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Test Report

Report No. : CQASZ20201200040EX-01
Applicant: Shanghai Jiachang Industrial Co. , Ltd.
Address of Applicant: 2/f, no. 400, Chuanqiao road, Pudong New Area, Shanghai, China
Manufacturer: Shanghai Jiachang Industrial Co. , Ltd.
Address of Manufacturer: 2/f, no. 400, Chuanqiao road, Pudong New Area, Shanghai, China
Equipment Under Test (EUT):
Product: Wireless Phone Charger 2.0
Test Model No.: 1625885-00-A Wireless Phone Charger 2.0 - Black
All Model No.: 1625885-00-A Wireless Phone Charger 2.0 – Black,
1625884-00-A Wireless Phone Charger 2.0 –White,
1625886-00-A Wireless Phone Charger 2.0-Red,
1625888-00-A Wireless Phone Charger 2.0 – Blue,
1625889-00-A Wireless Phone Charger 2.0 – Steel Gray
Brand Name: TESLA
FCC ID: 2AYE5-162588WLESS
Standards: 47 CFR Part 15, Subpart C
Date of Test: Nov. 24, 2020 to Dec. 10, 2020
Date of Issue: Dec. 10, 2020
Test Result : PASS*

Tested By:

Jun Li
(Jun Li)

Reviewed By:

Ares Liu
(Ares Liu)

Approved By:

Sheek Luo
(Sheek Luo)



* In the configuration tested, the EUT complied with the standards specified above.

The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CQA, this report can't be reproduced except in full.

1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20201200040EX-01	Rev.01	Initial report	Dec. 10, 2020

2 Test Summary

Test Item	Test Requirement	Test method	Result
Antenna Requirement	47 CFR Part 15, Subpart C Section 15.203/15.247 (c)	ANSI C63.10 2013	PASS
AC Power Line Conducted Emission	47 CFR Part 15, Subpart C Section 15.207	ANSI C63.10 2013	PASS
20dB Occupied Bandwidth	47 CFR Part 15, Subpart C Section 15.215 (c)	ANSI C63.10 2013	PASS
Radiated Spurious Emissions	47 CFR Part 15, Subpart C Section 15.209	ANSI C63.10 2013	PASS
Restricted bands around fundamental frequency (Radiated Emission)	47 CFR Part 15, Subpart C Section 15.209	ANSI C63.10 2013	PASS

N/A: Not Applicable

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4 General Information

4.1 Client Information

Applicant:	Shanghai Jiachang Industrial Co. , Ltd.
Address of Applicant:	2/f, no. 400, Chuanqiao road, Pudong New Area, Shanghai, China
Manufacturer:	Shanghai Jiachang Industrial Co. , Ltd.
Address of Manufacturer:	2/f, no. 400, Chuanqiao road, Pudong New Area, Shanghai, China

4.2 General Description of EUT

Product Name:	Wireless Phone Charger 2.0
All Model No.:	1625885-00-A Wireless Phone Charger 2.0 – Black, 1625884-00-A Wireless Phone Charger 2.0 –White, 1625886-00-A Wireless Phone Charger 2.0-Red, 1625888-00-A Wireless Phone Charger 2.0 – Blue, 1625889-00-A Wireless Phone Charger 2.0 – Steel Gray
Test Model No.:	1625885-00-A Wireless Phone Charger 2.0 – Black
Trade Mark:	TESLA
Hardware Version:	V1.0
Software Version:	/
Operation Frequency:	127.5KHz
Modulation Type:	MSK
Antenna Type:	Loop coil antenna
Antenna Gain:	0 dBi
Charger Information:	Input: 5V==2A; Maximum Fast Charging Support: 10W Wireless Output: 5V==1A(5W), 9V==2A(USB) USB Output: 5V==2A, 9V==2A

Note: For more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

4.3 Test Environment

Operating Environment:	
Temperature:	25.0 °C
Humidity:	53 % RH
Atmospheric Pressure:	1010mbar
Test Mode:	
Mode a	Wireless charging Mode at 9V(Full load)
Mode b	Wireless charging Mode at 9V(Half load)
Mode c	Wireless charging Mode at 9V(Null load)
Mode d	Wireless charging Mode at 5V((Full load)
Mode e	Wireless charging Mode at 5V(Half load)
Mode f	Wireless charging Mode at 5V(Null load)
Mode g	Fast Charging-10W
Mode h	Output: 5V---1A(5W-wireless), 9V---2A(USB)
Note:	
The mode h was the worst case and only the data of the worst case record in this report	

4.4 Description of Support Units

The EUT has been tested with associated equipment below.

Description	Manufacturer	Model No.	Remark	FCC certification
Adapter	Samsung	EP-TA50CBC	Provide by client	Verification
Adapter	HUAWEI	HW-050450C00	Provide by client	Verification
Wireless electronic Load	-	-	Provide by client	-

4.5 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 **Shenzhen Huaxia Testing Technology Co., Ltd.** 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.

Hereafter the best measurement capability for CQA laboratory is reported:

No.	Item	Uncertainty	Notes
1	Radiated Emission (Below 1GHz)	±5.12dB	(1)
2	Radiated Emission (Above 1GHz)	±4.60dB	(1)
3	Conducted Disturbance (0.15~30MHz)	±3.34dB	(1)
4	Radio Frequency	3×10^{-8}	(1)
5	Duty cycle	0.6 %.	(1)
6	Occupied Bandwidth	1.1%	(1)
7	RF conducted power	0.86dB	(1)
8	RF power density	0.74	(1)
9	Conducted Spurious emissions	0.86dB	(1)
10	Temperature test	0.8°C	(1)
11	Humidity test	2.0%	(1)
12	Supply voltages	0.5 %.	(1)
13	time	0.6 %.	(1)
14	Frequency Error	5.5 Hz	(1)

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

4.6 Test Location

Shenzhen Huaxia Testing Technology Co., Ltd,

1F., Block A of Tongsheng Technology Building, Huahui Road, Dalang Street, Longhua District, Shenzhen, China

4.7 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **IC Registration No.: 22984-1**

The 3m Semi-anechoic chamber of Shenzhen Huaxia Testing Technology Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing

- **A2LA (Certificate No. 4742.01)**

Shenzhen Huaxia Testing Technology Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 4742.01.

- **FCC Registration No.: 522263**

Shenzhen Huaxia Testing Technology Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No.:522263

4.8 Deviation from Standards

None.

4.9 Other Information Requested by the Customer

None.

4.10 Equipment List

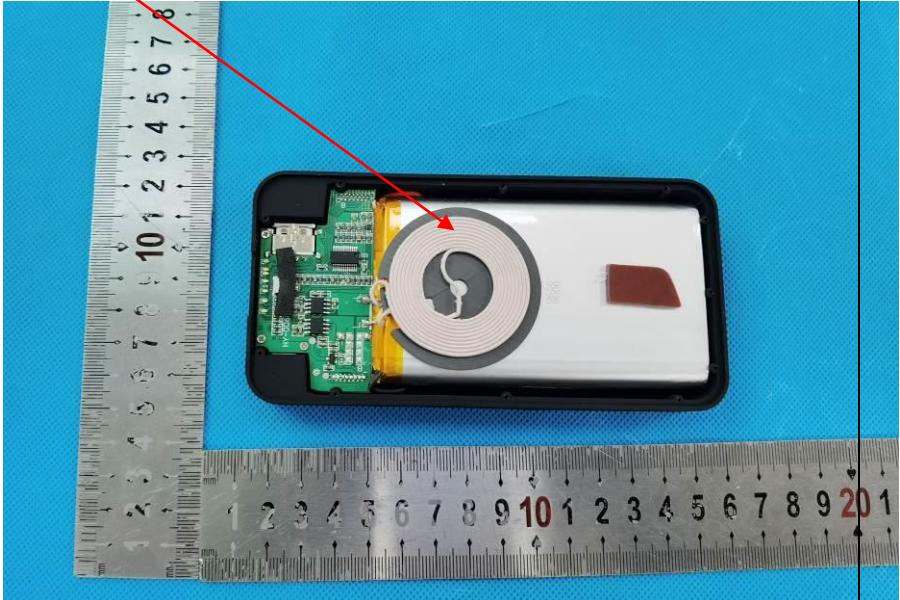
Test Equipment	Manufacturer	Model No.	Instrument No.	Calibration Date	Calibration Due Date
EMI Test Receiver	R&S	ESR7	CQA-005	2020/09/22	2021/09/21
Spectrum analyzer	R&S	FSU26	CQA-038	2020/10/24	2021/10/23
Preamplifier	MITEQ	AFS4-00010300-18-10P-4	CQA-035	2020/09/22	2021/09/21
Preamplifier	MITEQ	AMF-6D-02001800-29-20P	CQA-036	2020/10/29	2021/10/28
Loop antenna	Schwarzbeck	FMZB1516	CQA-087	2020/10/24	2021/10/23
Bilog Antenna	R&S	HL562	CQA-011	2020/09/22	2021/09/21
Horn Antenna	R&S	HF906	CQA-012	2020/09/22	2021/09/21
Horn Antenna	Schwarzbeck	BBHA 9170	CQA-088	2020/09/22	2021/09/21
Coaxial Cable (Above 1GHz)	CQA	N/A	C019	2020/09/22	2021/09/21
Coaxial Cable (Below 1GHz)	CQA	N/A	C020	2020/09/22	2021/09/21
Antenna Connector	CQA	RFC-01	CQA-080	2020/09/22	2021/09/21
RF cable(9KHz~40GHz)	CQA	RF-01	CQA-079	2020/09/22	2021/09/21
Power divider	MIDWEST	PWD-2533-02-SMA-79	CQA-067	2020/09/22	2021/09/21
EMI Test Receiver	R&S	ESPI3	CQA-013	2020/09/22	2021/09/21
LISN	R&S	ENV216	CQA-003	2020/11/01	2021/10/30
Coaxial cable	CQA	N/A	CQA-C009	2020/09/22	2021/09/21

Note:

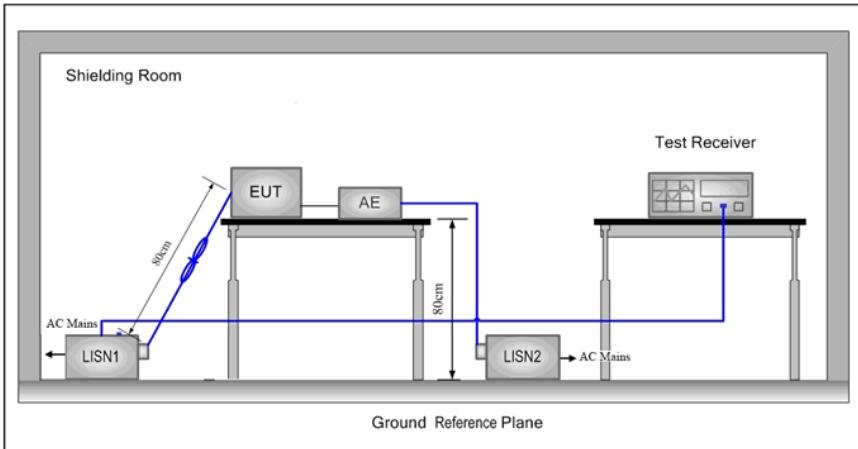
The temporary antenna connector is soldered on the PCB board in order to perform conducted tests and this temporary antenna connector is listed in the equipment list.

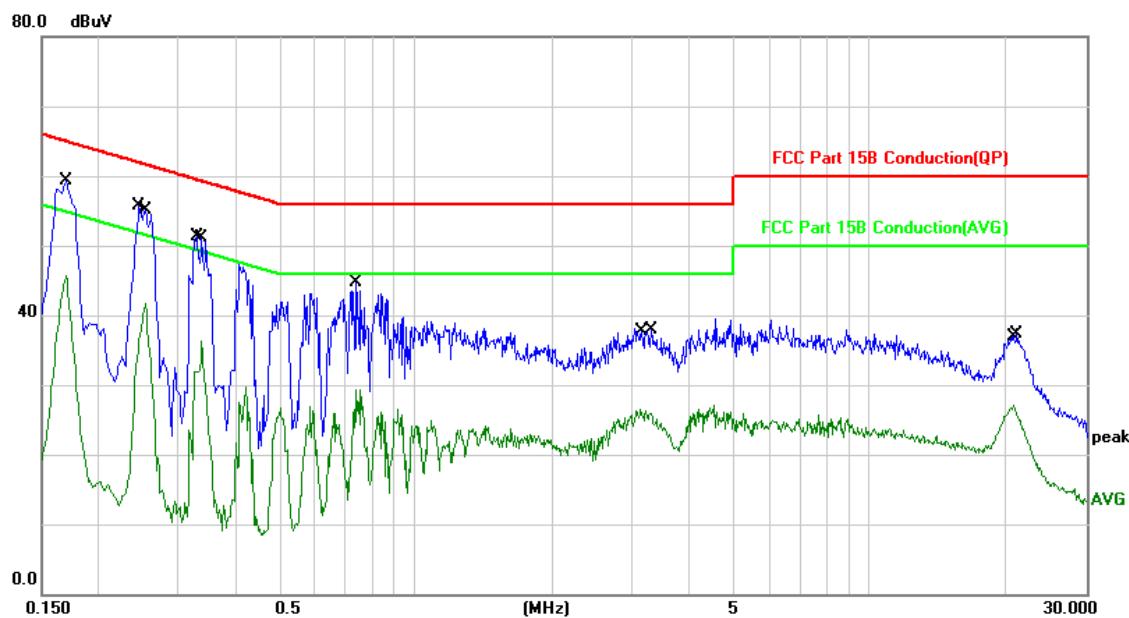
5 Test results and Measurement Data

5.1 Antenna Requirement

Standard requirement:	47 CFR Part 15C Section 15.203 /247(c)
15.203 requirement:	<p>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.</p>
15.247(b) (4) requirement:	<p>The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.</p>
EUT Antenna:	<p>Loop coil antenna</p>  <p>The antenna is Loop coil Antenna. The best case gain of the antenna is 0 dBi.</p>

5.2 Conducted Emissions

Test Requirement:	47 CFR Part 15C Section 15.207		
Test Method:	ANSI C63.10: 2013		
Test Frequency Range:	150kHz to 30MHz		
Limit:	Frequency range (MHz)		Limit (dBuV)
			Quasi-peak Average
	0.15-0.5	66 to 56*	56 to 46*
	0.5-5	56	46
	5-30	60	50
* Decreases with the logarithm of the frequency.			
Test Procedure:	<ol style="list-style-type: none"> 1) The mains terminal disturbance voltage test was conducted in a shielded room. 2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a $50\Omega/50\mu\text{H} + 5\Omega$ linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded. 3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane. 4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2. 5) 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. 		
Test Setup:			
Test Mode:	Mode h		
Test Results:	Pass		

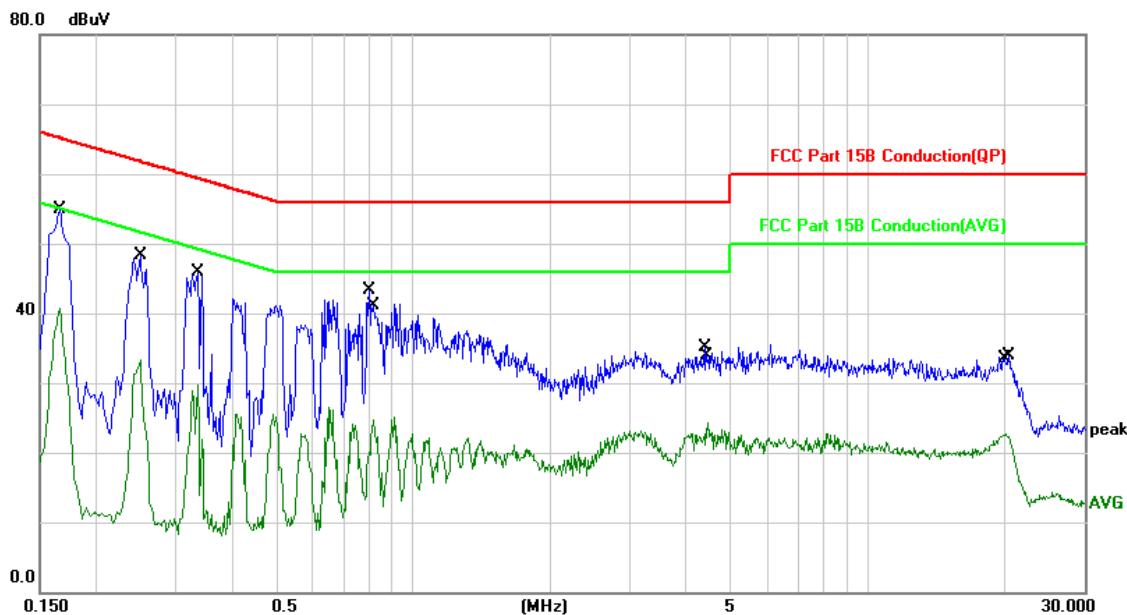
Measurement Data
L line:


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
		MHz	dBuV	dB	dBuV	dB			
1	*	0.1700	59.35	-0.13	59.22	64.96	-5.74	QP	
2		0.1700	45.92	-0.13	45.79	54.96	-9.17	AVG	
3		0.2460	55.78	-0.11	55.67	61.89	-6.22	QP	
4		0.2540	41.85	-0.11	41.74	51.62	-9.88	AVG	
5		0.3300	51.26	-0.02	51.24	59.45	-8.21	QP	
6		0.3379	36.29	-0.02	36.27	49.25	-12.98	AVG	
7		0.7380	44.74	-0.06	44.68	56.00	-11.32	QP	
8		0.7380	29.38	-0.06	29.32	46.00	-16.68	AVG	
9		3.1380	26.68	-0.18	26.50	46.00	-19.50	AVG	
10		3.3020	38.10	-0.19	37.91	56.00	-18.09	QP	
11		20.7340	27.50	-0.38	27.12	50.00	-22.88	AVG	
12		21.0980	37.66	-0.39	37.27	60.00	-22.73	QP	

Remark:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.
3. If the Peak value under Average limit, the Average value is not recorded in the report.

N line:

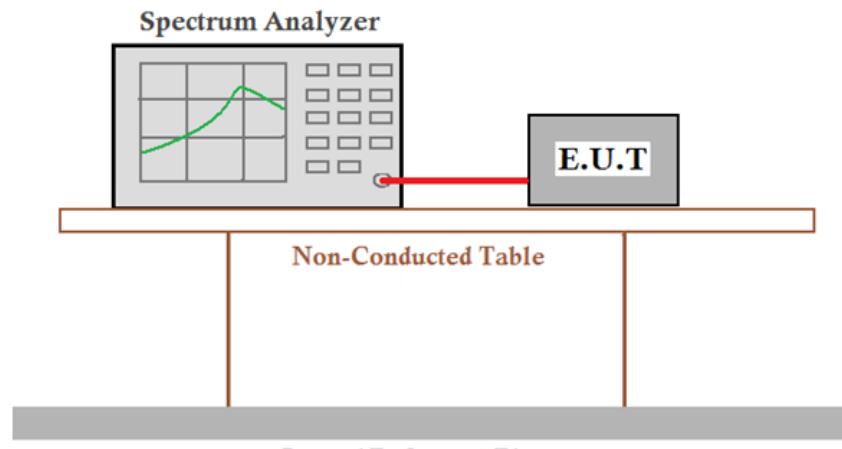


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
1	*	0.1660	54.99	-0.13	54.86	65.15	-10.29	QP	
2		0.1660	40.75	-0.13	40.62	55.15	-14.53	AVG	
3		0.2500	48.45	-0.11	48.34	61.75	-13.41	QP	
4		0.2500	33.35	-0.11	33.24	51.75	-18.51	AVG	
5		0.3339	45.82	-0.02	45.80	59.35	-13.55	QP	
6		0.3339	29.76	-0.02	29.74	49.35	-19.61	AVG	
7		0.7980	43.27	-0.07	43.20	56.00	-12.80	QP	
8		0.8139	24.84	-0.07	24.77	46.00	-21.23	AVG	
9		4.3659	35.40	-0.21	35.19	56.00	-20.81	QP	
10		4.4460	24.48	-0.21	24.27	46.00	-21.73	AVG	
11		20.1140	23.04	-0.37	22.67	50.00	-27.33	AVG	
12		20.3900	34.20	-0.38	33.82	60.00	-26.18	QP	

Remark:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.
3. If the Peak value under Average limit, the Average value is not recorded in the report.

5.3 20dB Occupy Bandwidth

Test Requirement:	47 CFR Part 15C Section 15.215 (c)
Test Method:	ANSI C63.10 2013
Test Setup:	<p style="text-align: center;">Spectrum Analyzer</p>  <p style="text-align: center;">Non-Conducted Table</p> <p style="text-align: center;">Ground Reference Plane</p> <p><i>Remark: Offset=Cable loss+ attenuation factor.</i></p>
Limit:	The 20dB bandwidth shall be less than 80% of the permitted frequency band.
Test Results:	Pass

Test Result:



5.4 Radiated Spurious Emission

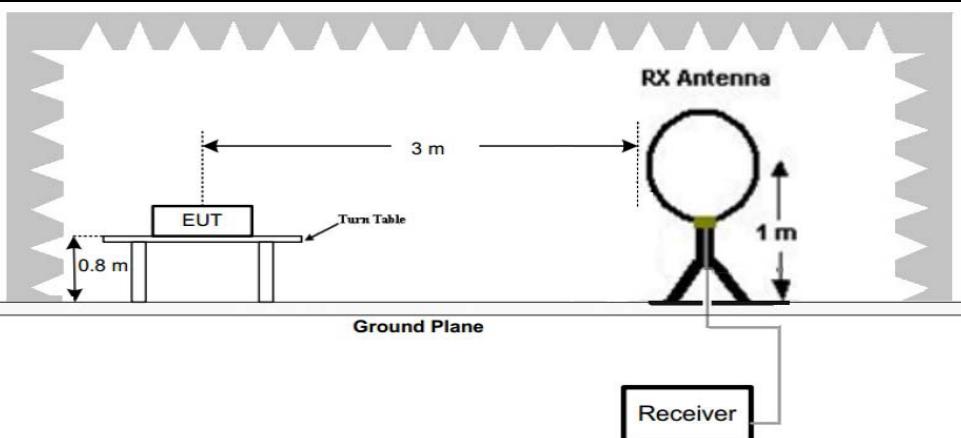
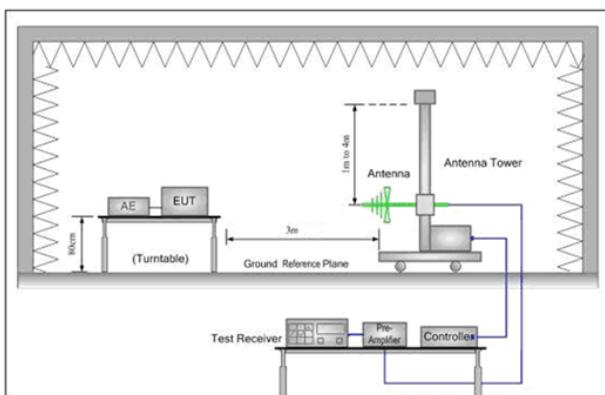
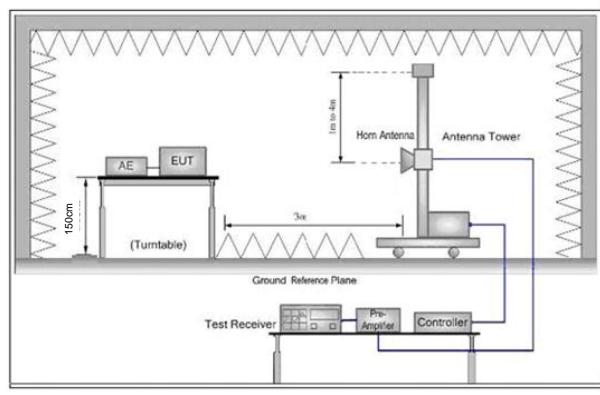
Test Requirement:	47 CFR Part 15C Section 15.209				
Test Method:	ANSI C63.10 2013				
Test Site:	Measurement Distance: 3m (Semi-Anechoic Chamber)				
Receiver Setup:	Frequency	Detector	RBW	VBW	Remark
	0.009MHz-0.090MHz	Peak	10kHz	30kHz	Peak
	0.009MHz-0.090MHz	Average	10kHz	30kHz	Average
	0.090MHz-0.110MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
	0.110MHz-0.490MHz	Peak	10kHz	30kHz	Peak
	0.110MHz-0.490MHz	Average	10kHz	30kHz	Average
	0.490MHz -30MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
	30MHz-1GHz	Quasi-peak	100 kHz	300kHz	Quasi-peak
	Above 1GHz	Peak	1MHz	3MHz	Peak
		Peak	1MHz	10Hz	Average
Limit:	Frequency	Field strength (microvolt/meter)	Limit (dBuV/m)	Remark	Measurement distance (m)
	0.009MHz-0.490MHz	2400/F(kHz)	-	-	300
	0.490MHz-1.705MHz	24000/F(kHz)	-	-	30
	1.705MHz-30MHz	30	-	-	30
	30MHz-88MHz	100	40.0	Quasi-peak	3
	88MHz-216MHz	150	43.5	Quasi-peak	3
	216MHz-960MHz	200	46.0	Quasi-peak	3
	960MHz-1GHz	500	54.0	Quasi-peak	3
	Above 1GHz	500	54.0	Average	3
<p>Note: 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.</p>					
Test Setup:					

Figure 1. Below 30MHz


Figure 2. 30MHz to 1GHz

Figure 3. Above 1 GHz

Test Procedure:	<ol style="list-style-type: none"> The EUT was placed on a turn table which is 0.8m above ground plane. Maximum procedure was performed by raising the receiving antenna from 1m to 4m and rotating the turn table from 0°C to 360°C to acquire the highest emissions from EUT And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. Repeat above procedures until all frequency measurements have been completed.
Test Results:	Pass

WORST-CASE RADIATED EMISSION BELOW 30 MHz

Frequency (MHz)	Reading (dB μ V/m)	Polar Loop	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Levels (dB μ V/m)	Limits at 3m (dB μ V/m)	Detector Mode
0.114(F)	48.12	Loop	23.64	0.01	71.77	106.17	PK
0.114(F)	45.28	Loop	23.64	0.01	68.93	86.17	AV
0.110	32.74	Loop	23.55	0.01	56.30	106.78	PK
0.110	31.58	Loop	23.55	0.01	55.14	86.78	AV
0.485	35.86	Loop	25.07	-0.17	60.76	73.71	QP
1.158	35.11	Loop	27.12	-0.25	61.98	66.33	QP
2.178	33.91	Loop	23.91	-0.24	57.58	69.54	QP

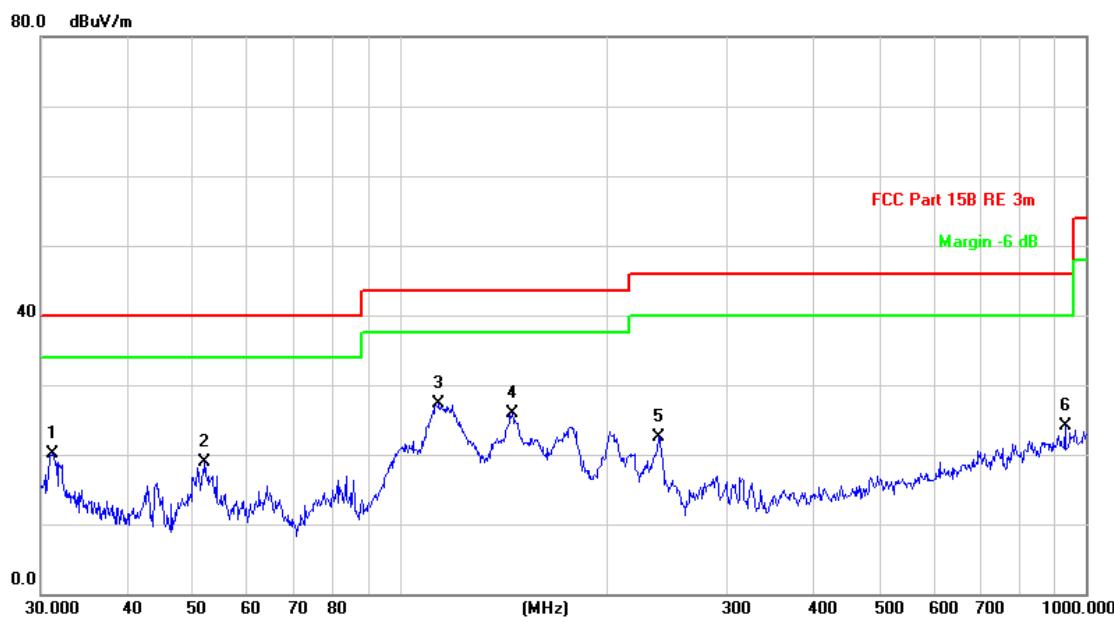
Remark:

1. Data of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
2. The test limit distance is 3m limit.
3. PK means Peak Value, QP means Quasi Peak Value, AV means Average Value.
4. F means Fundamental Frequency.

Radiated Emission below 1GHz

30MHz~1GHz, the worst case

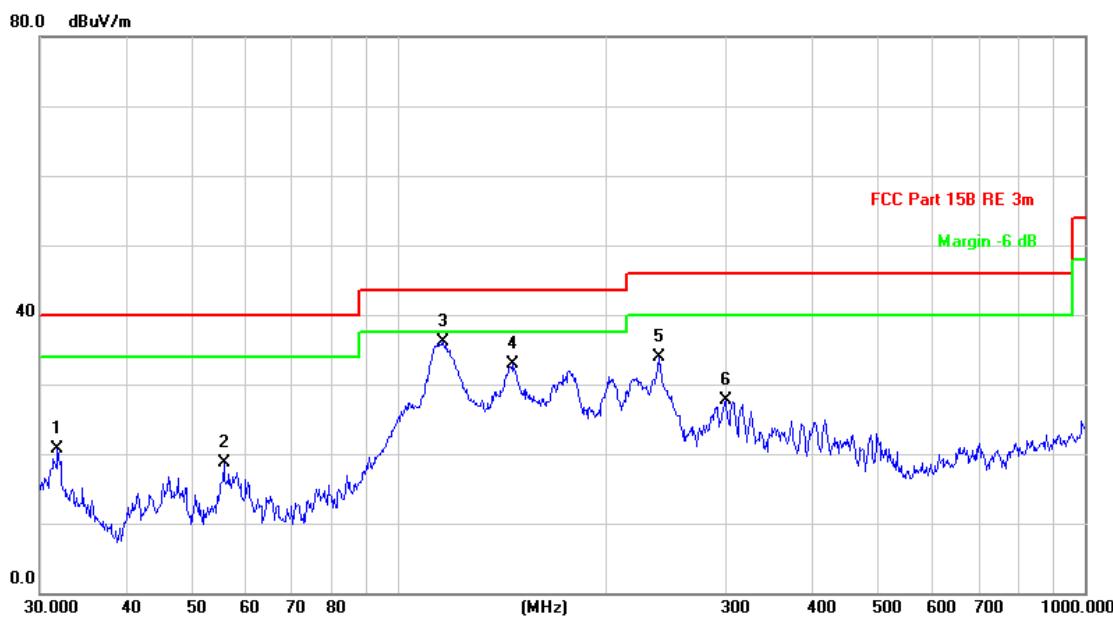
Test mode:	Mode h	Vertical
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No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Over	Antenna Height cm	Table Degree degree	Comment
1	31.1798	25.96	-5.88	20.08	40.00	-19.92	QP		
2	52.0251	37.60	-18.78	18.82	40.00	-21.18	QP		
3	* 114.1138	40.35	-13.00	27.35	43.50	-16.15	QP		
4	145.8611	38.60	-12.78	25.82	43.50	-17.68	QP		
5	238.3102	35.96	-13.42	22.54	46.00	-23.46	QP		
6	932.2715	23.93	0.11	24.04	46.00	-21.96	QP		

30MHz~1GHz, the worst case

Test mode:	Mode h	Horizontal
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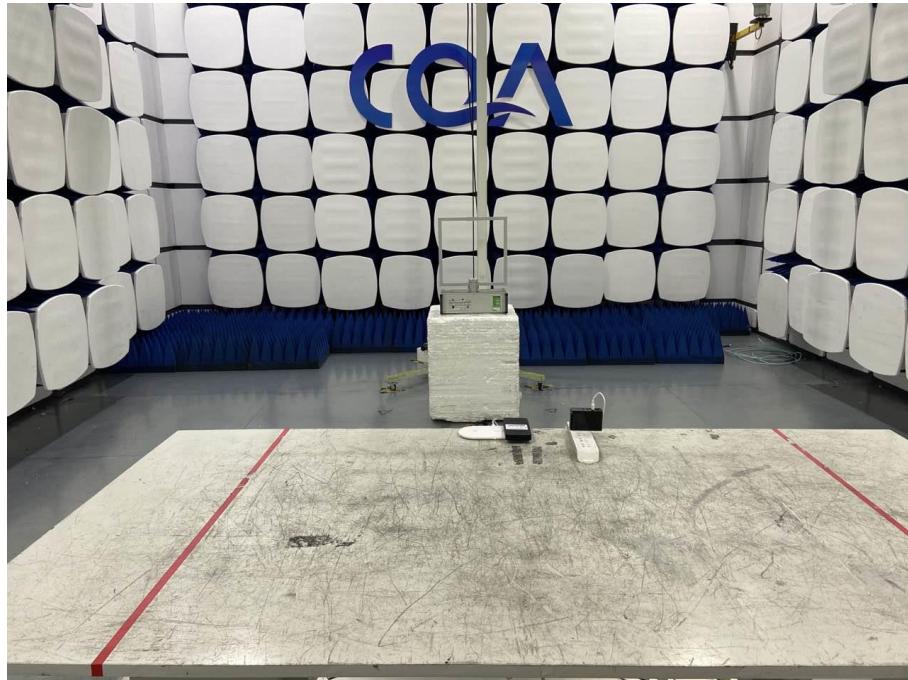


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Antenna	Table	Degree
			Level	Factor	ment					
MHz	dBuV	dB/m	dBuV/m	dB						
1	31.8427	25.72	-5.07	20.65	40.00	-19.35	QP			
2	55.6094	37.50	-18.89	18.61	40.00	-21.39	QP			
3	*	116.1320	48.99	-12.93	36.06	-7.44	QP			
4	146.3735	45.99	-13.14	32.85	43.50	-10.65	QP			
5	239.1473	47.32	-13.36	33.96	46.00	-12.04	QP			
6	299.3158	38.76	-11.09	27.67	46.00	-18.33	QP			

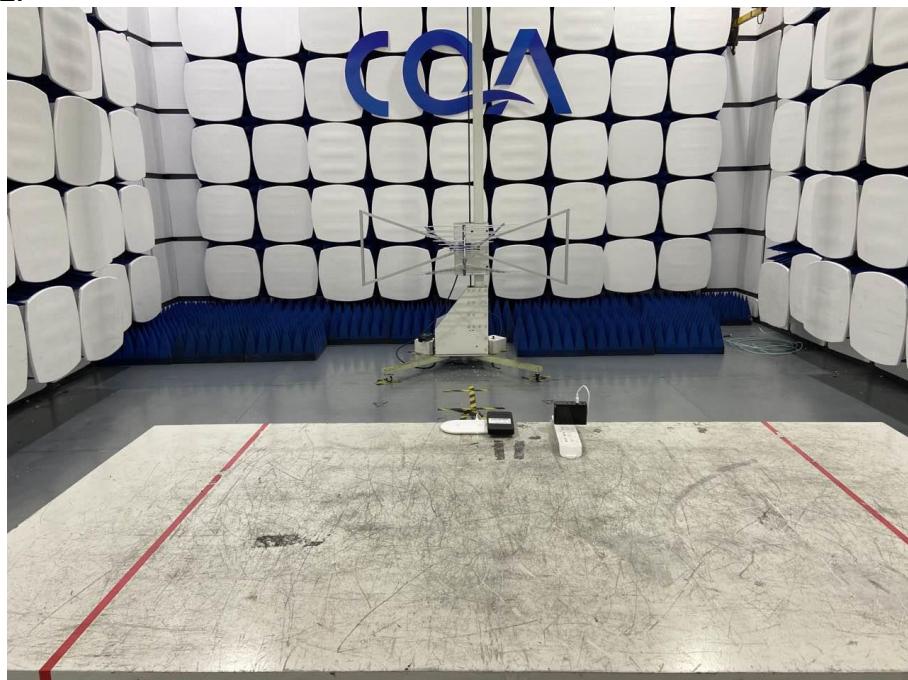
6 Photographs - EUT Test Setup

Please refer to the test setup file

9kHz~30MHz:



30MHz~1GHz:

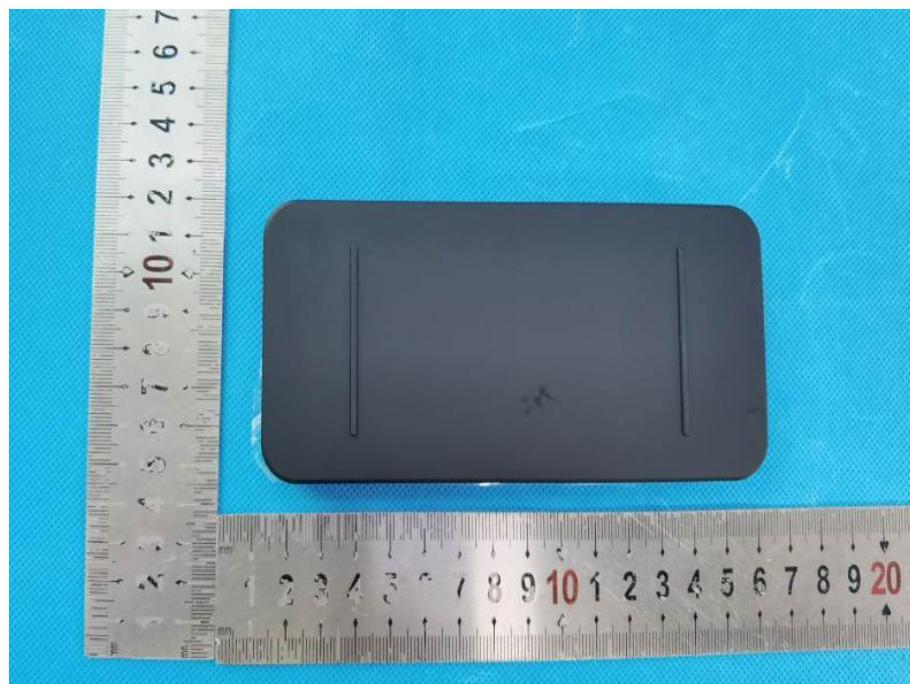


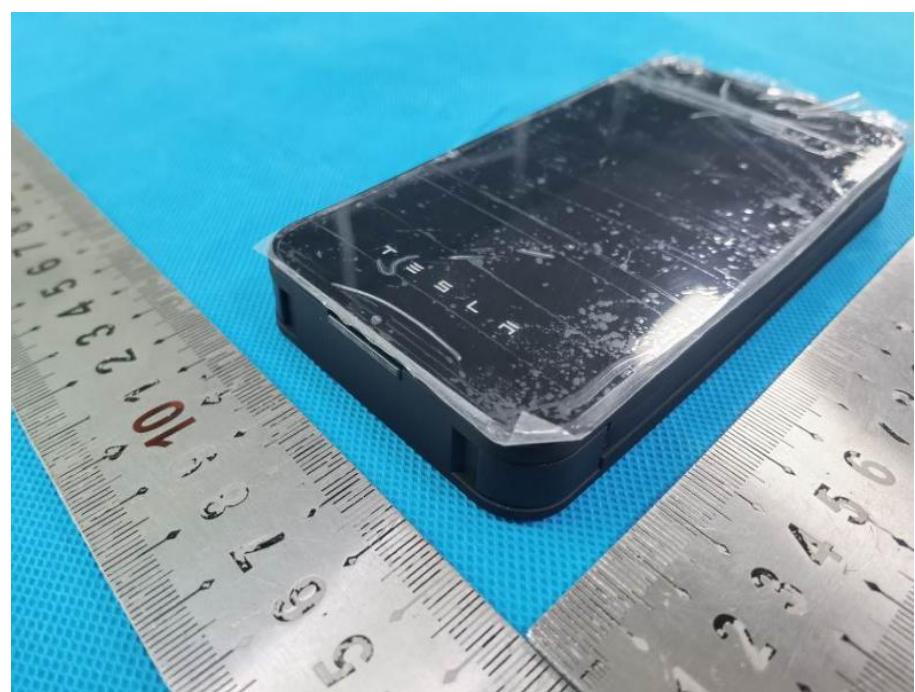
Conducted Emission :



7 Photographs - EUT Constructional Details

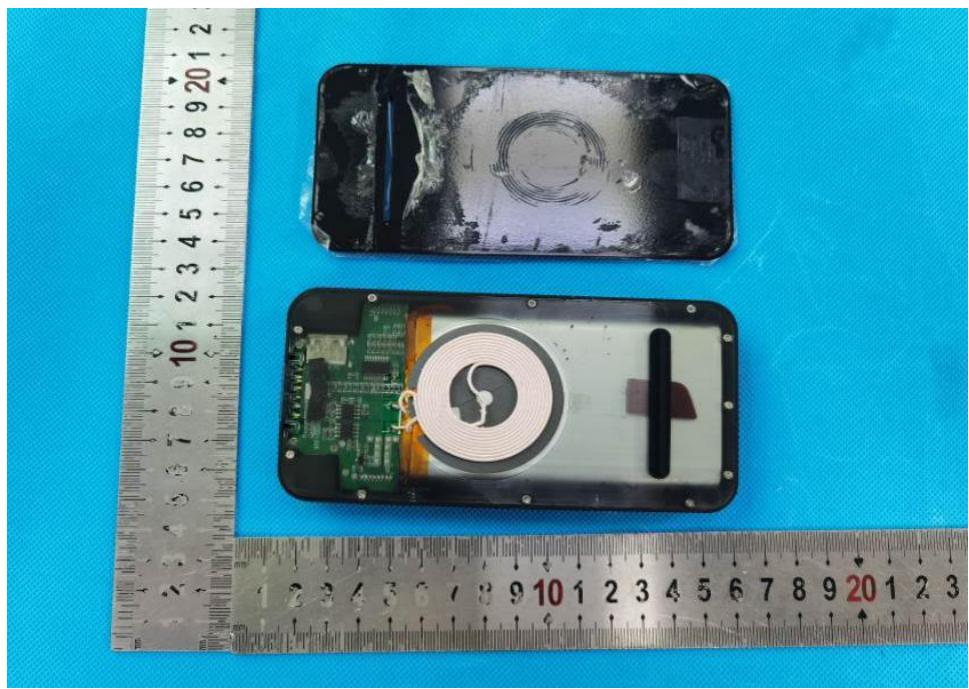
External Photos of EUT

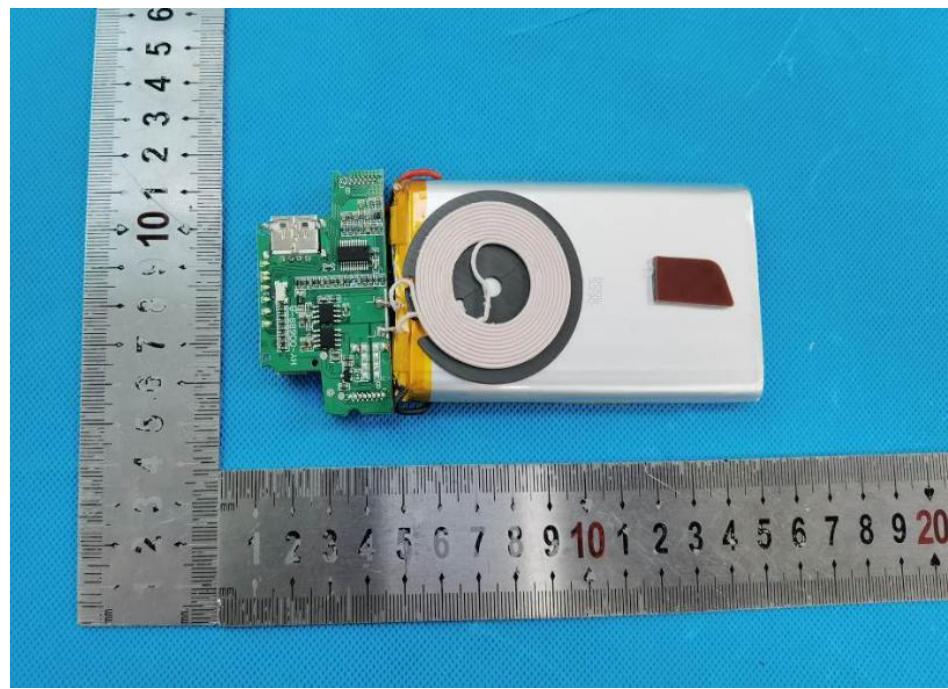


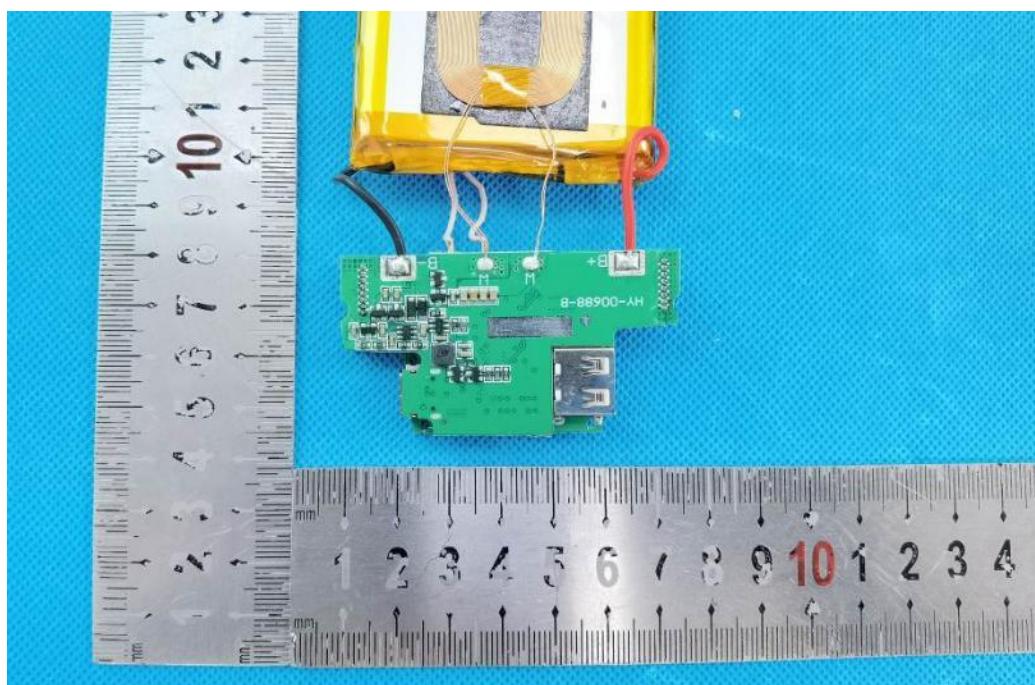
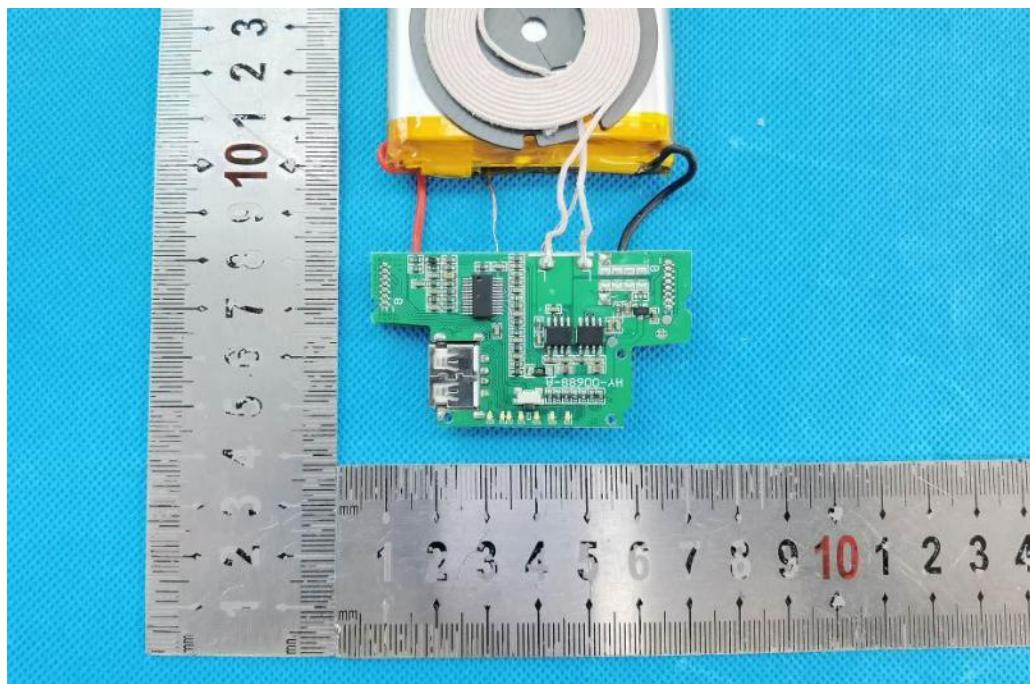




Internal Photos of EUT







The End