

EMC Test Report

Report No.: STS2407154E01

Issued for

Mid Ocean Brands B.V.

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

Product Name: Wooden torch with COB light

Brand Name: N/A

Model Name: MO6695

Series Model(s): N/A

Test Standards: EN IEC 55015:2019/A11:2020
EN IEC 61547:2023

The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Shenzhen STS Test Services Co., Ltd.

**TEST REPORT**

Applicant's Name : Mid Ocean Brands B.V.
Address : 7/F., Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon,
Hong Kong, China
Manufacturer's Name : Mid Ocean Brands B.V.
Address : 7/F., Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon,
Hong Kong, China

Product Description

Product Name : Wooden torch with COB light
Brand Name : N/A
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Date of Test :

Date of Receipt of Test Item : 26 July 2024
Date (s) of Performance of Tests : 26 July 2024 ~ 31 July 2024
Date of Issue : 31 July 2024
Test Result : **Pass**

Testing Engineer :

Stan Deng

(Star Deng)

Technical Manager :

Chris Chen

(Chris Chen)

Authorized Signatory :

Bovey Yang

(Bovey Yang)





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**Revision History**

Rev.	Issue Date	Report No.	Effect Page	Contents
00	31 July 2024	STS2407154E01	ALL	Initial Issue

1. TEST SUMMARY

Test procedures according to the technical standards:

EMC Emission				
Standard	Test Item	Limit	Judgement	Remark
EN IEC 55015:2019/A11:2020	Conducted Emission on AC And Telecom Port 150kHz to 30MHz	-----	N/A	
	Radiated Emission	-----	PASS	
	Magnetic field radiation harassment	-----	PASS	
EMC Immunity				
Section EN IEC 61547:2023	Test Item	Performance Criteria	Judgement	Remark
EN 61000-4-2:2009	Electrostatic discharges	B	PASS	
EN IEC 61000-4-3:2020	Continuous RF electromagnetic field disturbances	A	PASS	
EN 61000-4-4:2012	Electrical fast transients/burst	B	N/A	
EN 61000-4-5:2014/A1:2017	Surges	B	N/A	
EN 61000-4-6:2014+AC:2015	Continuous induced RF disturbances	A	N/A	
EN 61000-4-8:2010	Power frequency magnetic field	A	N/A	
EN IEC 61000-4-11:2020	Voltage dips and interruptions	B / C	N/A	NOTE (2)

NOTE:

(1) "N/A" denotes test is not applicable in this Test Report

(2) Voltage Dip: 100% reduction – Performance Criteria **B**

Voltage Dip: 30% reduction – Performance Criteria **C**



1.1 TEST FACTORY

Company Name:	SHENZHEN STS TEST SERVICES CO.,LTD.
Address:	101, Building B, Zhuoke Science Park, No.190 Chongqing Road, ZhanChengShequ, Fuhai Sub-District, Bao'an District, Shenzhen, Guang Dong, China
Telephone:	+86-755 3688 6288
Fax:	+86-755 3688 6277
Registration No.:	FCC test Firm Registration Number: 625569
	IC test Firm Registration Number: 12108A
	A2LA Certificate No.: 4338.01

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately **95** %.

A. Conducted Measurement:

Test Site	Method	Measurement Frequency Range	U · (dB)	NOTE
STSC01	CISPR 16-4-2	9KHz ~ 150KHz	2.19	
		150KHz ~ 30MHz	2.53	

B. Radiated Measurement:

Test Site	Method	Measurement Frequency Range	U · (dB)	NOTE
STSC02	CISPR 16-4-2	30MHz ~ 1000MHz	4.18	
		1GHz ~ 6GHz	4.90	

C. Magnetic field radiation harassment:

Test Site	Method	Measurement Frequency Range	U · (dB)	NOTE
STSC01	CISPR 16-4-2	9KHz ~ 30MHz	1.91	



2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF THE EUT

Product Name	Wooden torch with COB light
Brand	N/A
Model Number	MO6695
Series Model(s)	N/A
Model Difference	N/A
Product Description	The EUT is a Wooden torch with COB light Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as a Lighting Device. More details of EUT technical specification, please refer to the User's Manual.
Rating	Input: DC 1.5V*3

2.2 DESCRIPTION OF THE TEST MODES

To investigate the maximum EMI emission characteristics generated from EUT, the test system was pre-scanning tested based on the consideration of following EUT operation mode or test configuration mode which possibly have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	Lighting mode

For Radiated Test	
Final Test Mode	Description
Mode 1	Lighting Mode

For EMS Test	
Final Test Mode	Description
Mode 1	Lighting Mode

Note:

1. For radiated emission test, test mode 1 was the worst case and only this mode was presented in this report.

2.3 DESCRIPTION OF THE TEST SETUP

The EUT has been tested with associated equipment below and the test setup please refer to appendix 1 - test setup.

Necessary accessories

Item	Equipment	Mfr/Brand	Model/Type No.	Length	Note
	N/A	N/A	N/A	N/A	N/A

Support units

Item	Equipment	Mfr/Brand	Model/Type No.	Length	Note
	N/A	N/A	N/A	N/A	N/A

Note:

- (1) For detachable type I/O cable should be specified the length in cm in 『Length』 column.
- (2) “YES” means “with core”; “NO” means “without core”.

2.4 MEASUREMENT INSTRUMENTS LIST

2.4.1 CONDUCTED TEST SITE

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibration	Calibrated Until
EMI Test Receiver	R&S	ESCI	101427	2023.9.25	2024.9.24
LISN	R&S	AIT-F01220	8130179	2023.9.25	2024.9.24
Absorbing Clamp	R&S	MDS-21	100668	2024.4.15	2025.4.14
CE Cable	N/A	C01	N/A	2023.9.25	2024.9.24
Temperature & Humidity	Mieo	HH660	N/A	2023.9.28	2024.9.27
Testing Software	EZ-EMC(Ver.STSLAB-03A1 CE)				

2.4.2 RADIATED TEST SITE

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibration	Calibrated Until
EMI Test Receiver	R&S	ESCI	101427	2023.9.25	2024.9.24
Bi-log Antenna	TESEQ	CBL6111D	45873	2023.9.27	2024.9.26
Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-1343	2023.9.27	2024.9.26
Pre-amplifier(1G-26.5G)	Agilent	HP8449B	3008A02383	2024.2.23	2025.2.22
Pre-amplifier(0.1M-3GHz)	EM	EM330	060665	2024.2.23	2025.2.22
Spectrum Analyzer	Agilent	N9020A	MY49100060	2023.9.26	2024.9.25
RE Cable (9K-1G)	N/A	R01	N/A	2023.9.25	2024.9.24
RE Cable (1G-26G)	N/A	R02	N/A	2023.9.25	2024.9.24
Temperature & Humidity	Mieo	HH660	N/A	2023.9.28	2024.9.27
SAC	ChengYu	9*6*6	N/A	2023.9.05	2026.9.06
Testing Software	EZ-EMC(Ver.STSLAB-03A1 RE)				

2.4.3 THREE LOOP

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibration	Calibrated Until
Three Loop	ZNINAN	ZN30401	13018	2023.9.25	2024.9.24
EMI Test Receiver	R&S	ESCI	101427	2023.9.25	2024.9.24
Loop Cable	N/A	C03	N/A	2023.9.25	2024.9.24
Temperature & Humidity	Mieo	HH660	N/A	2023.9.28	2024.9.27

2.4.4 ESD

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibration	Calibrated Until
ESD TEST GENERATOR	TESEQ	NSG438	1175	2023.9.27	2024.9.26

Temperature & Humidity	N/A	WS1066	N/A	2024.2.22	2025.2.21
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2.4.5 RS

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibration	Calibrated Until
Power Meter	Agilent	E4419B	QB43312265	2023.9.25	2024.9.24
Power Sensor	hp	E9300A	US39210170	2023.9.25	2024.9.24
Power Sensor	hp	E9300A	US39210476	2023.9.25	2024.9.24
Signal Generator	Agilent	N5181A	MY56144718	2023.9.25	2024.9.24
Power Amplifier	MICOTOP	MPA-80-1000-250	MPA1711489	2023.9.25	2024.9.24
Power Amplifier	MICOTOP	MPA-1000-6000-100	MPA1904132	2023.9.25	2024.9.24
RS Test Antenna (80-1GHz)	SCHWARZBECK	VULP 9118E	000999	N/A	N/A
RS Test Antenna (1G-10GHz)	SCHWARZBECK	STLP 9149	000648	N/A	N/A
Universal Radio Communication Tester	R&S	CMU200	116337	2024.2.25	2025.2.24
Audio Analyzer	R&S	UPL	100689	2024.3.20	2025.3.19
Audio Breakthrough Shielding Box	SKET	SB_ABT/C35	N/A	N/A	N/A
Ear Simulator	SKET	AE_ABT/C35	N/A	N/A	N/A
Mouth Simulator	SKET	AM_ABT/C35	N/A	N/A	N/A
1KHz Standard Source	SKET	MSC_ABT/C35	N/A	2023.9.28	2024.9.27
Field Probe	Narda	EP601	611WX80261	2024.2.23	2025.2.22
Temperature & Humidity	Mieo	HH660	N/A	2023.9.28	2024.9.27
Testing Software	EMC-S V1.4.0.53				

3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION

(Frequency Range 9KHz-30MHz)

FREQUENCY (MHz)	Maximum RF Line Voltage	
	Quasi-peak	Average
0.009 ~ 0.05	110	---
0.05 ~ 0.15	90 - 80 *	---
0.15 ~ 0.5	66 - 56 *	56 - 46 *
0.5 ~ 5	56.00	46.00
5 ~ 30	60.00	50.00

Note: (1) The tighter limit applies at the band edges.

(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

3.1.2 LOAD TERMINAL CONDUCTED EMISSION (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Maximum RF Line Voltage	
	Quasi-peak	Average
0.15 ~ 0.5	80	70
0.5 ~ 30	74	64

Note: (1) The tighter limit applies at the band edges.

3.1.3 CONTROL TERMINAL CONDUCTED EMISSION (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Maximum RF Line Voltage	
	Quasi-peak	Average
0.15 ~ 0.5	84 - 74*	74 - 64*
0.5 ~ 30	74	64

Note: (1) The tighter limit applies at the band edges.

(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

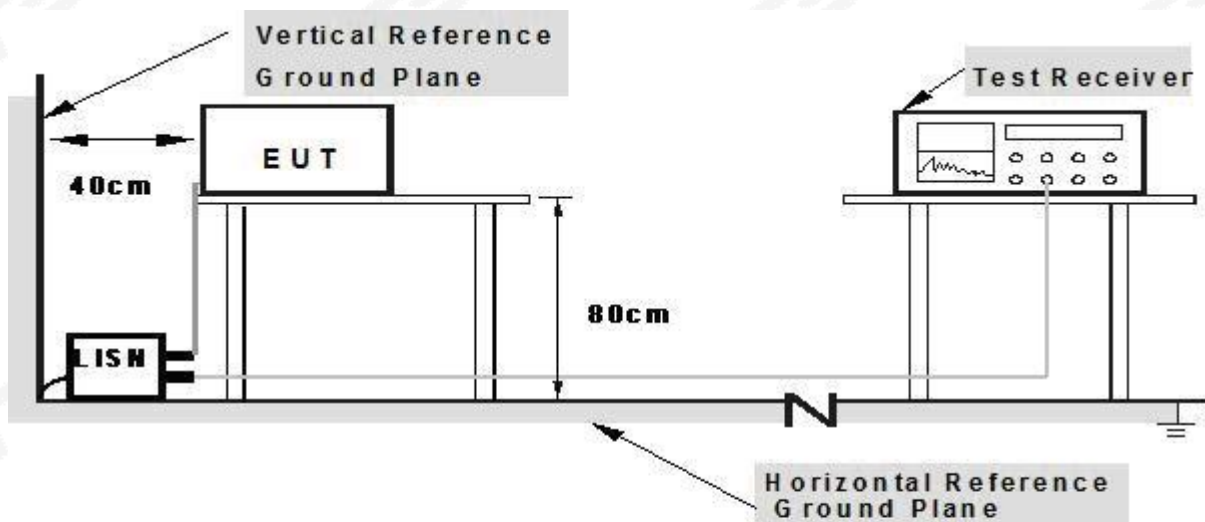
The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.009 MHz
Stop Frequency	30 MHz
IF Bandwidth	200Hz and 9 kHz

3.1.4 TEST PROCEDURE

- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.1.5 TEST SETUP



Note: 1.Support units were connected to second LISN.

2.Both of LISN s (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

3.1.6 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.3 described unless otherwise a special operating condition is specified in the following during the testing.

3.1.7 TEST RESULTS

Temperature:	--°C	Relative Humidity:	--%
Phase:	L/N	Test Mode:	N/A
Test Voltage:	N/A	Test Date:	N/A

Note: N/A

3.2 RADIATED EMISSION MEASUREMENT

3.2.1 LIMITS OF THE RADIATED EMISSION MEASUREMENT (Below 1000MHz)

FREQUENCY (MHz)	☒ 2m	☐ 3m	☐ 4m
	dB(μA)	dB(μA)	dB(μA)
9 KHz ~ 70 KHz	88	81	75
70 KHz ~ 150 KHz	88 to 58	81 to 51	75 to 45
150 KHz ~ 3 MHz	58 to 22	51 to 15	45 to 9
3 MHz ~ 30 MHz	22	15 to 16	9 to 12

FREQUENCY (MHz)	At 10m	At 3m
	dBuV/m	dBuV/m
30 ~ 230	30	40
230 ~ 1000	37	47

Notes:

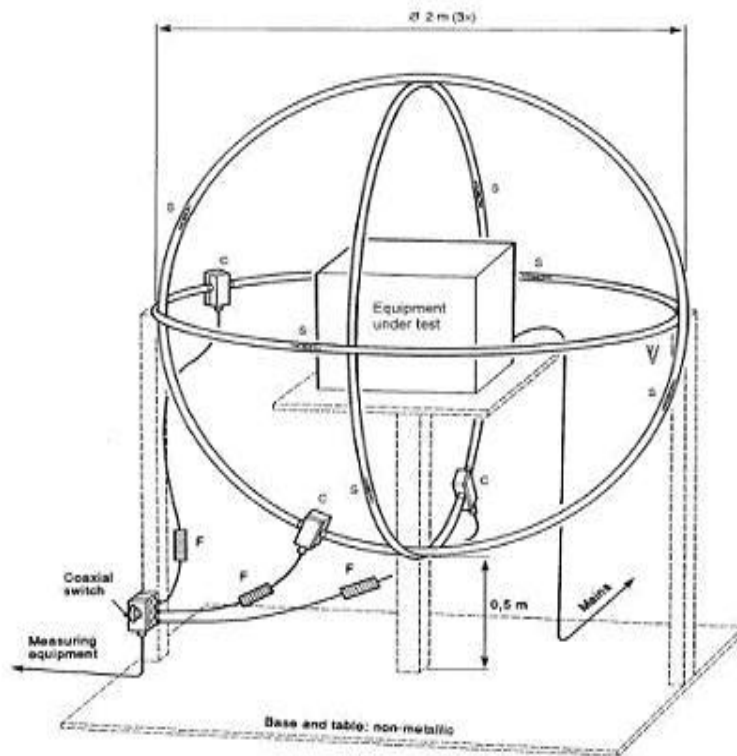
- (1) The limit for radiated test was performed in the following: CISPR 15.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m) = 20log Emission level (uV/m).

3.2.2 TEST PROCEDURE

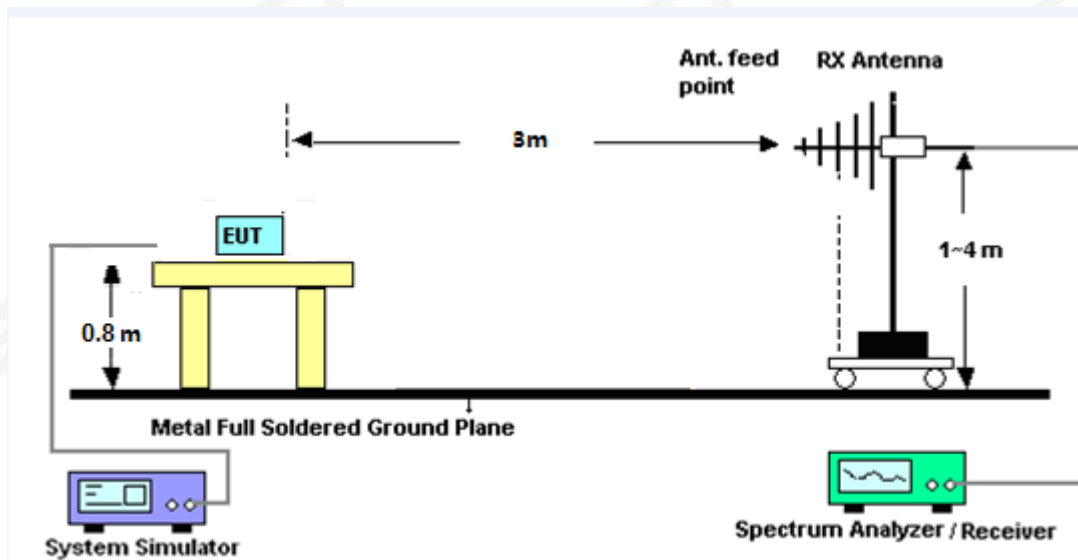
- a. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. EUT as the center to the edge of the auxiliary device, the distance from the maximum edge to the center of the antenna is 3 meter.
- c. The height of antenna is varied from 1 meter to 4 meter above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meter and the rotatable table was turned from 0 degrees to 360 degree to find the maximum reading.
- e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1GHz.
- f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.2.3 TEST SETUP

(A) Radiated Emission Test Set-Up Frequency Below 30 MHz



(B) Radiated Emission Test Set-Up Frequency Below 30 MHz



3.2.4 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.3 described unless otherwise a special operating condition is specified in the following during the testing.

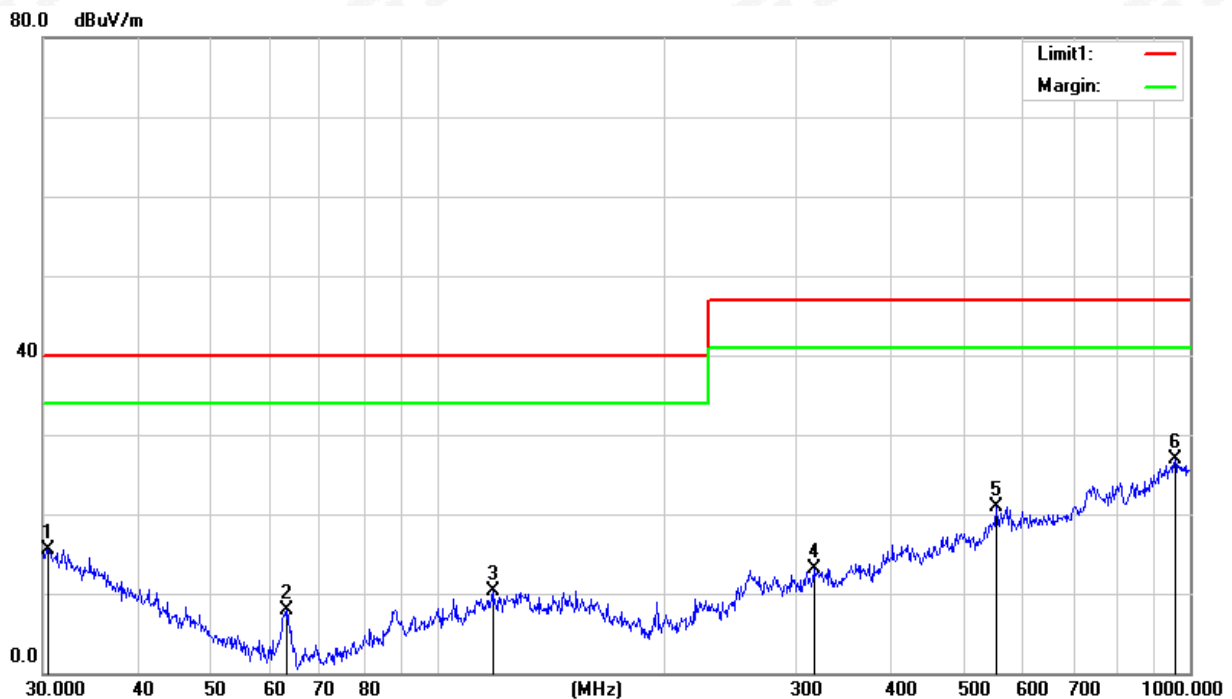
3.2.5 TEST RESULTS (30MHz~1000MHz)

Temperature:	26.1℃	Relative Humidity:	53%
Phase:	Horizontal	Test Mode:	Mode 1
Test Voltage:	DC 4.5V	Test Date:	2024.07.26

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	30.4237	26.81	-11.26	15.55	40.00	-24.45	QP
2	63.3132	33.75	-25.94	7.81	40.00	-32.19	QP
3	118.6013	28.83	-18.43	10.40	40.00	-29.60	QP
4	316.5890	28.07	-14.99	13.08	47.00	-33.92	QP
5	552.8832	29.27	-8.28	20.99	47.00	-26.01	QP
6	955.4380	29.00	-2.02	26.98	47.00	-20.02	QP

Remark:

1. All readings are Quasi-Peak
2. Margin = Result (Result = Reading + Factor)–Limit
3. Factor= Cable Loss +Antenna Factor–Amplifier Gain

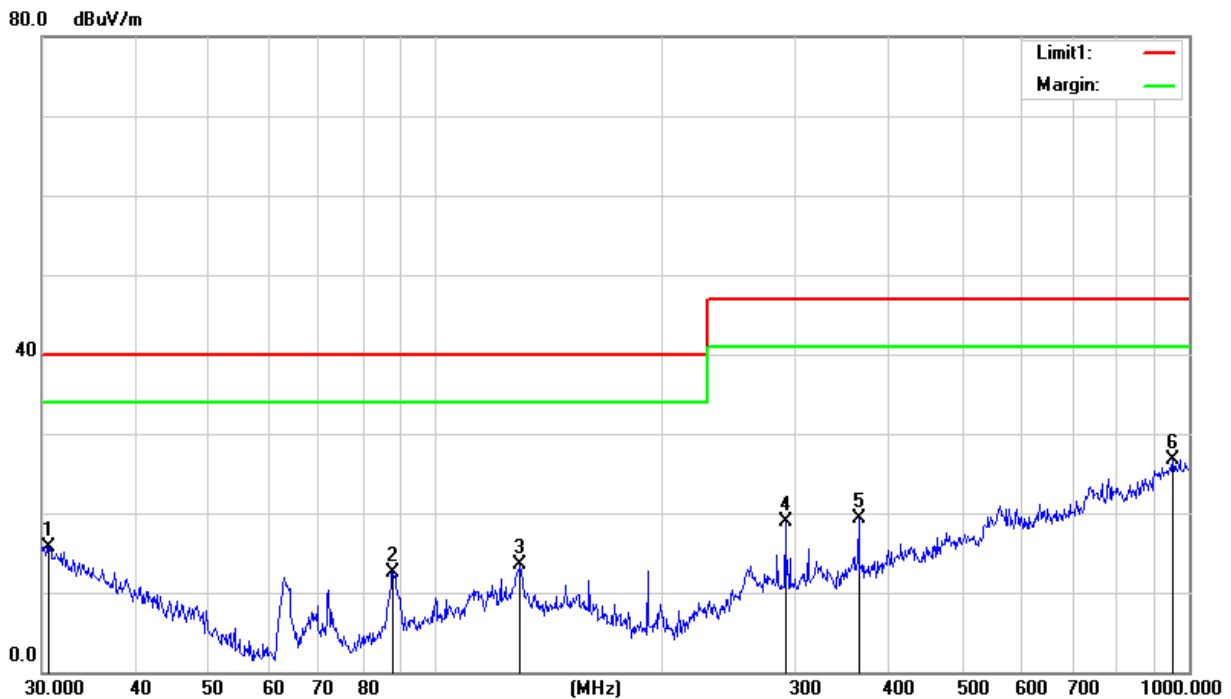


Temperature:	26.1 °C	Relative Humidity:	53%
Phase:	Vertical	Test Mode:	Mode 1
Test Voltage:	DC 4.5V	Test Date:	2024.07.26

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	30.6378	27.18	-11.39	15.79	40.00	-24.21	QP
2	87.7248	34.37	-21.87	12.50	40.00	-27.50	QP
3	129.4677	31.77	-18.18	13.59	40.00	-26.41	QP
4	291.0360	35.55	-16.70	18.85	47.00	-28.15	QP
5	364.2595	33.56	-14.29	19.27	47.00	-27.73	QP
6	952.0937	28.87	-2.10	26.77	47.00	-20.23	QP

Remark:

1. All readings are Quasi-Peak
2. Margin = Result (Result = Reading + Factor)–Limit
3. 3. Factor= Cable Loss +Antenna Factor–Amplifier Gain



3.2.6 TEST RESULTS (0.009~30MHz)

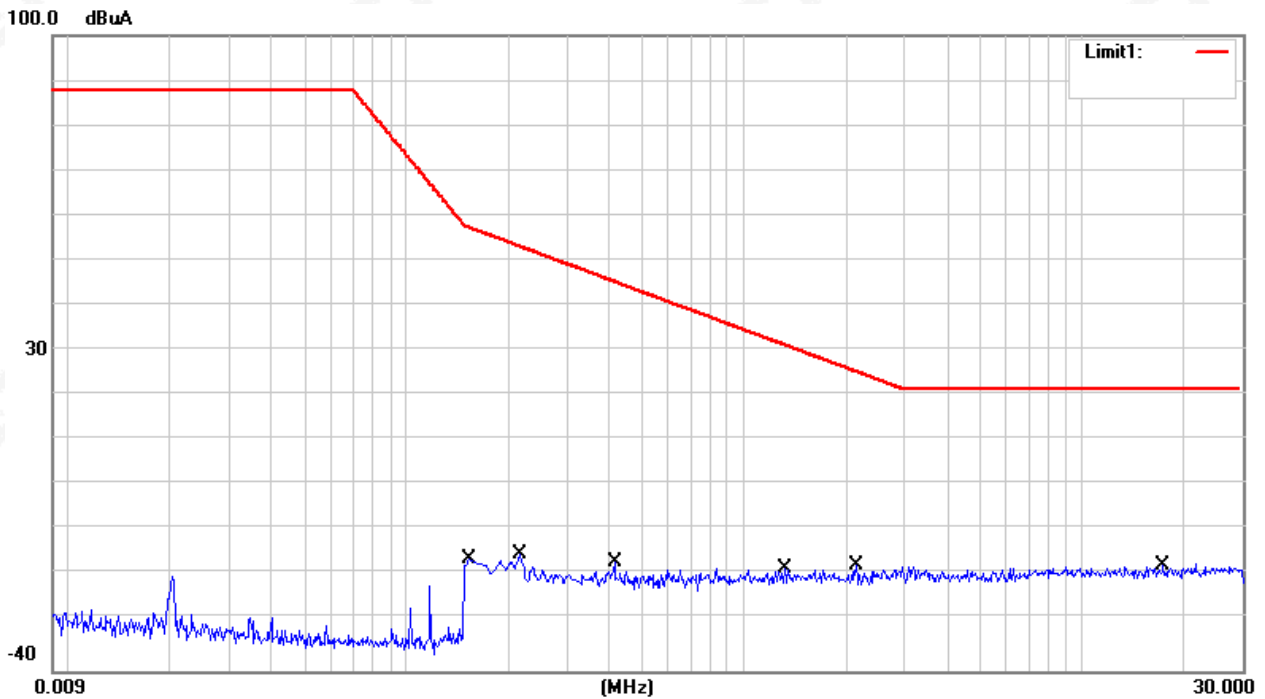
Temperature:	25.3℃	Relative Humidity:	59%
Test Voltage:	DC 4.5V	Test Date:	2024.7.30
Test Mode:	Mode 1		

X

No.	Frequency (MHz)	Reading (dBuA)	Correct Factor (dB)	Results (dBuA)	Limit (dBuA)	Margin (dB)	Detector
1	0.1540	-25.43	10.02	-15.41	57.68	-73.09	QP
2	0.2180	-24.18	10.02	-14.16	53.51	-67.67	QP
3	0.4140	-26.05	10.02	-16.03	45.80	-61.83	QP
4	1.3300	-27.34	10.03	-17.31	31.78	-49.09	QP
5	2.1540	-26.96	10.06	-16.90	25.98	-42.88	QP
6	17.4300	-27.12	10.26	-16.86	22.00	-38.86	QP

Remark:

1. All readings are Quasi-Peak
2. Margin = Result (Result = Reading + Factor)–Limit
3. Factor = Insertion loss + Cable loss

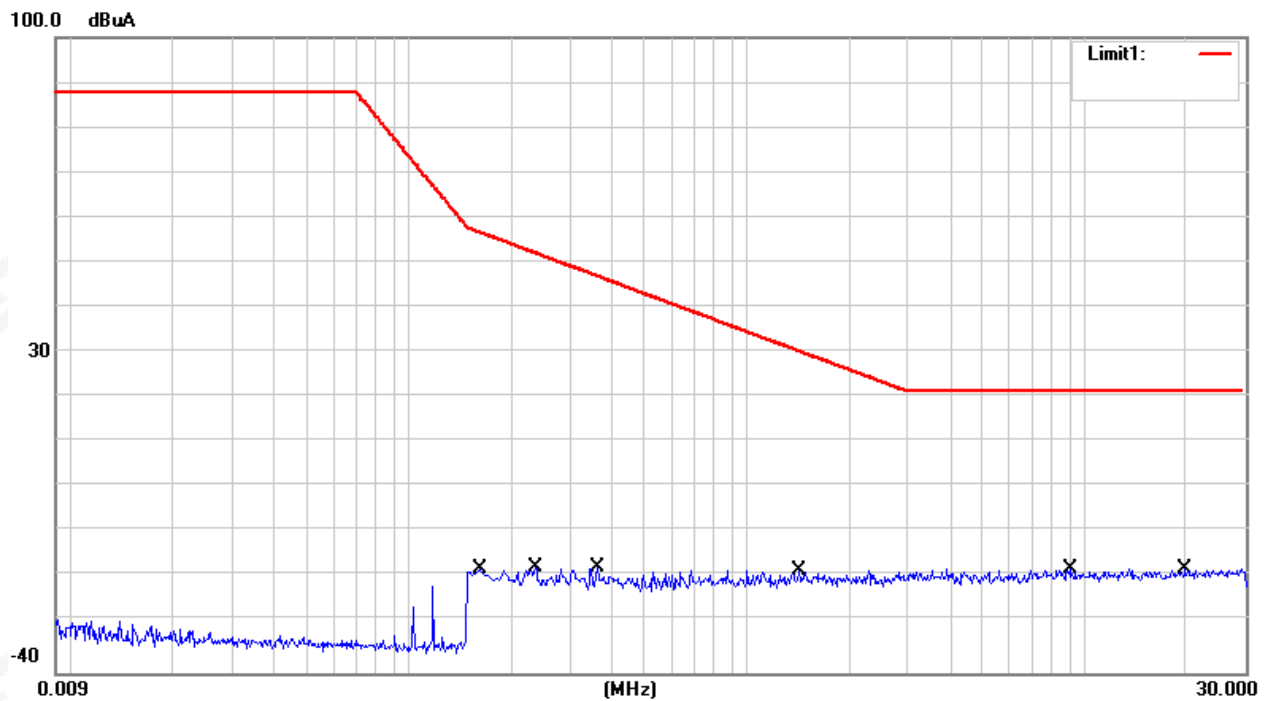


Y

No.	Frequency (MHz)	Reading (dBUA)	Correct Factor (dB)	Results (dBUA)	Limit (dBUA)	Margin (dB)	Detector
1	0.1620	-27.18	10.02	-17.16	57.08	-74.24	QP
2	0.2380	-26.67	10.02	-16.65	52.45	-69.10	QP
3	0.3620	-26.61	10.02	-16.59	47.41	-64.00	QP
4	1.4380	-27.36	10.04	-17.32	30.84	-48.16	QP
5	9.0540	-27.25	10.13	-17.12	22.00	-39.12	QP
6	19.8900	-27.21	10.24	-16.97	22.00	-38.97	QP

Remark:

1. All readings are Quasi-Peak
2. Margin = Result (Result = Reading + Factor)–Limit
3. Factor = Insertion loss + Cable loss

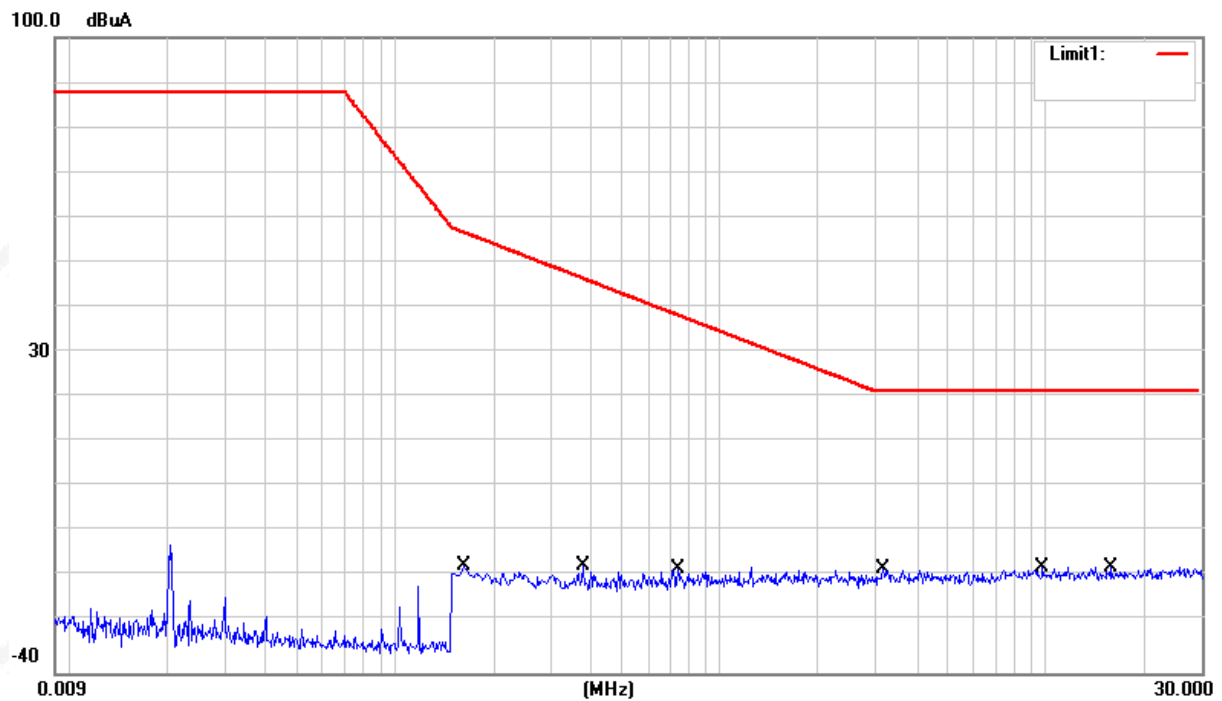


Z

No.	Frequency (MHz)	Reading (dBuA)	Correct Factor (dB)	Results (dBuA)	Limit (dBuA)	Margin (dB)	Detector
1	0.1620	-26.47	10.02	-16.45	57.08	-73.53	QP
2	0.3780	-26.43	10.02	-16.41	46.89	-63.30	QP
3	0.7380	-27.05	10.02	-17.03	38.85	-55.88	QP
4	3.1620	-27.25	10.08	-17.17	22.00	-39.17	QP
5	9.7500	-26.71	10.15	-16.56	22.00	-38.56	QP
6	15.9180	-26.84	10.27	-16.57	22.00	-38.57	QP

Remark:

1. All readings are Quasi-Peak
2. Margin = Result (Result = Reading + Factor)–Limit
3. Factor = Insertion loss + Cable loss



4. EMC IMMUNITY TEST

4.1 STANDARD COMPLIANCE/SERVRITY LEVEL/CRITERIA

Tests Standard No.	TEST SPECIFICATION	Test Mode Test Ports	Perform. Criteria
1. ESD IEC/EN 61000-4-2	8KV air discharge 4KV contact discharge	Direct Mode	B
	4KV HCP discharge 4KV VCP discharge	Indirect Mode	B
2. RS IEC/EN 61000-4-3	80 MHz to 1000 MHz, 1000Hz, 80%, AM modulated	Enclosure	A

4.2 GENERAL PERFORMANCE CRITERIA

According to **EN 61547** standard, the general performance criteria as following:

Criterion A	During the test, no change of the luminous intensity shall be observed and the regulating control, if any, shall operate during the test as intended.
Criterion B	During the test, the luminous intensity may change to any value. After the test, the luminous intensity shall be restored to its initial value within 1 min. Regulating controls need not function during the test, but after the test, the mode of the control shall be the same as before the test provided that during the test no mode changing commands were given.
Criterion C	During and after the test, any change of the luminous intensity is allowed and the lamp(s) may be extinguished. After the test, within 30 min, all functions shall return to normal, if necessary by temporary interruption of the mains supply and/or operating the regulating control. Additional requirement for lighting equipment incorporating a starting device: After the test, the lighting equipment is switched off. After half an hour, it is switched on again. The lighting equipment shall start and operate as intended.

4.2.1 GENERAL PERFORMANCE CRITERIA TEST SETUP

The EUT tested system was configured as the statements of **2.2** or **2.3** unless otherwise a special operating condition is specified in the following during the testing.

4.3 ELECTROSTATIC DISCHARGE IMMUNITY TEST (ESD)

4.3.1 TEST SPECIFICATION

Basic Standard:	IEC/EN 61000-4-2
Discharge Impedance:	330 ohm / 150 pF
Required Performance:	B
Discharge Voltage:	Air Discharge: 2KV/4KV/8KV (Direct) Contact Discharge: 4KV (Direct/Indirect)
Polarity:	Positive & Negative
Number of Discharge:	Air Discharge: at least 10 times on each point Contact Discharge: at least 10 times on each point
Discharge Mode:	Single Discharge
Discharge Period:	1 second minimum

4.3.2 TEST PROCEDURE

The test generator necessary to perform direct and indirect application of discharges to the EUT in the following manners:

a. Vertical Coupling Plane (VCP):

The coupling plane of dimensions 0.5m x 0.5m, is placed parallel to and positioned at a distance 0.1m from the EUT, with the Discharge Electrode touching the coupling plane. The four faces of the EUT will be performed with electrostatic discharge.

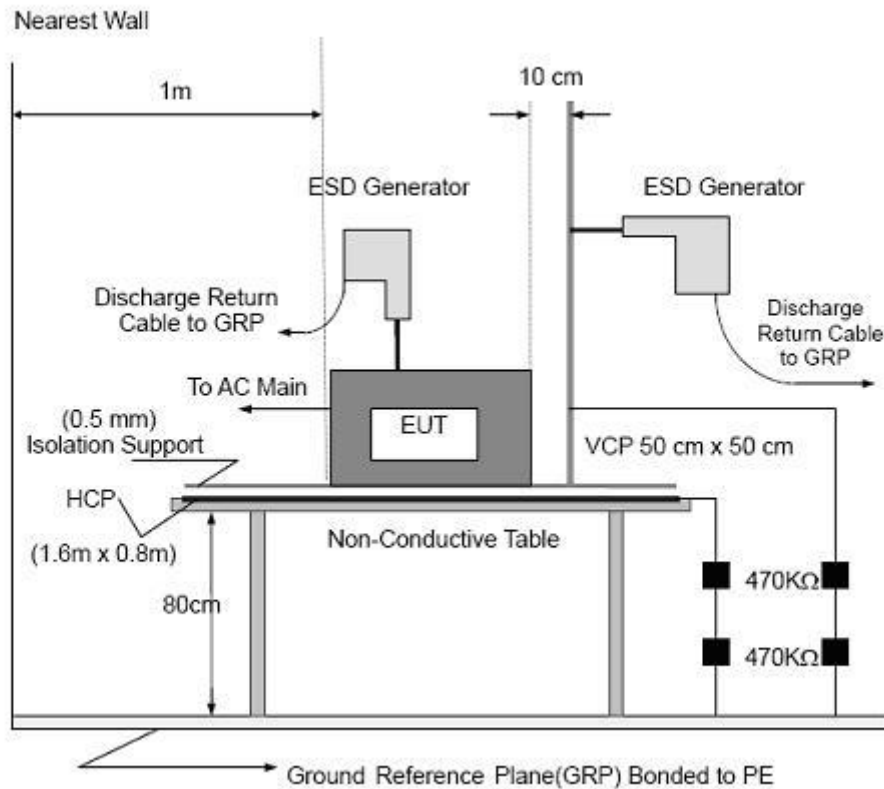
Horizontal Coupling Plane (HCP):

The coupling plane is placed under to the EUT. The generator shall be positioned vertically at a distance of 0.1m from the EUT, with the Discharge Electrode touching the coupling plane. The four faces of the EUT will be performed with electrostatic discharge.

b. Air discharges at insulation surfaces of the EUT.

It was at least ten single discharges with positive and negative at the same selected point.

4.3.3 TEST SETUP



Note:

TABLE-TOP EQUIPMENT

The configuration consisted of a wooden table 0.8 meter high standing on the Ground Reference Plane. The GRP consisted of a sheet of aluminum at least 0.25mm thick. A Horizontal Coupling Plane (1.6m x 0.8m) was placed on the table and attached to the GRP by means of a cable with 940kΩ total impedance. The equipment under test was installed in a representative system as described in section 7 of IEC /EN 61000-4-2, and its cables were placed on the HCP and isolated by an insulating support of 0.5mm thickness. A distance of 0.8-meter minimum was provided between the EUT and the walls of the laboratory and any other metallic structure.

FLOOR-STANDING EQUIPMENT

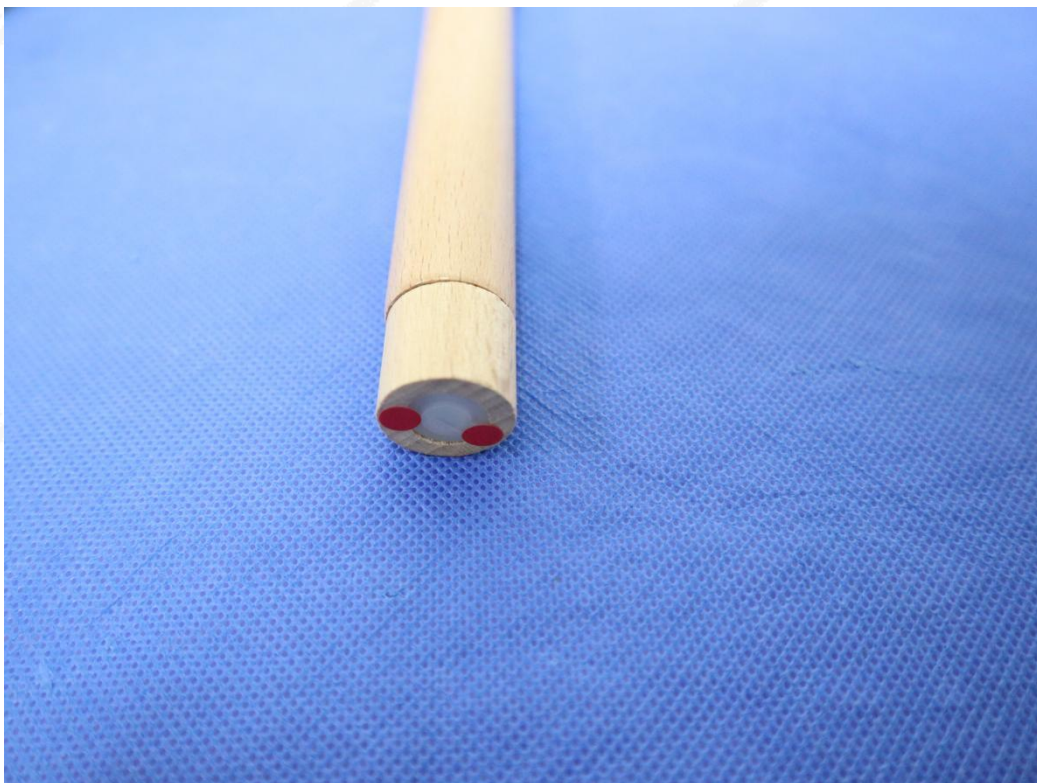
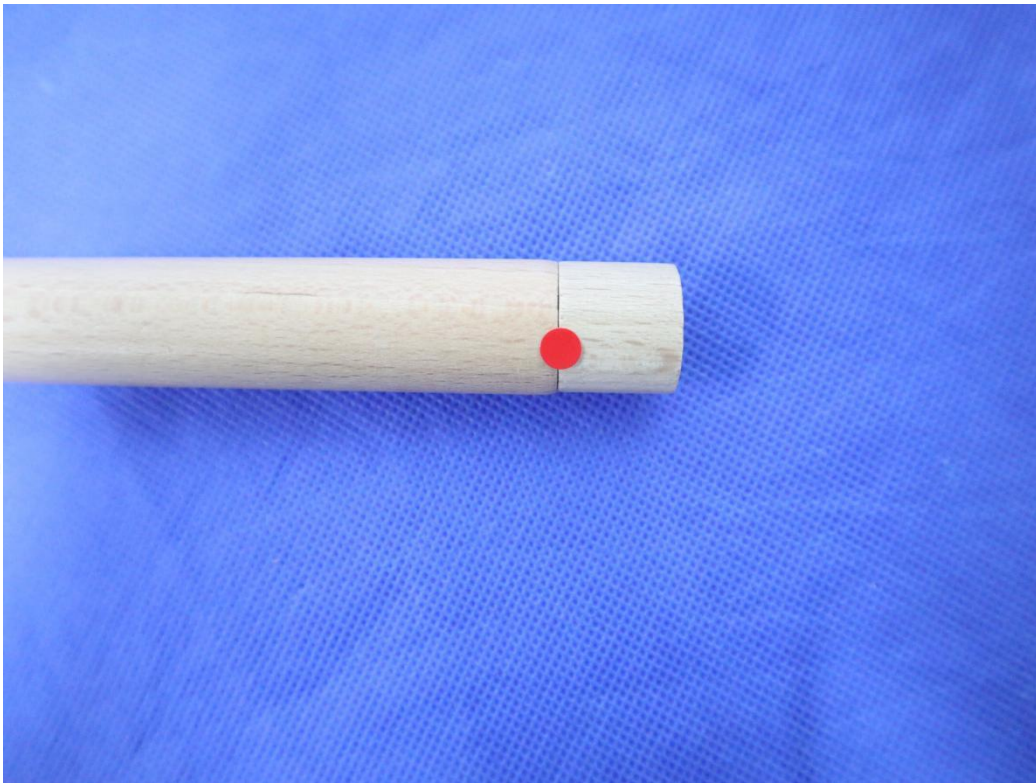
The equipment under test was installed in a representative system as described in section 7 of IEC/EN 61000-4-2, and its cables were isolated from the Ground Reference Plane by an insulating support of 0.1 meter thickness. The GRP was consisted of a sheet of aluminum that is at least 0.25mm thick, and extended at least 0.5 meter from the EUT on all sides.

**4.3.4 TEST RESULTS**

Temperature:	24.1°C	Relative Humidity:	50%
Pressure:	1017.8hPa	Test Voltage:	DC 4.5V
Test Mode:	Mode 1	Test Date:	2024.7.30

Discharge Level	Polarity	Test Points	Contact Discharge	Air Discharge	Criterion	Test Result
2,4	+/-	HCP/VCP	Note1	NA	B	A
2,4,8	+/-	Red Dot	NA	Note1	B	A

Note: The EUT function was correct during the test
Red Dot —Air Discharged
Green Dot —Contact Discharged

The Photo for Discharge Points of EUT

4.4 RADIATED, RADIO-FREQUENCY, ELECTROMAGNETIC FIELD IMMUNITY TEST (RS)

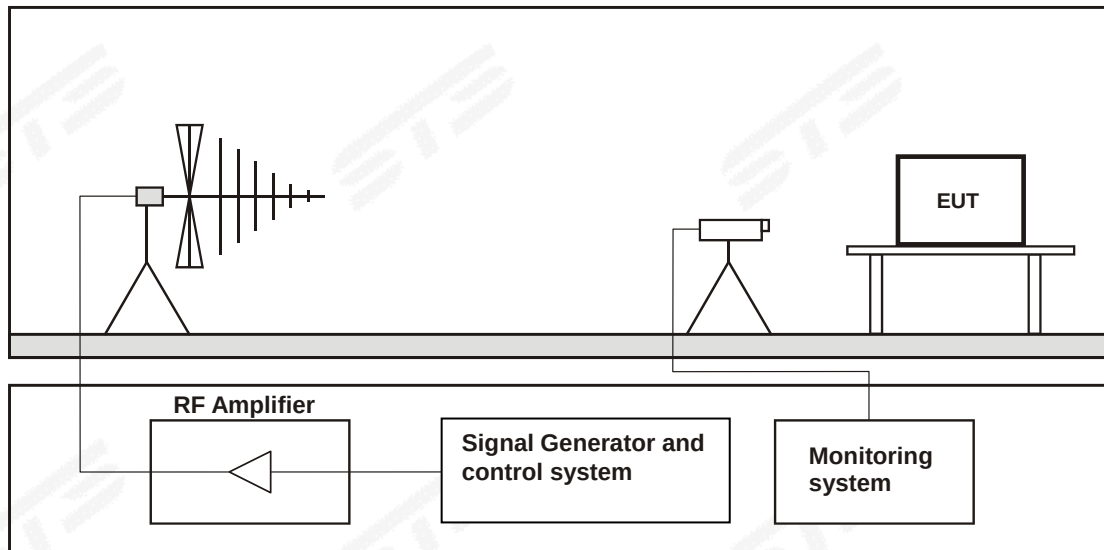
4.4.1 TEST SPECIFICATION

Basic Standard:	IEC/EN 61000-4-3
Required Performance:	A
Frequency Range:	80 MHz - 1000 MHz
Field Strength:	3 V/m
Modulation:	1kHz Sine Wave, 80%, AM Modulation
Frequency Step:	1 % of fundamental
Polarity of Antenna:	Horizontal and Vertical
Test Distance:	3 m
Antenna Height:	1.5 m
Dwell Time:	3s

4.4.2 TEST PROCEDURE

- The testing was performed in a fully anechoic chamber. The transmit antenna was located at a distance of 3 meters from the EUT.
- The frequency range is swept from 80 MHz to 1000 MHz, with the signal 80% amplitude modulated with a 1kHz sine-wave. The rate of sweep did not exceed 3s, where the frequency range is swept incrementally, the step size was 1% of preceding frequency value.
- The dwell time at each frequency shall be not less than the time necessary for the EUT to be able to respond.
- The test was performed with the EUT exposed to both vertically and horizontally polarized fields on each of the four sides.

4.4.3 TEST SETUP



Note:

TABLE-TOP EQUIPMENT

The EUT installed in a representative system as described in section 7 of IEC/EN 61000-4-3 was placed on a non-conductive table 0.8 meter in height. The system under test was connected to the power and signal wire according to the relevant installation instructions.

FLOOR-STANDING EQUIPMENT

The EUT installed in a representative system as described in section 7 of IEC/EN 61000-4-3 was placed on a non-conductive wood support 0.1 meter in height. The system under test was connected to the power and signal wire according to the relevant installation instructions.

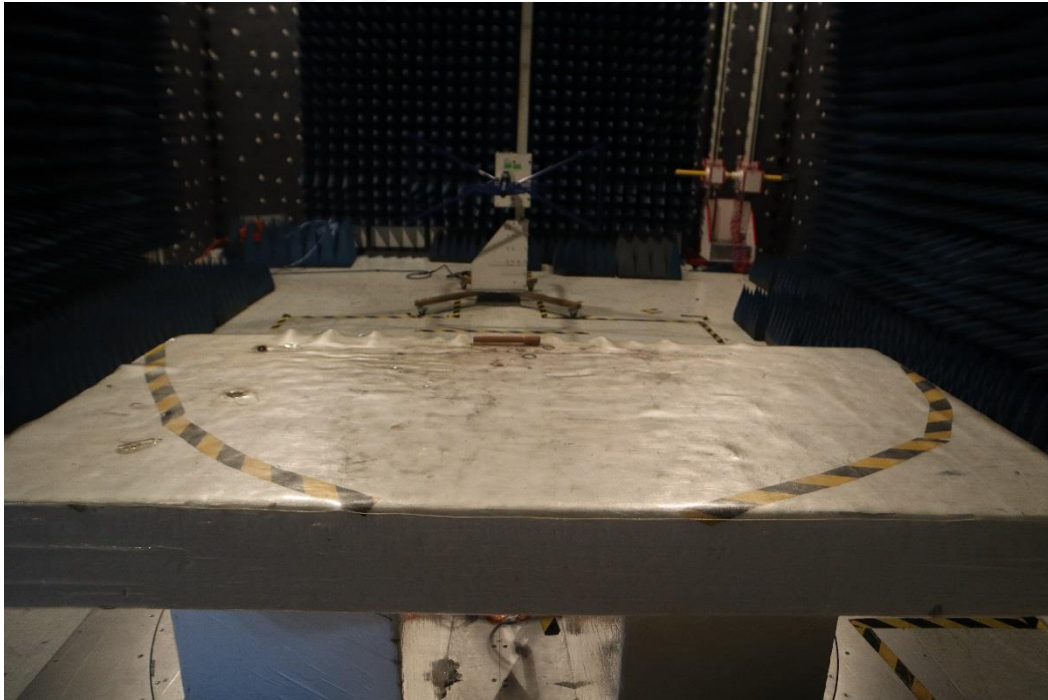
**4.4.4 TEST RESULTS**

Temperature:	24.1°C	Relative Humidity:	50%
Test Voltage:	DC 4.5V	Test Date:	2024.7.30
Test Mode:	Mode1		

Frequency Range (MHz)	RF Field Position	R.F. Field Strength	Azimuth	Perform. Criteria	Results	Judgement
80MHz - 1000MHz	H / V	3 V/m (rms) AM Modulated 1000Hz, 80%	Front	A	A	PASS
			Rear			
			Left			
			Right			

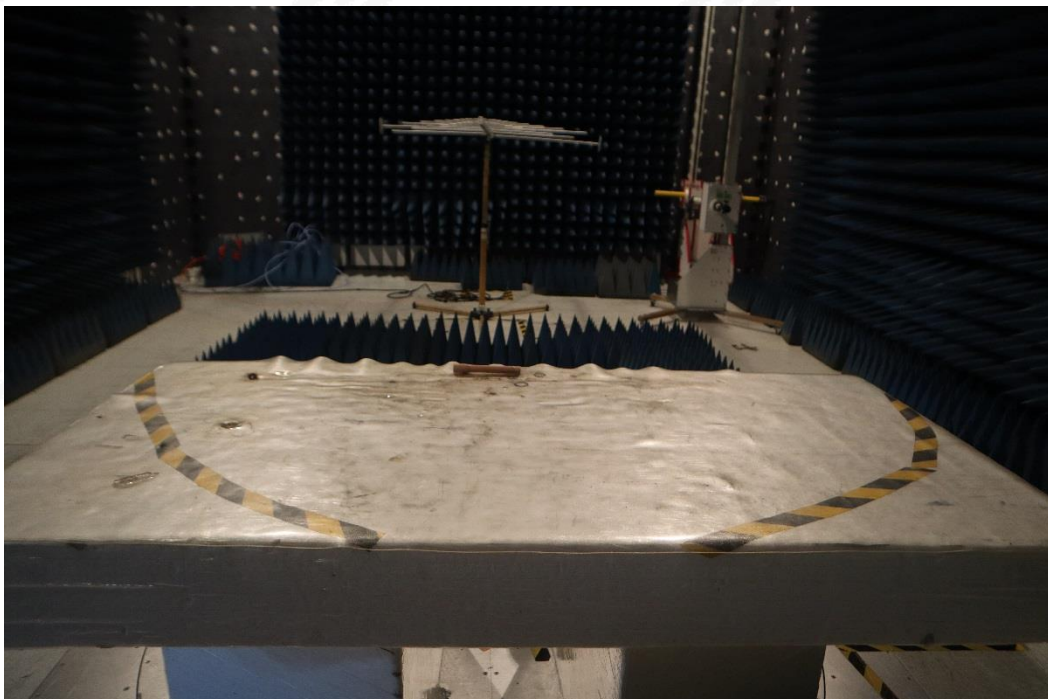
APPENDIX 1 - TEST SETUP

RE (30 - 1000 MHz)



LOOP



ESD**RS (80 - 1000 MHz)*********END OF THE REPORT*******