

FCC TEST REPORT

For

Guangzhou Tong Shi Trading Company

Wireless Power Bank

Test Model No.: W6-800

Additional Model No.: MW-008, MF-8000C

Prepared for : Guangzhou Tong Shi Trading Company
Address : Room 406, Liuhua Building, West of Zhongzhanli, Liuhua Road, Liwan District, Guangzhou, China

Prepared by : Shenzhen LCS Compliance Testing Laboratory Ltd.
Address : 1/F., Xingyuan Industrial Park, Tongda Road, Bao'an Avenue, Bao'an District, Shenzhen, Guangdong, China

Date of receipt of test sample : August 03, 2016
Number of tested samples : 1
Serial number : Prototype
Date of Test : August 03, 2016~August 17, 2016
Date of Report : August 17, 2016

FCC TEST REPORT
FCC CFR 47 PART 18: 2015**Report Reference No. : LCS1608151225E 01**

Date Of Issue..... : August 17, 2016

Testing Laboratory Name : Shenzhen LCS Compliance Testing Laboratory Ltd.Address : 1/F., Xingyuan Industrial Park, Tongda Road, Bao'an Avenue,
Bao'an District, Shenzhen, Guangdong, ChinaTesting Location/ Procedure : Full application of Harmonised standards ☒
Partial application of Harmonised standards ☐
Other standard testing method ☐**Applicant's Name..... : Guangzhou Tong Shi Trading Company**Address : Room 406, Liuhua Building, West of Zhongzhanli, Liuhua
Road, Liwan District, Guangzhou, China**Test Specification**

Standard : FCC CFR 47 PART 18: 2015

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. : Wireless Power Bank

Trade Mark..... : N/A

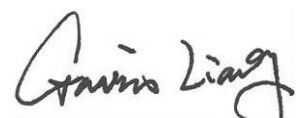
Model/ Type Reference..... : W6-800

Ratings : DC 3.7V by battery (4000mAh).
INPUT: 5V $\overline{\text{---}}$, 1A
OUTPUT: 5V $\overline{\text{---}}$, 2.1A**Result : Positive****Compiled by:**

Ada Liang/ File administrators

Supervised by:

Glin Lu/ Technique principal

Approved by:

Gavin Liang/ Manager

FCC TEST REPORT

Test Report No. : LCS1608151225E 01August 17, 2016

Date of issue

Type/ Model..... : W6-800

EUT..... : Wireless Power Bank

Applicant..... : Guangzhou Tong Shi Trading CompanyAddress..... : Room 406, Liuhua Building, West of Zhongzhanli, Liuhua
Road, Liwan District, Guangzhou, China

Telephone..... : /

Fax..... : /

Manufacturer..... : Shenzhen Maxpower Intelligence LimitedAddress..... : 2F,Block 3, Guanghui Technology Park, Minqing Road,
Longhua, Shenzhen, China

Telephone..... : /

Fax..... : /

Factory..... : Shenzhen Maxpower Intelligence LimitedAddress..... : 2F,Block 3, Guanghui Technology Park, Minqing Road,
Longhua, Shenzhen, China

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

Revision	Issue Date	Revisions	Revised By
00	2016-08-17	Initial Issue	Gavin Liang
01	2016-08-24	Revised	Gavin Liang

TABLE OF CONTENTS

1. SUMMARY OF STANDARDS AND RESULTS.....	6
1.1. Description of Standards and Results.....	6
1.2. Description of Test Modes	6
2. GENERAL INFORMATION	7
2.1. Description of Device (EUT)	7
2.2. Support Equipment List	7
2.3. External I/O Port	7
2.4. Description of Test Facility.....	7
2.5. Statement of the measurement uncertainty	8
2.6. Measurement Uncertainty	8
3. POWER LINE CONDUCTED MEASUREMENT	9
3.1. Test Equipment	9
3.2. Block Diagram of Test Setup	9
3.3. Power Line Conducted Emission Measurement Limits	9
3.4. Configuration of EUT on Measurement.....	9
3.5. Operating Condition of EUT.....	10
3.6. Test Procedure.....	10
3.7. Test Results	10
4. RADIATED EMISSION MEASUREMENT.....	12
4.1. Test Equipment	12
4.2. Block Diagram of Test Setup	12
4.3. Radiated Emission Limit.....	13
4.4. EUT Configuration on Measurement.....	13
4.5. Operating Condition of EUT.....	13
4.6. Measuring Setting	13
4.7. Test Procedure.....	14
4.8. Test Results	15
5. PHOTOGRAPHS OF TEST SETUP	17
5.1. Photo of Radiated Emissions Measurement.....	17
5.2. Photo of Line Conducted Emissions Measurement	18
6. EXTERIOR AND INTERIOR PHOTOGRAPHS.....	19

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	Results
Conducted disturbance at mains terminals	FCC CFR 47 PART 18.307(b): 2015 / MP-5: 1986	PASS
Radiated disturbance	FCC CFR 47 PART 18.305(b): 2015 / MP-5: 1986	PASS
N/A is an abbreviation for Not Applicable.		

1.2. Description of Test Modes

Test Modes:		
Mode 1	EUT + iphone5s (iphone5s battery status:<1%& Power bank Battery Status: <1%)	Record
Mode 2	EUT + iphone5s (iphone5s battery status:<50%& Power bank Battery Status: <1%)	Pre-tested
Mode 3	EUT + iphone5s (iphone5s battery status:100%& Power bank Battery Status: <1%)	Pre-tested
Mode 4	EUT + iphone5s (iphone5s battery status:<1%& Power bank Battery Status: <50%)	Pre-tested
Mode 5	EUT + iphone5s (iphone5s battery status:<50%& Power bank Battery Status: <50%)	Pre-tested
Mode 6	EUT + iphone5s (iphone5s battery status:100%& Power bank Battery Status: <100%)	Pre-tested
Mode 7	EUT + iphone5s (iphone5s battery status:<1%& Power bank Battery Status: <100%)	Pre-tested
Mode 8	EUT + iphone5s (iphone5s battery status:<50%& Power bank Battery Status: <100%)	Pre-tested
Mode 9	EUT + iphone5s (iphone5s battery status:100%& Power bank Battery Status: <100%)	Pre-tested
Note: All test modes were pre-tested, but we only recorded the worst case in this report.		

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

EUT : Wireless Power Bank

Model Number : W6-800

Power Supply : DC 3.7V by battery (4000mAh)
INPUT: 5V $\overline{=}$, 1A
OUTPUT: 5V $\overline{=}$, 2.1A

Frequency Band : 110KHz~205KHz

Antenna Type : Inductive loop Coil antenna

Additional models No.		
MW-008	MF-8000C	--
Remark: PCB board, structure and internal of these model(s) are the same, So no additional models were tested.		

2.2. Support Equipment List

Manufacturer	Description	Model	Serial Number	Certificate
Apple	iphone	5s	--	DOC
Lenovo	PC	B470	--	DOC
Lenovo	AC/DC ADAPTER	ADP-90DD B	--	DOC

2.3. External I/O Port

I/O Port Description	Quantity	Cable
USB	2	0.5m
Charge Interface	1	0.5m

2.4. Description of Test Facility

Site Description

EMC Lab.

: Accredited by CNAS, June 04, 2010
The Certificate Registration Number. is L4595.

Accredited by FCC, July 14, 2011
The Certificate Registration Number. is 899208.

Accredited by Industry Canada, May. 02, 2011
The Certificate Registration Number. is 9642A-1

Accredited by VCCI, Japan January 30, 2012
The Certificate Registration Number. is C-4260 and R-380

2.5.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.

2.6.Measurement Uncertainty

Test Item		Frequency Range	Uncertainty	Note
Radiation Uncertainty	:	9KHz~30MHz	$\pm 3.10\text{dB}$	(1)
	:	30MHz~200MHz	$\pm 2.96\text{dB}$	(1)
	:	200MHz~1000MHz	$\pm 3.10\text{dB}$	(1)
	:	1GHz~26.5GHz	$\pm 3.80\text{dB}$	(1)
	:	26.5GHz~40GHz	$\pm 3.90\text{dB}$	(1)
Conduction Uncertainty	:	150kHz~30MHz	$\pm 1.63\text{dB}$	(1)
Power disturbance	:	30MHz~300MHz	$\pm 1.60\text{dB}$	(1)

- (1). This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

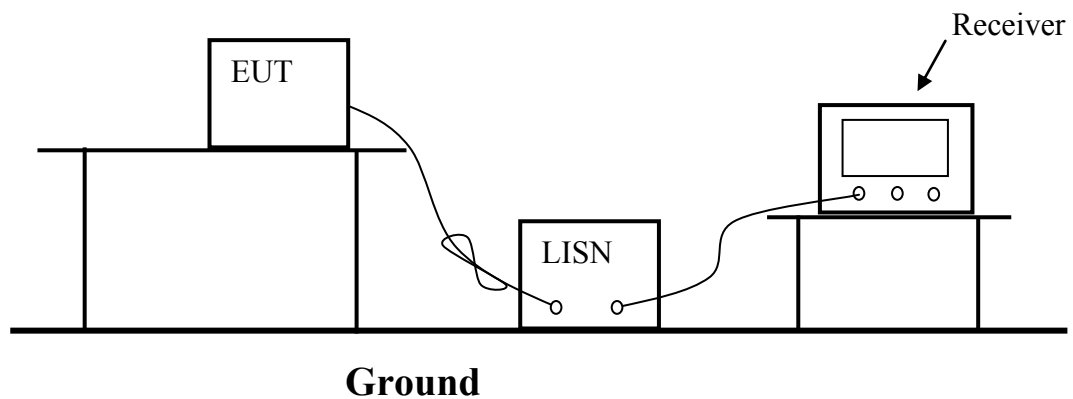
3. POWER LINE CONDUCTED MEASUREMENT

3.1. Test Equipment

The following test equipments are used during the power line conducted measurement:

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due. Date
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	101142	2016/06/18	2017/06/17
2	10dB Attenuator	SCHWARZBECK	OSPAM236	9729	2016/06/18	2017/06/17
3	Artificial Mains	ROHDE & SCHWARZ	ENV216	101288	2016/06/18	2017/06/17
4	EMI Test Software	AUDIX	E3	N/A	2016/06/18	2017/06/17

3.2. Block Diagram of Test Setup



3.3. Power Line Conducted Emission Measurement Limits

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 ~ 0.50	66 to 56*	56 to 46*
0.50 ~ 5.00	56	46
5.00 ~ 30.00	60	50

- Notes: 1. *Decreasing linearly with logarithm of frequency.
2. The lower limit shall apply at the transition frequencies.

3.4. Configuration of EUT on Measurement

The following equipments are installed on Power Line Conducted Emission Measurement to meet the commission requirement and operating regulations in a manner, which tends to maximize its emission characteristics in a normal application.

3.5. Operating Condition of EUT

- (1) Setup the EUT and simulator as shown as Section 3.2.
- (2) Turn on the power of all equipment.
- (3) Let the EUT work in worst test mode (Mode 1) and measure it.

3.6. Test Procedure

The EUT system is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to FCC/ANSI C63.4-2014 on Conducted Emission Measurement.

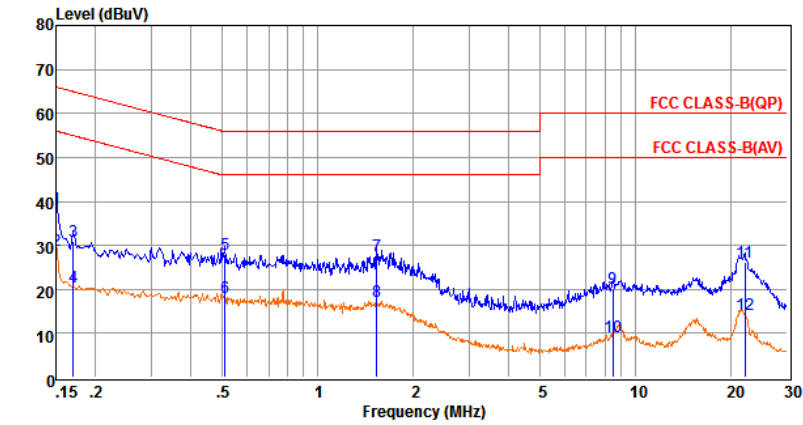
The bandwidth of test receiver is set at 9kHz.

The frequency range from 150kHz to 30MHz is checked.

3.7. Test Results

PASS.

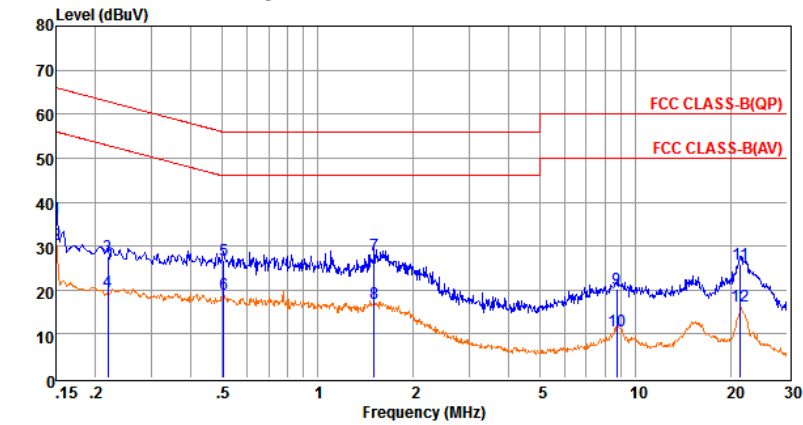
The test data please refer to following page.



Env. Ins: 24*/56%
Pol: NEUTRAL

	Freq	Reading	LisnFac	CabLos	Atten_Fac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB	
1	0.15000	18.64	9.70	0.02	10.00	38.36	66.00	-27.64	QP
2	0.15010	9.08	9.70	0.02	10.00	28.80	55.99	-27.19	Average
3	0.17034	11.39	9.65	0.02	10.00	31.06	64.94	-33.88	QP
4	0.17044	0.83	9.65	0.02	10.00	20.50	54.94	-34.44	Average
5	0.51007	8.23	9.62	0.04	10.00	27.89	56.00	-28.11	QP
6	0.51017	-1.48	9.62	0.04	10.00	18.18	46.00	-27.82	Average
7	1.53548	7.87	9.63	0.05	10.00	27.55	56.00	-28.45	QP
8	1.53648	-2.42	9.63	0.05	10.00	17.26	46.00	-28.74	Average
9	8.50112	0.31	9.71	0.08	10.00	20.10	60.00	-39.90	QP
10	8.50212	-10.58	9.71	0.08	10.00	9.21	50.00	-40.79	Average
11	22.06285	6.23	9.81	0.12	10.00	26.16	60.00	-33.84	QP
12	22.06385	-5.68	9.81	0.12	10.00	14.25	50.00	-35.75	Average

Remarks: 1. Measured = Reading + Lisn Factor +Cable Loss+Atten_Fac.
2. The emission levels that are 20dB below the official limit are not reported.



Env. Ins: 24*/56%
Pol: LINE

	Freq	Reading	LisnFac	CabLos	Atten_Fac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB	
1	0.15000	16.72	9.57	0.02	10.00	36.31	66.00	-29.69	QP
2	0.15010	10.61	9.57	0.02	10.00	30.20	55.99	-25.79	Average
3	0.21851	8.07	9.63	0.03	10.00	27.73	62.88	-35.15	QP
4	0.21861	-0.16	9.63	0.03	10.00	19.50	52.87	-33.37	Average
5	0.50469	7.07	9.62	0.04	10.00	26.73	56.00	-29.27	QP
6	0.50479	-0.77	9.62	0.04	10.00	18.89	46.00	-27.11	Average
7	1.50328	8.18	9.64	0.05	10.00	27.87	56.00	-28.13	QP
8	1.50428	-2.80	9.64	0.05	10.00	16.89	46.00	-29.11	Average
9	8.72934	0.40	9.69	0.08	10.00	20.17	60.00	-39.83	QP
10	8.73034	-9.15	9.69	0.08	10.00	10.62	50.00	-39.38	Average
11	22.37250	5.89	9.73	0.12	10.00	25.74	60.00	-34.26	QP
12	22.37350	-3.40	9.73	0.12	10.00	16.45	50.00	-33.55	Average

Remarks: 1. Measured = Reading + Lisn Factor +Cable Loss+Atten_Fac.
2. The emission levels that are 20dB below the official limit are not reported.

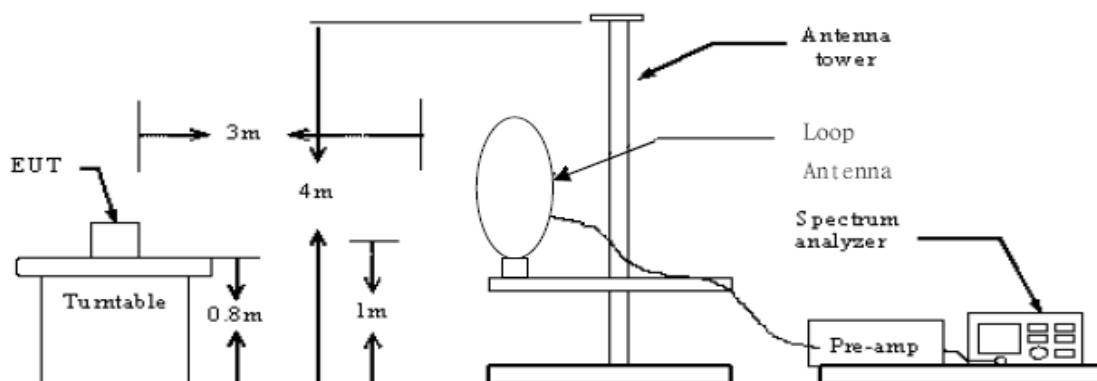
4. RADIATED EMISSION MEASUREMENT

4.1. Test Equipment

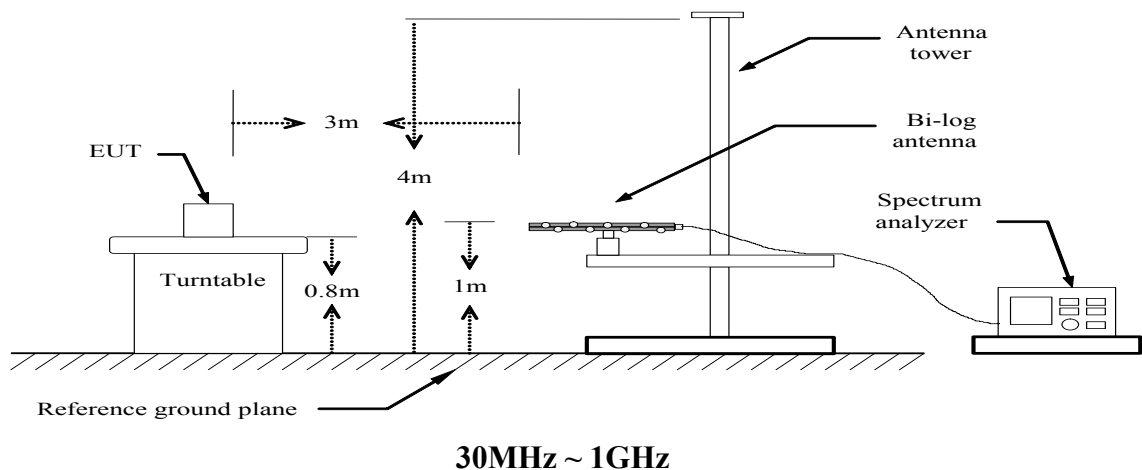
The following test equipments are used during the radiated emission measurement:

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1	3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	2016-06-18	2017-06-17
2	Amplifier	SCHAFFNER	COA9231A	18667	2016-04-18	2017-04-17
3	Amplifier	Agilent	8449B	3008A02120	2016-04-18	2017-04-17
4	Amplifier	MITEQ	AMF-6F-260400	9121372	2016-04-18	2017-04-17
5	Spectrum Analyzer	Agilent	E4407B	MY41440292	2016-06-16	2017-06-15
6	Signal analyzer	Agilent	E4448A(External mixers to 40GHz)	US44300469	2016-07-16	2017-07-15
7	Loop Antenna	R&S	HFH2-Z2	860004/001	2016-04-18	2017-04-17
8	By-log Antenna	SCHWARZBECK	VULB9163	9163-470	2016-04-18	2017-04-17
9	Horn Antenna	EMCO	3115	6741	2016-04-18	2017-04-17
10	Horn Antenna	SCHWARZBECK	BBHA9170	BBHA9170154	2016-04-18	2017-04-17
11	RF Cable-R03m	Jye Bao	RG142	CB021	2016-06-18	2017-06-17
12	RF Cable-HIGH	SUHNER	SUCOFLEX 106	03CH03-HY	2016-06-18	2017-06-17

4.2. Block Diagram of Test Setup



9KHz ~ 30MHz



4.3. Radiated Emission Limit

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		dB(μ V)/m	Remark
0.009~30MHz	3	103.5	Quasi-peak
30~88	3	40.0	Quasi-peak
88~216	3	43.5	Quasi-peak
216~960	3	46.0	Quasi-peak
960~1000	3	54.0	Quasi-peak

Remark: (1) Emission level dB μ V/m for 0.009~30MHz = $20\log(15) + 40\log(300/3)$ dB μ V/m;
Calculated according FCC 18.305&ANSI C63.10.

(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.

4.4. 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.

4.5. Operating Condition of EUT

(1) Setup the EUT as shown in Section 4.2.

(2) Let the EUT work in worst test mode (Mode 1) and measure it.

4.6. Measuring Setting

Receiver Parameter	Setting
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 100kHz for QP

4.7. Test Procedure

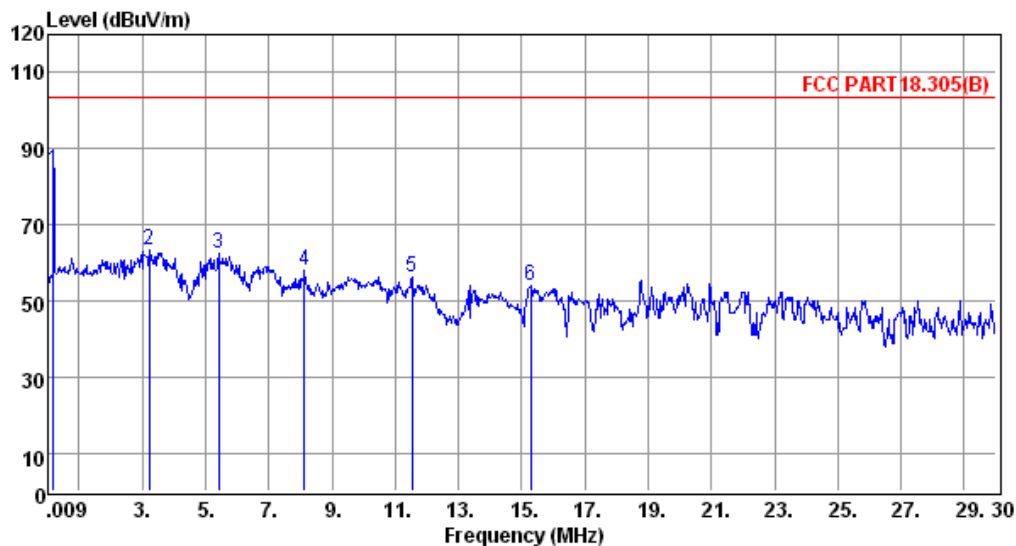
1. Configure the EUT according to ANSI C63.4. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
 2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
 3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
 4. For each suspected emissions, the antenna tower was scan (from 1 m to 4 m) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading
 5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
 6. For emissions above 1GHz, use 1MHz VBW and RBW for peak reading. Then 1MHz RBW and 10Hz VBW for average reading in spectrum analyzer.
 7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.
 8. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
 9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
 10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High – Low scan is not required in this case.
- 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 a 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 C63.4-2014 on radiated emission measurement.

4.8. Test Results

PASS.

Only report the worst test data (Mode 1) as following page.

0.009~30MHz:



Env./Ins: 24°C/56%

pol:

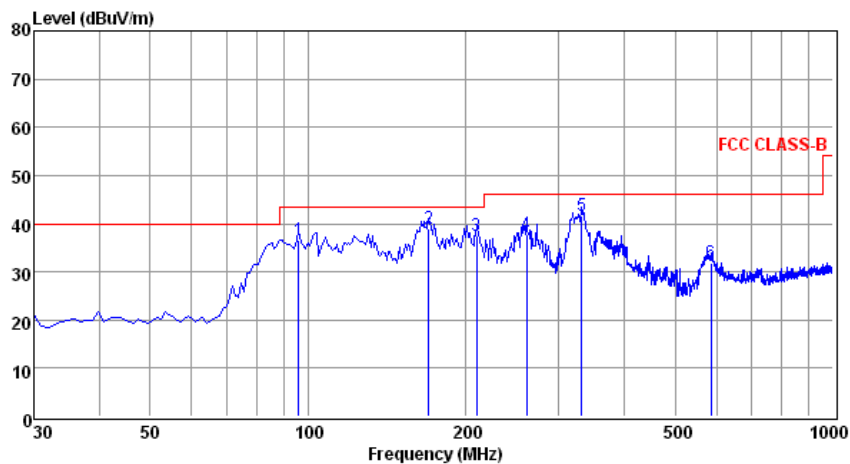
	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBm	dB	dB/m	dBm	dBm	dB	
1	0.19	60.96	0.22	22.91	84.09	103.50	-19.41	QP
2	3.22	41.57	0.12	21.44	63.13	103.50	-40.37	QP
3	5.41	40.07	0.19	22.10	62.36	103.50	-41.14	QP
4	8.14	34.78	0.28	22.92	57.98	103.50	-45.52	QP
5	11.53	31.71	0.39	24.05	56.15	103.50	-47.35	QP
6	15.27	28.08	0.52	25.34	53.94	103.50	-49.56	QP

Note: 1. All readings are Quasi-peak values.

2. Measured= Reading + Antenna Factor + Cable Loss

3. The emission that at 20db below the official limit are not reported

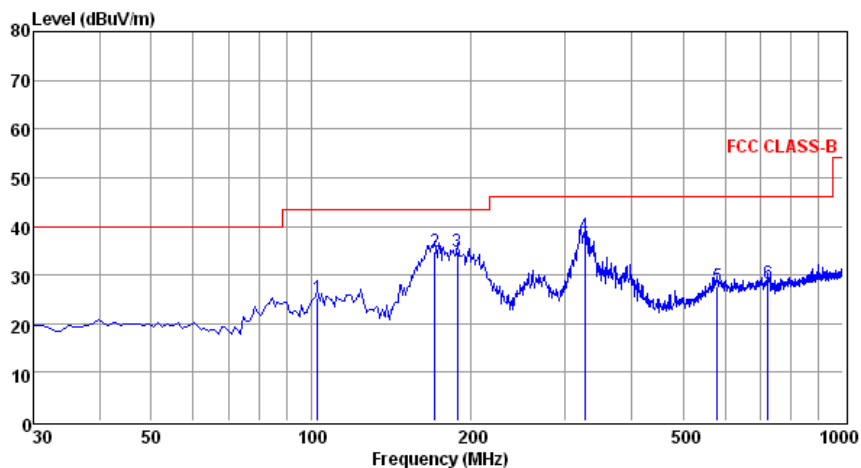
30~1000MHz:



Env./Ins: 24°C/56%
 pol: HORIZONTAL

	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBm	dB	dB/m	dBm	dBm	dB	
1	95.96	23.12	0.58	12.90	36.60	43.50	-6.90	QP
2	169.68	29.26	0.80	8.96	39.02	43.50	-4.48	QP
3	209.45	25.74	0.86	10.87	37.47	43.50	-6.03	QP
4	260.86	24.73	0.96	12.08	37.77	46.00	-8.23	QP
5	331.67	26.63	1.11	13.79	41.53	46.00	-4.47	QP
6	585.81	12.19	1.50	18.18	31.87	46.00	-14.13	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



Env./Ins: 24°C/56%
 pol: VERTICAL

	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBm	dB	dB/m	dBm	dBm	dB	
1	102.75	11.68	0.60	12.91	25.19	43.50	-18.31	QP
2	170.65	25.03	0.80	9.02	34.85	43.50	-8.65	QP
3	188.11	23.35	0.98	10.39	34.72	43.50	-8.78	QP
4	326.82	23.29	1.04	13.60	37.93	46.00	-8.07	QP
5	579.99	8.24	1.44	18.08	27.76	46.00	-18.24	QP
6	722.58	7.59	1.63	19.09	28.31	46.00	-17.69	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

5. PHOTOGRAPHS OF TEST SETUP

5.1. Photo of Radiated Emissions Measurement

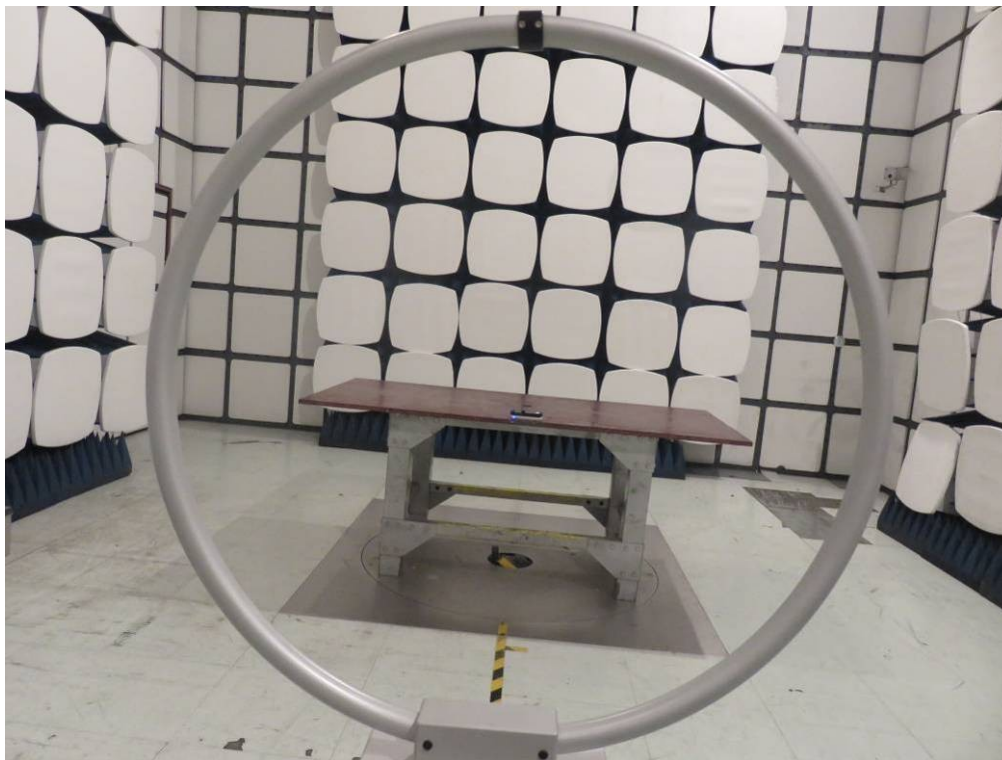


Fig.1

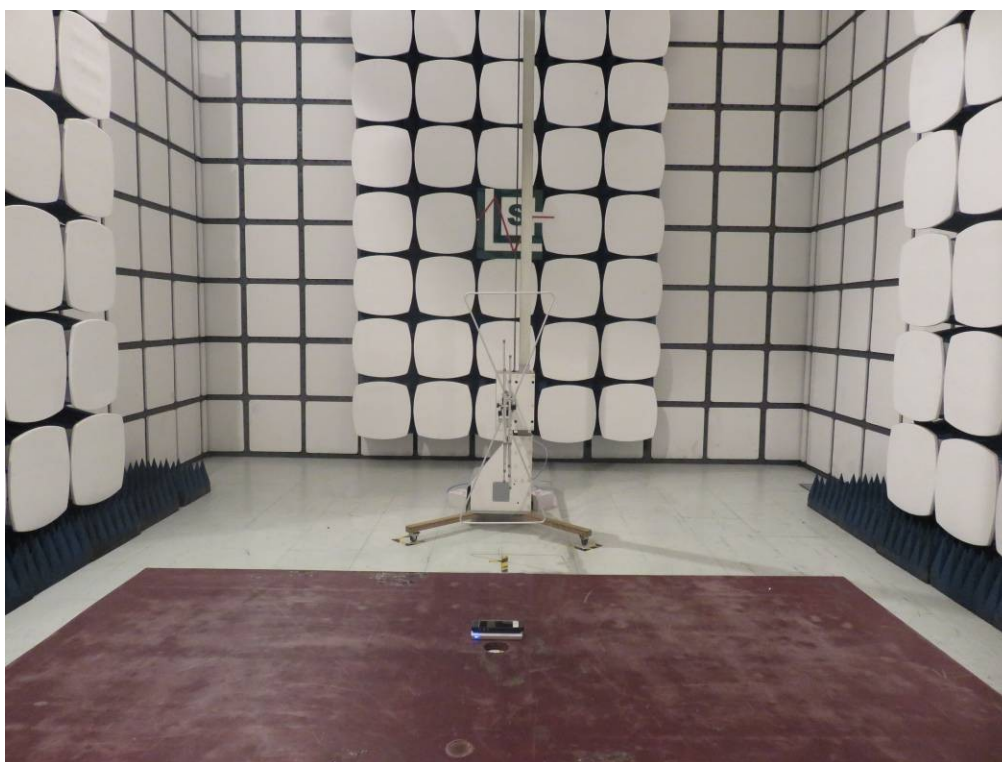


Fig.2

5.2. Photo of Line Conducted Emissions Measurement



6. EXTERIOR AND INTERIOR PHOTOGRAPHS



Fig. 1



Fig. 2



Fig. 3

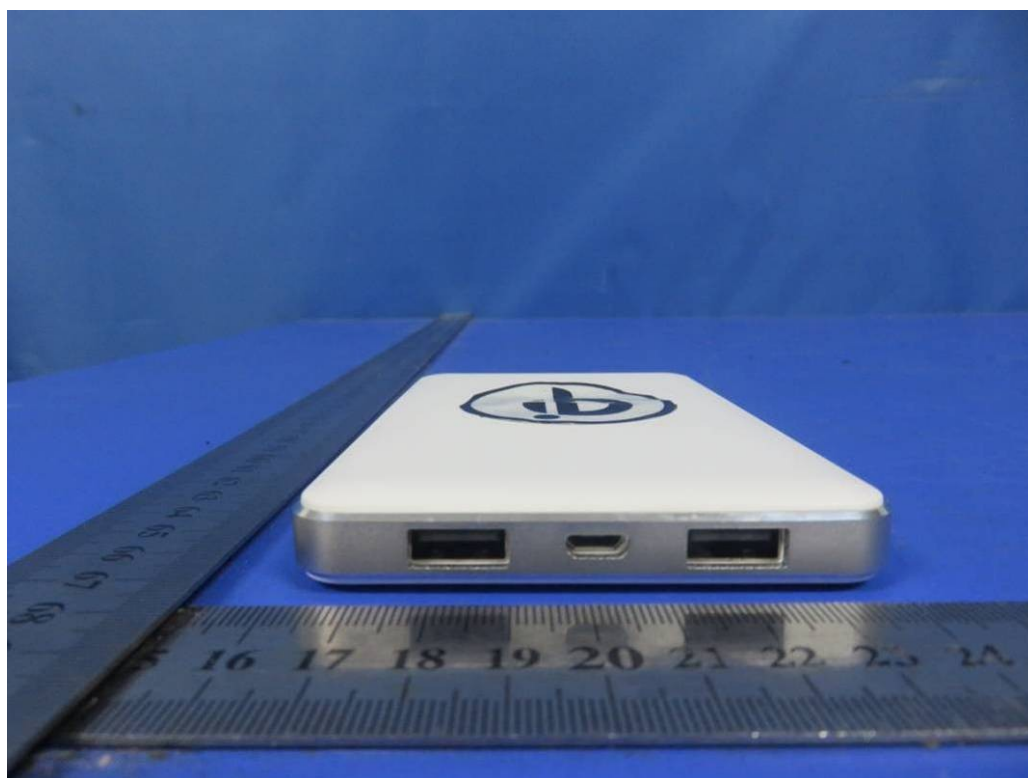


Fig. 4

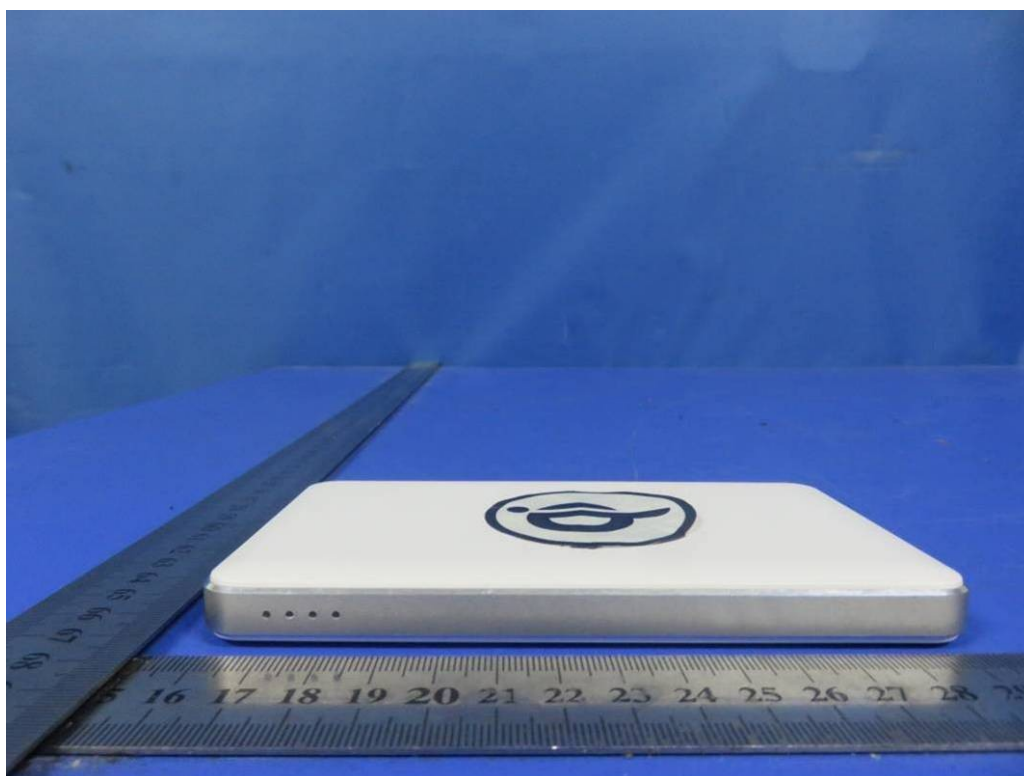


Fig. 5

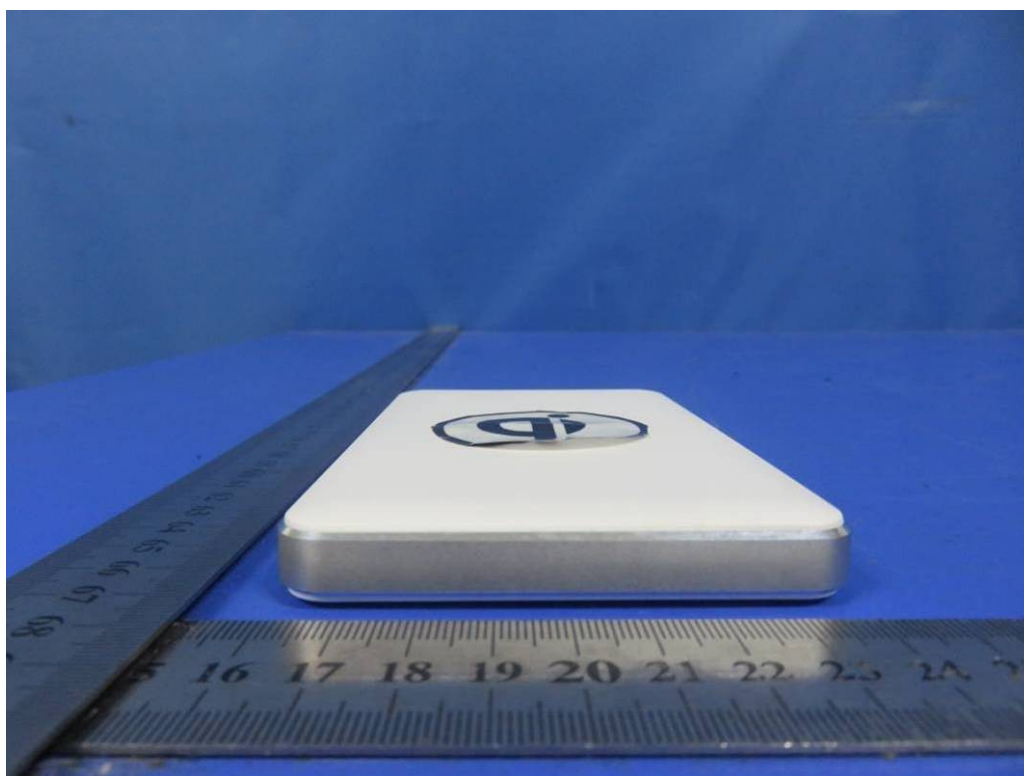


Fig. 6

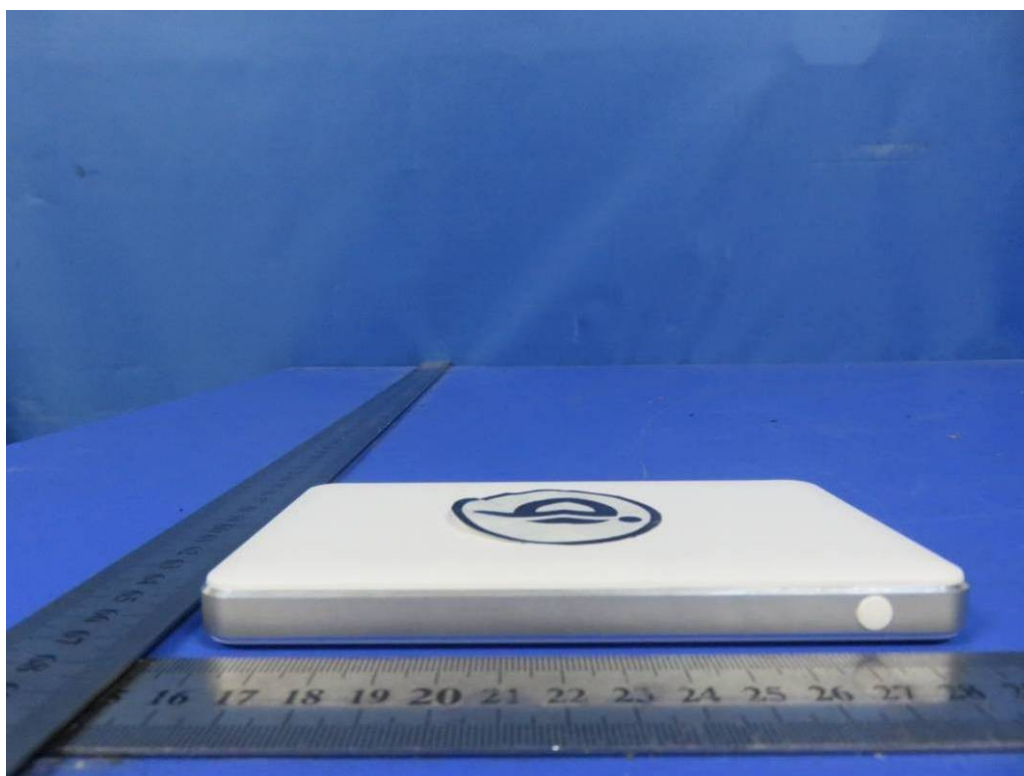


Fig. 7



Fig. 8

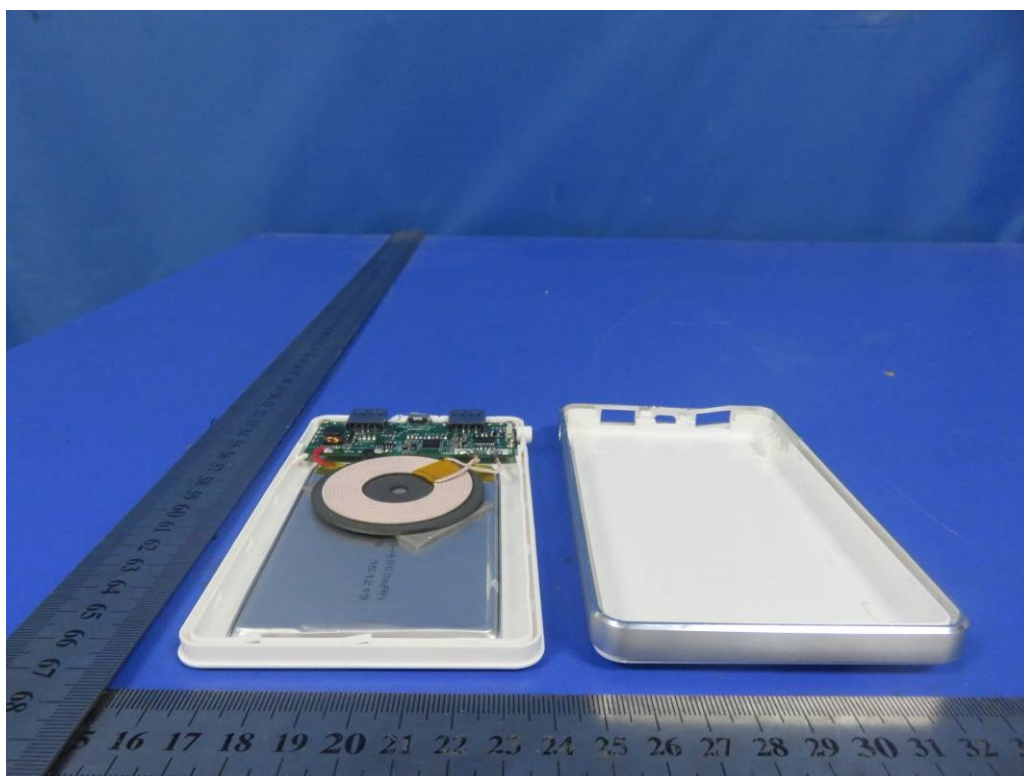


Fig. 9



Fig. 10

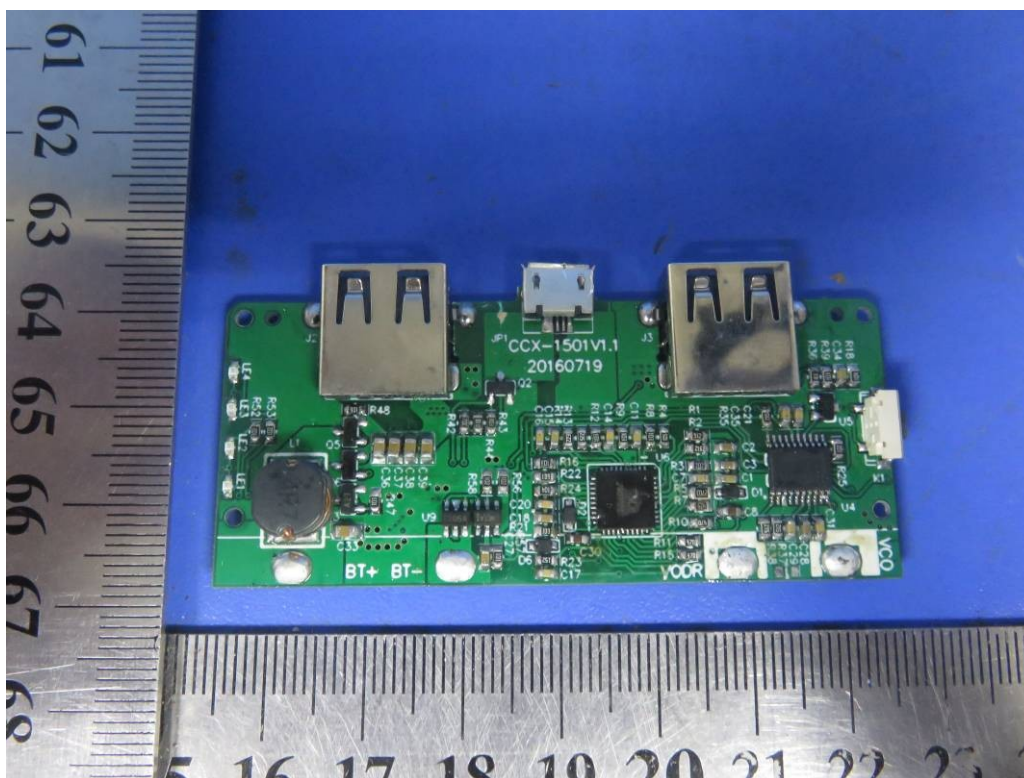


Fig. 11

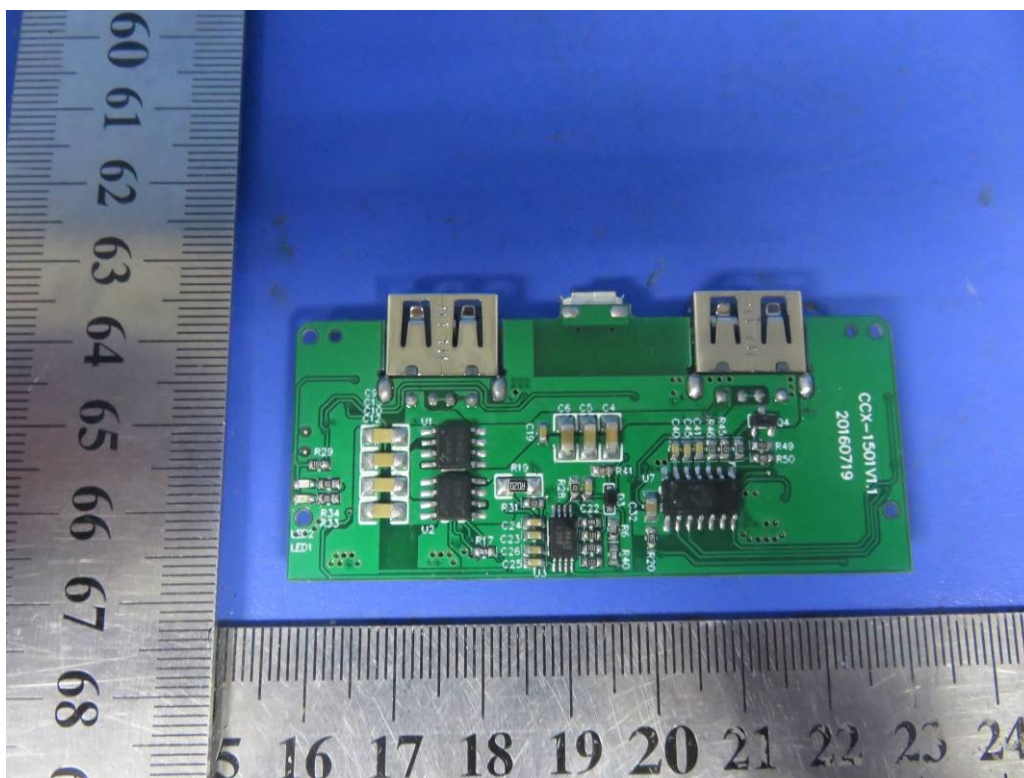


Fig. 12

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