

FCC Part 15, Supart B, Class B(sDoC)  
TEST REPORT

Power Bank

Test Model: UP-9111

Prepared for :  
Address :

Prepared by : Shenzhen LCS Compliance Testing Laboratory Ltd.  
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Date of receipt of test sample : October 11, 2018  
Number of tested samples : 1  
Serial number : Prototype  
Date of Test : October 11, 2018 ~ October 15, 2018  
Date of Report : October 23, 2018



## FCC TEST REPORT

### FCC Part 15, Supart B, Class B(sDoC)

**Report Reference No.** ..... : LCS181010011AE

**Date Of Issue** ..... : October 23, 2018

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

**Address** ..... : Xingyuan Industrial Park, Tongda Road, Bao'an Avenue, 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**..... : FCC Part 15, Supart B, Class B(sDoC), ANSI C63.4 -2014

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

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

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

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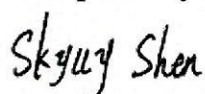
**Test Item Description**..... : Power Bank

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

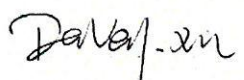
**Test Model**..... : UP-9111

**Ratings**..... : Input: MICRO USB 5V/2A; TYPE-C 5V/2A  
 Output: USB-A 5V/2.4A TYPE-C: 5V/2.4A

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

**Compiled by:**


Skylly Shen / File administrators

**Supervised by:**


Davey Xu/ Technique principal

**Approved by:**


Leo Lee/ Manager

**FCC -- TEST REPORT****Test Report No. : LCS181010011AE**October 23, 2018

Date of issue

Test Model..... : UP-9111

EUT..... : Power Bank

**Applicant..... :**

Address..... :

Telephone..... : /

Fax..... : /

**Manufacturer..... :**

Address..... :

Telephone..... : /

Fax..... : /

**Factory..... :**

Address..... :

Telephone..... : /

Fax..... : /

**Test Result** according to the standards on page 6: **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

Revision	Issue Date	Revisions	Revised By
000	October 23, 2018	Initial Issue	Leo Lee

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# 1. SUMMARY OF STANDARDS AND RESULTS

## 1.1. Description of Standards and Results

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

EMISSION			
Description of Test Item	Standard	Limits	Results
Conducted disturbance at mains terminals	FCC Part 15, Supart B, Class B(sDoC), ANSI C63.4 -2014	Class B	N/A
Radiated disturbance	FCC Part 15, Supart B, Class B(sDoC), ANSI C63.4 -2014	Class B	PASS
N/A is an abbreviation for Not Applicable.			

Test mode:		
Mode 1	Discharging(5V/2.4A)	Record
Mode 2	Charging	Pre-scan
***Note: All test modes were tested, but we only recorded the worst case in this report.		

## 2. GENERAL INFORMATION

### 2.1. Description of Device (EUT)

EUT	: Power Bank
Trade Mark	: N/A
Test Model	: UP-9111
Power Supply	: Input: MICRO USB 5V/2A; TYPE-C 5V/2A Output: USB-A 5V/2.4A TYPE-C: 5V/2.4A
EUT Clock Frequency	: $\leq 108\text{MHz}$

### 2.2. Description of Test Facility

Site Description	
EMC Lab.	: 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.

### 2.3. 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.

## 2.4. Measurement Uncertainty

Test	Parameters	Expanded uncertainty ( $U_{\text{lab}}$ )	Expanded uncertainty ( $U_{\text{cispr}}$ )
Conducted Emission	Level accuracy (9kHz to 150kHz) (150kHz to 30MHz)	$\pm 2.63$ dB $\pm 2.35$ dB	$\pm 4.0$ dB $\pm 3.6$ 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	$\pm 2.63$ dB
Radiated Emission	Level accuracy (9kHz to 30MHz)	$\pm 3.68$ dB	$\pm 2.63$ dB
Radiated Emission	Level accuracy (30MHz to 1000MHz)	$\pm 3.48$ dB	$\pm 2.63$ dB
Radiated Emission	Level accuracy (above 1000MHz)	$\pm 3.90$ dB	N/A
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%.



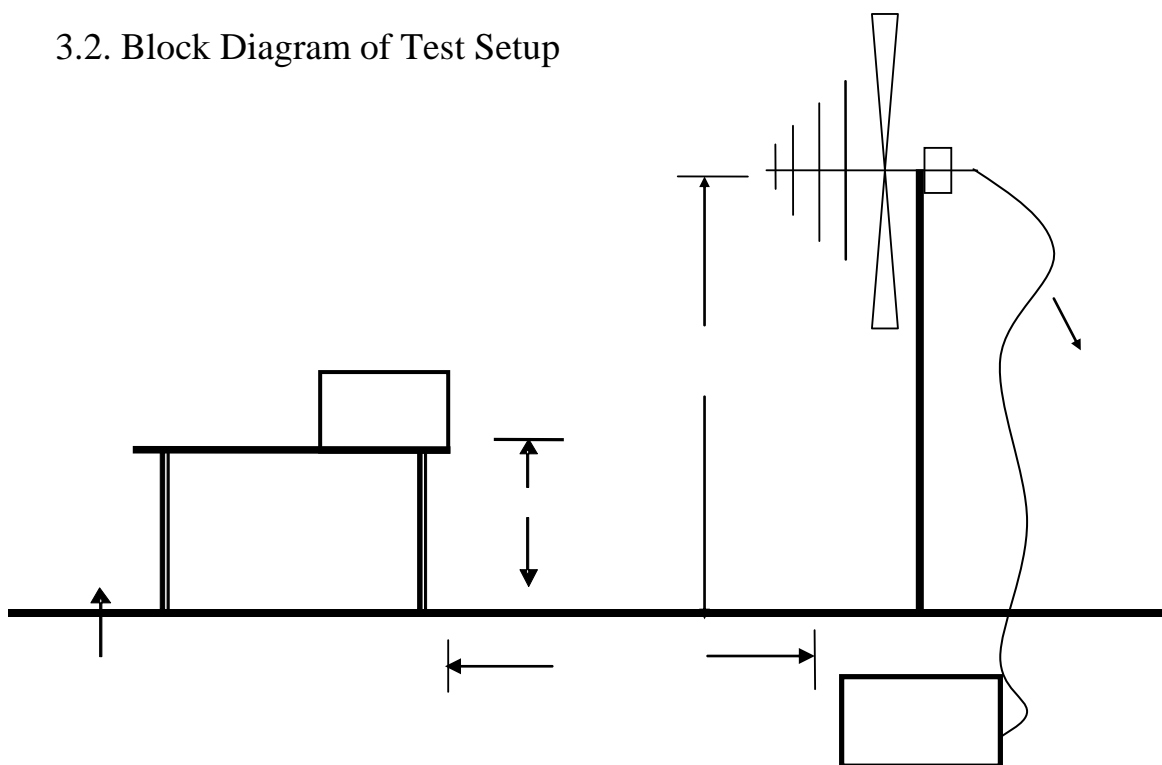
### 3. RADIATED EMISSION MEASUREMENT

#### 3.1. Test Equipment

The following test equipments are used during the radiated emission measurement:

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	2018-06-16
2	EMI Test Receiver	ROHDE & SCHWARZ	ESR 7	101181	2018-06-16
3	By-log Antenna	SCHWARZBECK	VULB9163	9163-470	2018-05-01
4	EMI Test Software	AUDIX	E3	N/A	2018-06-16
5	Positioning Controller	MF	MF-7082	/	2018-06-16

#### 3.2. Block Diagram of Test Setup



#### 3.3. Radiated Emission Limit (Class B)

Limits for radiated disturbance Blow 1GHz

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		$\mu\text{V}/\text{m}$	$\text{dB}(\mu\text{V})/\text{m}$
30 ~ 88	3	100	40
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46
960 ~ 1000	3	500	54

Remark: (1) Emission level  $(\text{dB})\mu\text{V} = 20 \log$  Emission level  $\mu\text{V}/\text{m}$   
(2) The smaller limit shall apply at the cross point between two frequency bands.  
(3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

### 3.4. EUT Configuration on Measurement

The following equipment are installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

### 3.5. Operating Condition of EUT

3.5.1. Setup the EUT as shown in Section 3.2.

3.5.2. Let the EUT work in test mode (1) and measure it.

### 3.6. Test Procedure

EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated by-log antenna) is used as receiving antenna. Both horizontal and vertical polarization of the antenna is set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4-2009 on radiated emission measurement.

The bandwidth of the EMI test receiver is set at 120kHz, 1000kHz.

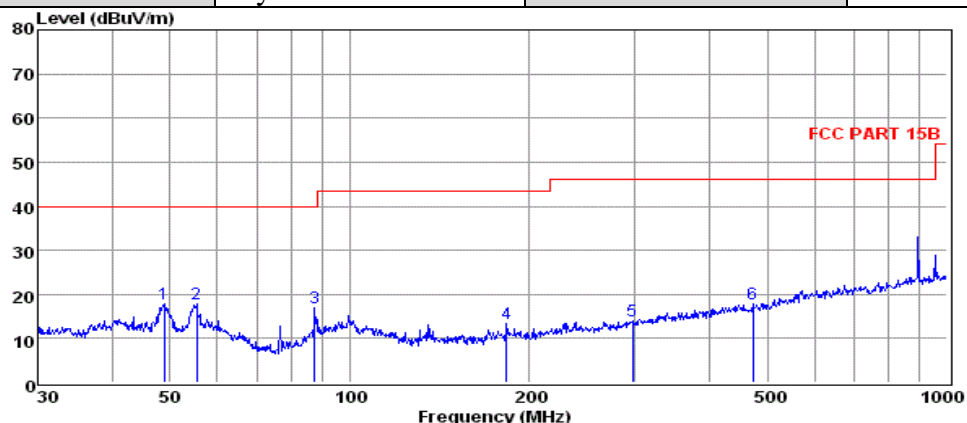
The frequency range from 30MHz to 1000MHz is checked.

### 3.7. Radiated Emission Noise Measurement Result

**PASS.**

The scanning waveforms please refer to the next page.

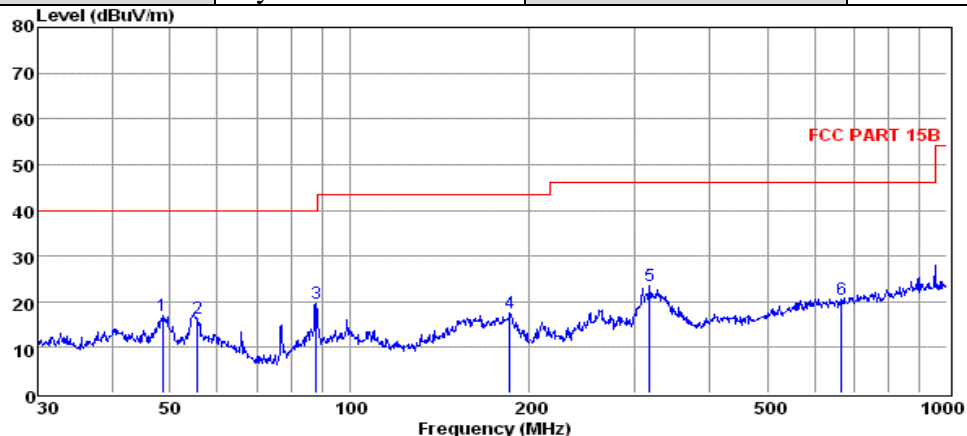
Test Model	UP-9111	Test Mode	Mode 1(5V/2.4A)
Environmental Conditions	23.4℃, 53.6% RH	Detector Function	Quasi-peak
Pol	Vertical	Distance	3m
Test Engineer	Jay Li		



	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	48.84	4.12	0.35	13.32	17.79	40.00	-22.21	QP
2	55.41	4.24	0.47	12.99	17.70	40.00	-22.30	QP
3	87.42	5.30	0.47	11.08	16.85	40.00	-23.15	QP
4	183.20	2.62	0.70	9.96	13.28	43.50	-30.22	QP
5	297.22	-0.24	1.12	13.01	13.89	46.00	-32.11	QP
6	473.83	0.51	1.38	15.92	17.81	46.00	-28.19	QP

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

Test Model	UP-9111	Test Mode	Mode 1(5V/2.4A)
Environmental Conditions	23.4℃, 53.6% RH	Detector Function	Quasi-peak
Pol	Horizontal	Distance	3m
Test Engineer	Jay Li		



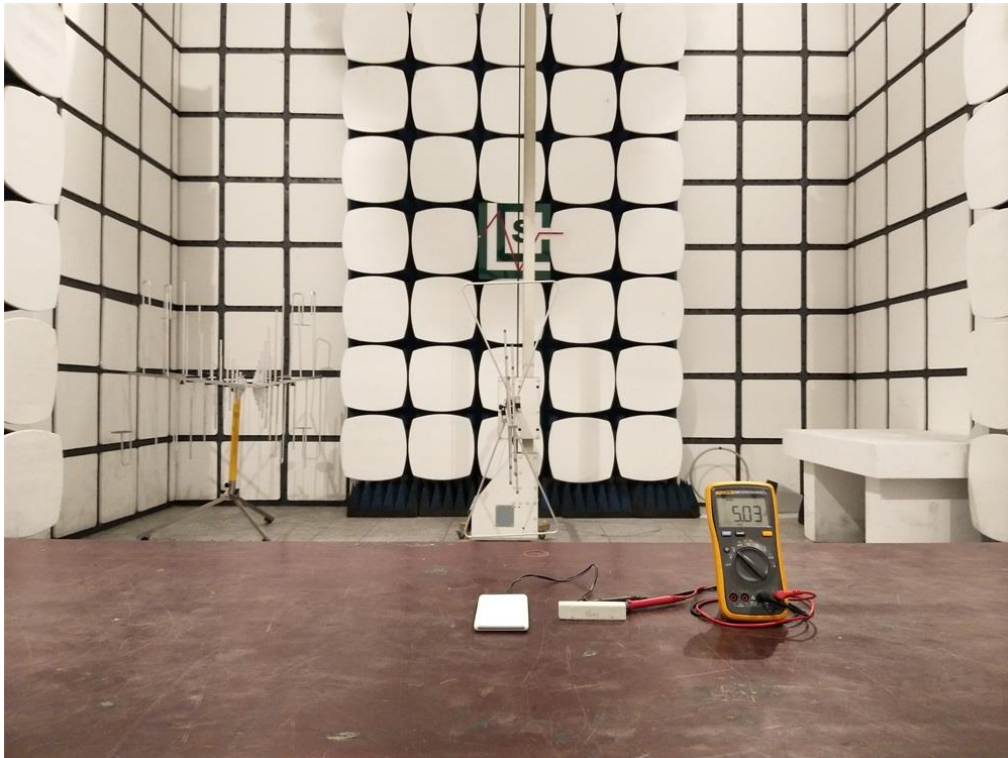
	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	48.50	3.26	0.35	13.34	16.95	40.00	-23.05	QP
2	55.61	3.03	0.47	12.98	16.48	40.00	-23.52	QP
3	87.72	8.02	0.47	11.18	19.67	40.00	-20.33	QP
4	185.14	6.85	0.70	10.13	17.68	43.50	-25.82	QP
5	317.70	9.22	1.01	13.30	23.53	46.00	-22.47	QP
6	665.80	0.35	1.55	18.69	20.59	46.00	-25.41	QP

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

Note: Pre-Scan all mode, Thus record worse case mode result in this report.

## 4. PHOTOGRAPH

### 4.1. Photo of Radiated Measurement



## 5. EXTERNAL AND INTERNAL PHOTOS OF THE EUT

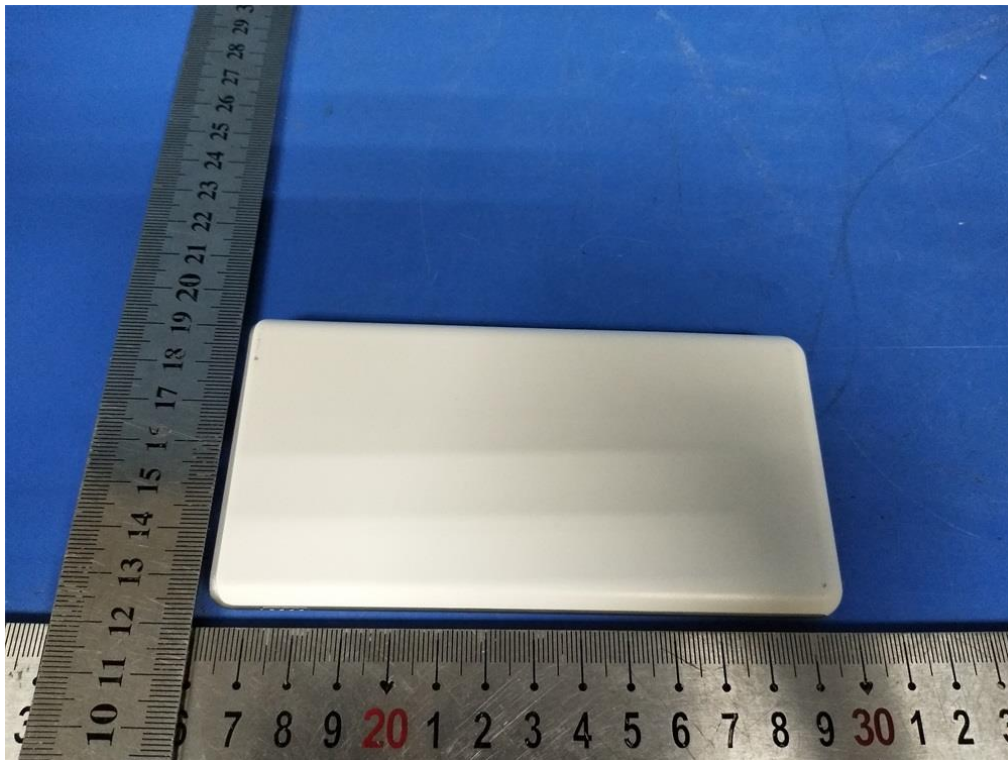


Fig. 1



Fig. 2



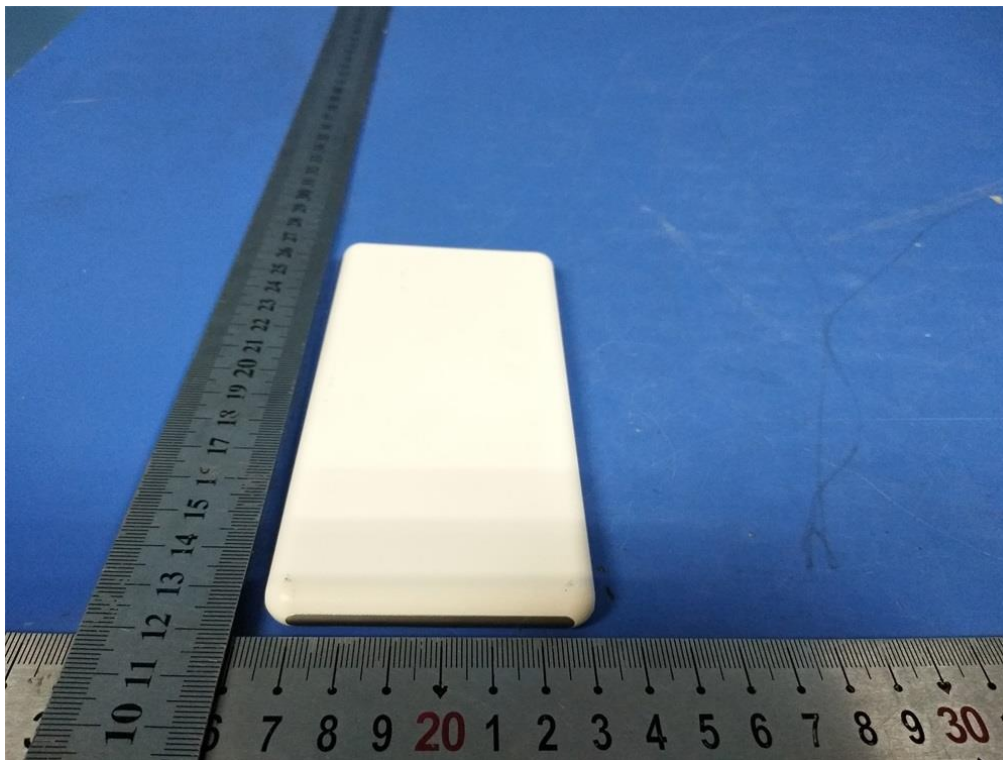


Fig. 3

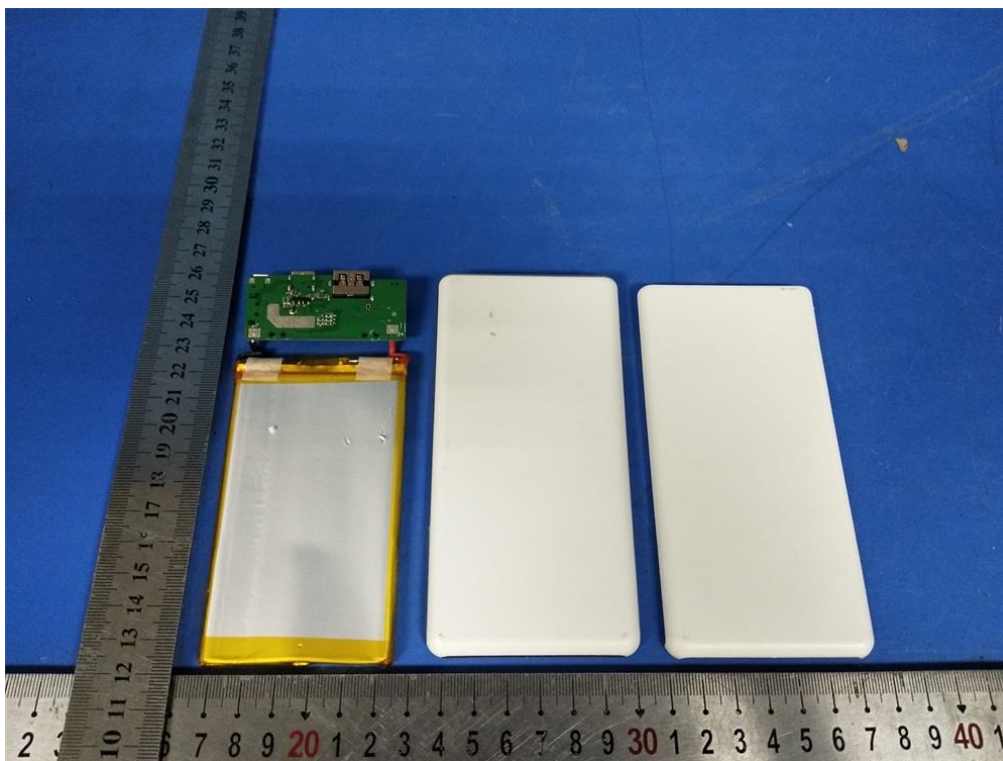


Fig. 4

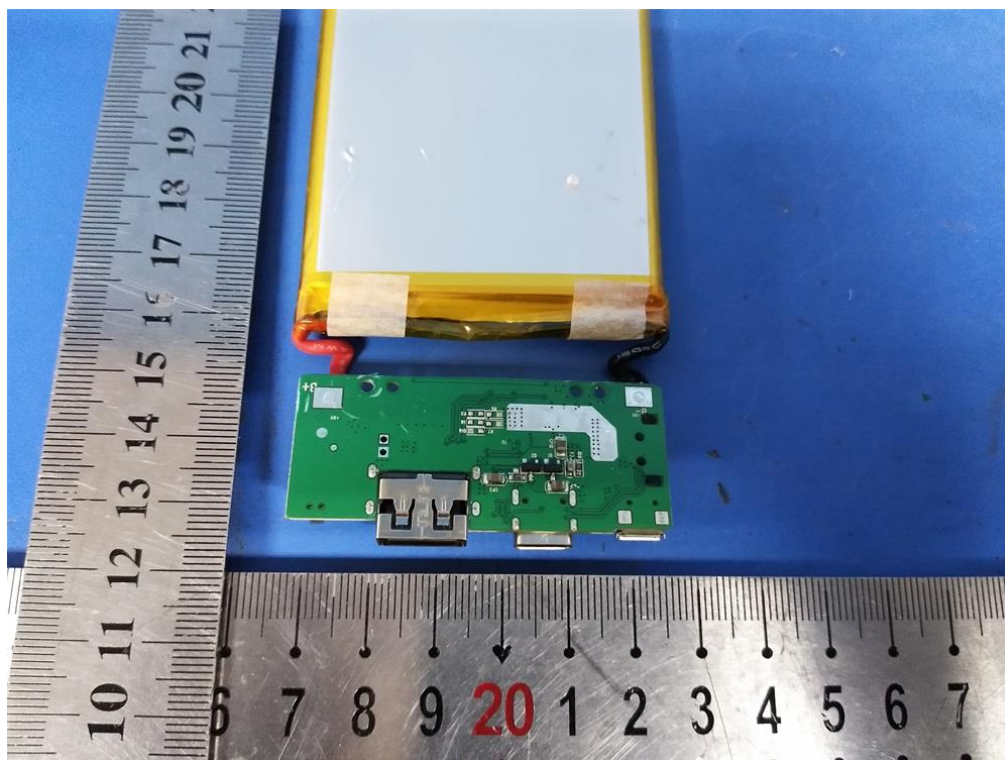


Fig. 5

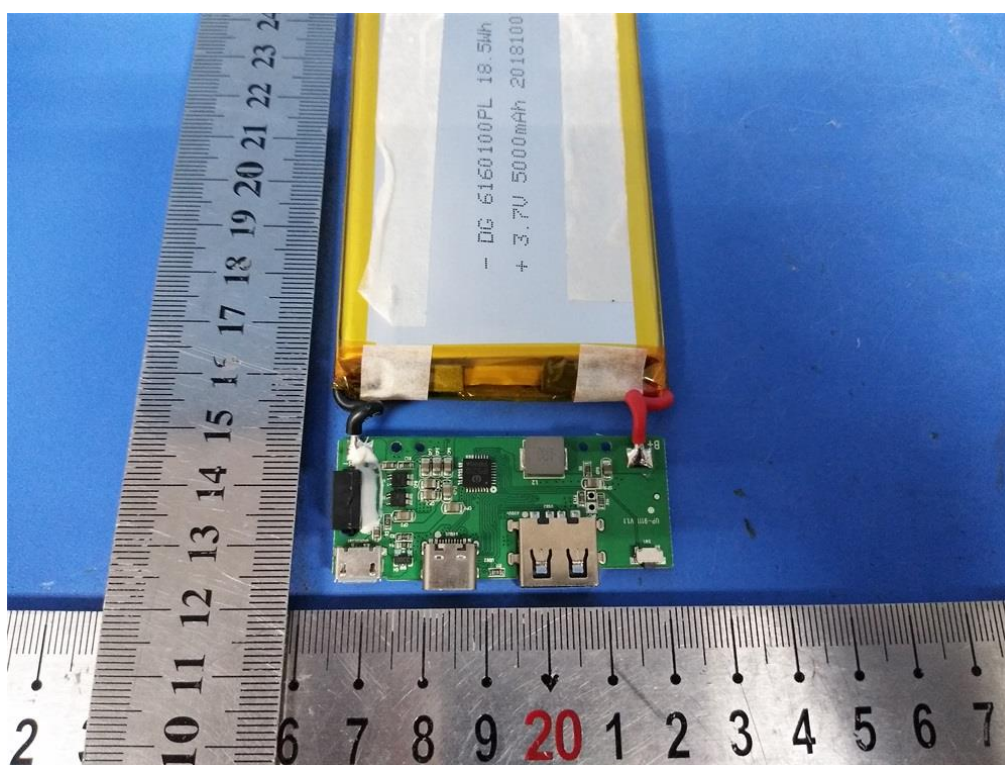


Fig. 6

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