TEST REPORT

Applicant : Mid Ocean Brands B.V.

Address: 7/F., Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong

The following sample(s) and sample information was/were submitted and identified by client as:

Product Name: Double wall S/S bottle with thermometer

Model/Style/Item #: MO6872

Receiving Date: 10-Oct-2022

Test Period: From 10-Oct-2022 to 14-Oct-2022

Add Information: -

Report Summary

#	Test item(s)	Reference Standard/Method	Result
1	EMC test - The Council EMC directive 2014/30/EU	EN IEC 55014-1:2021, EN IEC 55014-2:2021 (EN 61000-4-2:2009, EN IEC 61000-4-3:2020)	**PASS**

**********Please refer to the following page for detailed results**********

Signed for and on behalf of STS

Bovey Yang

Bovey Yang
(Electrical Test Manager)

GUANGZHOU DEPUHUA TEST SERVICES CO., LTD
TESTING SERVICES

Result：

1. GENERAL INFORMATION

1.1 Description of Device (EUT)

Description	:	Double wall S/S bottle with thermometer
Model Number	:	MO6872
Remark	:	N/A

1.2 Operational Mode(s) of EUT

Order Number	:	Test Mode(s)
1	:	Running

1.3 Test Voltage(s) of EUT

Order Number	:	Test Voltage(s)
1	:	DC3V by Battery

2. DESCRIPTION OF TEST STANDARD

The intention of this publication is to establish uniform requirements for the radio disturbance level of the equipment contained in the scope, to fix limits of disturbance, to describe methods of measurement and to standardize operating conditions and interpretation of results.

The following referenced standard are indispensable for the application of this report.

Referenced Description below:

EN IEC 55014-1:2021
Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus -- Part 1: Emission.

EN IEC 55014-2:2021
Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus -- Part 2: Immunity - Product family standard.

3. SUMMARY OF TEST RESULTS

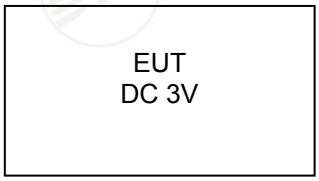
EMISSION			
Test Item	**Standard**	**Limits**	**Results**
Conducted disturbance at mains terminals	EN IEC 55014-1:2021	---	N/A
Radiated disturbance	EN IEC 55014-1:2021	Class B	PASS
Disturbance power test	EN IEC 55014-1:2021	---	N/A
Harmonic current emissions	EN IEC 61000-3-2:2019+A1:2021	---	N/A
Voltage fluctuations & flicker	EN 61000-3-3:2013+A1:2019 +A2:2021	---	N/A
Clicks	EN IEC 55014-1:2021	---	N/A
IMMUNITY (EN IEC 55014-2:2021)			
Test Item	**Basic Standard**	**Performance Criteria**	**Results**
Electrostatic discharge (ESD)	EN 61000-4-2:2009	B	PASS
Radio-frequency, Continuous radiated disturbance	EN IEC 61000-4-3:2020	A	PASS
Electrical fast transient (EFT)	EN 61000-4-4:2012	---	N/A
Surge (Input d.c. power ports)	EN 61000-4-5:2014+A1:2017	---	N/A
Radio-frequency, Continuous conducted disturbance	EN 61000-4-6:2014	A	N/A
Voltage dips, 60% reduction	EN IEC 61000-4-11:2020	C	N/A
Voltage dips, 30% reduction	EN IEC 61000-4-11:2020	C	N/A
Voltage interruptions	EN IEC 61000-4-11:2020	C	N/A
N/A is an abbreviation for Not Applicable.			

Because the electronic control circuitry of EUT with no Oscillator frequency higher than 15MHz, and is power by mains only, According to EN55014-2 section 4, the EUT may be defined as category II. Radiation immunity (EN 61000-4-3) need no test.

4. BLOCK DIAGRAM OF TEST SETUP

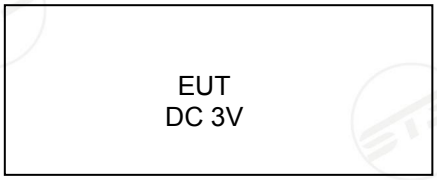
The equipments are installed test to meet EN 55014-1 requirement and operating in a manner which tends to maximize its emission characteristics in a normal application. EUT was tested in normal configuration (Please See following Block diagrams)

4.1 Block Diagram of connection between EUT and simulation-EMI



(EUT: Double wall S/S bottle with thermometer)

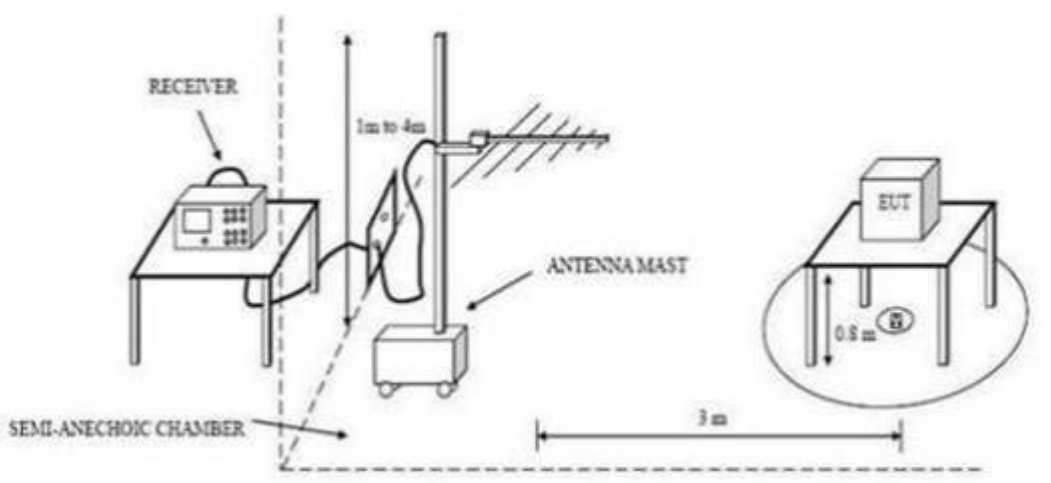
4.2 Block Diagram of connection between EUT and simulation-EMS



(EUT: Double wall S/S bottle with thermometer)

5. RADIATED DISTURBANCE TEST

5.1 Configuration of Test System



5.2 Test Standard

EN IEC 55014-1:2021

5.3 Radiated Disturbance Limit

All emanations from devices or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified below:

FREQUENCY (MHz)	DISTANCE (Meters)	FIELD STRENGTHS LIMITS (dB V/m)
30 ~ 230	3	40
230 ~ 1000	3	47

Note: 1.The lower limit shall apply at the transition frequencies.

2. Distance refers to the distance in meters between the test antenna and the closed point of any part of the EUT.

5.4 Test Procedure

The EUT was placed on a non-metallic table, 80 cm above the ground plane inside a semi-anechoic chamber. An antenna was located 10m from the EUT on an adjustable mast. A pre-scan was first performed in order to find prominent radiated emissions. For final emissions measurements at each frequency of interest, the EUT were rotated and the antenna height was varied between 1m and 4m in order to maximize the emission. Measurements in both horizontal and vertical polarities were made and the data was recorded. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to EN 55014-1 on Radiated Disturbance test.

The bandwidth setting on the test receiver is 120 kHz.

The frequency range from 30MHz to 1000MHz is checked. The test result are reported on Section 5.5.

5.5.Radiated Disturbance Test Results

5.5.1.Test Results: **PASS**

5.5.2.Emission Level= Correct Factor + Reading Level.

5.5.3.All reading are Quasi-Peak values.

5.5.4.The test data and the scanning waveform are attached within Appendix I.

6. IMMUNITY PERFORMANCE CRITERIA

The test results shall be classified in terms of the loss of function or degradation of performance of the equipment under test, relative to a performance level by its manufacturer or the requestor of the test, or the agreed between the manufacturer and the purchaser of the product.

Definition related to the performance level:
Based on the used product standard
Based on the declaration of the manufacturer, requestor or purchaser

Criterion A:
The apparatus shall continue to operate as intended during the test and 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. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and from what the user may reasonably expect from the apparatus if used as intended.

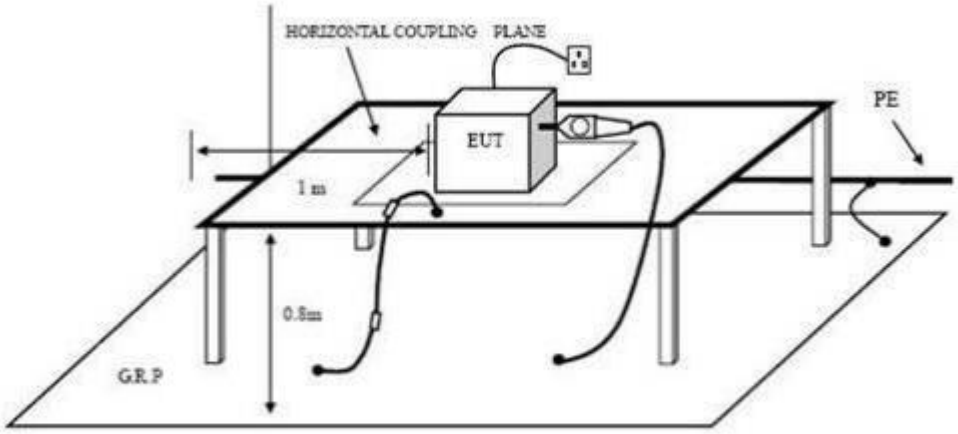
Criterion B:
The apparatus shall continue to operate as intended after the test. No degradation of performance or loss of function is allowed below a performance level (or permissible loss of performance) specified by the manufacturer, when the apparatus is used as intended. The performance level may be replaced by a permissible loss of performance. During the test, degradation of performance is allowed, however. No change of actual operation 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 form the apparatus the apparatus if used as intended.

Criterion C:
Temporary loss of function is allowed, provided the function is self-recoverable or can be restored by the operation of the controls, or by any operation specified in the instructions for use.

7. ELECTROSTATIC DISCHARGE IMMUNITY TEST

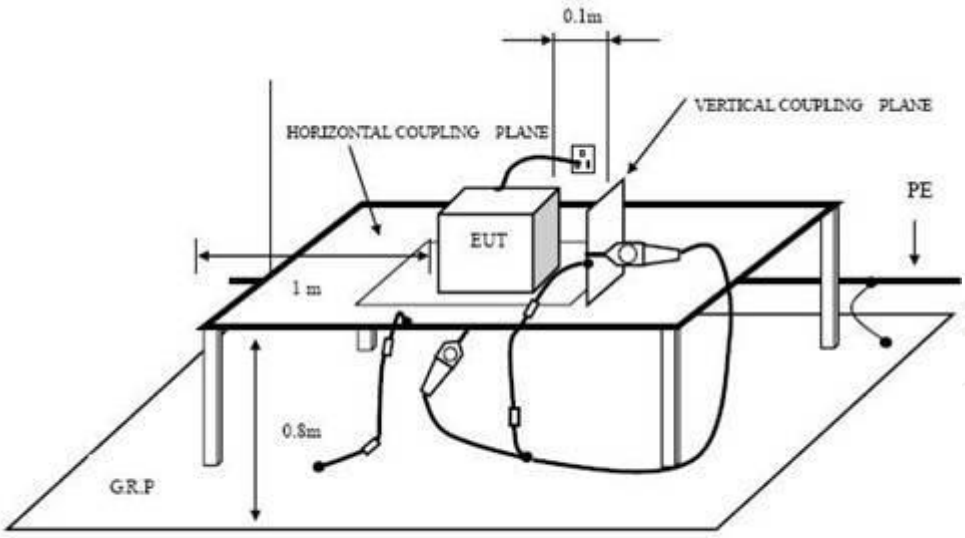
7.1 Configuration of Test System

7.1.1 Configuration of ESD Test System(Direct Discharge)



DIRECT DISCHARGE SETUP

7.1.2.Configuration of ESD Test System(Indirect Discharge)



INDIRECT DISCHARGE SETUP

7.2 Test Standard

EN IEC 55014-2:2021(EN 61000-4-2)
(Severity Level 3 for Air Discharge at 8KV, Severity Level 2 for Contact Discharge at 4KV)

7.3 Severity Levels and Performance Criterion

7.3.1 Severity 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

7.3.2 Performance criterion : **B**

7.4 Test Procedure

7.4.1.Air Discharge:

The test was applied on non-conductive surfaces of EUT. The round discharge tip of the discharge electrode was approached as fast as possible to touch the EUT. After each discharge, the discharge electrode was removed from the EUT. The generator was re-triggered for a new single discharge and repeated 20 times for each pre-selected test point. This procedure was repeated until all the air discharge completed

7.4.2.Contact Discharge:

All the procedure was same as Section 13.4.1. except that the generator was re-triggered for a new single discharge for each pre-selected test point. The tip of the discharge electrode was touch the EUT before the discharge switch was operated.

7.4.3.Indirect discharge for horizontal coupling plane

At least 20 single discharges were 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.

7.4.4.Indirect discharge for vertical coupling plane

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

7.5 Test Results

7.5.1 Test Results: **PASS**

7.5.2 Test data on the following pages.

Electrostatic Discharge Test Results

Test Voltage :	1	Test Date:	Oct.14,2022
Test Mode :	1	Criterion :	B
Temperature:	23℃	Humidity:	56 %

Air Discharge: ±8KV # For Air Discharge each Point Positive 10 times and negative 10 times discharge.

Contact Discharge: ±4KV # For Contact Discharge each point positive 10 times and negative 10 times discharge

Test Results Description

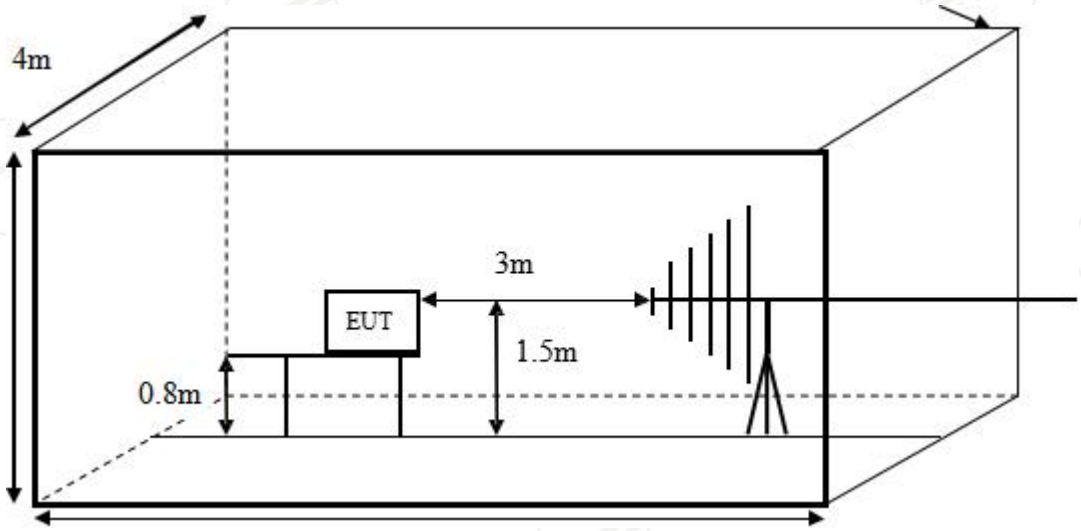
Location	Kind A-Air Discharge C-Contact Discharge	Result
Gaps	A	PASS
HCP	C	PASS
VCP of Front	C	PASS
VCP of Rear	C	PASS
VCP of Left	C	PASS
VCP of Right	C	PASS

Remark :

Discharge was considered on Contact and Air and Horizontal Coupling Plane (HCP) and Vertical Coupling Plane (VCP).

8. RF FIELD STRENGTH SUSCEPTIBILITY TEST

8.1 Configuration of Test System



8.2 Test Standard

EN IEC 55014-2:2021 (EN IEC 61000-4-3)
(Severity Level: 2 at 3V / m)

8.3 Severity Levels and Performance Criterion

8.3.1 Severity level

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

8.3.2 Performance criterion : **A**

8.4 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 polarization of the antenna is 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. Test Fielded Strength	3 V/m (Severity Level 2)
2. Radiated Signal	80% amplitude modulated with a 1kHz sine wave
3. Scanning Frequency	80 - 6000 MHz
4. Sweeping time of radiated	0.0015 decade/s
5. Dwell Time	1.5 Sec.

8.5 Test Results

8.5.1 Test Results: **PASS**

8.5.2 Test data on the following pages

RF Field Strength Susceptibility Test Results

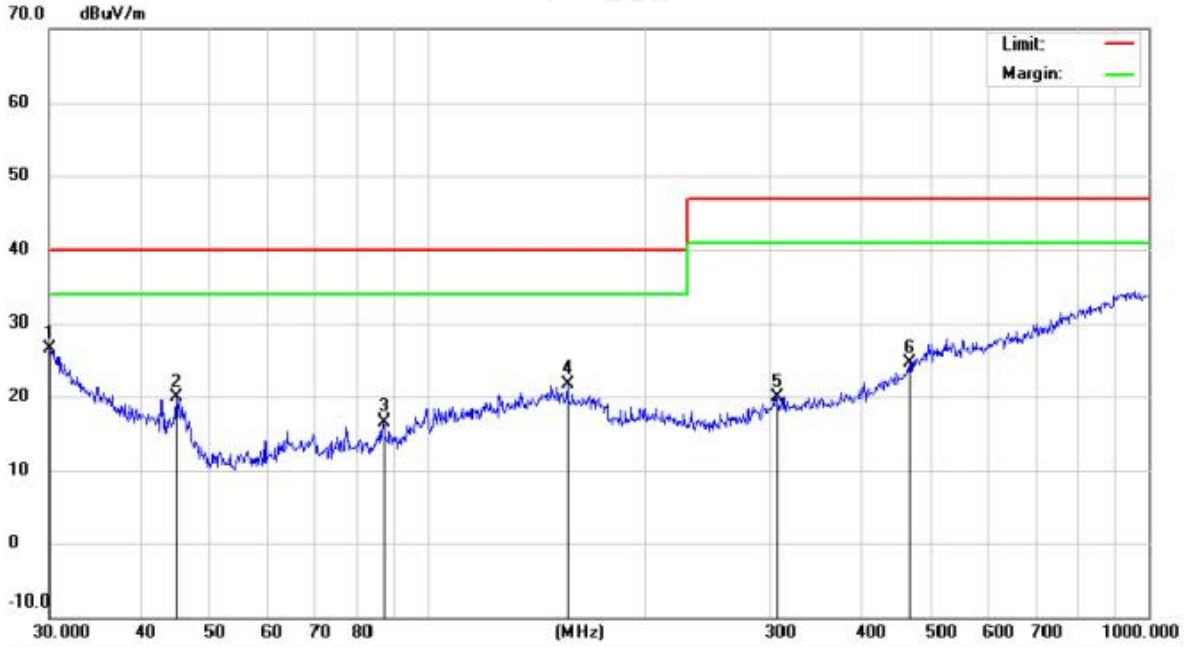
Test Voltage :	1	Test Date:	Oct.14,2022
Test Mode:	1	Frequency Range:	80-6000MHz
Field Strength :	3 V/m	Criterion :	A
Temperature:	25℃	Humidity:	55%
Modulation:	☑ AM ☐ Pulse ☐ none 1 kHz 80%		
Test Results Description			
Frequency Rang 1: 80MHz - 6000 MHz			

Steps	1%	1%
	Horizontal	Vertical
Front	PASS	PASS
Right	PASS	PASS
Rear	PASS	PASS
Left	PASS	PASS

Note: No function loss

APPENDIX I

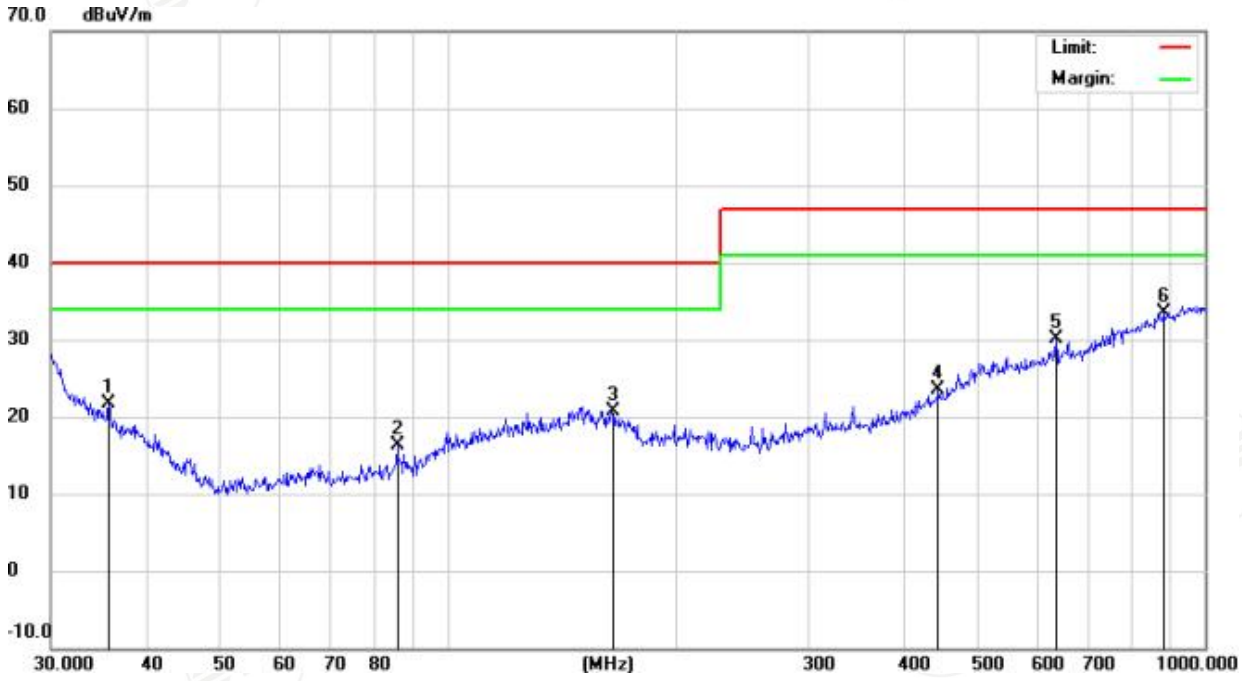
EUT:	**Double wall S/S bottle with thermometer**	**M/N:**	**MO6872**
Mode:	**Running**	**Polarization:**	**Vertical**
Test by:	**ROSA**	**Power:**	**DC 3V by Battery**
Temperature: / Humidity	**24.5℃/57.0%**	**Test date:**	**2022-10-14**



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	30.0000	5.51	20.90	26.41	40.00	-13.59	QP			
2		44.9006	9.34	10.57	19.91	40.00	-20.09	QP			
3		86.8068	6.63	9.96	16.59	40.00	-23.41	QP			
4		157.0074	4.27	17.42	21.69	40.00	-18.31	QP			
5		305.6800	4.22	15.61	19.83	47.00	-27.17	QP			
6		467.2349	3.64	20.96	24.60	47.00	-22.40	QP			

*:Maximum data x:Over limit !:over margin

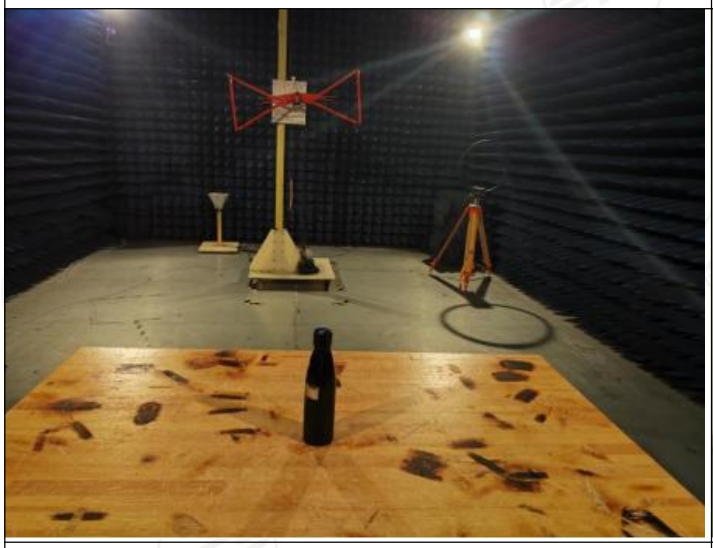
EUT:	Double wall S/S bottle with thermometer	M/N:	MO6872
Mode:	Running	Polarization:	Horizontal
Test by:	ROSA	Power:	DC 3V by Battery
Temperature: / Humidity	24.5℃/57.0%	Test date:	2022-10-14

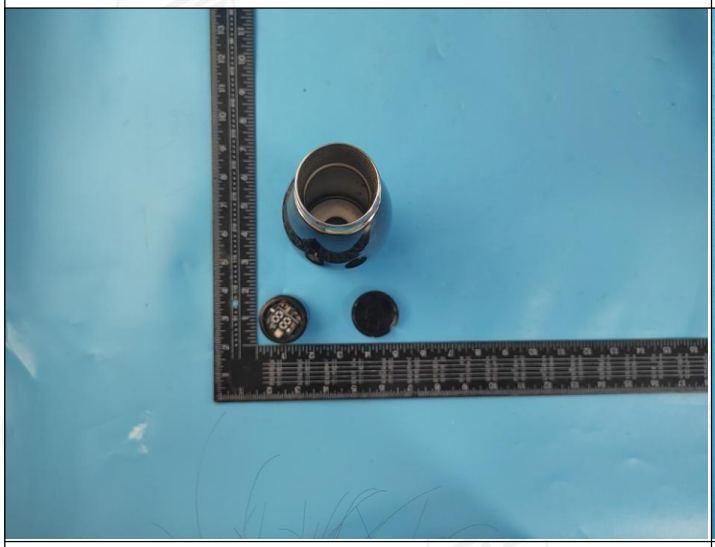


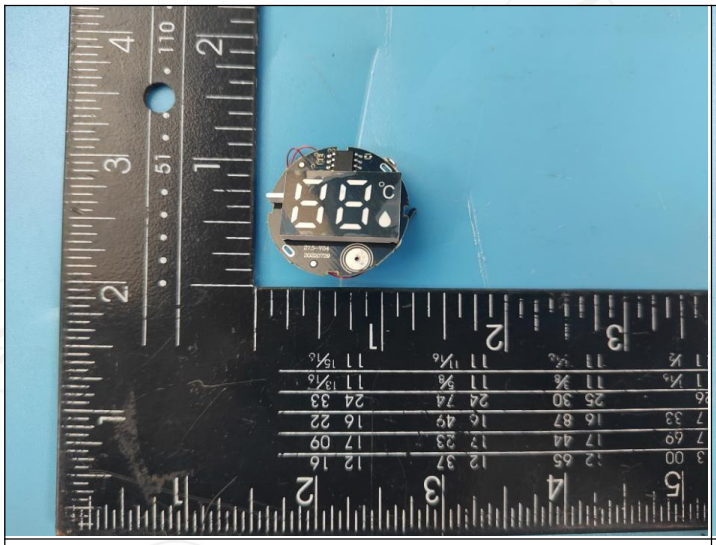
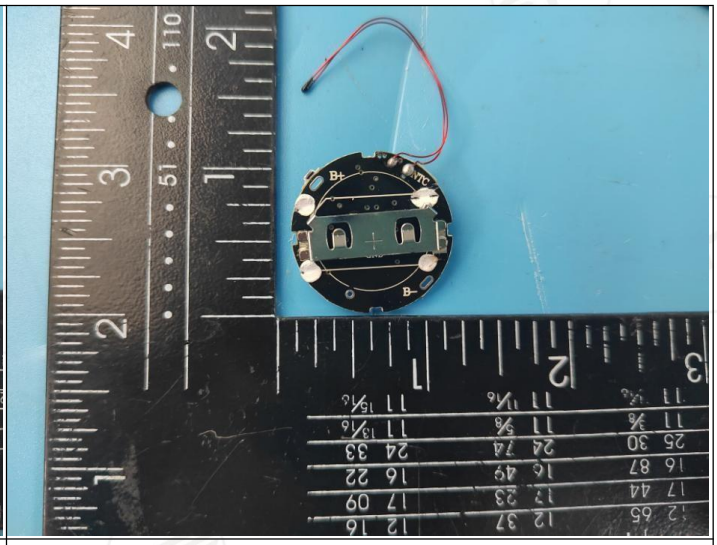
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		35.7490	4.73	16.95	21.68	40.00	-18.32	QP			
2		85.8984	6.42	9.98	16.40	40.00	-23.60	QP			
3		164.9075	3.61	17.14	20.75	40.00	-19.25	QP			
4		444.8514	3.75	19.78	23.53	47.00	-23.47	QP			
5		636.1340	5.80	24.27	30.07	47.00	-16.93	QP			
6	*	881.4067	4.67	28.80	33.47	47.00	-13.53	QP			

*:Maximum data x:Over limit !:over margin

Photo(s):

	
Test Sample Photo	Test Sample Photo
	
Radiated Test Setup Photograph	ESD Test Setup Photograph

	
General Appearance of the EUT	General Appearance of the EUT
	
Internal of the EUT	Battery of the EUT

	
PCB of the EUT	PCB of the EUT
Test Sample Photo	

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Clients wishing to use the Report in court proceedings or arbitration shall inform the Company to that effect prior to submitting the sample for testing.

9. 该测试报告的支持数据和信息本公司保存 10 年。个别评审机构有特别要求的,检测数据和报告的保存期可依情况变动。一旦超过上述提交的保存期限,数据和信息将被处理掉。任何情况下,本公司不必提供任何被处理的过期数据或信息。即使本公司事先被告知可能会发生相关的损害,本公司在任何情况下也不必承担任何损害,包括(但不限于)补偿性赔偿、利润损失、数据遗失、或任何形式的特殊损害、附带损害、间接损害、从属损害或任何违反约定、违反承诺、侵权(包括疏忽)、产品责任或其他原因的惩罚性损害。
Subject to the variable length of retention time for test data and report stored hereinto as otherwise specifically required by individual accreditation authorities, the Company will only keep the supporting test data and information of the test report for a period of ten years. The data and information will be disposed of after the aforementioned retention period has elapsed. Under no circumstances shall we provide any data and information which has been disposed of after retention period. Under no circumstances shall we be liable for damage of any kind, including (but not limited to) compensatory damages, lost profits, lost data, or any form of special, incidental, indirect, consequential or punitive damages of any kind, whether based on breach of contract of warranty, tort (including negligence), product liability or otherwise, even if we are informed in advance of the possibility of such damages.

10. 报告的签发记录可通过登录 www.stsgz.com 查询。如需进一步查询报告有效性或核实报告，需与本公司联系。
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