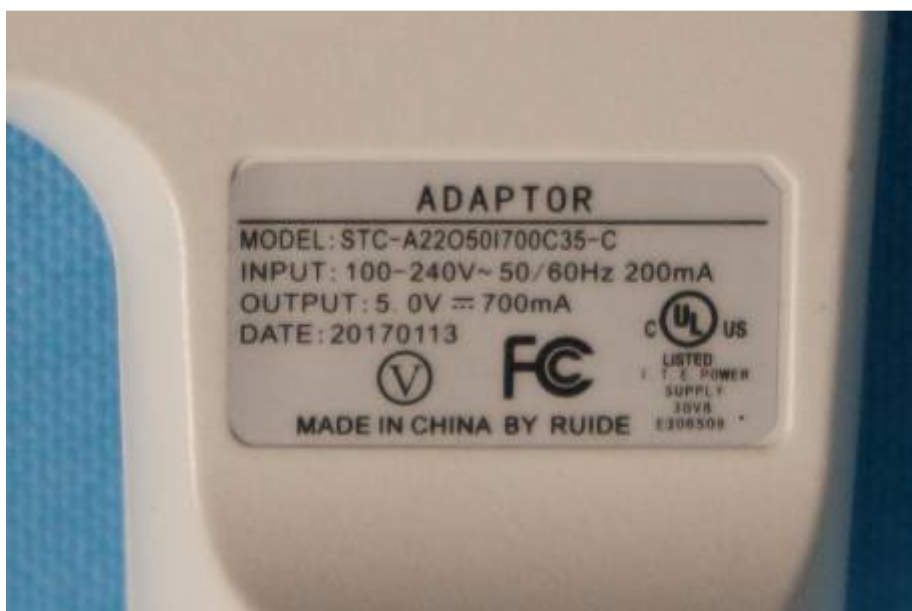


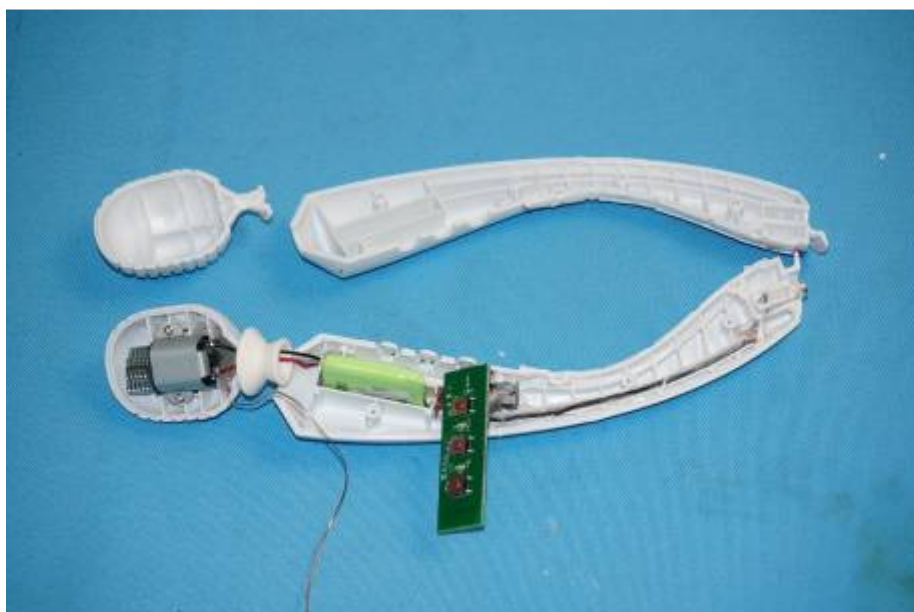
8.9 Conducted Immunity at Power Port(150kHz-230MHz) Test Setup

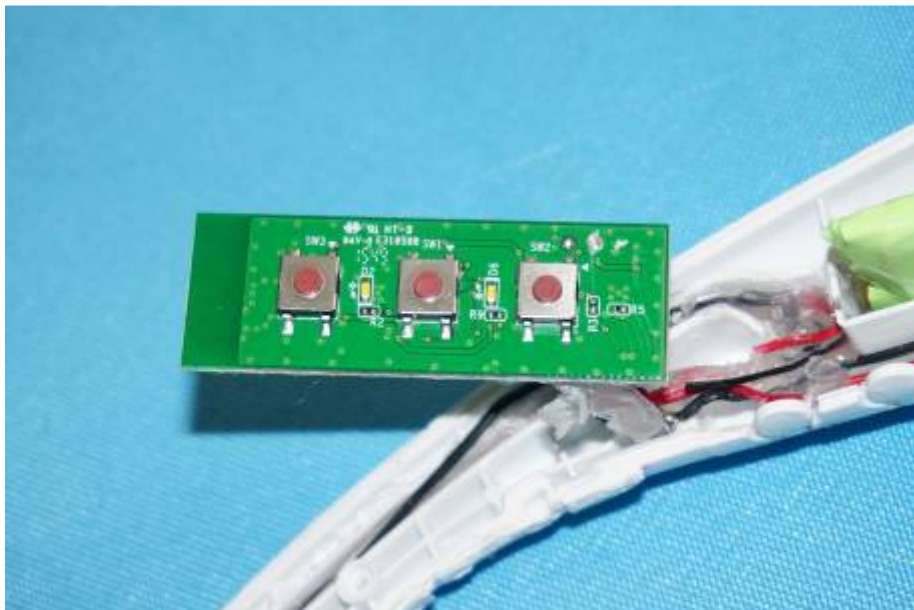
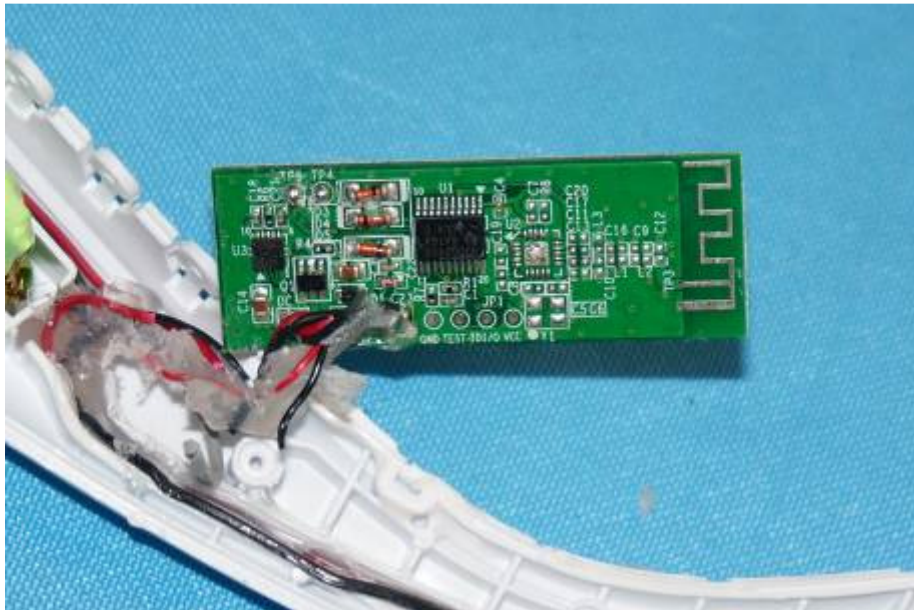


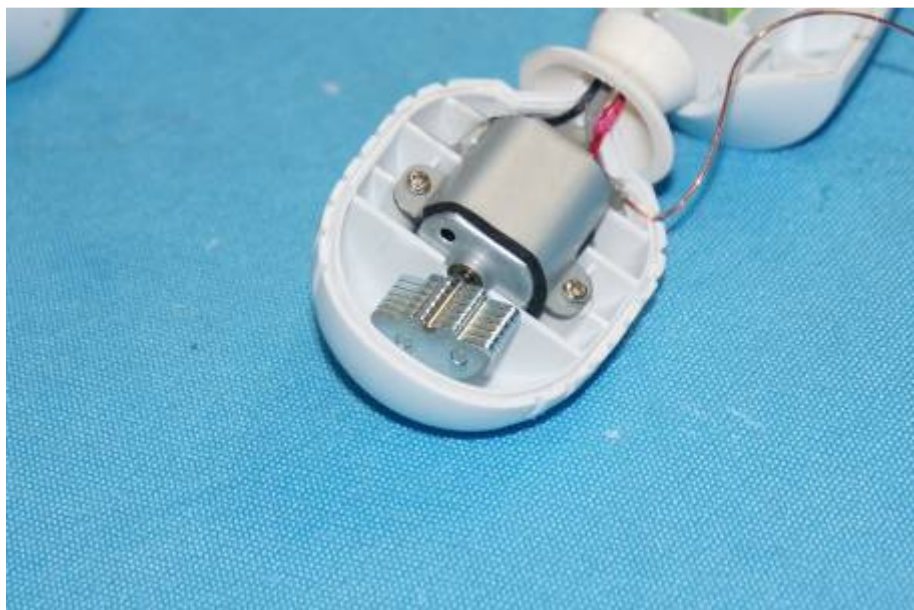
8.10 EUT Constructional Details











--End of the Report--