



EMC TEST REPORT

For

Mid Ocean Brands B.V.

Power bank with solar panel

Test Model: MO6841

Prepared for

: Mid Ocean Brands B.V.

Address

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

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 : November 18, 2022

Number of tested samples : 1

Sample No. : A102422170

Date of Test : November 18, 2022 ~ November 24, 2022

Date of Report : November 24, 2022

CE



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****EN 55032:2015/A11:2020**

Electromagnetic compatibility of multimedia equipment - Emission Requirements

EN 55035:2017/A11: 2020

Electromagnetic compatibility of multimedia equipment – Immunity requirements

Report Reference No.	: LCSA102422170E
Date of Issue	: November 24, 2022
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 <input checked="" type="checkbox"/> Partial application of Harmonised standards <input type="checkbox"/> Other standard testing method <input type="checkbox"/>
Applicant's Name	: Mid Ocean Brands B.V.
Address	: 7/F., Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong
Test Specification	
Standard	: EN 55032:2015/A11:2020 EN 55035:2017/A11: 2020
Test Report Form No.	: LCSEMC-1.0
TRF Originator.....	: Shenzhen LCS Compliance Testing Laboratory Ltd.
Master TRF.....	: Dated 2011-03
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.	: Power bank with solar panel
Trade Mark	: N/A
Test Model	: MO6841
Ratings	: Please Refer to Page 9
Result	: Positive

Compiled by:

Coco Song/ File administrators

Supervised by:

Baron Wen/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. : LCSA102422170E	November 24, 2022
	Date of issue

Test Model..... : MO6841

EUT..... : Power bank with solar panel

Applicant..... : Mid Ocean Brands B.V.

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

Telephone..... : /

Fax..... : /

Manufacturer..... : 114628

Address..... : /

Telephone..... : /

Fax..... : /

Factory..... : 114628

Address..... : /

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.



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



Revision History

Revision	Issue Date	Revisions Content	Revised By
000	November 24, 2022	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

Test Report Description	Page
1. TEST STANDARDS	6
2. SUMMARY OF STANDARDS AND RESULTS	7
2.1. DESCRIPTION OF STANDARDS AND RESULTS.....	7
2.2. DESCRIPTION OF PERFORMANCE CRITERIA.....	8
3. GENERAL INFORMATION	9
3.1. DESCRIPTION OF DEVICE (EUT).....	9
3.2. DESCRIPTION OF SUPPORT DEVICE	9
3.3. DESCRIPTION OF TEST FACILITY.....	9
3.4. STATEMENT OF THE MEASUREMENT UNCERTAINTY	10
3.5. MEASUREMENT UNCERTAINTY.....	10
4. MEASURING DEVICES AND TEST EQUIPMENT	11
5. TEST RESULTS.....	12
5.1. RADIATED EMISSION MEASUREMENT	12
5.2. ELECTROSTATIC DISCHARGE IMMUNITY TEST	14
5.3. RF FIELD STRENGTH SUSCEPTIBILITY TEST	16
ANNEX A	18
ANNEX B	20
ANNEX C	24



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



1. TEST STANDARDS

The tests were performed according to following standards:

EN 55032:2015/A11:2020 Electromagnetic compatibility of multimedia equipment - Emission Requirements

EN 55035:2017/A11: 2020 Electromagnetic compatibility of multimedia equipment – Immunity requirements



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



2. SUMMARY OF STANDARDS AND RESULTS

2.1. Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below.

Emission (EN 55032:2015/A11:2020)			
Description of Test Item	Standard	Limits	Results
Conducted disturbance at mains terminals	EN 55032:2015/A11:2020	Class B	N/A
Conducted disturbance at telecommunication port	EN 55032:2015/A11:2020	Class B	N/A
Radiated disturbance	EN 55032:2015/A11:2020	Class B	PASS
Harmonic current emissions	EN IEC 61000-3-2: 2019/A1:2021	Class A	N/A
Voltage fluctuations & flicker	EN 61000-3-3: 2013/A1:2019	-----	N/A
Immunity (EN 55035:2017/A11: 2020)			
Description of Test Item	Basic Standard	Performance Criteria	Results
Electrostatic Discharge (ESD)	EN 61000-4-2: 2009	B	PASS
Radio-frequency, Continuous Radiated Disturbance	EN IEC 61000-4-3:2020	A	PASS
Electrical Fast Transient (EFT)	EN 61000-4-4: 2012	B	N/A
Surge (Input a.c. Power Ports)	EN 61000-4-5: 2014/A1: 2017	B	N/A
Surge (Telecommunication Ports)		B	N/A
Conducted disturbances induced by radio-frequency fields	EN61000-4-6:2014/AC:2015	A	N/A
Power Frequency Magnetic Field	EN 61000-4-8: 2010	A	N/A
Voltage Dips, >95% Reduction	EN 61000-4-11:2020	B	N/A
Voltage Dips, 30% Reduction		C	N/A
Voltage Interruptions		C	N/A

***Note: N/A is an abbreviation for Not Applicable.

Test mode:		
Mode	Full Load	Record
***Note: All test modes were tested, but we only recorded the worst case in this report.		



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





2.2. Description of Performance Criteria

General Performance Criteria

Examples of functions defined by the manufacturer to be evaluated during testing include, but are not limited to, the following:

- essential operational modes and states;

2.2.1. Performance criterion A

The equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.

2.2.2. Performance criterion B

After the test, the equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed, after the application of the phenomena below a performance level specified by the manufacturer, when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance.

During the test, degradation of performance is allowed. However, no change of operation state or stored data is allowed to persist after the test.

If the minimum performance level (or the permissible performance loss) is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.

2.2.3. Performance criterion C

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

Functions, and/or information stored in non-volatile memory, or protected by a battery backup, shall not be lost.



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



3. GENERAL INFORMATION

3.1. Description of Device (EUT)

EUT : Power bank with solar panel

Trade Mark : N/A

Test Model : MO6841

Power Supply :
Input: 5V=2A
Output 1: 5V=2A
Output 2: 5V=2A
Battery: 3.7V=8000mAh, 29.6Wh

EUT Clock Frequency : $\leq 108\text{MHz}$

Highest internal frequency (Fx)	Highest measured frequency
$Fx \leq 108\text{ MHz}$	1 GHz
$108\text{ MHz} < Fx \leq 500\text{ MHz}$	2 GHz
$500\text{ MHz} < Fx \leq 1\text{ GHz}$	5 GHz
$Fx > 1\text{ GHz}$	$5 \times Fx$ up to a maximum of 6 GHz

NOTE 1 For FM and TV broadcast receivers, Fx is determined from the highest frequency generated or used excluding the local oscillator and tuned frequencies.
Where Fx is unknown, the radiated emission measurements shall be performed up to 6 GHz.

3.2. Description of Support Device

Name	Manufacturers	M/N	S/N
-	-	-	-

3.3. Description of Test Facility

NVLAP Accreditation Code is 600167-0.

FCC Designation Number is CN5024.

CAB identifier is CN0071.

CNAS Registration Number is L4595.



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

3.4. 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.

3.5. Measurement Uncertainty

Test	Parameters	Expanded Uncertainty (U_{lab})	Expanded Uncertainty (U_{cispr})
Conducted Emission	Level accuracy (9kHz to 150kHz) (150kHz to 30MHz)	± 2.63 dB ± 2.35 dB	± 3.8 dB ± 3.4 dB
Power Disturbance	Level accuracy (30MHz to 300MHz)	± 2.90dB	± 4.5 dB
Electromagnetic Radiated Emission (3-loop)	Level accuracy (9kHz to 30MHz)	± 3.60 dB	± 3.3 dB
Radiated Emission	Level accuracy (9kHz to 30MHz)	± 3.68 dB	N/A
Radiated Emission	Level accuracy (30MHz to 1000MHz)	± 3.48 dB	± 5.3 dB
Radiated Emission	Level accuracy (above 1000MHz)	± 3.90 dB	± 5.2 dB

1) Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus.
2) 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%.



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



4. MEASURING DEVICES AND TEST EQUIPMENT

RADIATED DISTURBANCE

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	EMI Test Software	AUDIX	E3	/	N/A	N/A
2	By-log Antenna	SCHWARZBECK	VULB9163	9163-470	2021-09-12	2024-09-11
3	Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-1925	2021-09-05	2024-09-04
4	EMI Test Receiver	R&S	ESR3	102311	2022-08-17	2023-08-16
5	Broadband Preamplifier	/	BP-01M18G	P190501	2022-06-16	2023-06-15

RF ELECTROMAGNETIC FIELD

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	MXG Vector Signal Generator	Agilent	E4438C	MY42081396(6G)	2022-06-16	2023-06-15
2	RF POWER AMPLIFIER	SKET	HAP_0306 G-50W	/	2022-06-16	2023-06-15
3	RF POWER AMPLIFIER	OPHIR	5225R	1052	2022-06-16	2023-06-15
4	RF POWER AMPLIFIER	OPHIR	5273F	1019	2022-06-16	2023-06-15
5	Stacked Broadband Log Periodic Antenna	SCHWARZBECK	STLP 9128	9128ES-145	NCR	NCR
6	Stacked Mikrowellen Log.-Per	SCHWARZBECK	STLP 9149	9149-484	NCR	NCR
7	RS Electric field probe	narda	EP601	611WX80208	2022-06-16	2023-06-15

Note: NCR means no calibration requirement

ELECTROSTATIC DISCHARGE

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	ESD Simulator	SCHLODER	SESD 230	604035	2022-07-18	2023-07-17

NCR --- No calibration requirement.



Shenzhen LCS Compliance Testing Laboratory Ltd.

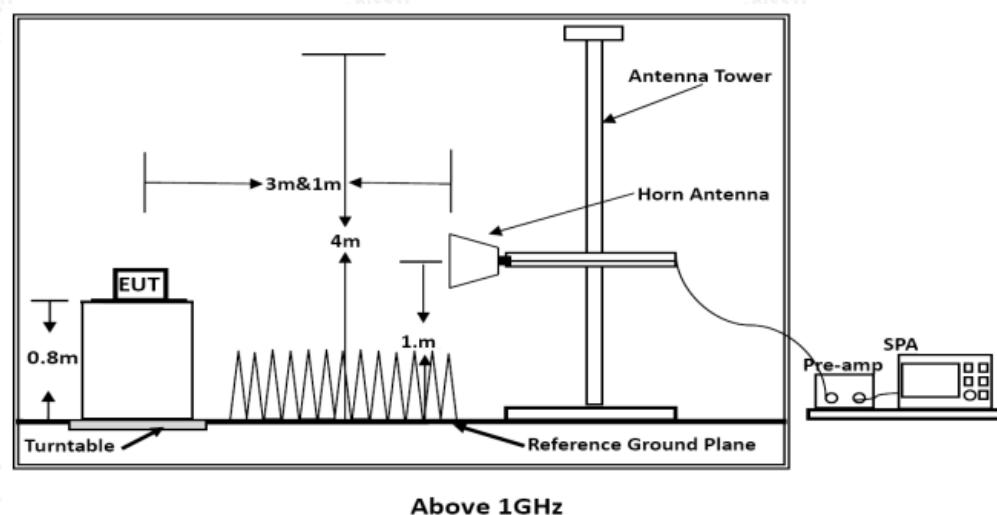
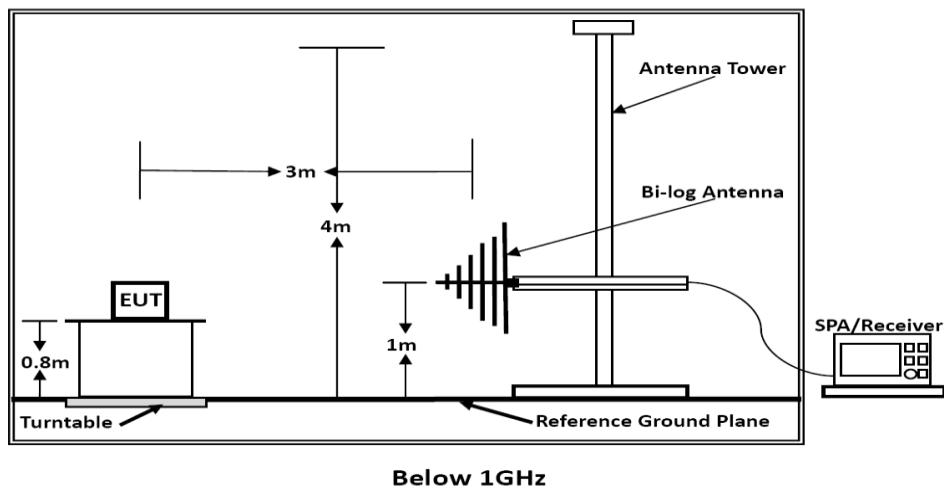
Add: Room 101, 201, Building A and Room 301, Building C, Juji Industrial Park, Yabianxueziwei, Shajing Street, Bao'an District, Shenzhen, Guangdong, China
Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity

5. TEST RESULTS

5.1. RADIATED EMISSION MEASUREMENT

5.1.1. Block Diagram of Test Setup



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



5.1.2. Test Standard

EN 55032:2015/A11:2020 Class B

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

Limits for Radiated Emission Below 1GHz		
Frequency (MHz)	Distance (Meters)	Field Strengths Limit (dB μ V/m)
30 ~ 230	3	40
230 ~ 1000	3	47

***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 Emission Above 1GHz			
Frequency (MHz)	Distance (Meters)	Peak Limit (dB μ V/m)	Average Limit (dB μ V/m)
1000 ~ 3000	3	70	50
3000 ~ 6000	3	74	54

***Note: The lower limit applies at the transition frequency.

5.1.3. EUT Configuration on Test

The EN 55032 regulations test method must be used to find the maximum emission during emission measurement.

5.1.4. Operating Condition of EUT

- 5.1.4.1. Turn on the power.
- 5.1.4.2. Let the EUT work in the test USB and measure it.

5.1.5. Test Procedure

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 a antenna tower. The antenna can be moved up and down from 1 to 4 meters to find out the maximum emission level. By-log antenna is used as a receiving antenna. Both horizontal and vertical polarization of the antenna is set on test.

The bandwidth of the EMI test receiver is set at RBW/VBW=120kHz/300kHz.

The frequency range from 30MHz to 1000MHz is checked.

The bandwidth of the Spectrum analyzer is set at RBW/VBW=1MHz/3MHz.

The frequency range from 1GHz to the frequency which about 5th carrier harmonic or 6GHz is checked.

5.1.6. Test Results

PASS.

Refer to attached Annex B.1



Shenzhen LCS Compliance Testing Laboratory Ltd.

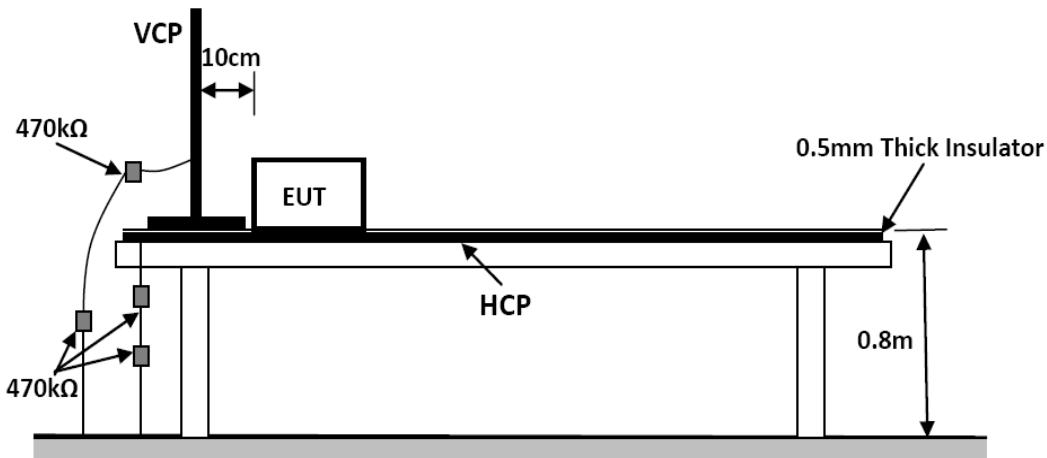
Add: Room 101, 201, Building A and Room 301, Building C, Juji Industrial Park, Yabianxueziwei, Shajing Street, Bao'an District, Shenzhen, Guangdong, China

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

Scan code to check authenticity

5.2. ELECTROSTATIC DISCHARGE IMMUNITY TEST

5.2.1. Block Diagram of Test Setup



5.2.2. Test Standard

EN 55035:2017/A11: 2020 (EN 61000-4-2: 2009, Severity Level: 3 / Air Discharge: $\pm 8\text{KV}$, Level: 2 / Contact Discharge: $\pm 4\text{KV}$)

5.2.3. Severity Levels and Performance Criterion

5.2.3.1. Severity level

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

5.2.3.2. Performance Criterion

Performance Criterion: B

5.2.4. EUT Configuration on Test

The configuration of EUT is listed in Section 5.2.1.

5.2.5. Operating Condition of EUT

Same as radiated emission measurement, which is listed in Section 5.1.4. Except the test set up replaced by Section 5.2.1.



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

5.2.6. Test Procedure

5.2.6.1. Air Discharge

This test is done on a non-conductive surfaces. The round discharge tip of the Electrostatic Discharge simulator shall be approached as fast as possible then to touch the EUT. After each discharge, the simulator shall be removed from the EUT. The simulator is then re-triggered for a new single discharge and repeated 25 times for each pre-selected test point. This procedure shall be repeated until all the air discharge completed

5.2.6.2. Contact Discharge

All the procedure shall be same as air discharge, except using the acute discharge tip. The top end of the Electrostatic Discharge simulator is touch the EUT all the time when the simulator is re-triggered for a new single discharge and repeated 25 times for each pre-selected test point.

5.2.6.3. Indirect Discharge For Horizontal Coupling Plane

The vertical coupling plane(VCP) is placed 0.1m away from EUT. The top end of Electrostatic Discharge simulator should aim at the center of one border of the VCP for at least 25 times discharge.

5.2.6.4. Indirect Discharge For Vertical Coupling Plane

The top end of Electrostatic Discharge simulator should place at the point 0.1m away from EUT on the horizontal coupling plane(HCP). At least 25 times discharge should be done for every pre-selected point around EUT.

Record any performance degradation of the EUT during the test and judge the test result according to ce criterion.

5.2.7. Test Results

PASS.

Refer to attached Annex B.2



Shenzhen LCS Compliance Testing Laboratory Ltd.

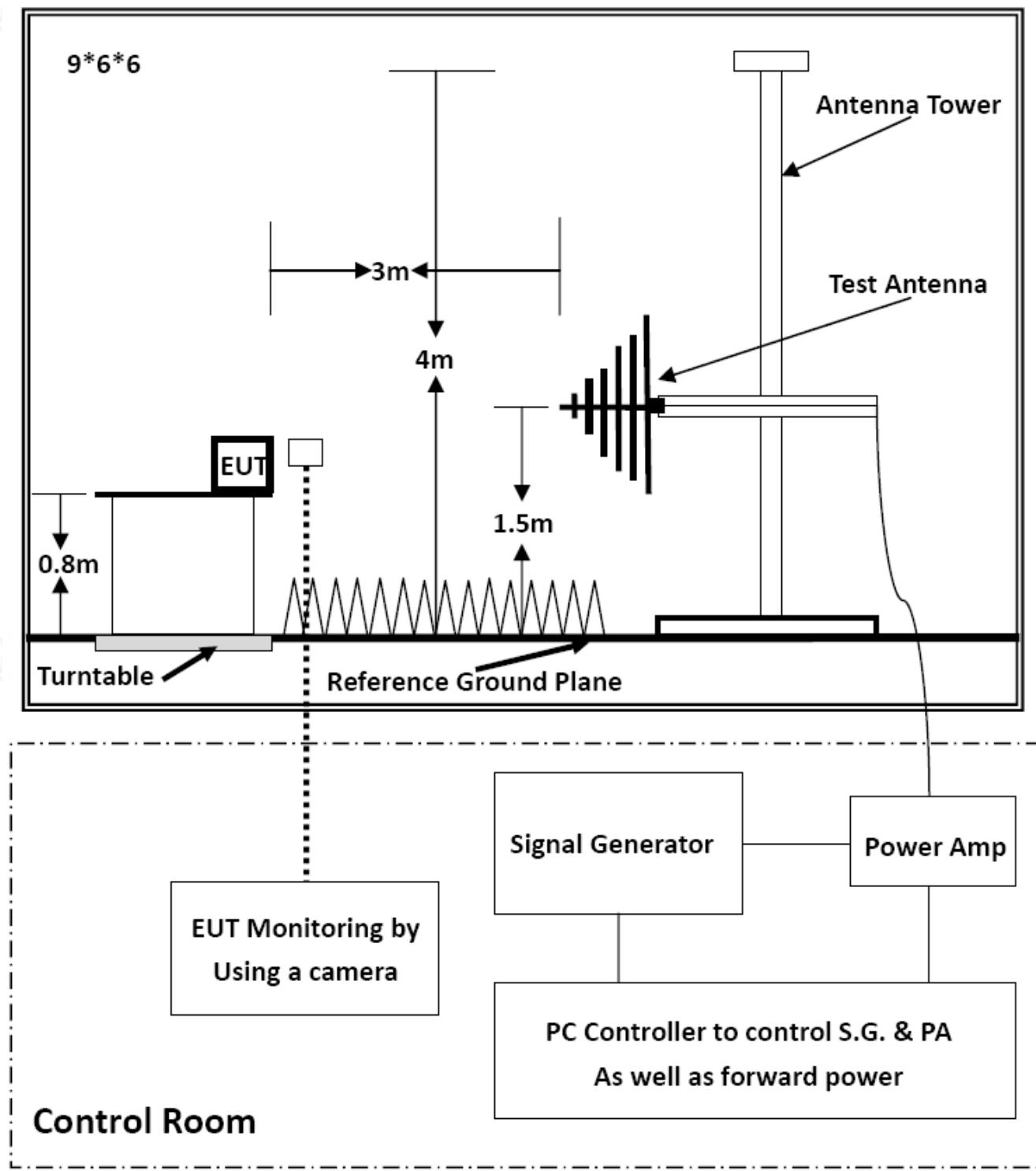
Add: Room 101, 201, Building A and Room 301, Building C, Juji Industrial Park, Yabianxueziwei, Shajing Street, Bao'an District, Shenzhen, Guangdong, China

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

Scan code to check authenticity

5.3. RF FIELD STRENGTH SUSCEPTIBILITY TEST

5.3.1. Block Diagram of Test Setup



5.3.2. Test Standard

EN 55035:2017/A11: 2020 (EN IEC 61000-4-3:2020 Severity Level: 2, 3V/m)

5.3.3. Severity Levels and Performance Criterion

5.3.3.1. Severity level

Level	Field Strength (V/m)
1	1
2	3
3	10
X	Special

5.3.3.2. Performance Criterion

Performance Criterion: A

5.3.4. EUT Configuration on Test

The configuration of EUT is listed in Section 5.3.1.

5.3.5. Operating Condition of EUT

Same as radiated emission measurement, which is listed in Section 5.1.4, except the test setup replaced as Section 5.3.1.

5.3.6. Test Procedure

The EUT are placed on a table, which is 0.8 meter high above the ground. The EUT is set 3 meters away from the transmitting antenna, which is mounted on an antenna tower. Both horizontal and vertical polarization of the antenna is set on test. Each of the four sides of the EUT must be faced this transmitting antenna and measured individually. In order to judge the EUT performance, a CCD Recording is used to monitor its screen. All the scanning conditions are as following:

Condition of Test	Remark
Fielded Strength	3 V/m (Severity Level 2)
Radiated Signal	Unmodulated
Test Frequency Range (Swept Test)	80-1000MHz
Test Frequency (spot test)	1800MHz, 2600MHz, 3500MHz, 5000MHz
Dwell Time of Radiated	0.0015 decade/s
Waiting Time	3 Sec.

5.3.7. Test Results

PASS.

Refer to attached Annex B.3



Shenzhen LCS Compliance Testing Laboratory Ltd.

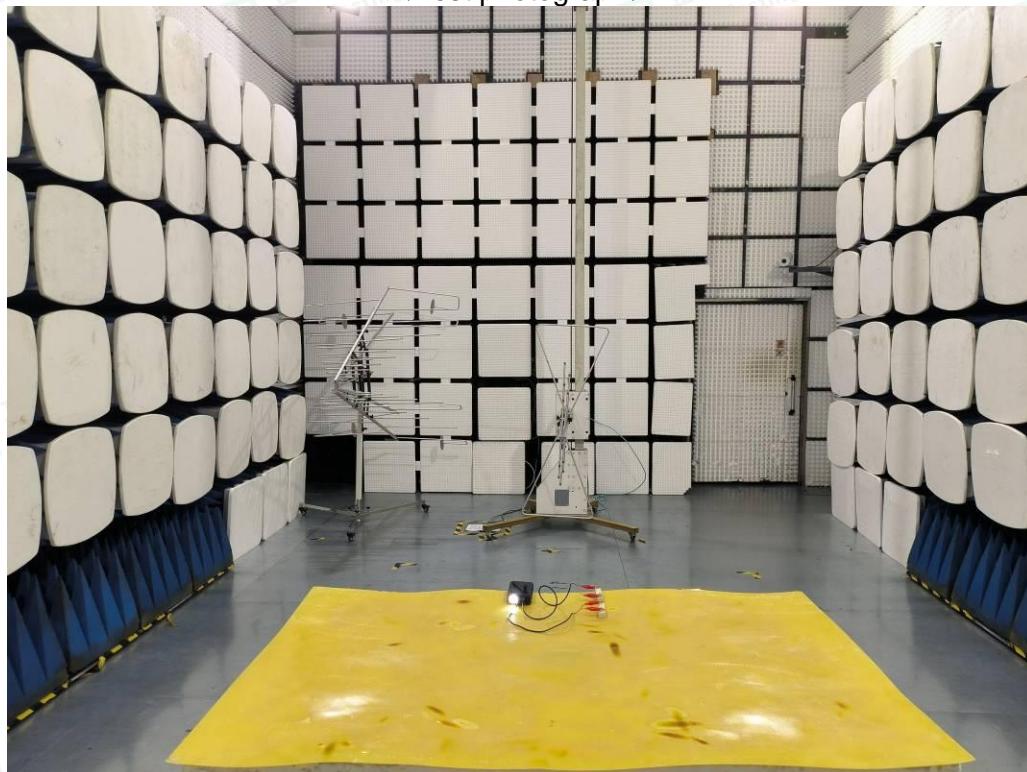
Add: Room 101, 201, Building A and Room 301, Building C, Juji Industrial Park, Yabianxueziwei, Shajing Street, Bao'an District, Shenzhen, Guangdong, China

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

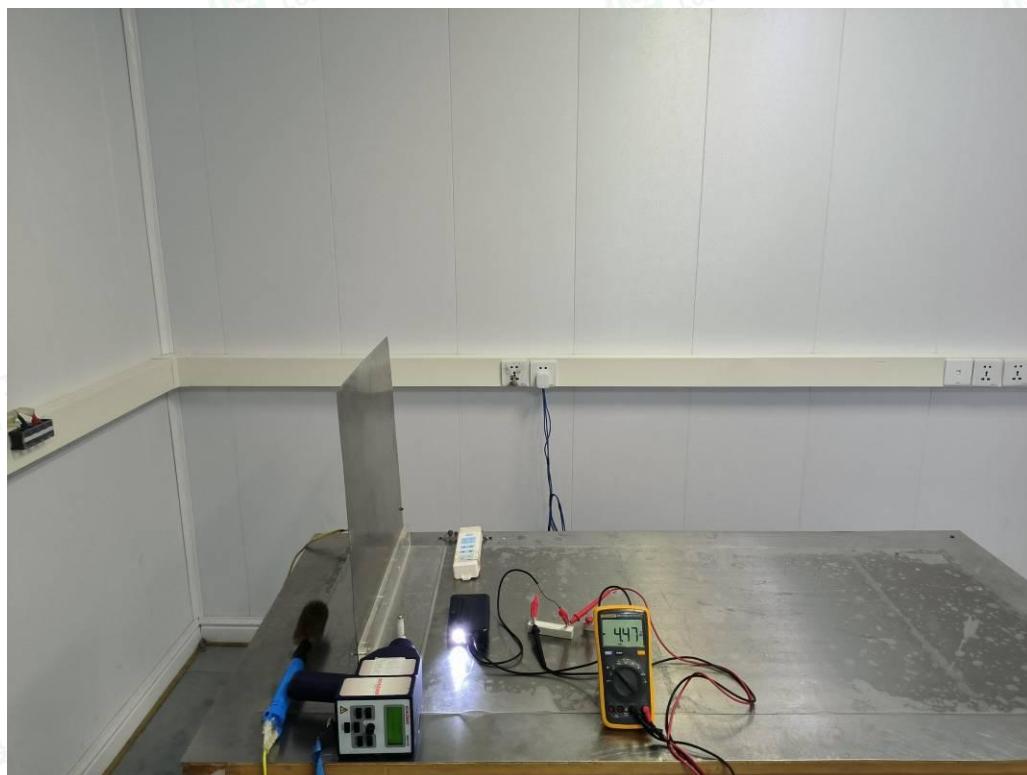
Scan code to check authenticity

ANNEX A

(Test photograph)



Test Setup Photo of Radiated Measurement (30MHz~1GHz)



Test Setup Photo of Electrostatic Discharge Test

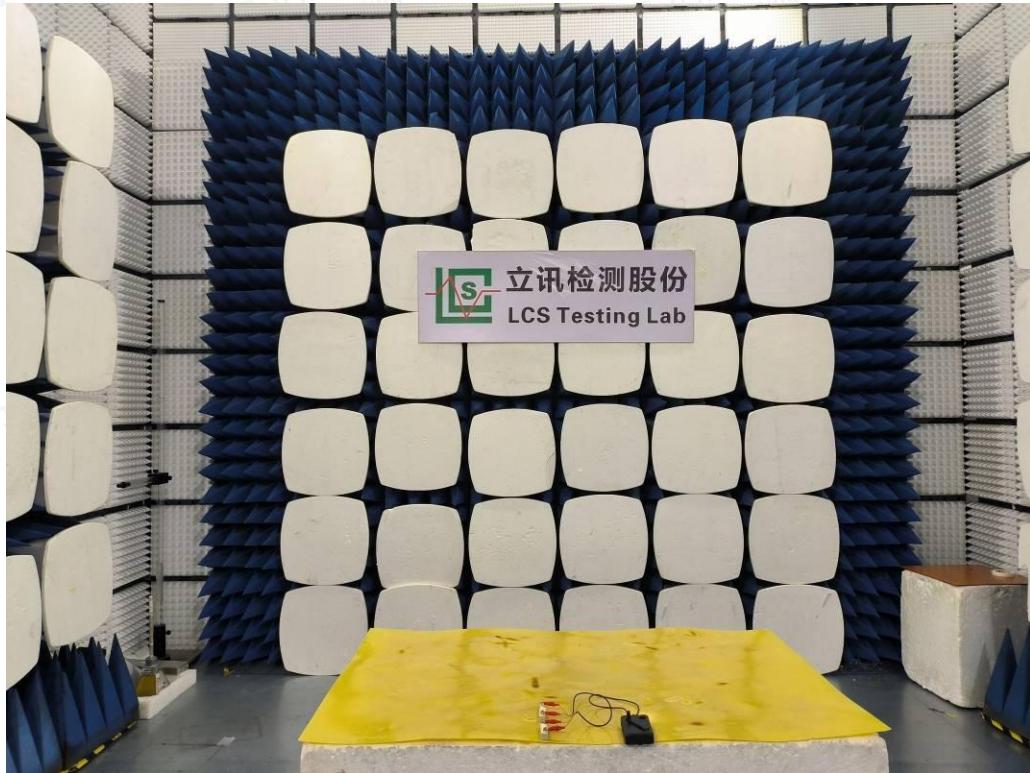


Shenzhen LCS Compliance Testing Laboratory Ltd.

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



Rf Field Strength Susceptibility Test



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



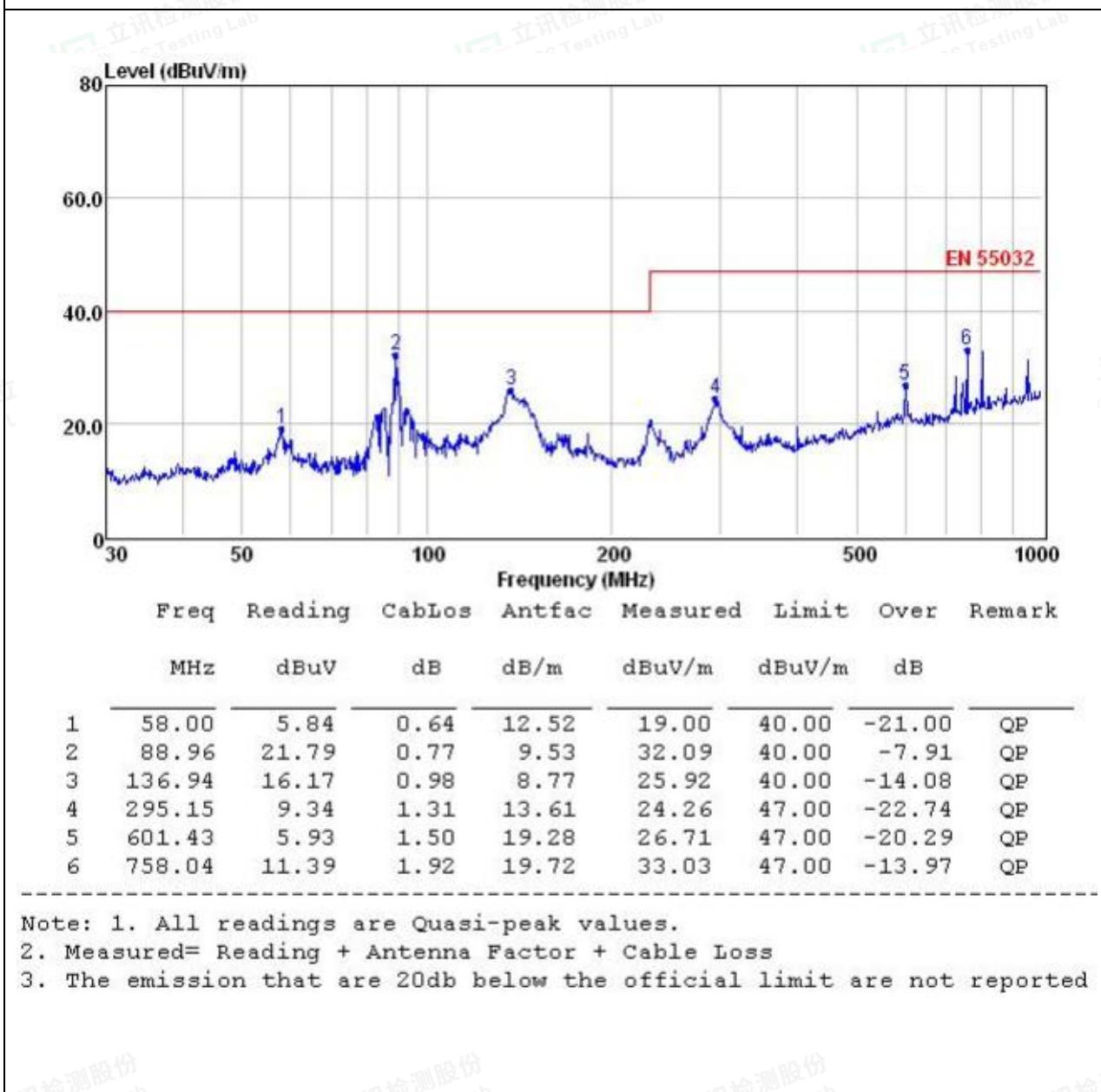
ANNEX B

(Emission and Immunity test results)

B.1 Radiated Disturbance Test Results (30MHz to 1000MHz)

Environmental Conditions:	22.3°C, 53%RH
Test Voltage:	DC
Test Model:	MO6841
Test Mode:	Full Load
Test Engineer:	Hy Luo
Pol:	Vertical

Detailed results are shown below



Shenzhen LCS Compliance Testing Laboratory Ltd.

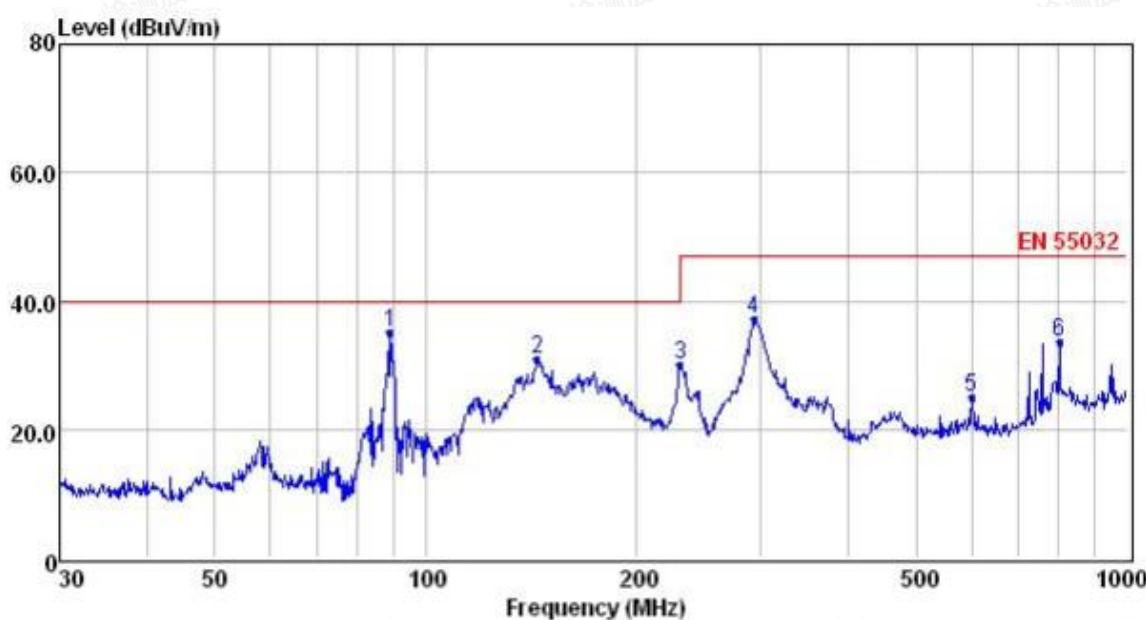
Add: Room 101, 201, Building A and Room 301, Building C, Juji Industrial Park, Yabianxueziwei, Shajing Street, Bao'an District, Shenzhen, Guangdong, China

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

Scan code to check authenticity

Environmental Conditions:	22.3°C, 53%RH
Test Voltage:	DC
Test Model:	MO6841
Test Mode:	Full Load
Test Engineer:	Hy Luo
Pol:	Horizontal

Detailed results are shown below



Freq	Reading	CabLoss	Antfac	Measured		Limit	Over	Remark
				MHz	dBuV	dB	dB/m	
1	88.96	24.93	0.77	9.53	35.23	40.00	-4.77	QP
2	144.33	21.44	1.01	8.59	31.04	40.00	-8.96	QP
3	230.91	16.80	1.24	12.02	30.06	47.00	-16.94	QP
4	294.11	22.38	1.31	13.59	37.28	47.00	-9.72	QP
5	601.43	4.06	1.50	19.28	24.84	47.00	-22.16	QP
6	801.79	11.70	2.00	19.85	33.55	47.00	-13.45	QP

Note: 1. All readings are Quasi-peak values.
2. Measured = Reading + Antenna Factor + Cable Loss
3. The emission that are 20db below the official limit are not reported



B.2 ELECTROSTATIC DISCHARGE IMMUNITY TEST

Electrostatic Discharge Test Results

Standard	<input type="checkbox"/> IEC 61000-4-2	<input checked="" type="checkbox"/> EN 61000-4-2	
Applicant	Mid Ocean Brands B.V.		
EUT	Power bank with solar panel	Temperature	23.1 °C
M/N	MO6841	Humidity	54.2%
Criterion	B	Pressure	1021mbar
Test Mode	Full Load	Test Engineer	Hy Luo

Air Discharge						
Test Points	Test Levels			Results		
	± 2kV	± 4kV	± 8kV	Passed	Fail	Performance Criterion
Front	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> A <input checked="" type="checkbox"/> B
Back	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> A <input checked="" type="checkbox"/> B
Left	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> A <input checked="" type="checkbox"/> B
Right	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> A <input checked="" type="checkbox"/> B
Top	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> A <input checked="" type="checkbox"/> B
Bottom	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> A <input checked="" type="checkbox"/> B
Contact Discharge						
Test Points	Test Levels		Results			
	± 2 kV	± 4 kV	Passed	Fail	Performance Criterion	
Front	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> A	<input checked="" type="checkbox"/> B
Back	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> A	<input checked="" type="checkbox"/> B
Left	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> A	<input checked="" type="checkbox"/> B
Right	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> A	<input checked="" type="checkbox"/> B
Top	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> A	<input checked="" type="checkbox"/> B
Bottom	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> A	<input checked="" type="checkbox"/> B
Discharge To Horizontal Coupling Plane						
Side of EUT	Test Levels		Results			
	± 2 kV	± 4 kV	Passed	Fail	Performance Criterion	
Front	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> A	<input checked="" type="checkbox"/> B
Back	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> A	<input checked="" type="checkbox"/> B
Left	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> A	<input checked="" type="checkbox"/> B
Right	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> A	<input checked="" type="checkbox"/> B
Discharge To Vertical Coupling Plane						
Side of EUT	Test Levels		Results			
	± 2 kV	± 4 kV	Passed	Fail	Performance Criterion	
Front	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> A	<input checked="" type="checkbox"/> B
Back	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> A	<input checked="" type="checkbox"/> B
Left	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> A	<input checked="" type="checkbox"/> B
Right	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> A	<input checked="" type="checkbox"/> B



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



B.3 RF FIELD STRENGTH SUSCEPTIBILITY TEST

RF Field Strength Susceptibility Test Results

Standard	<input type="checkbox"/> IEC 61000-4-3 <input checked="" type="checkbox"/> EN 61000-4-3		
Applicant	Mid Ocean Brands B.V.		
EUT	Power bank with solar panel	Temperature	23.5 °C
M/N	MO6841	Humidity	53.9 %
Field Strength	3 V/m	Criterion	A
Test Mode	Full Load	Test Engineer	Hy Luo
Test Frequency	80MHz to 1000MHz (Swept Test) 1800MHz, 2600MHz, 3500MHz, 5000MHz (spot test)		
Modulation	<input type="checkbox"/> None <input type="checkbox"/> Pulse <input checked="" type="checkbox"/> AM 1KHz 80%		
Steps	1%		

	Horizontal	Vertical
Front	PASS	PASS
Right	PASS	PASS
Rear	PASS	PASS
Left	PASS	PASS

Note:



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

ANNEX C

(External and internal photos of the EUT)



Fig. 1



Fig. 2





Fig. 3

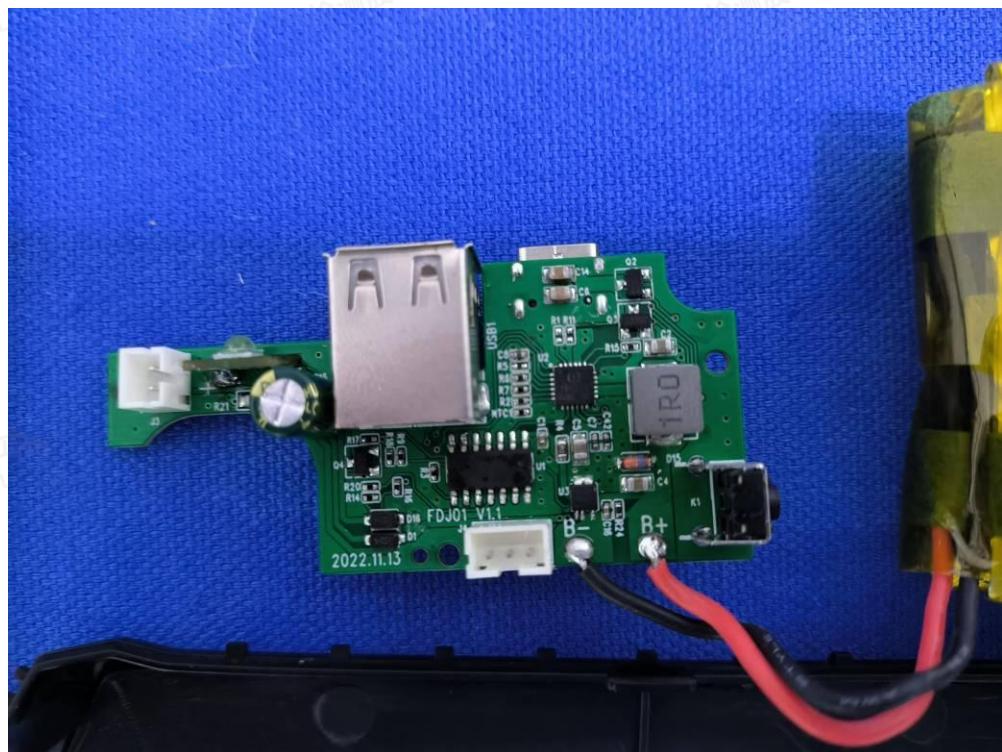


Fig. 4



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, China 518109

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

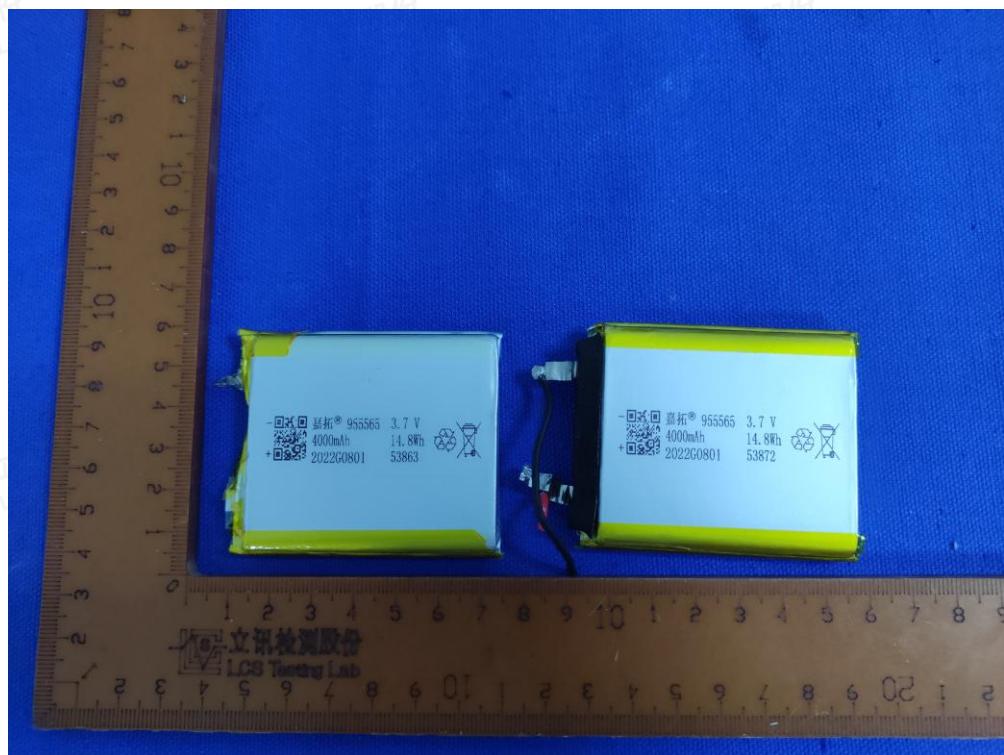


Fig. 5



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



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