



EMC TEST REPORT

For

Mid Ocean Brands B.V.

Table light wireless charger

Test Model: MO6349

Prepared for : Mid Ocean Brands B.V.
Address : 7/F., King Tower, 111King Lam Street, Cheung ShaWan,
Kowloon, HongKong.

Prepared by : Shenzhen LCS Compliance Testing Laboratory Ltd.
Address : Room 101, 201, Building A and Room 301, Building C,
Juji Industrial Park, Yabianxueziwei, Shajing Street,
Bao'an District, Shenzhen, Guangdong, China

Tel : (+86)755-82591330
Fax : (+86)755-82591332
Web : www.LCS-cert.com
Mail : webmaster@LCS-cert.com

Date of receipt of test sample : July 19, 2024
Number of tested samples : 2
Sample No. : A240712044-1, A240712044-2
Serial number : Prototype
Date of Test : July 19, 2024 ~ July 26, 2024
Date of Report : July 29, 2024



**EMC TEST REPORT****ETSI EN 301 489-1 V2.2.3 (2019-11) & ETSI EN 301 489-3 V2.3.2 (2023-01)****Report Reference No. : LCSA07194066EA****Date Of Issue..... : July 29, 2024****Testing Laboratory Name..... : Shenzhen LCS Compliance Testing Laboratory Ltd.****Address..... : Room 101, 201, Building A and Room 301, Building C, Juji Industrial Park, Yabianxueziwei, Shajing Street, Bao'an District, Shenzhen, Guangdong, China****Testing Location/ Procedure.... : Full application of Harmonised standards■
Partial application of Harmonised standards□
Other standard testing method□****Applicant's Name..... : Mid Ocean Brands B.V.****Address..... : 7/F., King Tower, 111King Lam Street, Cheung ShaWan, Kowloon, HongKong.****Test Specification****Standard..... : ETSI EN 301 489-1 V2.2.3 (2019-11)
ETSI EN 301 489-3 V2.3.2 (2023-01)
EN 55032:2015/A1:2020
EN 55035:2017/A11:2020****Test Report Form No. : TRF-4-E-132 A/0****TRF Originator..... : Shenzhen LCS Compliance Testing Laboratory Ltd.****Master TRF..... : Dated 2017-06****Shenzhen LCS Compliance Testing Laboratory Ltd. All rights reserved.**

This publication may be reproduced in whole or in part for non-commercial purposes as long as the Shenzhen LCS Compliance Testing Laboratory Ltd. is acknowledged as copyright owner and source of the material. Shenzhen LCS Compliance Testing Laboratory Ltd. takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.

Test Item Description..... : Table light wireless charger**Trade Mark..... : N/A****Test Model..... : MO6349****Ratings..... : Input: DC 5V/2A, DC 9V/2A
Output: DC 5V/1A, DC 9V/1.1A, LED 2W****Result : Positive****Compiled by:**

Ling Zhu/Administrator

Supervised by:

Cary Luo/ Technique principal

Approved by:

Gavin Liang/ Manager



Shenzhen LCS Compliance Testing Laboratory Ltd.

Add: Room 101, 201, Building A and Room 301, Building C, Juji Industrial Park, Yabianxueziwei, Shajing Street, Bao'an District, Shenzhen, Guangdong, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity



EMC -- TEST REPORT

Test Report No. : LCSA07194066EA	<u>July 29, 2024</u> Date of issue
---	---------------------------------------

Test Model.....	: MO6349
EUT.....	: Table light wireless charger
Applicant.....	: Mid Ocean Brands B.V.
Address.....	: 7/F., King Tower, 111King Lam Street, Cheung ShaWan, Kowloon, HongKong.
Telephone.....	: /
Fax.....	: /
Manufacturer.....	: Mid Ocean Brands B.V.
Address.....	: 7/F., King Tower, 111King Lam Street, Cheung ShaWan, Kowloon, HongKong.
Telephone.....	: /
Fax.....	: /
Factory.....	: Mid Ocean Brands B.V.
Address.....	: 7/F., King Tower, 111King Lam Street, Cheung ShaWan, Kowloon, HongKong.
Telephone.....	: /
Fax.....	: /

Test Result	Positive
--------------------	-----------------

The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.





Revision History

Report Version	Issue Date	Revision Content	Revised By
000	July 29, 2024	Initial Issue	--



Shenzhen LCS Compliance Testing Laboratory Ltd.
Add: Room 101, 201, Building A and Room 301, Building C, Juji Industrial Park, Yabianxueziwei, Shajing Street,
Bao'an District, Shenzhen, Guangdong, China
Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com
Scan code to check authenticity



TABLE OF CONTENTS

1. GENERAL INFORMATION	6
1.1. PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT)	6
1.2. OBJECTIVE	7
1.3. RELATED SUBMITTAL(S)/GRANT(S)	7
1.4. TEST METHODOLOGY	7
1.5. DESCRIPTION OF TEST FACILITY	7
1.6. SUPPORT EQUIPMENT LIST	7
1.7. EXTERNAL I/O	7
1.8. MEASUREMENT UNCERTAINTY	8
1.9. DESCRIPTION OF TEST MODES	8
2. SUMMARY OF TEST RESULTS	9
3. TEST RESULTS	10
3.1. LINE CONDUCTED EMISSION	10
3.2. CONDUCTED EMISSION (WIRED NETWORK PORT)	12
3.3. RADIATED DISTURBANCE	13
3.4. HARMONIC CURRENT EMISSIONS	16
3.5. VOLTAGE FLUCTUATION AND FLICKER	17
3.6. RF ELECTROMAGNETIC FIELD (80 MHz - 6000 MHz)	18
3.7. ELECTROSTATIC DISCHARGE	20
3.8. ELECTRICAL FAST TRANSIENT IMMUNITY	22
3.9. RF COMMON MODE	23
3.10. SURGES, LINE TO LINE AND LINE TO GROUND	25
3.11. VOLTAGE DIPS/INTERRUPTIONS IMMUNITY TEST	26
4. GENERAL PERFORMANCE CRITERIA FOR IMMUNITY TEST	27
4.1. PERFORMANCE CRITERIA FOR CONTINUOUS PHENOMENA APPLIED TO TRANSMITTER (CT)	27
4.2. PERFORMANCE CRITERIA FOR TRANSIENT PHENOMENA APPLIED TO TRANSMITTER (TT)	27
4.3. PERFORMANCE CRITERIA FOR CONTINUOUS PHENOMENA APPLIED TO RECEIVER (CR)	27
4.4. PERFORMANCE CRITERIA FOR TRANSIENT PHENOMENA APPLIED TO RECEIVER (TR)	27
5. LIST OF MEASURING EQUIPMENT	31
6. PHOTOGRAPHS OF TEST SETUP	33
7. PHOTOGRAPHS OF THE EUT	33





1. GENERAL INFORMATION

1.1. Product Description for Equipment Under Test (EUT)

EUT : Table light wireless charger

Test Model : MO6349

Ratings : Input: DC 5V/2A, DC 9V/2A
Output: DC 5V/1A, DC 9V/1.1A, LED 2W

Hardware Version : /

Software Version : /

Wireless Charging :

Operating Frequency : 100.0~205.0KHz

Modulation Type : ASK

Antenna Type : Coil Antenna





1.2. Objective

ETSI EN 301 489-1	ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements; Harmonised Standard for ElectroMagnetic Compatibility
ETSI EN 301 489-3	ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 3: Specific conditions for Short Range Devices (SRD) operating on frequencies between 9 kHz and 246 GHz; Harmonised Standard for ElectroMagnetic Compatibility
EN 55032	Electromagnetic compatibility of multimedia equipment — Emission Requirements
EN 55035	Electromagnetic compatibility of multimedia equipment – Immunity requirements

The objective is to determine compliance with ETSI EN 301 489-1 V2.2.3 (2019-11), ETSI EN 301 489-3 V2.3.2 (2023-01), EN 55032:2015/A1:2020 and EN 55035:2017/A11:2020.

1.3. Related Submittal(s)/Grant(s)

No Related Submittals.

1.4. Test Methodology

All measurements contained in this report were conducted with ETSI EN 301 489-1 V2.2.3 (2019-11), ETSI EN 301 489-3 V2.3.2 (2023-01), EN 55032:2015/A1:2020 and EN 55035:2017/A11:2020.

1.5. Description of Test Facility

NVLAP Accreditation Code is 600167-0.
FCC Designation Number is CN5024.
CAB identifier is CN0071.
CNAS Registration Number is L4595.

1.6. Support Equipment List

Manufacturer	Description	Model	Serial Number	Certificate
SHENZHEN TIANYIN ELECTRONICS CO., LTD	Power Adapter	TPA-46050 200UU	--	CE
Apple	Phone	ipone 11	--	CE

Note: Auxiliary equipment is provided by the laboratory.

1.7. External I/O

I/O Port Description	Quantity	Cable
Power Port	1	N/A





1.8. Measurement Uncertainty

Item	MU	Remark
Uncertainty for Power point Conducted Emissions Test	2.42dB	
Uncertainty for Radiation Emission test in 3m chamber (30MHz to 1GHz)	3.54dB	Polarize: V
	4.1dB	Polarize: H
Uncertainty for Radiation Emission test in 3m chamber (1GHz to 25GHz)	2.08dB	Polarize: H
	2.56dB	Polarize: V
Uncertainty for radio frequency	0.01ppm	
Uncertainty for conducted RF Power	0.65dB	
Uncertainty for temperature	0.2°C	
Uncertainty for humidity	1%	
Uncertainty for DC and low frequency voltages	0.06%	

1.9. Description of Test Modes

There was 2 test Modes. TM1 to TM2 were shown below:

TM1 : Operate Wireless Charging Mode;

TM2 : Idle Mode

***Note:

1. All test modes were tested, but we only recorded the worst case in this report.





2. SUMMARY OF TEST RESULTS

Rule	Description of Test Items	Result
§7.1	Reference to clause 8.4 of ETSI EN 301 489-1 Conducted Emission (AC mains input/output port)	Compliant
§7.1	Reference to clause 8.3 of ETSI EN 301 489-1 Conducted Emission (DC power input/output port)	N/A*
§7.1	Reference to clause 8.7 of ETSI EN 301 489-1 Conducted Emission (Wired network port)	N/A*
§7.1	Reference to clause 8.2 of ETSI EN 301 489-1 Radiated Emission (Enclosure of ancillary equipment)	Compliant
§7.1	Reference to clause 8.5 of ETSI EN 301 489-1 Harmonic current emissions (AC mains input port)	N/A*
§7.1	Reference to clause 8.6 of ETSI EN 301 489-1 Voltage fluctuations and flicker (AC mains input port)	Compliant
§7.2	Reference to clause 9.3 of ETSI EN 301 489-1 Electrostatic discharge (Enclosure port) (EN 61000-4-2)	Compliant
§7.2	Reference to clause 9.2 of ETSI EN 301 489-1 RF electromagnetic field (80MHz to 6000MHz) (Enclosure port) (EN 61000-4-3)	Compliant
§7.2	Reference to clause 9.4 of ETSI EN 301 489-1 Fast transients common mode (signal, wired network and control ports, DC and AC power ports) (EN 61000-4-4)	Compliant
§7.2	Reference to clause 9.8 of ETSI EN 301 489-1 Surges, line to line and line to ground (AC mains power input ports, wired network ports) (EN 61000-4-5)	Compliant
§7.2	Reference to clause 9.5 of ETSI EN 301 489-1 RF common mode 0.15MHz to 80MHz (signal, wired network and control ports, DC and AC power ports) (EN 61000-4-6)	Compliant
§7.2	Reference to clause 9.6 of ETSI EN 301 489-1 Transients and surges in the vehicular environment (ISO 7637-2)	N/A*
§7.2	Reference to clause 9.7 of ETSI EN 301 489-1 Voltage dips and interruptions (AC mains power input ports) (EN 61000-4-11)	Compliant





3. TEST RESULTS

3.1. Line Conducted Emission

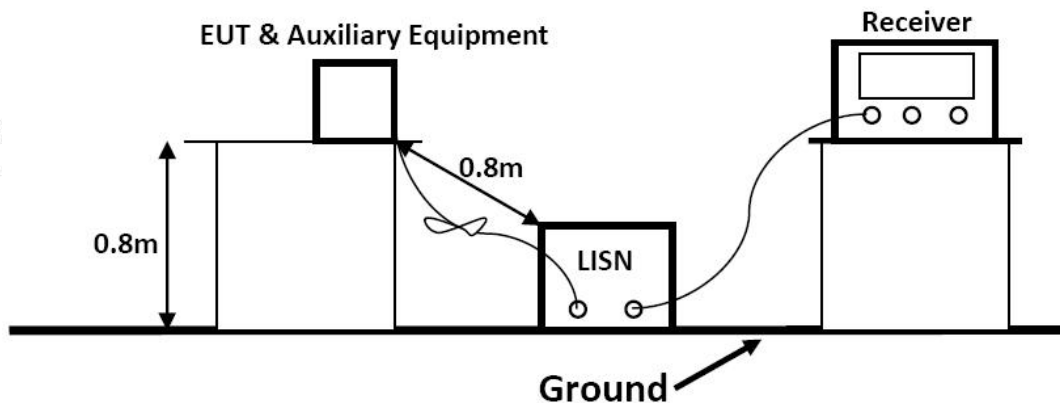
3.1.1 Conducted Emission Limit

Relevant Standard(s): ETSI EN 301 489-1 V2.2.3 (2019-11) / EN 55032:2015/A1:2020 Class B

Limits for Line Conducted Emission		
Frequency (MHz)	Limit (dB μ V)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66.0 ~ 56.0 *	56.0 ~ 46.0 *
0.50 ~ 5.00	56.0	46.0
5.00 ~ 30.00	60.0	50.0

NOTE1-The lower limit shall apply at the transition frequencies.
NOTE2-The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.50MHz.

3.1.2 Test Configuration



The setup of EUT is according with per ETSI EN 301 489-1 measurement procedure. The specification used was with the ETSI EN 301 489-1 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.

The EUT received charging power from the charger which received power through a LISN supplying power of AC 230V/50Hz.





3.1.3 EMI Test Receiver Setup

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

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	150KHz ~ 30MHz
(IF)RBW	9kHz

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

3.1.4 Test Procedure

Power on the EUT, the EUT begins to work. Make sure the EUT operates normally during the test.

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

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

3.1.5 Test Results

PASS

Please refer to Appendix A.1 for Emission and Immunity test results.





3.2. Conducted Emission (Wired Network Port)

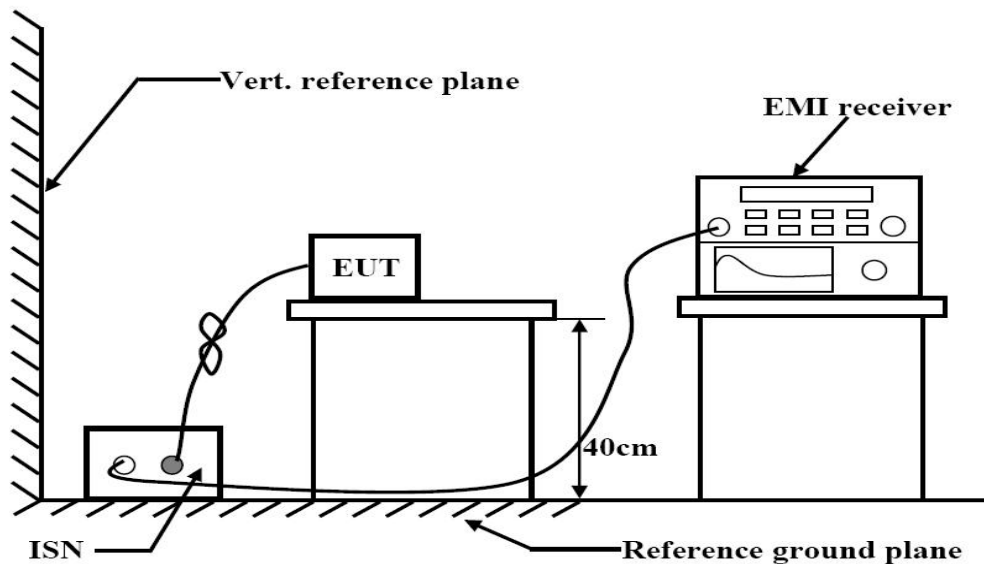
3.2.1 Conducted Emission Limit(Wired Network Port)

Limits for asymmetric mode conducted emissions				
Frequency (MHz)	Class B voltage limits (dB μ V)		Class B current limits (dB μ A)	
	Quasi-peak Level	Average Level	Quasi-peak Level	Average Level
0.15 ~ 0.50	84.0~74.0	74.0~64.0	40.0~30.0	30.0~20.0
0.50 ~ 30.00	74.0	64.0	30.0	20.0

NOTE 1-The limits decrease linearly with the logarithm of the frequency in the range 0,15 MHz to 0,5 MHz.

NOTE 2-The current and voltage disturbance limits are derived for use with an impedance stabilization network (ISN) which presents a common mode (asymmetric mode) impedance of 150 Ω to the telecommunication port under test (conversion factor is $20 \log_{10} 150 / 1 = 44$ dB).

3.2.2 Test Configuration



3.2.3 EMI Test Receiver Setup

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

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	150KHz ~ 30MHz
(IF)RBW	9kHz

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

3.2.4 Test Procedure

Please refer to ETSI EN 301 489-1 Clause 8.7.2 and EN 55032 Clause 6 for the measurement methods.

3.2.5 Test Results

Not applicable.





3.3. Radiated Disturbance

3.3.1 Radiated Emission Limit

Relevant Standard(s): ETSI EN 301 489-1 V2.2.3 (2019-11) / EN 55032:2015/A1:2020 Class B

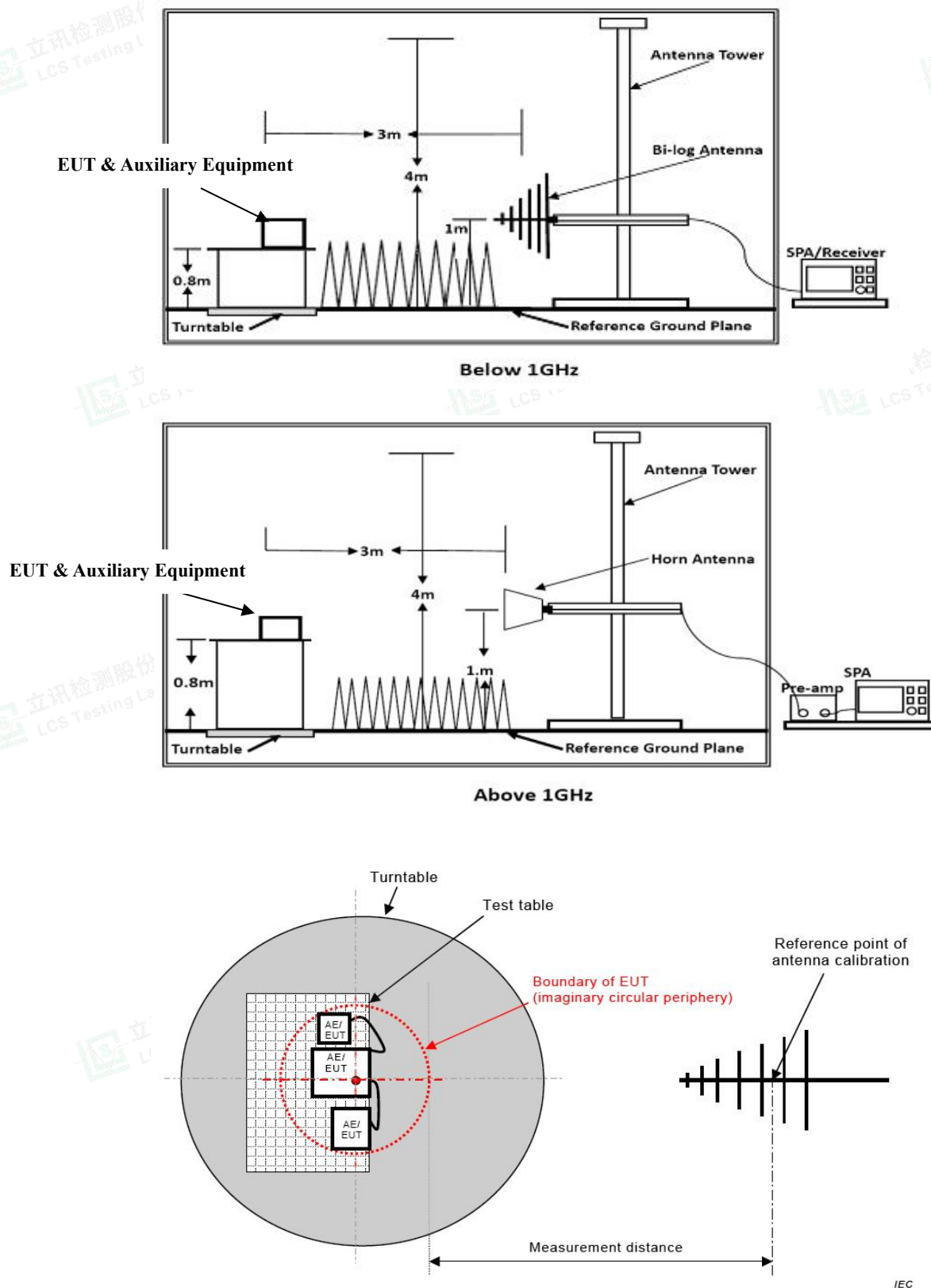
Limits for Radiated Disturbance Below 1GHz			
Frequency (MHz)	Facility	Distance (Meters)	Field Strengths Limit (dB μ V/m)
30 ~ 230	FAR	3	42-35
230 ~ 1000	FAR	3	42
***Note: (1) The smaller limit shall apply at the combination point between two frequency bands. (2) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the EUT.			
Limits for Radiated Disturbance Above 1GHz			
Frequency (MHz)	Distance (Meters)	Peak Limit (dB μ V/m)	Average Limit (dB μ V/m)
1000 ~ 6000	3	74	54
***Note: The lower limit applies at the transition frequency.			

Limits for Radiated Disturbance Below 1GHz (For FM Receivers)			
Frequency (MHz)	Distance (Meters)	Class B Limit (dBμV/m)	
		Fundamental	Harmonics
30 ~ 230	3	60	52
230 ~ 300	3		52
300 ~ 1000	3		56
***Note: These relaxed limits apply only to emissions at the fundamental and harmonic frequencies of the LO. Signals at all other frequencies shall be compliant with the limits given in above Table.			
Limits for Radiated Disturbance Above 1GHz (For FM Receivers)			
1000 ~ 6000	3	74	54
***Note: The lower limit applies at the transition frequency.			





3.3.2 Test Configuration



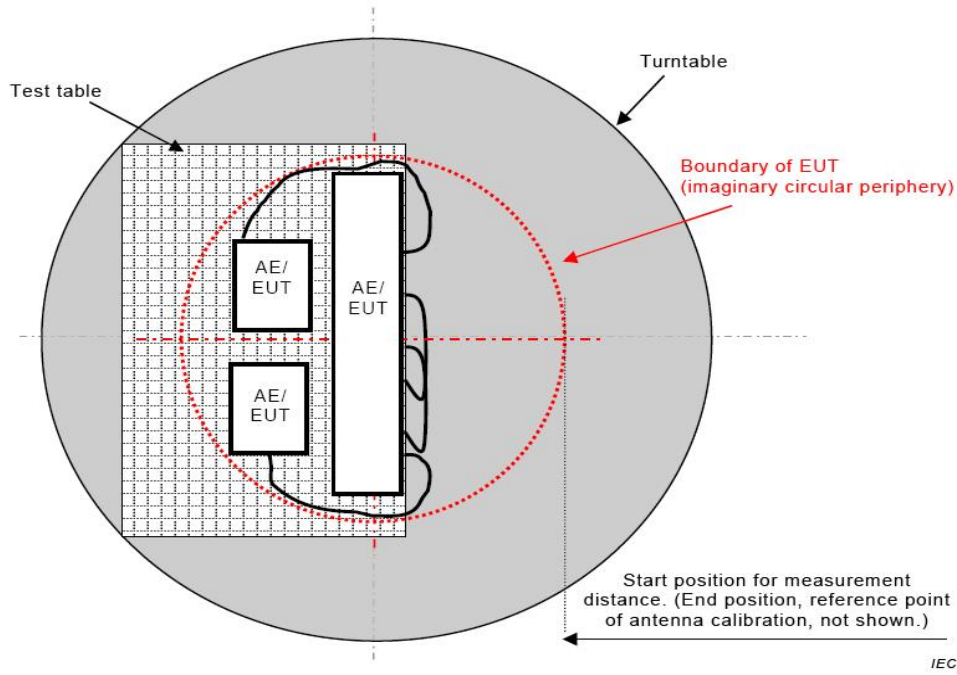


Figure C.2 – Boundary of EUT, Local AE and associated cabling

Test Setup for FM Receiver

3.3.3 Test Procedure

The test method shall be in accordance with CENELEC EN 55032 [1], annex A.3.

3.3.4 Test Results

PASS

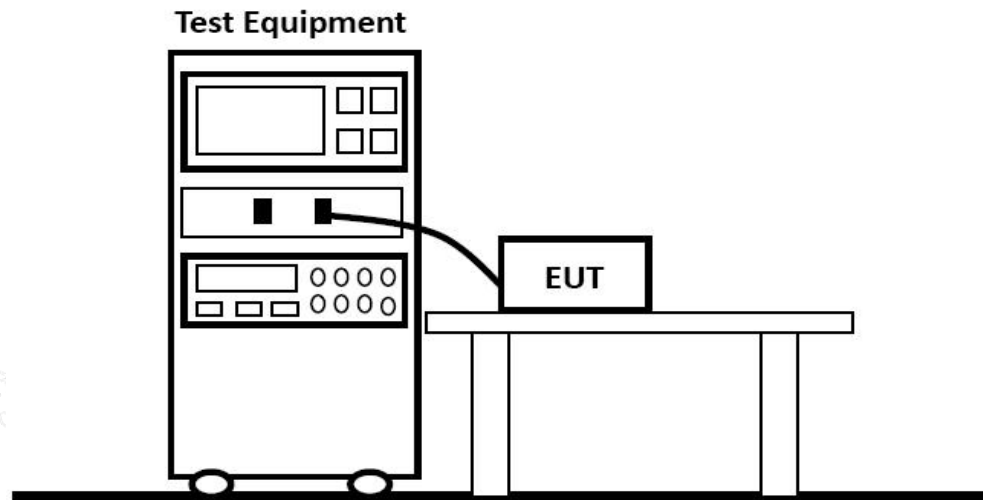
The worst test mode of the EUT was TM1, and its test data please refer to Appendix A.3 for Emission and Immunity test results.





3.4. Harmonic Current Emissions

3.4.1 Test Configuration



3.4.2 Test Standard

According to ETSI EN 301 489-1 V2.2.3 (2019-11) & EN 61000-3-2: 2014

3.4.3 Test Results

N/A

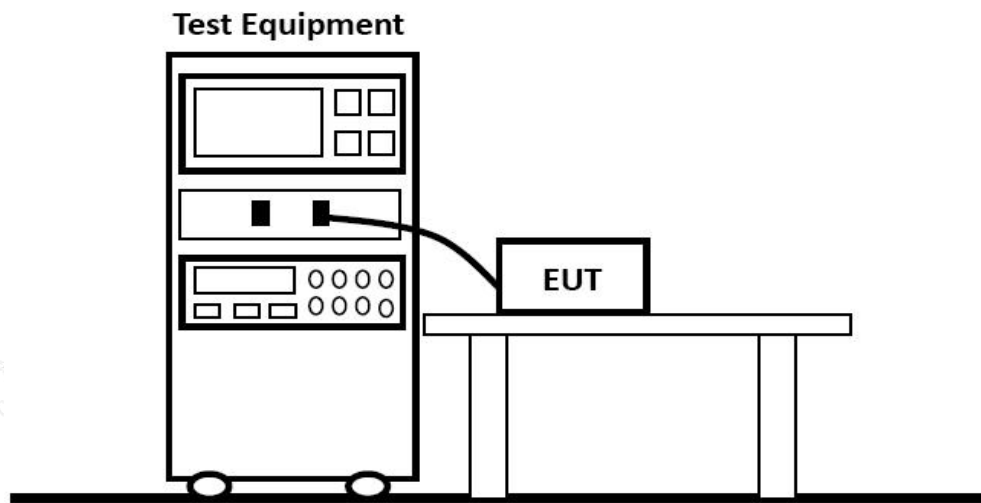
Please refer to Appendix A.4 for Emission and Immunity test results.





3.5. Voltage Fluctuation and Flicker

3.5.1 Test Configuration



3.5.2 Test Standard

According to ETSI EN 301 489-1 V2.2.3 (2019-11) & EN 61000-3-3: 2013

3.5.3 Test Results

PASS

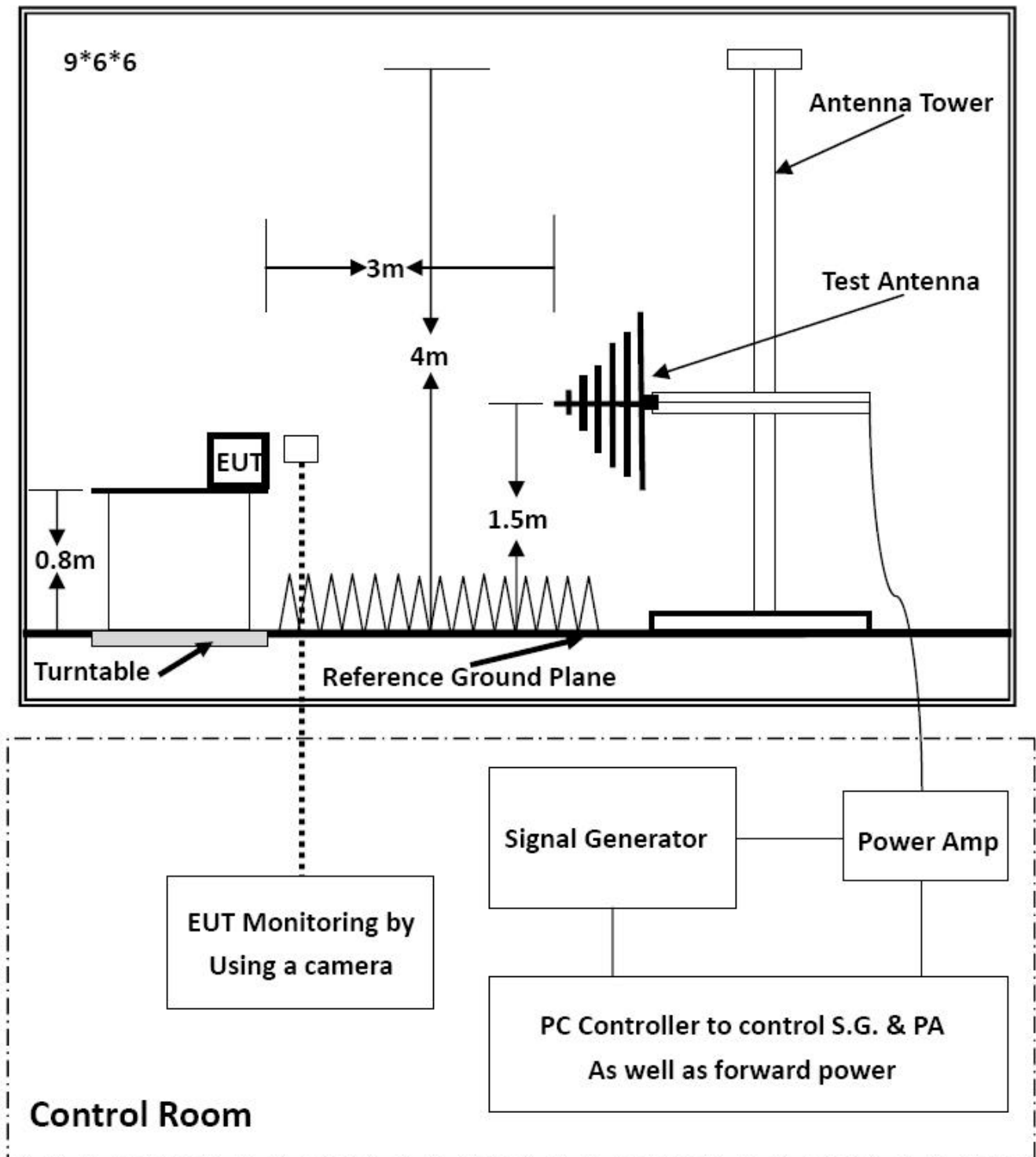
Please refer to Appendix A.5 for Emission and Immunity test results.





3.6. RF Electromagnetic Field (80 MHz - 6000 MHz)

3.6.1 Test Configuration





3.6.2 Test Standard

ETSI EN 301 489-1, ETSI EN 301 489-3, (EN 61000-4-3: 2006+A2: 2010)

Test level 2 at 3V/m.

3.6.3 Severity Level

Level	Field Strength (V/m)
1	1
2	3
3	10
X	Special
Performance Criterion: A	

3.6.4 Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. EUT is set 3 meter away from the transmitting antenna which is mounted on an antenna tower. Both horizontal and vertical polarization 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 EUT screen. All the scanning conditions are as follows:

Condition of Test	Remark
Fielded Strength	3 V/m (Severity Level 2)
Radiated Signal	Unmodulated
Scanning Frequency	80-6000MHz
Dwell time of radiated	0.0015 decade/s
Waiting Time	3 Sec.

3.6.5 Test Results

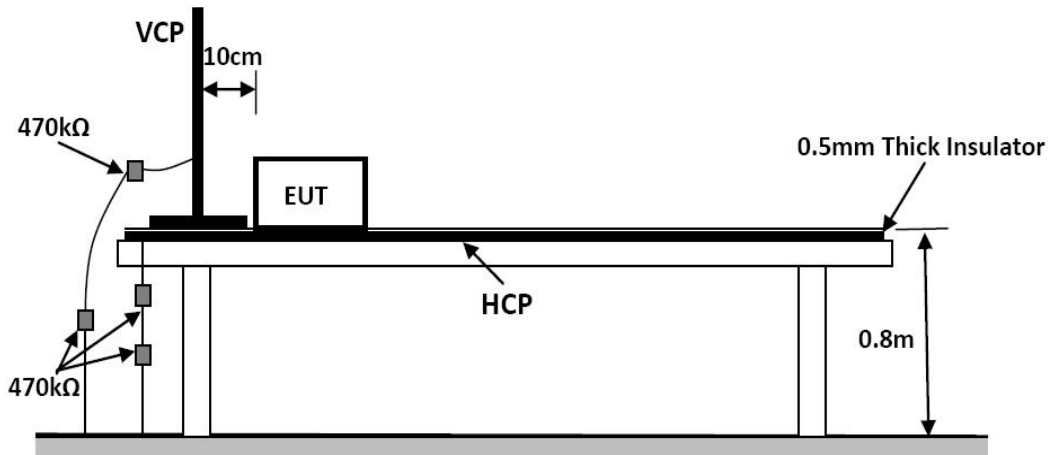
PASS

Please refer to Appendix A.6 for Emission and Immunity test results.



3.7. Electrostatic Discharge

3.7.1 Test Configuration



EN 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 1.5 by 1.0-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.

3.7.2 Test Procedure

ETSI EN 301 489-1 V2.2.3 (2019-11) / EN 61000-4-2: 2009

Test level 3 for Air Discharge at ± 8 kV

Test level 2 for Contact Discharge at ± 4 kV

3.7.2.1 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.

3.7.2.2 Contact Discharge

All the procedure shall be same as Section 3.7.2.1. except that the tip of the discharge electrode shall touch the EUT before the discharge switch is operated.

3.7.2.3 Indirect Discharge For Horizontal Coupling Plane

At least 10 single discharges (in the most sensitive polarity) shall be applied at the front edge of each HCP opposite the center point of each unit (if applicable) of the EUT and 0.1m from the front of the EUT. The long axis of the discharge electrode shall be in the plane of the HCP and perpendicular to its front edge during the discharge.





3.7.2.4 Indirect Discharge For Vertical Coupling Plane

At least 10 single discharges (in the most sensitive polarity) 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.

3.7.3 Test Results

PASS

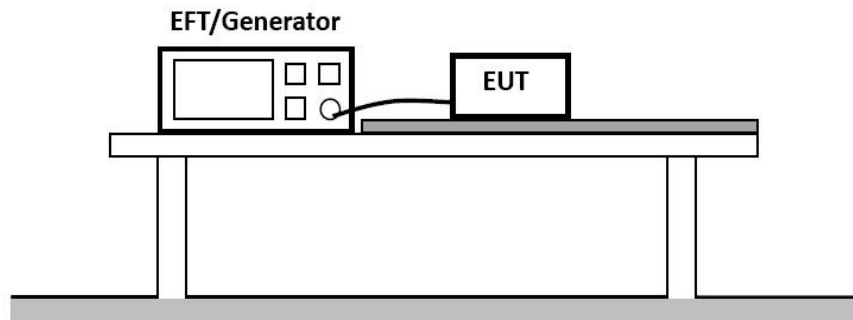
Please refer to Appendix A.7 for Emission and Immunity test results.





3.8. Electrical Fast Transient Immunity

3.8.1 Test Configuration



3.8.2 Test Standard

ETSI EN 301 489-1 V2.2.3 (2019-11)/ EN61000-4-4: 2012

Test level 2 at 1 kV

Test Level		
Open Circuit Output Test Voltage $\pm 10\%$		
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		

3.8.3 Test Procedure

The EUT is put on the table, which is 0.8 meter high above the ground. This reference ground plane shall project beyond the EUT by at least 0.1m on all sides and the minimum distance between EUT and all other conductive structure, except the ground plane beneath the EUT, shall be more than 0.5m.

3.8.3.1 For input and output AC power ports:

The EUT is connected to the power mains by using a coupling device, which couples the EFT interference signal to AC power lines. Both polarities of the test voltage should be applied during compliance test and the duration of the test is 2 minutes.

3.8.3.2 For signal lines and control lines ports: No I/O ports. It's unnecessary to test.

3.8.3.3 For DC output line ports: It's unnecessary to test.

3.8.4 Test Results

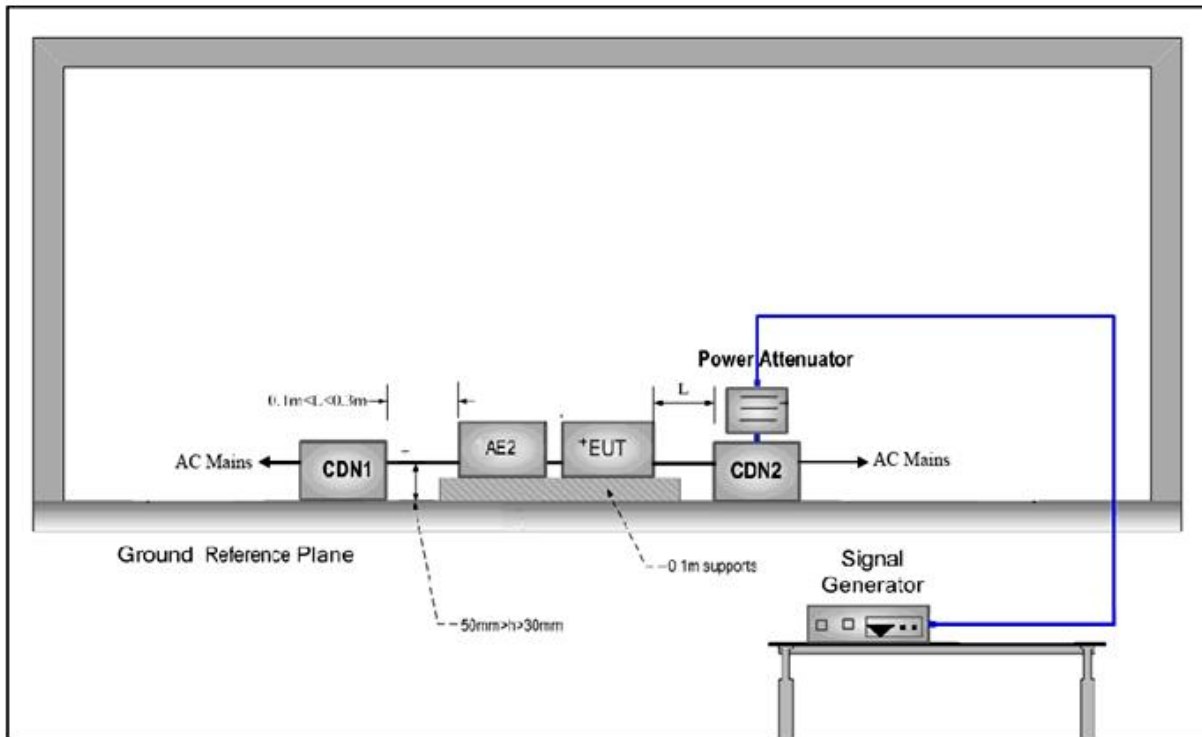
PASS

Please refer to Appendix A.8 for Emission and Immunity test results.



3.9. RF Common Mode

3.9.1 Test Configuration



3.9.2 Test Standard

ETSI EN 301 489-1 V2.2.3 (2019-11)/ EN 61000-4-6: 2014

Test level: 3V (r.m.s.) for 0.15MHz ~ 10MHz; 3V (r.m.s.) to 1V (r.m.s.) for 10MHz ~ 30MHz;

1V (r.m.s.) for 30MHz ~ 80MHz

Modulation type: AM

Modulation depth: 80%

Modulation signal: 1 kHz

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

Performance Criterion: A



Shenzhen LCS Compliance Testing Laboratory Ltd.

Shenzhen EES Compliance Testing Laboratory Ltd.
Add: Room 101, 201, Building A and Room 301, Building C, Juji Industrial Park, Yabianxueziwei, Shajing Street,
Bao'an District, Shenzhen, Guangdong, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity



3.9.3 Test Procedure

3.9.3.1 Let the EUT work in test mode and test it.

3.9.3.2 The EUT are placed on an insulating support 0.1m high above a ground reference plane. CDN (coupling and decoupling device) is placed on the ground plane about 0.3m 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 50mm (where possible).

3.9.3.3 The disturbance signal described below is injected to EUT through CDN.

3.9.3.4 The EUT operates within its operational mode(s) under intended climatic conditions after power on.

3.9.3.5 The frequency range is swept from 150kHz to 10MHz using 3V signal level, 10MHz to 30MHz using 3V to 1V signal level, 30MHz to 80MHz using 1V signal level, and with the disturbance signal 80% amplitude modulated with a 1kHz sine wave.

3.9.3.6 The rate of sweep shall not exceed 1.5×10^{-3} decades/s. Where the frequency is swept incrementally, the step size shall not exceed 1% of the start and thereafter 1% of the preceding frequency value.

3.9.3.7 Recording the EUT operating situation during compliance testing and decide the EUT immunity criterion.

3.9.4 Test Results

PASS

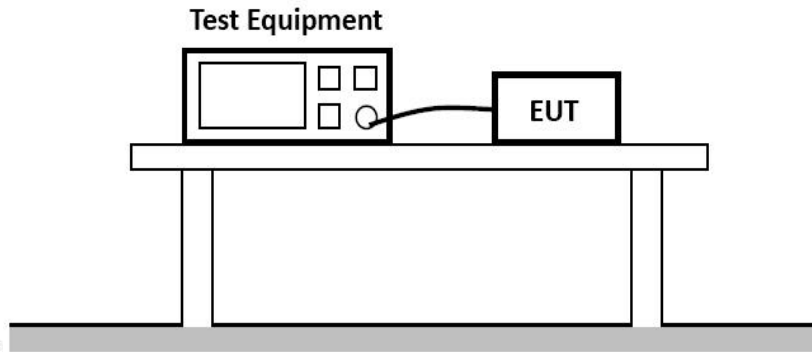
Please refer to Appendix A.9 for Emission and Immunity test results.





3.10. Surges, Line to Line and Line to Ground

3.10.1 Test Configuration



3.10.2 Test Standard

ETSI EN 301 489-1 V2.2.3 (2019-11) / EN 61000-4-5: 2014+A1:2017

L-N: Test level 2 at 1 kV

L-PE, N-PE Test Level 3 at 2kV

Test Level		
Open Circuit Output Test Voltage $\pm 10\%$		
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		

3.10.3 Test Procedure

3.10.3.1 For line to line coupling mode, provide a 0.5 kV 1.2/50us voltage surge (at open-circuit condition).

3.10.3.2 At least 5 positive and 5 negative (polarity) tests with a maximum 1/min repetition rate are conducted during test.

3.10.3.3 Different phase angles are done individually.

3.10.3.4 Record the EUT operating situation during compliance test and decide the EUT immunity criterion for above each test.

3.10.4 Test Results

PASS

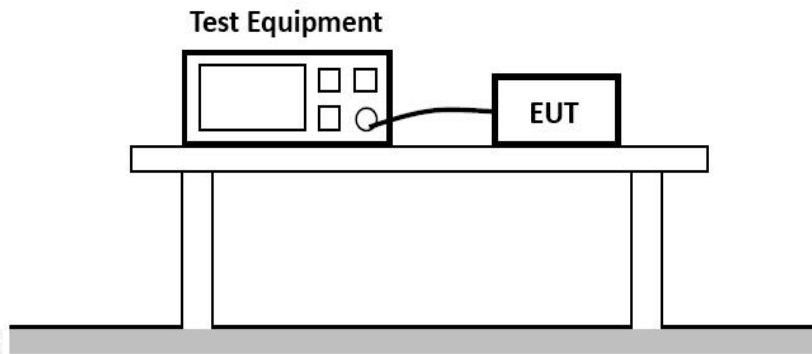
Please refer to Appendix A.10 for Emission and Immunity test results.





3.11. Voltage Dips/Interruptions Immunity Test

3.11.1 Test Configuration



3.11.2 Test Standard

ETSI EN 301 489-1 V2.2.3 (2019-11)/ EN 61000-4-11: 2004
Test levels and Performance Criterion

Test Level		
Voltage Reduction $\%U_T$	Voltage Dips $\%U_T$	Duration (in Period)
100	0	0.5
100	0	1
30	70	5
Voltage Reduction $\%U_T$	Voltage Dips $\%U_T$	Duration (in Period)
100	0	250
Performance Criterion: B&C		

3.11.3 Test Procedure

3.11.3.1 The interruption is introduced at selected phase angles with specified duration.

3.11.3.2 Record any degradation of performance.

3.11.4 Test Results

PASS

Please refer to Appendix A.11 for Emission and Immunity test results.





4. GENERAL PERFORMANCE CRITERIA FOR IMMUNITY TEST

4.1. Performance criteria for Continuous phenomena applied to Transmitter (CT)

For equipment of type II or type III that requires a communication link that is maintained during the test, it shall be verified by appropriate means supplied by the manufacturer that the communication link is maintained during each individual exposure in the test sequence. Where the EUT is a transmitter, tests shall be repeated with the EUT in standby mode to ensure that any unintentional transmission does not occur.

4.2. Performance criteria for Transient phenomena applied to Transmitter (TT)

For equipment of type II or type III that requires a communication link that is maintained during the test, this shall be verified by appropriate means supplied by the manufacturer during each individual exposure in the test sequence. Where the EUT is a transmitter, tests shall be repeated with the EUT in standby mode to ensure that any unintentional transmission does not occur.

4.3. Performance criteria for Continuous phenomena applied to Receiver (CR)

For equipment of type II or III that requires a communication link that is maintained during the test, it shall be verified by appropriate means supplied by the manufacturer that the communication link is maintained during each individual exposure in the test sequence. Where the EUT is a transceiver, under no circumstances shall the transmitter operate unintentionally during the test.

4.4. Performance criteria for Transient phenomena applied to Receiver (TR)

For equipment of type II or type III that requires a communication link that is maintained during the test, this shall be verified by appropriate means supplied by the manufacturer during each individual exposure in the test sequence. Where the EUT is a transceiver, under no circumstances shall the transmitter operate unintentionally during the test.





Performance criteria for ETSI EN 301 489-3 V2.3.2 (2023-01)

1) Introduction

The performance criteria are used to make an assessment whether a radio equipment passes or fails immunity tests.

Only the performance criteria specified in the present document or in ETSI EN 301 489-1 [1] where referenced shall apply.

The provisions of ETSI EN 301 489-1 [1], clause 6, shall apply together with the following.

2) Continuous and non-continuous operation

Latency is the time delay between the initiation and the completion of operation of the EUT. Correct functioning requires completing the relevant operation within the maximum latency time.

Where the maximum latency is specified in the applicable harmonised radio standard (in the wanted performance

criterion, or an acknowledge requirement), that value shall be used.

Where this is not the case, then the maximum latency is that required by the intended use of the EUT.

3) Operating modes

Where the EUT has more than one mode of operation (see clause 4.4.1), an unplanned transition from one mode to another is considered as an unintentional response. The EUT shall be tested in all modes to confirm there are no such unintentional responses.









5. LIST OF MEASURING EQUIPMENT

LINE CONDUCTED EMISSION

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	EMI Test Software	Farad	EZ	/	N/A	N/A
2	EMI Test Receiver	R&S	ESR3	102312	2024-03-02	2025-03-01
3	Artificial Mains	R&S	ENV216	101288	2024-06-06	2025-06-05
4	Pulse Limiter	R&S	ESH3-Z2	102750-NB	2024-06-06	2025-06-05
5	Impedance Stabilization Network	TESEQ	ISN T800	45130	2023-10-18	2024-10-17
6	WIDEBAND RADIO COMMUNICATION TESTER	R&S	CMW 500	103818	2024-06-06	2025-06-05

RADIATED DISTURBANCE

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	EMI Test Software	Farad	EZ	/	N/A	N/A
2	3m Full Anechoic Chamber	MRDIANZI	FAC-3M	MR009	2022-08-17	2025-08-16
3	Positioning Controller	Max-Full	MF7802BS	MF780208586	N/A	N/A
4	By-log Antenna	SCHWARZBECK	VULB9163	9163-470	2021-09-12	2024-09-11
5	Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-1925	2021-09-05	2024-09-04
6	EMI Test Receiver	R&S	ESPI	101940	2024-06-06	2025-06-05
7	Low-frequency amplifier	SchwarzZBECK	BBV9745	00253	2023-10-18	2024-10-17
8	High-frequency amplifier	JS Denki Pte	PA0118-43	JSPA21009	2023-10-18	2024-10-17
9	MXA Signal Analyzer	Agilent	N9020A	MY50510140	2023-10-18	2024-10-17
10	RS SPECTRUM ANALYZER	R&S	FSP40	100503	2024-06-06	2025-06-05
11	WIDEBAND RADIO COMMUNICATION TESTER	R&S	CMW 500	103818	2024-06-06	2025-06-05

VOLTAGE FLUCTUATION AND FLICKER/HARMONIC CURRENT EMISSIONS

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	HARMONICS&FLICKER MEASUREMENT SYSTEM	EVERFINE	HFM-3000	P630850CD1411116	2024-03-02	2025-03-01
2	HARMONICS&FLICKER TESTING POWER SOURCE	EVERFINE	HFS-4000	P624486CD1411124	2024-03-02	2025-03-01
3	WIDEBAND RADIO COMMUNICATION TESTER	R&S	CMW 500	103818	2024-06-06	2025-06-05

RF ELECTROMAGNETIC FIELD

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	RS Test Software	Tonscend	/	/	N/A	N/A
2	MXG Vector Signal Generator	Agilent	E4438C	MY42081396(6G)	2023-10-18	2024-10-17
3	3m Full Anechoic Chamber	MRDIANZI	FAC-3M	MR009	2022-08-17	2025-08-16
4	RF POWER AMPLIFIER	OPHIR	5225R	1052	2024-06-06	2025-06-05
5	RF POWER AMPLIFIER	OPHIR	5273F	1019	2024-06-06	2025-06-05
6	RF POWER AMPLIFIER	SKET	HAP_0306G-50W	/	2024-06-06	2025-06-05
7	Stacked Broadband Log Periodic Antenna	SCHWARZBECK	STLP 9128	9128ES-145	2023-07-14	2026-07-13
8	Stacked Mikrowellen Log.-Per Antenna	SCHWARZBECK	STLP 9149	9149-482	2023-07-14	2026-07-13
9	RS Electric field probe	narda	EP601	611WX80208	2024-06-25	2025-06-24
10	Sound Level meter	BK Precision	735	7350087310010020	2024-06-06	2025-06-05



Shenzhen LCS Compliance Testing Laboratory Ltd.

Add: Room 101, 201, Building A and Room 301, Building C, Juji Industrial Park, Yabianxueziwei, Shajing Street, Bao'an District, Shenzhen, Guangdong, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity



Item	Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
11	Audio Analyzer	R&S	UPV	1146.2003K02-10 1721-UW	2023-10-18	2024-10-17
12	Mouse Simulation	Bruel & Kjaer	4227	A0304216	2024-06-06	2025-06-05
13	Ear Simulation and supply	Bruel & Kjaer	2669.4182.5 935	A0305284	2024-06-06	2025-06-05
14	Acoustical Calibrators	Bruel & Kjaer	4231	A0304215	2024-06-06	2025-06-05
15	WIDEBAND RADIO COMMUNICATION TESTER	R&S	CMW 500	103818	2024-06-06	2025-06-05

Note: N/A means no calibration requirement

ELECTROSTATIC DISCHARGE

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	ESD Simulator	SCHLODER	SESD 230	604035	2024-07-15	2025-07-14
2	WIDEBAND RADIO COMMUNICATION TESTER	R&S	CMW 500	103818	2024-06-06	2025-06-05

ELECTRICAL FAST TRANSIENT IMMUNITY

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	Immunity Simulative Generator	EM TEST	UCS500-M4	0101-34	2024-06-06	2025-06-05
2	Electric fast pulse group generator	3ctest	EFT-4001G	EC0461044	2023-10-18	2024-10-17
3	Capacitive coupling clamp	3CTEST	EFTC	EC0441098	2024-06-06	2025-06-05
4	WIDEBAND RADIO COMMUNICATION TESTER	R&S	CMW 500	103818	2024-06-06	2025-06-05

RF COMMON MODE

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	Simulator	FRANKONIA	CIT-10/75	A126A1195	2024-06-06	2025-06-05
2	CDN	FRANKONIA	CDN-M2+M3	A2210177	2024-06-06	2025-06-05
3	6dB Attenuator	FRANKONIA	DAM25W	1172040	2024-06-06	2025-06-05
4	Electromagnetic coupling injection clamp	ZHINAN	ZN23203	14017	2024-06-06	2025-06-05
5	WIDEBAND RADIO COMMUNICATION TESTER	R&S	CMW 500	103818	2024-06-06	2025-06-05

SURGES, LINE TO LINE AND LINE TO GROUND

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	Immunity Simulative Generator	EM TEST	UCS500-M4	0101-34	2024-06-06	2025-06-05
2	Communication wave lightning generator	HTEC	HTSG 70	181701	2023-10-18	2024-10-17
3	Symmetrical data line coupling network	HTEC	HCN 8	182701	2023-10-18	2024-10-17
4	Data line decoupling network	HTEC	HDEC 8	182702	2023-10-18	2024-10-17
5	WIDEBAND RADIO COMMUNICATION TESTER	R&S	CMW 500	103818	2024-06-06	2025-06-05

VOLTAGE DIPS/INTERRUPTIONS IMMUNITY TEST

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	Voltage dips and up generator	3CTEST	VDG-1105G	EC0171014	2024-06-06	2025-06-05
2	WIDEBAND RADIO COMMUNICATION TESTER	R&S	CMW 500	103818	2024-06-06	2025-06-05





6. PHOTOGRAPHS OF TEST SETUP

Please refer to separated files Appendix B for Photographs of Test Setup_EMC

7. PHOTOGRAPHS OF THE EUT

Please refer to separated files Appendix C for Photographs of The EUT.



-----THE END OF REPORT-----





EMC TEST REPORT

For

Mid Ocean Brands B.V

Table light wireless charger

Test Model: MO6349

Prepared for : Mid Ocean Brands B.V
Address : 7/F., King Tower, 111King Lam Street, Cheung ShaWan,
Kowloon, HongKong.

Prepared by : Shenzhen Southern LCS Compliance Testing Laboratory Ltd.
Address : 101-201, No.39 Building, Xialang Industrial Zone, Heshuikou
Community, Matian Street, Guangming District, Shenzhen, China

Tel : (+86)755-29871520
Fax : (+86)755-29871521
Web : www.LCS-cert.com
Mail : webmaster@LCS-cert.com

Date of receipt of test sample : July 19, 2024
Number of tested samples : 1
Serial number : Prototype
Date of Test : July 19, 2024 - July 25, 2024
Date of Report : July 25, 2024



**EMC TEST REPORT****EN IEC 55015:2019+A11:2020**

Emission - Electrical lighting and similar equipment

EN IEC 61547:2023

Equipment for general lighting purposes - EMC immunity requirements

Report Number..... : LCSB07194026E

Date of Issue..... : July 25, 2024

Testing Laboratory Name..... : Shenzhen Southern LCS Compliance Testing Laboratory Ltd.

Address..... : 101-201, No.39 Building,Xialang Industrial Zone, Heshuikou Community, Matian Street,Guangming District, Shenzhen, China.

Testing Procedure..... : Full application of Harmonised standards ☒
Partial application of Harmonised standards ☐
Other standard testing method ☐**Applicant's Name..... : Mid Ocean Brands B.V**

Address..... : 7/F., King Tower, 111King Lam Street, Cheung ShaWan, Kowloon, HongKong.

Test Specification:Standard..... : EN IEC 55015:2019+A11:2020
EN IEC 61547:2023

Test Report Form No..... : TRF-4-E-014 Ver. A/0

TRF Originator..... : Shenzhen Southern LCS Compliance Testing Laboratory Ltd.

Master TRF..... : Dated 2016-08

Shenzhen Southern LCS Compliance Testing Laboratory Ltd. All rights reserved.

This publication may be reproduced in whole or in part for non-commercial purposes as long as the Shenzhen Southern LCS Compliance Testing Laboratory Ltd. is acknowledged as copyright owner and source of the material. Shenzhen Southern LCS Compliance Testing Laboratory Ltd. takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.

Equipment Under Test..... : Table light wireless charger

Trademark..... : N/A

Test Model/Type..... : MO6349

Rating..... : DC5V, 2A

Results : PASS**Compiled by:**

Aimee Yang / Engineer

Supervised by:

Kris Mai / Technique Director

Approved by:

Dm Gu / Manager



Shenzhen Southern LCS Compliance Testing Laboratory Ltd.

101-201, No. 39 Building, Xialang Industrial Zone, Heshuikou Community, Matian Street, Guangming District, Shenzhen, China.

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com.

Scan code to check authenticity.



EMC - TEST REPORT

Test Report No.....: LCSB07194026E

Applicant.....:	Mid Ocean Brands B.V
Address.....:	7/F., King Tower, 111King Lam Street, Cheung ShaWan, Kowloon, HongKong.
Telephone.....:	/
Fax.....:	/
Manufacturer.....:	Mid Ocean Brands B.V
Address.....:	7/F., King Tower, 111King Lam Street, Cheung ShaWan, Kowloon, HongKong.
Telephone.....:	/
Fax.....:	/
Factory.....:	Mid Ocean Brands B.V
Address.....:	7/F., King Tower, 111King Lam Street, Cheung ShaWan, Kowloon, HongKong.
Telephone.....:	/
Fax.....:	/

The applicant and manufacturer information, product name, model, trademark and other information in this report are all provided by the applicant, and this laboratory is not responsible for verifying its authenticity.

The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.





ENVIRONMENTAL CONDITIONS

The climatic conditions during the test are within the limits specified by the manufacturer for the operation of the EUT and the test equipment. the climatic conditions during the test were in the following Limits:

Ambient temperature	15°C - 30°C
Relative Humidity air	30% - 60%
Atmospheric pressure	86 kPa - 106 kPa

Climate values will be recorded and recorded separately if specifically required in the base standard or application product/product series standard.

POSSIBLE TEST CASE VERDICTS

Test cases does not apply to test object	N/A
Test object does meet requirement	P(Pass) / PASS
Test object does not meet requirement	F(Fail) / FAIL
Not measured	N/M

DEFINITION OF SYMBOLS USED IN THIS TEST REPORT

☒ Indicate that the conditions, standards or equipment listed is applicable to this report / test / EUT.
☐ Indicate that the conditions, standards or equipment listed is not applicable to this report / test / EUT.

REVISION HISTORY

Revision	Issue Date	Revision Content	Revised by
000	July 25, 2024	Initial Issue	-

Remark:
000) : “---”





TABLE OF CONTENTS

1. GENERAL INFORMATION	6
1.1. General Description of The Item(s)	6
1.2. Operating Mode(s) Used of Tests	7
1.3. Support / Auxiliary Equipment for The EUT	7
1.4. Description of Test Facility	7
2. STATEMENT OF THE MEASUREMENT UNCERTAINTY	8
3. MEASURING DEVICES AND TEST EQUIPMENT	9
4. VERDICT SUMMARY SECTION	11
4.1. Standard(s)	11
4.2. Overview of Results	12
5. EMISSION TESTS	13
5.1. Conducted Disturbance	13
5.2. Radiated Disturbance (9KHz - 30MHz)	15
5.3. Radiated Disturbance (30MHz - 1GHz)	16
6. IMMUNITY TESTS	17
6.1. Performance Criteria	17
6.2. Electrostatic Discharge	18
6.3. Radio-Frequency Electromagnetic Fields	19
6.4. Electrical Fast Transient / Burst	20
6.5. Injected Currents (Radio-Frequency Common Mode)	21
ANNEX A - TEST RESULTS	22
ANNEX B - TEST PHOTOS	31
ANNEX C - EXTERNAL AND INTERNAL PHOTOS OF THE EUT	34





1. GENERAL INFORMATION

1.1. GENERAL DESCRIPTION OF THE ITEM(S)

Equipment Under Test	Table light wireless charger
Test Model/Type	MO6349
Additional Models/Type	-
Description of Model difference	-
Rating	DC5V, 2A





1.2. OPERATING MODE(S) USED OF TESTS

During the tests, the following operating mode(s) has(have) been used.

Operating Mode	Operating Mode description	Used for testing	
		Emission	Immunity
1	Lighting on mode	☒	☒
2	Maximum light	☐	☐
3	Minimum light	☐	☐
4	Charging+Lighting	☐	☐

1.3. SUPPORT / AUXILIARY EQUIPMENT FOR THE EUT

EUT has been tested using the following auxiliary equipment :

Auxeq	Model/Type	Manufacturer	Supplied by
Adapter	HW-100225C00	HUAWEI TECHNOLOGIES CO., LTD.	Lab
Wireless charging load	V2.1.0	Shenzhen Yuebu Technology Co., LTD	Lab

1.4. DESCRIPTION OF TEST FACILITY

Test Location	Shenzhen Southern LCS Compliance Testing Laboratory Ltd. 101-201, No.39 Building,Xialang Industrial Zone, Heshuikou Community, Matian Street, Guangming District, Shenzhen, China. CNAS Registration Number is L10160.
Date of receipt of test item	July 19, 2024
Date(s) of performance of test	July 19, 2024 - July 25, 2024





2. STATEMENT OF THE MEASUREMENT UNCERTAINTY

The data and results referenced in this document are true and accurate. the reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. the measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 "Specification for radio disturbance and immunity measuring apparatus and methods - Part 4: Uncertainty in EMC Measurements" and is documented in the LCS quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. the manufacturer has the sole responsibility of continued compliance of the device.

Measurement	Uncertainty (U_{lab})
Conducted disturbance (9kHz - 30MHz)	± 2.80 dB
Magnetic field disturbance (9kHz - 30MHz)	± 3.46 dB
Radiated disturbance (30MHz - 200MHz)	± 4.66 dB
Radiated disturbance (200MHz - 1GHz)	± 4.64 dB

Supplementary information:

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor of $k=2$, which for a normal distribution corresponds to a coverage probability of approximately 95%.





3. MEASURING DEVICES AND TEST EQUIPMENT

CONDUCTED DISTURBANCE

Item	Test equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	No. 1 shielded Room	CHENGYU	843	/	2023-04-26	2026-04-25
2	EMI Test Receiver	R&S	ESCI	101142	2024-04-24	2025-04-23
3	10dB Attenuator	SCHWARZBECK	VTSD9561-F	9561-F159	2024-04-24	2025-04-23
4	Artificial Mains Network	SCHWARZBECK	NSLK 8127	8127716	2024-04-24	2025-04-23
5	Artificial Mains Network	SCHWARZBECK	NSLK 8163	00043	2024-04-24	2025-04-23
6	Impedance Stabilization Network	SCHWARZBECK	NTFM 8158	NTFM8158#120	2024-04-24	2025-04-23
7	Voltage Probe	SCHWARZBECK	KT 9420	9420401	2024-04-24	2025-04-23
8	Current Probe	R&S	EZ-17	101921	2024-03-18	2025-03-17
9	EMI Test Software	EZ	EZ_EMG	N/A	/	/

RADIATED DISTURBANCE (9KHz - 30MHz)

Item	Test equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	No. 1 shielded Room	CHENGYU	843	/	2023-04-26	2026-04-25
2	EMI Test Receiver	R&S	ESCI	101142	2024-04-24	2025-04-23
3	10dB Attenuator	SCHWARZBECK	VTSD9561-F	9561-F159	2024-04-24	2025-04-23
4	Triple-loop Antenna	EVERFINE	LLA-2	11050003	2024-04-24	2025-04-23
5	EMI Test Software	EZ	EZ_EMG	N/A	/	/

RADIATED DISTURBANCE (above 30MHz)

Item	Test equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	2024-04-28	2027-04-27
2	EMI Test Receiver	R&S	ESCI3	101010	2024-04-24	2025-04-23
3	Log-periodic Antenna	SCHWARZBECK	VULB9163	5094	2024-04-29	2025-04-28
4	Coupling Decoupling Network	SCHWARZBECK	CDNE M2	00251	2024-04-24	2025-04-23
5	Coupling Decoupling Network	SCHWARZBECK	CDNE M3	00248	2024-04-24	2025-04-23
6	EMI Test Software	EZ	EZ_EMG	N/A	/	/
7	Controller system	SKET	SKC1000	N/A	/	/

ELECTROSTATIC DISCHARGE

Item	Test equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	ESD Simulator	TESEQ	NSG 437	1615	2024-02-24	2025-02-23

ELECTRICAL FAST TRANSIENT / BURST

Item	Test equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	Electrical Fast Transient Generator	HTEC	HEFT51	162201	2024-04-24	2025-04-23
2	EFT Coupling Clamp	HTEC	H3C	163701	2024-04-24	2025-04-23



Shenzhen Southern LCS Compliance Testing Laboratory Ltd.

101-201, No. 39 Building, Xialang Industrial Zone, Heshuikou Community, Matian Street, Guangming District, Shenzhen, China.

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com.

Scan code to check authenticity.

**INJECTED CURRENTS (RADIO-FREQUENCY COMMON MODE)**

Item	Test equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	No. 2 shielded room	CHENGYU	743	/	2023-04-26	2026-04-25
2	Conducted Susceptibility Generator	HTEC	CDG6000	126A140012016	2024-04-24	2025-04-23
3	CDN	HTEC	CDN-M2+M3	A22/0382/2016	2024-04-24	2025-04-23
4	6dB attenuator	HTEC	ATT6	HA1601	2024-04-24	2025-04-23
5	Electromagnetic clamp	LUTHI	EM101	35535	2024-04-24	2025-04-23

RADIO-FREQUENCY ELECTROMAGNETIC FIELDS

Item	Test equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	2023-03-02	2026-03-01
2	RF signal generator	Agilent	8648B	3847M00804	2024-02-24	2025-02-23
3	Power amplifier	SKET	LPA 0810-150	202302457	2024-02-24	2025-02-23
4	Field generating antenna	SKET	STLP 9129 Plus	/	/	/
5	Power probe	R&S	NRP-Z11	115232	2024-02-24	2025-02-23
6	Power probe	R&S	NRP-Z11	117755	2024-02-24	2025-02-23
7	Test Software	SKET	EMC-S	N/A	/	/





4. VERDICT SUMMARY SECTION

This chapter present an overview of the standards and results. Refer the next chapter for details of measured test results and applied test levels.

4.1. STANDARD(S)

EN IEC 55015:2019+A11:2020 - Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment.

EN IEC 61547:2023 - Equipment for general lighting purposes — EMC immunity requirements.



Shenzhen Southern LCS Compliance Testing Laboratory Ltd.

101-201, No. 39 Building, Xialang Industrial Zone, Heshuikou Community, Matian Street, Guangming District, Shenzhen, China.

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com.

Scan code to check authenticity.



4.2. OVERVIEW OF RESULTS

EMISSION TESTS - EN IEC 55015		
Requirement - Test case	Limit	Verdict
Conducted Disturbance - electric power supply	Table 1, Table 4	PASS
Conducted Disturbance - wired network ports at other than power supply	Table 2, Table 3	N/A
Conducted Disturbance - local wired ports at other than electrical power supply interface of ELV lamp	Table 5, Table 6	N/A
Assessment of the enclosure port	---	---
Radiated Disturbance in the frequency range 9 kHz to 30 MHz	Table 8, Table 9	PASS
Radiated Disturbance in the frequency range 30 MHz to 1 GHz	Table 10	PASS
IMMUNITY TESTS - EN IEC 61547		
Requirement - Test case	Basic Standard(s)	Verdict
Electrostatic Discharge	IEC/EN 61000-4-2	PASS
Radio-Frequency Electromagnetic Fields	IEC/EN 61000-4-3	PASS
Electrical Fast Transient / Burst	IEC/EN 61000-4-4	PASS
Surge	IEC/EN 61000-4-5	N/A
Injected Currents (Radio-Frequency Common Mode)	IEC/EN 61000-4-6	PASS
Power Frequency Magnetic Field ¹	IEC/EN 61000-4-8	N/A
Voltage Dips and Short Interruptions	IEC/EN 61000-4-11	N/A

Supplementary information:

1) Only need to be applied to equipment containing components susceptible to magnetic fields.





5. EMISSION TESTS

5.1. CONDUCTED DISTURBANCE

Standard	EN IEC 55015:2019+A11:2020
Basic Standard(s)	CISPR 16-2-1

Disturbance voltage limits at the electric power supply interface

Frequency range [MHz]	Limit: Quasi-peak [dB(μV)]	Limit: Average[dB(μV)]	IF BW
0,009 - 0,05	110	N/A	200 Hz
0,05 - 0,15	90 - 80	N/A	200 Hz
0,15 - 0,5	66 - 56	56 - 46	9 kHz
0,5 - 5,0	56	46	9 kHz
5,0 - 30	60	50	9 kHz

1) At the transition frequency, the lower limit applies.
2) The limit decreases linearly with the logarithm of the frequency in the ranges 50 kHz to 150 kHz and 150 kHz to 0,5 MHz.
3) If the EUT is non-restricted ELV lamps, the limits add 26dB.

Disturbance voltage limits at wired network interfaces other than power supply

Frequency range [MHz]	Limit: Quasi-peak [dB(μV)]	Limit: Average[dB(μV)]	IF BW
0,15 - 5,0	84 - 74	74 - 64	9 kHz
5,0 - 30	74	64	9 kHz

1) The limits decrease linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.
2) The disturbance voltage limits are derived for use with an artificial asymmetrical network (AAN) which presents a common mode (asymmetric mode) impedance of 150 Ω to the measured interface.

Disturbance current limits at wired network interfaces other than power supply

Frequency range [MHz]	Limit: Quasi-peak [dB(μA)]	Limit: Average[dB(μA)]	IF BW
0,15 - 5,0	40 - 30	30 - 20	9 kHz
5,0 - 30	30	20	9 kHz

1) The limits decrease linearly with the logarithm of the frequency in the range 0.15MHz to 0.5 MHz.

Disturbance voltage limits at local wired ports: local wired ports other than electrical power supply interface of ELV lamp

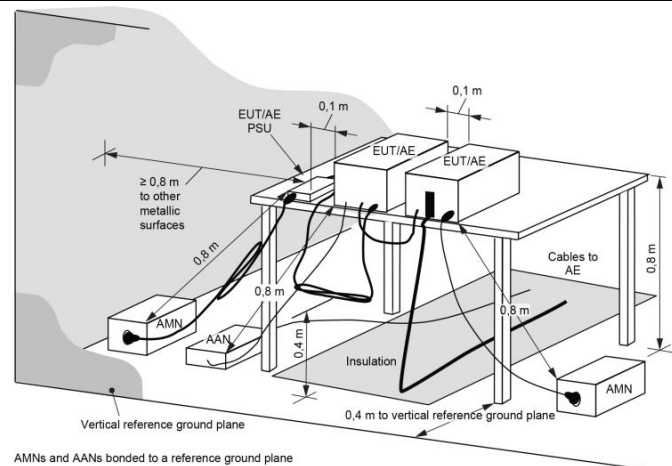
Frequency range [MHz]	Limit: Quasi-peak [dB(μV)]	Limit: Average[dB(μV)]	IF BW
0,15 - 5,0	80	70	9 kHz
5,0 - 30	74	64	9 kHz

1) At the transition frequency, the lower limit applies.

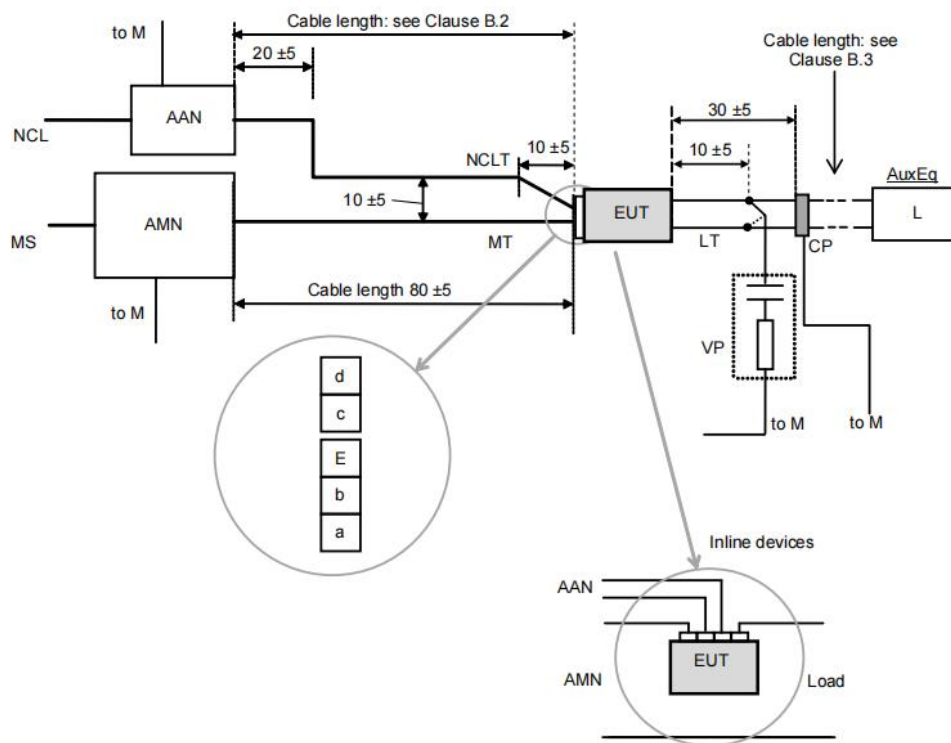
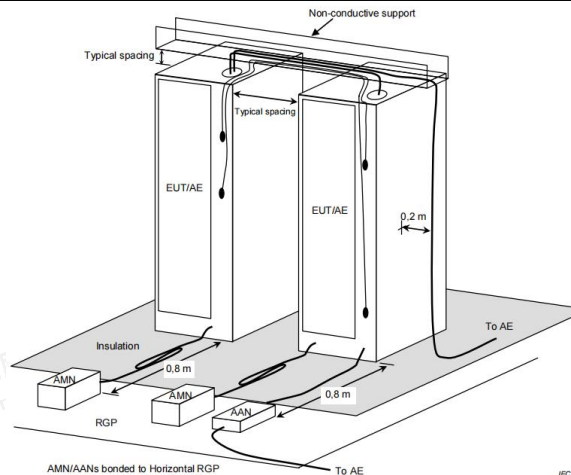


Test configuration

Test Setup for table-top



Test Setup for Floor standing



Test Procedure Description

For Table-top, EUT shall be placed at $(0,8 \pm 0,05)$ m above the reference plane of the test site selected for measurement. for Floor standing, EUT shall be placed at $(0,12 \pm 0,04)$ m above the reference plane of the test site selected for measurement.

and connected to the AC mains through artificial mains network (LISN). EUT is powered by V-type artificial power network, and the distance from LISN or ANN is 0,8m. the part of the EUT power cord exceeding 0,8m folds in parallel to form a 0,3-0,4 m eights harness.

Test Results refer to Annex A.1





5.2. RADIATED DISTURBANCE (9KHz - 30MHz)

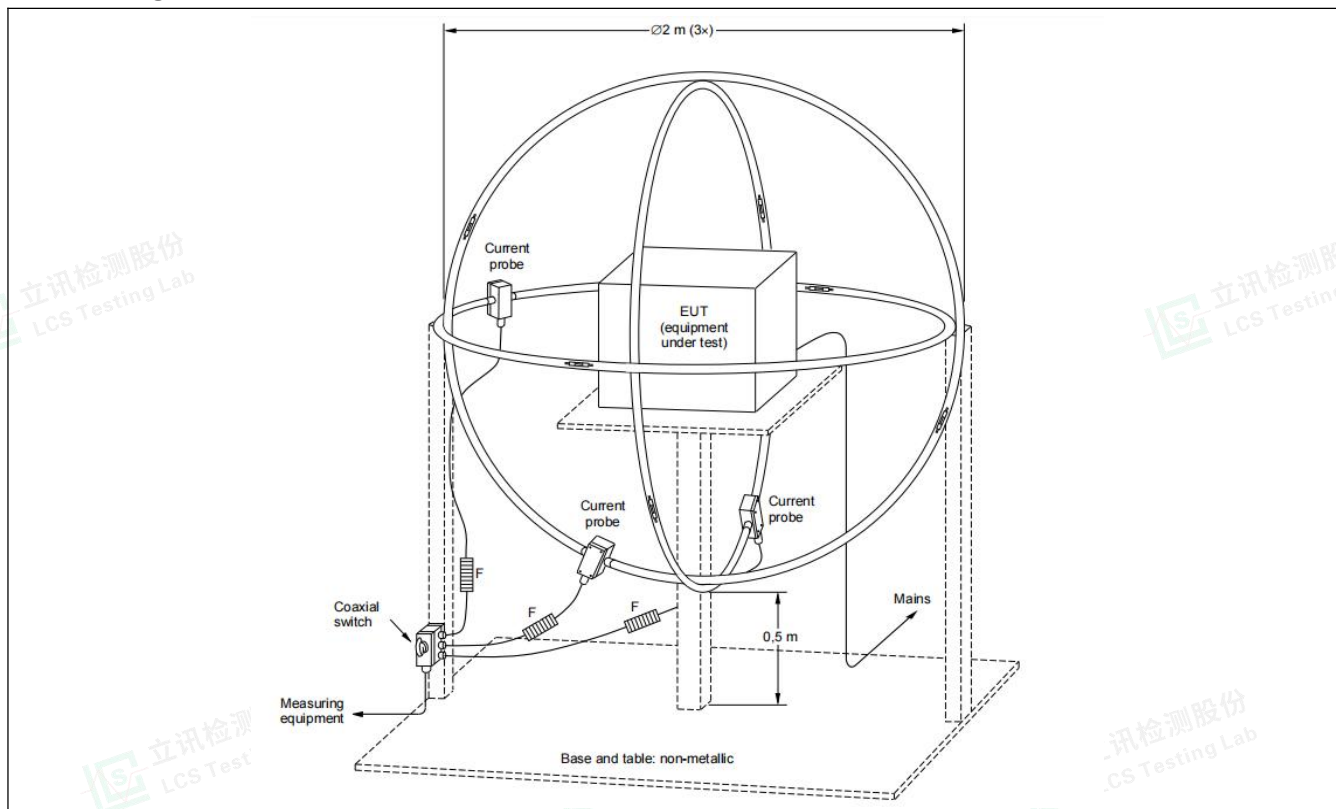
Standard	EN IEC 55015:2019+A11:2020
Basic Standard(s)	CISPR 16-2-3
Test method	Large Loop Antenna (LLA)

LLAS Radiated disturbance limits (2m)

Frequency range [MHz]	Limit: Quasi-peak [dB(μA)]	IF BW
0,009 - 0,07	88	200 Hz
0,07 - 0,15	88 - 58	200 Hz
0,15 - 3,0	58 - 22	9 kHz
3,0 - 30	22	9 kHz

- 1) At the transition frequency the lower limit applies.
- 2) Decreasing linearly with logarithm of the frequency.

Test configuration



Test Procedure Description

The EUT is placed on a wood table in the center of a loop antenna. the induced current in the loop antenna is measured by means of a current probe and the test receiver. Three field components are checked by means of a coaxial switch.

Test Results refer to Annex A.2





5.3. RADIATED DISTURBANCE (30MHz - 1GHz)

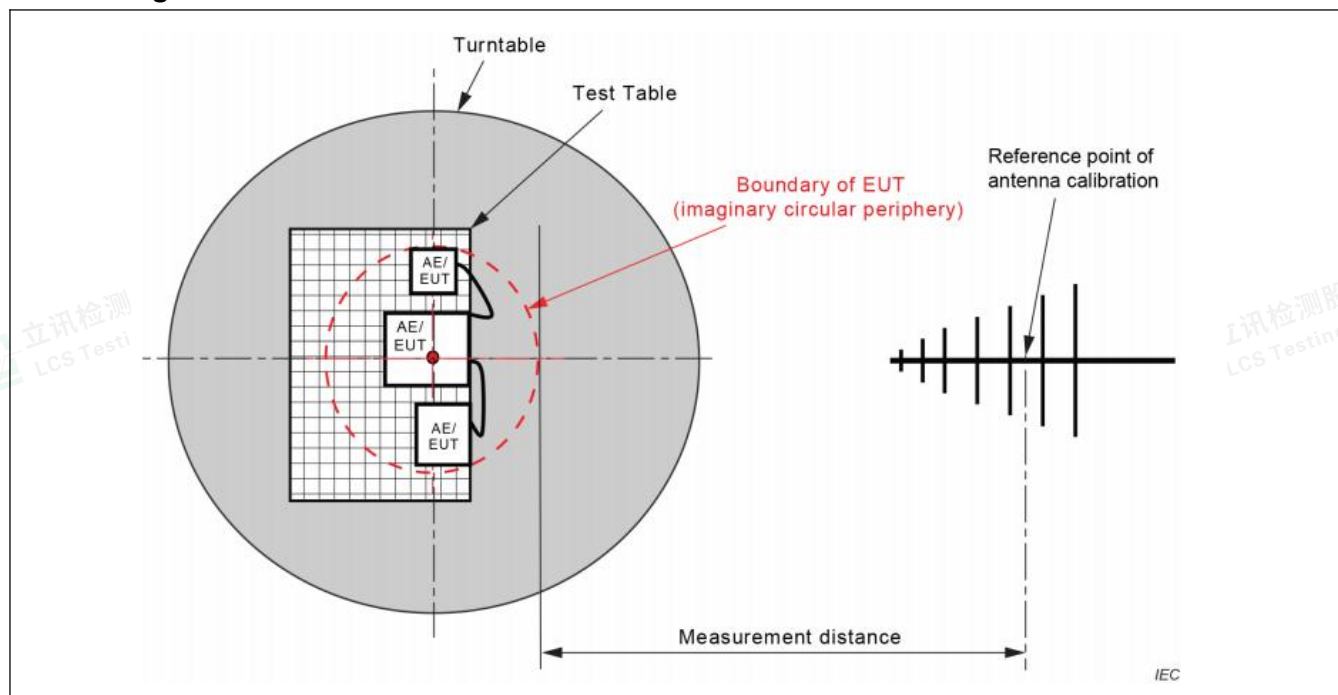
Standard	EN IEC 55015:2019+A11:2020
Basic Standard(s)	CISPR 16-2-3
Test method	Semi Anechoic Chamber (SAC)

SAC Radiated disturbance limit

Frequency range [MHz]	Limit: Quasi-peak [dB(μV/m)]		IF BW
	3 m distance	10 m distance	
30 - 230	40	30	120 KHz
230 - 1000	47	37	120 KHz

- 1) At the transition frequency, the lower limit applies.
- 2) Distance refers to the distance in meters between the measuring instrument antenna geometric center and the closed point of any part of the EUT.

Test configuration



Test Procedure Description

The radiated disturbance test was conducted in a 3m Semi Anechoic Chamber and conforming to CISPR 16-2-3. the EUT is placed on a turntable, which is 0.8 meter high above the ground. the turntable can rotate 360 degrees to determine the position of the maximum emission level. the EUT is set 3 meters away from the receiving antenna, which is mounted on an antenna tower. the antenna can be moved up and down from 1 to 4 meters to find out the maximum emission level. Log-periodic Antenna (calibrated by Dipole antenna) is used as a receiving antenna. both horizontal and vertical polarization of the antenna is set on test.

Test Results refer to Annex A.3





6. IMMUNITY TESTS

6.1. PERFORMANCE CRITERIA

Standard	EN IEC 61547:2023
----------	-------------------

For the various immunity tests that apply, the performance of the following functions shall be assessed, as far as applicable or specified by the manufacturer:

- the luminous intensity of the luminaire or of the light source(s);
- the control function, for example on/off switching, light level setting, colour adjustment, wireless control.

Performance 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.

Performance 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(30 min for high pressure gas discharge lamps) 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.

Performance 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.

Electronic lighting equipment		Tests and performance criteria							
		5.2 (ESD)	5.3 (RS)	5.4 (PFMF)	5.5 (EFT)	5.6 (CS)	5.7 (Surge)	5.8 (Dips)	5.8 (Interruption)
☐	Self-ballasted lamps	B	A	A	B	A	C	B	B
☒	Lighting equipment (excluding self-ballasted lamps) Module in host	B	A	A	B	A	C	B	B ¹
☐	Luminaire for emergency lighting	B ²	A	A	B ²	A	B ²	See ³	See ³

Supplementary information:

- 1) For ballasts where the lamp is not able to restart within 1 min, due to the physical constraints of the lamp, performance criterion C applies.
- 2) Luminaires for emergency lighting shall be tested in both the normal and emergency mode of operation.
- 3) These tests do not apply as they are covered by the test in IEC 60598-2-22.
- 4) For emergency luminaires designed to operate in high-risk task areas, after the test, the luminous intensity shall be restored to its initial value within 0,5 s.





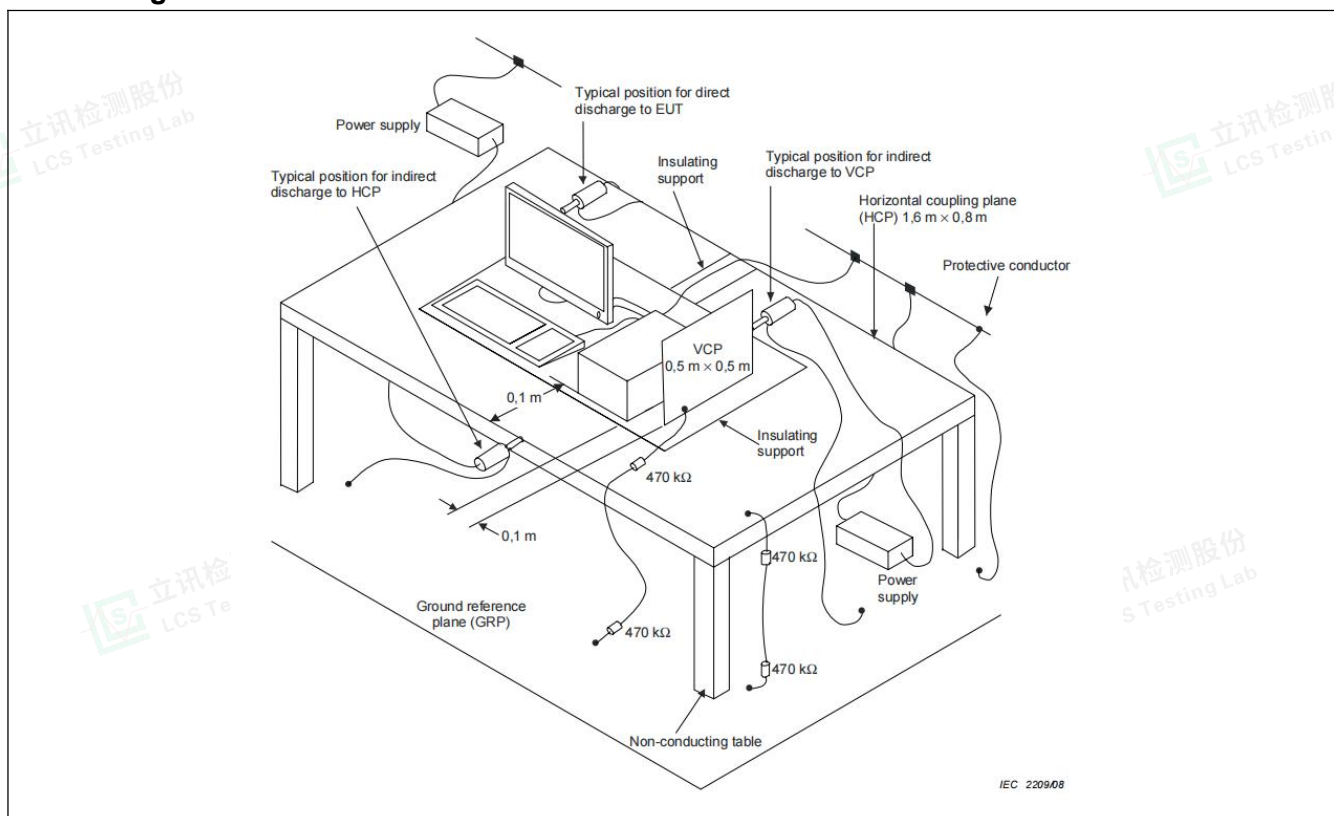
6.2. ELECTROSTATIC DISCHARGE

Electrostatic discharge (ESD) is the result of accumulated static electricity from a person or object, for example, walking on a synthetic carpet. ESD can indirectly affect the operation of equipment or damage its electronic components through direct discharge or coupling. both effects were simulated during the test. contact discharge is the preferred test method. twenty discharges (10 with positive and 10 with negative polarity) shall be applied on each accessible metallic part of the enclosure (terminals are excluded). air discharges shall be used where contact discharges cannot be applied. discharges shall be applied on the horizontal or vertical coupling planes.

Requirements

Standard	EN IEC 61547:2023							
Basic standard	EN 61000-4-2							
Port under test	Enclosure							
Contact discharge	☒	± 2 kV	☒	± 4 kV	☐	±8 kV	☐	±15 kV
Air discharge	☒	± 2 kV	☒	± 4 kV	☒	±8 kV	☐	±15 kV
Number of discharges	≥ 10 per polarity with ≥ 1 sec interval							
Note : Road and street lighting equipment shall be tested for air discharge at ±15 kV and for contact discharge at ±8 kV. This is to simulate the phenomenon of static charging during thunderstorms.								

Test configuration



Test Results refer to Annex A.4



6.3. RADIO-FREQUENCY ELECTROMAGNETIC FIELDS

During the test it is verified if the EUT has sufficient immunity against radiated electromagnetic fields.

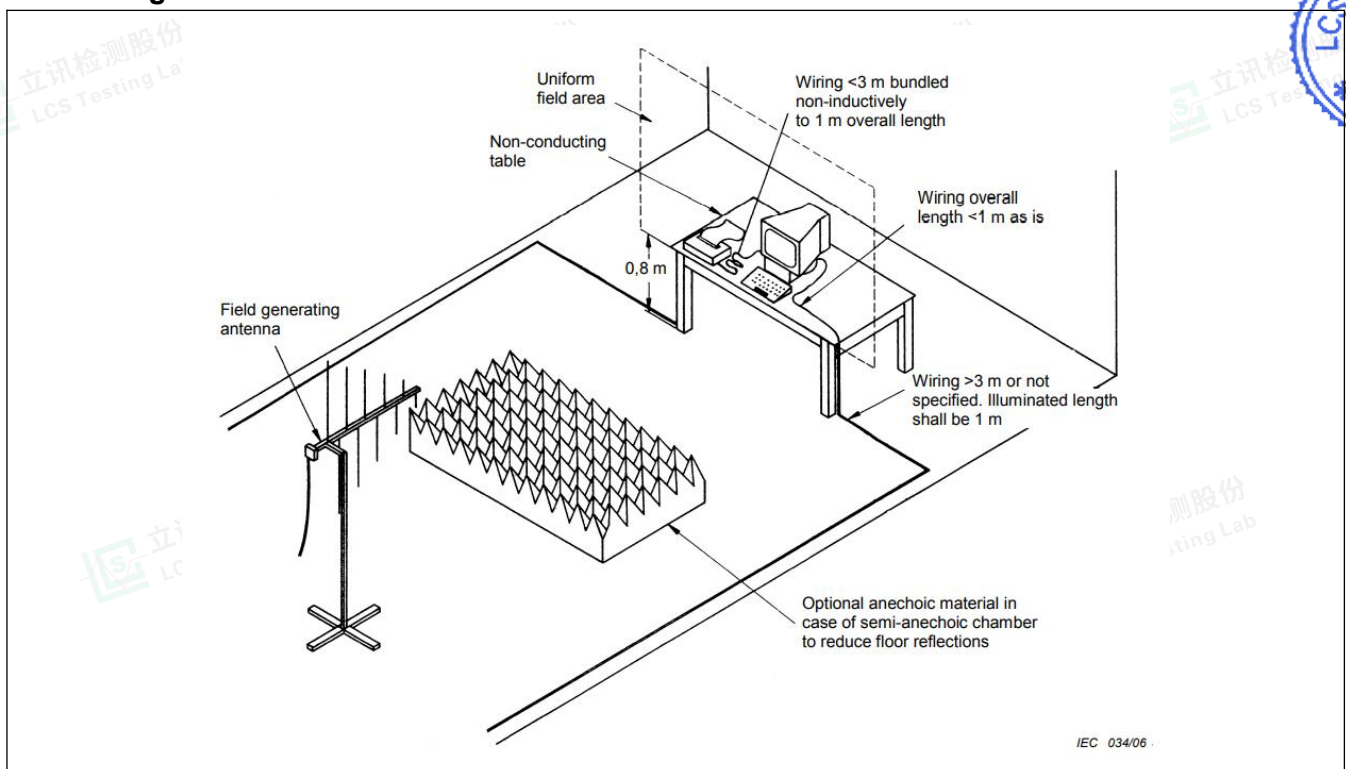
The test was carried out in a half-wave anechoic chamber with absorbent material attached to a reflective ground plate. Before the test, the test field strength needs to be calibrated. during the calibration, the corresponding relationship between the target field strength and the forward power applied to the transmitting antenna is established. during the test, except for EUT, the indoor layout is consistent with the calibration.

The EUT and its simulators are placed on a turn table which is 0,8 meter above ground. EUT is set 3 meter away from the transmitting antenna which is mounted on an antenna tower. both horizontal and vertical polarization 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 EUT screen.

Requirements

Standard	EN IEC 61547:2023			
Basic standard	EN 61000-4-3			
Port under test	Enclosure			
Frequency range	Test level	Modulation	Dwell time	Step size
80 - 1000 MHz	3 V/m	1 kHz, 80 % AM	≥ 0,5 s	≤ 1%

Test configuration



Test Results refer to Annex A.4



6.4. ELECTRICAL FAST TRANSIENT / BURST

The EFT immunity test simulates the disturbances by caused of very short transient bursts.

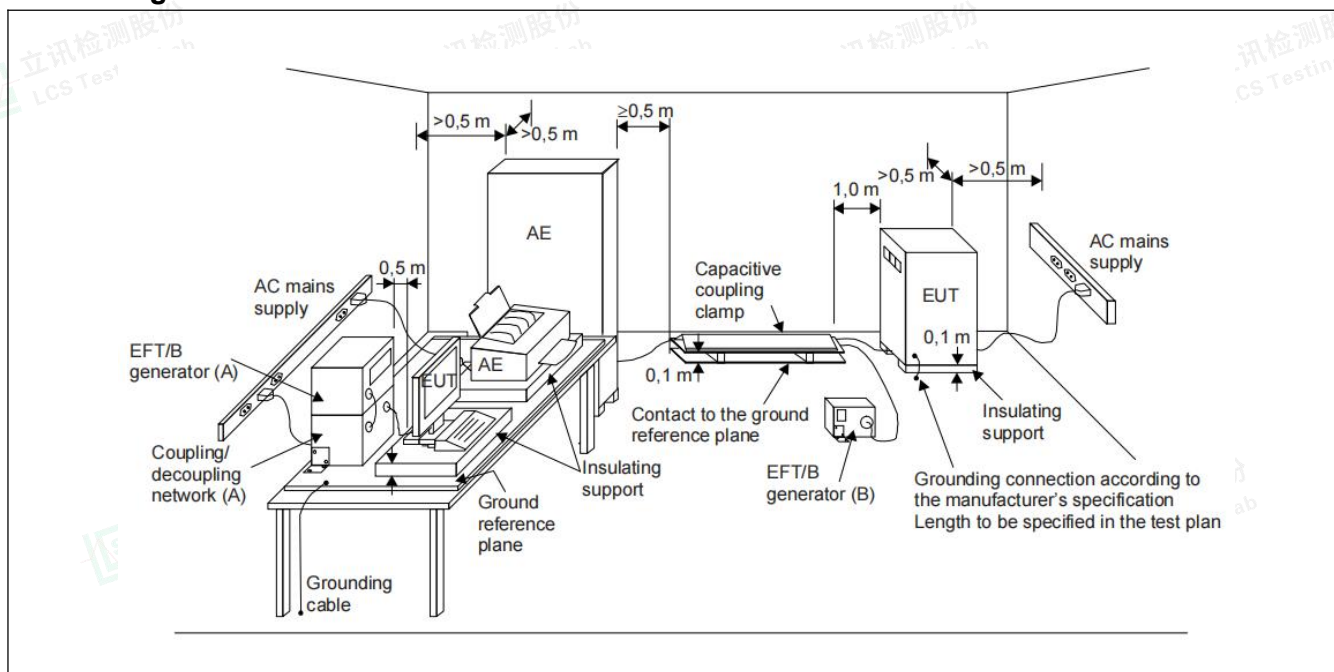
The EUT is put on the Insulating support which is 0.1 meter high above the ground reference plane. the minimum distance between EUT and all other conductive structure, except the ground plane beneath the EUT, shall be more than 0.5 m. both polarities of the test voltage should be applied during test, fast transients are carried out with a minimum duration of 2 min with a positive polarity and a minimum of 2 min with a negative polarity.

Requirements

Standard		EN IEC 61547:2023		
Basic standard		EN 61000-4-4		
Pulse characteristics		5/50 ns		
Port under test		Test level	Repetition frequency	Duration
☐	AC input / output power	± 1000 V	5 kHz	2 min / polarity
☒	DC input / output power ²	± 500 V	5 kHz	2 min / polarity
☐	Signal / control lines and load ¹ ports	± 500 V	5 kHz	2 min / polarity

1) Only applicable to ports interfacing with cables whose whose total length may exceed 3 m.
2) Not applicable to equipment not connected to the mains while in use.

Test configuration



Test Results refer to Annex A.4



6.5. INJECTED CURRENTS (RADIO-FREQUENCY COMMON MODE)

During the test the immunity of the EUT for conducted electromagnetic fields is checked .

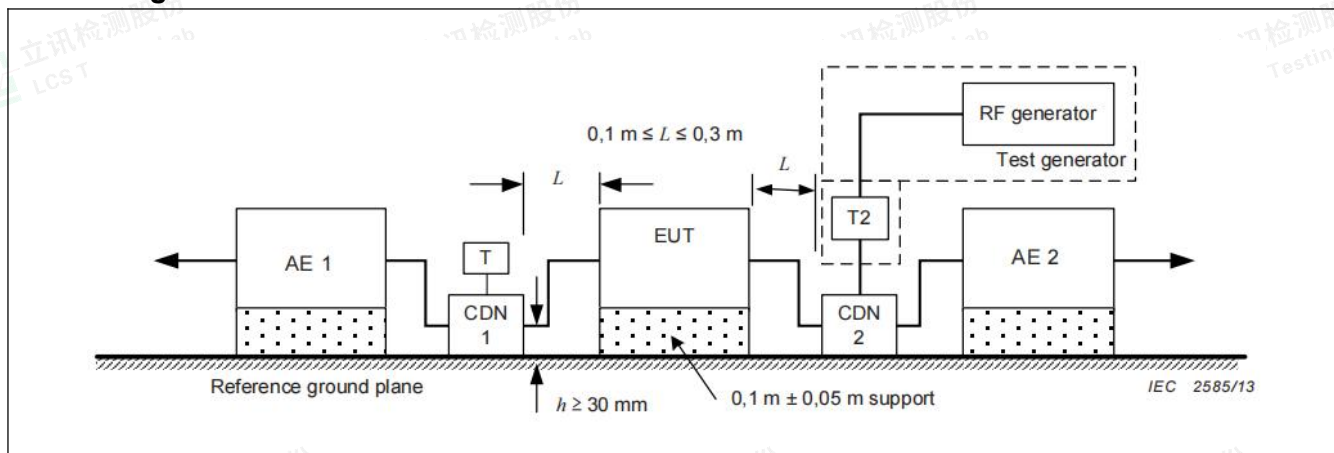
The equipment to be tested is placed on an insulating support of $0,1 \text{ m} \pm 0,05 \text{ m}$ height above a reference ground plane. a non conductive roller / caster in the range of $0,1 \text{ m} \pm 0,05 \text{ m}$ above the reference ground plane can be used as an alternative to an insulating support. all cables exiting the EUT shall be supported at a height of at least 30 mm above the reference ground plane. The coupling and decoupling devices shall be placed on the reference ground plane, making direct contact with it at a distance of 0.1 m to 0.3 m from the EUT.

Requirements

Standard		EN IEC 61547:2023			
Basic standard		EN 61000-4-6			
Frequency range		0,15 - 80 MHz			
Port under test		Test level	Modulation	Dwell time	Step size
☐	AC input / output power	3 V	1 kHz, 80 % AM	≥ 0,5 s	≤ 1%
☒	DC input / output power ^{1 2}	3 V	1 kHz, 80 % AM	≥ 0,5 s	≤ 1%
☐	Signal / control line ²	3 V	1 kHz, 80 % AM	≥ 0,5 s	≤ 1%

1) Not applicable to equipment not connected to the mains while in use.
2) Only applicable to ports interfacing with cables whose whose total length may exceed 3 m.

Test configuration



Test Results refer to Annex A.4

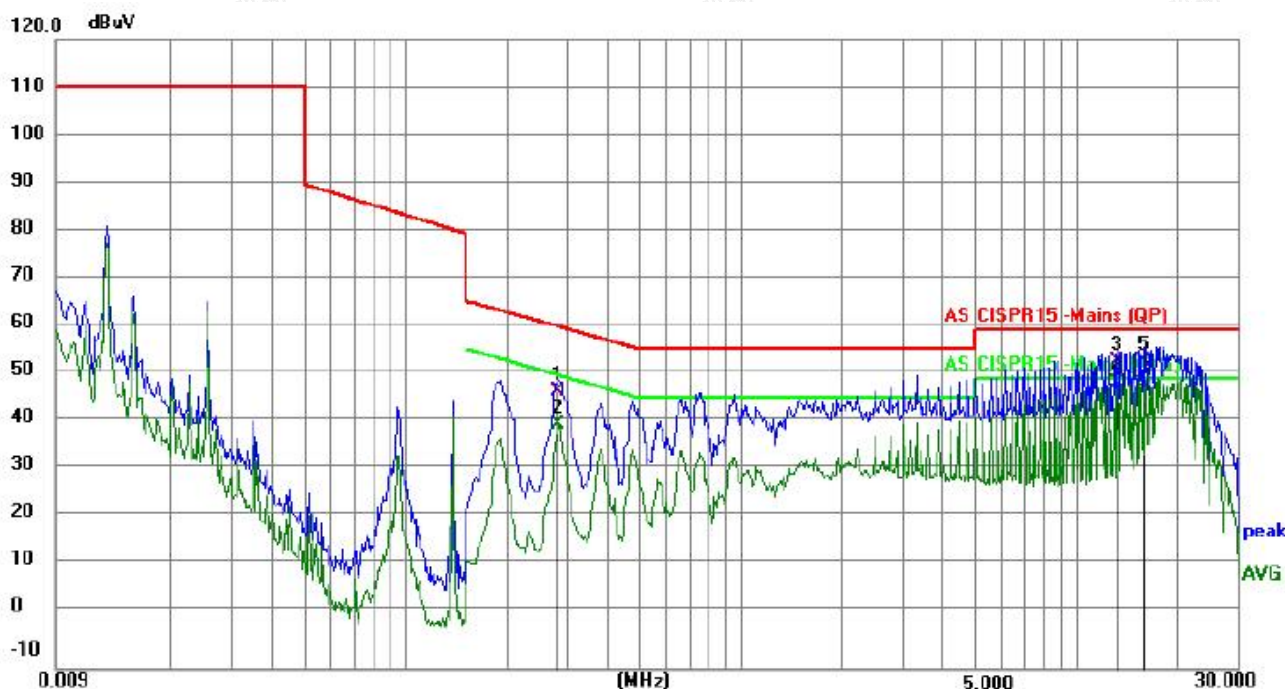




ANNEX A - TEST RESULTS

A.1. CONDUCTED DISTURBANCE TEST RESULTS

Environmental Conditions	24.5°C, 52% RH
Model	MO6349
Operating mode	Mode 1 (worst case)
Test voltage	DC5V
Test engineer	Aru Yang
Pol	Line



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.2811	36.39	10.98	47.37	60.78	-13.41	QP	
2		0.2811	29.42	10.98	40.40	50.78	-10.38	AVG	
3		13.2763	42.18	11.28	53.46	60.00	-6.54	QP	
4	*	13.2763	37.71	11.28	48.99	50.00	-1.01	AVG	
5		15.7696	42.14	11.27	53.41	60.00	-6.59	QP	
6		15.7696	37.33	11.27	48.60	50.00	-1.40	AVG	



Shenzhen Southern LCS Compliance Testing Laboratory Ltd.

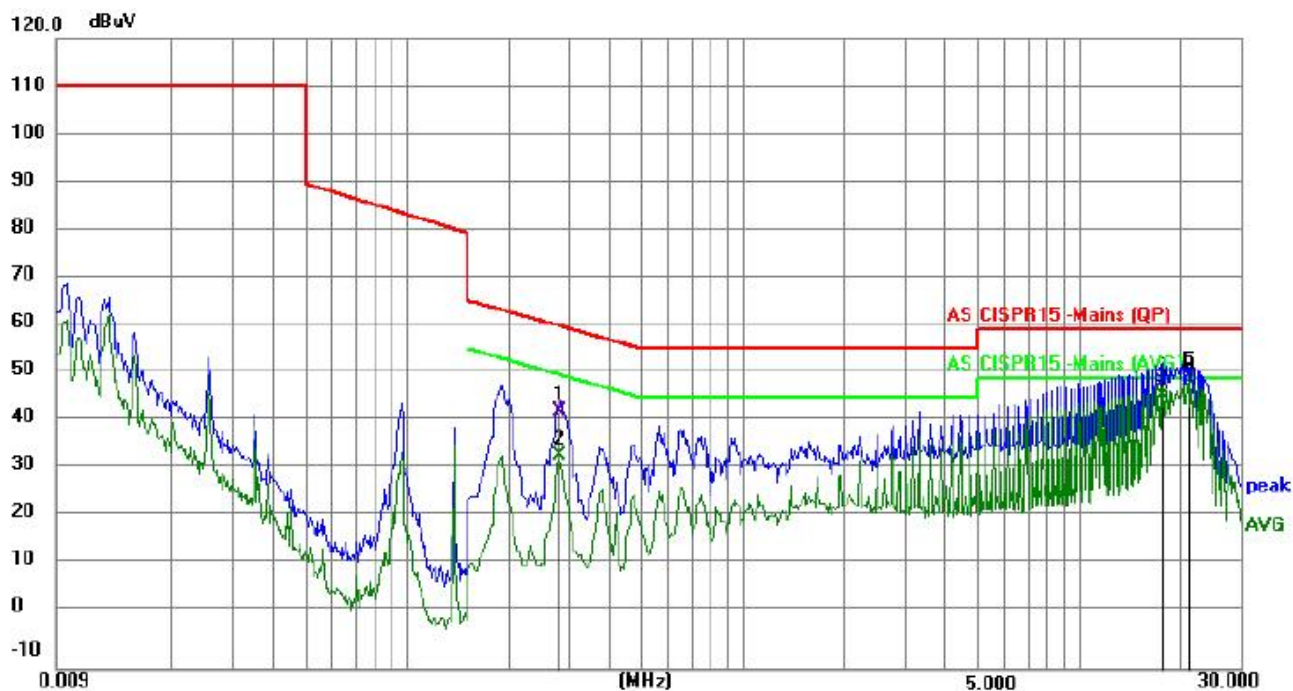
101-201, No. 39 Building, Xialang Industrial Zone, Heshuikou Community, Matian Street, Guangming District, Shenzhen, China.

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com.

Scan code to check authenticity.



Environmental Conditions	24.5°C, 52% RH
Model	MO6349
Operating mode	Mode 1 (worst case)
Test voltage	DC5V
Test engineer	Aru Yang
Pol	Neutral



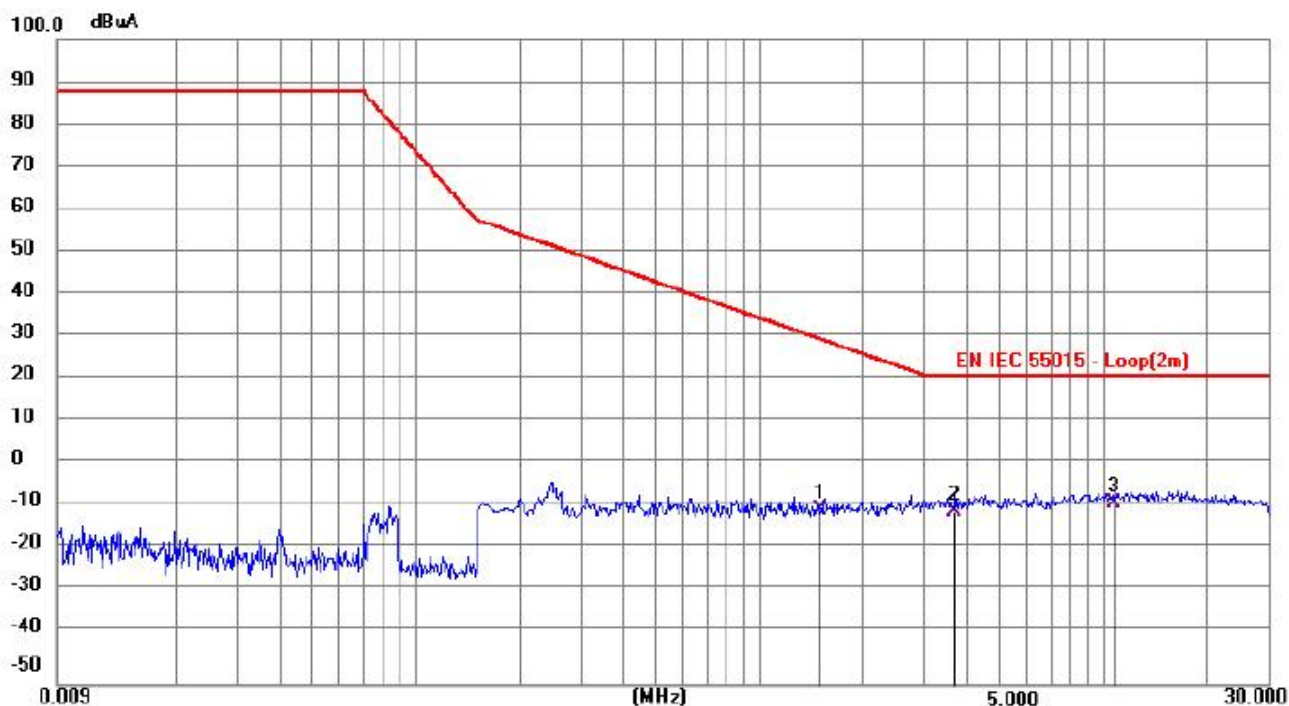
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.2808	32.36	10.90	43.26	60.79	-17.53	QP	
2		0.2808	23.13	10.90	34.03	50.79	-16.76	AVG	
3		17.6967	37.88	11.19	49.07	60.00	-10.93	QP	
4		17.6967	35.18	11.19	46.37	50.00	-3.63	AVG	
5		21.1470	38.98	11.31	50.29	60.00	-9.71	QP	
6	*	21.1470	37.93	11.31	49.24	50.00	-0.76	AVG	





A.2. RADIATED DISTURBANCE TEST RESULTS (9kHz - 30MHz)

Environmental Conditions	24.5°C, 52% RH
Model	MO6349
Operating mode	Mode 1 (worst case)
Test voltage	DC5V
Test engineer	Aru Yang
Pol	X

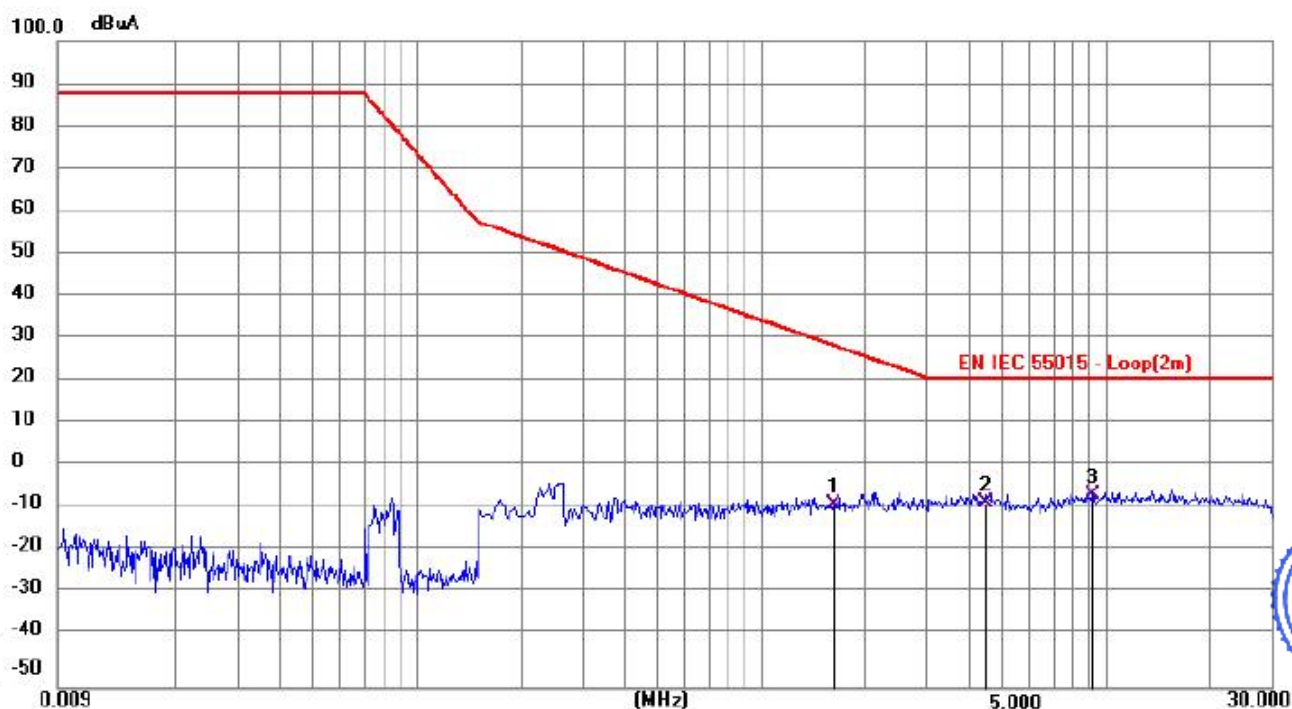


No.	Mk.	Freq. MHz	Reading Level dBuA	Correct Factor dB	Measure- ment dBuA	Limit dBuA	Over dB	Detector	Comment
1		1.4955	-33.90	24.75	-9.15	30.37	-39.52	QP	
2		3.6780	-34.62	25.12	-9.50	22.00	-31.50	QP	
3	*	10.6755	-34.11	26.13	-7.98	22.00	-29.98	QP	





Environmental Conditions	24.5°C, 52% RH
Model	MO6349
Operating mode	Mode 1 (worst case)
Test voltage	DC5V
Test engineer	Aru Yang
Pol	Y



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuA	dB	dBuA	dBuA	dB	Detector	Comment
1		1.6125	-32.80	25.44	-7.36	29.46	-36.82	QP	
2		4.4610	-32.97	25.87	-7.10	22.00	-29.10	QP	
3	*	9.1725	-31.64	26.28	-5.36	22.00	-27.36	QP	



Shenzhen Southern LCS Compliance Testing Laboratory Ltd.

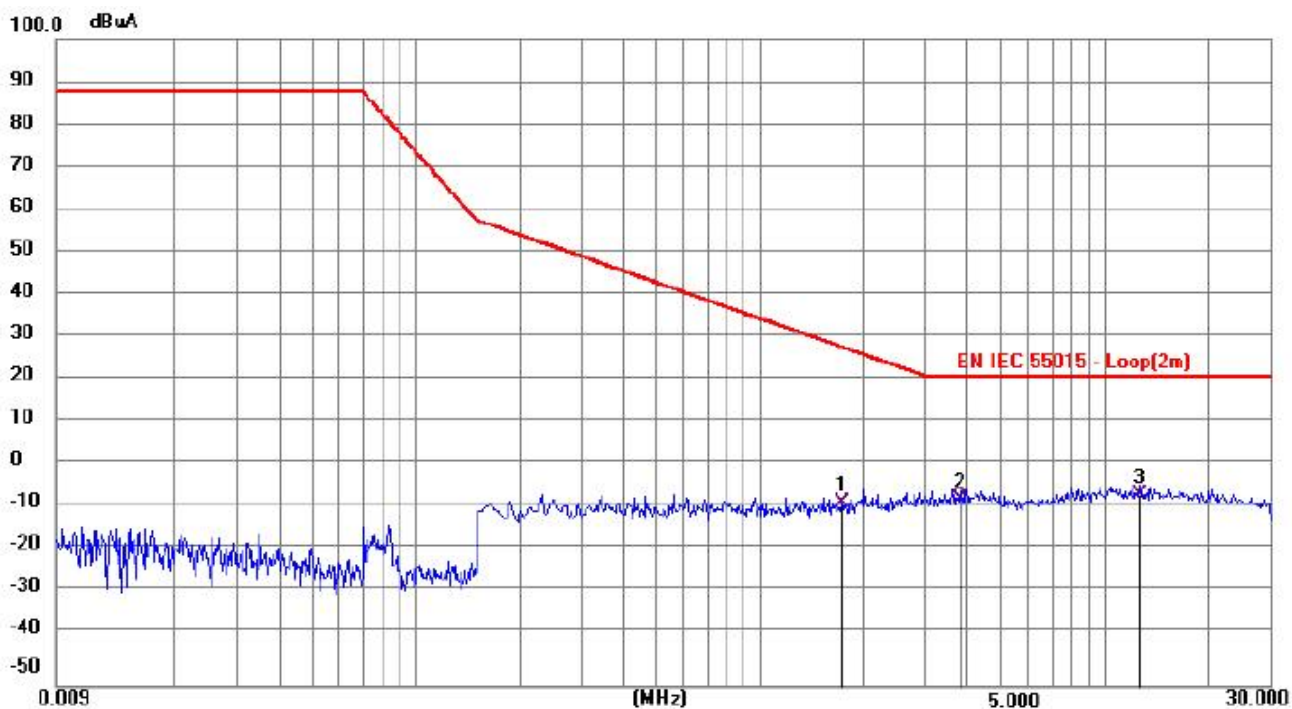
101-201, No. 39 Building, Xialang Industrial Zone, Heshuikou Community, Matian Street, Guangming District, Shenzhen, China.

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com.

Scan code to check authenticity.



Environmental Conditions	24.5°C, 52% RH
Model	MO6349
Operating mode	Mode 1 (worst case)
Test voltage	DC5V
Test engineer	Aru Yang
Pol	Z



No.	Mk.	Freq. MHz	Reading Level dBuA	Correct Factor dB	Measure- ment dBuA	Limit dBuA	Over dB	Detector	Comment
1		1.7205	-32.45	25.10	-7.35	28.68	-36.03	QP	
2		3.7995	-33.23	26.38	-6.85	22.00	-28.85	QP	
3	*	12.6735	-32.08	26.68	-5.40	22.00	-27.40	QP	





A.3. RADIATED DISTURBANCE TEST RESULTS (30MHz - 1GHz)

Environmental Conditions	25.9°C, 56% RH
Model	MO6349
Operating mode	Mode 1 (worst case)
Test voltage	DC5V
Test engineer	Aru Yang
Pol	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	38.8027	21.94	13.58	35.52	40.00	-4.48	QP		
2		53.7403	19.40	14.74	34.14	40.00	-5.86	QP		
3		165.6319	24.88	10.16	35.04	40.00	-4.96	QP		



Shenzhen Southern LCS Compliance Testing Laboratory Ltd.

101-201, No. 39 Building, Xialang Industrial Zone, Heshuikou Community, Matian Street, Guangming District, Shenzhen, China.

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com.

Scan code to check authenticity.



Environmental Conditions	25.9℃, 56% RH
Model	MO6349
Operating mode	Mode 1 (worst case)
Test voltage	DC5V
Test engineer	Aru Yang
Pol	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	161.9704	13.69	10.59	24.28	40.00	-15.72	QP		
2		234.8879	16.67	12.41	29.08	47.00	-17.92	QP		
3		361.0802	13.36	16.19	29.55	47.00	-17.45	QP		



**A.4. IMMUNITY TEST RESULTS**

ELECTROSTATIC DISCHARGE TEST RESULTS					
Test model	MO6349		Temperature	23.5℃	
Test mode	Mode 1		Humidity	52%	
Input voltage	DC5V		Pressure	1008mbar	
Test engineer	Aru Yang				
Discharge Mode	Test Points	Test Voltage (kV) & polarity	Number of discharges/polarity	Discharge interval (s)	Performance Criteria
Contact Discharge	Conductive surfaces	± 4	10	1	B
Air Discharge	Insulating surfaces	± 2&4&8	10	1	B
VCP	-	± 4	10	1	B
HCP	-	± 4	10	1	B
Note :					

RADIO-FREQUENCY ELECTROMAGNETIC FIELD TEST RESULTS				
Test model	MO6349		Temperature	24.5℃
Test mode	Mode 1		Humidity	53%
Input voltage	DC5V		Pressure	1008mbar
Test engineer	Aru Yang			
Angle of EUT	Antenna polarization	Frequency Range	Test Level	Performance Criteria
0°	Vertical, Horizontal	80 - 1000 MHz	3 V/m	A
90°	Vertical, Horizontal	80 - 1000 MHz	3 V/m	A
180°	Vertical, Horizontal	80 - 1000 MHz	3 V/m	A
270°	Vertical, Horizontal	80 - 1000 MHz	3 V/m	A
Note : (1) Modulation:1kHz, 80% AM.				



**ELECTRICAL FAST TRANSIENT/BURST TEST RESULTS**

Test model	MO6349		Temperature	24.0℃
Test mode	Mode 1		Humidity	54%
Input voltage	DC5V		Pressure	1008mbar
Test engineer	Aru Yang			
Port under test	Test Level&polarity	Repetition Frequency	Test duration /polarity	Performance Criteria
AC input power				
DC input power	± 0.5 kV	5 kHz	2min	B
Signal/control/load				
Note :				

INJECTED CURRENTS (RADIO-FREQUENCY COMMON MODE) TEST RESULTS

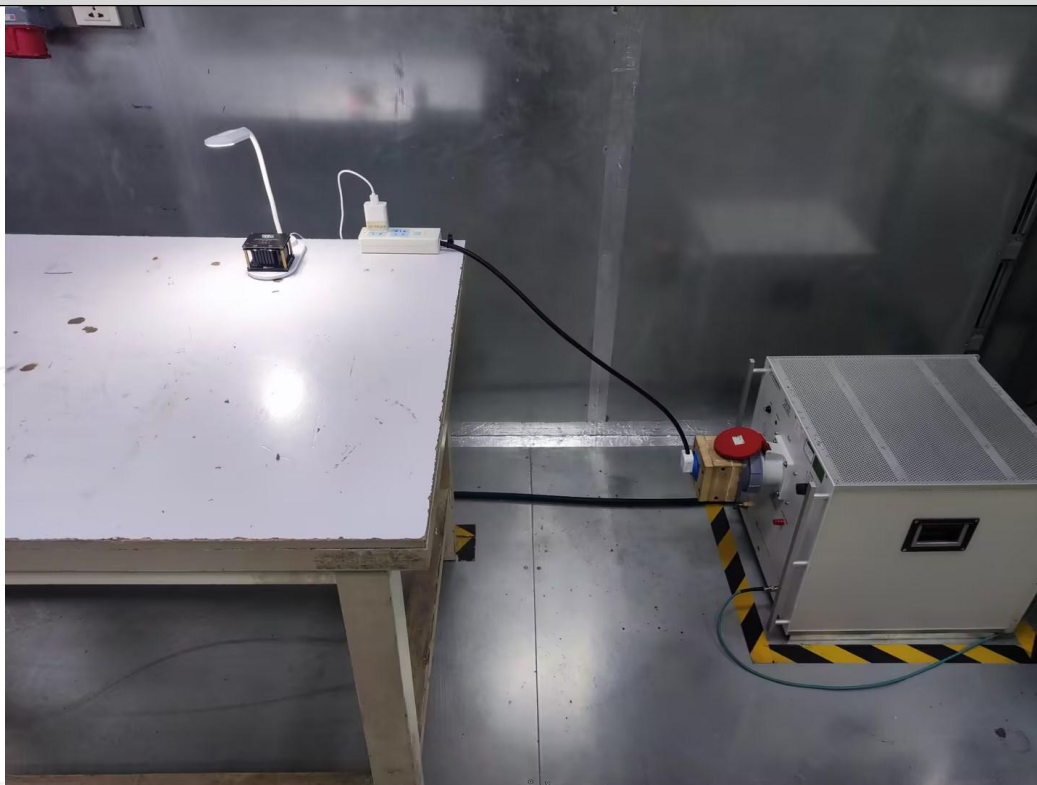
Test model	MO6349		Temperature	24.0℃
Test mode	Mode 1		Humidity	54%
Input voltage	DC5V		Pressure	1008mbar
Test engineer	Aru Yang			
Port under test	Test Level	Coupling method	Dwell time	Performance Criteria
AC input power				
DC input power	3 V	CDN	1 seconds	A
Signal/control				
Note: (1) Frequency range:0.15MHz - 80MHz.				





ANNEX B - TEST PHOTOS

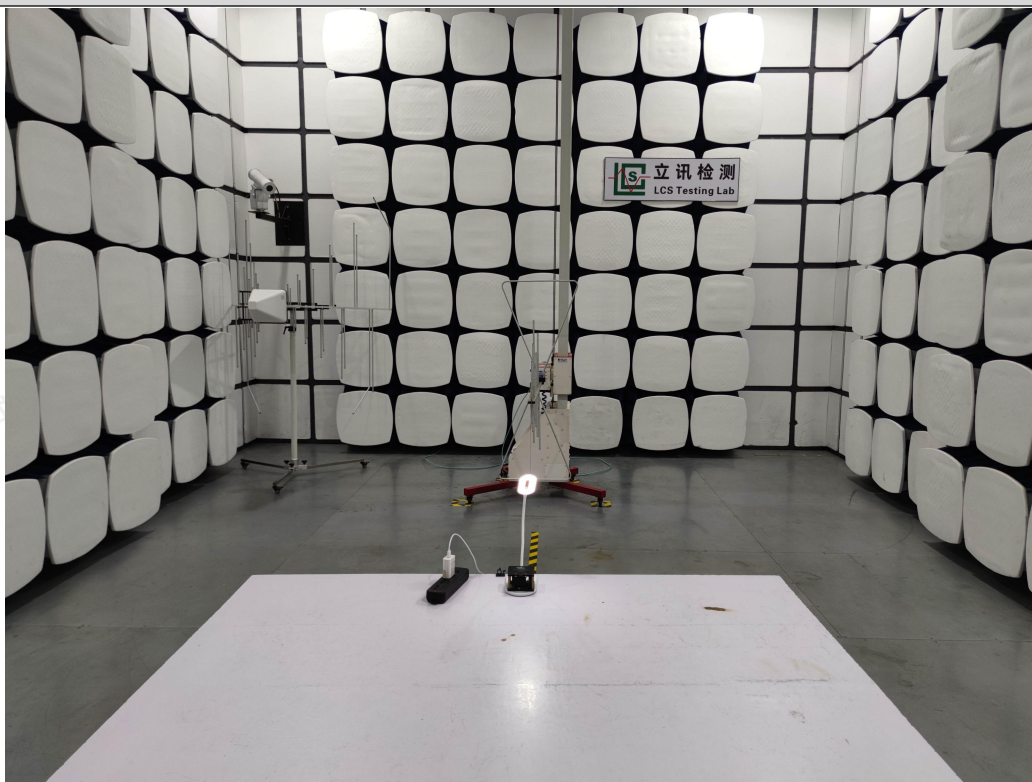
B.1. Conducted Disturbance



B.2. Radiated Disturbance (9kHz - 30MHz)



B.3. Radiated Disturbance (30MHz to 1GHz) & Radio-Frequency Electromagnetic Fields

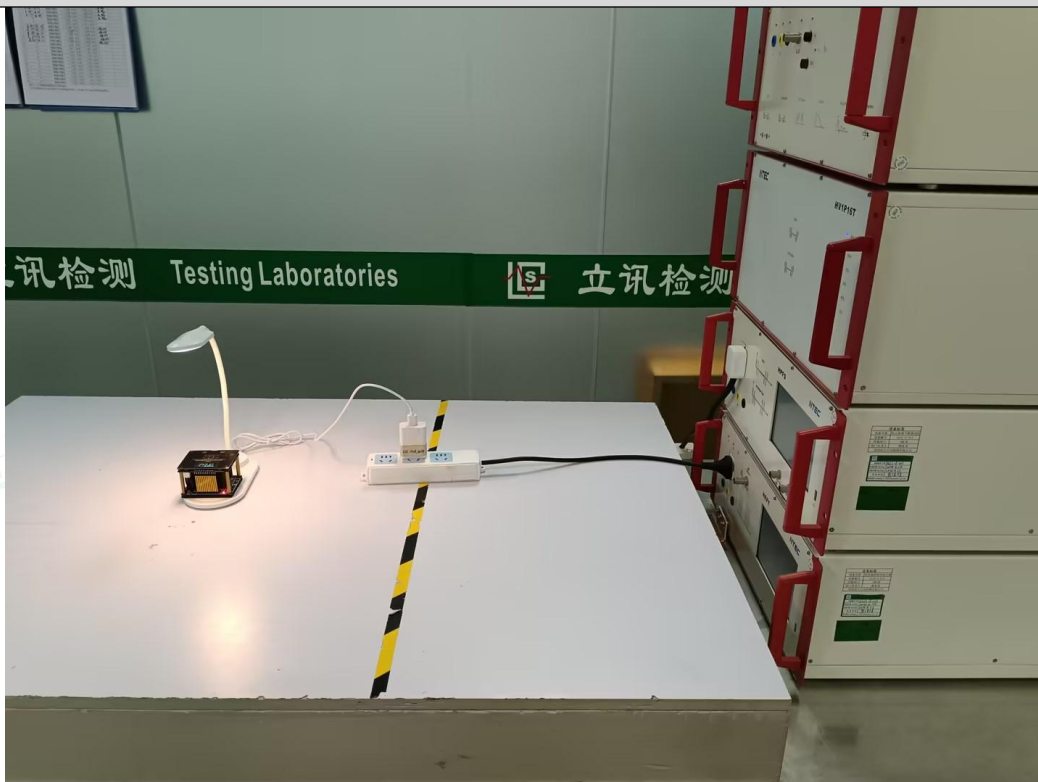


B.4. Electrostatic Discharge





B.5. Electrical Fast Transient / Burst



B.6. Injected Currents (Radio-Frequency Common Mode)



Shenzhen Southern LCS Compliance Testing Laboratory Ltd.

101-201, No. 39 Building, Xialang Industrial Zone, Heshuikou Community, Matian Street, Guangming District, Shenzhen, China.

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com.

Scan code to check authenticity.



ANNEX C - EXTERNAL AND INTERNAL PHOTOS OF THE EUT

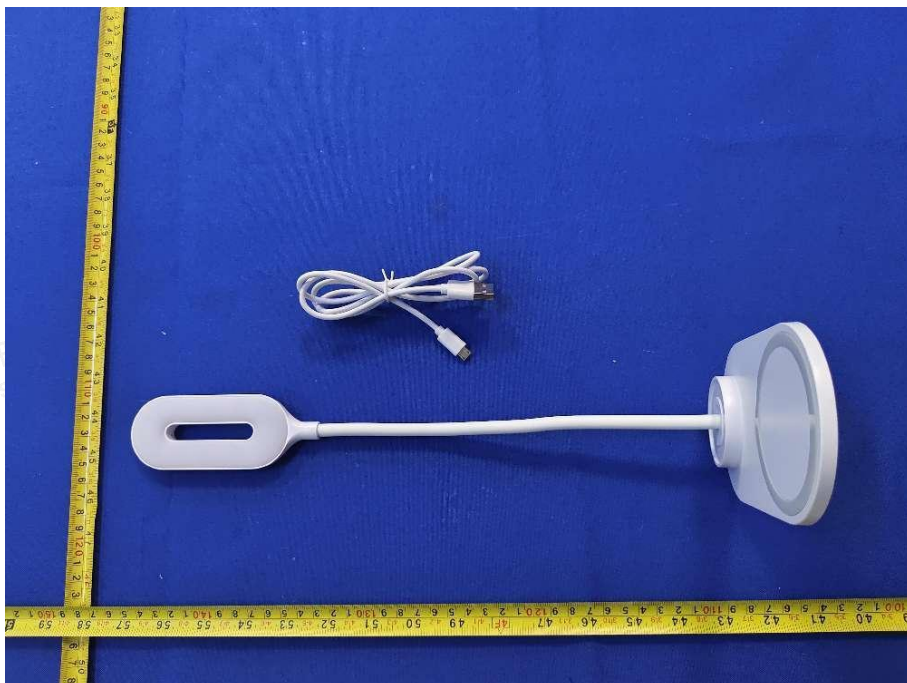


Photo.1

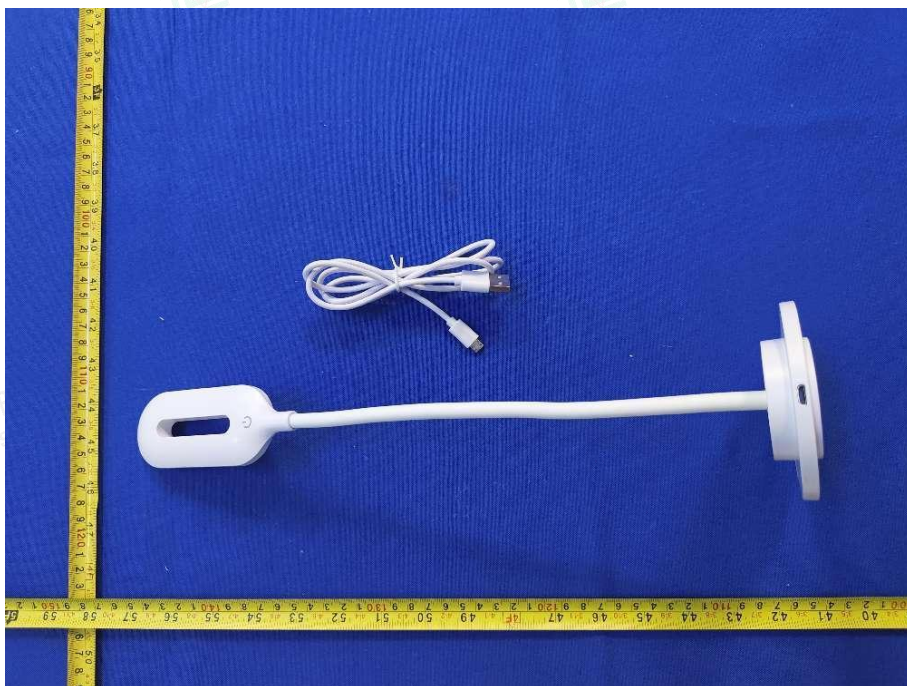


Photo.2





Photo.3



Photo.4





Photo.5



Photo.6



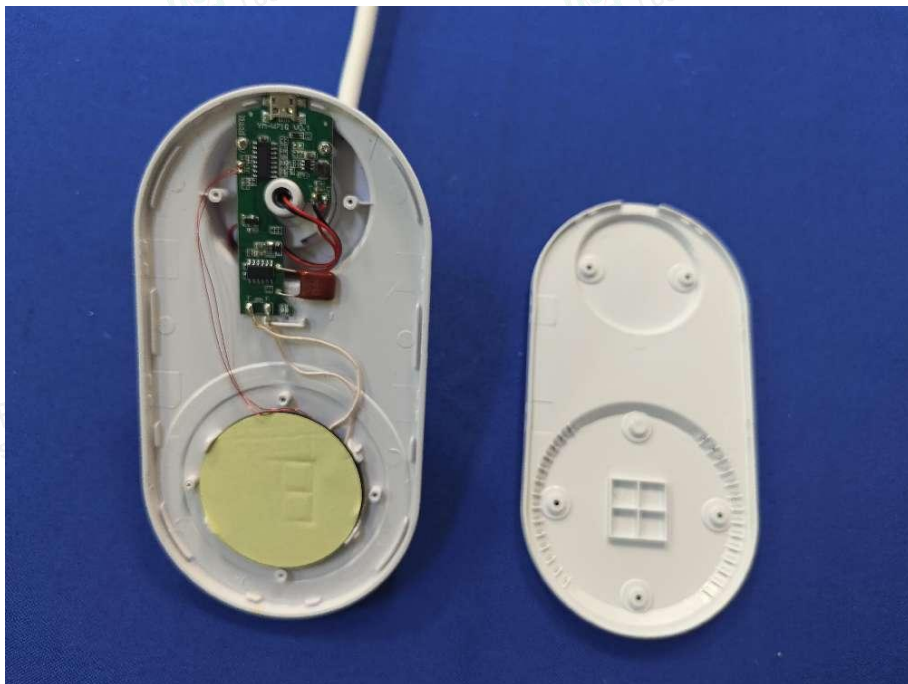


Photo.7

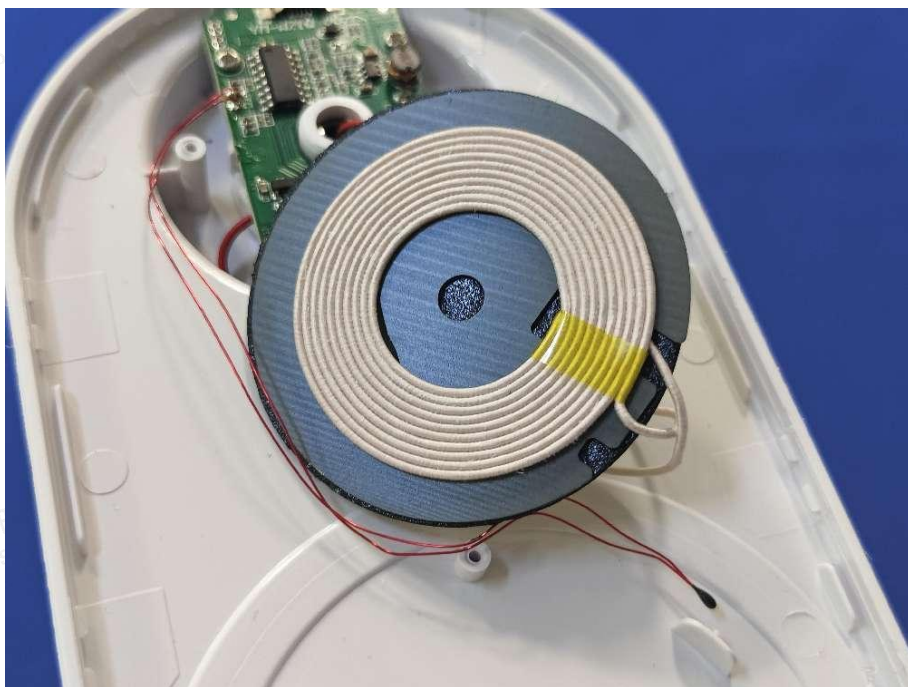


Photo.8



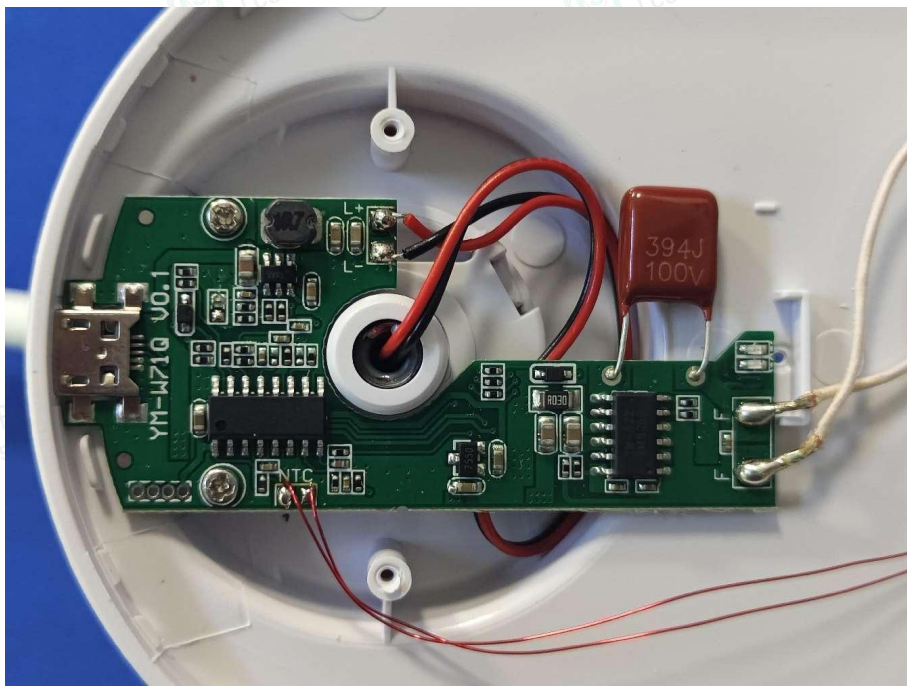


Photo.9



Photo.10





Photo.11

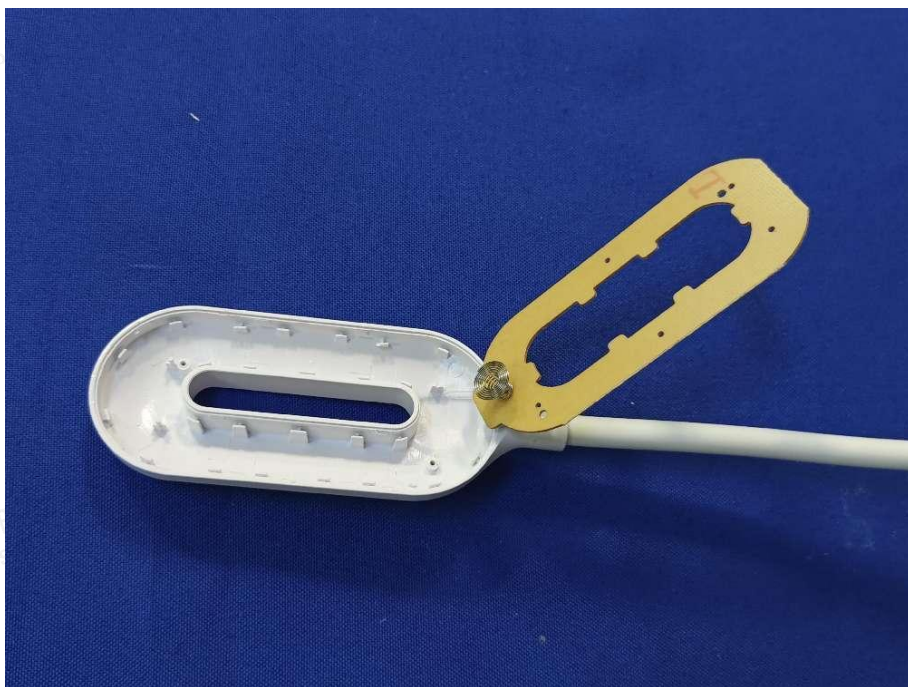


Photo.12

----- END -----

