FCC TEST REPORT

FCC ID: 2AP2N-BLADE10000W

On Behalf of

Shenzhen Esorun Technology Co.,LTD

Wireless Power Bank

Model No.: Blade10000W

Prepared for	:	Shenzhen Esorun Technology Co.,LTD
Address	:	425(E02), No. 5 Golf Avenue, Guangpei Community, Guanlan Street, Longhua District, Shenzhen, China

Prepared By	:	Shenzhen Alpha Product Testing Co., Ltd.
Address	:	Building i, No.2, Lixin Road, Fuyong Street, Bao'an District, 518103, Shenzhen, Guangdong, China

Report Number	:	A1909134-C01-R05
Date of Receipt	:	September 24, 2019
Date of Test	:	September 24, 2019–October 14,2019
Date of Report	:	October 15,2019
Version Number	:	V0

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TEST REPORT DECLARATION

Applicant	:	Shenzhen Esorun Technology Co.,LTD
Address	:	425(E02), No. 5 Golf Avenue, Guangpei Community, Guanlan Street, Longhua District, Shenzhen, China
Manufacturer	:	Shenzhen Esorun Technology Co.,LTD
Address	:	425(E02), No. 5 Golf Avenue, Guangpei Community, Guanlan Street, Longhua District, Shenzhen, China
EUT Description	:	Wireless Power Bank
		(A) Model No. : Blade10000W
		(B) Trademark : ESORUN

Measurement Standard Used:
FCC CFR Title 47 Part 15 Subpart C Section 15.209

The device described above is tested by Shenzhen Alpha Product Testing Co., Ltd. to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The test results are contained in this test report and Shenzhen Alpha Product Testing Co., Ltd. is assumed full responsibility for the accuracy and completeness of test. Also, this report shows that the EUT is technically compliant with the FCC CFR Title 47 Part 15 Subpart C Section 15.209 requirements.

This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Shenzhen Alpha Product Testing Co., Ltd.

Tested by (name + signature).....:	Ella Liang Project Engineer	Ella Liang
Approved by (name + signature).....:	Simple Guan Project Manager	
Date of issue…… ……..:	October 15,2019	

Revision History

Revision	Issue Date	Revisions	Revised By
V0	October 15,2019	Initial released Issue	Simple Guan

1. Test Result Summary

Requirement	CFR 47 Section	Result
Antenna requirement	§15.203	PASS
AC Power Line Conducted Emission	§15.207	PASS
Spurious Emission	§15.209(a)(f)	PASS
Occupied Bandwidth	§15.215 (c)	PASS

Note:

1. PASS: Test item meets the requirement.

2. Fail: Test item does not meet the requirement.

3. N/A: Test case does not apply to the test object.

4. The test result judgment is decided by the limit of test standard.

2. General Information

2.1. Description of Device (EUT)

EUT Name	:	Wireless Power Bank
Model No.	:	Blade10000W
DIFF.	:	N/A
Trademark	:	ESORUN
Power supply	:	Capacity:10000mAh Micro Input: 5V/2A, 9V/2A Type C Input:5V/2.5A, 9V/2A Output: 5V/3.1A, 9V/2A, 12V/1.5A, Wireless Output: 5V/1A, 9V/1.12A
Operation frequency	:	125-205KHz
Modulation	:	MSK
Antenna Type	:	Coil Antenna
Software version	:	V1.0
Hardware version	:	V2

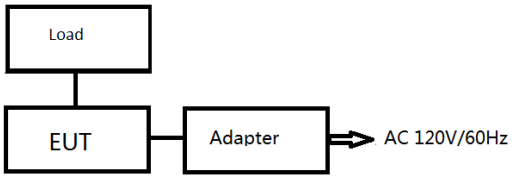
2.2. Accessories of Device (EUT)

Accessories1 : /
Manufacturer : /
Model : /
Ratings : /

2.3. Tested Supporting System Details

No.	Description	Manufacturer	Model	Serial Number	Certification or DOC
1	Adapter	SHENZHEN BIAOYUAN TECHNOLOGY CO.,LTD	Power adapter	BY-075W01M	SDOC
2	Wireless Load	JIDUOMANG TECHNOLOGY CO.,LTD	Jiduoban g-004	--	--

2.4. Block Diagram of connection between EUT and simulators



2.5. Description of Test Modes

Equipment under test was operated during the measurement under the following conditions:

☒ *Charging mode*

☒ *Discharging mode*

Modulation Type: CW (Continuous Wave)

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

2.6. Test Conditions

Items	Required	Actual
Temperature range:	15-35℃	24℃
Humidity range:	25-75%	56%
Pressure range:	86-106kPa	98kPa

2.7. Test Facility

Shenzhen Alpha Product Testing Co., Ltd
Building i, No.2, Lixin Road, Fuyong Street, Bao'an District, 518103, Shenzhen, Guangdong, China

June 21, 2018 File on Federal Communication Commission
Registration Number: 293961

July 15, 2019 Certificated by IC
Registration Number: CN0085

2.8. Measurement Uncertainty

(95% confidence levels, k=2)

Item	MU	Remark
Uncertainty for Conducted Emission Test	2.74dB	
Uncertainty for Radiation Emission test in 3m chamber (below 30MHz)	2.13 dB	Polarize: V
	2.57dB	Polarize: H
Uncertainty for Radiation Emission test in 3m chamber (30MHz to 1GHz)	3.77dB	Polarize: V
	3.80dB	Polarize: H
Uncertainty for Radiation Emission test in 3m chamber (1GHz to 25GHz)	4.16dB	Polarize: H
	4.13dB	Polarize: V
Uncertainty for radio frequency	5.4×10^{-8}	
Uncertainty for conducted RF Power	0.37dB	

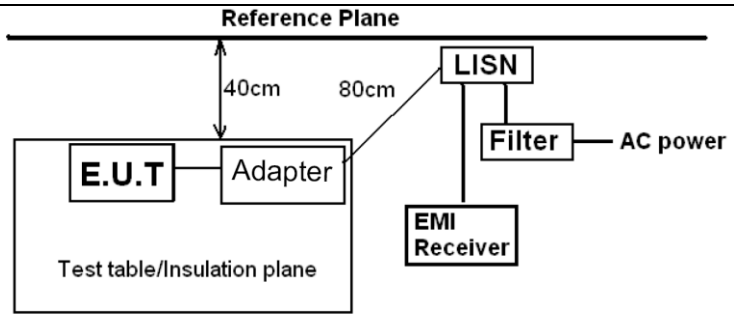
2.9. Test Equipment List

Equipment	Manufacture	Model No.	Serial No.	Last cal.	Cal Interval
9*6*6 anechoic chamber	CHENYU	9*6*6	N/A	2019.09.06	1Year
Spectrum analyzer	ROHDE&SCHWARZ	FSU	1166.1660.26	2019.09.06	1Year
Spectrum analyzer	Agilent	N9020A	MY499100060	2019.09.05	1Year
Receiver	R&S	ESCI	1166.5950K03-1011	2019.09.20	1Year
Receiver	R&S	ESCI	101202	2019.09.20	1Year
Bilog Antenna	Schwarzbeck	VULB 9168	VULB9168-438	2019.04.12	2Year
Loop Antenna	SCHWARZBECK	FMZB 1519B	00059	2019.09.07	2Year
Cable	Resenberger	N/A	No.1	2019.09.05	1Year
Cable	SCHWARZBECK	N/A	No.2	2019.09.05	1Year
Cable	SCHWARZBECK	N/A	No.3	2019.09.05	1Year
Pre-amplifier	Schwarzbeck	BBV9743	9743-019	2019.09.20	1Year
Pre-amplifier	R&S	AFS33-18002650-30-8P-44	SEL0080	2019.09.20	1Year
Temperature controller	Terchy	MHQ	120	2019.09.20	1Year
L.I.S.N.#1	Schwarzbeck	NSLK8126	8126466	2019.09.20	1Year
L.I.S.N.#2	ROHDE&SCHWARZ	ENV216	101043	2019.09.05	1 Year
20db Attenuator	ICPROBING	IATS1	82347	2019.09.20	1 Year

3. Test Results and Measurement Data

3.1. Conducted Emission

3.1.1. Test Specification

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.207</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10:2013</td></tr>
<tr><td>Frequency Range:</td><td>150 kHz to 30 MHz</td></tr>
<tr><td>Receiver setup:</td><td>RBW=9 kHz, VBW=30 kHz, Sweep time=auto</td></tr>
<tr><td>Limits:</td><td>
<table>
<tr><td rowspan="2">Frequency range (MHz)</td><td colspan="2">Limit (dBuV)</td></tr>
<tr><td>Quasi-peak</td><td>Average</td></tr>
<tr><td>0.15-0.5</td><td>66 to 56*</td><td>56 to 46*</td></tr>
<tr><td>0.5-5</td><td>56</td><td>46</td></tr>
<tr><td>5-30</td><td>60</td><td>50</td></tr>
</table>
</td></tr>
<tr><td>Test Setup:</td><td> 

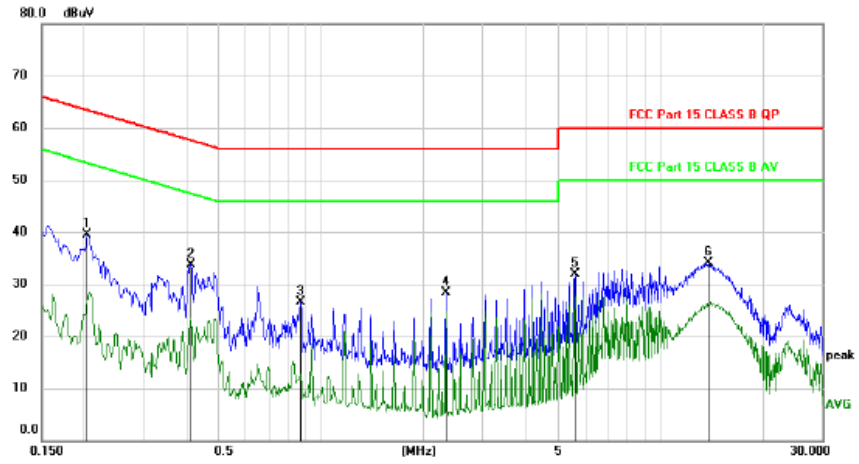
Remark:
E.U.T: Equipment Under Test
LISN: Line Impedence Stabilization Network
Test table height=0.8m</td></tr>
<tr><td>Test Procedure:</td><td>1. The E.U.T is connected to an adapter through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment.
2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs).
3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2013 on conducted measurement.</td></tr>
<tr><td>Test Result:</td><td>PASS</td></tr>
</table>

3.1.2. Test data

Please refer to following diagram for individual

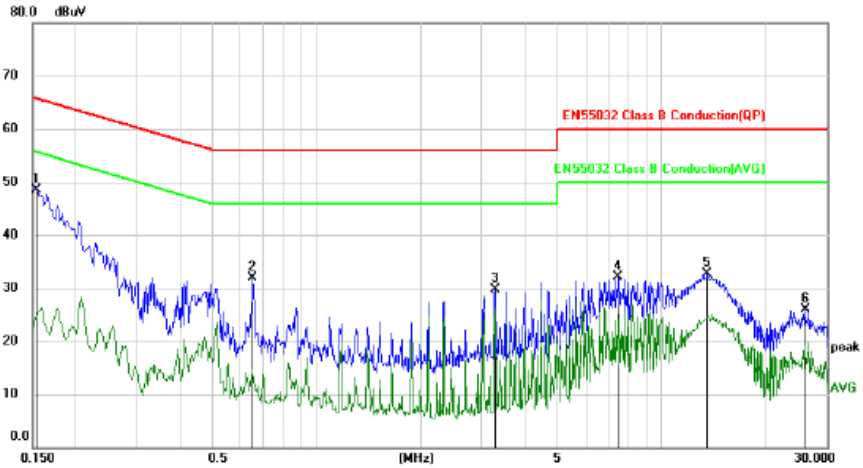
Test Mode	:	Charging
Test Results	:	**PASS**
Note:	The test results are listed in next pages. This mode is worst case mode, so this report only reflected the worst mode. If the limits for the measurement with the average detector are met when using a receiver with a peak detector, the test unit shall be deemed to meet both limits and the measurement with the average detector and quasi-peak detector need not be carried out. If the limits for the measurement with the average detector are met when using a receiver with a quasi-peak detector, the test unit shall be deemed to meet both limits and the measurement with the average detector need not be carried out.	

EUT Description	Wireless Power Bank	Model No.	Blade10000W
Temperature	24℃	Humidity	56%
Pol	Line	Test date	2019/9/24
Test Voltage	AC 120V/60Hz	Test mode	Charging



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2040	29.70	9.80	39.50	63.45	-23.95	peak	
2	*	0.4140	23.95	9.80	33.75	57.57	-23.82	peak	
3		0.8670	16.63	9.80	26.43	56.00	-29.57	peak	
4		2.3400	18.50	9.71	28.21	56.00	-27.79	peak	
5		5.5949	22.03	9.80	31.83	60.00	-28.17	peak	
6		13.8660	24.26	9.80	34.06	60.00	-25.94	peak	

Pol	Neutral



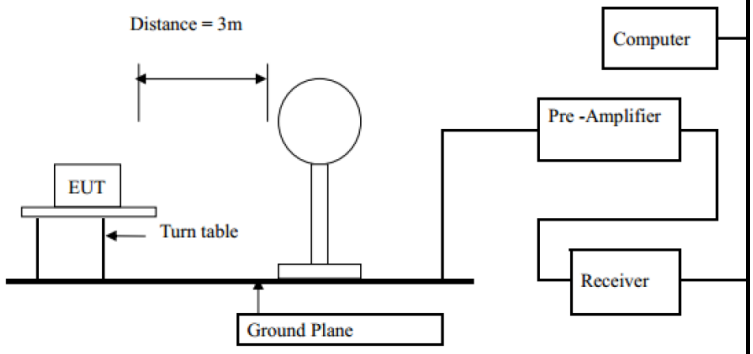
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1539	38.64	9.80	48.44	65.79	-17.35	peak	
2		0.6510	22.03	9.80	31.83	56.00	-24.17	peak	
3		3.2880	19.97	9.74	29.71	56.00	-26.29	peak	
4		7.4520	22.25	9.80	32.05	60.00	-27.95	peak	
5		13.4850	22.95	9.80	32.75	60.00	-27.25	peak	
6		25.8810	16.30	9.70	26.00	60.00	-34.00	peak	

*:Maximum data x:Over limit !:over margin

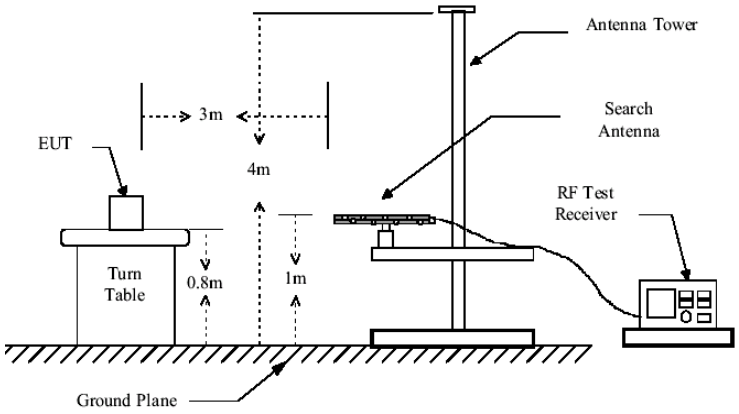
Note: Measurement=Reading Level+Correc Factor. Factor=(LISN or ISN or PLC or Current Probe)Factor+Cable

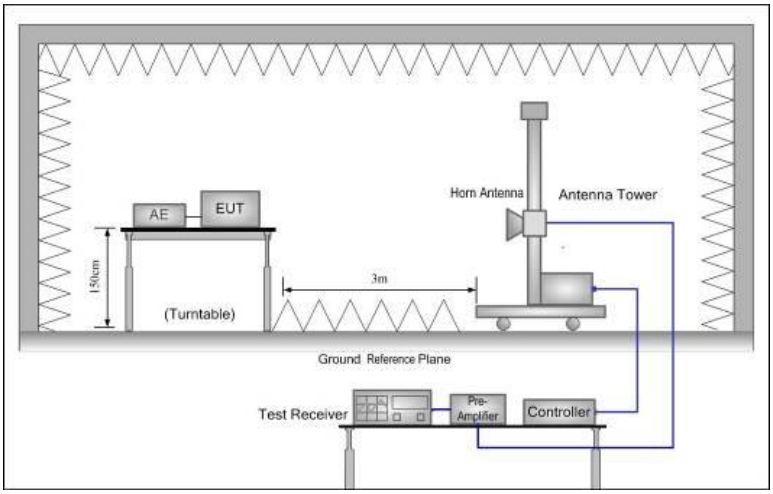
3.2. Radiated Spurious Emission Measurement

3.2.1. Test Specification

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.209</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10: 2013</td></tr>
<tr><td>Frequency Range:</td><td>9 kHz to 25 GHz</td></tr>
<tr><td>Measurement Distance:</td><td>3 m</td></tr>
<tr><td>Antenna Polarization:</td><td>Horizontal & Vertical</td></tr>
<tr><td>Receiver Setup:</td><td>
<table>
<tr><td>Frequency</td><td>Detector</td><td>RBW</td><td>VBW</td><td>Remark</td></tr>
<tr><td>9kHz- 150kHz</td><td>Quasi-peak</td><td>200Hz</td><td>1kHz</td><td>Quasi-peak Value</td></tr>
<tr><td>150kHz-30MHz</td><td>Quasi-peak</td><td>9kHz</td><td>30kHz</td><td>Quasi-peak Value</td></tr>
<tr><td>30MHz-1GHz</td><td>Quasi-peak</td><td>100KHz</td><td>300KHz</td><td>Quasi-peak Value</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak Value</td></tr>
<tr><td>Peak</td><td>1MHz</td><td>10Hz</td><td>Average Value</td></tr>
</table>
</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><td>Frequency</td><td>Field Strength (microvolts/meter)</td><td>Measurement Distance (meters)</td></tr>
<tr><td>0.009-0.490</td><td>2400/F(KHz)</td><td>300</td></tr>
<tr><td>0.490-1.705</td><td>24000/F(KHz)</td><td>30</td></tr>
<tr><td>1.705-30</td><td>30</td><td>30</td></tr>
<tr><td>30-88</td><td>100</td><td>3</td></tr>
<tr><td>88-216</td><td>150</td><td>3</td></tr>
<tr><td>216-960</td><td>200</td><td>3</td></tr>
<tr><td>Above 960</td><td>500</td><td>3</td></tr>
</table>
<table>
<tr><td>Frequency</td><td>Field Strength (microvolts/meter)</td><td>Measurement Distance (meters)</td><td>Detector</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>500</td><td>3</td><td>Average</td></tr>
<tr><td>5000</td><td>3</td><td>Peak</td></tr>
</table>
</td></tr>
<tr><td>Test setup:</td><td>For radiated emissions below 30MHz
 

30MHz to 1GHz</td></tr>
</table>

<table>
<tr>
<td></td>
<td>


Above 1GHz


</td>
</tr>
<tr>
<td>Test Procedure:</td>
<td>1. For the radiated emission test below 1GHz:
The EUT was placed on a turntable with 0.8 meter above ground. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high PASS filter are used for the test in order to get better signal level.
For the radiated emission test above 1GHz:
Place the measurement antenna on a turntable with 1.5 meter above ground, which is away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum</td>
</tr>
</table>

	emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane. 2. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level 3. For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported. 4. Use the following spectrum analyzer settings: (1) Span shall wide enough to fully capture the emission being measured; (2) Set RBW=100 kHz for f < 1 GHz; VBW ≥RBW; Sweep = auto; Detector function = peak; Trace = max hold; (3) Set RBW = 1 MHz, VBW= 3MHz for f □ 1 GHz for peak measurement. For average measurement: VBW = 10 Hz, when duty cycle is no less than 98 percent. VBW ≥ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.
Test results:	PASS

3.2.2. Test Data

Please refer to following diagram for individual

Frequency Range	:	9KHz~30MHz
Test Mode	:	Discharging（10.08W）
Test Results	:	**PASS**

Note: 1. The test results are listed in next pages.

2. This mode is worst case mode, so this report only reflected the worst mode.

3. If the limits for the measurement with the average detector are met when using a receiver with a peak detector, the test unit shall be deemed to meet both limits and the measurement with the quasi-peak detector need not be carried out.

4. Result =Reading+Antenna Factor+Cable loss-Amp Factor

5. Margin= Result- Limit

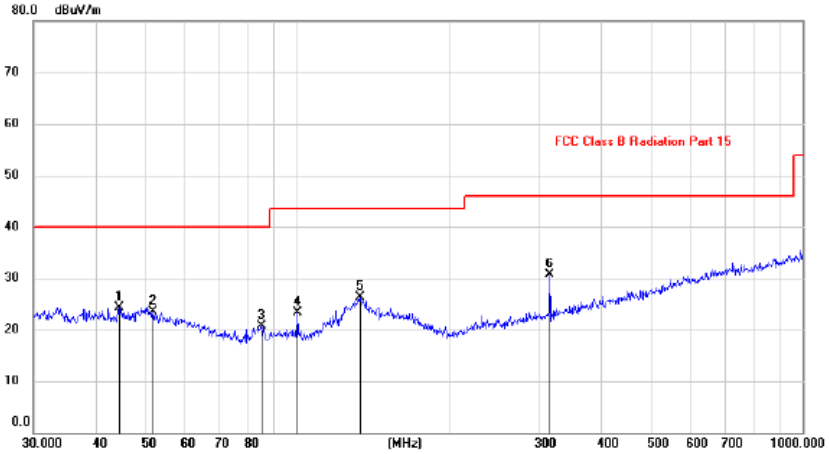
Freq.	Reading	Antenna Factor	Cable loss	Amp Factor	Result	Limit	Margin	Detector	State
(MHz)	(dBuV/m)	dB/m	dB	dB	(dBuV/m)	(dBuV/m) at 3 m	(dB)		P/F
0.125	24.34	48.34	0.16	29.87	42.97	125.46	-82.49	PK	PASS
0.125	18.80	48.34	0.16	29.87	37.43	105.46	-68.03	AV	PASS
0.175	92.31	48.34	0.16	29.87	110.94	122.74	-11.81	PK	PASS
0.175	69.31	48.34	0.16	29.87	87.94	102.74	-14.80	AV	PASS
0.205	49.30	48.38	0.17	29.89	67.96	121.37	-53.41	PK	PASS
0.205	46.40	48.38	0.17	29.89	65.06	101.37	-36.31	AV	PASS
0.35	44.94	48.44	0.19	29.89	63.68	116.72	-53.05	PK	PASS
0.35	42.20	48.44	0.19	29.89	60.94	96.72	-35.78	AV	PASS
0.45	45.48	48.47	0.19	29.89	64.25	114.54	-50.29	PK	PASS
0.45	41.93	48.47	0.19	29.89	60.70	94.54	-33.84	AV	PASS
1.928	18.03	49.12	0.2	29.94	37.41	69.5	-22.59	QP	PASS
1.920	21.98	49.12	0.2	29.94	41.36	69.5	-18.64	QP	PASS

Frequency Range	:	30MHz~1000MHz
Test Mode	:	Discharging（10.08W）
Test Results	:	**PASS**
Note:	1. The test results are listed in next pages. 2. This mode is worst case mode, so this report only reflected the worst mode. 3. If the limits for the measurement with the average detector are met when using a receiver with a peak detector, the test unit shall be deemed to meet both limits and the measurement with the quasi-peak detector need not be carried out.	

Frequency Range	:	Above 1GHz			
EUT	:	/	Test Date	:	/
M/N	:	/	Temperature	:	/
Test Engineer	:	/	Humidity	:	/
Test Mode	:	/			
Test Results	:	N/A			
Note:	1. The highest frequency of the internal sources of the EUT is less than 108 MHz, the measurement shall only be made up to 1 GHz. So the frequency rang above 1GHz radiation test not applicable.				

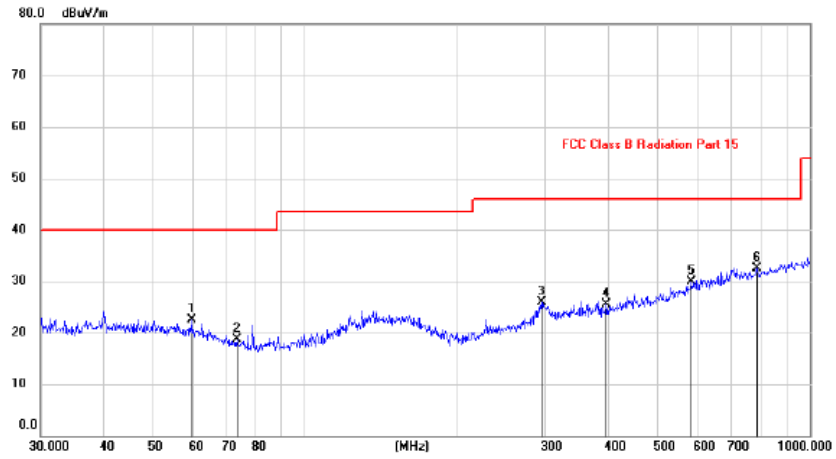
30MHz-1GHz

EUT Description	Wireless Power Bank	Model No.	Blade10000W
Temperature	24℃	Humidity	56%
Pol	Vertical	Test date	2019/9/27
Test Voltage	AC 120V/60Hz	Test mode	Discharging（10.08W）



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		44.2752	10.14	14.19	24.33	40.00	-15.67	peak			
2		51.6616	9.62	13.88	23.50	40.00	-16.50	peak			
3		85.2980	10.69	9.98	20.67	40.00	-19.33	peak			
4		99.8777	12.46	10.85	23.31	43.50	-20.19	peak			
5		132.6850	12.43	13.78	26.21	43.50	-17.29	peak			
6	*	316.5890	16.22	14.53	30.75	46.00	-15.25	peak			

Pol	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		59.6493	9.17	13.25	22.42	40.00	-17.58	peak			
2		73.3593	7.84	10.81	18.65	40.00	-21.35	peak			
3		294.1137	12.02	13.97	25.99	46.00	-20.01	peak			
4		394.8545	9.31	16.16	25.47	46.00	-20.53	peak			
5		584.7895	9.97	19.92	29.89	46.00	-16.11	peak			
6	*	787.8513	9.59	22.83	32.42	46.00	-13.58	peak			

*:Maximum data x:Over limit !:over margin

Note: Measurement=Reading Level+Correc Factor. Factor=(LISN or ISN or PLC or Current Probe)Factor+Cable

3.3. Test Specification

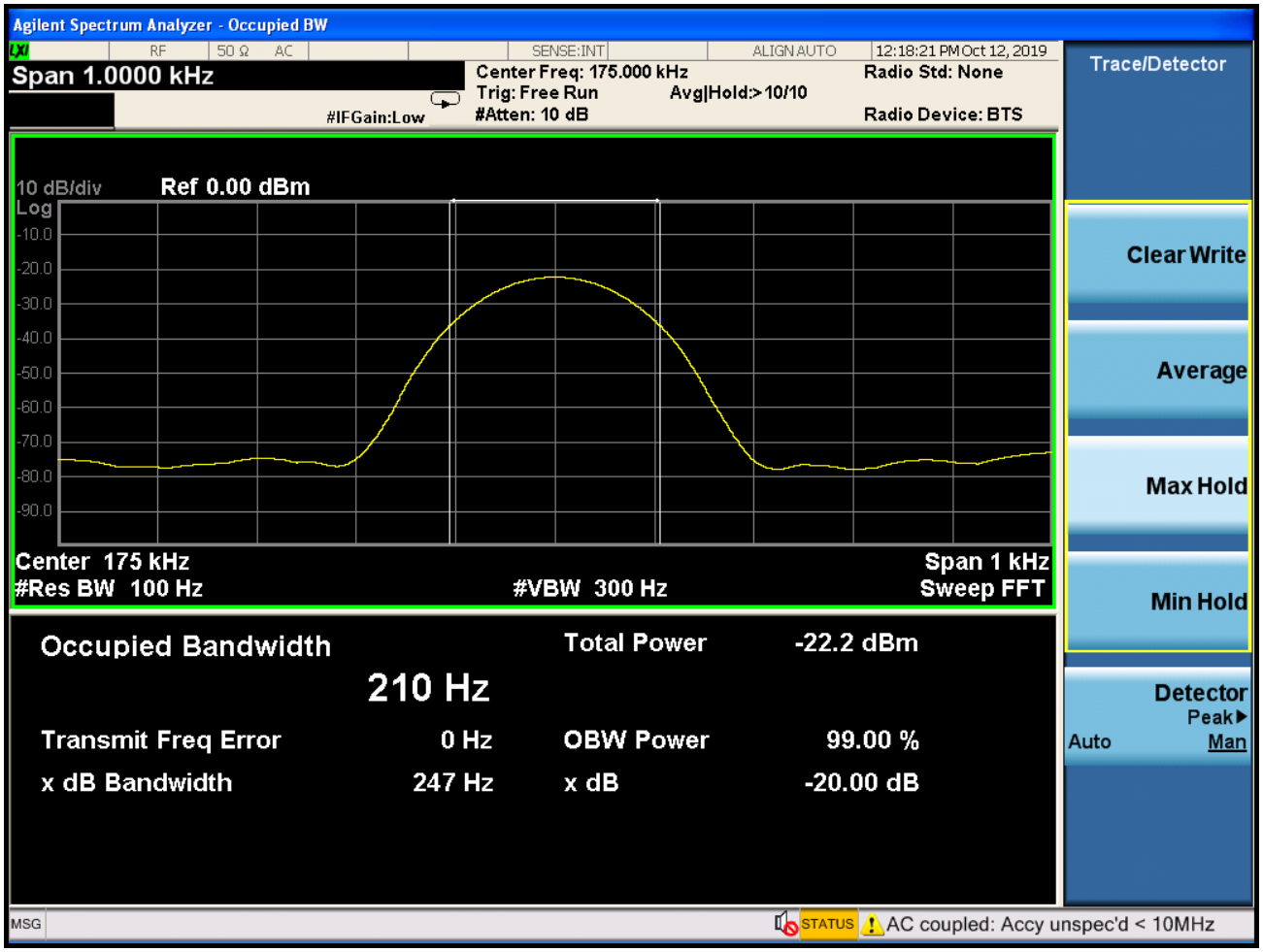
Test Requirement:	FCC Part15 C Section 15.215(c)
Test Method:	ANSI C63.10: 2013
Limit:	N/A
Test Procedure:	1. According to the follow Test-setup, keep the relative position between the artificial antenna and the EUT. 2. Set to the maximum power setting and enable the EUT transmit continuously. 3. Use the following spectrum analyzer settings for 20dB Bandwidth measurement. Span = approximately 2 to 3 times the 20 dB bandwidth, centered on a hopping channel; RBW≥ 1% of the 20 dB bandwidth; VBW≥RBW; Sweep = auto; Detector function = peak; Trace = max hold. 4. Measure and record the results in the test report.
Test setup:	
Test Mode:	Mid Channel（10.08W）
Test results:	PASS

3.3.1. Test data

Frequency(KHz)	20dB Occupy Bandwidth (kHz)	Limit (kHz)	Conclusion
175.0	0.247	---	PASS

Test plots as follows:

Mid channel



4. Antenna Requirements

4.1. Limit

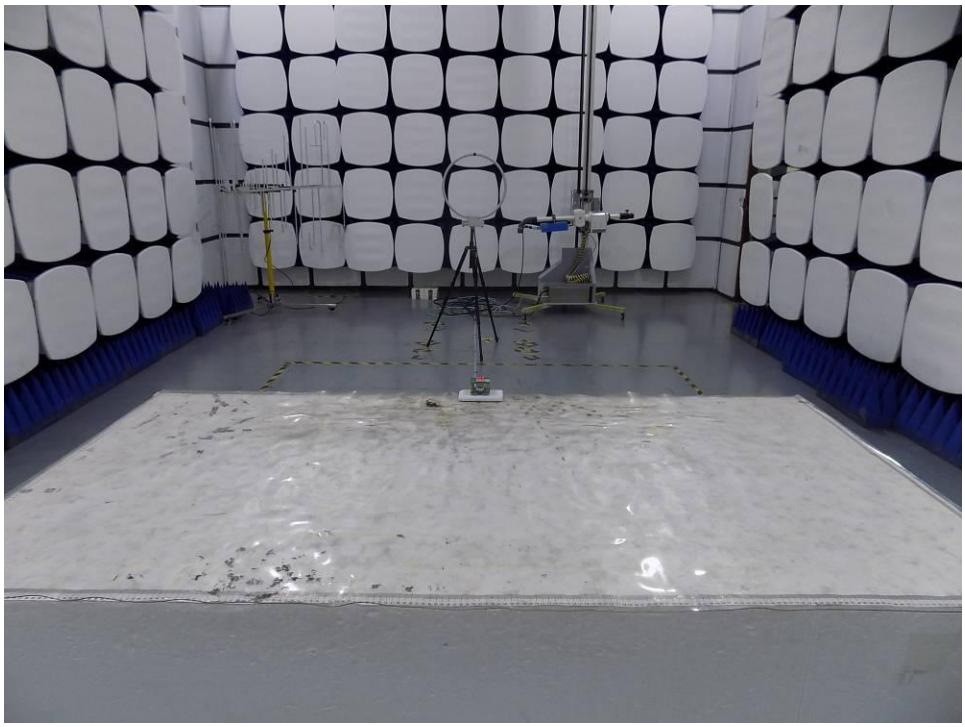
15.203 requirement:
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

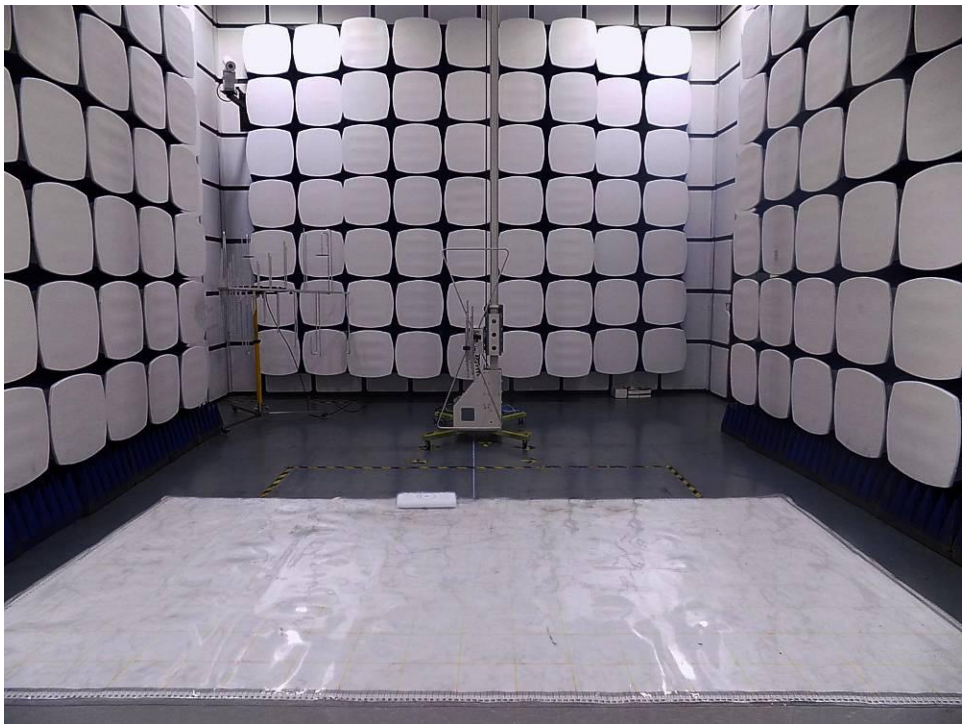
4.2. Result

The antenna is coil antenna which permanently attached. It complies with the standard requirement.

5. Photos of test setup

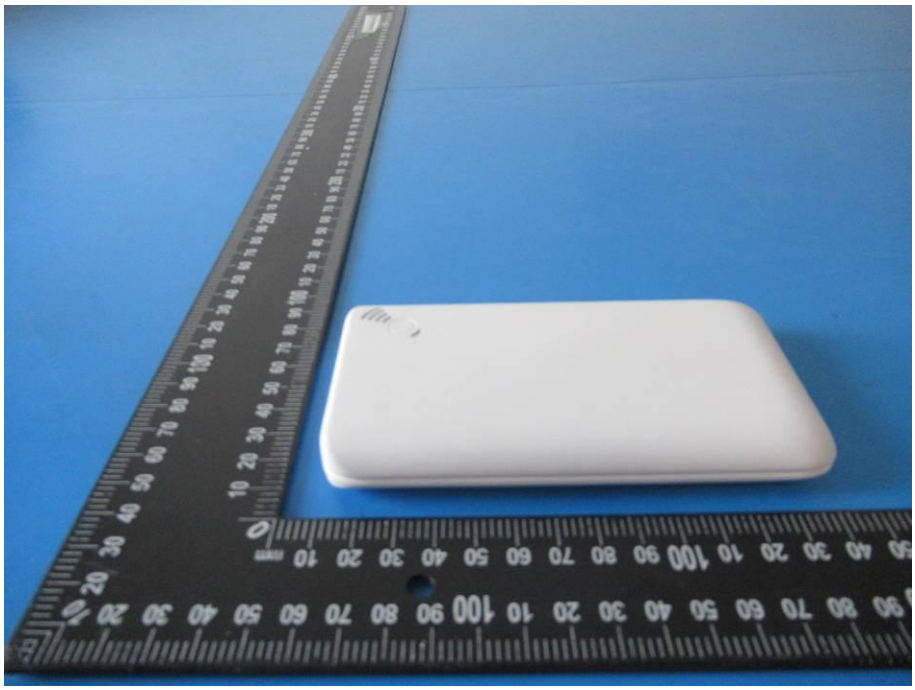
Radiated Emission

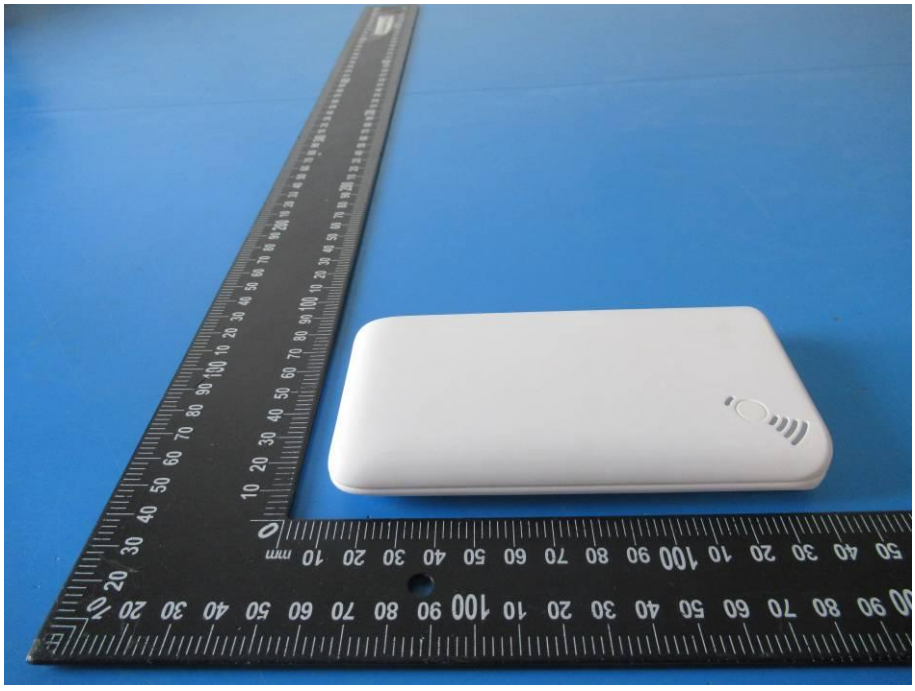




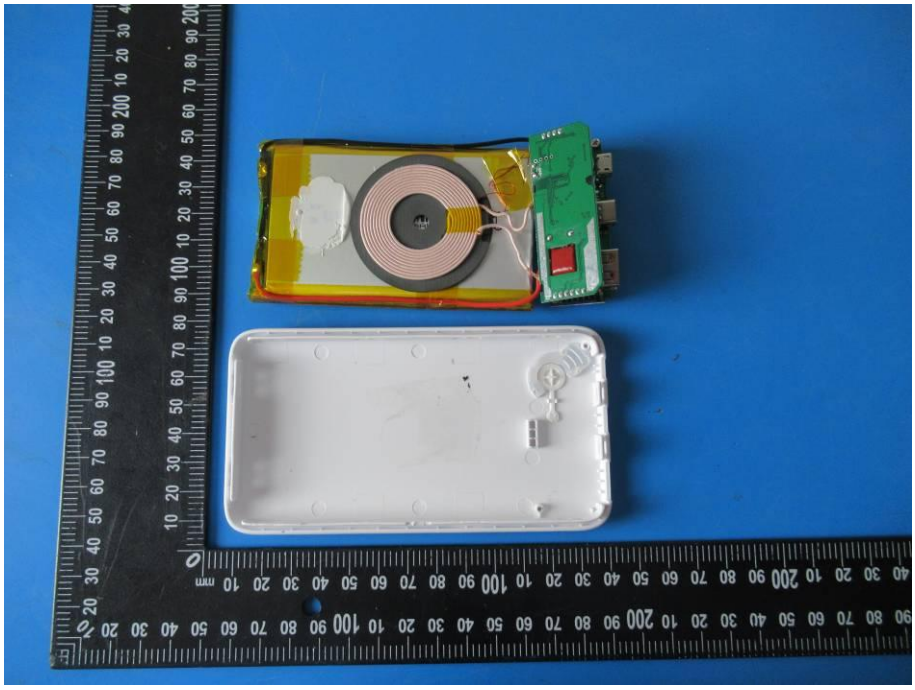
Conducted Emission

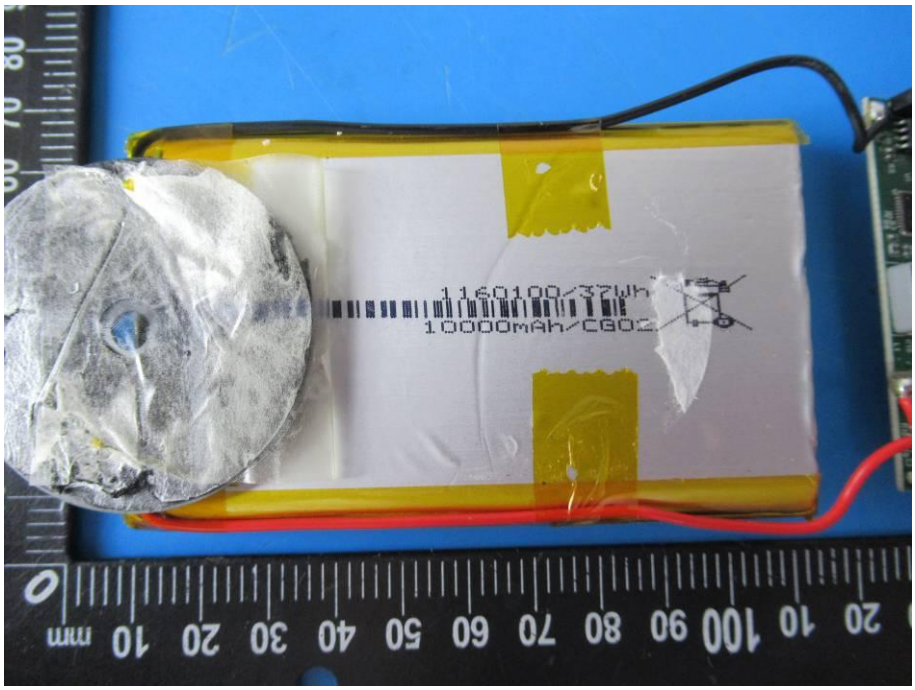
6. Photographs of EUT

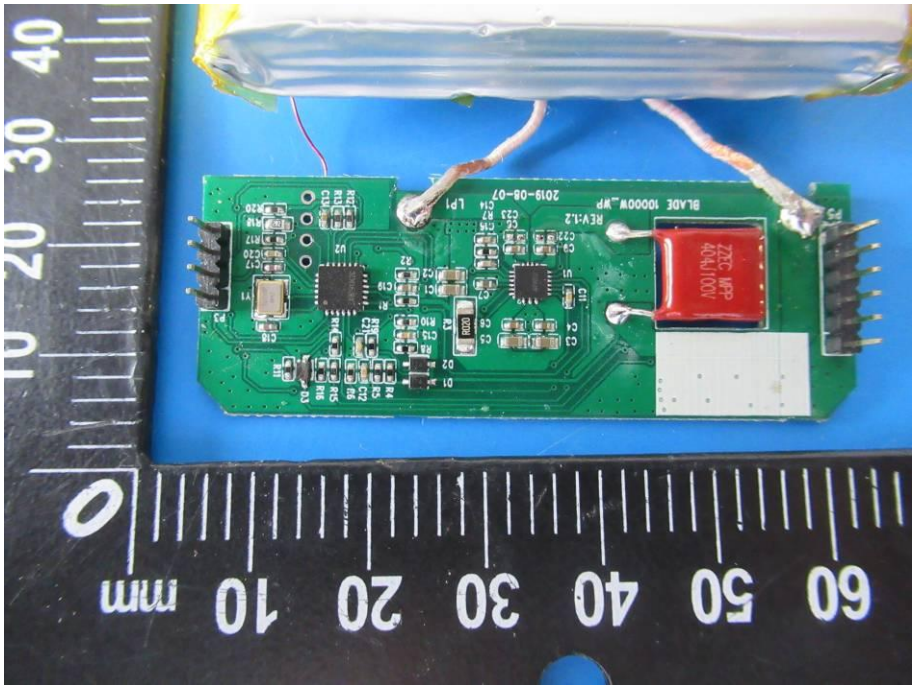


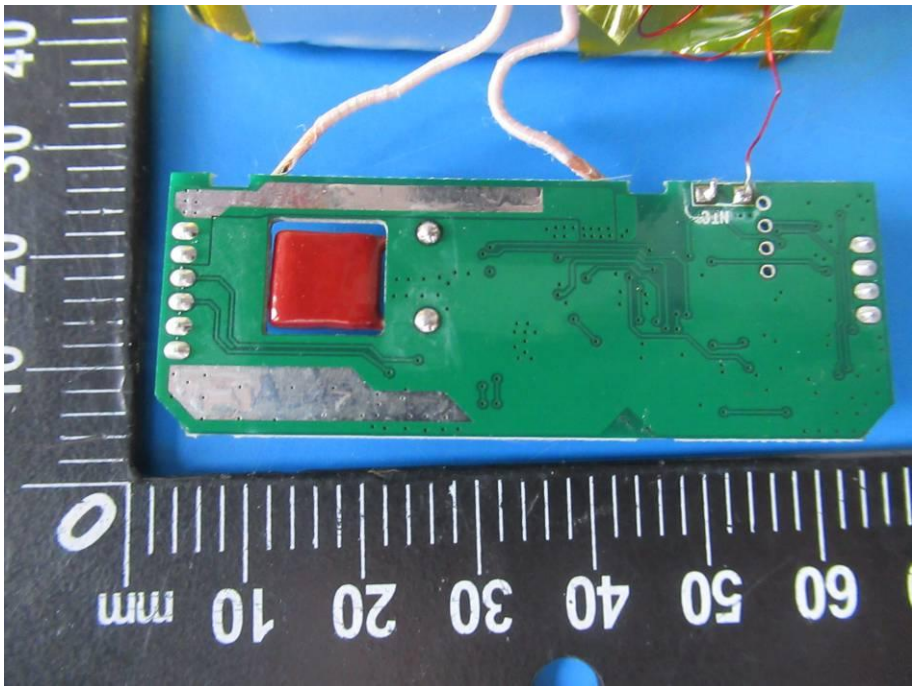


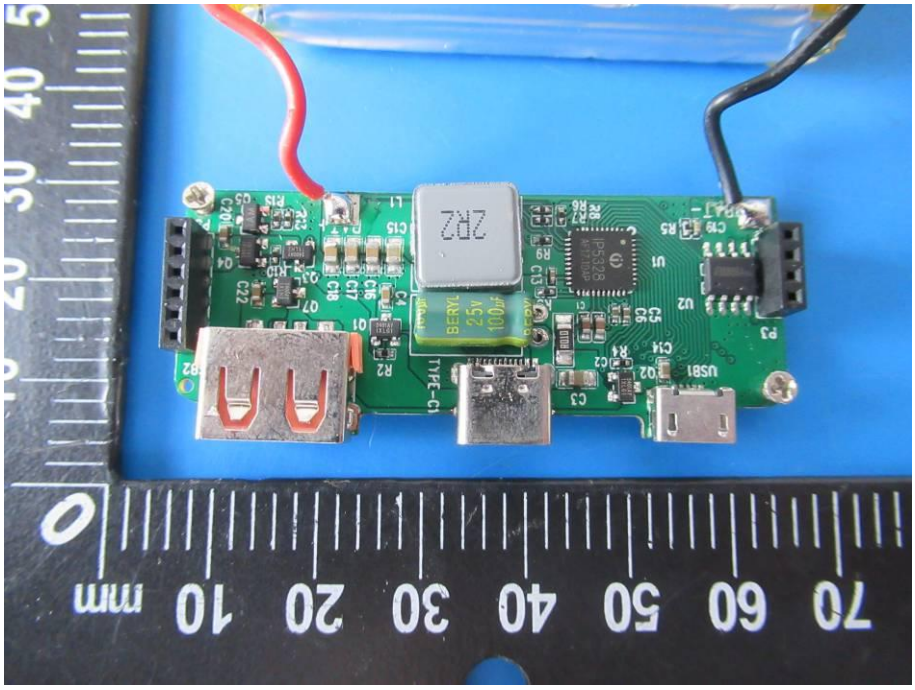

Wireless Power Bank
Capacity: 10000mAh
Output : 5V/3.1A 9V/2A 12V/1.5A

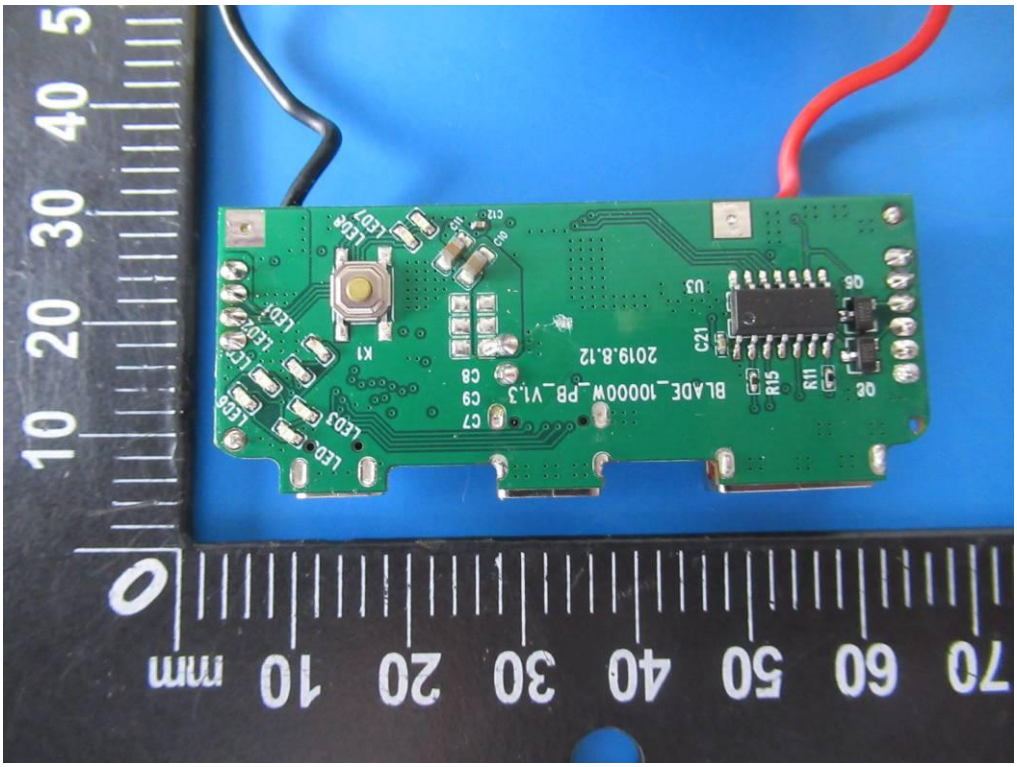



160100/37Wh
10000mAh/CB02


BLADE 10000W_Wp
2019-08-07
REV:1.2







------End------