

EN 55014-1:2017
EN 55014-2:2015
EN 61000-3-2:2019
EN 61000-3-3:2013/A1:2019

TEST REPORT

For

SUZHOU ARMOCON TECHNOLOGY CO.,LTD

3/F No 77 SuHong Middle Road SIP Jiangsu China

Tested Model: Enigma

Report Type: Original Report	Product Type: Hand held massage
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Report Number:	RSHD200515001-01A
Report Date:	2020-06-13
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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Applicant	SUZHOU ARMOCON TECHNOLOGY CO.,LTD
Test Model	Enigma
Product	Hand held massage
Rate Voltage	DC 5 V from Adapter
Highest Operation Frequency	100 MHz

**All measurement and test data in this report was gathered from production sample serial number: 20200515001. (Assigned by BACL, Kunshan). The EUT supplied by the applicant was received on 2020-06-15*

Objective

The following report is prepared on behalf of *SUZHOU ARMOCON TECHNOLOGY CO.,LTD* in accordance with EN 55014-1, Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus Part 1: Emission.

EN 55014-2, Electromagnetic compatibility – Requirements for household appliances, electric tools and similar apparatus Part 2: Immunity- Product family standard.

EN61000-3-2, Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions (equipment input current ≤ 16 A per phase).

EN 61000-3-3, 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.

The objective of the manufacturer is to determine the compliance of the EUT with EN 55014-1, EN 55014-2, EN 61000-3-2 and EN 61000-3-3.

Related Submittal(s)/Grant(s)

No related submittal(s).

Test Methodology

All measurements contained in this report were conducted with
CISPR 16-1-1:2015: Specification for radio disturbance and immunity measuring apparatus and methods
Part1-1: Radio disturbance and immunity measuring apparatus-Measuring apparatus.

CISPR 16-1-2:2014, Specification for radio disturbance and immunity measuring apparatus and methods -
Part 1-2: Radio disturbance and immunity measuring apparatus - Coupling devices for conducted
disturbance measurements.

CISPR 16-1-4-2010+A1-2012, Specification for radio disturbance and immunity measuring apparatus and
methods-Part 1-4: Radio disturbance and immunity measuring apparatus - Antennas and test sites for
radiated disturbance measurements.

CISPR 16-2-1:2014, Specification for radio disturbance and immunity measuring apparatus and methods -
Part 2-1: Methods of measurement of disturbances and immunity -Conducted disturbance measurements.

CISPR 16-2-3: 2016, Specification for radio disturbance and immunity measuring apparatus and methods -
Part 2-3: Methods of measurement of disturbances and immunity -Radiated disturbance measurements.

CISPR 16-4-2: 2011+A1-2014, Specification for radio disturbance and immunity measuring apparatus and
methods –Part 4-2: Uncertainties, statistics and limit modeling -Measurement instrumentation uncertainty.

All radiated and conducted emissions measurement was performed at Bay Area Compliance Laboratory,
Corp. The radiated testing was performed at an antenna-to-EUT distance of 3 Meters.

Test Facility

The test site used by Bay Area Compliance Laboratories Corp. (Kunshan) to collect test data is located on
the No.248 Chenghu Road, Kunshan,Jiangsu province, China.

Bay Area Compliance Laboratories Corp. (Kunshan) Lab is accredited to ISO/IEC 17025 by A2LA (Lab
code: 4323.01) and the FCC designation No. CN1185 under the FCC KDB 974614 D01 and CAB
identifier CN0004 under the ISED requirement. The facility also complies with the radiated and AC line
conducted test site criteria set forth in ANSI C63.4-2014.

SYSTEM TEST CONFIGURATION

Justification

The system was configured for testing in a typical fashion (as normally used by a typical user).

Test Mode: Normal Working & Adapter Charging

EUT Exercise Software

No exercise software was used to test.

Equipment Modifications

No modification was made to the EUT.

Support Equipment List and Details

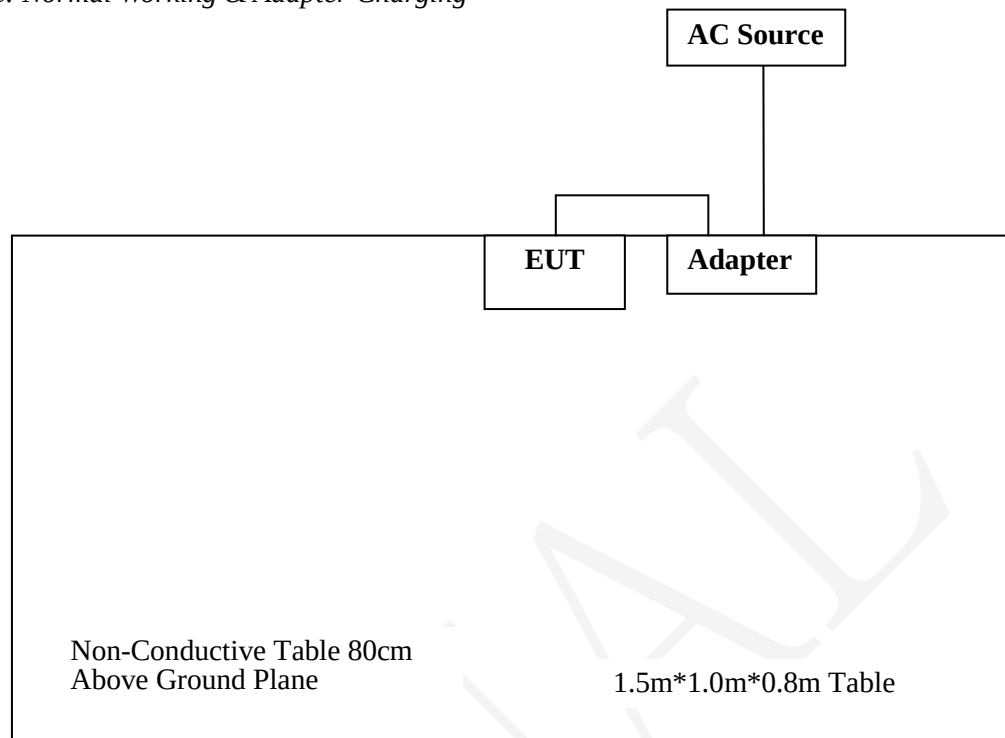
Manufacturer	Description	Model	Serial Number
SHENZHEN KEYU POWER SUPPLY TECHNOLOGY CO.,LTD	Adapter	KA25-0501000EU	/

External I/O Cable

Cable Description	Length (m)	From/Port	To
Power Cable	1.0	Adapter	AC Source
USB Cable	0.5	EUT	Adapter

Block Diagram of Radiated Test Setup

Test Mode: Normal Working & Adapter Charging



SUMMARY OF TEST REPORT**EN 55014-1**

Rule	Description	Results
§ 4.3.3.2	Terminal Voltage	Compliant
§4.3.4.5	Radiated Disturbance	Compliant

EN 55014-2

Rule	Description	Results
§ 5.1	Electrostatic Discharge (IEC 61000-4-2)	Compliant
§ 5.2	Fast Transients (IEC 61000-4-4)	Compliant
§ 5.3	Injected Currents (0.15MHz to 230MHz) (IEC 61000-4-6)	Compliant
§ 5.4	Injected Currents(0.15MHz to 80MHz) (IEC 61000-4-6)	Compliant
§ 5.5	Radio Frequency Electromagnetic Fields (IEC 61000-4-3)	Compliant
§ 5.6	Surges (IEC 61000-4-5)	Compliant
§ 5.7	Voltage Dips and Interruptions (IEC 61000-4-11)	Compliant

EN 61000-3-2

Rule	Description	Results
§6、§7	Harmonic Current Emissions	Not Applicable

EN 61000-3-3

Rule	Description	Results
§5、§6	Voltage Fluctuation and Flicker	Compliant

Note:

Not Applicable: The Equipment with a rated power of 75 W or less, other than lighting equipment, are not included in this standard.

Immunity test performance criteria refer to EN55014-2§6

EN 55014 §4.3.3.2-TERMINAL VOLTAGE

Measurement Uncertainty

Compliance or non-compliance with a disturbance limit shall be determined in the following manner:

If U_{lab} is less than or equal to U_{cispr} of Table 1, then:

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.

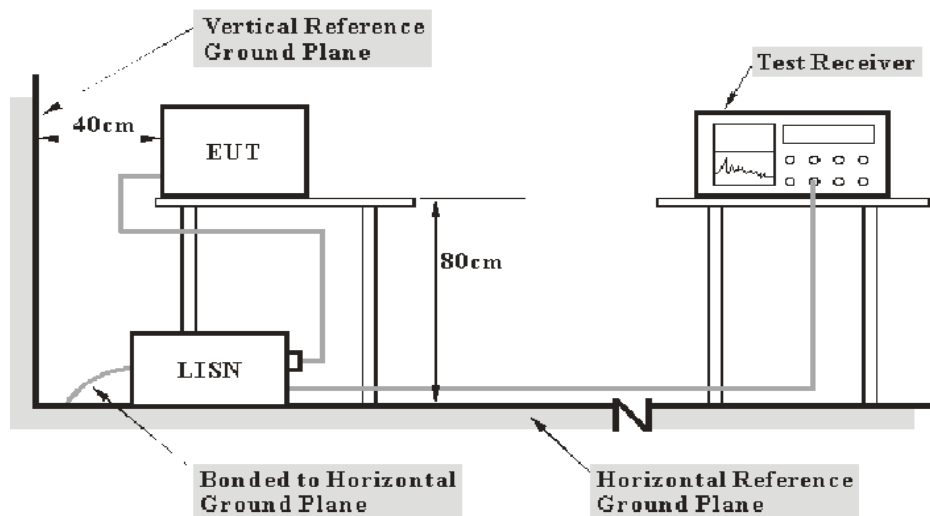
If U_{lab} is greater than U_{cispr} of Table 1, then:

- compliance is deemed to occur if no measured disturbance level, increased by $(U_{lab} - U_{cispr})$, exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level, increased by $(U_{lab} - U_{cispr})$, exceeds the disturbance limit.

Item		Measurement Uncertainty	U_{cispr}
AMN	150kHz~30MHz	3.19 dB	3.4 dB

Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

EUT Setup



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

The setup of EUT is according with per CISPR 16-2-1:2014 measurement procedures. The specification used was with the EN 55014-1:2017 limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESR	1316.3003K03-101746-zn	2019-08-05	2020-08-04
ROHDE&SCHWARZ	LISN	ENV216	101115	2019-12-14	2020-12-13
Audix	Test Software	e3	V9	/	/
Rohde & Schwarz	Pulse limiter	ESH3-Z2	100552	/	/
MICRO-COAX	Coaxial Cable	Cable-15	015	2019-08-15	2020-08-14

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Kunshan) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

Test Procedure

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and average detection mode.

Factor & Over Limit Calculation

The Factor is calculated by adding LISN VDF (Voltage Division Factor), Cable Loss and Transient Limiter Attenuator. The basic equation is as follows:

$$\text{Factor (dB)} = \text{LISN VDF (dB)} + \text{Cable Loss (dB)} + \text{Transient Limiter Attenuator (dB)}$$

The “**Over Limit**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, an over limit of 7dB means the emission is 7 dB above the limit. The equation for over limit calculation is as follows:

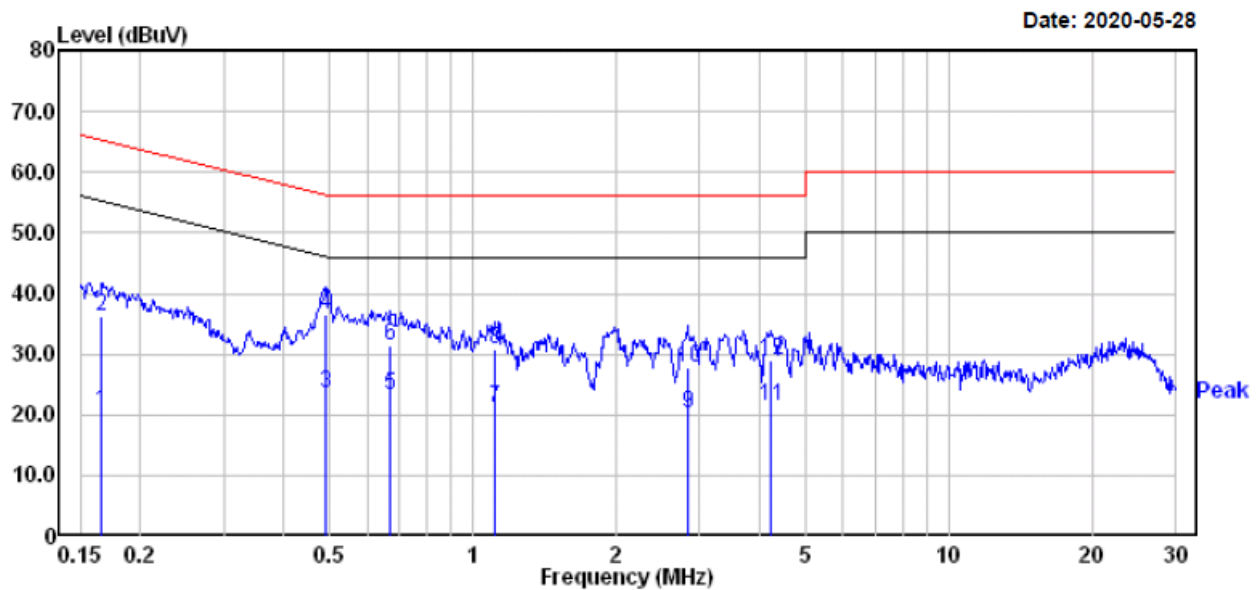
$$\text{Over Limit (dB)} = \text{Read level (dB}\mu\text{V)} + \text{Factor (dB)} - \text{Limit (dB}\mu\text{V)}$$

Test Data**Environmental Conditions**

Temperature:	26.4 °C
Relative Humidity:	50 %
ATM Pressure:	101.3 kPa

The testing was performed by Gerry Xing on 2020-05-28.

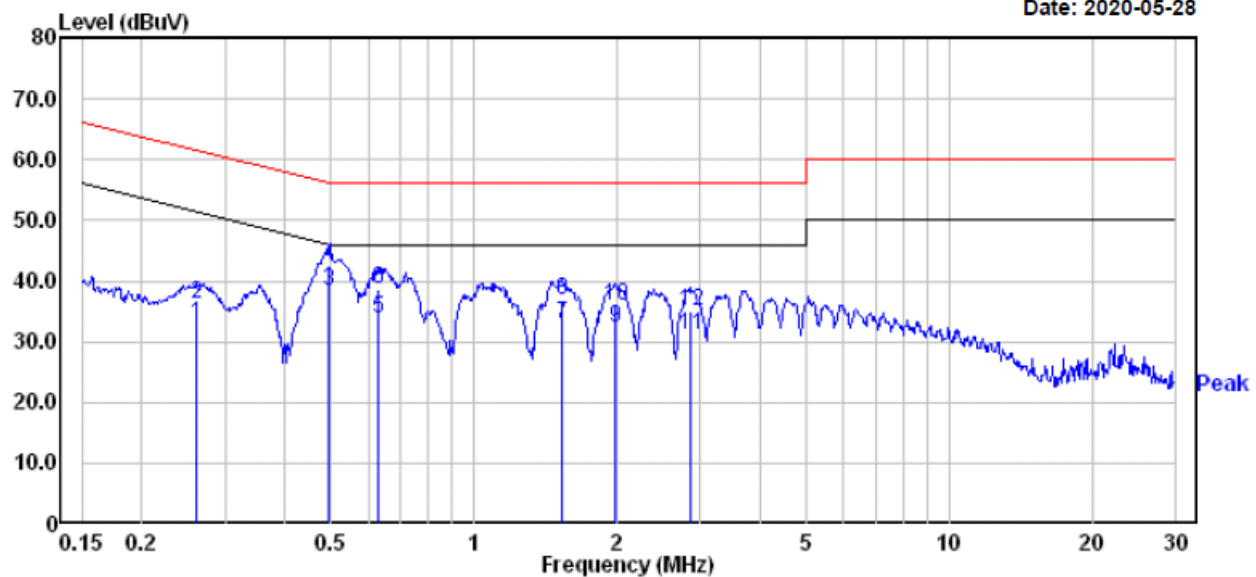
Test Mode: Normal Working & Adapter Charging

Line:

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.166	0.60	19.83	20.43	55.16	-34.73	Average
2	0.166	16.30	19.83	36.13	65.16	-29.03	QP
3	0.492	3.80	19.76	23.56	46.14	-22.58	Average
4	0.492	16.70	19.76	36.46	56.14	-19.68	QP
5	0.672	3.60	19.75	23.35	46.00	-22.65	Average
6	0.672	11.70	19.75	31.45	56.00	-24.55	QP
7	1.117	1.41	19.81	21.22	46.00	-24.78	Average
8	1.117	11.11	19.81	30.92	56.00	-25.08	QP
9	2.824	0.79	19.47	20.26	46.00	-25.74	Average
10	2.824	8.19	19.47	27.66	56.00	-28.34	QP
11	4.247	2.11	19.47	21.58	46.00	-24.42	Average
12	4.247	9.51	19.47	28.98	56.00	-27.02	QP

Neutral:

Date: 2020-05-28



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.262	13.00	19.82	32.82	51.38	-18.56	Average
2	0.262	16.50	19.82	36.32	61.38	-25.06	QP
3	0.494	18.60	19.76	38.36	46.10	-7.74	Average
4	0.494	22.70	19.76	42.46	56.10	-13.64	QP
5	0.627	14.10	19.75	33.85	46.00	-12.15	Average
6	0.627	18.90	19.75	38.65	56.00	-17.35	QP
7	1.527	13.19	19.85	33.04	46.00	-12.96	Average
8	1.527	16.89	19.85	36.74	56.00	-19.26	QP
9	1.991	12.40	19.83	32.23	46.00	-13.77	Average
10	1.991	16.20	19.83	36.03	56.00	-19.97	QP
11	2.854	11.69	19.47	31.16	46.00	-14.84	Average
12	2.854	15.69	19.47	35.16	56.00	-20.84	QP

Note:

- 1) Factor (dB) = LISN VDF (dB) + Cable Loss (dB) + Transient Limiter Attenuation (dB)
- 2) Over Limit (dB) = Read level (dBUV) + Factor (dB) - Limit (dBUV)

EN 55014 §4.3.4.5- Radiated Disturbance

Measurement Uncertainty

Compliance or non-compliance with a disturbance limit shall be determined in the following manner:

If U_{lab} is less than or equal to U_{cisp} of Table 1, then:

-compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;

-non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.

If U_{lab} is greater than U_{cisp} of Table 1, then:

- compliance is deemed to occur if no measured disturbance level, increased by $(U_{lab} - U_{cisp})$, exceeds the disturbance limit;

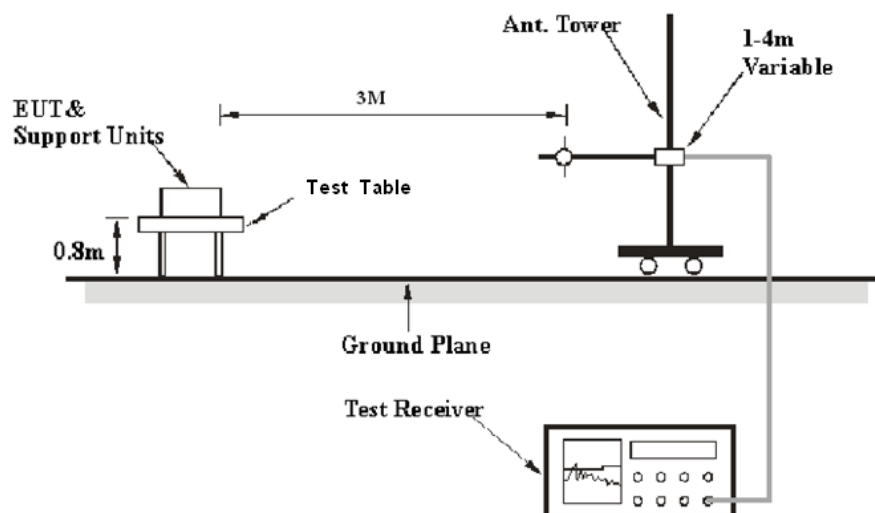
-non-compliance is deemed to occur if any measured disturbance level, increased by $(U_{lab} - U_{cisp})$, exceeds the disturbance limit.

Item		Measurement Uncertainty	U_{cisp}
Radiated Emission	30MHz~1GHz	5.91dB	6.3 dB

Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

Test System Setup

Below 1GHz:



The radiated emission tests were performed in the 3 meters, using the setup accordance with the CISPR 16-2-3: 2016. The specification used was the EN 55014-1:2017 limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

EMI Test Receiver Setup

The system was investigated from 30 MHz to 1 GHz.

During the radiated emission test, the EMI test receiver Setup was set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Detector
30MHz – 1000 MHz	120 kHz	300 kHz	120kHz	QP

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test receiver	ESR	102454	2019-12-14	2020-12-13
Sunol Sciences	Broadband Antenna	JB3	A060217	2017-08-04	2020-08-03
Albatross	Chamber 3#	3m-SAC 966	NA	2019-05-21	2022-05-20
Audix	Test Software	e3	V9	/	/
MICRO-COAX	Coaxial Cable	Cable-8	008	2019-08-15	2020-08-14
MICRO-COAX	Coaxial Cable	Cable-9	009	2019-08-15	2020-08-14
MICRO-COAX	Coaxial Cable	Cable-10	010	2019-08-15	2020-08-14

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Kunshan) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

All data was recorded in the Quasi-peak detection mode from 30MHz to 1GHz.

Factor & Over Limit Calculation

The factor is calculated by adding Antenna Factor, Cable Loss and Amplifier Gain. The basic equation is as follows:

$$\text{Factor (dB)} = \text{Antenna Factor (dB/m)} + \text{Cable Loss (dB)} + \text{Amplifier Gain (dB)}$$

The “**Over Limit**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, an over Limit of 7dB means the emission is 7 dB above the limit. The equation for over Limit calculation is as follows:

$$\text{Over Limit (dB)} = \text{Read level (dB}\mu\text{V)} + \text{Factor (dB)} - \text{Limit (dB}\mu\text{V)}$$

Test Data**Environmental Conditions**

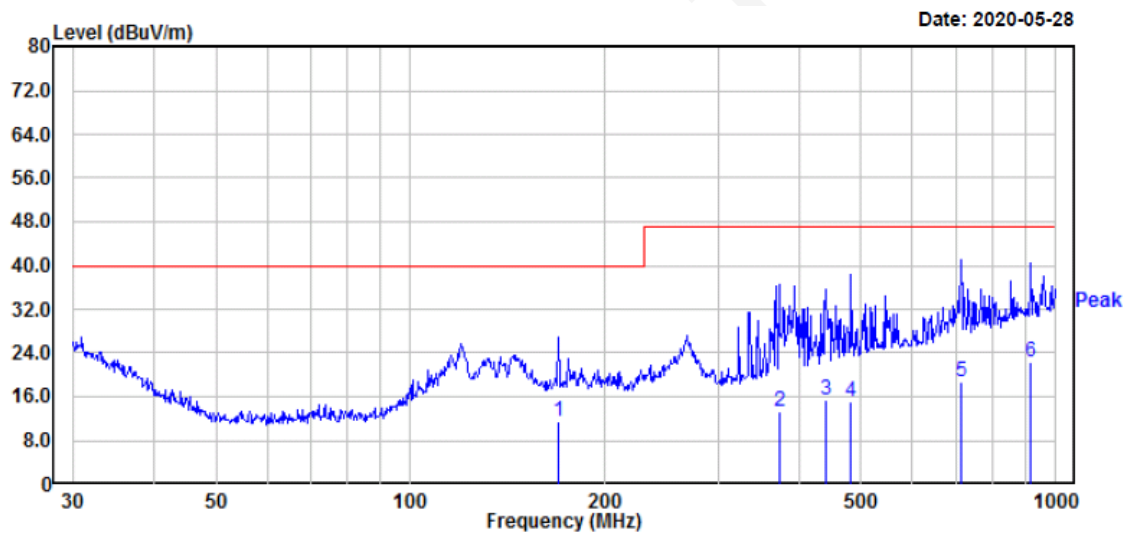
Temperature:	26.4 °C
Relative Humidity:	50 %
ATM Pressure:	101.3 kPa

The testing was performed by Gerry Xing on 2020-05-28.

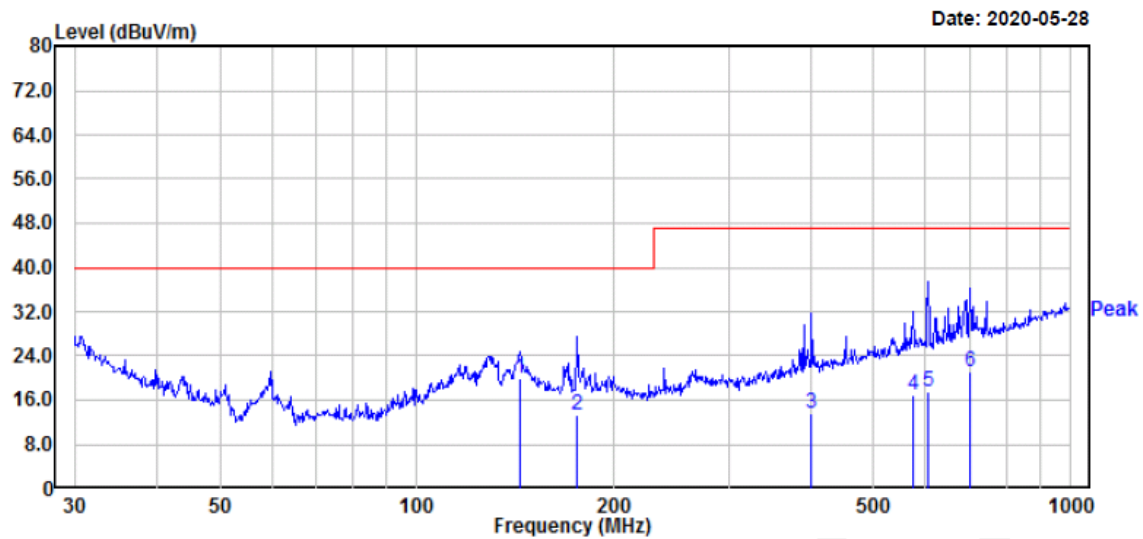
Test Mode: Normal Working & Adapter Charging

1)30MHz ~ 1GHz

Horizontal:



	Read Freq	Level	Factor	Level	Limit Line	Over Limit	APos	TPos	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	deg	
1	169.60	23.90	-12.52	11.38	40.00	-28.62	200	171	QP
2	373.31	21.60	-8.45	13.15	47.00	-33.85	100	174	QP
3	441.74	22.11	-6.79	15.32	47.00	-31.68	100	231	QP
4	482.22	21.01	-5.90	15.11	47.00	-31.89	200	54	QP
5	714.17	20.60	-1.88	18.72	47.00	-28.28	100	39	QP
6	916.07	21.09	1.38	22.47	47.00	-24.53	100	45	QP

Vertical:

	Freq	Read		Limit	Over	APos	TPos	Remark
	MHz	Level	Factor	Level	Line	Limit		
		dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	deg
1	143.83	31.71	-11.82	19.89	40.00	-20.11	100	225 QP
2	176.27	25.99	-12.83	13.16	40.00	-26.84	100	139 QP
3	401.84	21.20	-7.57	13.63	47.00	-33.37	100	232 QP
4	574.63	21.21	-4.39	16.82	47.00	-30.18	100	315 QP
5	605.66	21.31	-3.89	17.42	47.00	-29.58	100	283 QP
6	701.76	23.20	-2.05	21.15	47.00	-25.85	100	323 QP

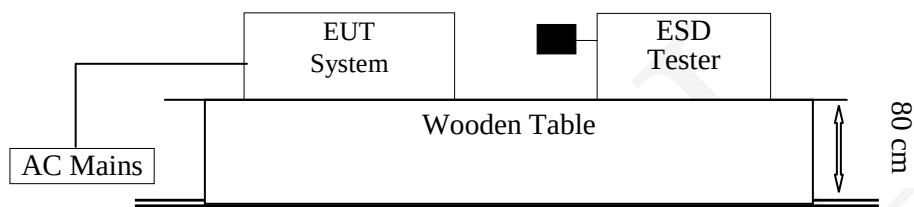
Note:

- 1) Factor (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB) - Amplifier Gain (dB)
- 2) Over Limit (dB) = Read level (dBμV) + Factor (dB) - Limit (dBμV)

EN 55014-2 §5.1-ELECTROSTATIC DISCHARGE (IEC 61000-4-2)**Test Equipment**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
TESEQ	ESD Simulator	NSG 438	1079	2020-05-17	2021-05-16

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Kunshan) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

Test System Setup

Remark: ■ is the tip of the electrode

IEC 61000-4-2 specifies that a tabletop EUT shall be placed on a non-conducting table which is 80 centimeters above a ground reference plane and that floor mounted equipment shall be placed on a insulating support approximately 10 centimeters above a ground plane. During the tests, the EUT is positioned over a ground reference plane in conformance with this requirement.

For tabletop equipment, a 1.6 by 0.8-meter metal sheet (HCP) is placed on the table and connected to the ground plane via a metal strap with two 470 k Ohms resistors in series. The EUT and attached cables are isolated from this metal sheet by 0.5-millimeter thick insulating material. A Vertical Coupling Plane (VCP) grounded on the ground plane through the same configuration as in the HCP is used.

Test Standard

EN 55014-2:2015 / IEC 61000-4-2:2008

Air Discharge at ± 2 kV, ± 4 kV, ± 8 kV

Contact Discharge at ± 2 kV, ± 4 kV

Test Level

Level	Test Voltage Contact Discharge ($\pm$ kV)	Test Voltage Air Discharge ($\pm$ kV)
1.	2	2
2.	4	4
3.	6	8
4.	8	15
X.	Special	Special

Performance Criterion: B

Test Procedure

Air Discharge:

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

Contact Discharge:

All the procedure shall be same as Section 8.3.1. of IEC 61000-4-2, except that the tip of the discharge electrode shall touch the EUT before the discharge switch is operated.

Indirect discharge for horizontal coupling plane

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

Indirect discharge for vertical coupling plane

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

Test Data

Environmental Conditions

Temperature:	26.5 °C
Relative Humidity:	57 %
ATM Pressure:	101.7 kPa

The testing was performed by Gerry Xing on 2020-06-09.

Test Mode: Normal Working & Adapter Charging

Table 1: Electrostatic Discharge Immunity (Air Discharge)

EN 61000-4-2 Test Points Location	Test Levels								
	-2 kV	+2 kV	-4 kV	+4 kV	-8 kV	+8 kV	-15 kV	+15 kV	X
1-4	A	A	A	A	A	A	/	/	/

Table 2: Electrostatic Discharge Immunity (Contact Discharge)

EN 61000-4-2 Test Points Location	Test Levels								
	-2 kV	+2 kV	-4 kV	+4 kV	-6 kV	+6 kV	-8 kV	+8 kV	X
5	A	A	A	A	/	/	/	/	/

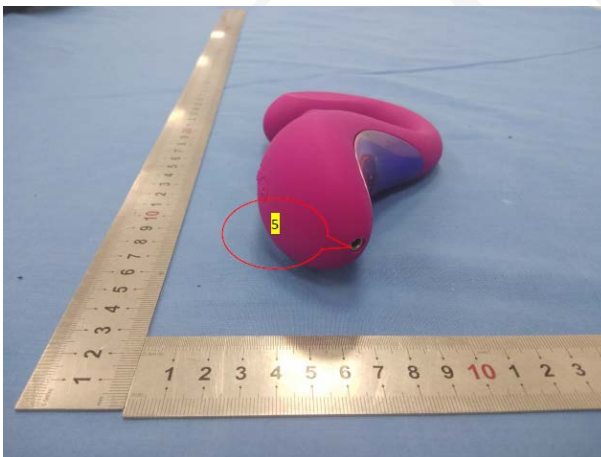
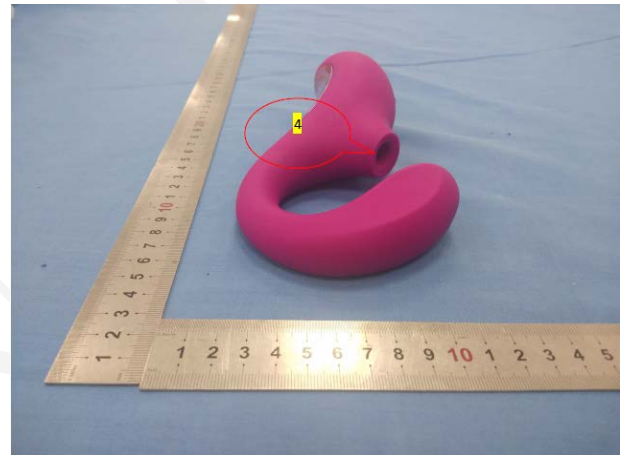
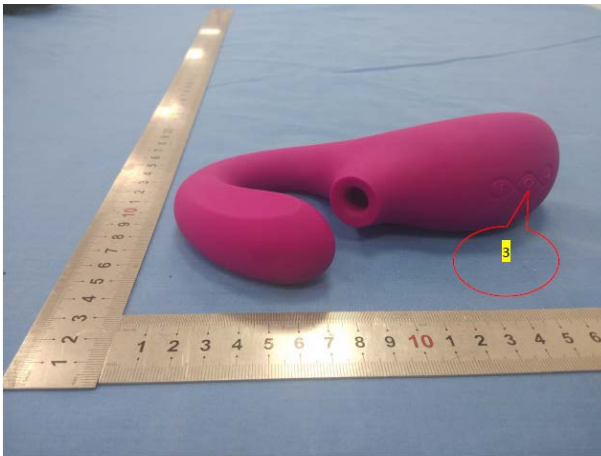
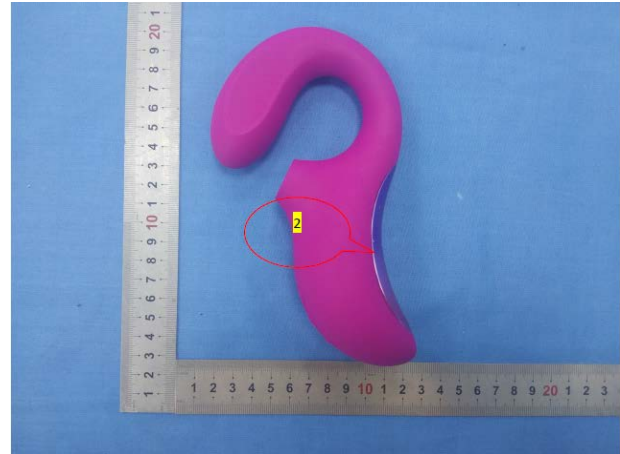
Table 3: Electrostatic Discharge Immunity (Indirect Contact HCP)

EN 61000-4-2 Test Points Location	Test Levels								
	-2 kV	+2 kV	-4 kV	+4 kV	-6 kV	+6 kV	-8 kV	+8 kV	X
Front Side	A	A	A	A	/	/	/	/	/
Back Side	A	A	A	A	/	/	/	/	/
Left Side	A	A	A	A	/	/	/	/	/
Right Side	A	A	A	A	/	/	/	/	/

Table 4: Electrostatic Discharge Immunity (Indirect Contact VCP)

EN 61000-4-2 Test Points Location	Test Levels								
	-2 kV	+2 kV	-4 kV	+4 kV	-6 kV	+6 kV	-8 kV	+8 kV	X
Front Side	A	A	A	A	/	/	/	/	/
Back Side	A	A	A	A	/	/	/	/	/
Left Side	A	A	A	A	/	/	/	/	/
Right Side	A	A	A	A	/	/	/	/	/

Test point as follows:

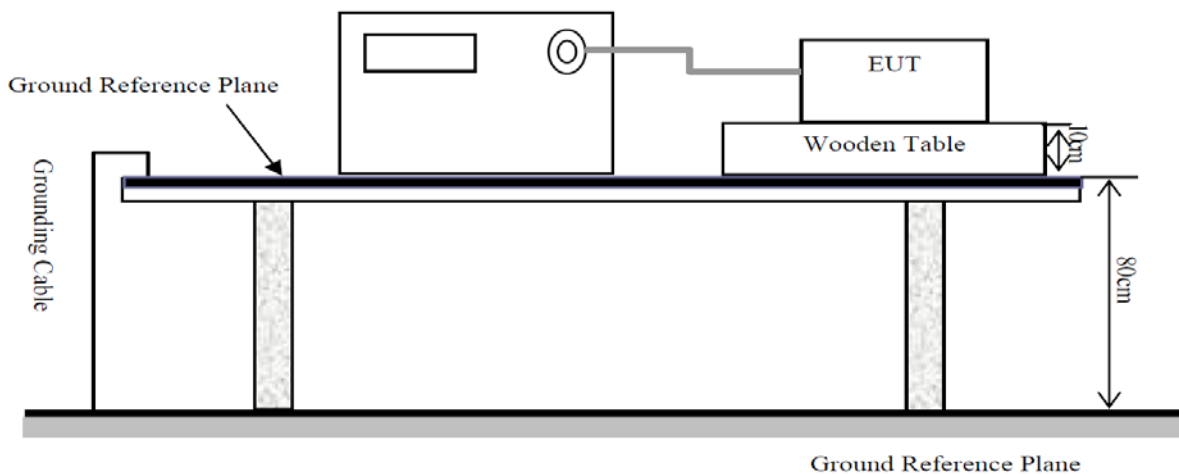


Note: "A" stands for, during test, operate as intended no loss of function, no degradation of performance, no unintentional transmissions and after test, no degradation of performance, no loss of function, no loss of stored data or user programmable functions.

EN 55014-2 §5.2-FAST TRANSIENTS (IEC 61000-4-4)**Test Equipment**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
EM TEST	Auto Transformer	MV2616	V0939105172	NCR	NCR
EM TEST	Ultra Compact Generator	UCS 500 N5	P1406130994	2019-07-21	2020-07-20

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Kunshan) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

Test System Setup**Test Standard**

EN 55014-2:2015/IEC 61000-4-4:2012
AC mains: Test level 2 at 1 kV

Test Level

Open Circuit Output Test Voltage $\pm 10\%$				
Level	Power ports, earth port(PE)		Signal and control ports	
	Voltage(kV)	Repetition frequency(kHz)	Voltage(kV)	Repetition frequency(kHz)
1	0.5	5 or 100	0.25	5 or 100
2	1		0.5	
3	2		1	
4	4		2	
X	Special	Special	Special	Special

Performance Criterion: B

Test Procedure

The EUT was arranged for Power Line Coupling and for I/O Line Coupling through a capacitive clamp, where applicable. (Note: The I/O coupling test using a capacitive clamp is performed on the I/O interface cables that are longer in length than 3 meters.) A metal ground plane 2.4 meters by 2.0 meter was placed between the floor and the table and is connected to the earth by a 2.0-meter ground rod. The ground rod is connected to the test facility's electrical earth.

Test Data

Environmental Conditions

Temperature:	26.2 °C
Relative Humidity:	50 %
ATM Pressure:	100.6 kPa

The testing was performed by Gerry Xing on 2020-06-03.

Test Mode: Normal Working & Adapter Charging

EN 61000-4-4 Test Points		Test Levels (kV) ; Repetition frequency(5kHz)							
		+0.5	-0.5	+1.0	-1.0	+2.0	-2.0	+4.0	-4.0
AC Mains Power Input Ports	L	A	A	A	A	/	/	/	/
	N	A	A	A	A	/	/	/	/
	L-N	A	A	A	A	/	/	/	/
	L-PE	/	/	/	/	/	/	/	/
	N-PE	/	/	/	/	/	/	/	/
	L-N-PE	/	/	/	/	/	/	/	/
Signal Port	/	/	/	/	/	/	/	/	/

Note: "A" stands for, during test, operate as intended no loss of function, no degradation of performance, no unintentional transmissions and after test, no degradation of performance, no loss of function, no loss of stored data or user programmable functions.

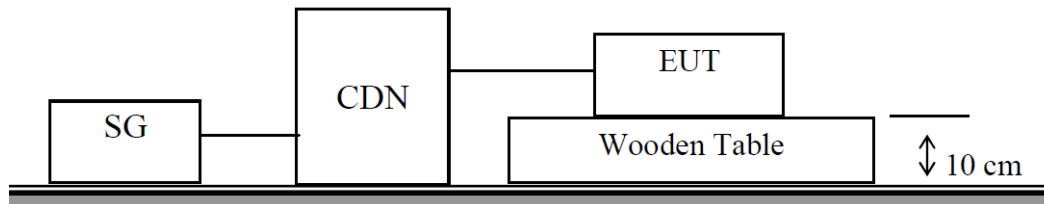
EN 55014-2 §5.4-INJECTED CURRENTS (0.15MHZ TO 230MHZ) (IEC 61000-4-6)

Test Equipment

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	Signal Generator	8648C	3537A01810	2019-07-21	2020-07-20
R&S	Power Amplifier	500A100M2	18117	NCR	NCR
Dressler	Attenuator	ATT 6/75	510020010004	NCR	NCR
COM POWER	CDN	CDN M225E	511098	2019-07-21	2020-07-20

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Kunshan) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

Test Setup



Test Standard

EN 55014-2:2015/IEC 61000-4-6:2014
Test level 2 at 3V (r.m.s.), 0.15 MHz ~ 230 MHz

Test Level

Level	Voltage Level (r.m.s.) (V)
1	1
2	3
3	10
X	Special

Performance Criterion: A

Test Procedure

- 1) Let the EUT work in test mode and test it.
- 2) The EUT are placed on an insulating support 0.1 m high above a ground reference plane. CDN (coupling and decoupling device) is placed on the ground plane about 0.3 m from EUT. Cables between CDN and EUT are as short as possible, and their height above the ground reference plane shall be between 30 and 50 mm (where possible).
- 3) The disturbance signal described below is injected to EUT through CDN.
- 4) The EUT operates within its operational mode(s) under intended climatic conditions after power on.
- 5) The frequency range is swept from 150 kHz to 230 MHz using 3V signal level, and with the disturbance signal 80% amplitude modulated with a 1 kHz sine wave.
- 6) The rate of sweep shall not exceed 1.5×10^{-3} decades/s. Where the frequency is swept incrementally, the step size shall not exceed 1% of the start and thereafter 1% of the preceding frequency value.
- 7) Recording the EUT operating situation during compliance testing and decide the EUT immunity criterion.

Test Data

Environmental Conditions

Temperature:	26.2 °C
Relative Humidity:	50 %
ATM Pressure:	100.6 kPa

The testing was performed by Gerry Xing on 2020-06-03.

Test Mode: Normal Working & Adapter Charging

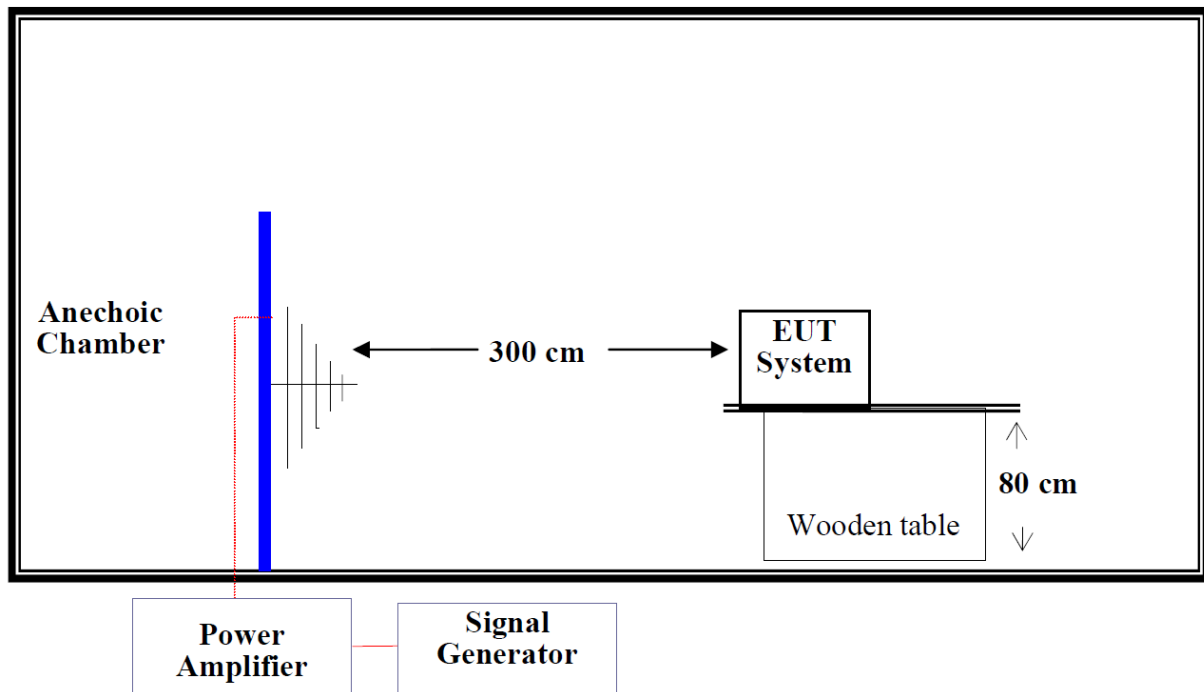
EN61000-4-6 Test Ports	Test equipment	Frequency Range (MHz)	Voltage Level (e.m.f.) U0			
			1V	3V	10V	X
AC mains power input	M2	0.15-80	/	A	/	/

Note: "A" stands for, during test, operate as intended no loss of function, no degradation of performance, no unintentional transmissions and after test, no degradation of performance, no loss of function, no loss of stored data or user programmable functions.

**EN 55014-2 §5.5 - RADIO FREQUENCY ELECTROMAGNETIC FIELDS
(IEC 61000-4-3)****Test Equipment**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
HP	Signal Generator	E4428C	MY49070179	2019-07-21	2020-07-20
Amplifier Research	Power Amplifier	200W1000M3A	18062	NCR	NCR
Ar	Log Periodic Antenna	ATL80M1G	350122	NCR	NCR

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Kunshan) attests that all calibrations have been performed in accordance to requirements, traceable to National Primary Standards and International System of Units (SI).

Test System Setup**Test Standard**

EN 55014-2:2015/IEC 61000-4-3: 2006 + A2:2010
Test level 2 at 3V/m (unmodulated, r.m.s.)

Test Level

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

Performance Criterion: A**Test Procedure**

The EUT and its simulators are placed on a turn table which is 0.8 meter above the ground. The EUT is set 3 meters away from the transmitting antenna which is mounted on an antenna tower. Both horizontal and vertical polarizations of the antenna are set on test. Each of the four sides of EUT must be faced this transmitting antenna and measured individually.

In order to judge the EUT performance, a CCD camera is used to monitor the EUT.

All the scanning conditions are as follows:

Condition of Test	Remarks
1. Field Strength	3 V/m (Test level 2)
2. Radiated Signal	AM 80%, 1 kHz Modulation
3. Scanning Frequency	80 – 1000 MHz
4. Scanning Frequency Step	1%
5. Dwell Time	3 sec.

Test Data**Environmental Conditions**

Temperature:	26.2 °C
Relative Humidity:	50 %
ATM Pressure:	100.6 kPa

The testing was performed by Gerry Xing on 2020-06-03.

Test Mode: Normal Working & Adapter Charging

Frequency Range (MHz)	Front Side (3V/m)		Rear Side (3V/m)		Left Side (3V/m)		Right Side (3V/m)	
	VERT	HORI	VERT	HORI	VERT	HORI	VERT	HORI
80-2000	A	A	A	A	A	A	A	A

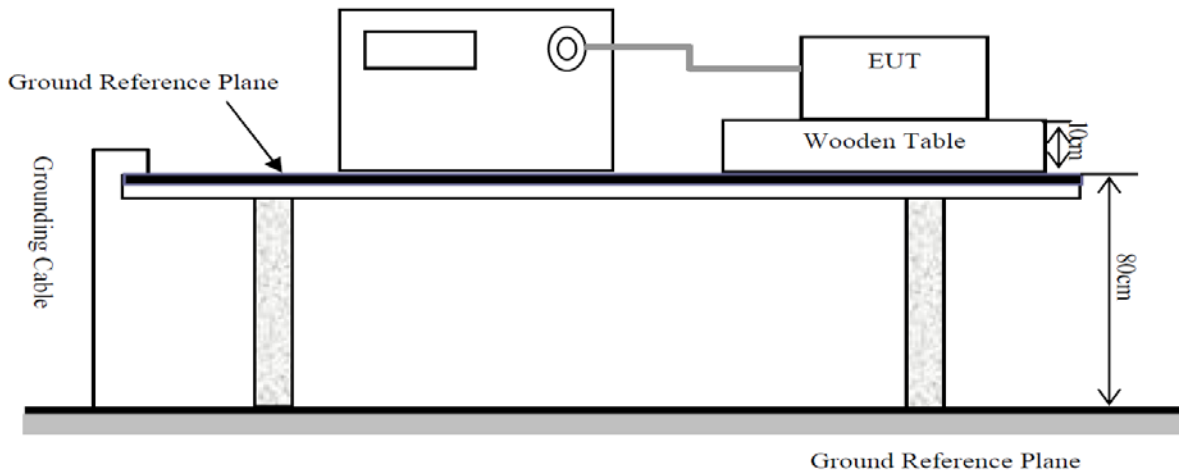
Frequency Range (MHz)	Front Side (3V/m)		Rear Side (3V/m)		Left Side (3V/m)		Right Side (3V/m)	
	VERT	HORI	VERT	HORI	VERT	HORI	VERT	HORI
2000-2700	A	A	A	A	A	A	A	A

Note: "A" stands for, during test, operate as intended no loss of function, no degradation of performance, no unintentional transmissions and after test, no degradation of performance, no loss of function, no loss of stored data or user programmable functions.

EN 55014-2 §5.6 - SURGES (IEC 61000-4-5)**Test Equipment**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
EM TEST	Auto Transformer	MV2616	V0939105172	N/A	N/A
EM TEST	Ultra Compact Generator	UCS500-N	P1406130994	2019-07-21	2020-07-20

* Statement of Traceability: Bay Area Compliance Laboratories Corp. (Kunshan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test system Setup**Test Standard**

EN 55014-2: 2015 (IEC 61000-4-5:2014)
AC Mains: L-N: Test level 3 at 1 kV

Test level

Level	Open Circuit Output Test Voltage $\pm 10\%$		Performance Criterion	
	Line - Line	Line - Ground	AC Mains	Signal Port
1	---	0.5 kV	---	---
2	0.5 kV	1 kV	---	---
3	1 kV	2 kV	B	---
4	2 kV	4 kV	---	---
X	Special	Special	---	---

Performance Criterion: B

Test Procedure

- 1) Provide disturbance signal described below is injected to EUT.
- 2) 10 positive and 10 negative (polarity) tests with a maximum 1/min repetition rate are conducted during test.
- 3) Different phase angles are done individually.
- 4) Record the EUT operating situation during compliance test and decide the EUT immunity criterion for above each test.

Test Data

Environmental Conditions

Temperature:	26.2 °C
Relative Humidity:	50 %
ATM Pressure:	100.6 kPa

The testing was performed by Gerry Xing on 2020-06-03.

Test Mode: Normal Working & Adapter Charging

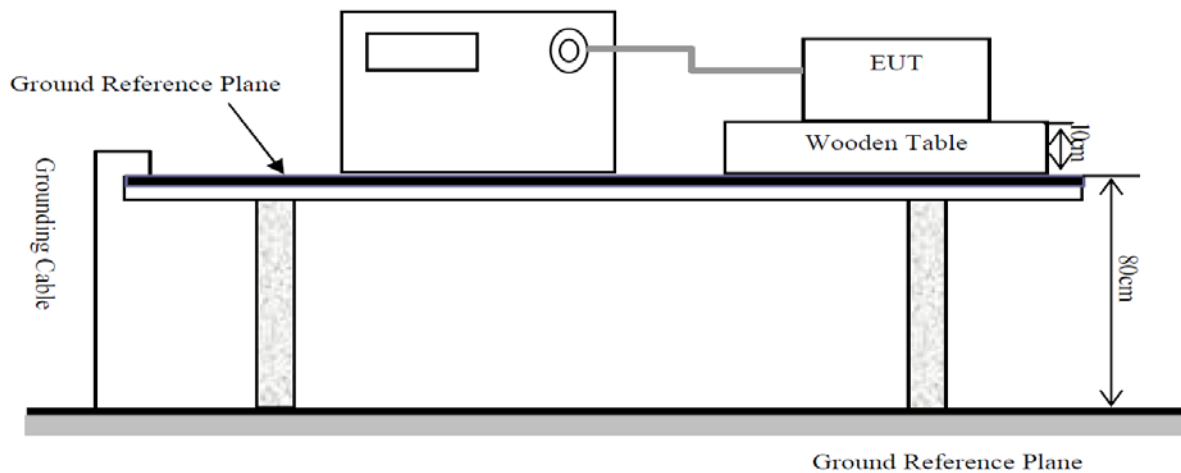
EN61000-4-5 Test Points		Test Levels (kV)							
		+0.5	-0.5	+1.0	-1.0	+2.0	-2.0	+4.0	-4.0
AC mains power input ports	L-N	A	A	A	A	/	/	/	/
	L-PE	/	/	/	/	/	/	/	/
	N-PE	/	/	/	/	/	/	/	/

Note: "A" stands for, during test, operate as intended no loss of function, no degradation of performance, no unintentional transmissions and after test, no degradation of performance, no loss of function, no loss of stored data or user programmable functions.

EN 55014-2 §5.7-VOLTAGE DIPS AND INTERRUPTIONS (IEC 61000-4-11)**Test Equipment**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
EM TEST	Auto Transformer	MV2616	V0939105172	N/A	N/A
EM TEST	Ultra Compact Generator	UCS500-N5	P1406130994	2019-07-21	2020-07-20

* Statement of Traceability: Bay Area Compliance Laboratories Corp. (Kunshan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test setup**Test Standard**

EN 55014-2: 2015 (IEC 61000-4-11:2004)
Test levels and Performance Criterion

Test Levels and Performance Criterion

Test Level	Td (Periods)	Phase Angle	Performance criterion
Voltage dip : 0 % residual voltage	0.5	0°/90°/180°/270°	C
Voltage dip : 40 % residual voltage	10	0°/90°/180°/270°	C
Voltage dip : 70 % residual voltage	25	0°/90°/180°/270°	C

Test Procedure

- 1) The interruption is introduced at selected phase angles with specified duration.
- 2) Record any degradation of performance.

Test Data**Environmental Conditions**

Temperature:	26.2 °C
Relative Humidity:	50 %
ATM Pressure:	100.6 kPa

The testing was performed by Gerry Xing on 2020-06-13.

Test Mode: Normal Working & Adapter Charging

Test Level	Td (Periods)	Phase Angle	Result
Voltage dip : 0 % residual voltage	0.5	0°/90°/180°/270°	A
Voltage dip : 40 % residual voltage	10	0°/90°/180°/270°	A
Voltage dip : 70 % residual voltage	25	0°/90°/180°/270°	A
Voltage interruptions : 0 % residual voltage	250	0°/90°/180°/270°	A

Note: “A” stand for, during test, operate as intended no loss of function, no degradation of performance, no unintentional transmissions and after test, no degradation of performance, no loss of function or user programmable functions.

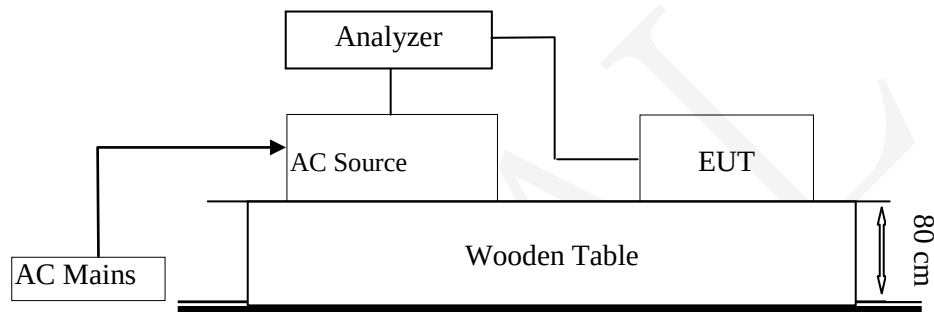
EN 61000-3-3 VOLTAGE FLUCTUATIONS AND FLICKER

Test Equipment

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
EM TEST	Harmonic & Flicker Analyzer	DPA 500N	P1402129120	2019-11-12	2020-11-11
EM TEST	AC Power Source	ACS 500N	P1251107475	2019-11-12	2020-11-11

* Statement of Traceability: Bay Area Compliance Laboratories Corp. (Kunshan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test System Setup



Test Standard

EN 61000-3-3:2013

Flicker Test Limits

The limits shall be applicable to voltage fluctuations and flicker at the supply terminals of the equipment under test, measured or calculated according to clause 4 under test conditions described in clause 6 and annex A. Tests made to prove compliance with the limits are considered to be type tests.

The following limits apply:

- the value of P_{st} shall not be greater than 1,0;
- the value of P_{lt} shall not be greater than 0,65;
- T_{max} , the accumulated time value of $d(t)$ with a deviation exceeding 3,3 % during a single voltage change at the EUT terminals, shall not exceed 500 ms;
- the relative steady-state voltage change, dc , shall not exceed 3,3 %;
- the maximum relative voltage change d_{max} , shall not exceed
 - a) 4 % without additional conditions;
 - b) 6 % for equipment which is:

Switched manually, or

- switched automatically more frequently than twice per day, and also has either a delayed restart (the delay being not less than a few tens of seconds), or manual restart, after a power supply interruption.

Note: The cycling frequency will be further limited by the Pst and Plt limit. For example: a dmax of 6 % producing a rectangular voltage change characteristic twice per hour will give a Plt of about 0,65.

c) 7 % for equipment which is - attended whilst in use (for example: hair dryers, vacuum cleaners, kitchen equipment such as mixers, garden equipment such as lawn mowers, portable tools such as electric drills), or

– switched on automatically, or is intended to be switched on manually, no more than twice per day, and also has either a delayed restart (the delay being not less than a few tens of seconds) or manual restart, after a power supply interruption.

In the case of equipment having several separately controlled circuits in accordance with 6.6, limits b) and c) shall apply only if there is delayed or manual restart after a power supply interruption; for all equipment with automatic switching which is energized immediately on restoration of supply after a power supply interruption, limits a) shall apply; for all equipment with manual switching, limits b) or c) shall apply depending on the rate of switching. Pst and Plt requirements shall not be applied to voltage changes caused by manual switching. The limits shall not be applied to voltage changes associated with emergency switching or emergency interruptions.

Test Data

Environmental Conditions

Temperature:	26.2 °C
Relative Humidity:	50 %
ATM Pressure:	100.6 kPa

Date of test:	10:17 3.Jun 2020
Tester:	Gerry Xing
Standard used:	EN/IEC 61000-3-3 Flicker
Short time (Pst):	10 min
Observation time:	120 min (12 Flicker measurement)
Flicker meter:	230V / 50Hz according IEC 61000-4-15 Ed.2
Flicker Impedance:	Zref (IEC 60725)
Customer:	SUZHOU ARMOCON TECHNOLOGY CO.,LTD
E. U. T.:	Hand held massage
Model:	Enigma
EUT operation mode	Test Mode: Normal Working & Adapter Charging

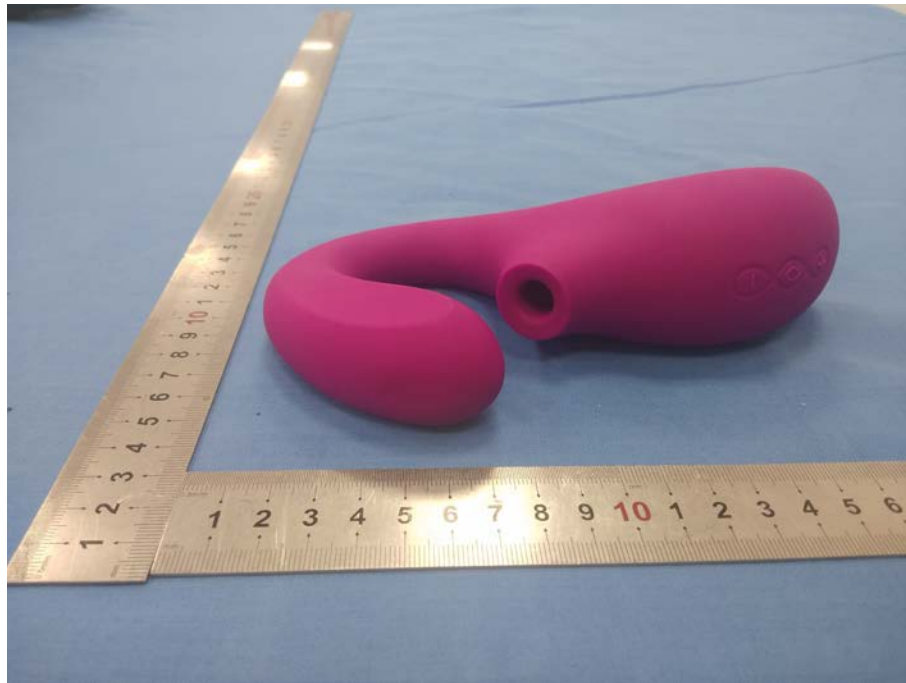
Maximum Flicker results

	EUT values	Limit	Result
Pst	0.427	1.00	Pass
Plt	0.427	0.65	Pass
dc [%]	0.000	3.30	Pass
dmax [%]	0.102	7.00	Pass
Tmax [s]	0.000	0.50	Pass

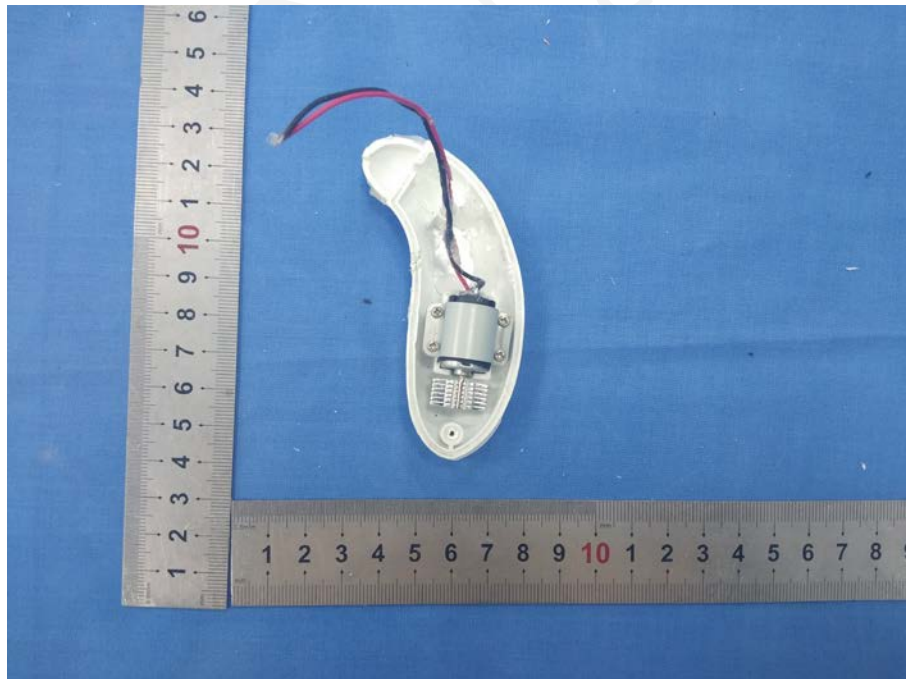
EXHIBIT A - EUT PHOTOGRAPHS

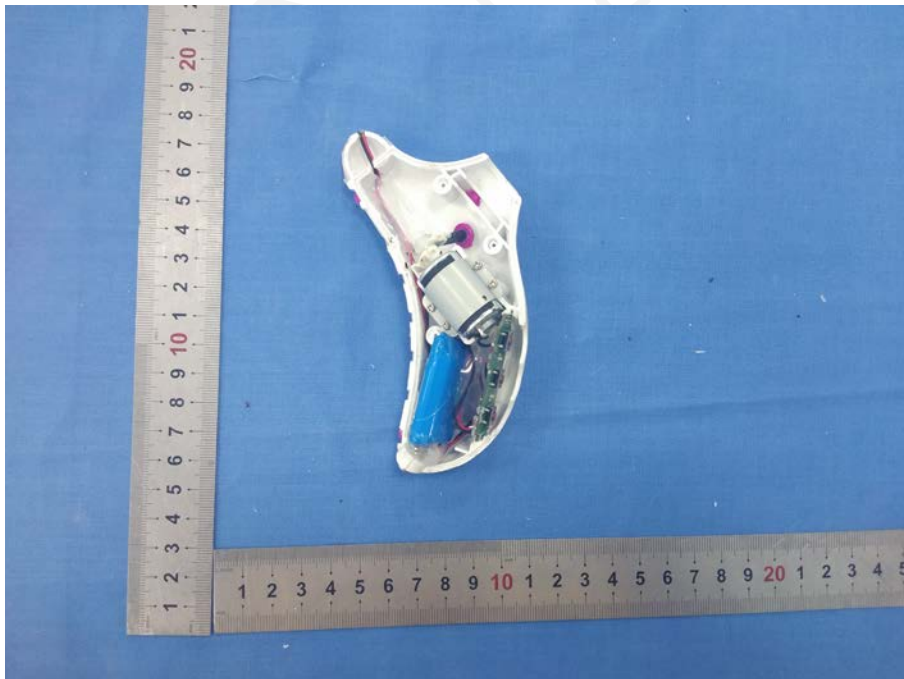
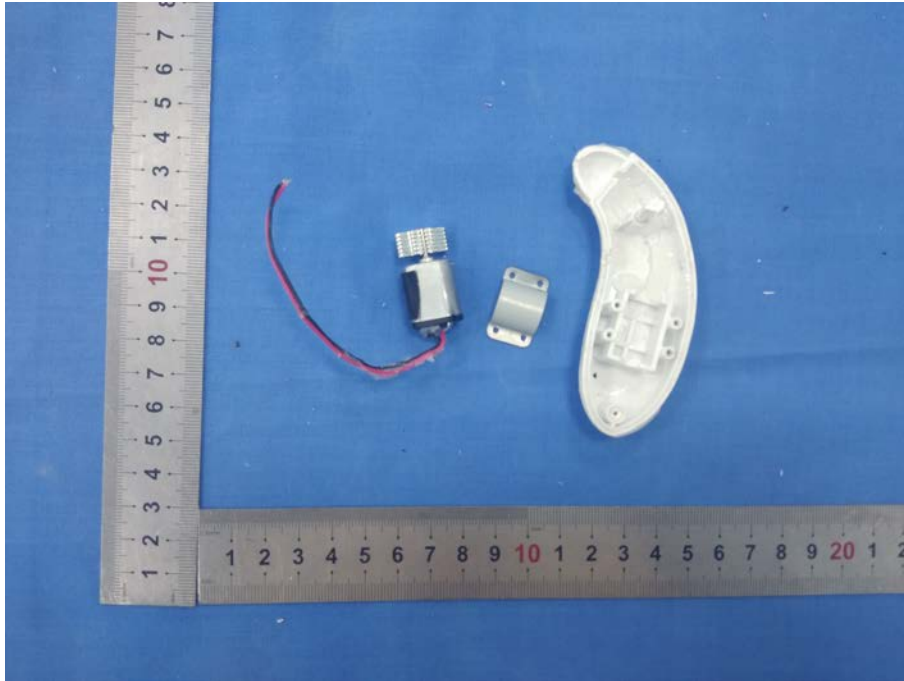


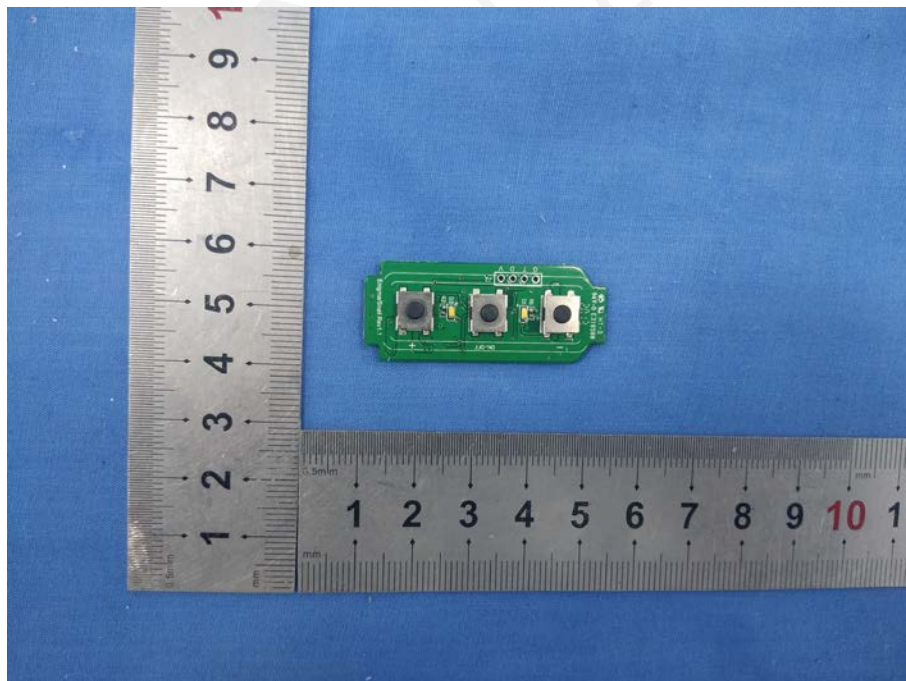


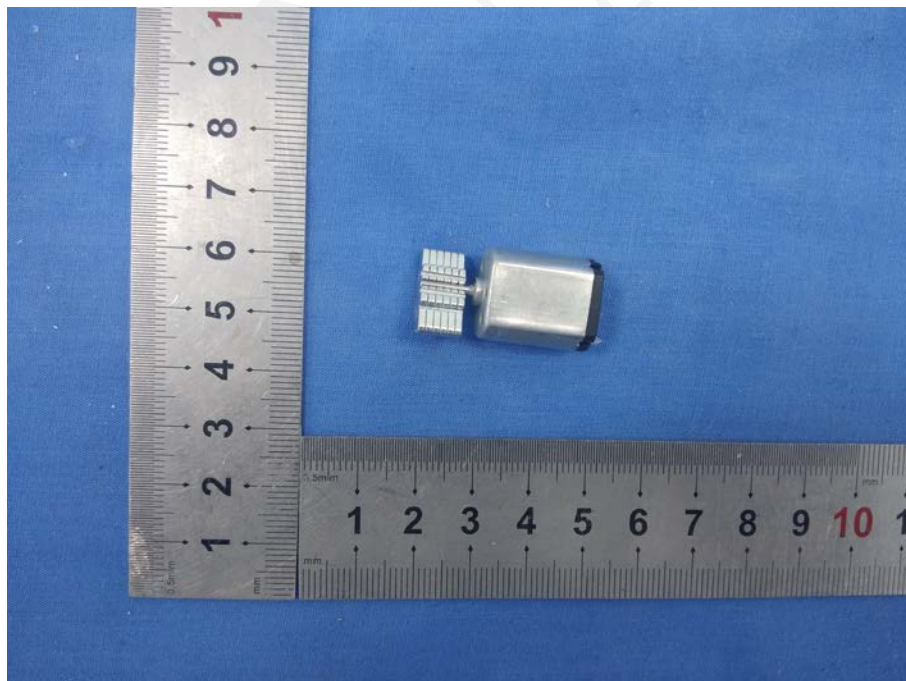
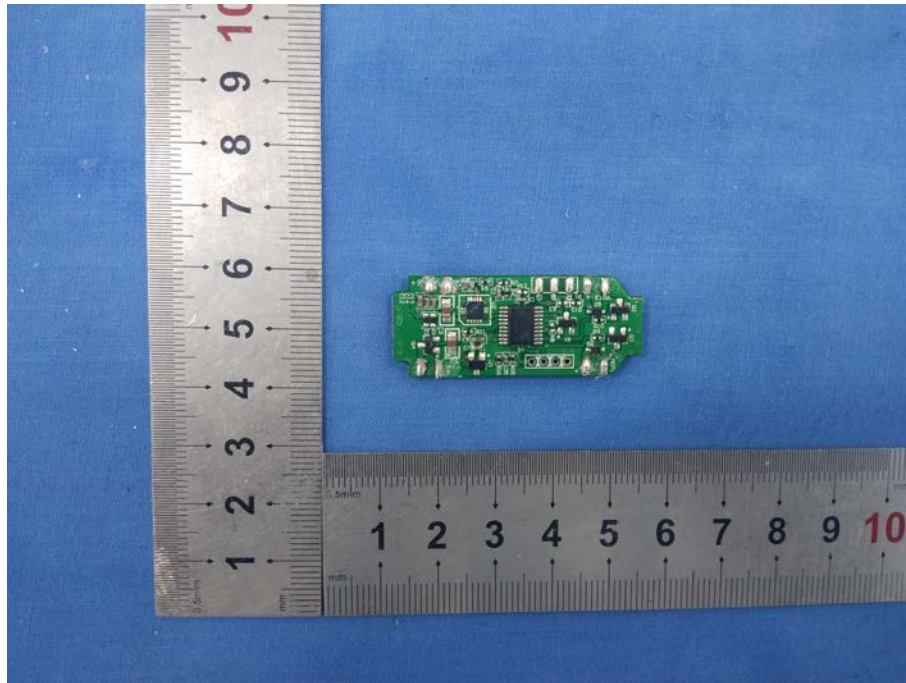












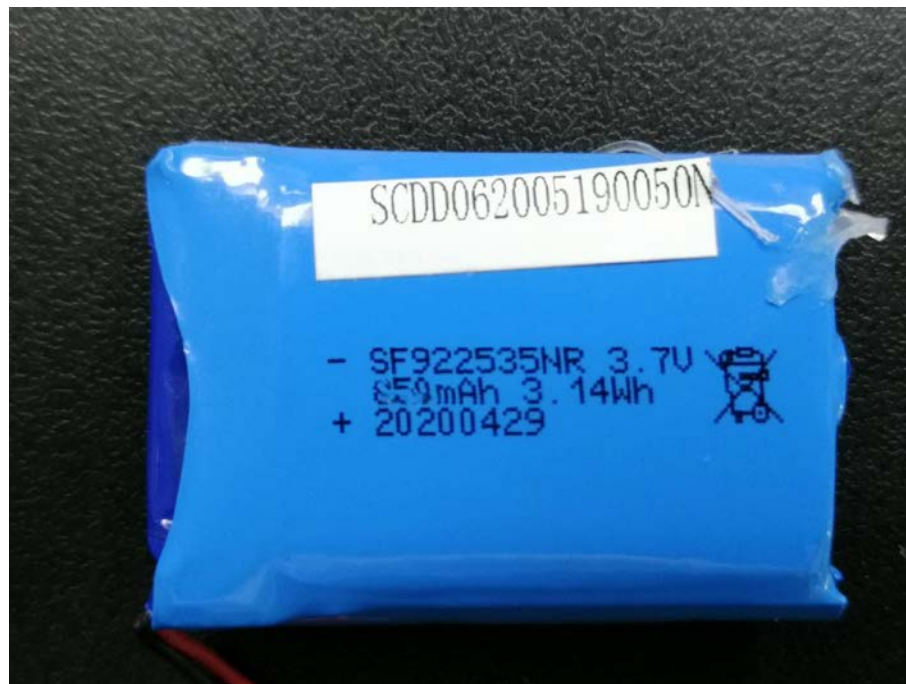


EXHIBIT B - TEST SETUP PHOTOGRAPHS

Terminal Voltage - Front Side



Terminal Voltage - Rear Side



Radiated Disturbance - Front View (Below 1GHz)



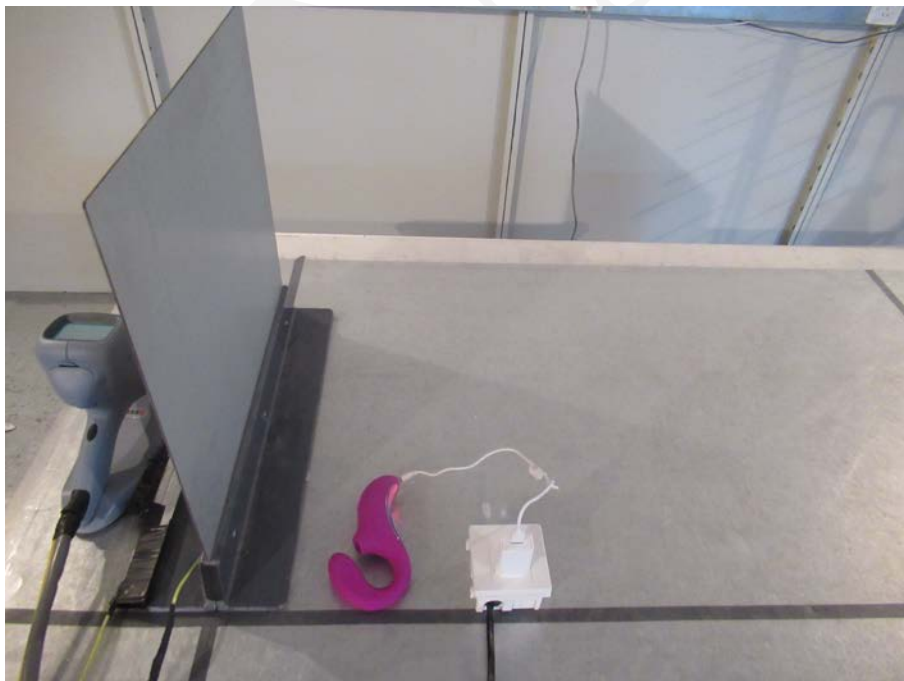
Radiated Disturbance - Rear View (Below 1GHz)



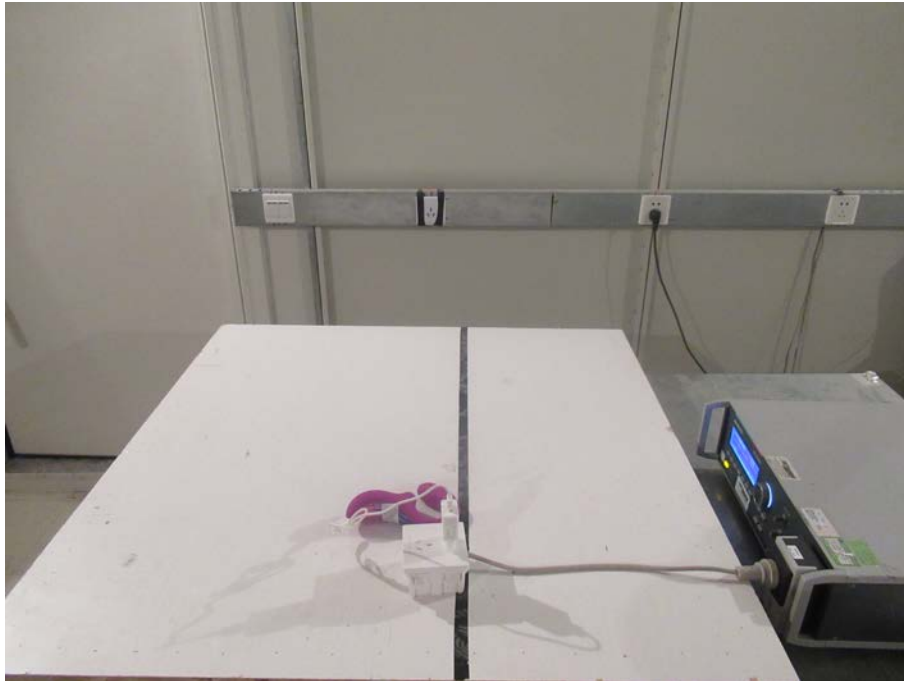
Flicker & Harmonic Test Setup Photo



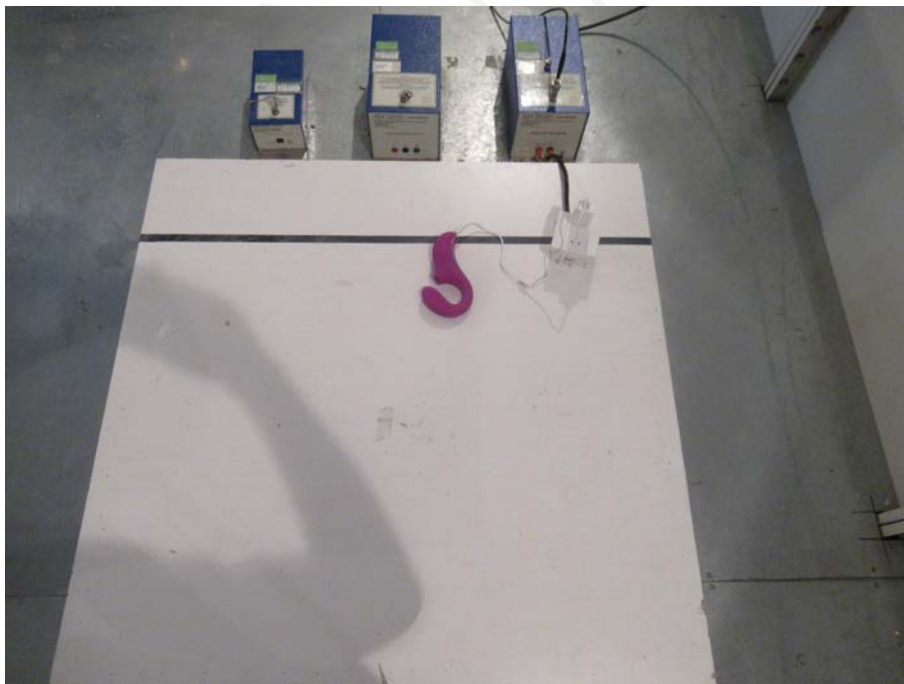
Electrostatic Discharge Test Setup Photo



Fast Transients Test Setup Photo



Injected Currents (0.15MHz to 230 MHz) Test Setup Photo



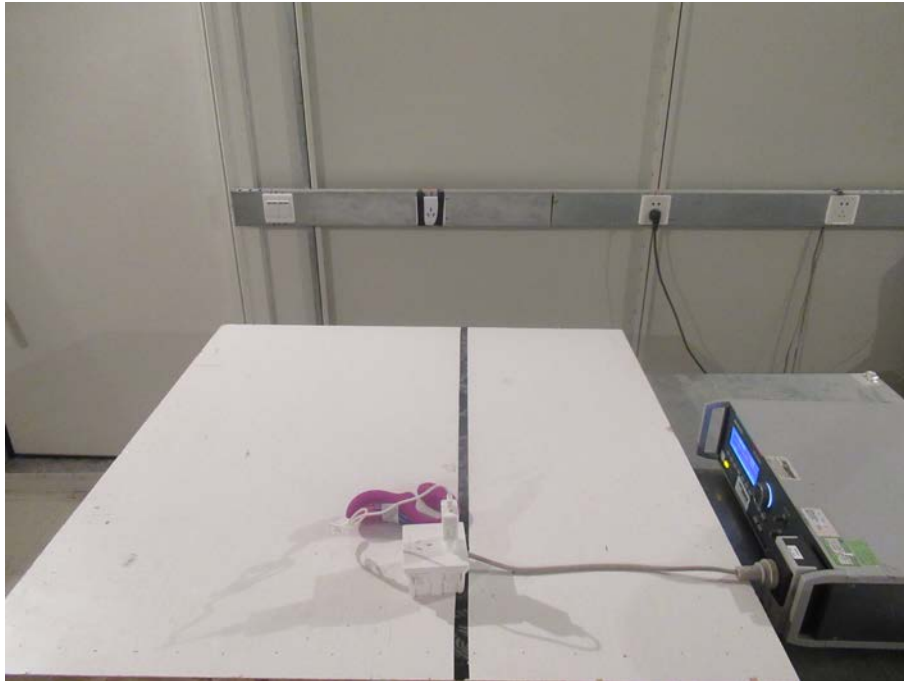
Radio Frequency Electromagnetic Fields Test Setup Photo (Below 1GHz)



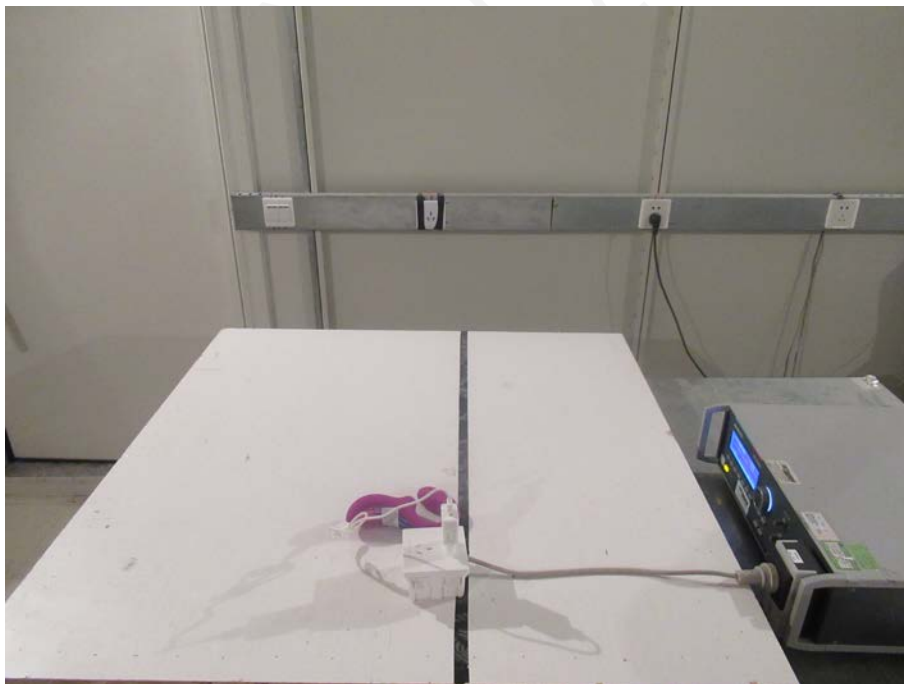
Radio Frequency Electromagnetic Fields Test Setup Photo (Above 1GHz)



Surges Test Setup Photo



Voltage Dips and Interruptions Test Setup Photo



*******END OF REPORT*******