FCC TEST REPORT

For

Shenzhen Xintuo Supply Chain LTD

Wireless charger

Model No.: PA146A

Prepared For	:	Shenzhen Xintuo Supply Chain LTD
Address	:	F1 Building 2 Snow Industrial Park Snow Elephant Community Bantian Street, Longgang, Shenzhen, Guangdong, China
Prepared By	:	Shenzhen Anbotek Compliance Laboratory Limited
Address	:	1/F, Building D, Sogood Science and Technology Park, Sanwei community, Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China.518102 Tel: (86) 755-26066440 Fax: (86) 755-26014772
Report Number	:	SZAWW180411002-01
Date of Test	:	Apr. 11~19, 2018
Date of Report	:	Apr. 19, 2018

Contents

TEST REPORT

Applicant	:	Shenzhen Xintuo Supply Chain LTD
Manufacturer	:	DESAY INDUSTRY INSTITUTE CO.，LTD
Product Name	:	Wireless charger
Model No.	:	PA146A
Trade Mark	:	Seneo
Rating(s)	:	Input: DC 5V 2A , 9V 1.3A Output: 10W Max

Test Standard(s) : FCC Part15 Subpart C 2017, Paragraph 15.209

Test Method(s) : ANSI C63.10: 2013

The device described above is tested by Shenzhen Anbotek Compliance Laboratory Limited to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and Shenzhen Anbotek Compliance Laboratory Limited is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the FCC Part 15 Subpart C requirements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of Shenzhen Anbotek Compliance Laboratory Limited.

Date of Test : Apr. 11~19, 2018

Prepared by : Winkey Wang

(Tested Engineer / Winkey Wang)

Reviewer : Tangcy. T.

(Project Manager / Tangcy. T)

Approved & Authorized Signer : Tom Chen

(Manager / Tom Chen)

1. General Information

1.1. Client Information

Applicant	:	Shenzhen Xintuo Supply Chain LTD
Address	:	F1 Building 2 Snow Industrial Park Snow Elephant Community Bantian Street, Longgang, Shenzhen, Guangdong, China
Manufacturer	:	DESAY INDUSTRY INSTITUTE CO.，LTD
Address	:	No.3, Desay Industrials Zone, Chenjiang Town, Huizhou, Guangdong, China

1.2. Description of Device (EUT)

Product Name	:	Wireless charger	
Model No.	:	PA146A	
Trade Mark	:	Seneo	
Test Power Supply	:	AC 120V, 60Hz for adapter/AC 240V, 60Hz for adapter	
Product Description	:	Operation Frequency:	110-205KHz
		Number of Channel:	20 Channels
		Modulation Type:	MSK
		Antenna Type:	Loop Antenna
		Antenna Gain(Peak):	0 dBi
Remark: 1) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.			

1.3. Auxiliary Equipment Used During Test

Adapter	:	Manufacturer: SAMSUNG M/N: ETA-U90CBC S/N: RT6FB17ZS/B-E Input: 100-240V~50/60Hz 0.35A Output: DC 5V, 2000mA

1.4. Description of Test Modes

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	CH01
Mode 2	CH10
Mode 3	CH20
Mode 4	Keeping TX+Charging mode

For Conducted Emission	
Final Test Mode	Description
Mode 4	Keeping TX+Charging mode

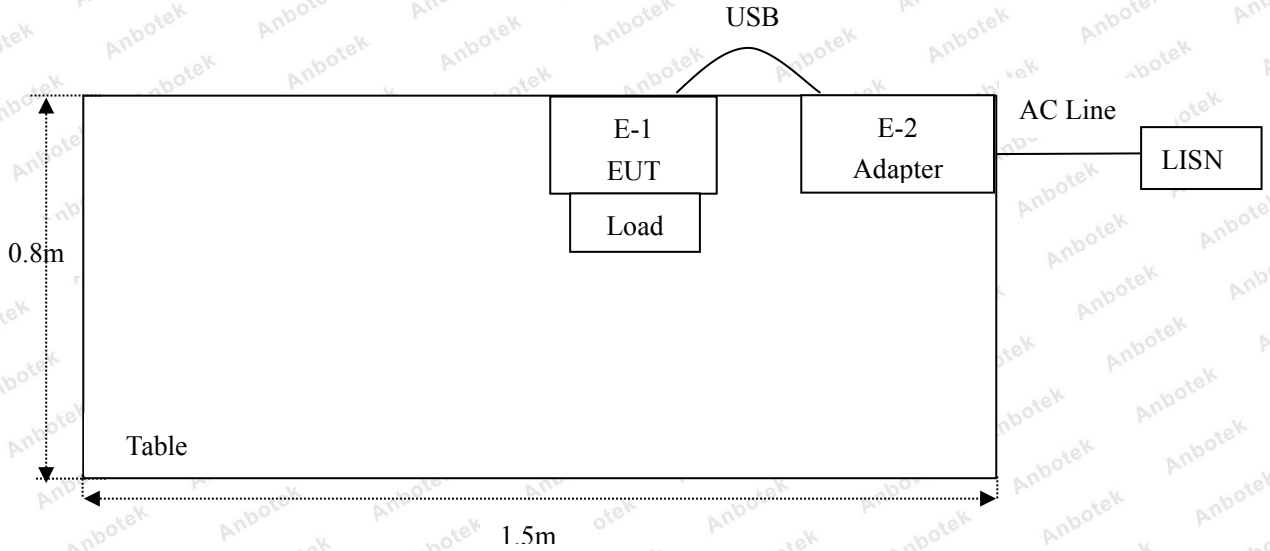
For Radiated Emission	
Final Test Mode	Description
Mode 1	CH01
Mode 2	CH10
Mode 3	CH20
Mode 4	Keeping TX+Charging mode

1.5. List of channels

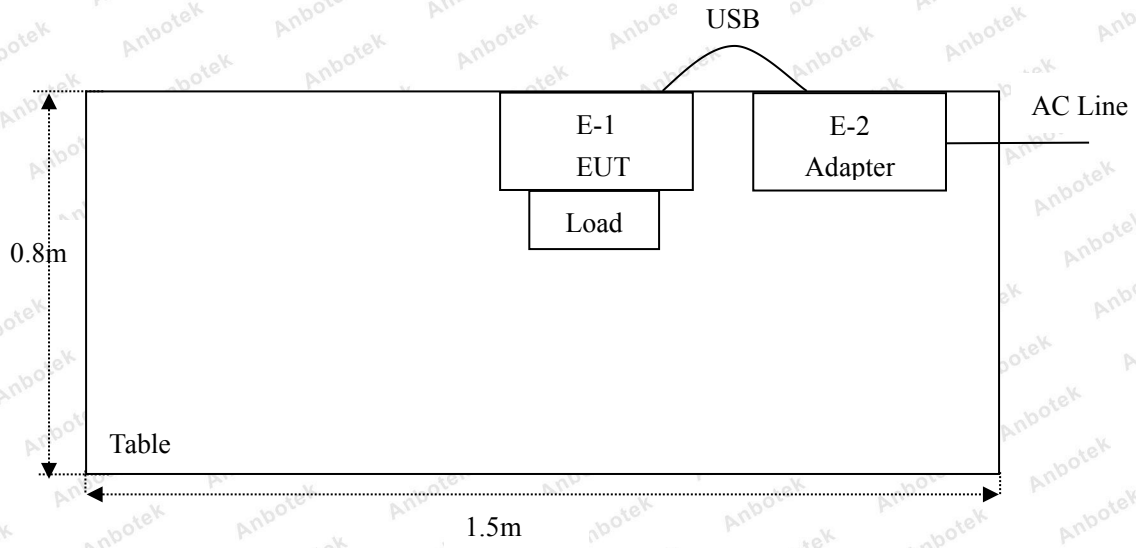
Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
1	0.110	6	0.135	11	0.160	16	0.185
2	0.115	7	0.140	12	0.165	17	0.190
3	0.120	8	0.145	13	0.170	18	0.195
4	0.125	9	0.150	14	0.175	19	0.200
5	0.130	10	0.155	15	0.180	20	0.205

1.6. Description Of Test Setup

CE



RE



1.7. Test Equipment List

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	L.I.S.N. Artificial Mains Network	Rohde & Schwarz	ENV216	100055	Nov. 17, 2017	1 Year
2.	EMI Test Receiver	Rohde & Schwarz	ESCI	100627	Nov. 17, 2017	1 Year
3.	RF Switching Unit	Compliance Direction	RSU-M2	38303	Nov. 17, 2017	1 Year
4.	Spectrum Analysis	Agilent	E4407B	US39390582	Nov. 17, 2017	1 Year
5.	Spectrum Analysis	Agilent	N9038A	MY53227295	Nov. 17, 2017	1 Year
6.	Preamplifier	SKET Electronic	BK1G18G30D	KD17503	Nov. 17, 2017	1 Year
7.	EMI Test Receiver	Rohde & Schwarz	ESPI	101604	Nov. 17, 2017	1 Year
8.	Double Ridged Horn Antenna	Instruments corporation	GTH-0118	351600	Nov. 20, 2017	1 Year
9.	Bilog Broadband Antenna	Schwarzbeck	VULB9163	VULB 9163-289	Nov. 20, 2017	1 Year
10.	Loop Antenna	Schwarzbeck	HFH2-Z2	100047	Nov. 17, 2017	1 Year
11.	Horn Antenna	Schewarzbeck	BBHA9170	9170-375	Nov. 17, 2017	1 Year
12.	Pre-amplifier	SONOMA	310N	186860	Nov. 17, 2017	1 Year
13.	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	N/A	N/A
14.	RF Test Control System	YIHENG	YH3000	2017430	Nov. 18, 2017	1 Year
15.	Power Sensor	DAER	RPR3006W	15I00041SN045	Nov. 17, 2017	1 Year
16.	Power Sensor	DAER	RPR3006W	15I00041SN046	Nov. 17, 2017	1 Year
17.	MXA Spectrum Analysis	Agilent	N9020A	MY51170037	Nov. 18, 2017	1 Year
18.	MXG RF Vector Signal Generator	Agilent	N5182A	MY48180656	Nov. 18, 2017	1 Year
19.	Signal Generator	Agilent	E4421B	MY41000743	Nov. 18, 2017	1 Year
20.	DC Power Supply	LW	TPR-6410D	349315	Nov. 01, 2017	1 Year
21.	Constant Temperature Humidity Chamber	Sertep	ZJ-HWHS80B	ZJ-17042804	Nov. 01, 2017	1 Year

1.8. Measurement Uncertainty

Radiation Uncertainty	:	Ur = 4.1 dB (Horizontal)
		Ur = 4.3 dB (Vertical)
Conduction Uncertainty	:	Uc = 3.4dB

1.9. Description of Test Facility

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

FCC-Registration No.: 184111

Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registed 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. 184111, July 31, 2017.

ISED-Registration No.: 8058A-1

Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (ISED) Innovation, Science and Economic Development Canada. The acceptance letter from the ISED is maintained in our files. Registration 8058A-1, June 13, 2016.

Test Location

All Emissions tests were performed at

Shenzhen Anbotek Compliance Laboratory Limited. at 1/F, Building D, Sogood Science and Technology Park, Sanwei community, Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China.518102

2. Summary of Test Results

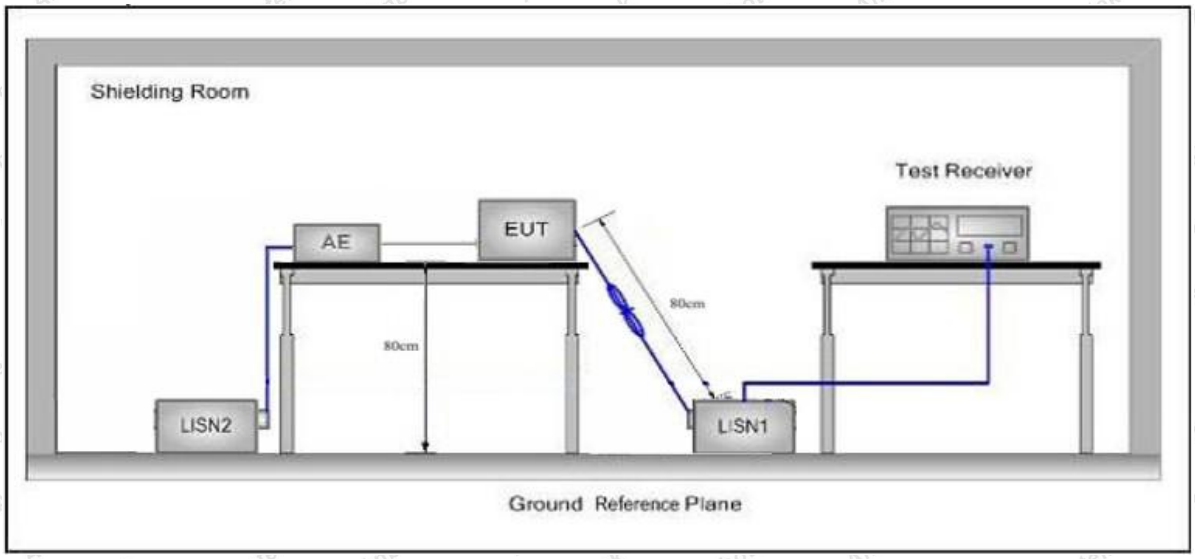
Standard Section	Test Item	Result
FCC Part 15, Paragraph 15.207	Conducted Emission Test	PASS
FCC Part 15, Paragraph 15.209(a)(f)	Spurious Emission	PASS

3. Conducted Emission Test

3.1. Test Standard and Limit

Test Standard	FCC Part15 Section 15.207		
Test Limit	Frequency	Maximum RF Line Voltage (dBuV)	
		Quasi-peak Level	Average Level
	150kHz~500kHz	66 ~ 56 *	56 ~ 46 *
	500kHz~5MHz	56	46
	5MHz~30MHz	60	50
Remark: (1) *Decreasing linearly with logarithm of the frequency. (2) The lower limit shall apply at the transition frequency.			

3.2. Test Setup



3.3. Test Procedure

The EUT system is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 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 C63.10-2013 on Conducted Emission Measurement.

The bandwidth of test receiver (ESCI) set at 9kHz.

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

3.4. Test Data

Please to see the following pages

Conducted Emission Test Data

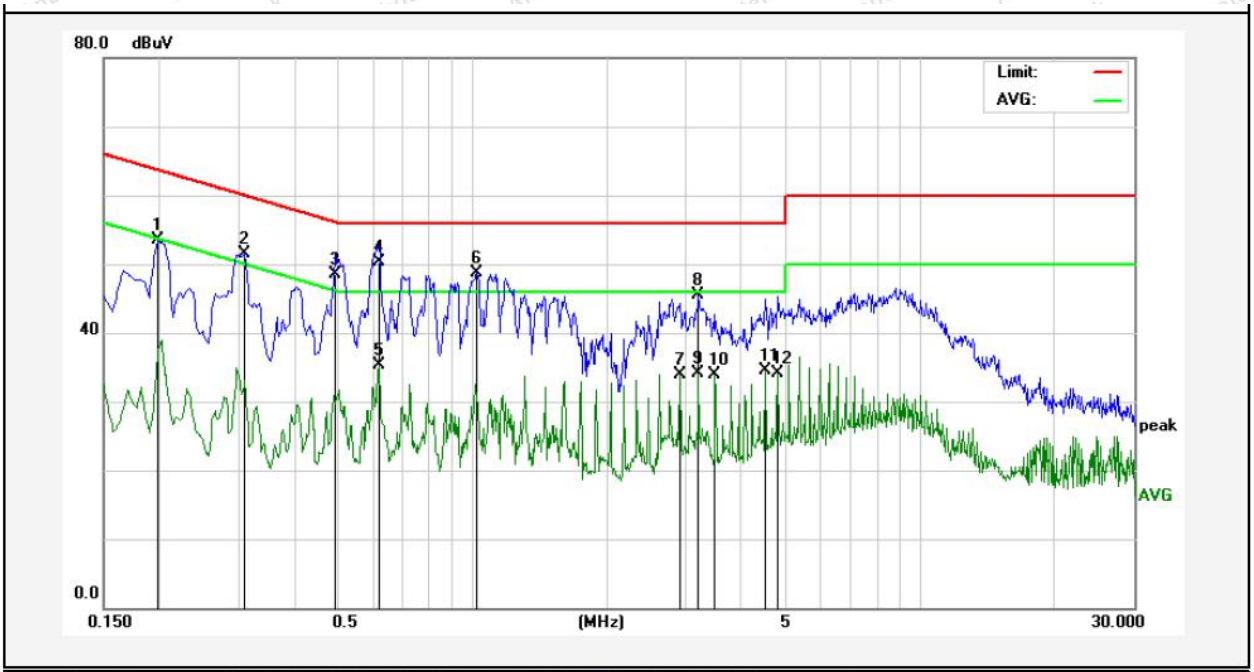
Test Site: 1# Shielded Room

Operating Condition: Keeping TX+Charging mode

Test Specification: AC 120V, 60Hz for adapter

Comment: Live Line

Tem.:22.3℃ Hum.:57%



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Over Limit (dB)	Detector	Remark
1	0.1980	33.51	19.90	53.41	63.69	-10.28	QP	
2	0.3100	31.71	19.89	51.60	59.97	-8.37	QP	
3	0.4940	28.44	19.98	48.42	56.10	-7.68	QP	
4	0.6180	30.19	20.02	50.21	56.00	-5.79	QP	
5	0.6180	15.25	20.02	35.27	46.00	-10.73	AVG	
6	1.0220	28.59	20.12	48.71	56.00	-7.29	QP	
7	2.9100	13.71	20.16	33.87	46.00	-12.13	AVG	
8	3.1980	25.31	20.16	45.47	56.00	-10.53	QP	
9	3.1980	14.03	20.16	34.19	46.00	-11.81	AVG	
10	3.4900	13.77	20.17	33.94	46.00	-12.06	AVG	
11	4.5100	14.29	20.19	34.48	46.00	-11.52	AVG	
12	4.8020	13.84	20.20	34.04	46.00	-11.96	AVG	

Conducted Emission Test Data

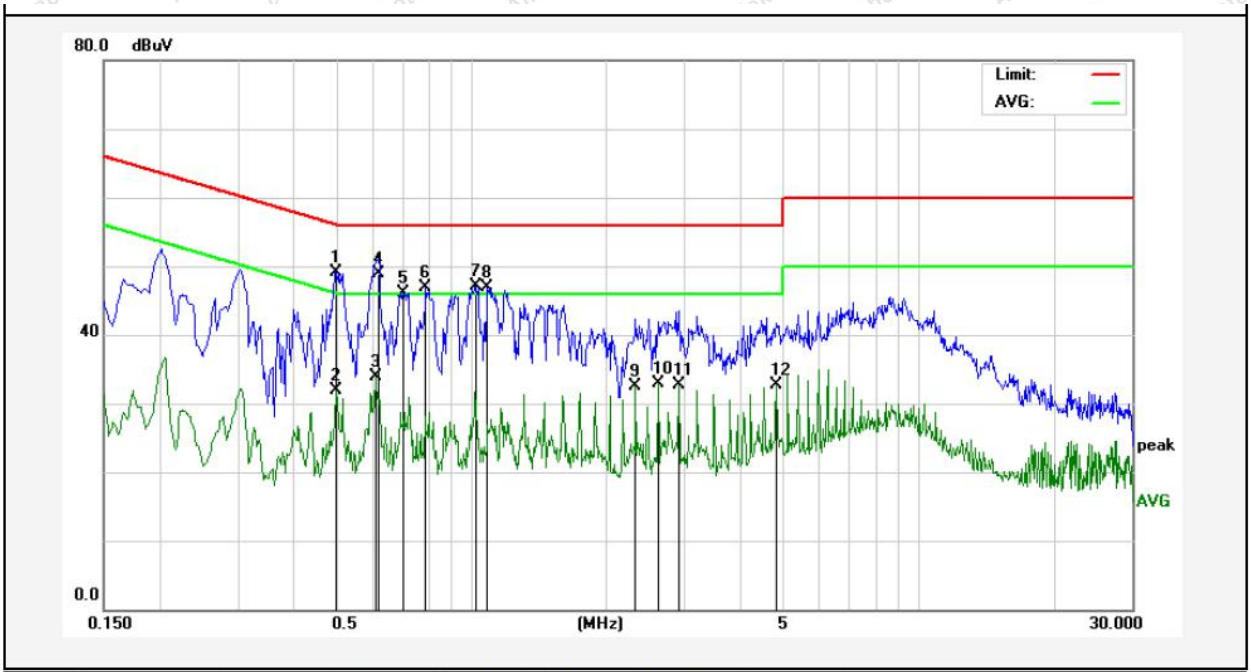
Test Site: 1# Shielded Room

Operating Condition: Keeping TX+Charging mode

Test Specification: AC 120V, 60Hz for adapter

Comment: Neutral Line

Tem.:22.3℃ Hum.:57%



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Over Limit (dB)	Detector	Remark
1	0.4980	29.14	19.98	49.12	56.03	-6.91	QP	
2	0.4980	11.94	19.98	31.92	46.03	-14.11	AVG	
3	0.6100	13.81	20.01	33.82	46.00	-12.18	AVG	
4	0.6180	28.95	20.02	48.97	56.00	-7.03	QP	
5	0.7019	26.13	20.04	46.17	56.00	-9.83	QP	
6	0.7900	26.85	20.06	46.91	56.00	-9.09	QP	
7	1.0220	26.91	20.12	47.03	56.00	-8.97	QP	
8	1.0859	26.86	20.12	46.98	56.00	-9.02	QP	
9	2.3260	12.36	20.15	32.51	46.00	-13.49	AVG	
10	2.6180	12.81	20.15	32.96	46.00	-13.04	AVG	
11	2.9100	12.55	20.16	32.71	46.00	-13.29	AVG	
12	4.7980	12.45	20.20	32.65	46.00	-13.35	AVG	

Conducted Emission Test Data

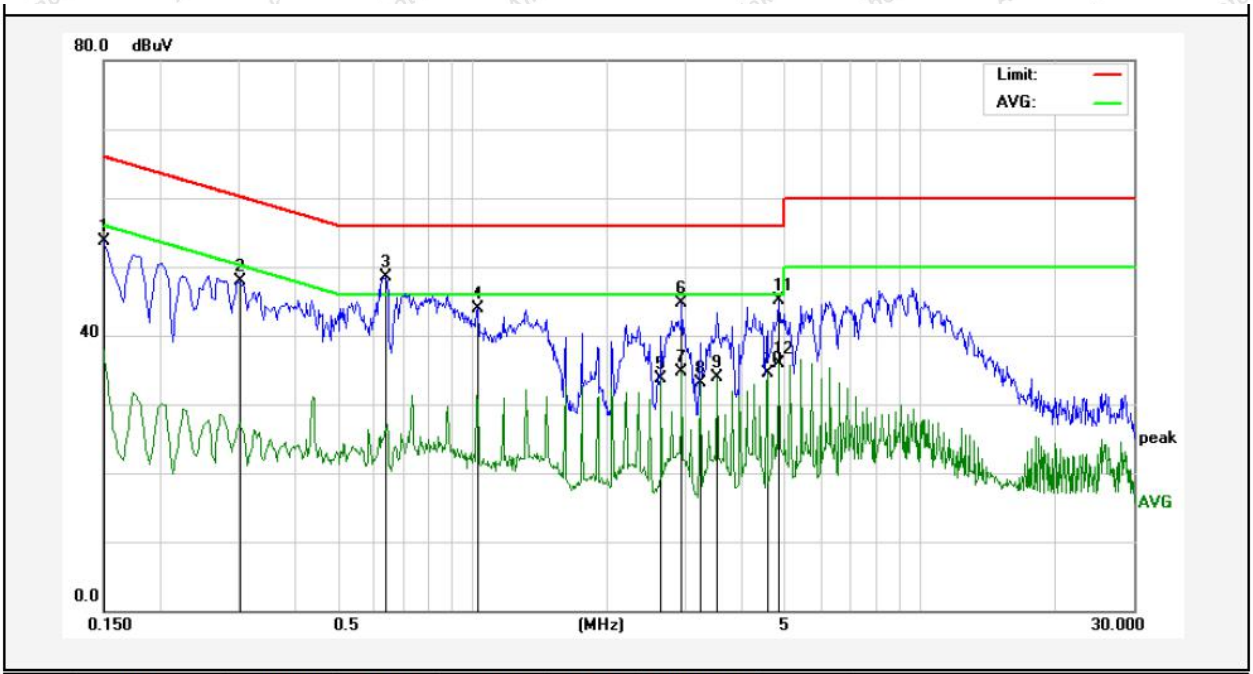
Test Site: 1# Shielded Room

Operating Condition: Keeping TX+Charging mode

Test Specification: AC 240V, 60Hz for adapter

Comment: Live Line

Tem.:22.3℃ Hum.:57%



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Over Limit (dB)	Detector	Remark
1	0.1500	33.86	19.90	53.76	65.99	-12.23	QP	
2	0.3020	27.95	19.89	47.84	60.19	-12.35	QP	
3	0.6419	28.40	20.02	48.42	56.00	-7.58	QP	
4	1.0300	23.86	20.12	43.98	56.00	-12.02	QP	
5	2.6420	13.48	20.15	33.63	46.00	-12.37	AVG	
6	2.9340	24.53	20.16	44.69	56.00	-11.31	QP	
7	2.9340	14.48	20.16	34.64	46.00	-11.36	AVG	
8	3.2300	12.85	20.16	33.01	46.00	-12.99	AVG	
9	3.5220	13.83	20.17	34.00	46.00	-12.00	AVG	
10	4.5500	14.29	20.19	34.48	46.00	-11.52	AVG	
11	4.8420	24.95	20.20	45.15	56.00	-10.85	QP	
12	4.8420	15.62	20.20	35.82	46.00	-10.18	AVG	

Conducted Emission Test Data

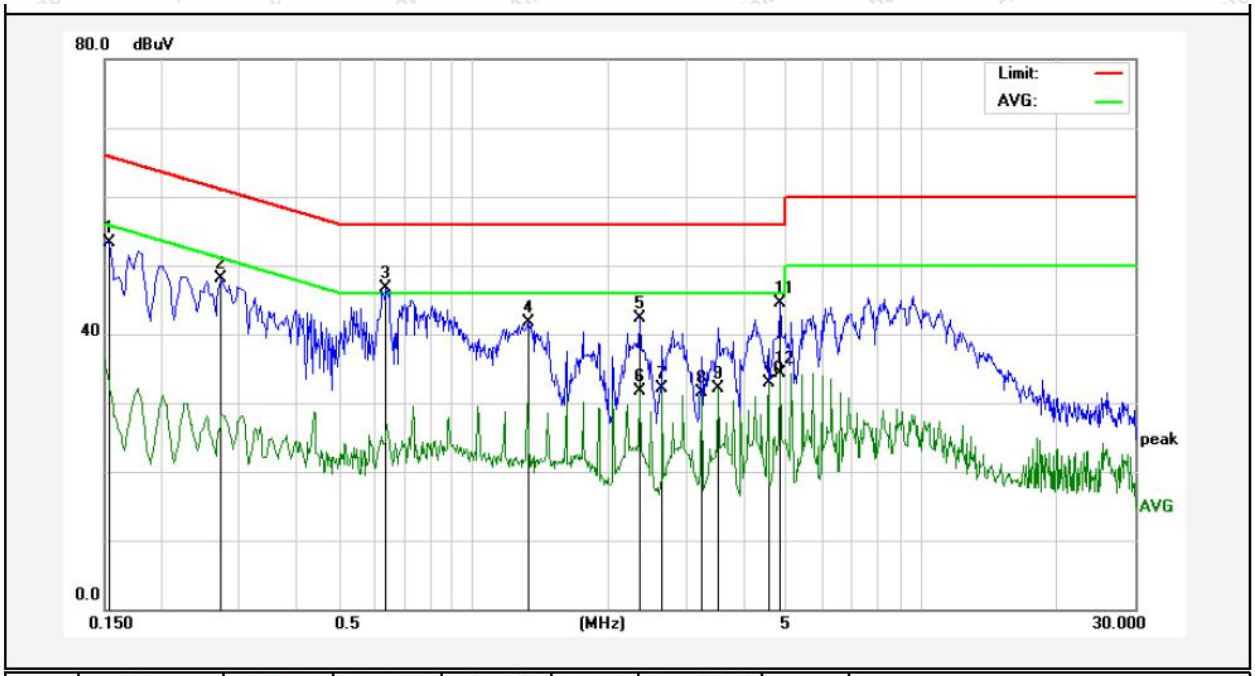
Test Site: 1# Shielded Room

Operating Condition: Keeping TX+Charging mode

Test Specification: AC 240V, 60Hz for adapter

Comment: Neutral Line

Tem.:22.3℃ Hum.:57%



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Over Limit (dB)	Detector	Remark
1	0.1539	33.45	19.90	53.35	65.78	-12.43	QP	
2	0.2740	28.14	19.89	48.03	60.99	-12.96	QP	
3	0.6380	26.61	20.02	46.63	56.00	-9.37	QP	
4	1.3260	21.67	20.13	41.80	56.00	-14.20	QP	
5	2.3460	22.13	20.15	42.28	56.00	-13.72	QP	
6	2.3460	11.52	20.15	31.67	46.00	-14.33	AVG	
7	2.6420	11.90	20.15	32.05	46.00	-13.95	AVG	
8	3.2300	11.32	20.16	31.48	46.00	-14.52	AVG	
9	3.5220	11.90	20.17	32.07	46.00	-13.93	AVG	
10	4.5500	12.62	20.19	32.81	46.00	-13.19	AVG	
11	4.8420	24.32	20.20	44.52	56.00	-11.48	QP	
12	4.8420	14.02	20.20	34.22	46.00	-11.78	AVG	

4. Radiation Spurious Emission and Band Edge

4.1. Test Standard and Limit

Test Standard	FCC Part15 C Section 15.209 and 15.205				
Test Limit	Frequency (MHz)	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~1000MHz	500	54.0	Quasi-peak	3
	Above 1000MHz	500	54.0	Average	3
		-	74.0	Peak	3

Remark:

(1)The lower limit shall apply at the transition frequency.

(2) 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.

4.2. Test Setup

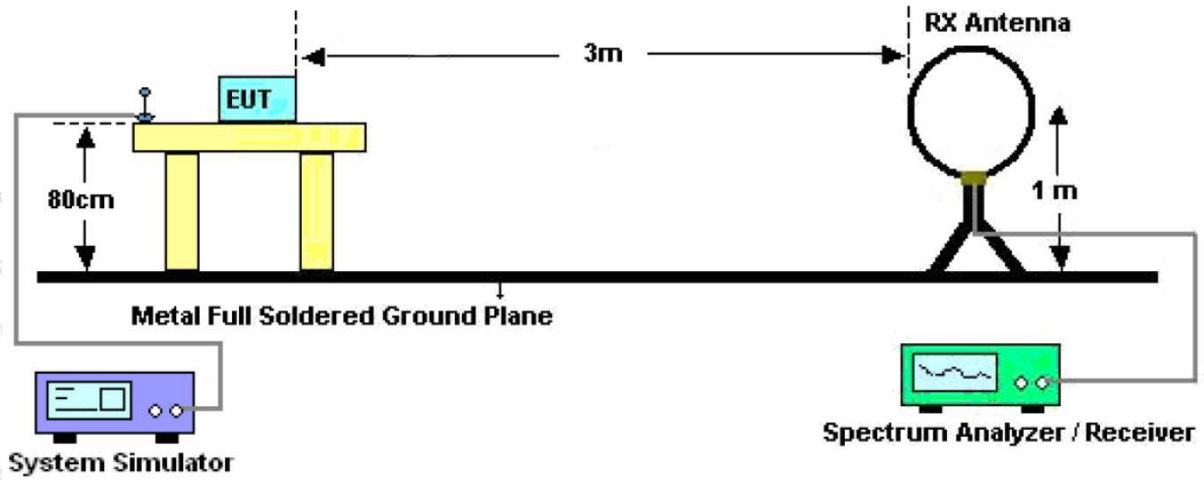


Figure 1. Below 30MHz

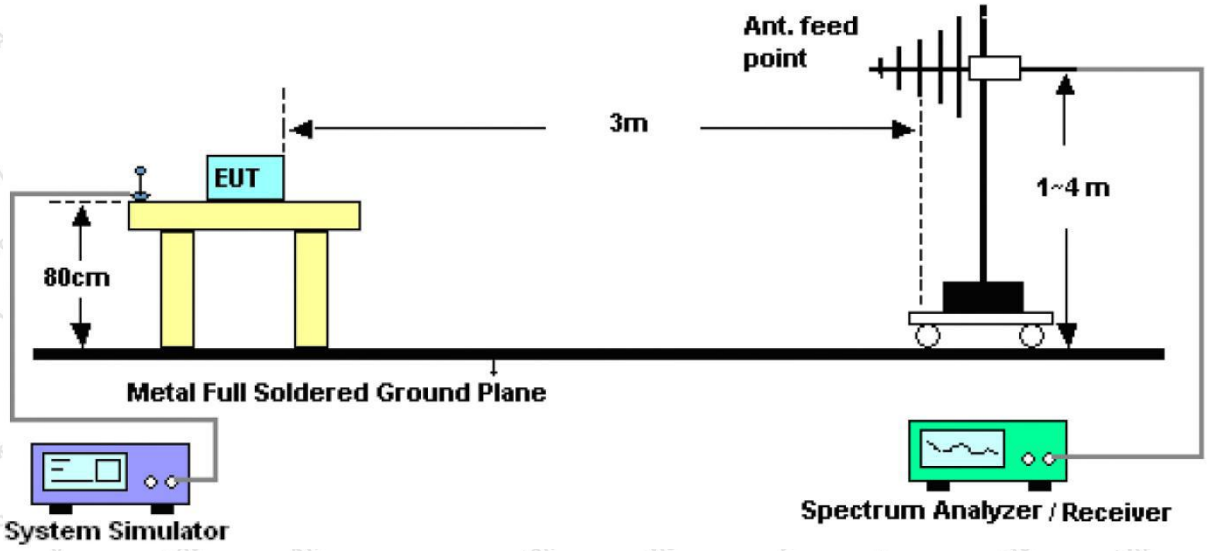


Figure 2. 30MHz to 1GHz

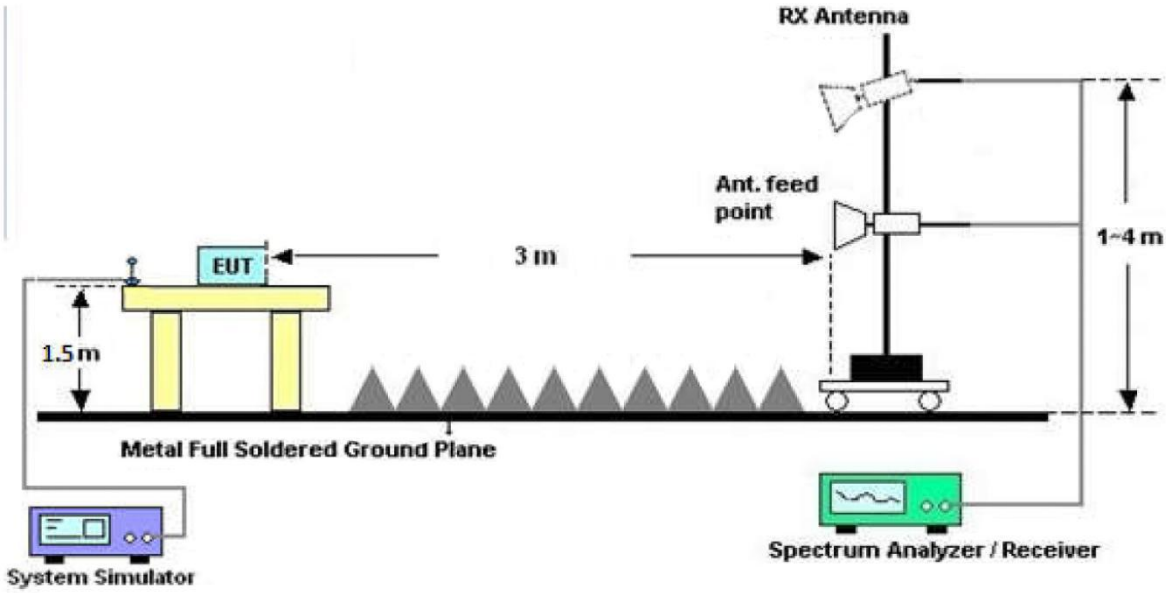


Figure 3. Above 1 GHz

4.3. Test Procedure

For below 1GHz: The EUT is placed on a turntable, which is 0.8m above the ground plane.
For above 1GHz: The EUT is placed on a turntable, which is 1.5m above the ground plane.
The turn table 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 a antenna tower. The antenna can be moved up and down from 1 to 4 meters to find out the maximum emission level. Rotated the EUT through three orthogonal axes to determine the maximum emissions, both horizontal and vertical polarization of the antenna are set on test. The EUT is tested in 9*6*6 Chamber. The device is evaluated in xyz orientation.

For 9kHz to 150kHz, Set the spectrum analyzer as:
RBW = 200Hz, VBW =1kHz, Detector= Quasi-Peak, Trace mode= Max hold, Sweep- auto couple.

For 150kHz to 30MHz, Set the spectrum analyzer as:

RBW = 9KHz, VBW =30kHz, Detector= Quasi-Peak, Trace mode= Max hold, Sweep- auto couple.

For 30MHz to 1000MHz, Set the spectrum analyzer as:
RBW = 100kHz, VBW =300kHz, Detector= Quasi-Peak, Trace mode= Max hold, Sweep- auto couple.

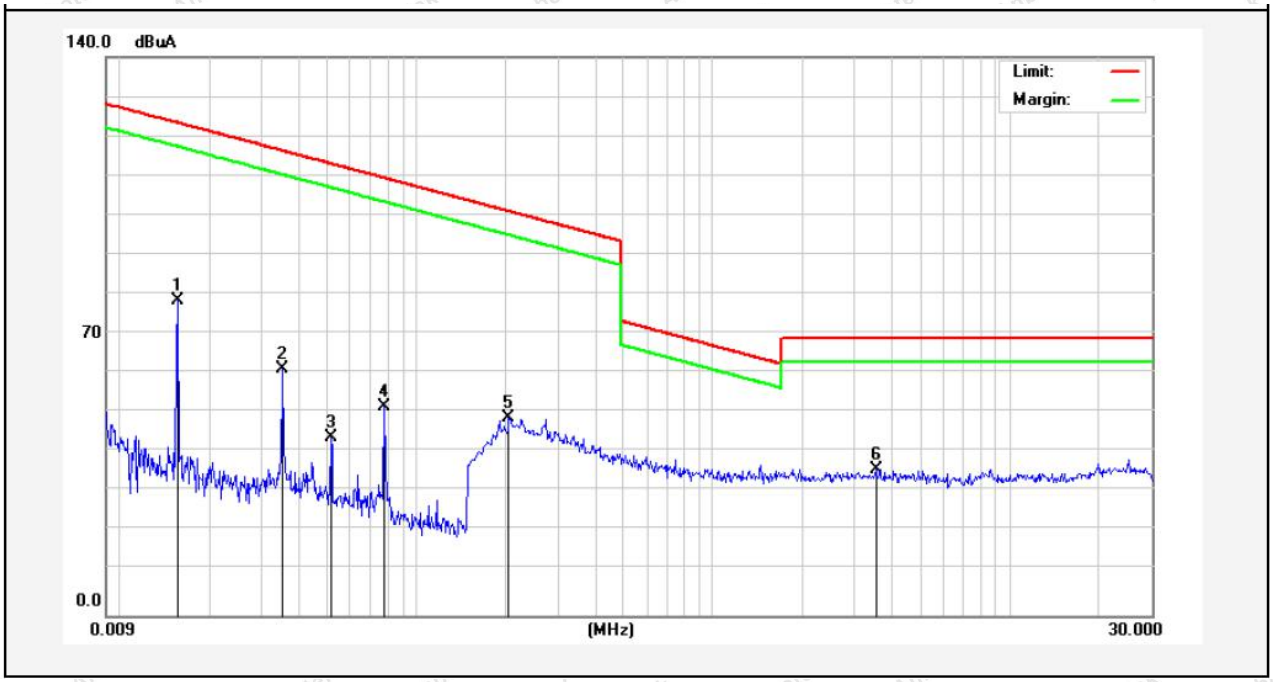
4.4. Test Data

PASS

Test Results

(Between 9KHz – 30MHz)

Job No.:	**SZAWW180411002-01**		
Standard:	**FCC PART15 C _3m**	**Power Source:**	**AC 120V, 60Hz for adapter**
Test item:	**Radiation Test**	**Temp.(C)/Hum.(%RH):**	**24.4(C)/50%RH**
Test Mode:	**Mode 4**	**Distance:**	**3m**

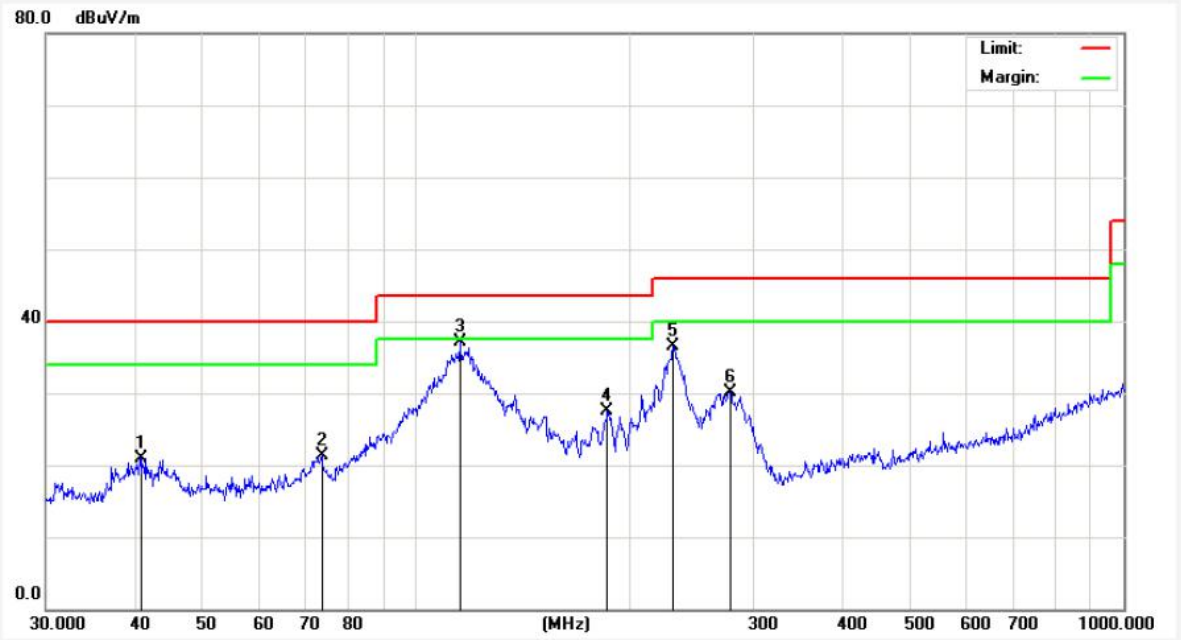


Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	degree (dge)
0.0157	67.42	19.27	2.53	0	89.22	143.52	-54.30	Peak	240
0.0157	57.29	19.27	2.53	0	79.09	123.52	-44.43	AV	240
0.0354	49.12	19.30	2.53	0	70.95	136.50	-65.55	Peak	124
0.0354	39.90	19.30	2.53	0	61.73	116.50	-54.77	AV	124
0.0518	43.34	19.35	2.55	0	65.24	133.21	-67.97	Peak	95
0.0518	22.88	19.35	2.55	0	44.78	113.21	-68.43	AV	95
0.0781	41.64	19.35	2.55	0	63.54	129.66	-66.12	Peak	250
0.0781	30.34	19.35	2.55	0	52.24	109.66	-57.42	AV	250
0.2060	36.33	20.73	2.60	0	59.66	121.28	-61.62	Peak	330
0.2060	26.25	20.73	2.60	0	49.58	101.28	-51.70	AV	330
3.5420	12.18	21.83	2.72	0	36.73	69.54	-32.81	QP	100

Remark: According to FCC PART 15.209 (d), the emission limits for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz, Radiated emission limits in these three bands are based on measurements employing an average detector.

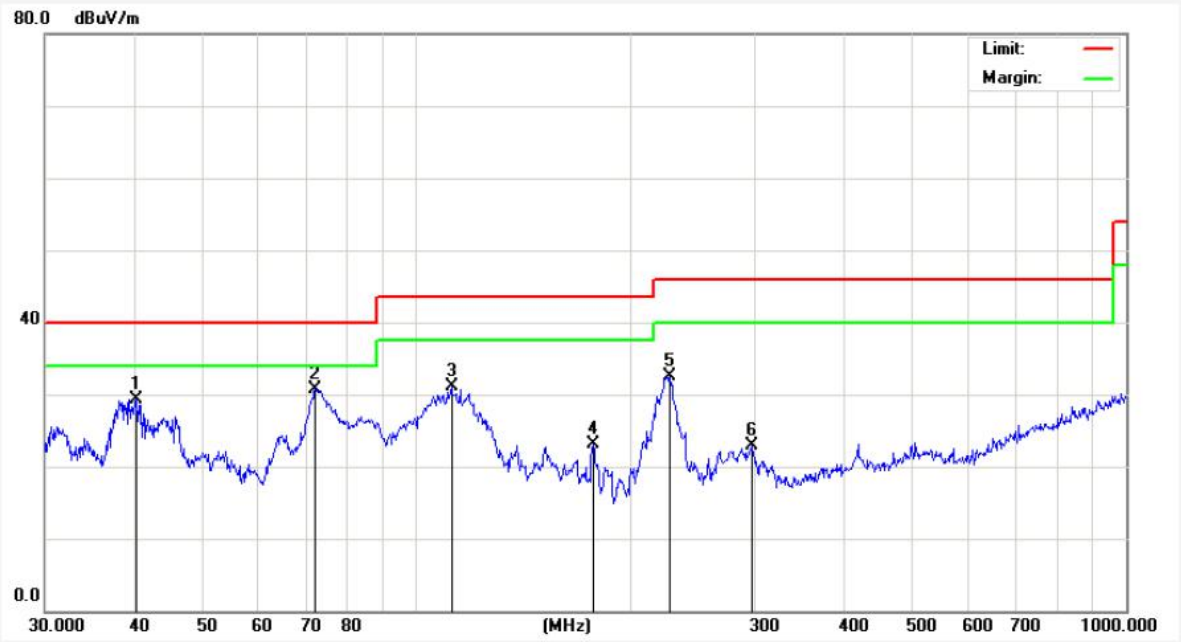
(Between 30MHz –1000 MHz)

Job No.:	**SZAWW180411002-01**	**Polarization:**	**Horizontal**
Standard:	**FCC PART15 C _3m**	**Power Source:**	**AC 120V, 60Hz for adapter**
Test item:	**Radiation Test**	**Temp.(C)/Hum.(%RH):**	**24.4(C)/50%RH**
Test Mode:	**Mode 4**	**Distance:**	**3m**



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	40.9881	35.47	-14.57	20.90	40.00	-19.10	QP	300	32	
2	73.6170	42.77	-21.37	21.40	40.00	-18.60	QP	300	76	
3	115.3204	58.07	-21.00	37.07	43.50	-6.43	QP	300	114	
4	186.4409	47.48	-19.90	27.58	43.50	-15.92	QP	300	196	
5	230.9068	54.81	-18.32	36.49	46.00	-9.51	QP	300	254	
6	278.0668	48.19	-18.08	30.11	46.00	-15.89	QP	300	360	

Job No.:	**SZAWW180411002-01**	**Plarization:**	**Vertical**
Standard:	**FCC PART15 C _3m**	**Power Source:**	**AC 120V, 60Hz for adapter**
Test item:	**Radiation Test**	**Temp.(C)/Hum.(%RH):**	**24.4(C)/50%RH**
Test Mode:	**Mode 4**	**Distance:**	**3m**



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	40.4172	42.74	-13.44	29.30	40.00	-10.70	QP	300	45	
2	72.0843	50.80	-20.14	30.66	40.00	-9.34	QP	300	99	
3	112.1305	45.78	-14.77	31.01	43.50	-12.49	QP	300	114	
4	177.5092	39.05	-16.03	23.02	43.50	-20.48	QP	300	176	
5	227.6906	46.43	-14.00	32.43	46.00	-13.57	QP	300	244	
6	297.2241	37.55	-14.74	22.81	46.00	-23.19	QP	300	360	

APPENDIX I -- TEST SETUP PHOTOGRAPH

Photo of Conducted Emission Measurement

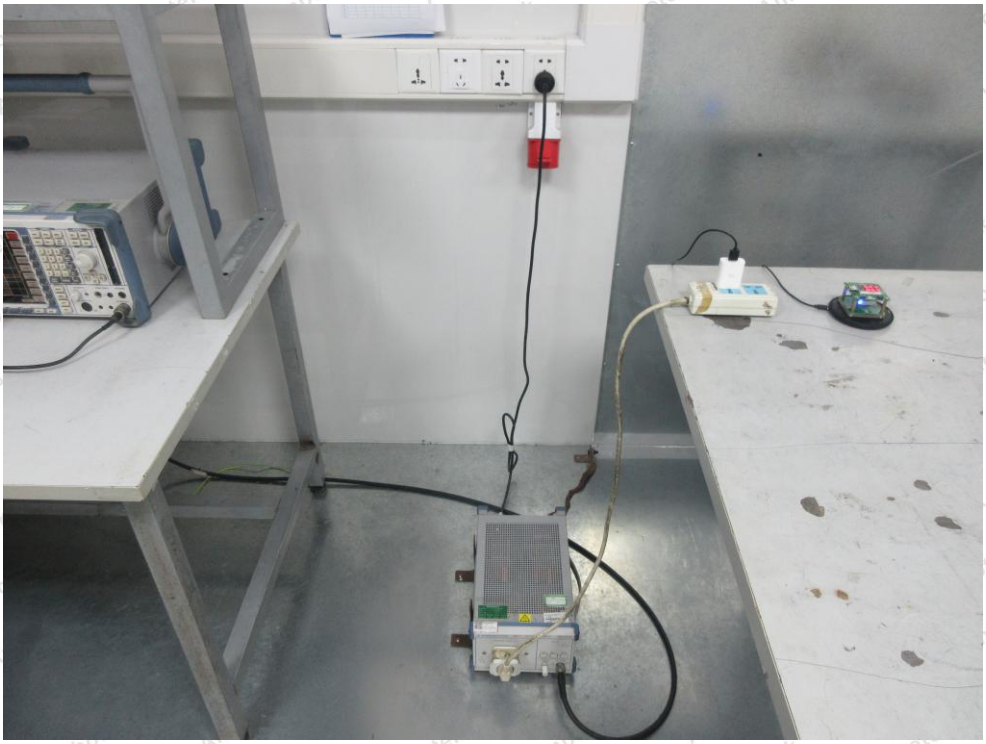
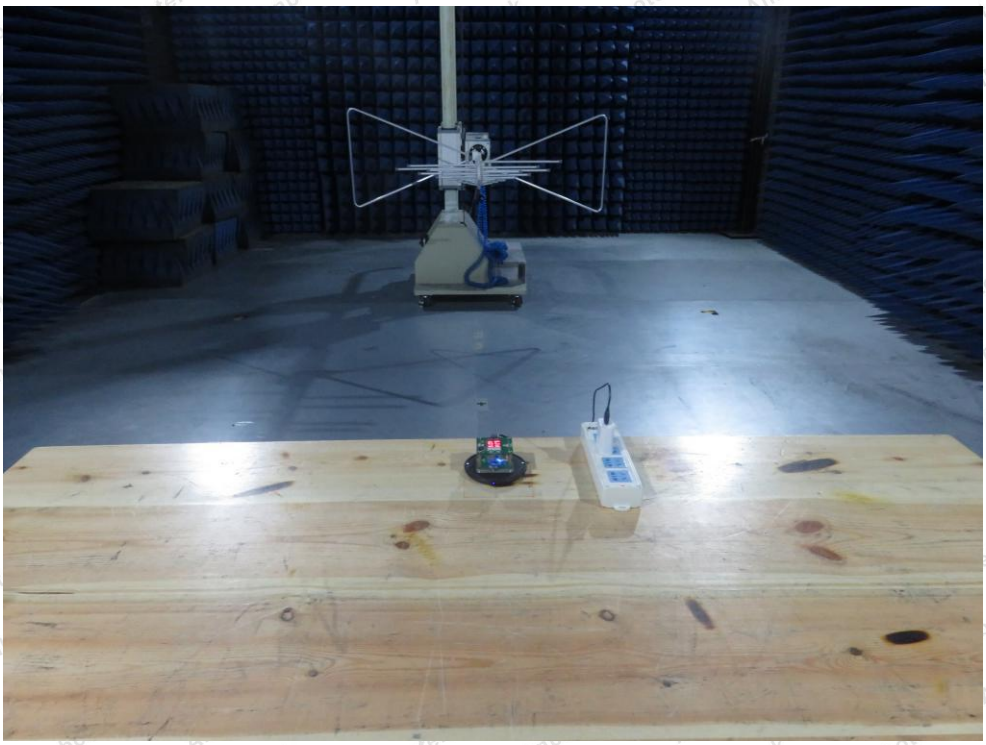
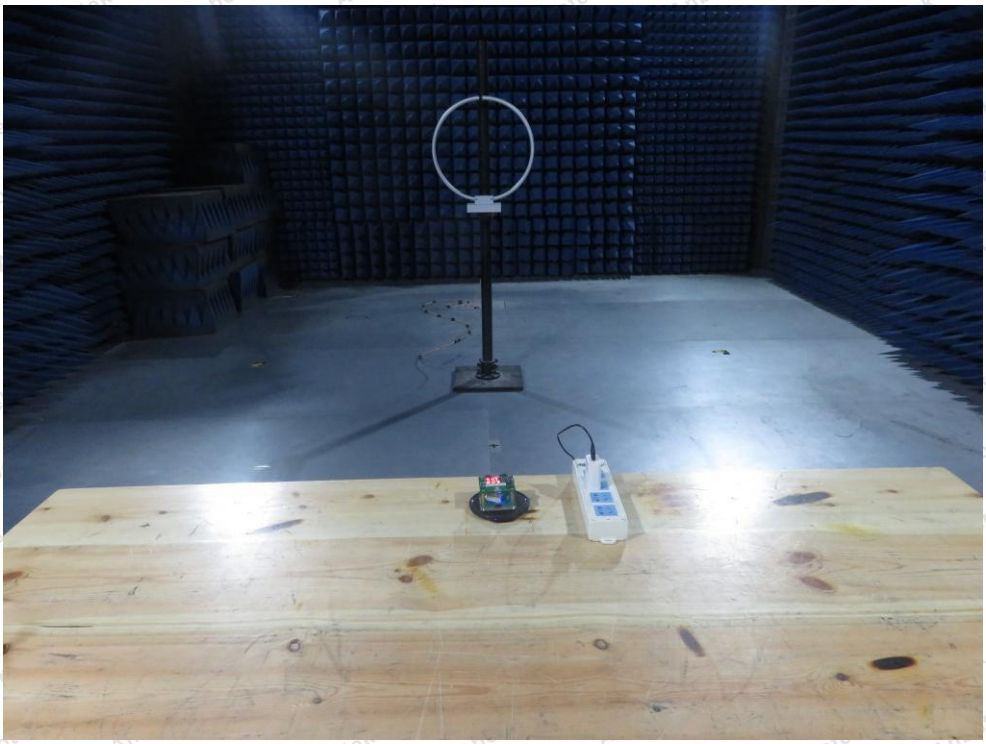


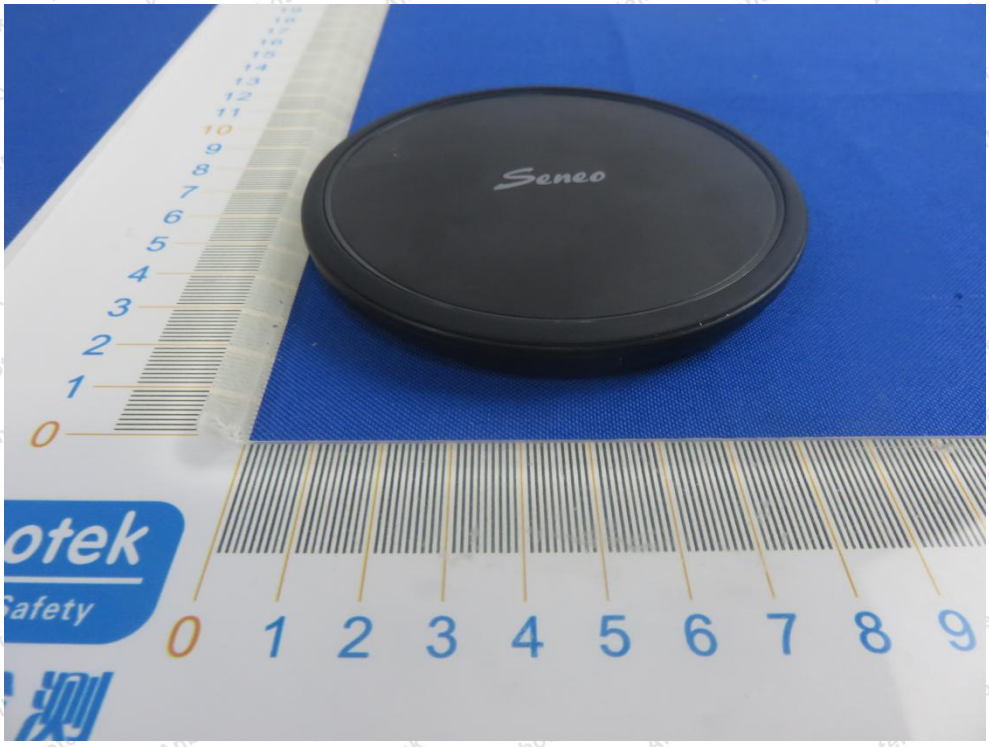
Photo of Radiation Emission Test

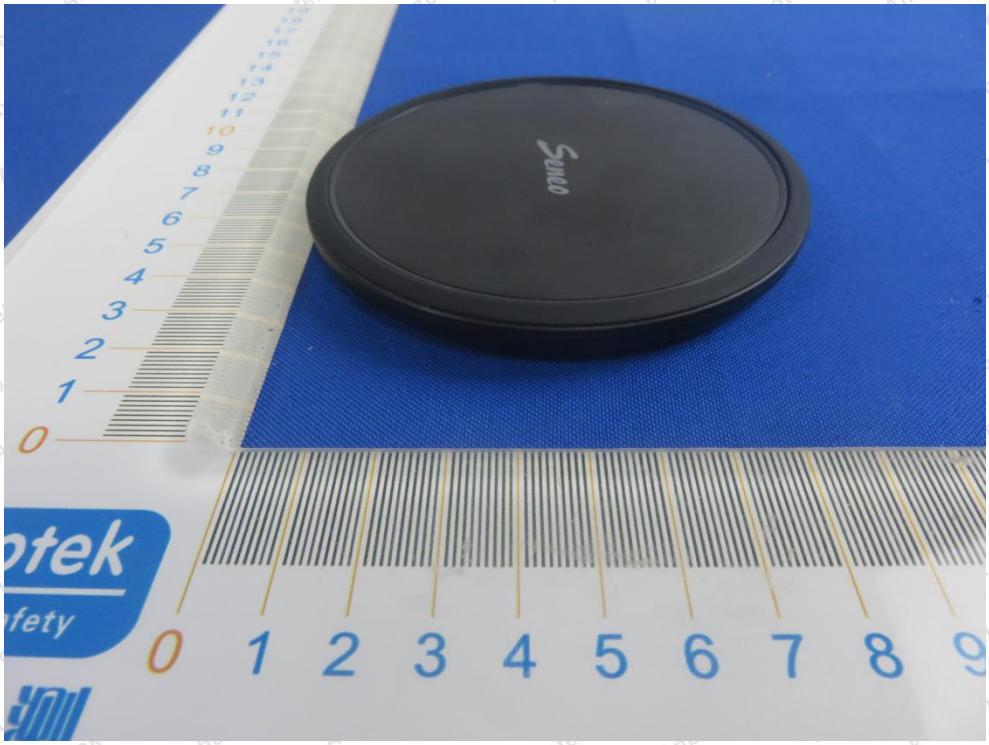


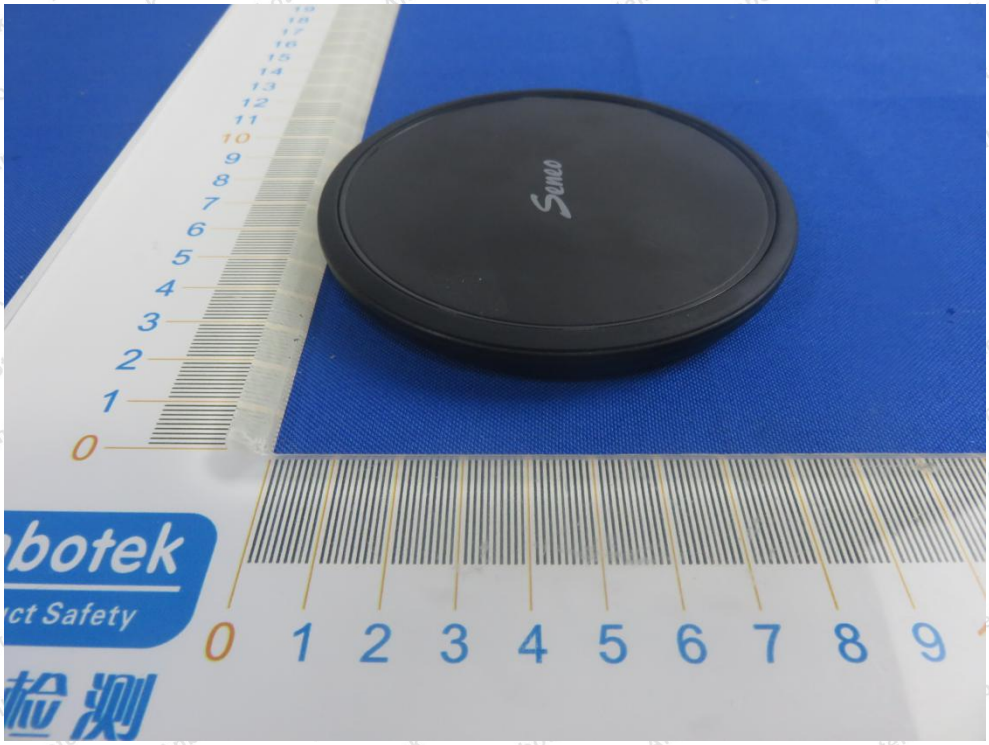


APPENDIX II -- EXTERNAL PHOTOGRAPH

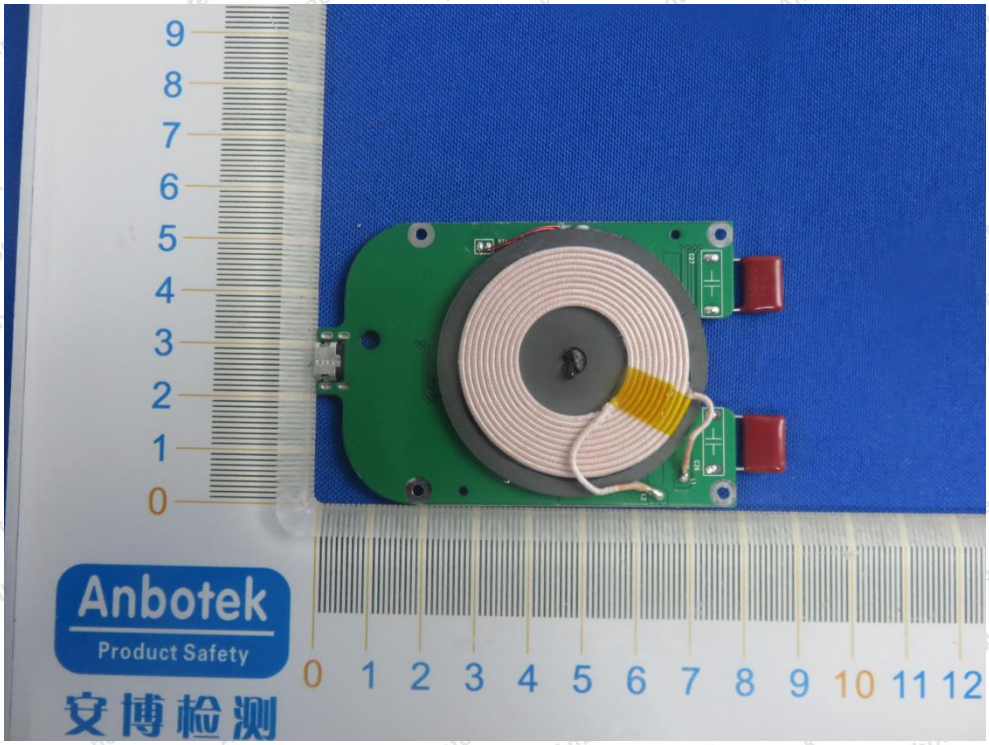

Seneo

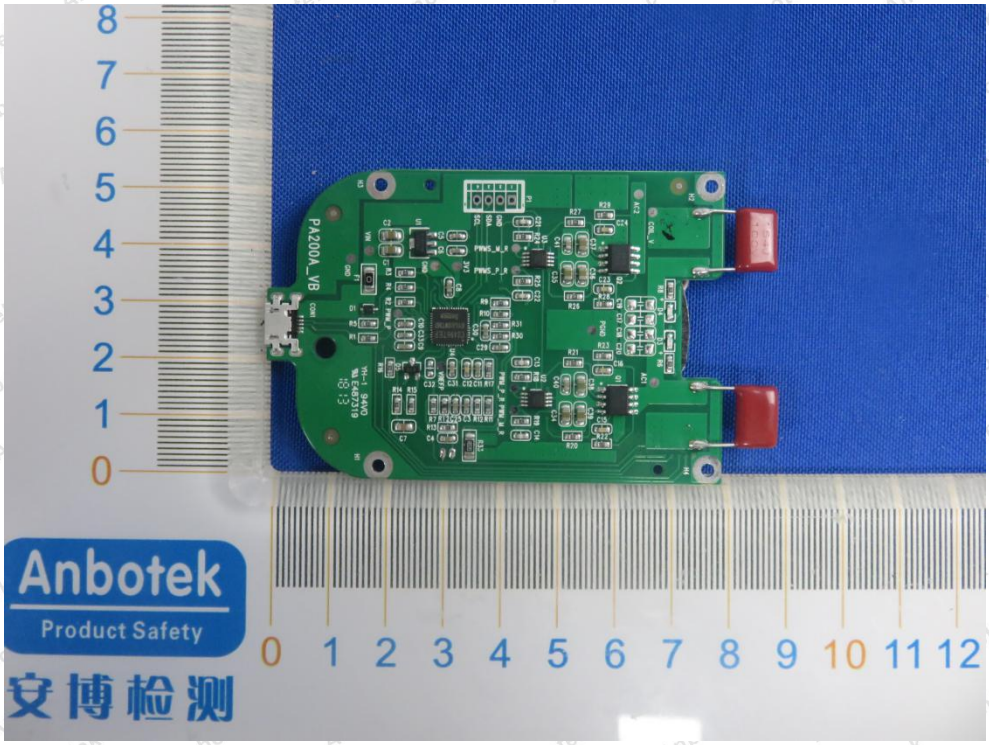

Seneo





APPENDIX III -- INTERNAL PHOTOGRAPH

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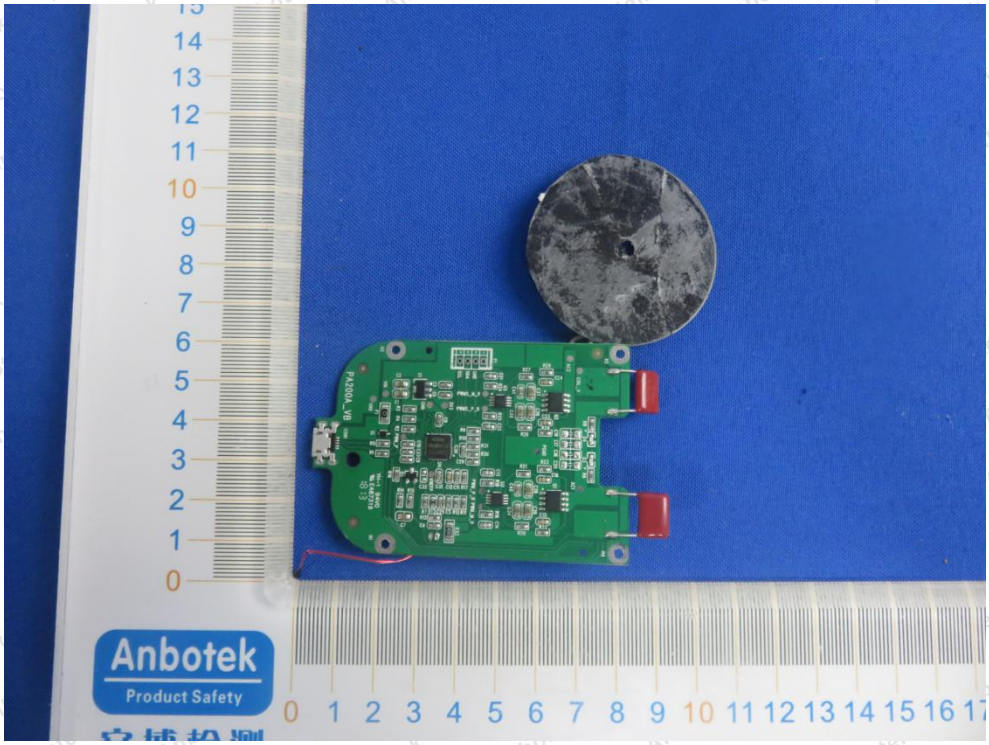
Anbotek
Product Safety
安博检测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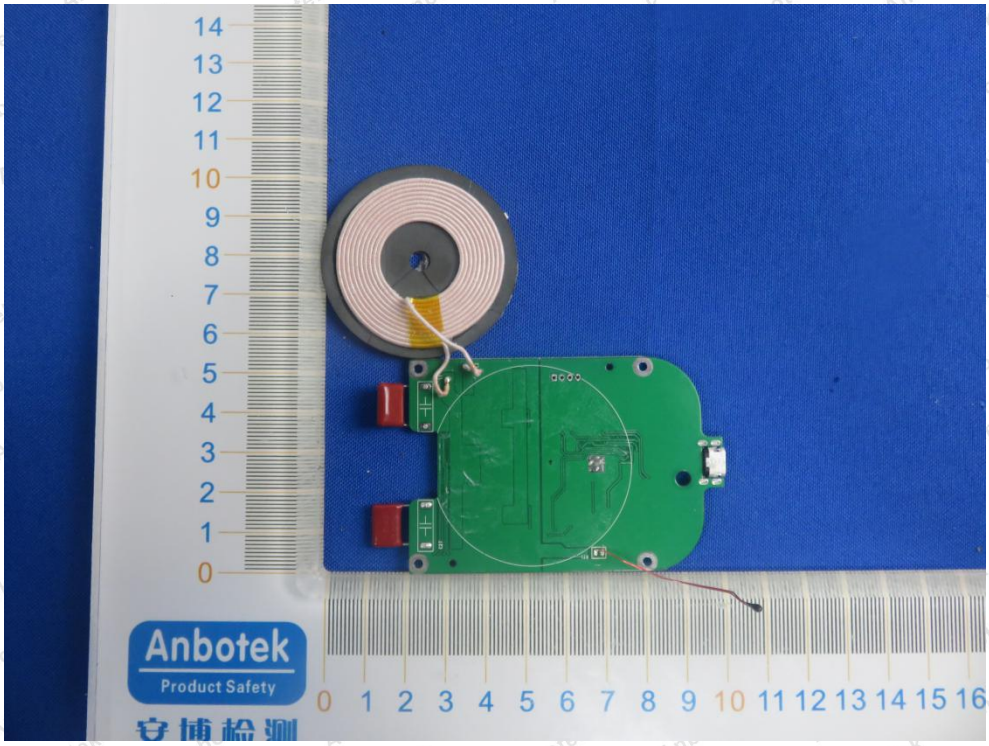
Anbotek
Product Safety



End of Report