



**SGS-CSTC Standards Technical Services
(Shanghai) Co., Ltd.**

588 West Jindu Road, Songjiang District, Shanghai, China
Telephone: +86 (0) 21 6191 5666
Fax: +86 (0) 21 6191 5678
ee.shanghai@sgs.com

Report No.: SHEM140300062801
Page: 1 of 23

1 Cover Page

TEST REPORT

Application No.:	SHEM1403000628HS
Applicant:	Liaoyang Baile Health Care Product Co., Ltd.
Product Name:	MASSAGER
Model No.(EUT):	BW-004101
Add Model No.:	BW-020236, BW-037011, BW-046451, BW-053001, BW-058002, BI-014109, BI-014116, BI-014131, BM-900T27Z, BW-000001-BW-999999, BI-000001-BI-999999, BM-000001-BM-999999, BM-00900T1-BM-00900T9999
Standards:	EN 55014-1:2006/A1:2009/A2:2011, EN 55014-2:1997/A1:2001/A2:2008.
Date of Receipt:	March 25, 2014
Date of Test:	March 27, 2014 to April 21, 2014
Date of Issue:	April 22, 2014
Test Result:	Pass*

* In the configuration tested, the EUT (Equipment under test) 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 EC Declaration of Conformity and compliance with all relevant EC Directives.




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.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. All test results in this report can be traceable to National or International Standards.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

2 Version

Revision Record				
Version	Chapter	Date	Modifier	Remark
00		April 21, 2014		Original

Authorized for issue by:			
Engineer		Terry Hou _____ Print Name	 _____
Clerk		Tricia Jiang _____ Print Name	 _____
Reviewer		Keny Xu _____ Print Name	 _____

3 Test Summary

ELECTROMAGNETIC INTERFERENCE (EMI)			
Test	Test Requirement	Test Method	Result
Radiated Emission (30MHz to 1GHz)	EN 55014-1:2006/ A1:2009/A2:2011	CISPR 16-2-3:2006	PASS
Electromagnetic Susceptibility(EMS)			
Test	Test Requirement	Test Method	Result
ESD	EN 55014-2:1997 /A1:2001/A2:2008	EN 61000-4-2:2009	PASS
Other Immunity	EN 55014-2:1997 /A1:2001/A2:2008	N/A	N/A
Remark :			
N/A: Not applicable, please refer to Section 8 of this report for details.			
Note: There are series models mentioned in this report, and they are the similar in electrical and electronic characters. Only the model BW-004101 was tested since their differences were the model number, trade name and appearance deviation.			

4 Contents

1	COVER PAGE	1
2	VERSION	2
3	TEST SUMMARY	3
4	CONTENTS	4
5	GENERAL INFORMATION	5
5.1	Client Information.....	5
5.2	Details of E.U.T.	5
5.3	E.U.T Operation Mode.....	5
5.4	E.U.T Operation Environment	5
5.5	Description of Support Units	5
5.6	Deviation from Standards	5
5.7	Abnormalities from Standard Conditions	5
5.8	Monitoring of EUT for All Immunity Test.....	5
5.9	Test Location.....	6
5.10	Test Facility.....	6
5.11	Measurement Uncertainty.....	7
6	EQUIPMENT LIST	8
7	ELECTROMAGNETIC INTERFERENCE TEST RESULTS.....	10
7.1	Radiated Emissions, 30MHz to 1GHz.....	10
8	ELECTROMAGNETIC SUSCEPTIBILITY TEST RESULTS	14
8.1	Performance Criteria Description in Clause 6 of EN 55014-2.....	14
8.2	ESD.....	15
9	PHOTOGRAPHS.....	17
9.1	Radiated Emission Test Setup.....	17
9.2	ESD Test Setup	17
10	EUT CONSTRUCTIONAL DETAILS	18
10.1	Exterior of EUT	18
10.2	Interior of EUT	20-23

5 General Information

5.1 Client Information

Applicant:	Liaoyang Baile Health Care Product Co., Ltd.
Address of Applicant:	No.160-1 Liao An Road, Shoushan, Liaoyang, Liaoning Province, China 111200
Manufacturer:	Liaoyang Baile Health Care Product Co., Ltd.
Address of Manufacturer:	No.160-1 Liao An Road, Shoushan, Liaoyang, Liaoning Province, China 111200
Factory:	Liaoyang Baile Health Care Product Co., Ltd.
Address of Factory:	No.160-1 Liao An Road, Shoushan, Liaoyang, Liaoning Province, China 111200

5.2 Details of E.U.T.

Power Supply:	3*1.5V "AAA" Battery Size DC 4.5V
Test voltage:	DC 4.5V
Cable Type:	N/A

5.3 E.U.T Operation Mode

Functions/Modes:	Running mode
Running mode:	Keep the internal motor of EUT running continuously.
Remark:	Pre-test all running modes then choose the worst result.

5.4 E.U.T Operation Environment

Temperature Range:	20-25°C
Humidity Range:	30-60% RH
Atmospheric Pressure Range:	100-102kPa

5.5 Description of Support Units

The EUT has been tested as an independent unit.

5.6 Deviation from Standards

All Immunity tests to EN 55014-2 were performed in accordance with EN 61000-4-x and not IEC 61000-4-x. (x=2).

5.7 Abnormalities from Standard Conditions

None.

5.8 Monitoring of EUT for All Immunity Test

Audio:	None.
Visual:	Working status of the EUT.

5.9 Test Location

All tests were performed at:

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

No.588 West Jindu Road, Songjiang District, Shanghai, China. 201612.

Tel: +86 21 6191 5666

Fax: +86 21 6191 5678

No tests were sub-contracted.

5.10 Test Facility

- **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. Date of expiry: 2014-07-26.

- **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, Expiry Date: 2015-02-22.

- **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. Expiry Date: 2014-09-20.

- **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 and C-4336 respectively. Date of Registration: 2012-05-29. Date of Expiry: 2015-05-28.

5.11 Measurement Uncertainty

According to CISPR 16-4-2.

Test Item	Frequency Range	Measurement Uncertainty	U _{cispr}
Conducted Emission at mains port using AMN	9kHz-150kHz	3.2dB	3.8dB
Conducted Emission at mains port using AMN	150kHz-30MHz	2.6dB	3.4dB
Conducted Emission at mains port using VP	9kHz-30MHz	3.9dB	2.9dB
Conducted Emission at telecommunication port using AAN	150kHz-30MHz	4.5dB	5.0dB
Radiated Emission	30MHz-1000MHz	4.3dB	6.3dB
Radiated Emission	1GHz-18GHz	4.5dB	5.2dB(1GHz-6GHz)
			5.5dB(6GHz-18GHz)
Disturbance Power	30MHz-300MHz	2.6dB	4.5dB
Remark: AMN – Artificial Mains Network VP – Voltage Probe ANN – Asymmetric Artificial Network			

Note: The measurement uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

6 Equipment list

Radiated Emission

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal.Due date
1	EMI test receiver	Rohde & Schwarz	ESU40	100109	2014-02-14	2015-02-13
2	CONTROLLER	INNCO	CO200	474	/	/
3	Broadband UHF-VHF ANTENNA	SCHWARZBE CK	VULB916 8	9168-313	2014-02-14	2015-02-13
4	Double ridged broadband horn ANTENNA	SCHWARZBE CK	BBHA912 0D	9120D-67 9	2014-02-14	2015-02-13
5	Amplifier	SCHWARZBE CK	SCU-F011 8-G40-BZ 4-CSS(F)	10001	2014-02-14	2015-02-13
6	Low noise amplifier	TESEQ	LNA6900	71033	2014-02-14	2015-02-13
7	Loop Antenna	SCHWARZBE CK	FMZB151 9	1519-034	2013-05-06	2014-05-06

Electrostatic Discharge Test

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal.Due date
1	Electrostatic Discharge Simulator	TESEQ	NSG 437	468	2013-08-19	2014-08-18

General Equipment

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal.Due date
1	Digital pressure meter	YONGZHI	DYM3-01	101012	2013-03-11	2015-03-09
2	Temperature & humidity recorder	ShangHai weather meter work	ZJ 1-2B	803136	2013-08-26	2014-08-25
3	Temperature & humidity recorder	ShangHai weather meter work	ZJ 1-2B	F3040201 53, 20101201 FS100A6 K	2013-10-29	2014-10-28
4	Digital Multimeter	FLUKE	17B	19720439	2014-01-20	2015-01-19

7 Electromagnetic Interference Test Results

7.1 Radiated Emissions, 30MHz to 1GHz

Detector: Peak for pre-scan (120 kHz resolution bandwidth)
 Quasi-Peak for final test (120 kHz resolution bandwidth)

Limit:

For 3m

Frequency range	Quasi-peak limits
MHz	dB (μ V/m)
30 to 230	40
230 to 1000	47
At transitional frequencies the lower limit applies.	

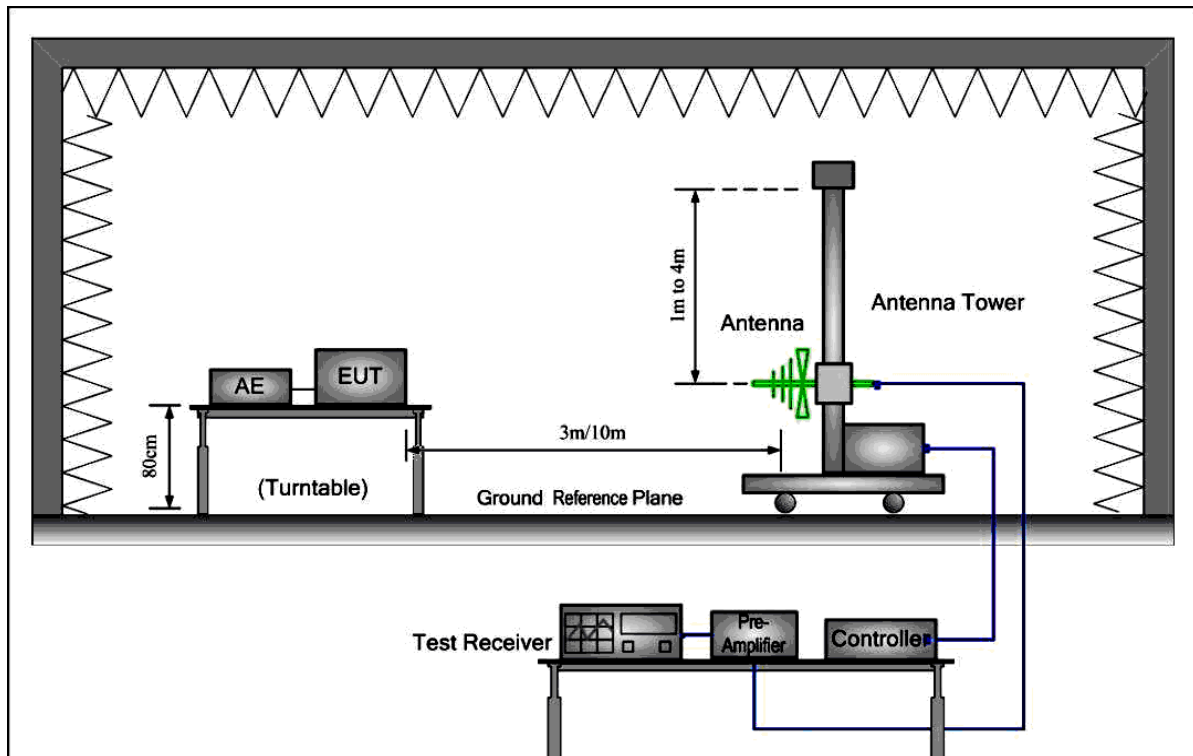
7.1.1 E.U.T. Operation

Test mode: Running mode

Pre-scan was performed with peak detected on all ports, Quasi-peak measurements was performed at the frequencies at which maximum peak emission level were detected.

Please see the attached Quasi-peak test results.

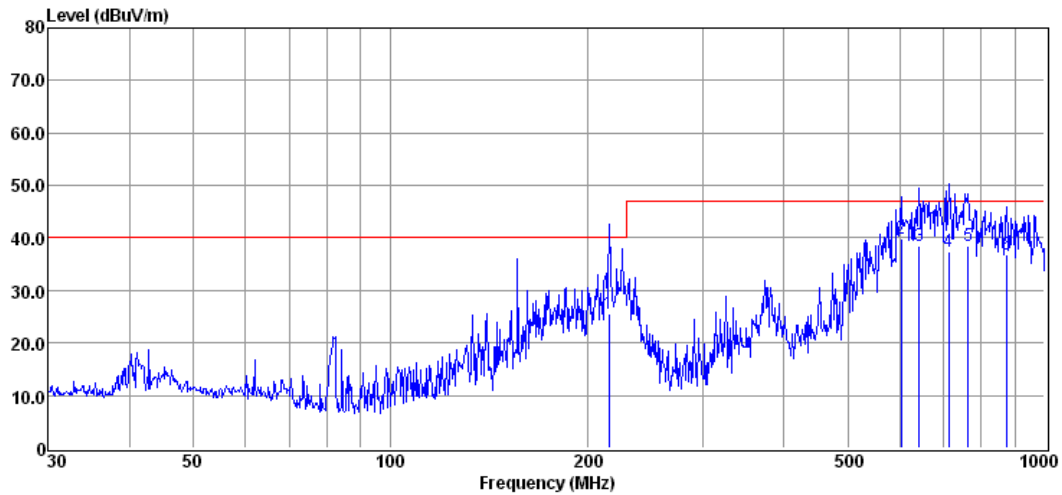
7.1.2 Test Setup and Procedure



1. The radiated emissions test was conducted in a semi-anechoic chamber.
2. The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane, but separated from metallic contact with the ground reference plane by 0.1m of insulation.
3. Before final measurements of radiated emissions, a pre-scan was performed in the spectrum mode with the peak detector to find out the maximum emission spectrum signature data plots of the EUT.
4. The frequencies of maximum emission were determined in the final radiated emissions measurement, the physical arrangement of the test system and associated cabling was varied in order to determine the effect on the EUT's emissions in amplitude, direction and frequency. At each frequency, the EUT was rotated 360°, and the antenna was raised and lowered from 1 to 4 meters in order to determine the maximum disturbance. Measurements were performed for both horizontal and vertical antenna polarization.

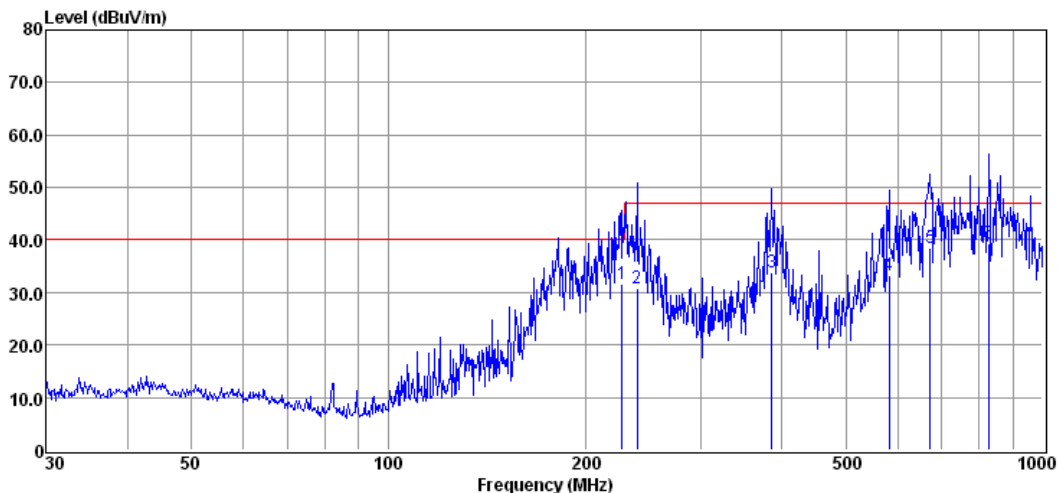
7.1.3 Measurement Data

Vertical:



Item	Freq.	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dB μ V)	(dB/m)	(dB)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
1	216.02	39.68	9.04	24.60	1.58	25.70	40.00	-14.30	QP
2	603.54	41.63	19.56	24.20	2.92	39.91	47.00	-7.09	QP
3	642.86	39.99	19.56	24.16	3.01	38.40	47.00	-8.60	QP
4	714.17	37.55	20.61	24.10	3.20	37.26	47.00	-9.74	QP
5	763.38	37.23	21.89	24.00	3.36	38.48	47.00	-8.52	QP
6	875.25	34.96	22.30	23.90	3.60	36.96	47.00	-10.04	QP

Horizontal:



Item	Freq.	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBμV)	(dB/m)	(dB)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
1	227.69	45.47	9.25	24.60	1.63	31.75	40.00	-8.25	QP
2	239.99	43.59	10.10	24.50	1.69	30.88	47.00	-16.12	QP
3	385.28	41.67	14.19	24.40	2.25	33.71	47.00	-13.29	QP
4	582.74	36.20	18.55	24.20	2.85	33.40	47.00	-13.60	QP
5	672.84	39.48	20.10	24.10	3.06	38.54	47.00	-8.46	QP
6	827.49	37.83	21.94	23.90	3.51	39.38	47.00	-7.62	QP

$$\text{Level} = \text{Read Level} + \text{Antenna Factor} + \text{Cable Loss} - \text{Preamp Factor}$$

8 Electromagnetic Susceptibility Test Results

8.1 Performance Criteria Description in Clause 6 of EN 55014-2

<p>Criterion A:</p>	<p>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.</p>
<p>Criterion B:</p>	<p>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.</p>
<p>Criterion C:</p>	<p>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.</p>

Test Requirement: EN 55014-2

Test Method: Category III apparatus as the Below:

There is need for immunity tests to be performed on this product in accordance with clause 7.2.3 of EN 55014-2(see the detail information in the Test Summary)

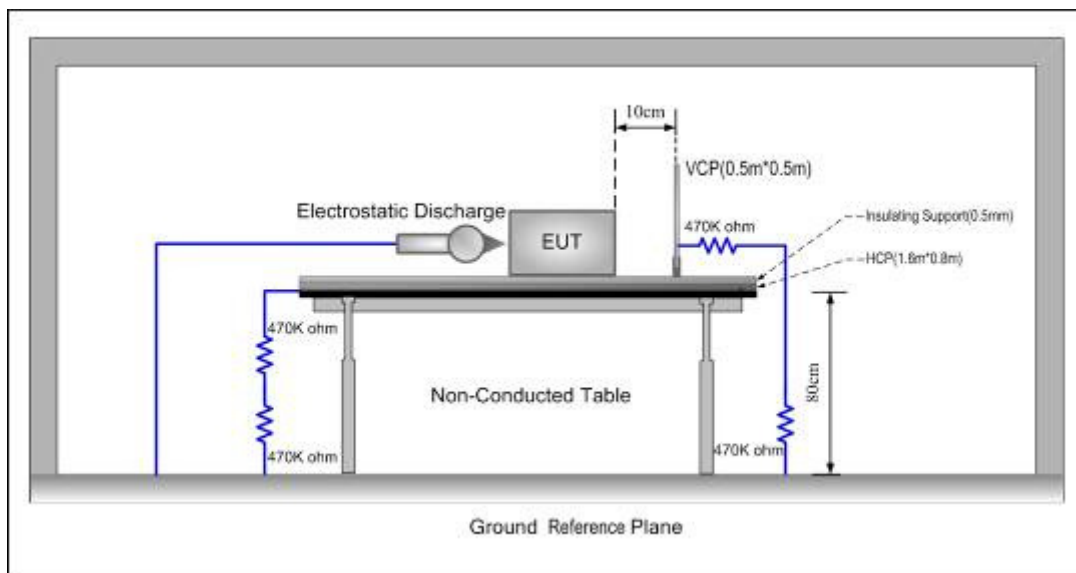
For further details, please refer to clause 4.3 of EN 55014-2 which states:

“Category III: battery powered apparatus(with built-in batteries or external batteries), which in normal use is not connected to the mains, containing an electronic control circuitry with no internal clock frequency or oscillator frequency higher than 15MHz”

8.2 ESD

Discharge Voltage:	Air Discharge:	8 kV
	Contact Discharge:	4 kV
	VCP/HCP:	4 kV
Polarity:	Positive & Negative	
Number of Discharge:	Minimum 10 times at each test point	
Discharge Mode:	Single Discharge	
Discharge Period:	1 second minimum	

8.2.1 Test Setup and Procedure



- Contact discharge was applied only to conductive surfaces of the EUT. Air discharge was applied only to non-conducted surfaces of the EUT.
- The EUT was put on a 0.8m high wooden table for table-top equipment or 0.1m high for floor standing equipment standing on the ground reference plane (GRP).
- A horizontal coupling plane(HCP) 1.6m by 0.8m in size was placed on the table, and the EUT with its cables were isolated from the HCP by an insulating support thick than 0.5mm. The VCP 0.5m by 0.5m in size while HCP were constructed from the same material type and thickness as that of the GRP, and connected to the GRP via a 470kΩ resistor at each end. The distance between EUT and any of the other metallic surface excepted the GRP, HCP and VCP was greater than 1m.
- During the contact discharges, the tip of the discharge electrode was touch the EUT before the discharge switch is operated. During the air discharges, the round discharge tip of the discharge electrode was approached as fast as possible to touch the EUT.
- After each discharge, the ESD generator was removed from the EUT, the generator is then retriggered for a new single discharge. For ungrounded product, a discharge cable with two resistances were used after each discharge to remove remnant electrostatic voltage. 10 times of each polarity single discharge were applied to HCP and VCP.

8.2.2 Test Results

Direct Application Test Results

- Observations: Test Point:
- All insulated enclosure & seams.
 - All accessible metal parts of the enclosure.

Direct Application		Test Results			
Discharge Level (kV)	Polarity (+/-)	Test Point	Test Mode	Contact Discharge	Air Discharge
8	+/-	1	Running mode	N/A	A
4	+/-	2		A	N/A

Indirect Application Test Results

- Observations: Test Point:
- All sides.

Indirect Application		Test Results			
Discharge Level (kV)	Polarity (+/-)	Test Point	Test Mode	Horizontal Coupling	Vertical Coupling
4	+/-	1	Running mode	A	A

Results:

A: During test, no degradation in the performance of the EUT was observed; After test, no degradation in the performance of the EUT was observed.

N/A: Not applicable (floor mounted EUT or not requested by Standard).

9 Photographs

9.1 Radiated Emission Test Setup



9.2 ESD Test Setup



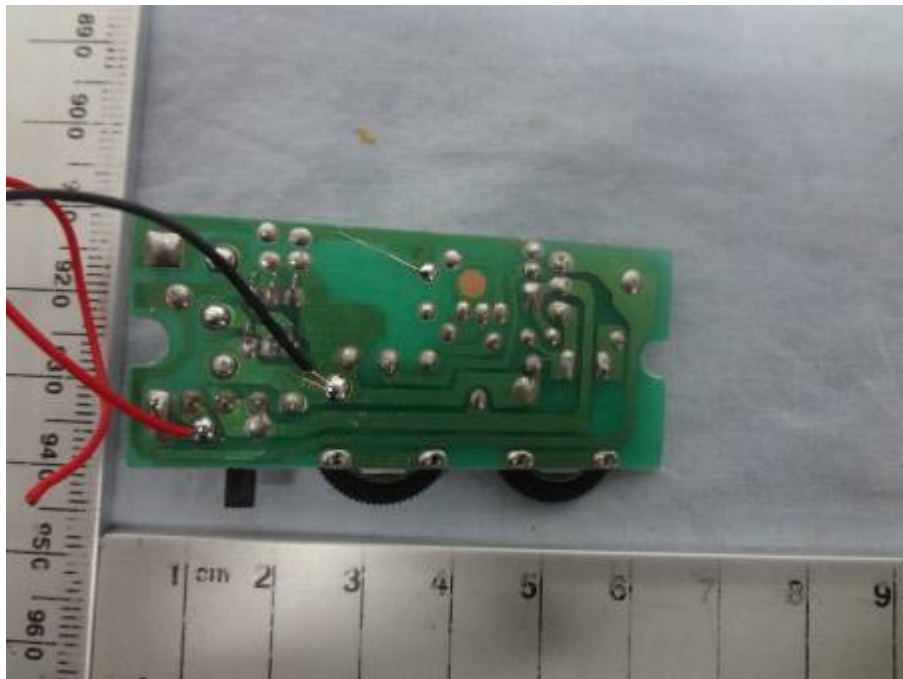
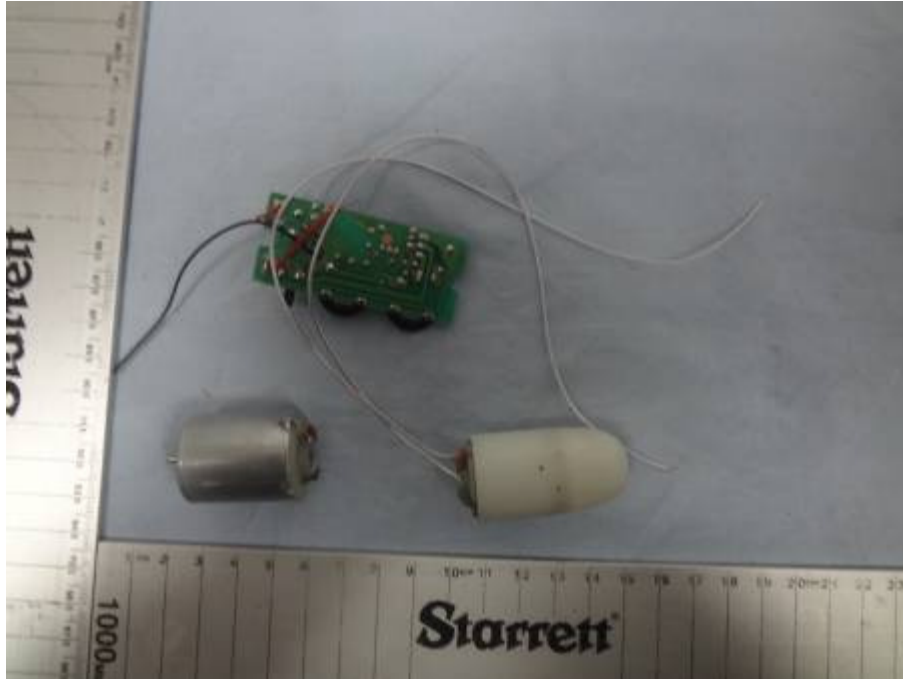
10 EUT Constructional Details

10.1 Exterior of EUT





10.2 Interior of EUT









--End of the Report--