

TEST REPORT

Applicant/Manufacturer:
Address :

Report Number : SZ4221009-45885E-EM-01

Test Standard (s)

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

Sample Description

Product Type: Massagegun
Model No.: RB-PC-MSG01-B
Multiple Model(s) No.: MG-029 , MO6827
Trade Mark: N/A
Date Received: 2022/10/09
Report Date: 2022/10/20

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

Prepared and Checked By:

Approved By:



Haiguo Li
EMC Engineer

Moon Liu
EMC Supervisor

Note: BACL is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with an asterisk "*". Customer model name, addresses, names, trademarks etc. are not considered data.

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Product	Massagegun
Test Model	RB-PC-MSG01-B
Multiple Model(s)	MG-029 , MO6827 (model difference see product declaration letter of similarity)
Highest operating frequency	15KHz
Voltage Range	5V DC, 1.0A (max.)
Sample serial number	SZ4221009-45885E-EM-S1 (Assigned by BACL, Shenzhen)
Sample/EUT Status	Good condition
Sample category	Category II

Objective

This report is in accordance with EN IEC 55014-1, Electromagnetic Compatibility – Requirements for household appliances, electric tools and similar apparatus Part 1: Emission. EN IEC 55014-2, Electromagnetic Compatibility – Requirements for household appliances, electric tools and similar apparatus Part 2: Immunity- Product family Standard.

EN IEC 61000-3-2, Limits – Limits for harmonic current emissions (equipment input current up to and including 16 A per phase), and also in accordance with EN 61000-3-3, Limits Section 3; Limitation of voltage fluctuations and flicker in low-voltage supply systems for equipment with rated current <16A.

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

Performance criterion

Performance criterion A

The equipment shall continue to operate as intended without operator intervention. No degradation of performance, loss of function or change of operating state is allowed below a performance level specified by the manufacturer when the equipment is used as intended.

The performance level may be replaced by a permissible loss of performance. 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 by what the user may reasonably expect from the equipment if used as intended.

Performance criterion B

During the application of the disturbance, degradation of performance is allowed. However, no unintended change of actual operating state or stored data is allowed to persist after the test. After the test, the equipment shall continue to operate as intended without operator intervention; no degradation of performance or loss of function is allowed, below a performance level specified by the manufacturer, when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance. If the minimum performance level (or the permissible performance loss), or recovery time, is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.

Performance criterion C

Loss of function is allowed, provided the function is self-recoverable, or can be restored by the operation of the controls by the user in accordance with the manufacturer's instructions. A reboot or re-start operation is allowed.

Information stored in non-volatile memory, or protected by a battery backup, shall not be lost.

Measurement Uncertainty

Item	Frequency Range		Expanded Measurement uncertainty
Conducted Emissions	AC Mains	150 KHz ~30MHz	2.88dB(k=2, 95% level of confidence)
Radiated Disturbance	30MHz~200MHz	Horizontal	4.46dB(k=2, 95% level of confidence)
	30MHz~200MHz	Vertical	4.53dB(k=2, 95% level of confidence)
	200MHz~1000MHz	Horizontal	4.85dB(k=2, 95% level of confidence)
	200MHz~1000MHz	Vertical	4.76dB(k=2, 95% level of confidence)

Note: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

Test Facility

The test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 5F(B-West) ,6F,7F,the 3rd Phase of Wan Li Industrial Building D,Shihua Rd, FuTian Free Trade Zone,Shenzhen,China.

Each test item follows test standards and with no deviation.

SYSTEM TEST CONFIGURATION

Justification

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

Test Mode 1: Charging.

Test Mode 2: Working

EUT Exercise Software

No exercise software was used.

Equipment Modifications

No modification was made to the EUT.

Support Equipment List and Details

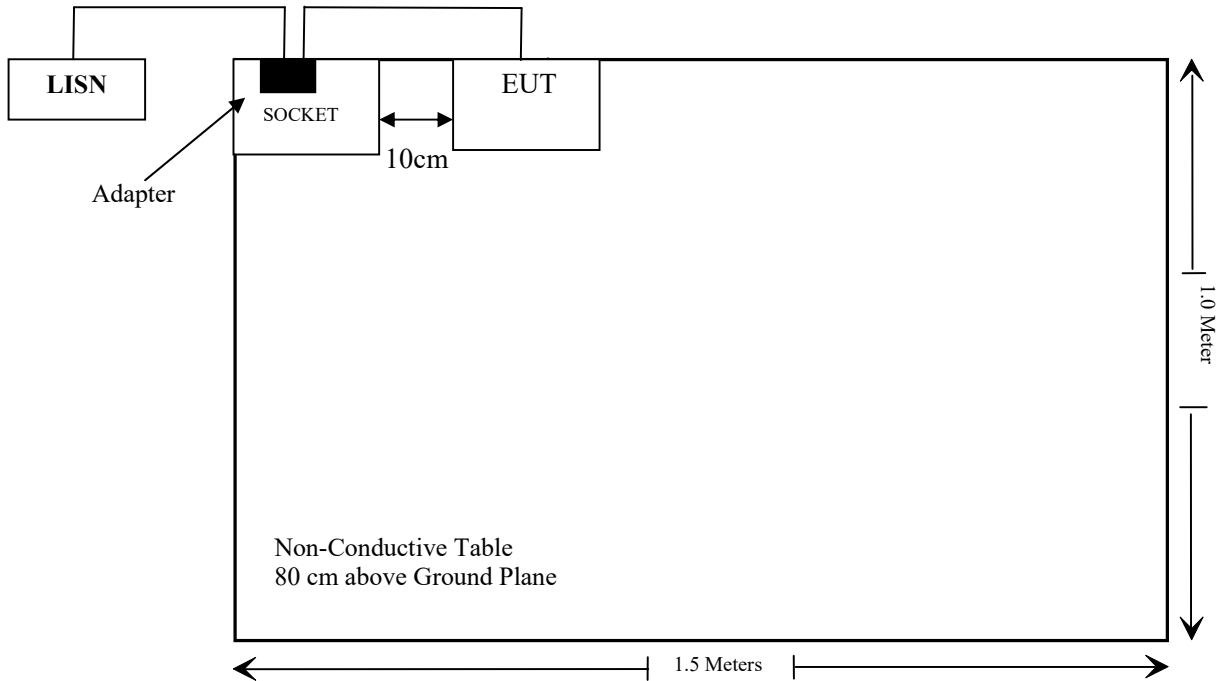
Manufacturer	Description	Model	Serial Number
OUPU	SOCKET	PDU-OP1606K	Unknown
VERNEE	ADAPTOR	APS-KI018WE-G	Unknown

External I/O Cable

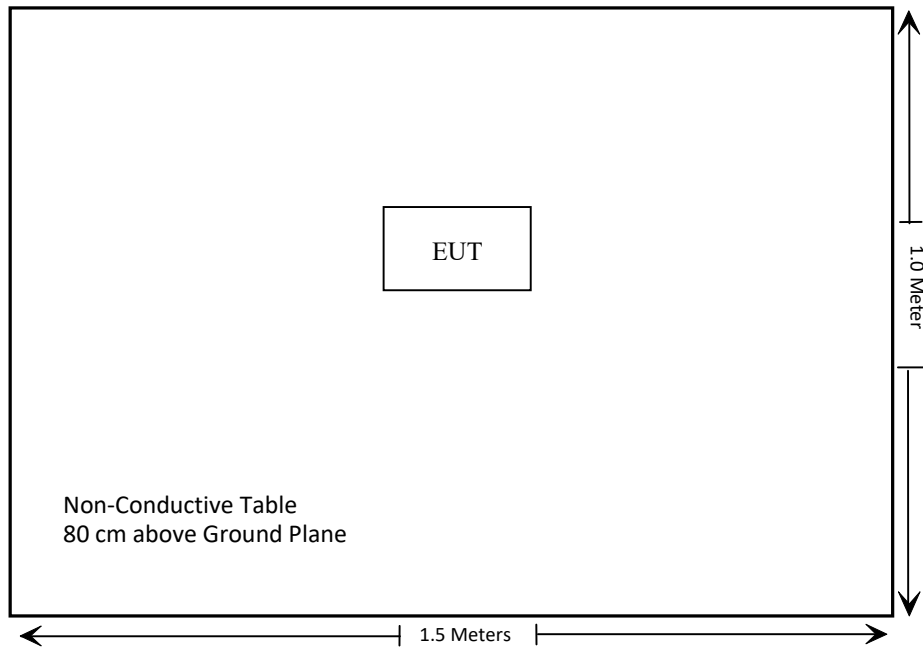
Cable Description	Length (m)	From/Port	To
Un-shielding un-Detachable AC Cable	1.0	LISN	SOCKET
Un-shielding Detachable USB Cable	1.0	ADAPTOR	EUT

Block Diagram of Test Setup

Test mode 1:



Test mode 2:



SUMMARY OF TEST REPORT

EN IEC 55014-1

Rule	Description	Results
§ 4.3 Continuous disturbances		
§ 4.3.2	Disturbance voltage/current(induction cooking)	Not Applicable
§ 4.3.2	Magnetic field(induction cooking)	Not Applicable
§ 4.3.3	Conducted Disturbance(150kHz-30MHz)	Compliant
§ 4.3.4	Disturbance Power(30MHz-300MHz)	Not Applicable
§ 4.3.4	Radiated Disturbance(30MHz-1000MHz)	Compliant
§ 4.4 Discontinuous disturbances		
§ 4.4.2	Disturbance voltage	Not Applicable

EN IEC 55014-2

Rule	Description	Results
§ 5.1	Electrostatic Discharge (IEC 61000-4-2)	Compliant
§ 5.2	Fast Transients (IEC 61000-4-4)	Compliant
§ 5.4	Injected Currents (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 IEC 61000-3-2

Rule	Description	Results
§7	Harmonic Current Emissions	Not Applicable

EN 61000-3-3

Rule	Description	Results
§5	Voltage Fluctuation and Flicker	Compliant

Not Applicable: This device is not applicable to this section test.

TEST EQUIPMENT LIST

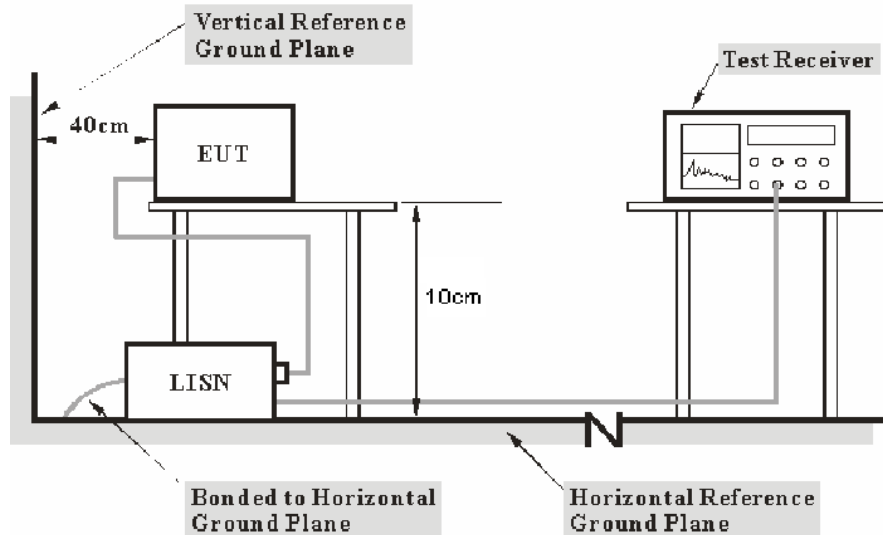
Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
EMI					
Rohde & Schwarz	EMI Test Receiver	ESCI	101120	2022/07/04	2023/07/03
Rohde & Schwarz	LISN	ENV216	101613	2022/07/04	2023/07/03
Rohde & Schwarz	Transient Limiter	ESH3Z2	DE25985	2021/11/26	2022/11/25
Unknown	CE Cable	CE Cable	UF A210B-1-0720-504504	2021/11/26	2022/11/25
Rohde & Schwarz	CE Test software	EMC 32	V8.53.0	NCR	NCR
R&S	EMI Test Receiver	ESR3	102455	2022/07/28	2023/07/27
Sonoma instrument	Pre-amplifier	310 N	186238	2022/08/03	2023/08/02
Sunol Sciences	Broadband Antenna	JB1	A040904-2	2020/12/22	2023/12/21
Unknown	Cable	Chamber Cable 1	F-03-EM236	2022/08/03	2023/08/02
Unknown	Cable	Chamber Cable 4	EC-007	2022/08/03	2023/08/02
Rohde & Schwarz	Auto test software	EMC 32	V9.10.00	NCR	NCR
EM TEST	Harmonics/flicker Analyer	DPA 500N	V093910517 6	2022/04/28	2023/04/27
EM TEST	AC Source	ACS500	303276	2022/10/08	2023/10/07

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
EMS					
EM Test	ESD Generator	NSG 438	1476	2022/10/09	2023/10/08
HP	Signal Generator	8665B	3744A01692	2022/07/04	2023/07/03
R&S	Audio Analyzer	UPV	101782	2022/07/04	2023/07/03
AR	Amplifier	500W1000B	0348446	NCR	NCR
AR	Amplifier	60S1G6	0348712	NCR	NCR
AR	Antenna	ATL80M1G	0348837	NCR	NCR
AR	Antenna	ATT700M12G	0349411	NCR	NCR
BACL	Test Software	VEE PRO	V2.3 VXE	NCR	NCR
HP	Signal Generator	8648C	3426A01345	2022/07/04	2023/07/03
A&R	Power Amplifier	15A250	13444	2021/11/26	2022/11/25
WEINSCHEL	6dB Attenuator	50-6	R4376	NCR	NCR
Com-Power Corporation	CDN	CDN M325E	521145	2022/06/27	2023/06/26
Com-Power Corporation	CDN	CDN T8E	581609	2022/06/27	2023/06/26
BACL	Test Software	VEE PRO	V2.3 VXE	NCR	NCR
EM TEST	EMS Combination Tester	UCS 500 N5	V0939105172	2022/10/09	2023/10/08
EM TEST	AC Source	MV2616	V0939105173	2022/10/09	2023/10/08
EM TEST	CDN	CNV 504N	V0939105174	2022/04/01	2023/03/31
EM TEST	Current Transformer	MC 2630	0309-59	2022/04/11	2023/04/10
EM TEST	IEC.Control	V5.1.3.0	135689	NCR	NCR

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

EN 55014 §4.3.3- CONDUCTED DISTURBANCE(150kHz-30MHz)

Test System Setup



- Note: 1. Support units were connected to second LISN.
 2. Both of LISNs (AMN) 10cm from EUT and at the least 10cm from other units and other metal planes support units.

The setup of EUT is according with CISPR 16-2-1:2014 measurement procedure. The specification used was the EN 55014-1 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 Procedure

During the conducted emission test, the adapter was connected to the outlet of the LISN.

Maximizing procedure was performed on the six (6) highest emissions to ensure EUT compliance using all installation combination.

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

Corrected Factor & Margin Calculation

The Corrected factor is calculated by adding LISN/ISN VDF (Voltage Division Factor), Cable Loss and Pulse Limiter Attenuation. The basic equation is as follows:

$$\text{Correction Factor} = \text{LISN/ISN VDF} + \text{Cable Loss} + \text{Pulse Limiter Attenuation}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7 dB below the limit. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

Test Results Summary

According to the recorded data in following table, the EUT complied with the limit of EN 55014-1

Refer to CISPR16-4-2:2011 and CISPR 16-4-1:2009, the measured level complies with the limit if

$$L_m + U_{(Lm)} \leq L_{lim} + U_{cispr}$$

In BAEL, $U_{(Lm)}$ is less than U_{cispr} , if L_m is less than L_{lim} , it implies that the EUT complies with the limit.

Test Data

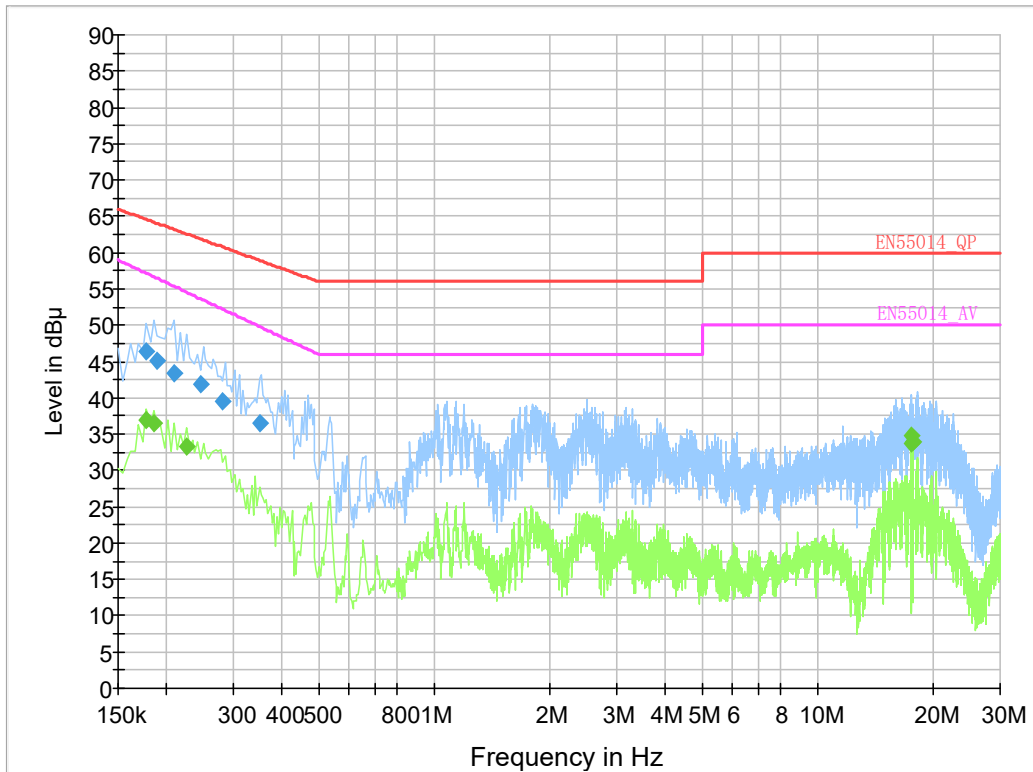
Environmental Conditions

Temperature:	25 °C
Relative Humidity:	70 %
ATM Pressure:	101.0 kPa

The testing was performed by Macy Shi on 2022-10-13

Test mode 1

AC 230V/50 Hz, Line



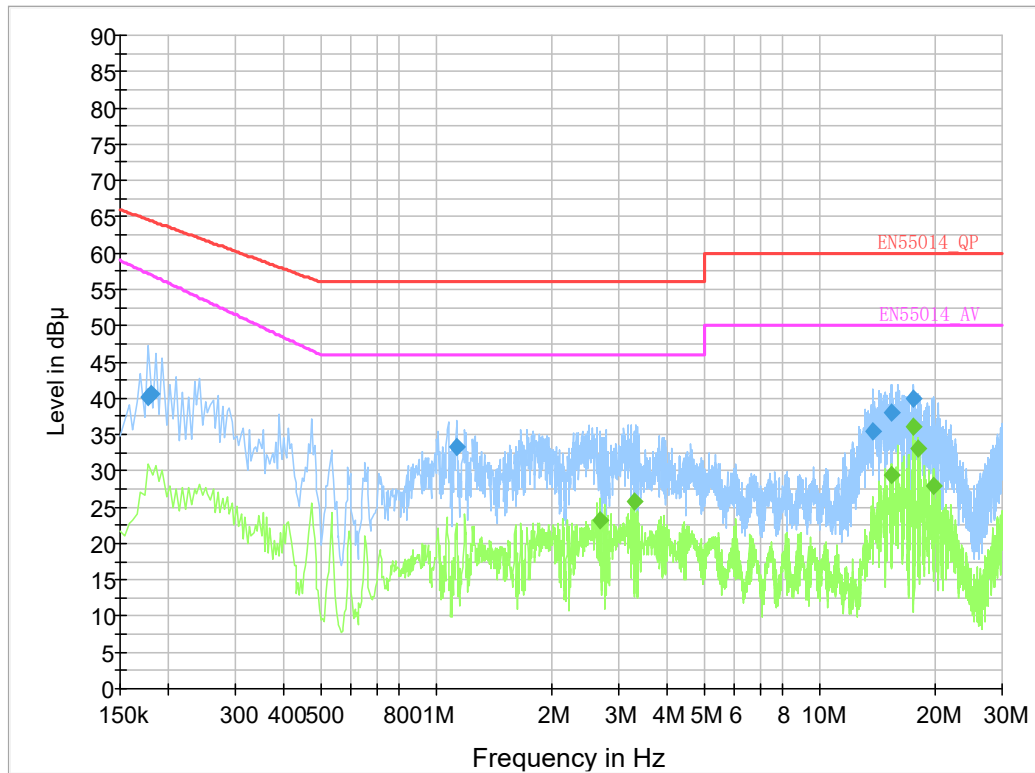
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.177500	46.3	9.000	L1	20.2	18.3	64.6
0.189500	45.0	9.000	L1	20.2	19.1	64.1
0.209500	43.5	9.000	L1	20.2	19.7	63.2
0.245500	41.9	9.000	L1	20.2	20.0	61.9
0.281500	39.5	9.000	L1	20.2	21.3	60.8
0.352690	36.6	9.000	L1	20.3	22.3	58.9

Final Result 2

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.178000	36.9	9.000	L1	20.2	20.3	57.2
0.186000	36.6	9.000	L1	20.2	20.1	56.7
0.226000	33.3	9.000	L1	20.2	21.3	54.6
17.610000	33.8	9.000	L1	20.3	16.2	50.0
17.670000	34.9	9.000	L1	20.3	15.1	50.0
17.730000	33.9	9.000	L1	20.3	16.1	50.0

AC 230V/50 Hz, Neutral:



Final Result 1

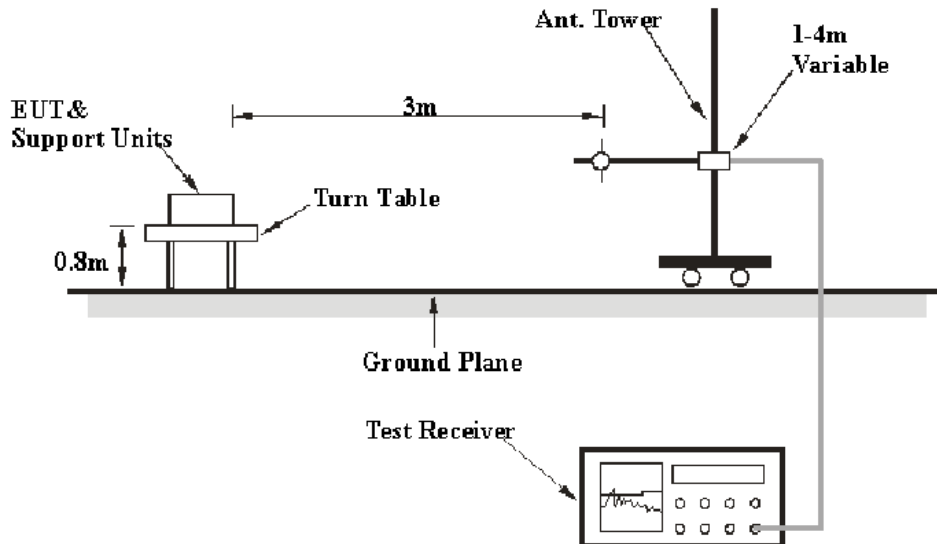
Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.177500	40.2	9.000	N	20.2	24.4	64.6
0.181500	40.6	9.000	N	20.2	23.8	64.4
1.132930	33.3	9.000	N	20.3	22.7	56.0
13.822850	35.5	9.000	N	20.1	24.5	60.0
15.439330	38.0	9.000	N	20.1	22.0	60.0
17.633370	40.0	9.000	N	20.3	20.0	60.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
2.686000	23.2	9.000	N	20.3	22.8	46.0
3.282000	25.7	9.000	N	20.4	20.3	46.0
15.378000	29.4	9.000	N	20.1	20.6	50.0
17.642000	36.0	9.000	N	20.3	14.0	50.0
18.174000	33.1	9.000	N	20.3	16.9	50.0
19.790000	28.0	9.000	N	20.4	22.0	50.0

EN 55014-1§4.3.4- RADIATED DISTURBANCE

Test System Setup



The radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the CISPR16-1-4: 2010+A1:2012, CISPR 16-2-3: 2010+A1:2010+A2:2014. The related limit was specified in EN55014-1.

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 was set with the following configurations:

Frequency Range	RBW	Video B/W	Detector
30MHz – 1000 MHz	120 kHz	300 kHz	Quasi-peak

Test Procedure

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

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

Corrected Amplitude & Margin Calculation

The Corrected Level is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Read Level. The basic equation is as follows:

$$\begin{aligned} \text{Correction factor} &= \text{Antenna Factor} + \text{Cable Loss} - \text{Amplifier Gain} \\ \text{Corrected Level} &= \text{Read Level} + \text{Correction factor} \end{aligned}$$

The “**Over limit**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -6 dB means the emission is 6 dB below the limit for Class B. The equation for margin calculation is as follows:

$$\text{Over limit} = \text{Corrected Level} - \text{Limit.}$$

Test Results Summary

According to the recorded data in following table, the EUT complied with the limit of EN 55014-1

Refer to CISPR16-4-2:2011 and CISPR 16-4-1:2009, the measured level complies with the limit if

$$L_m + U_{(L_m)} \leq L_{\text{lim}} + U_{\text{cispr}}$$

In BACL, $U_{(L_m)}$ is less than U_{cispr} , if L_m is less than L_{lim} , it implies that the EUT complies with the limit.

Test Data

Environmental Conditions

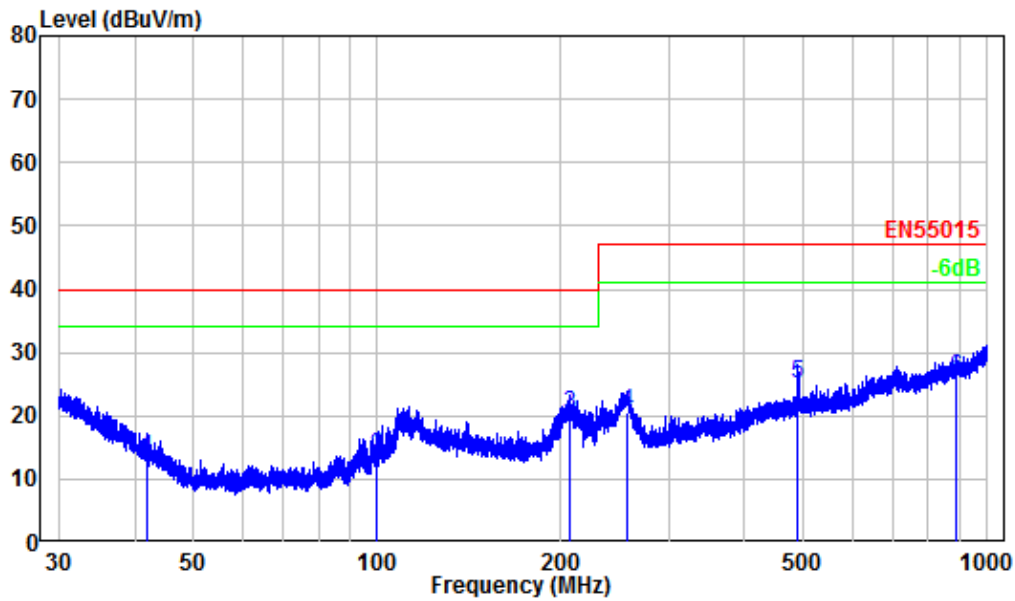
Temperature:	22 °C
Relative Humidity:	55 %
ATM Pressure:	101.0 kPa

The testing was performed by Anson Su on 2022-10-15.

Test mode 1

30 MHz~1 GHz:

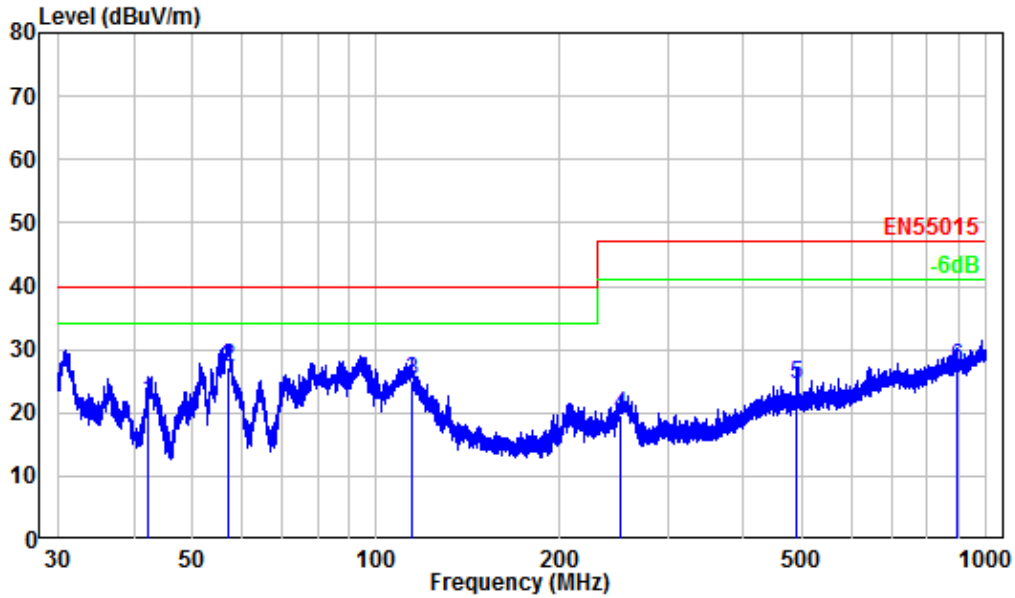
Horizontal



Site : chamber
 Condition: 3m Horizontal
 Job No. : SZ4221009-45885E-EM
 Test Mode: Charging

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	41.82	-11.55	24.86	13.31	40.00	-26.69	QP
2	99.97	-13.74	27.28	13.54	40.00	-26.46	QP
3	206.85	-11.15	31.24	20.09	40.00	-19.91	QP
4	257.42	-11.57	32.21	20.64	47.00	-26.36	QP
5	489.89	-5.16	30.34	25.18	47.00	-21.82	QP
6	889.95	0.85	25.24	26.09	47.00	-20.91	QP

Vertical



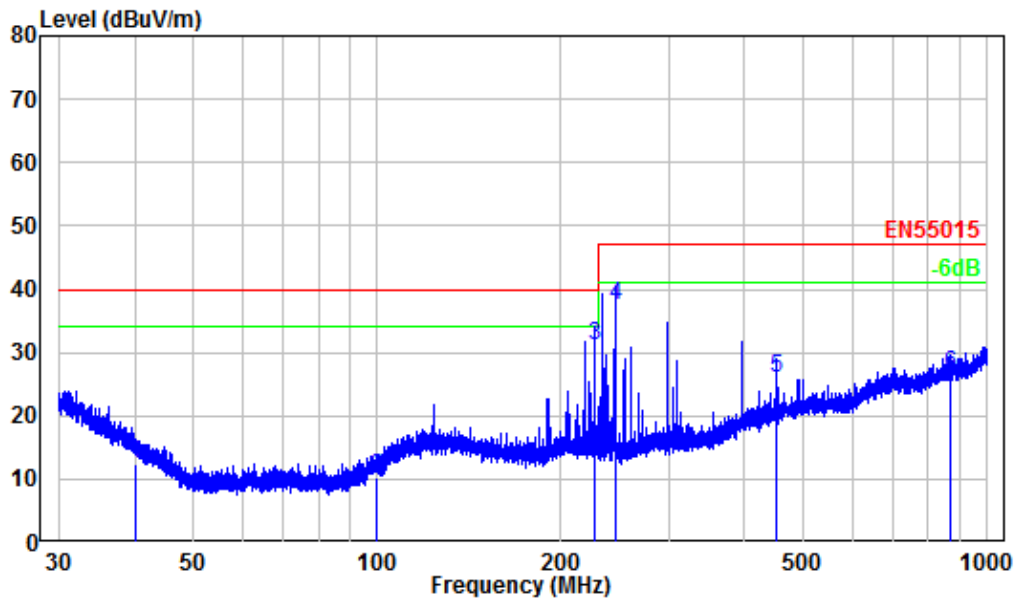
Site : chamber
 Condition: 3m Vertical
 Job No. : SZ4221009-45885E-EM
 Test Mode: Charging

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	42.34	-11.88	33.66	21.78	40.00	-18.22	QP
2	57.04	-16.54	43.76	27.22	40.00	-12.78	QP
3	114.01	-10.82	35.97	25.15	40.00	-14.85	QP
4	251.62	-11.79	31.36	19.57	47.00	-27.43	QP
5	489.67	-5.17	29.63	24.46	47.00	-22.54	QP
6	894.64	0.93	26.32	27.25	47.00	-19.75	QP

Test mode 2

30 MHz~1 GHz:

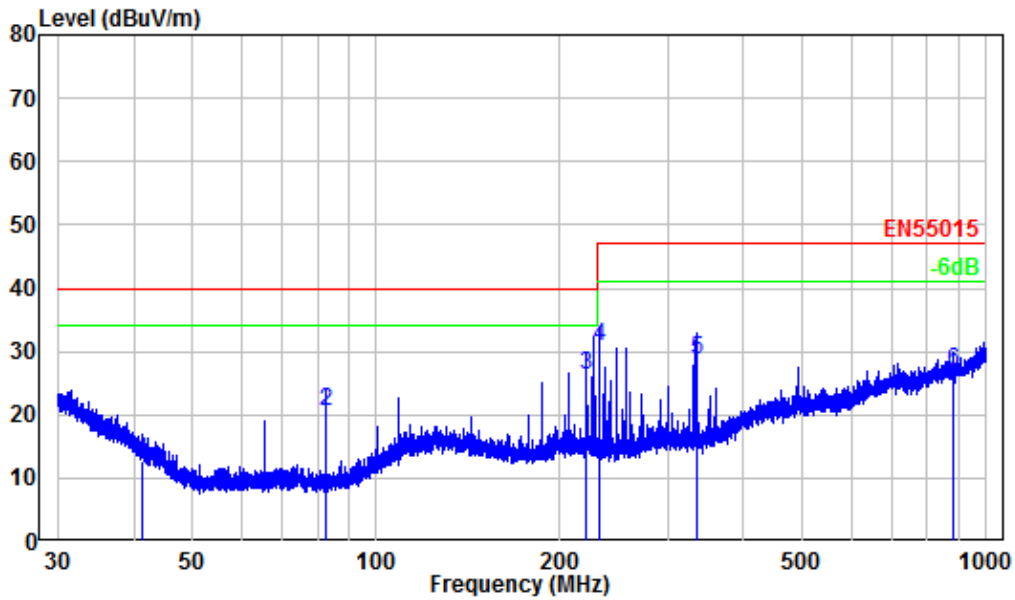
Horizontal



Site : chamber
 Condition: 3m Horizontal
 Job No. : SZ4221009-45885E-EM
 Test Mode: working

	Freq	Factor	Read Level	Level	Limit	Over	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	40.01	-10.40	22.69	12.29	40.00	-27.71	QP
2	99.79	-13.79	24.02	10.23	40.00	-29.77	QP
3	226.69	-11.46	42.59	31.13	40.00	-8.87	QP
4	245.74	-11.78	49.11	37.33	47.00	-9.67	QP
5	452.52	-5.59	31.69	26.10	47.00	-20.90	QP
6	870.66	0.53	26.04	26.57	47.00	-20.43	QP

Vertical

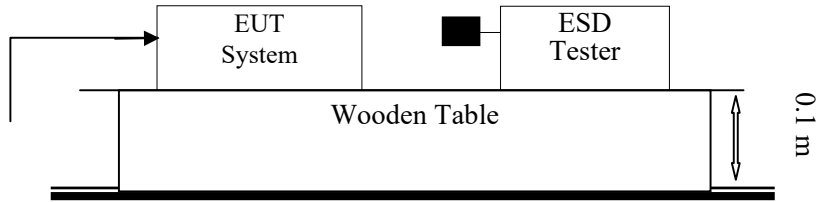


Site : chamber
 Condition: 3m Vertical
 Job No. : SZ4221009-45885E-EM
 Test Mode: working

	Freq	Factor	Read Level	Level	Limit	Over	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	41.28	-11.20	23.99	12.79	40.00	-27.21	QP
2	82.61	-16.68	37.09	20.41	40.00	-19.59	QP
3	220.33	-11.37	37.78	26.41	40.00	-13.59	QP
4	231.82	-11.56	42.31	30.75	47.00	-16.25	QP
5	335.89	-9.88	38.60	28.72	47.00	-18.28	QP
6	882.57	0.73	26.23	26.96	47.00	-20.04	QP

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

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 IEC 55014-2:2021 / IEC 61000-4-2:2008

Test Level

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

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 X 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:	27 °C
Relative Humidity:	43 %
ATM Pressure:	101.0 kPa

The testing was performed by Jason Lion 2022-10-18.

EUT Operation Mode: Test Mode1 & Test Mode2

Table 1: Electrostatic Discharge Immunity (Air Discharge)

IEC 61000-4-2 Test Points	Test Levels							
	-2 kV	+2 kV	-4 kV	+4 kV	-8 kV	+8 kV	-15 kV	+15 kV
Front (4 points)	A	A	A	A	A	A	/	/
Left (4 points)	A	A	A	A	A	A	/	/
Right (3 points)	A	A	A	A	A	A	/	/
Top (2 points)	A	A	A	A	A	A	/	/

Table 2: Electrostatic Discharge Immunity (Direct Contact)

IEC 61000-4-2 Test Points	Test Levels							
	-2 kV	+2 kV	-4 kV	+4 kV	-6 kV	+6 kV	-8 kV	+8 kV
/	/	/	/	/	/	/	/	/

Table 3: Electrostatic Discharge Immunity (Indirect Contact HCP)

IEC 61000-4-2 Test Points	Test Levels							
	-2 kV	+2 kV	-4 kV	+4 kV	-6 kV	+6 kV	-8 kV	+8 kV
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)

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



Note:  represents air discharge,  represents direct contact

Test Mode1



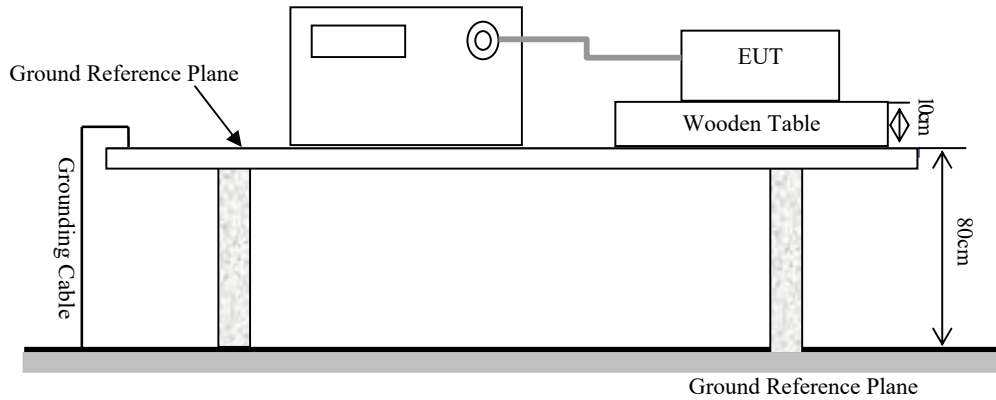
Test Mode2



Test Setup Photos

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

Test System Setup



Test Standard

EN IEC 55014-2:2021 (IEC 61000-4-4:2012)

Test Level

Open Circuit Output Test Voltage ±10%		
Level	On Power Supply Lines	On I/O (Input/Output) Signal data and control lines
1	0.5 kV	0.25 kV
2	1 kV	0.5 kV
3	2 kV	1 kV
4	4 kV	2 kV
X	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 meter 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:	27 °C
Relative Humidity:	44 %
ATM Pressure:	101.0 kPa

The testing was performed by Jason Li on 2022-10-18.

EUT Operation Mode: Test Model

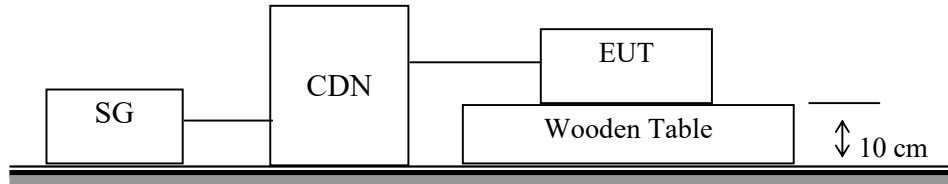
EN 61000-4-4 Test Points		Test Levels (kV)							
		+0.5	-0.5	+1.0	-1.0	+2.0	-2.0	+4.0	-4.0
AC Mains Power Input Ports	L1	/	/	A	A	/	/	/	/
	N	/	/	A	A	/	/	/	/
	PE	/	/	/	/	/	/	/	/
	L1/N	/	/	A	A	/	/	/	/
	L1/PE	/	/	/	/	/	/	/	/
	N/PE	/	/	/	/	/	/	/	/
	L1/N/PE	/	/	/	/	/	/	/	/
Signal Port	/	/	/	/	/	/	/	/	



Test Setup Photo

EN IEC 55014-2 §5.4 - INJECTED CURRENTS (IEC 61000-4-6)

Test Setup



Test Standard

EN IEC 55014-2:2021 (IEC 61000-4-6:2013)

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 $1.5 \cdot 10^{-3}$ 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) An artificial ear and sound level meter are used to monitor the sound pressure level. RF communication test set is used to monitor the noise level.
- 8) Recording the EUT operating situation during compliance testing and decide the EUT immunity criterion.

Test Data

Environmental Conditions

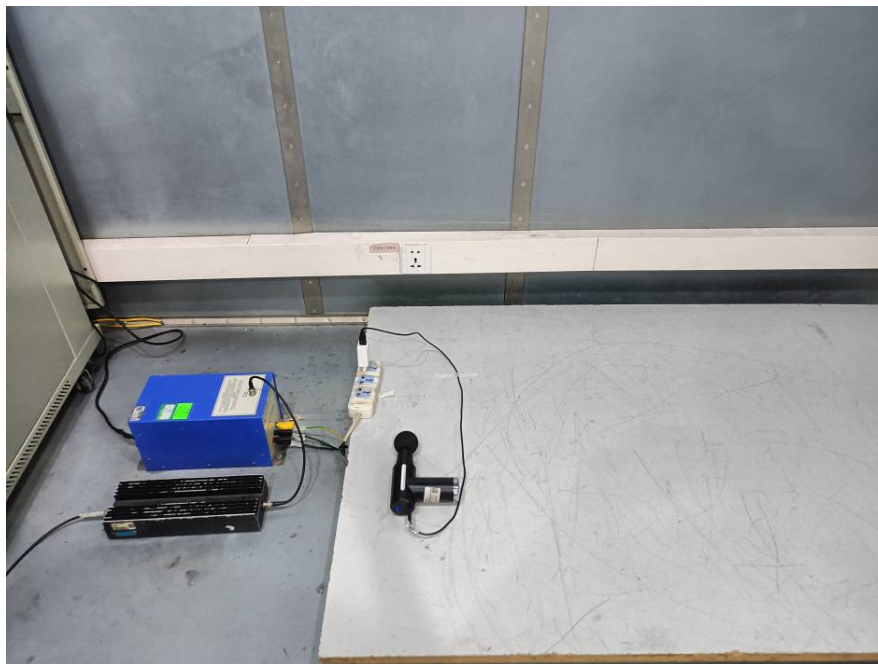
Temperature:	27 °C
Relative Humidity:	43%
ATM Pressure:	101.0 kPa

The testing was performed by Jason Li on 2022-10-18

EUT Operation Mode: Test Model

Table 1: AC mains power input port
Frequency range: 150 kHz to 230 MHz
Modulation: Amplitude 80%, 1 kHz sine wave
Test level: 3V r.m.s.

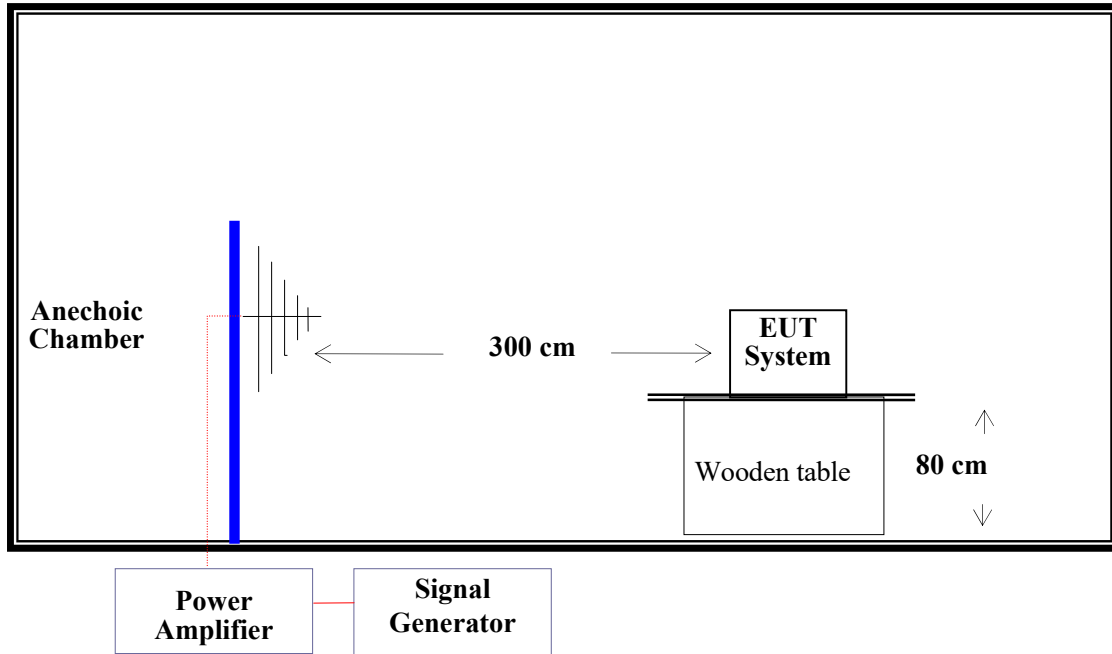
Level	Voltage Level (r.m.s.) U ₀	Pass	Fail
1	1	/	/
2	3	A	/
3	10	/	/
X	Special	/	/



Test Setup Photo

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

Test System Setup



Test Standard

EN IEC 55014-2:2021(IEC 61000-4-3: 2006 /AMD2:2010)

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	80% AM (1 kHz) Modulation
3. Scanning Frequency	80-1000MHz
4. Frequency step	1%
5. Dwell Time	1Sec.

Test Data and Setup Photo

Environmental Conditions

Temperature:	26 °C
Relative Humidity:	46 %
ATM Pressure:	101.0 kPa

The testing was performed by Jason Li 2022-10-18.

EUT Operation Mode: Test Mode1 & Test Mode2

Frequency Range (MHz)	Front Side (3 V/m)		Rear Side (3 V/m)		Left Side (3 V/m)		Right Side (3 V/m)	
	VERT	HORI	VERT	HORI	VERT	HORI	VERT	HORI
80-1000	A	A	A	A	A	A	A	A

Test Model1



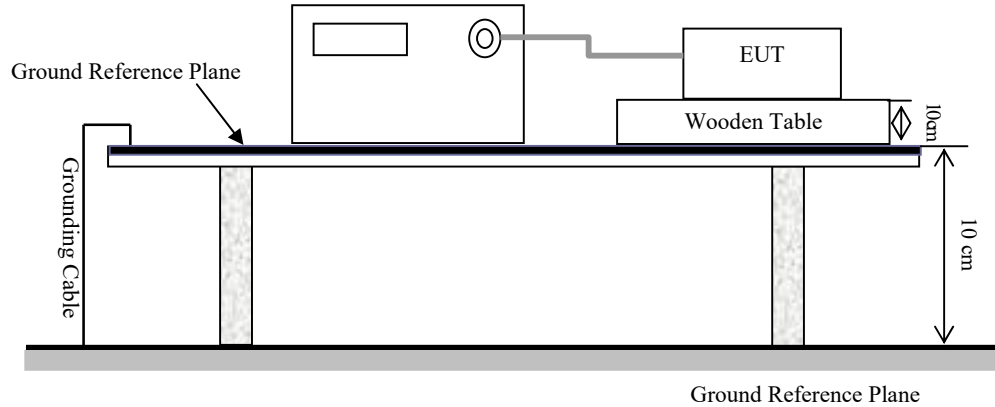
Test Mode2



Test Setup Photos

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

Test System Setup



Test Standard

EN IEC 55014-2: 2021 (IEC 61000-4-5:2014/AMD1:2017)

Test Level

Level	Open Circuit Output Test Voltage ±10%	Performance Criterion	
		AC Mains	Signal Port
1	0.5 kV	B	C
2	1 kV	B	C
3	2 kV	B	C
4	4 kV	B	C
X	Special	/	/

Test Procedure

- 1) For input power ports, provide a 1.2/50µs voltage surge (at open-circuit condition) and a 8/20 µs current surge into a short circuit.
- 2) For signal ports and telecommunication ports, provide a 10/700µs voltage surge (at open-circuit condition) and a 5/320 µs current surge into a short circuit.
- 3) At least 5 positive and 5 negative (polarity) tests with a maximum 1/min repetition rate are conducted during test.
- 4) Different phase angles are done individually.
- 5) Record the EUT operating situation during compliance test and decide the EUT immunity criterion for above each test.

Test Data

Environmental Conditions

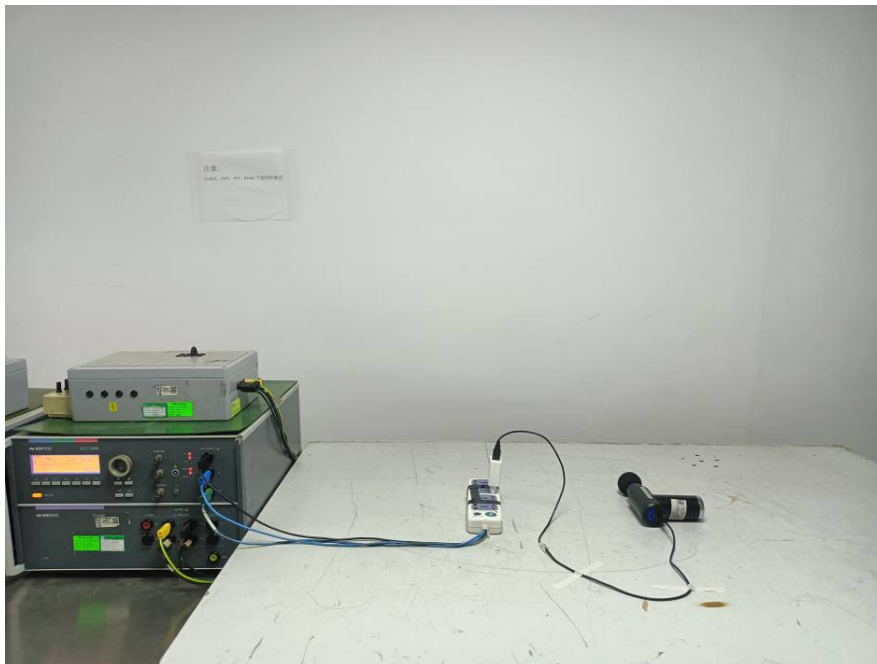
Temperature:	27 °C
Relative Humidity:	44 %
ATM Pressure:	101.0 kPa

The testing was performed by Jason Li on 2022-10-18.

EUT Operation Mode: Test Mode1

Table 1: AC mains power input port

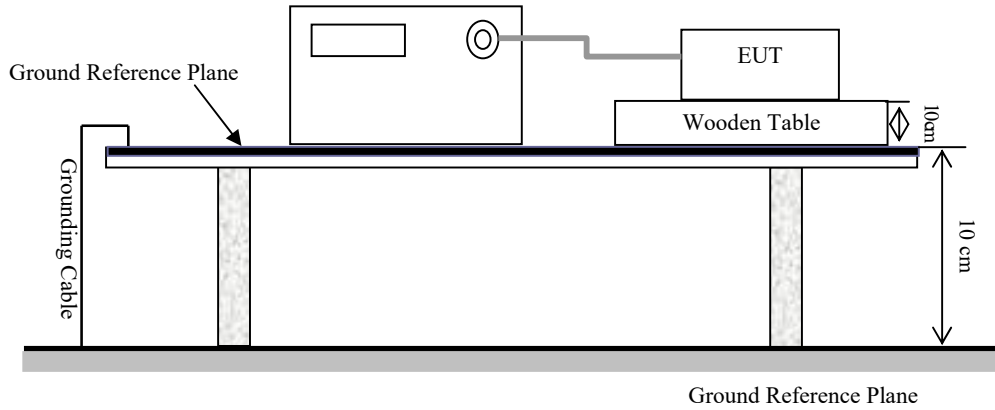
Level	Voltage	Poll	Path	Pass	Fail
1	0.5kV	±	L1/N	A	/
2	1kV	±	L1/N	A	/
3	2kV	±	/	/	/
4	4kV	±	/	/	/



Test Setup Photo

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

Test Setup



Test Standard

EN IEC 55014-2: 2021 (IEC 61000-4-11:2020)

Test level

Test Level	Voltage dip and short interruptions %UT	Duration (Periods)	Performance Criterion
1	100	0.5	C
2	60	10	C
3	30	25	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:	27 °C
Relative Humidity:	44 %
ATM Pressure:	101.0 kPa

The testing was performed by Jason Li on 2022-10-18.

EUT Operation Mode: Test Model

Level	U2 (% Residual)	Td(Periods)	Phase Angle	N	Pass	Fail
1	0	0.5	0/180	3	A	/
2	40	10	0/180	3	A	/
3	70	25	0/180	3	A	/



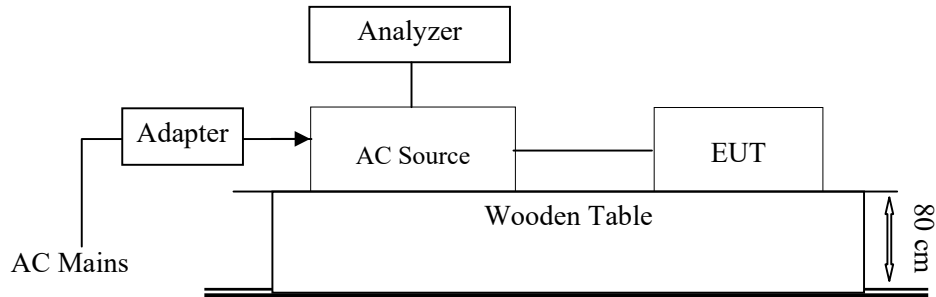
Test Setup Photo

EN IEC 61000-3-2 – HARMONIC CURRENT EMISSIONS

According to EN IEC 61000-3-2:2019/A1:2021 section 7: Equipment with a rated power of 75 W or less, other than lighting equipment, are not included in this standard.

EN 61000-3-3 – VOLTAGE FLUCTUATION AND FLICKER

Test System Setup



Test Standard

According to EN 61000-3-3:2013/A1:2019

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 Pst shall not be greater than 1,0;
- the value of Plt shall not be greater than 0,65;
- the value of d(t) during a voltage change shall not exceed 3,3 % for more than 500 ms;
- the relative steady-state voltage change, dc, shall not exceed 3,3 %;
- the maximum relative voltage change dmax, 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.
 - 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 and Setup Photo

Environmental Conditions

Temperature:	28 °C
Relative Humidity:	40 %
ATM Pressure:	101.0 kPa

Date of test:	9:03 18 Oct 2022
Tester:	Jason Li
Standard used:	EN/IEC 61000-3-3 Flicker
Short time (Pst):	10 min
Observation time:	120 min (12 Flicker measurements)
Flicker meter:	230V / 50Hz
Model:	RB-PC-MSG01-B
Test Mode:	Test Model1

Maximum Flicker results

	EUT values	Limit	Result
Pst	0.028	1.00	Pass
Plt	0.028	0.65	Pass
dc [%]	0.015	3.30	Pass
dmax [%]	0.056	4.00	Pass
dt [s]	0.000	0.50	Pass



Test Setup Photo

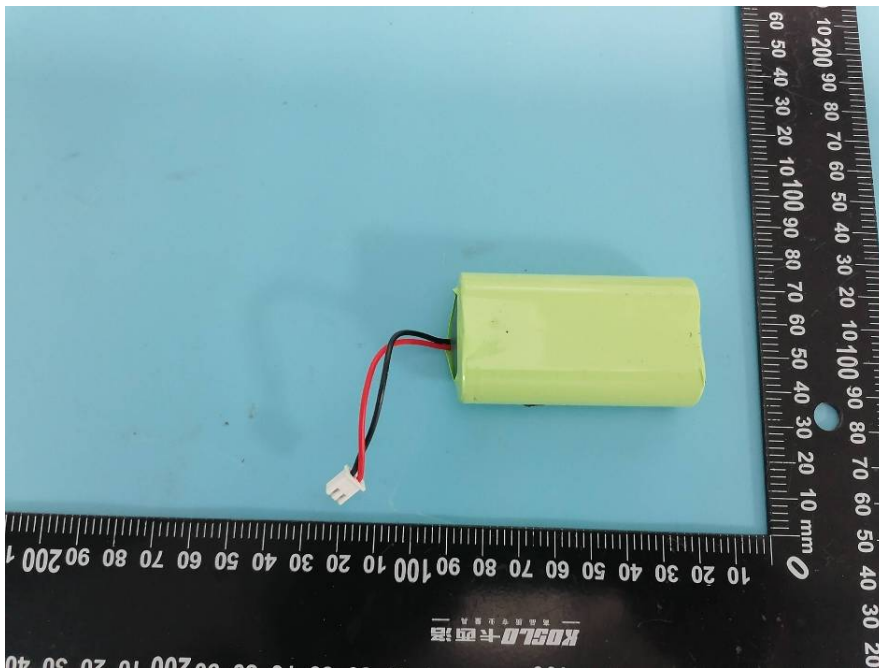
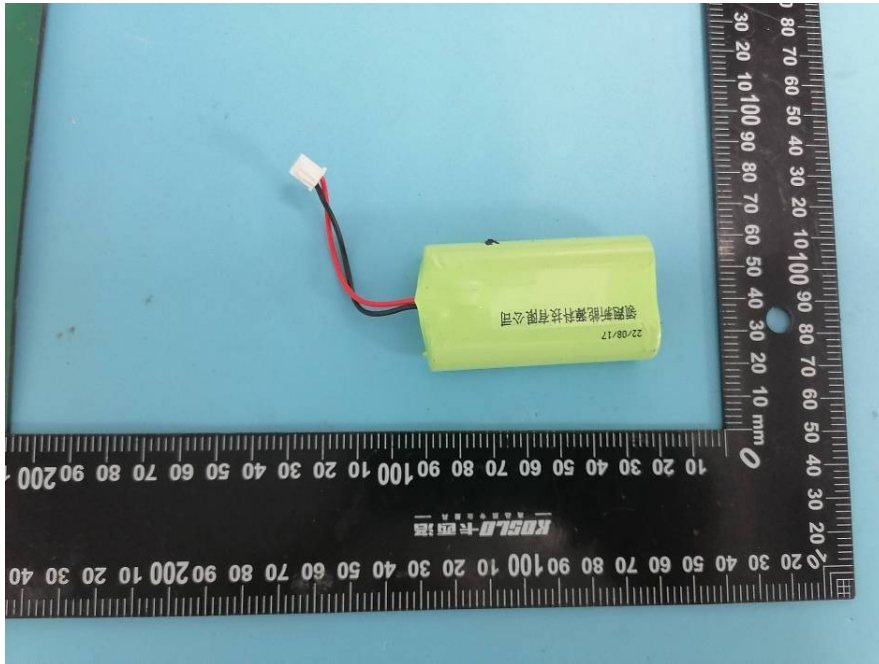
EXHIBIT A - EUT PHOTOGRAPHS

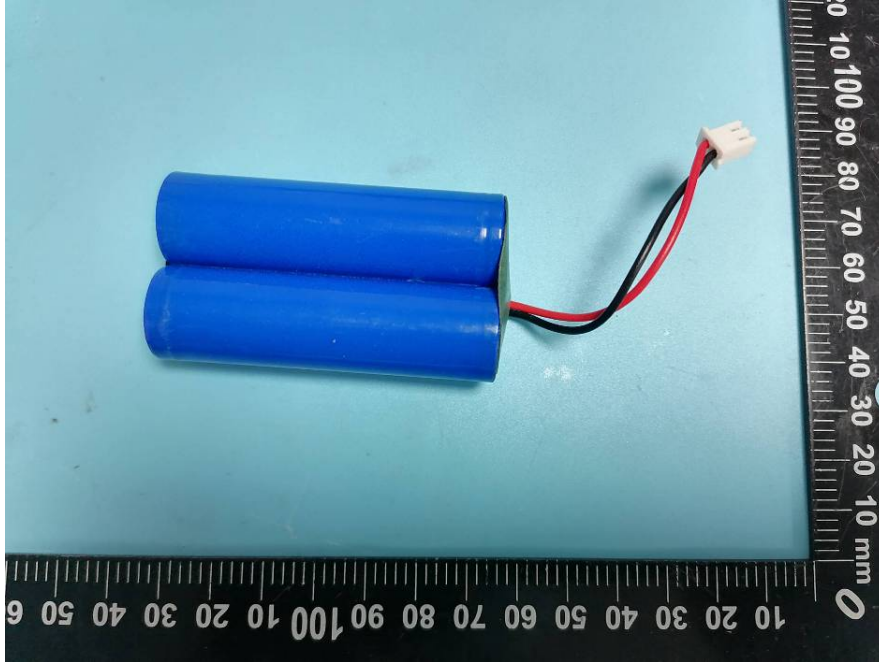
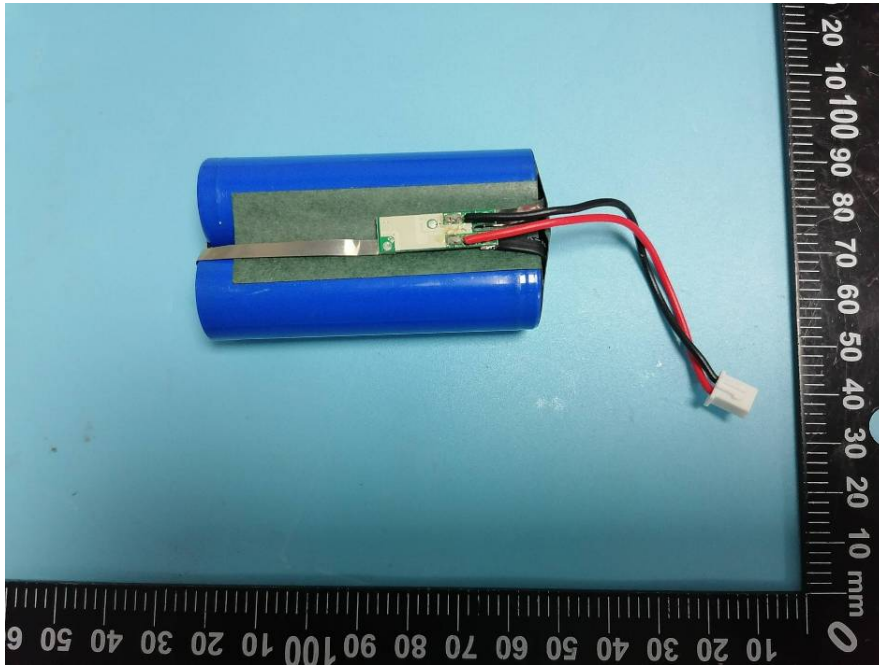


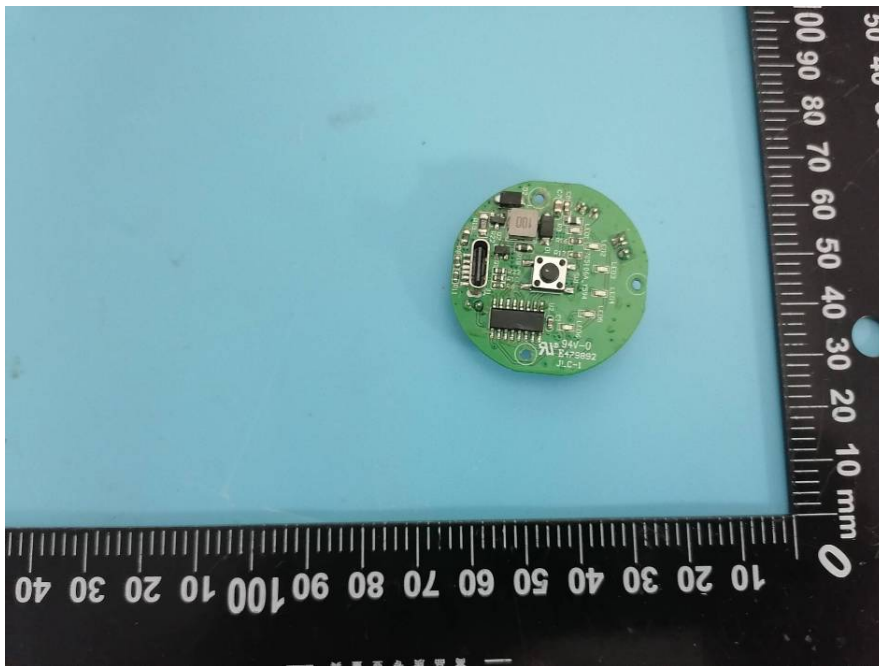












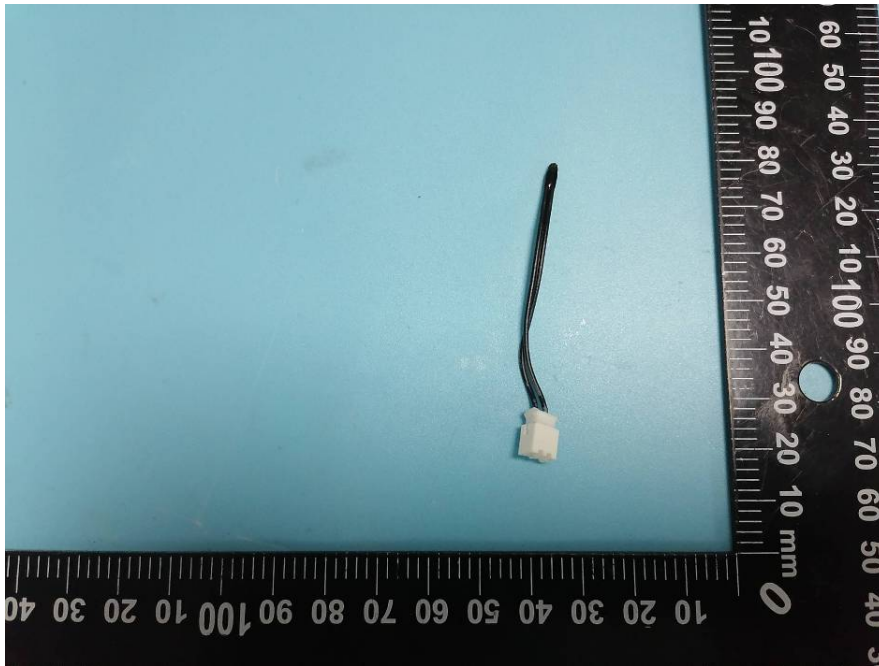
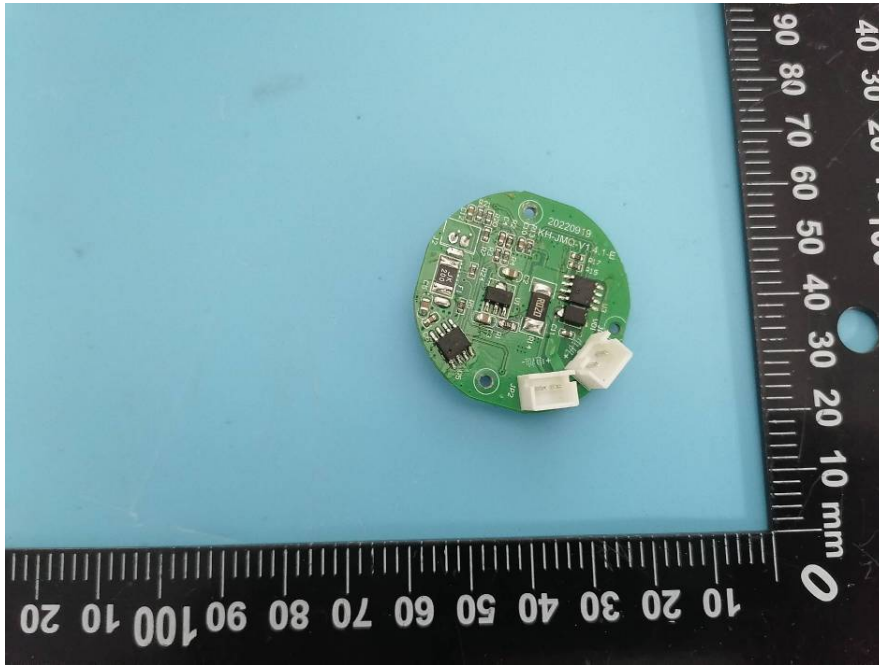


EXHIBIT B - TEST SETUP PHOTOGRAPHS

Conducted Disturbance - Front View



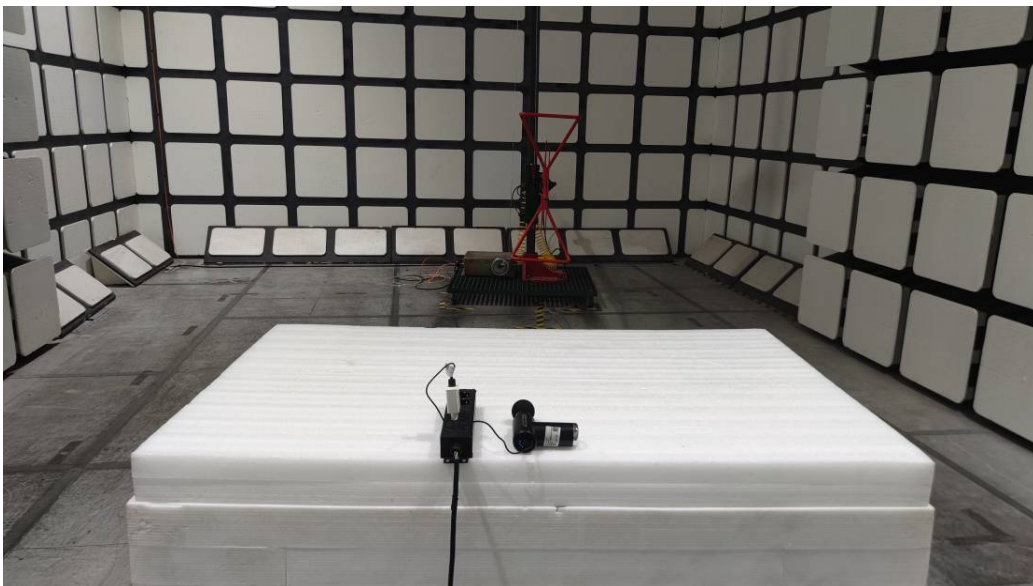
Conducted Disturbance - Side View



Test Model
Radiated Disturbance – Front View (Below 1 GHz)



Radiated Disturbance – Rear View (Below 1 GHz)



Test Mode 2

Radiated Disturbance – Below 1 GHz



PRODUCT SIMILARITY DECLARATION LETTER

SHENZHEN ESURE ELECTRONICS Co., Ltd
 #3 Building Xufa Industrial Zone Heshuikou Village Gongming Town Guangming District SZ China.518106
 Tel: 0755-27513411
 Email: tim@szesure.com
 10/19/2022

Declaration of Similarity

We, Shenzhen Esure Electronics Co., Ltd hereby declare that there are some differences between our Multiple Models and tested model. Details as below:

Products	Name	Massagegun	
Description	Manufacturer	SHENZHEN ESURE ELECTRONICS Co., Ltd	
Differences Description			
Tested Model	Multiple Models	Differences	Details
RB-PC-MSG01-B	MG-029 MO6827	Model name	The only difference is the model name

Notes:

Multiple Model - have the same appearance, structure, PCB, Material and function to the tested model, the only difference is the model.

Besides the differences in the table above, we declare the products are identical.

We guarantee all the information provided above is true, and notice that we'll bear all the consequences caused by any false information or concealing.

Best Regards,

Signature:

Print Name

Tim Xiao

Title: Manager



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