

# EMC TEST REPORT

For

Power bank

Test Model: UP-9148

Prepared for :  
Address :

Prepared by : Shenzhen LCS Compliance Testing Laboratory Ltd.  
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Date of receipt of test sample : June 05, 2019  
Number of tested samples : 1  
Serial number : Prototype  
Date of Test : June 05, 2019~ June 12, 2019  
Date of Report : June 14, 2019



**EMC TEST REPORT**

**EN 55032: 2015**

Electromagnetic compatibility of multimedia equipment - Emission Requirements

**EN 55035: 2017**

Electromagnetic compatibility of multimedia equipment – Immunity requirements

**Report Reference No. .... : LCS190604029AE**

**Date of Issue ..... : June 14, 2019**

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

**Address ..... : 101, 601, Xingyuan Industrial Park, Gushu Community,  
Xixiang 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 ..... :**

**Address ..... :**

**Test Specification**

**Standard..... : EN 55032: 2015  
EN 55035: 2017**

**Test Report Form No. .... : LCSEMC-1.0**

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

**Master TRF ..... : Dated 2011-03**

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**Test Item Description..... : Power bank**

**Trade Mark..... : N/A**

**Test Model ..... : UP-9148**

**Ratings ..... : Please Refer To Page 10**

**Result ..... : Positive**

**Compiled by:**

*Skyly Shen*

**Supervised by:**

*Leo Lee*

**Approved by:**



Skyly Shen/ File administrators

Leo Lee/ Technique Principal

Gavin Liang/ Manager

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# EMC -- TEST REPORT

<b>Test Report No. : LCS190604029AE</b>	<u>June 14, 2019</u> Date of issue
-----------------------------------------	---------------------------------------

Test Model..... : UP-9148  EUT..... : Power bank
<b>Applicant</b> ..... : Address..... :  Telephone..... : / Fax..... : /
<b>Manufacturer</b> ..... : Address..... :  Telephone..... : / Fax..... : /
<b>Factory</b> ..... : Address..... :  Telephone..... : / Fax..... : /

<b>Test Result</b>	<b>Positive</b>
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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.

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### Revision History

Revision	Issue Date	Revisions	Revised By
000	June 14, 2019	Initial Issue	Gavin Liang

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## TABLE OF CONTENTS

Test Report Description	Page
<b>1. TEST STANDARDS .....</b>	<b>6</b>
<b>2.SUMMARY OF STANDARDS AND RESULTS .....</b>	<b>7</b>
2.1. DESCRIPTION OF STANDARDS AND RESULTS.....	7
2.2. DESCRIPTION OF PERFORMANCE CRITERIA.....	8
<b>3. GENERAL INFORMATION.....</b>	<b>9</b>
3.1. DESCRIPTION OF DEVICE (EUT).....	9
3.2. DESCRIPTION OF TEST FACILITY.....	9
3.3. STATEMENT OF THE MEASUREMENT UNCERTAINTY.....	9
3.4. MEASUREMENT UNCERTAINTY.....	10
<b>4. MEASURING DEVICES AND TEST EQUIPMENT .....</b>	<b>11</b>
<b>5.TEST RESULTS.....</b>	<b>12</b>
5.1. RADIATED EMISSION MEASUREMENT .....	12
5.2. ELECTROSTATIC DISCHARGE IMMUNITY TEST .....	15
5.3. RF FIELD STRENGTH SUSCEPTIBILITY TEST .....	18
5.4. MAGNETIC FIELD SUSCEPTIBILITY TEST .....	21
<b>6. PHOTOGRAPHS OF TEST SETUP .....</b>	<b>23</b>
<b>7. PHOTOGRAPHS OF THE EUT.....</b>	<b>25</b>

## 1. TEST STANDARDS

The tests were performed according to following standards:

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

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

## 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)			
Description of Test Item	Standard	Limits	Results
Conducted disturbance at mains terminals	EN 55032: 2015	Class B	N/A
Conducted disturbance at telecommunication port	EN 55032: 2015	Class B	N/A
Radiated disturbance	EN 55032: 2015	Class B	PASS
Harmonic current emissions	EN 61000-3-2: 2014	Class A	N/A
Voltage fluctuations & flicker	EN 61000-3-3: 2013	-----	N/A
Immunity (EN 55035: 2017)			
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 61000-4-3: 2006+A2: 2010	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
Radio-frequency, Continuous Conducted Disturbance	EN 61000-4-6: 2014	A	N/A
Power Frequency Magnetic Field	EN 61000-4-8: 2010	A	PASS
Voltage Dips, >95% Reduction	EN 61000-4-11: 2004+A1: 2017	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 1	Discharging	Record
Mode 2	Charging	Pre-scan

\*\*\*Note: All test modes were tested, but we only recorded the worst case in this report.



## 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;
- tests of all peripheral access (hard disks, floppy disks, printers, keyboard, mouse, etc.);
- quality of software execution;
- quality of data display and transmission;
- quality of speech transmission.

#### 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 manufacture 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 manufacture, 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 manufacture's instructions.

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



### 3. GENERAL INFORMATION

#### 3.1. Description of Device (EUT)

EUT	: Power bank
Trade Mark	: N/A
Test Model	: UP-9148
Power Supply	: Micro USB Input: 5V $\leq$ 2A Type C Input: 5V $\leq$ 2A Lightning Input: 5V $\leq$ 1.5A USB Output 1: 5V $\leq$ 1A USB Output 2: 5V $\leq$ 2A

Highest internal frequency (Fx)	Highest measured frequency
Fx $\leq$ 108 MHz	1 GHz
108 MHz < Fx $\leq$ 500 MHz	2 GHz
500 MHz < Fx $\leq$ 1 GHz	5 GHz
Fx > 1 GHz	5 x 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.  
NOTE 2 Fx is defined in EN 55032 Section 3.1.19.  
Where Fx is unknown, the radiated emission measurements shall be performed up to 6 GHz

#### 3.2. Description of Test Facility

FCC Registration Number is 254912.  
Industry Canada Registration Number is 9642A-1.  
ESMD Registration Number is ARCB0108.  
UL Registration Number is 100571-492.  
TUV SUD Registration Number is SCN1081.  
TUV RH Registration Number is UA 50296516-001  
NVLAP Registration Code is 600167-0.

#### 3.3. 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.

### 3.4. Measurement Uncertainty

Test	Parameters	Expanded Uncertainty ( $U_{lab}$ )	Expanded Uncertainty ( $U_{cispr}$ )
Conducted Emission	Level accuracy (9kHz to 150kHz) (150kHz to 30MHz)	$\pm 2.63$ dB $\pm 2.35$ dB	$\pm 3.8$ dB $\pm 3.4$ dB
Power Disturbance	Level accuracy (30MHz to 300MHz)	$\pm 2.90$ dB	$\pm 4.5$ dB
Electromagnetic Radiated Emission (3-loop)	Level accuracy (9kHz to 30MHz)	$\pm 3.60$ dB	$\pm 3.3$ dB
Radiated Emission	Level accuracy (9kHz to 30MHz)	$\pm 3.68$ dB	N/A
Radiated Emission	Level accuracy (30MHz to 1000MHz)	$\pm 3.48$ dB	$\pm 5.3$ dB
Radiated Emission	Level accuracy (above 1000MHz)	$\pm 3.90$ dB	$\pm 5.2$ dB
Mains Harmonic	Voltage	$\pm 0.510\%$	N/A
Voltage Fluctuations & Flicker	Voltage	$\pm 0.510\%$	N/A
EMF	/	$\pm 21.59\%$	N/A

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%.

#### 4. MEASURING DEVICES AND TEST EQUIPMENT

Test Item: Radiated Disturbance (Electric Field)					
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI Test Software	AUDIX	E3	/	2018-06-16
2	3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	2018-06-16
3	Positioning Controller	MF	MF-7082	/	2018-06-16
4	By-log Antenna	SCHWARZBECK	VULB9163	9163-470	2018-07-26
5	Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-1925	2018-07-02
6	EMI Test Receiver	R&S	ESR 7	101181	2018-06-16
7	RS SPECTRUM ANALYZER	R&S	FSP40	100503	2018-11-15
8	AMPLIFIER	QuieTek	QTK	CHM/0809065	2018-11-15
9	RF Cable-R03m	Jye Bao	RG142	CB021	2018-06-16
10	RF Cable-HIGH	SUHNER	SUCOFLEX 106	03CH03-HY	2018-06-16

Test Item: Electrostatic Discharge					
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	ESD Simulator	SCHLODER	SESD 230	604035	2018-07-02

Test Item: RF Field Strength Susceptibility					
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	RS Test Software	Tonscend	/	/	2018-06-16
2	ESG Vector Signal Generator	Agilent	E4438C	MY42081396	2018-11-15
3	3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	2018-06-16
4	RF POWER AMPLIFIER	OPHIR	5225R	1052	NCR
5	RF POWER AMPLIFIER	OPHIR	5273F	1019	NCR
6	Stacked Broadband Log Periodic Antenna	SCHWARZBECK	STLP 9128	9128ES-145	NCR
7	Stacked Mikrowellen Log.-Per Antenna	SCHWARZBECK	STLP 9149	9149-484	NCR
8	Electric field probe	Narda S.TS./PMM	EP601	611WX80208	2019-03-25

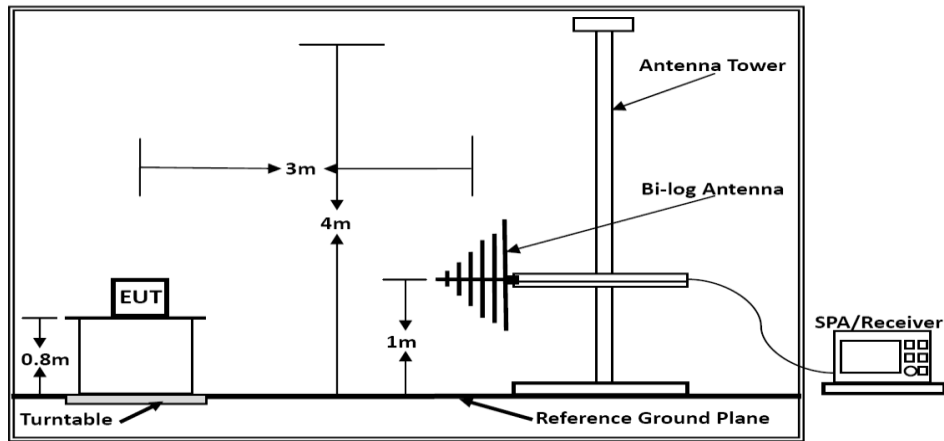
Note: NCR means no calibration requirement

Test Item: Power Frequency Magnetic Field Susceptibility					
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Power frequency mag-field generator System	EVERFINE	EMS61000-8K	906003	2018-06-16

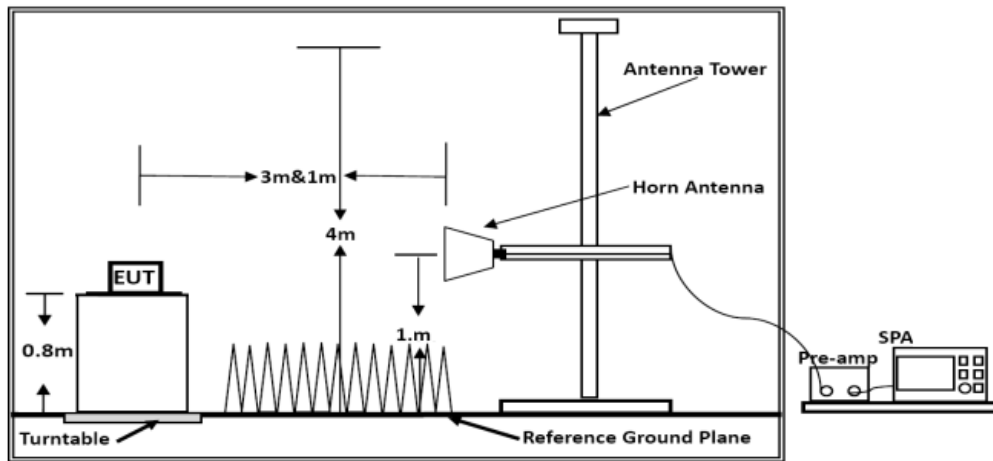
## 5. TEST RESULTS

### 5.1. RADIATED EMISSION MEASUREMENT

#### 5.1.1. Block Diagram of Test Setup



Below 1GHz



Above 1GHz

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### 5.1.2. Test Standard

EN 55032: 2015 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 $\mu$ 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 $\mu$ V/m)	Average Limit (dB $\mu$ 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 radiated 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 mode (1) 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 an 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/1000kHz.

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

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

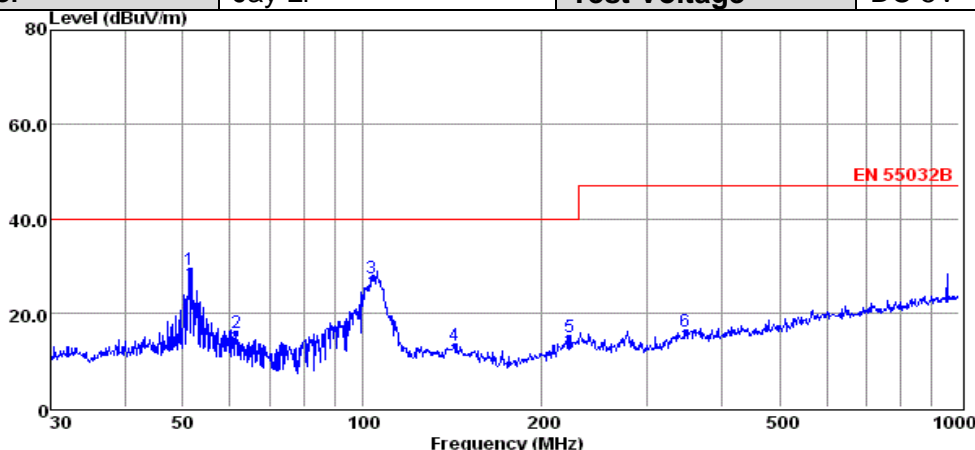
The frequency range from 1GHz to the frequency which about 5th carrier harmonic or 6GHz is checked.

### 5.1.6. Test Results

**PASS.**

The test result please refer to the next page.

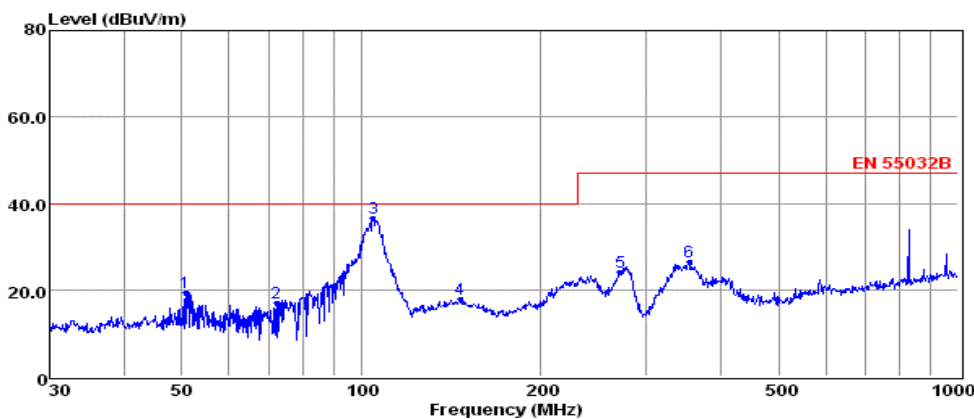
<b>Test Model</b>	UP-9148	<b>Test Mode</b>	Mode 1
<b>Environmental Conditions</b>	23.9°C, 54.1% RH	<b>Detector Function</b>	Quasi-peak
<b>Pol.</b>	Vertical	<b>Distance</b>	3m
<b>Test Engineer</b>	Jay Li	<b>Test Voltage</b>	DC 5V



	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	51.30	15.43	0.54	13.19	29.16	40.00	-10.84	QP
2	61.35	3.17	0.48	12.16	15.81	40.00	-24.19	QP
3	103.81	14.04	0.61	12.81	27.46	40.00	-12.54	QP
4	142.82	4.13	0.71	8.21	13.05	40.00	-26.95	QP
5	222.17	2.58	0.95	11.30	14.83	40.00	-25.17	QP
6	348.03	0.72	1.13	14.24	16.09	47.00	-30.91	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>Test Model</b>	UP-9148	<b>Test Mode</b>	Mode 1
<b>Environmental Conditions</b>	23.9°C, 54.1% RH	<b>Detector Function</b>	Quasi-peak
<b>Pol.</b>	Horizontal	<b>Distance</b>	3m
<b>Test Engineer</b>	Jay Li	<b>Test Voltage</b>	DC 5V



	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	50.76	5.68	0.54	13.21	19.43	40.00	-20.57	QP
2	72.08	7.97	0.55	8.30	16.82	40.00	-23.18	QP
3	104.54	23.17	0.61	12.75	36.53	40.00	-3.47	QP
4	146.37	8.98	0.77	8.23	17.98	40.00	-22.02	QP
5	271.32	10.62	0.99	12.40	24.01	47.00	-22.99	QP
6	354.18	11.08	1.15	14.34	26.57	47.00	-20.43	QP

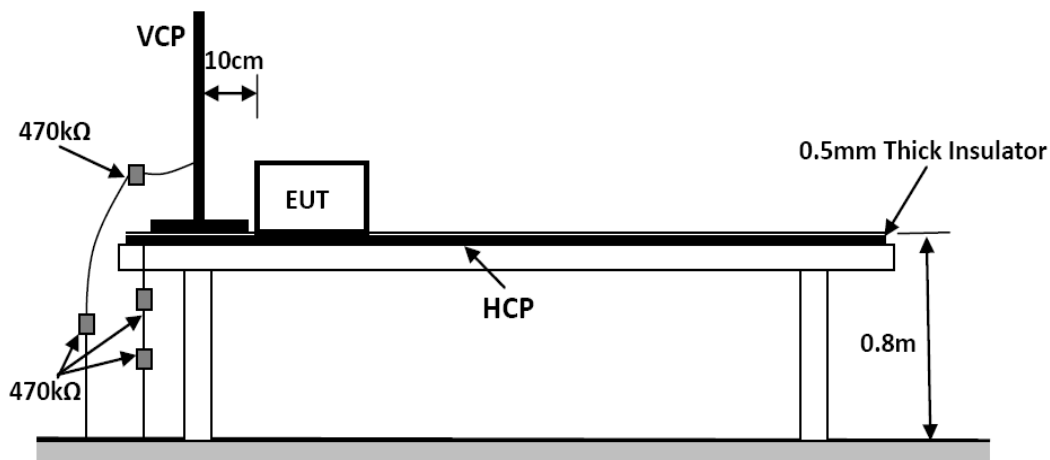
Note: 1. All readings are Quasi-peak values.  
 2. Measured= Reading + Antenna Factor + Cable Loss  
 3. The emission that are 20db below the official limit are not reported

Remark: Pre-San all mode, Thus record worse case mode result in this report

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## 5.2. ELECTROSTATIC DISCHARGE IMMUNITY TEST

### 5.2.1. Block Diagram of Test Setup



### 5.2.2. Test Standard

EN 55035: 2017 (EN 61000-4-2: 2009, Severity Level: 3 / Air Discharge: ±8KV, Level: 2 / Contact Discharge: ±4KV)

### 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 4.

### 5.2.5. Operating Condition of EUT

Same as radiated emission measurement, which is listed in Section 5.1.1. Except the test set up replaced by Section 5.2.1

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## 5.2.6. Test Procedure

### 5.2.6.1. 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

### 5.2.6.2. Contact Discharge

All the procedure shall be same as Section 5.2.1. Except that the tip of the discharge electrode shall touch the EUT before the discharge switch is operated.

### 5.2.6.3. 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.

### 5.2.6.4. Indirect Discharge For Vertical Coupling Plane

At least 10 single discharge (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.

## 5.2.7. Test Results

**PASS.**

The test result please refer to the next page.

# Electrostatic Discharge Test Results

<b>Standard</b>	<input type="checkbox"/> IEC 61000-4-2 <input checked="" type="checkbox"/> EN 61000-4-2		
<b>Applicant</b>	SHENZHEN UNIWINS TECHNOLOGY CO., LTD		
<b>EUT</b>	Power bank	<b>Temperature</b>	24.5°C
<b>M/N</b>	UP-9148	<b>Humidity</b>	54.1%
<b>Criterion</b>	B	<b>Pressure</b>	1021mbar
<b>Test Mode</b>	Mode 1	<b>Test Engineer</b>	Jay Li
<b>Test Voltage</b>	DC 5V		

## 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

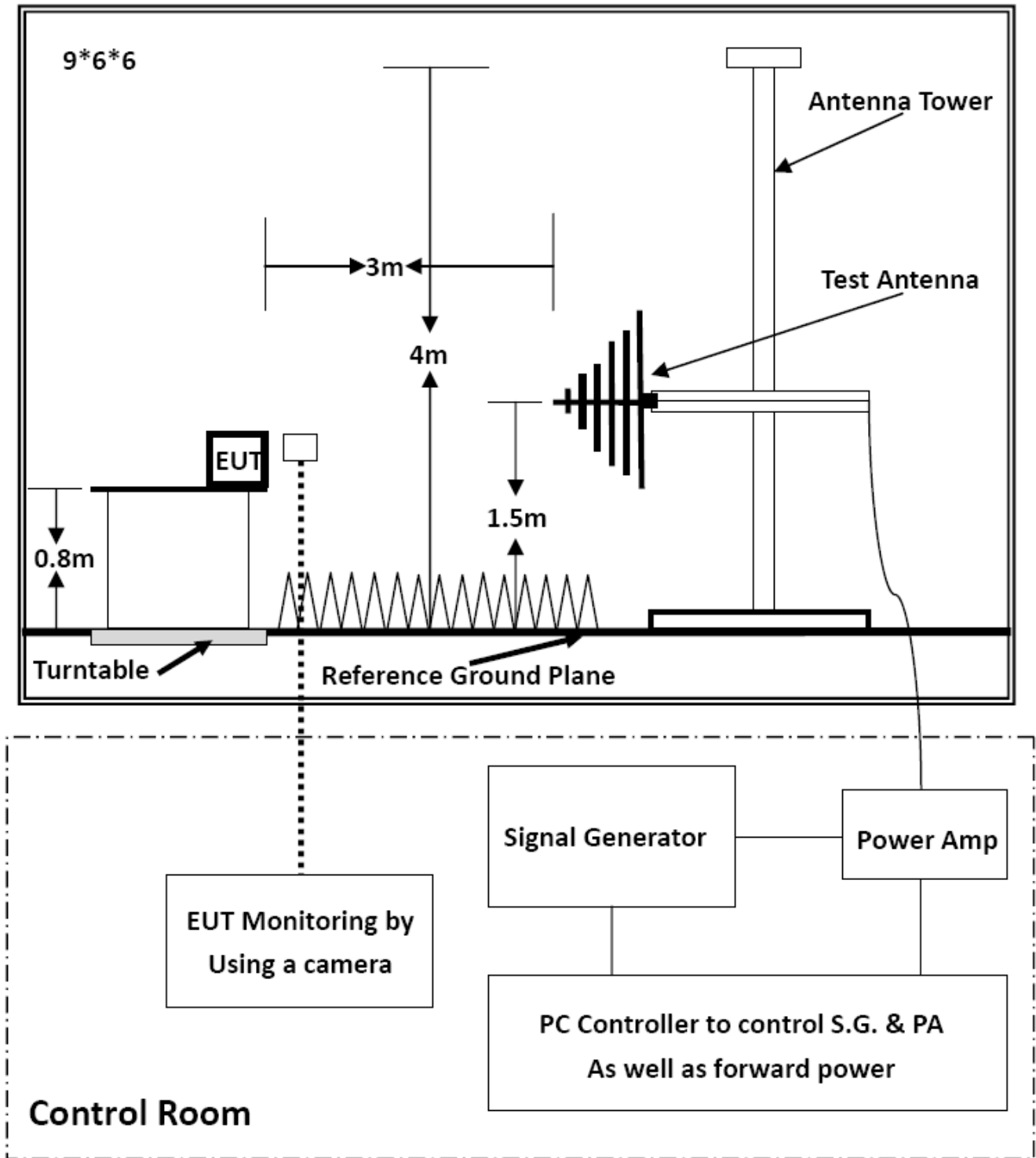
## Discharge To Vertical Coupling Plane

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

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### 5.3. RF FIELD STRENGTH SUSCEPTIBILITY TEST

#### 5.3.1. Block Diagram of Test Setup



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**5.3.2. Test Standard**

EN 55035: 2017 (EN 61000-4-3: 2006+A2: 2010 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 4.

**5.3.5. Operating Condition of EUT**

Same as radiated emission measurement, which is listed in Section 5.1.1, 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.**

The test result please refer to the next page.

# RF Field Strength Susceptibility Test Results

<b>Standard</b>	<input type="checkbox"/> IEC 61000-4-3 <input checked="" type="checkbox"/> EN 61000-4-3		
<b>Applicant</b>	SHENZHEN UNIWINS TECHNOLOGY CO., LTD		
<b>EUT</b>	Power bank	<b>Temperature</b>	23.9°C
<b>M/N</b>	UP-9148	<b>Humidity</b>	54.1%
<b>Field Strength</b>	3 V/m	<b>Criterion</b>	A
<b>Test Mode</b>	Mode 1	<b>Test Engineer</b>	Jay Li
<b>Test Frequency</b>	80MHz to 1000MHz (Swept Test) 1800MHz, 2600MHz, 3500MHz, 5000MHz (spot test)	<b>Test Voltage</b>	DC 5V
<b>Modulation</b>	<input type="checkbox"/> None <input type="checkbox"/> Pulse <input checked="" type="checkbox"/> AM 1KHz 80%		
<b>Steps</b>	1%		

	Horizontal	Vertical
<b>Front</b>	PASS	PASS
<b>Right</b>	PASS	PASS
<b>Rear</b>	PASS	PASS
<b>Left</b>	PASS	PASS

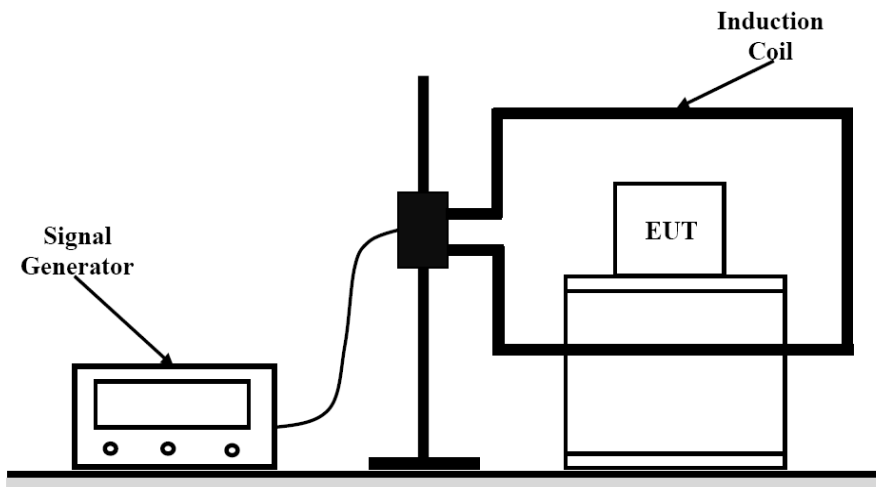
## Test Equipment:

1. Signal Generator: 2031 (MARCONI)
2. Power Amplifier: 500A100 & 100W/1000M1 (A&R)
3. Power Antenna: 3108 (EMCO) & AT1080 (A&R)
4. Field Monitor: FM2000 (A&R)

## Note:

### 5.4. MAGNETIC FIELD SUSCEPTIBILITY TEST

#### 5.4.1. Block Diagram of Test Setup



#### 5.4.2. Test Standard

EN 55035: 2017 (EN 61000-4-8: 2010, Severity Level: Level 1, 1A/m)

#### 5.4.3. Severity Levels and Performance Criterion

##### 5.4.3.1. Severity level

Level	Field Strength (A/m)
1	1
2	3
3	10
4	30
5	100
X	Special

##### 5.4.3.2. Performance Criterion

Performance Criterion: A

#### 5.4.4. EUT Configuration on Test

The configuration of EUT is listed in Section 4.

#### 5.4.5. Test Procedure

The EUT is placed in the middle of a induction coil (1\*1m), under which is a 1\*1\*0.1m (high) table, this small table is also placed on a larger table, 0.8 m above the ground. Both horizontal and vertical polarization of the induction coil is set on test, so that each side of the EUT is affected by the magnetic field. Also can reach the same aim by change the position of the EUT.

#### 5.4.6. Test Results

**PASS.**

The test result please refer to the next page.

# Magnetic Field Immunity Test Result

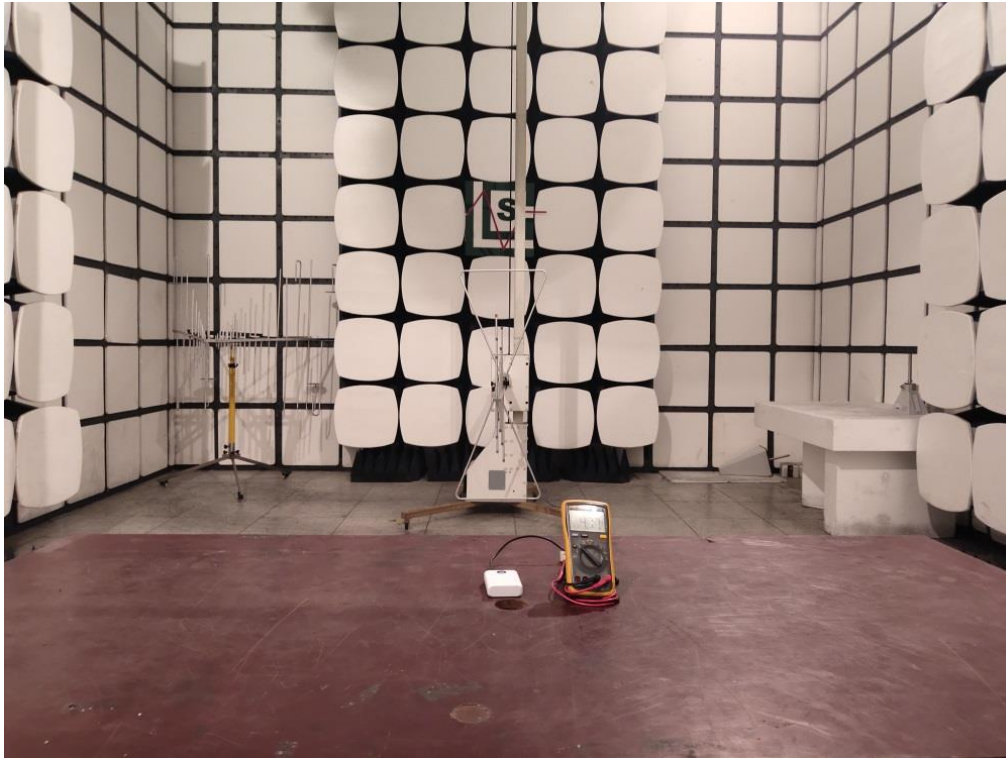
<b>Standard</b>	<input type="checkbox"/> IEC 61000-4-8 <input checked="" type="checkbox"/> EN 61000-4-8		
<b>Applicant</b>	SHENZHEN UNIWINS TECHNOLOGY CO., LTD		
<b>EUT</b>	Power bank	<b>Temperature</b>	24.5°C
<b>M/N</b>	UP-9148	<b>Humidity</b>	54.1%
<b>Test Mode</b>	Mode 1	<b>Criterion</b>	A
<b>Test Engineer</b>	Jay Li	<b>Test Voltage</b>	DC 5V

Test Level (A/M)	Testing Duration	Coil Orientation	Criterion	Result
1	5 mins	X	A	PASS
1	5 mins	Y	A	PASS
1	5 mins	Z	A	PASS

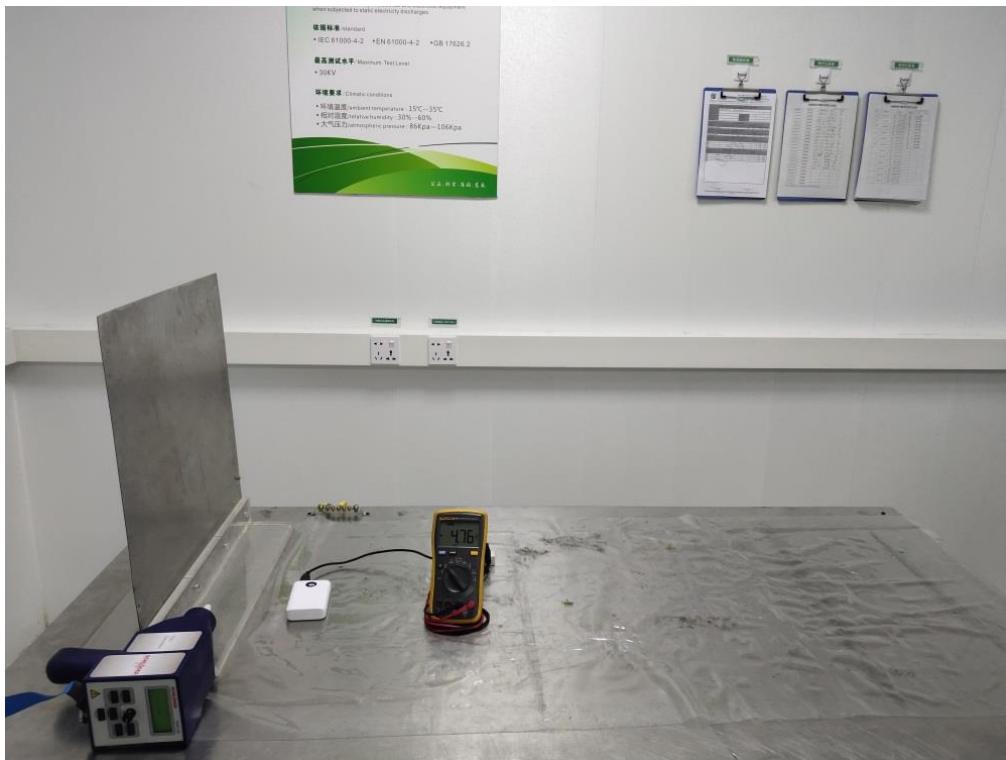
Note:



## 6. PHOTOGRAPHS OF TEST SETUP

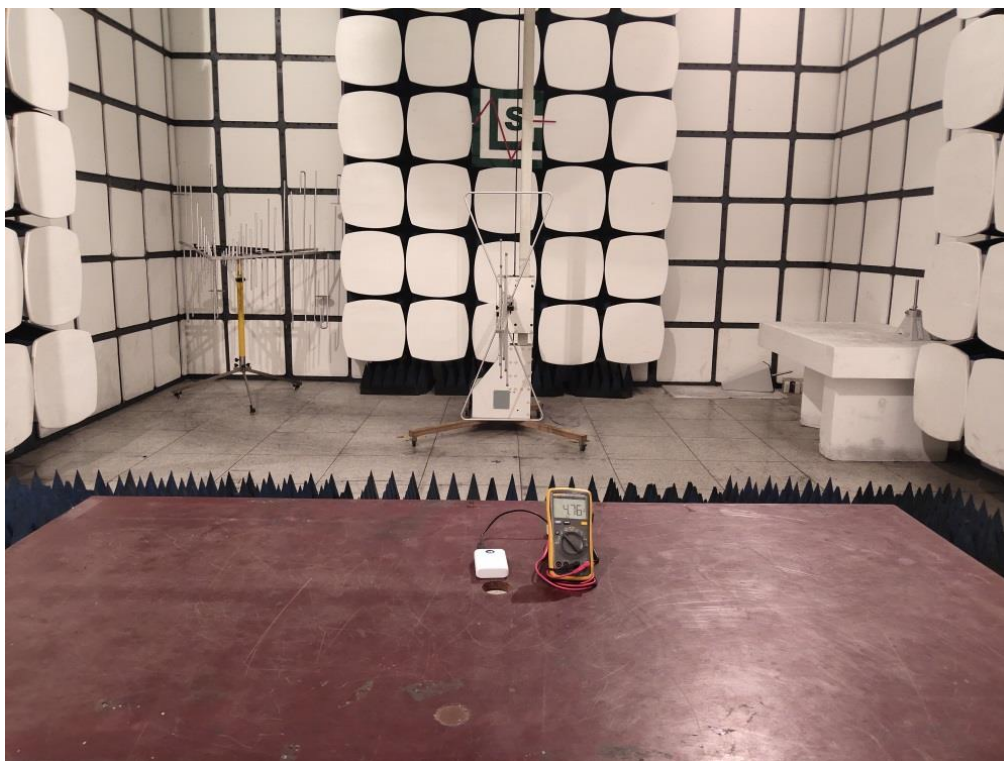


Test Setup Photo of Radiated Measurement (30MHz~1GHz)



Test Setup Photo of Electrostatic Discharge Test

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Test Setup Photo of RF Electromagnetic Field Measurement



Test Setup Photo of Magnetic Field Immunity Test

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### 7. PHOTOGRAPHS OF THE EUT

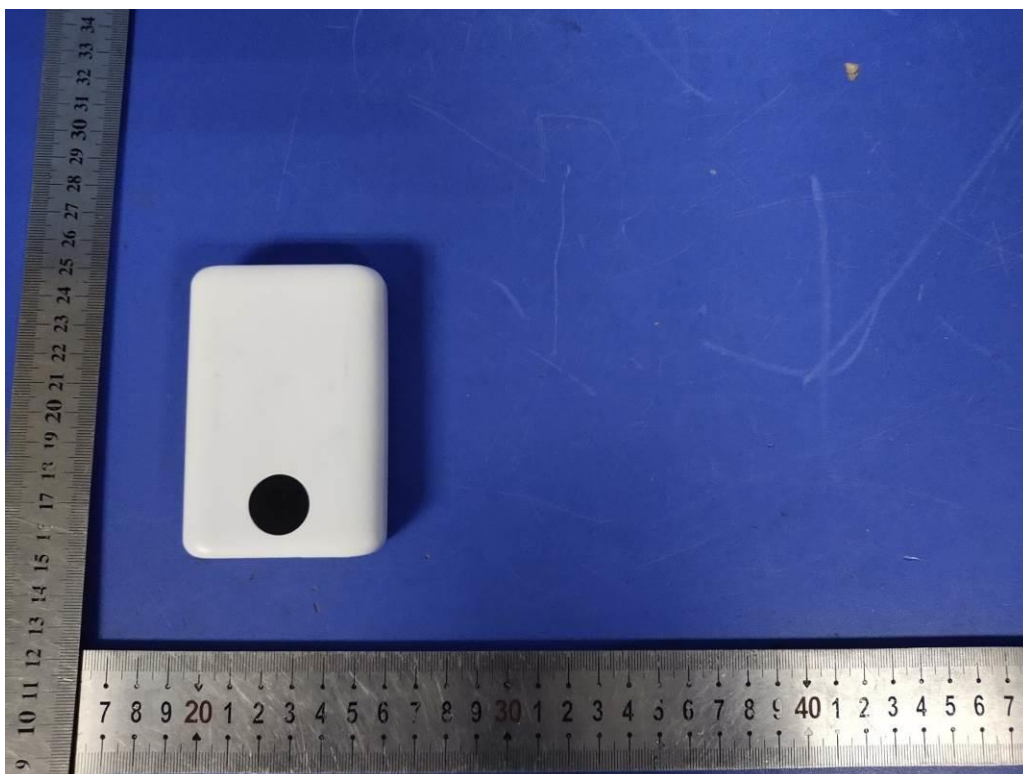


Fig. 1

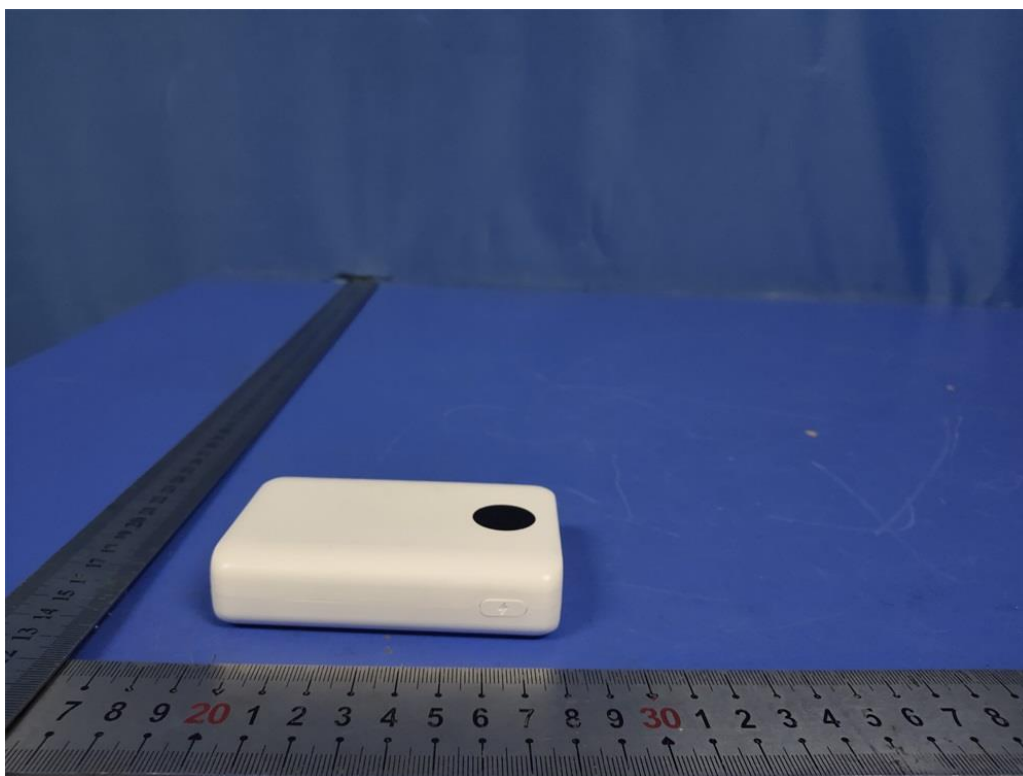


Fig. 2



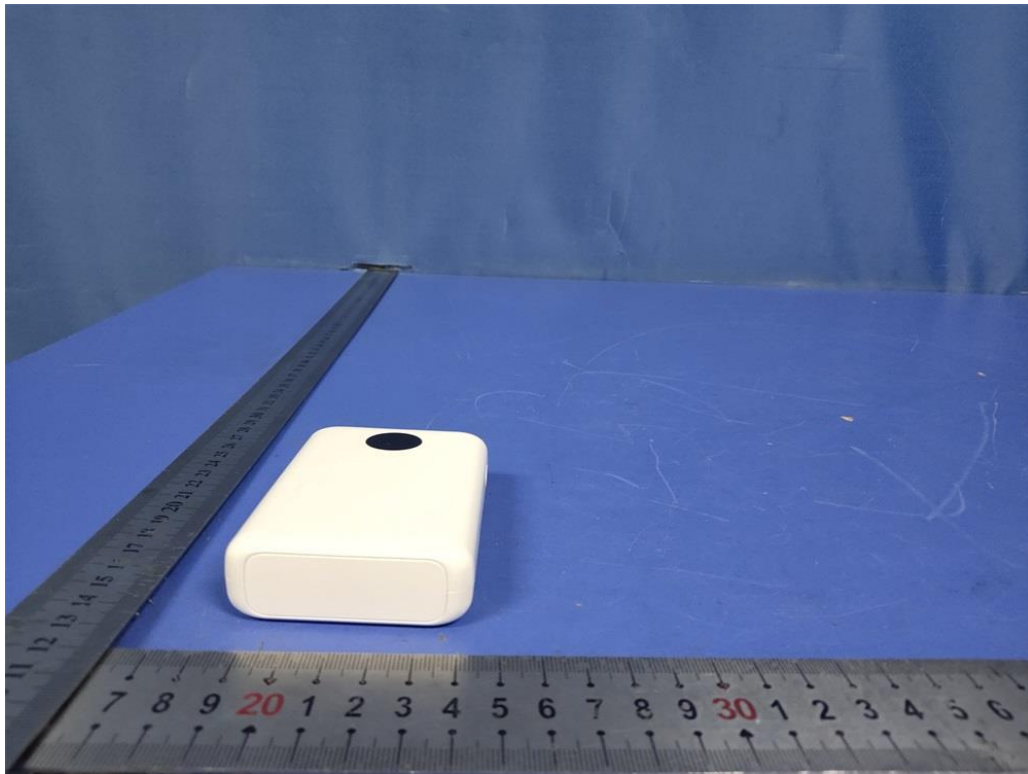


Fig. 3

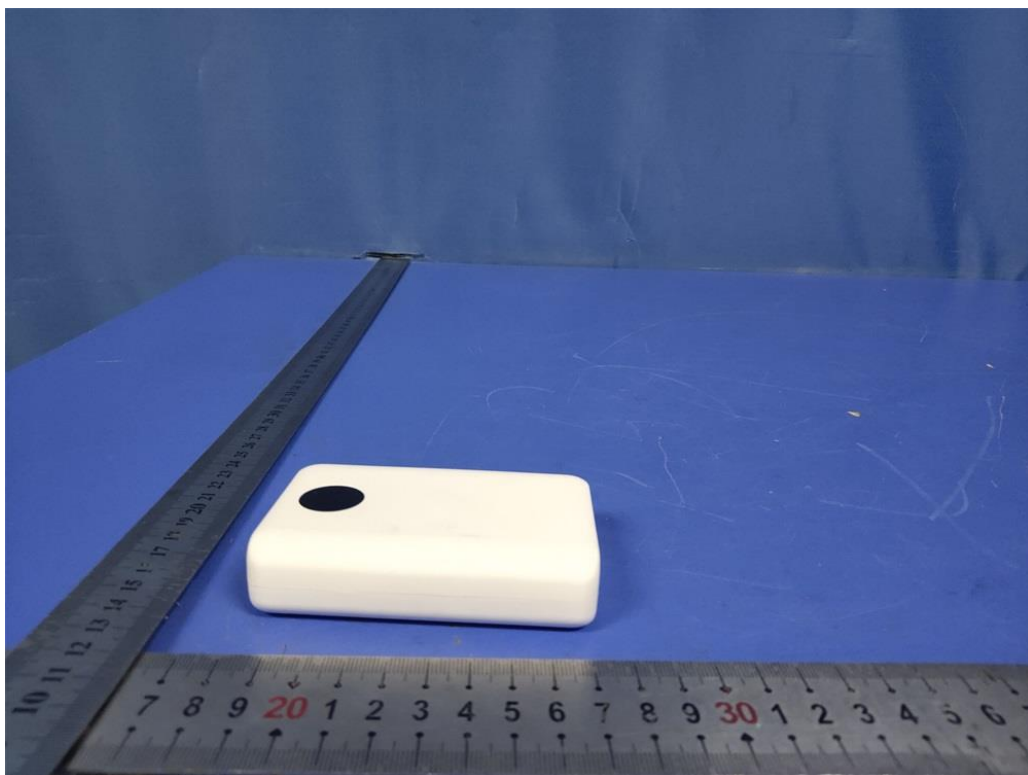


Fig. 4

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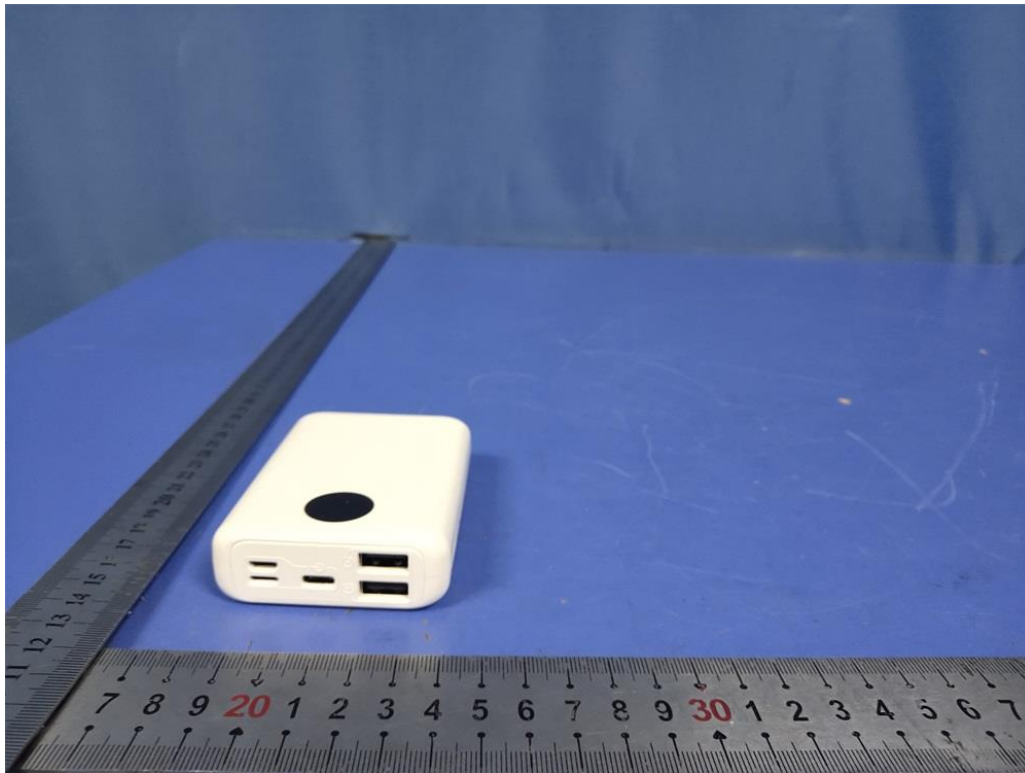


Fig. 5



Fig. 6

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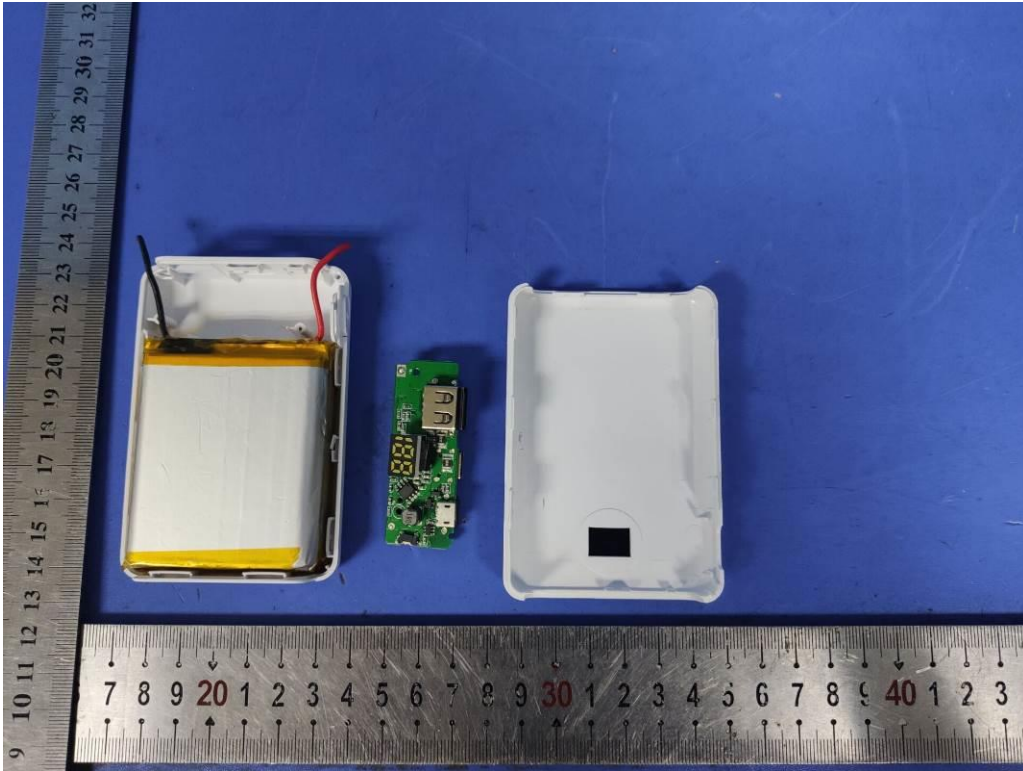


Fig. 7

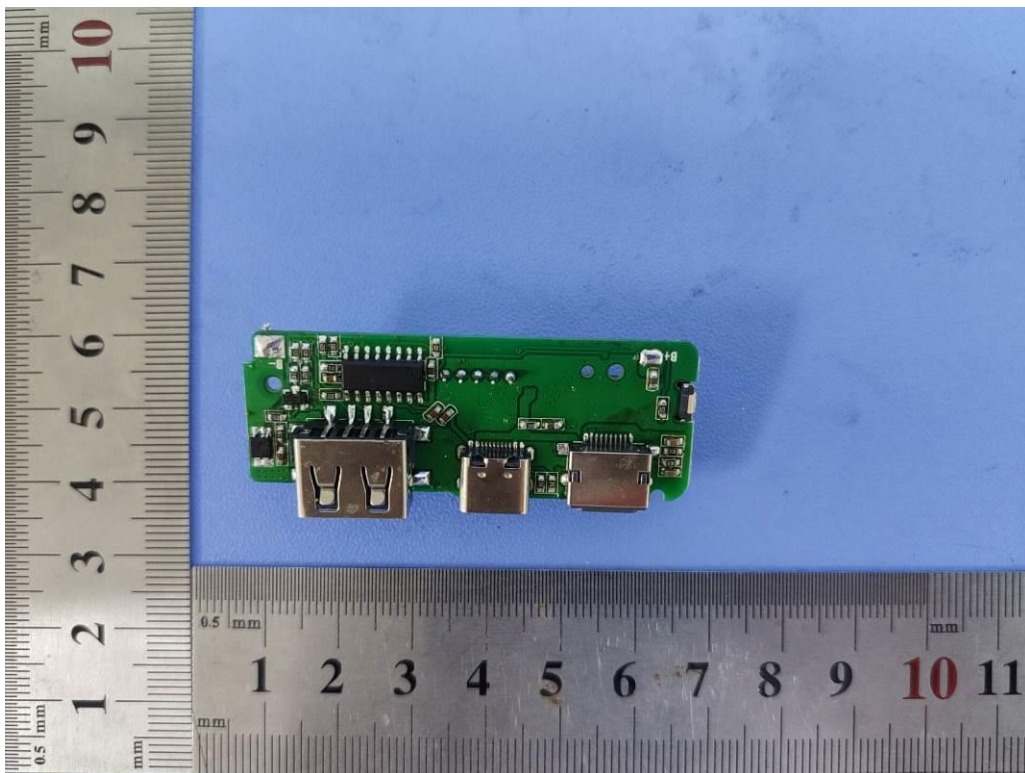


Fig. 8

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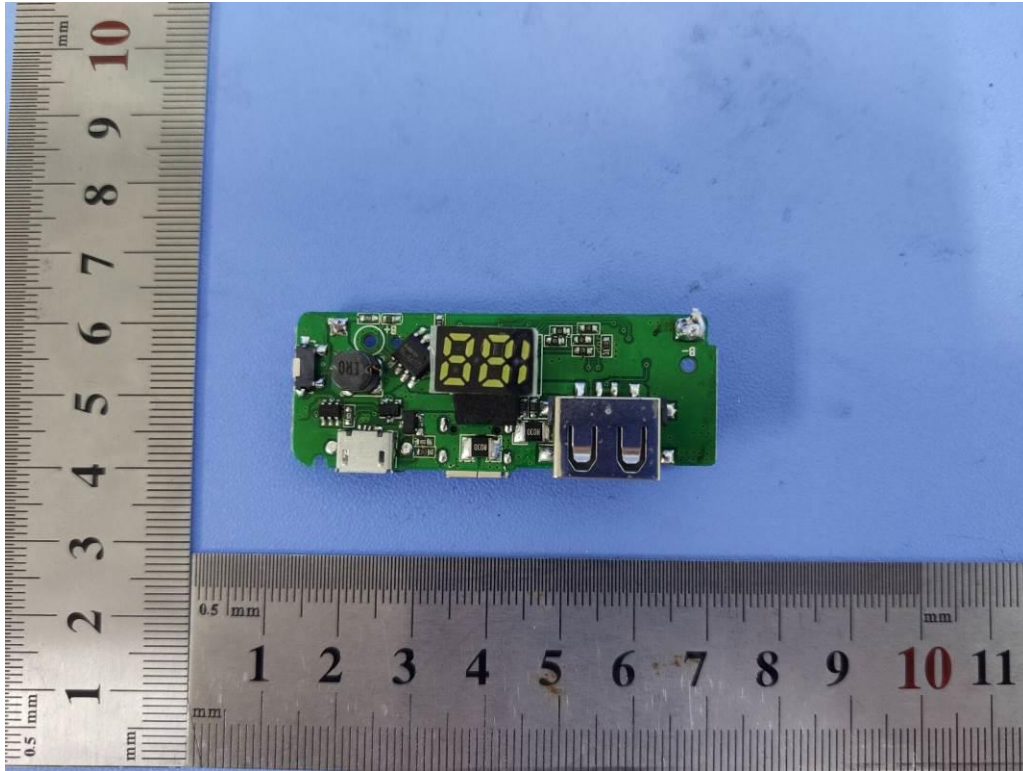


Fig. 9

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

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