

FCC TEST REPORT

For

shenzhen shenchuangweiye technology Co.,Ltd

wireless charge

Model No.: SCWY-X8, SCWY-X9, SCWY-X10, SCWY-X11,
WS17121101, WS17121102, WS17121103

Prepared For : shenzhen shenchuangweiye technology Co.,Ltd
Address : 4F, 328Building, hua chang Road, Shuiwei Industrial Zone, Dalang Town,
Longhua New district, Shenzhen

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Report Number : SZAWW171213004-01

Date of Test : Dec. 13~Jan. 03, 2018

Date of Report : Jan. 03, 2018

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TEST REPORT

Applicant : shenzhen shenchuangweiye technology Co.,Ltd
Manufacturer : shenzhen shenchuangweiye technology Co.,Ltd
Product Name : wireless charge
Model No. : SCWY-X8, SCWY-X9, SCWY-X10, SCWY-X11, WS17121101, WS17121102,
WS17121103
Trade Mark : N/A
Rating(s) : Input: DC 5V 2.1A/ DC 9V/1.67A
Wireless Output: DC 5V 1.5A/ DC 9V/1.1A

Test Standard(s) : FCC Part15 Subpart C 2016, 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 : Dec. 13~Jan. 03, 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 shenchuangweiye technology Co.,Ltd
Address	:	4F, 328Building, hua chang Road, Shuiwei Industrial Zone, Dalang Town, Longhua New district, Shenzhen
Manufacturer	:	shenzhen shenchuangweiye technology Co.,Ltd
Address	:	4F, 328Building, hua chang Road, Shuiwei Industrial Zone, Dalang Town, Longhua New district, Shenzhen

1.2. Description of Device (EUT)

Product Name	:	wireless charge
Model No.	:	SCWY-X8, SCWY-X9, SCWY-X10, SCWY-X11, WS17121101, WS17121102, WS17121103 (Note: All samples are the same except the colour. so we prepare "SCWY-X8" for test only.)
Trade Mark	:	N/A
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-U90BBA S/N: RT6FB18ZS/B-F Input: AC 100-240V, 50-60Hz, 0.35A Output: DC 9V, 1.67A
Load	:	System

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	TX+Charging Mode

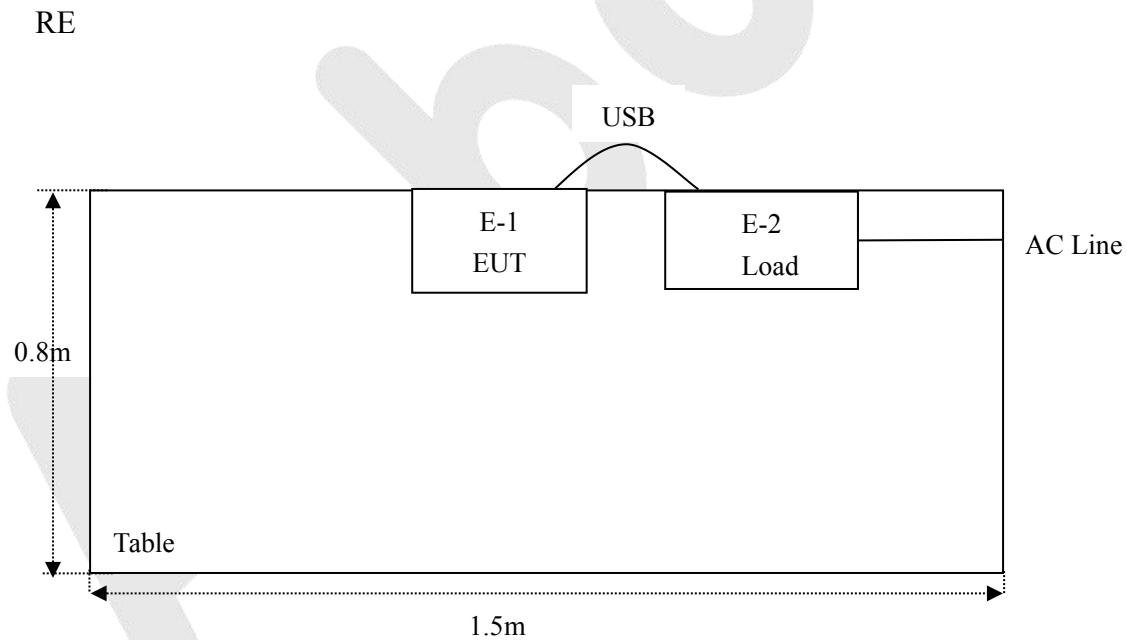
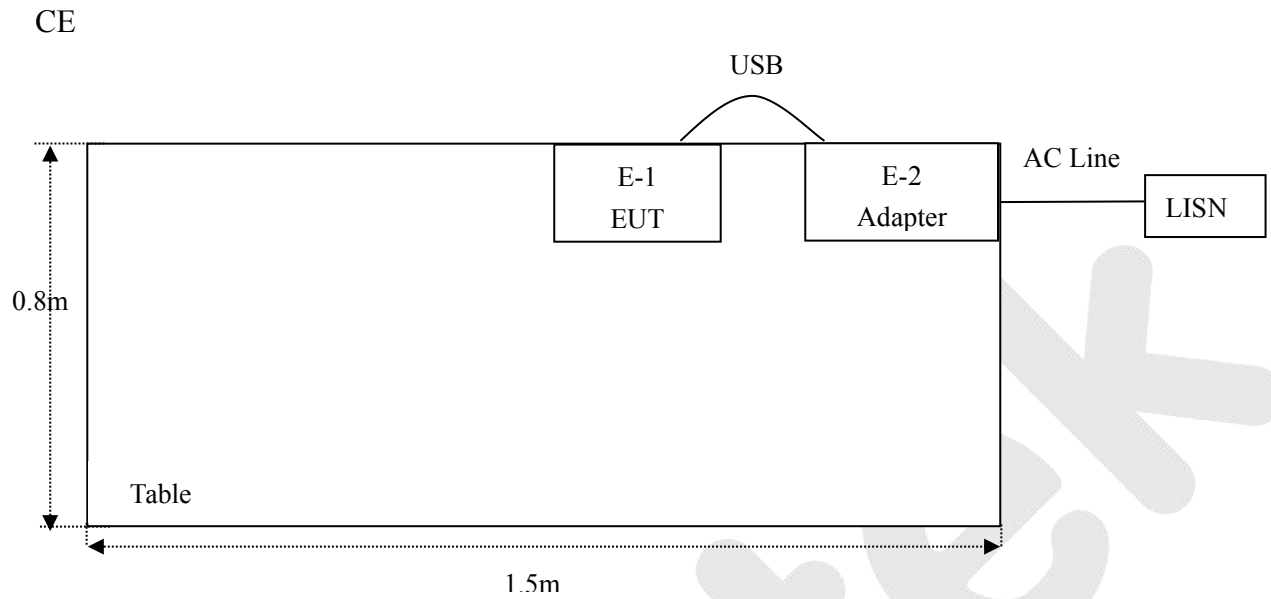
For Conducted Emission	
Final Test Mode	Description
Mode 4	TX+Charging Mode

For Radiated Emission	
Final Test Mode	Description
Mode 1	CH01
Mode 2	CH10
Mode 3	CH20

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



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	May 27, 2017	1 Year
2.	EMI Test Receiver	Rohde & Schwarz	ESCI	100627	May 27, 2017	1 Year
3.	RF Switching Unit	Compliance Direction	RSU-M2	38303	May 27, 2017	1 Year
4.	Spectrum Analysis	Agilent	E4407B	US39390582	May 27, 2017	1 Year
5.	Spectrum Analysis	Agilent	N9038A	MY53227295	May 27, 2017	1 Year
6.	Preamplifier	SKET Electronic	BK1G18G30 D	KD17503	May 27, 2017	1 Year
7.	EMI Test Receiver	Rohde & Schwarz	ESPI	101604	May 27, 2017	1 Year
8.	Double Ridged Horn Antenna	Instruments corporation	GTH-0118	351600	May 31, 2017	1 Year
9.	Bilog Broadband Antenna	Schwarzbeck	VULB9163	VULB 9163-289	May 31, 2017	1 Year
10.	Loop Antenna	Schwarzbeck	HFH2-Z2	100047	Apr. 03, 2018	1 Year
11.	Horn Antenna	Schwarzbeck	BBHA9170	9170-375	May 27, 2017	1 Year
12.	Pre-amplifier	SONOMA	310N	186860	May 27, 2017	1 Year
13.	Pre-amplifier	SKET Electronic	BK1G40G50 A	KD25352	May 27, 2017	1 Year
14.	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	N/A	N/A
15.	Power Sensor	DAER	RPR3006W	15I00041SN045	May 27, 2017	1 Year
16.	Power Sensor	DAER	RPR3006W	15I00041SN046	May 27, 2017	1 Year
17.	MXA Spectrum Analysis	Agilent	N9020A	MY51170037	May 27, 2017	1 Year
18.	MXG RF Vector Signal Generator	Agilent	N5182A	MY48180656	May 27, 2017	1 Year
19.	Signal Generator	Agilent	E4421B	MY41000743	May 27, 2017	1 Year
20.	DC Power supply	IVYTECH	IV6003	1601D6030007	May 26, 2017	1 Year
21.	TEMP&HUMI PROGRAMMABLE CHAMBER	Sertep	ZJ-HWHS80 B	ZJ-17042804	Mar. 03, 2018	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 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. 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
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

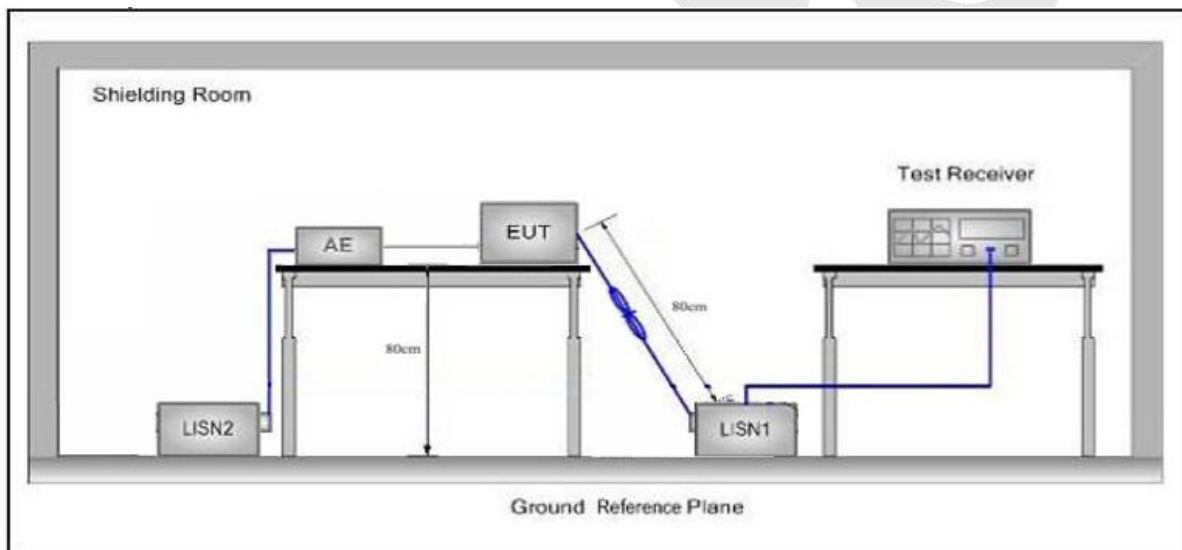
3. Conducted Emission Test

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.

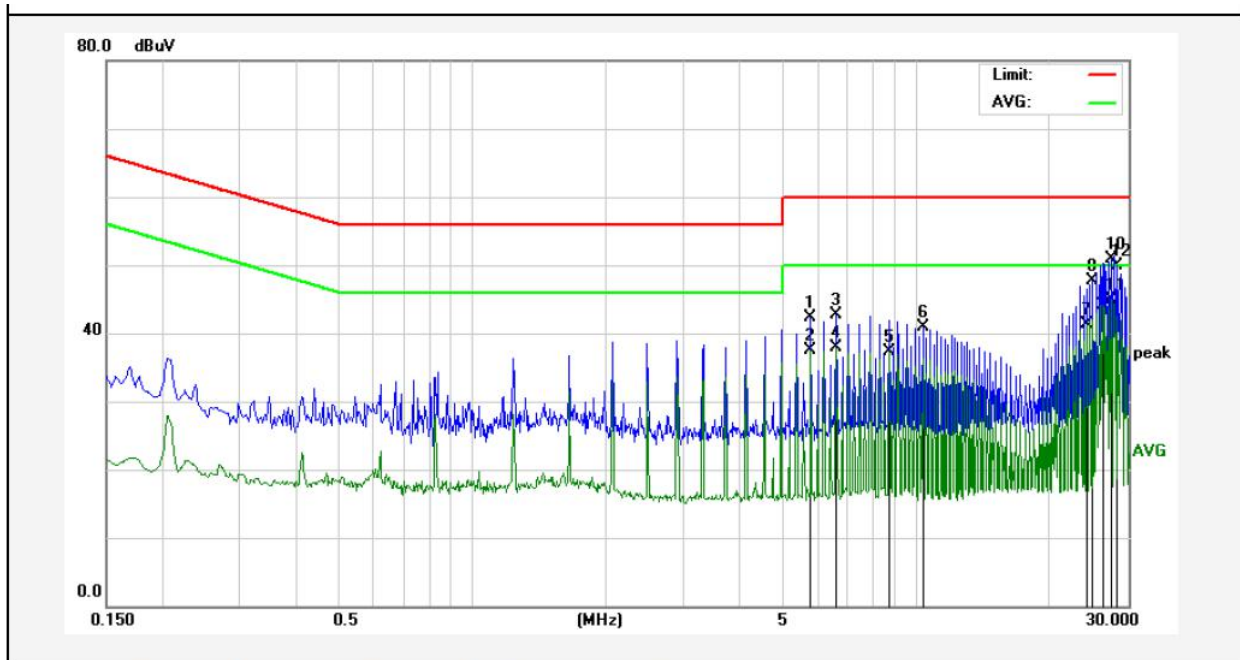
The frequency range from 150kHz to 30MHz is checked.

3.4. Test Data

Please to see the following pages

Conducted Emission Test Data

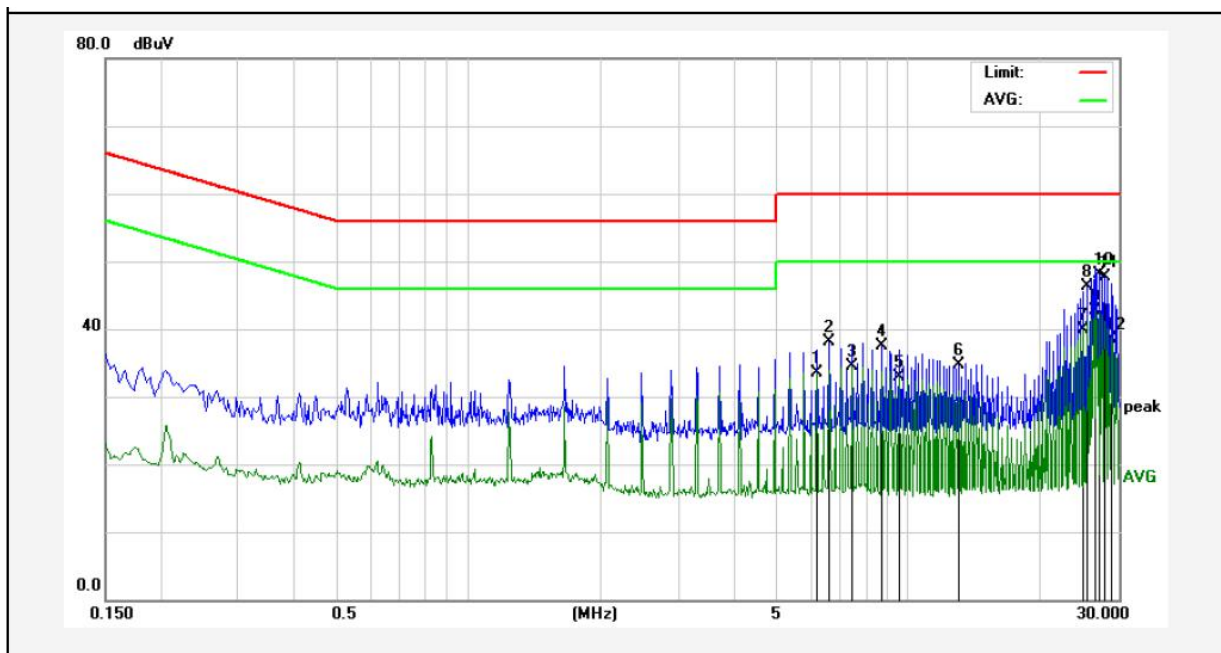
Test Site: 1# Shielded Room
Operating Condition: TX+Charging Mode
Test Specification: AC 120V, 60Hz for adapter
Comment: Live Line
Tem.:25℃ Hum.:50%



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Over Limit (dB)	Detector	Remark
1	5.7938	22.17	20.23	42.40	60.00	-17.60	QP	
2	5.7938	17.28	20.23	37.51	50.00	-12.49	AVG	
3	6.6219	22.48	20.25	42.73	60.00	-17.27	QP	
4	6.6219	17.70	20.25	37.95	50.00	-12.05	AVG	
5	8.6937	17.03	20.31	37.34	50.00	-12.66	AVG	
6	10.3498	20.56	20.33	40.89	60.00	-19.11	QP	
7	24.2138	20.99	20.29	41.28	50.00	-8.72	AVG	
8	25.0419	27.51	20.28	47.79	60.00	-12.21	QP	
9	26.2820	23.89	20.28	44.17	50.00	-5.83	AVG	
10	27.5218	30.58	20.27	50.85	60.00	-9.15	QP	
11	27.5218	24.68	20.27	44.95	50.00	-5.05	AVG	
12	28.3580	29.70	20.27	49.97	60.00	-10.03	QP	

Conducted Emission Test Data

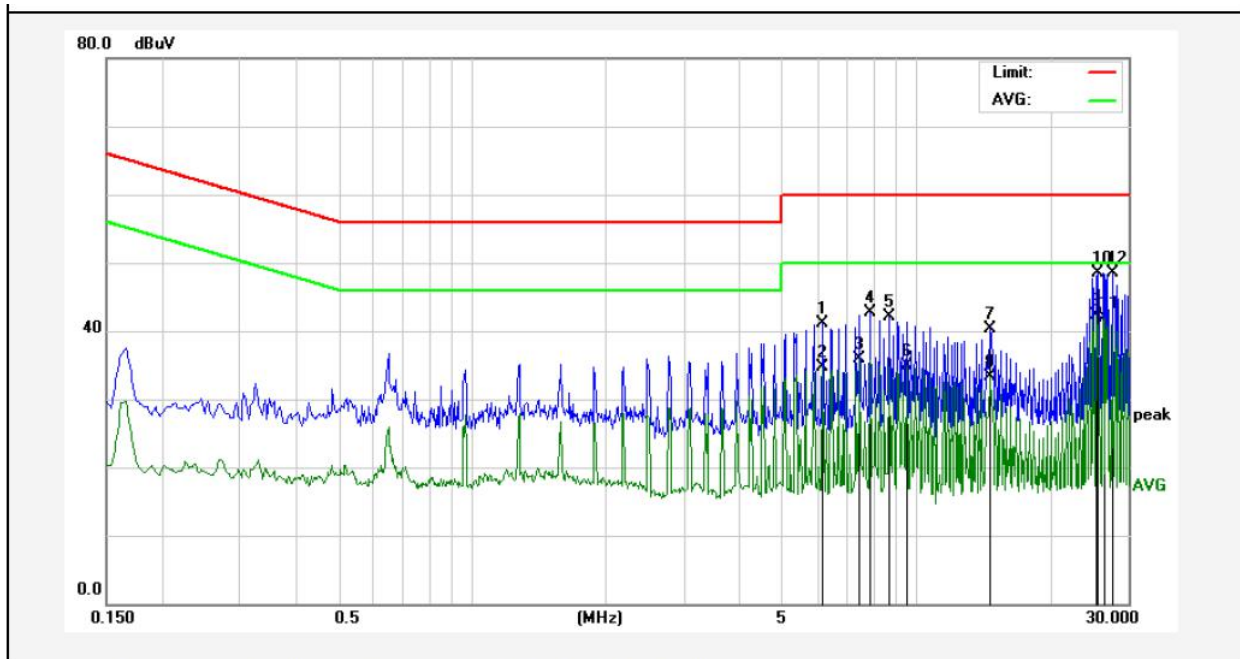
Test Site: 1# Shielded Room
Operating Condition: TX+Charging Mode
Test Specification: AC 120V, 60Hz for adapter
Comment: Neutral Line
Tem.:25℃ Hum.:50%



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Detector	Remark
1	6.2099	13.35	20.24	33.59	50.00	-16.41	AVG	
2	6.6219	17.80	20.25	38.05	60.00	-21.95	QP	
3	7.4499	14.14	20.27	34.41	50.00	-15.59	AVG	
4	8.6939	17.12	20.31	37.43	60.00	-22.57	QP	
5	9.5219	12.58	20.33	32.91	50.00	-17.09	AVG	
6	13.0379	14.36	20.29	34.65	60.00	-25.35	QP	
7	25.0419	19.68	20.28	39.96	50.00	-10.04	AVG	
8	25.4540	25.95	20.28	46.23	60.00	-13.77	QP	
9	26.6980	22.43	20.28	42.71	50.00	-7.29	AVG	
10	27.1100	27.84	20.28	48.12	60.00	-11.88	QP	
11	27.9380	27.39	20.27	47.66	60.00	-12.34	QP	
12	28.7660	18.33	20.27	38.60	50.00	-11.40	AVG	

Conducted Emission Test Data

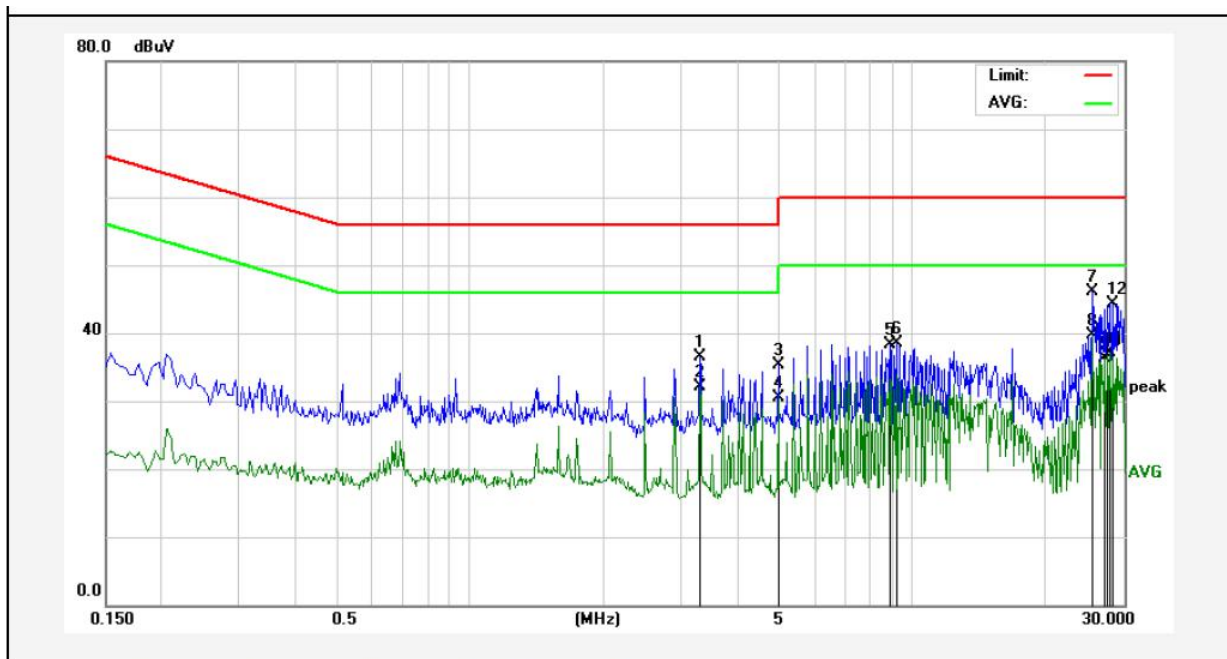
Test Site: 1# Shielded Room
Operating Condition: TX+Charging Mode
Test Specification: AC 240V, 60Hz for adapter
Comment: Live Line
Tem.:25℃ Hum.:50%



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Over Limit (dB)	Detector	Remark
1	6.1819	20.96	20.24	41.20	60.00	-18.80	QP	
2	6.1819	14.47	20.24	34.71	50.00	-15.29	AVG	
3	7.4499	15.66	20.27	35.93	50.00	-14.07	AVG	
4	7.8659	22.46	20.28	42.74	60.00	-17.26	QP	
5	8.6939	21.74	20.31	42.05	60.00	-17.95	QP	
6	9.5219	14.66	20.33	34.99	50.00	-15.01	AVG	
7	14.6339	19.97	20.27	40.24	60.00	-19.76	QP	
8	14.6339	12.99	20.27	33.26	50.00	-16.74	AVG	
9	25.4380	21.94	20.28	42.22	50.00	-7.78	AVG	
10	25.6259	28.31	20.28	48.59	60.00	-11.41	QP	
11	26.5380	21.59	20.28	41.87	50.00	-8.13	AVG	
12	27.7020	28.24	20.27	48.51	60.00	-11.49	QP	

Conducted Emission Test Data

Test Site: 1# Shielded Room
Operating Condition: TX+Charging Mode
Test Specification: AC 240V, 60Hz for adapter
Comment: Neutral Line
Tem.:25℃ Hum.:50%



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Over Limit (dB)	Detector	Remark
1	3.3100	16.28	20.17	36.45	56.00	-19.55	QP	
2	3.3100	12.03	20.17	32.20	46.00	-13.80	AVG	
3	4.9660	15.05	20.21	35.26	56.00	-20.74	QP	
4	4.9660	10.36	20.21	30.57	46.00	-15.43	AVG	
5	8.9140	17.92	20.31	38.23	60.00	-21.77	QP	
6	9.2460	18.25	20.32	38.57	60.00	-21.43	QP	
7	25.4540	25.85	20.28	46.13	60.00	-13.87	QP	
8	25.4540	19.37	20.28	39.65	50.00	-10.35	AVG	
9	27.1140	16.08	20.28	36.36	50.00	-13.64	AVG	
10	27.5260	16.36	20.27	36.63	50.00	-13.37	AVG	
11	27.9380	16.83	20.27	37.10	50.00	-12.90	AVG	
12	28.3460	24.03	20.27	44.30	60.00	-15.70	QP	

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

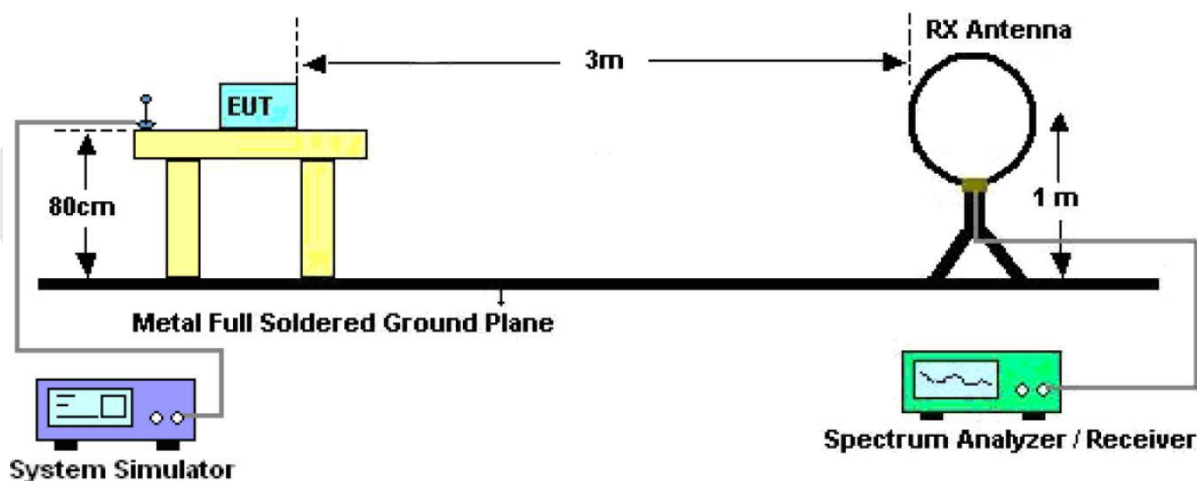


Figure 1. Below 30MHz

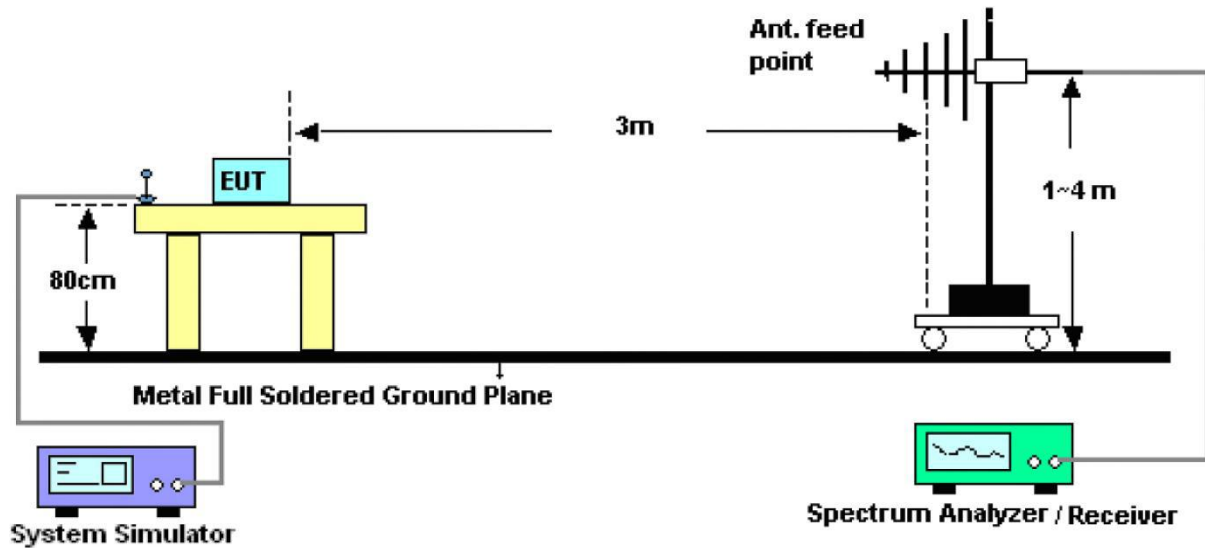


Figure 2. 30MHz to 1GHz

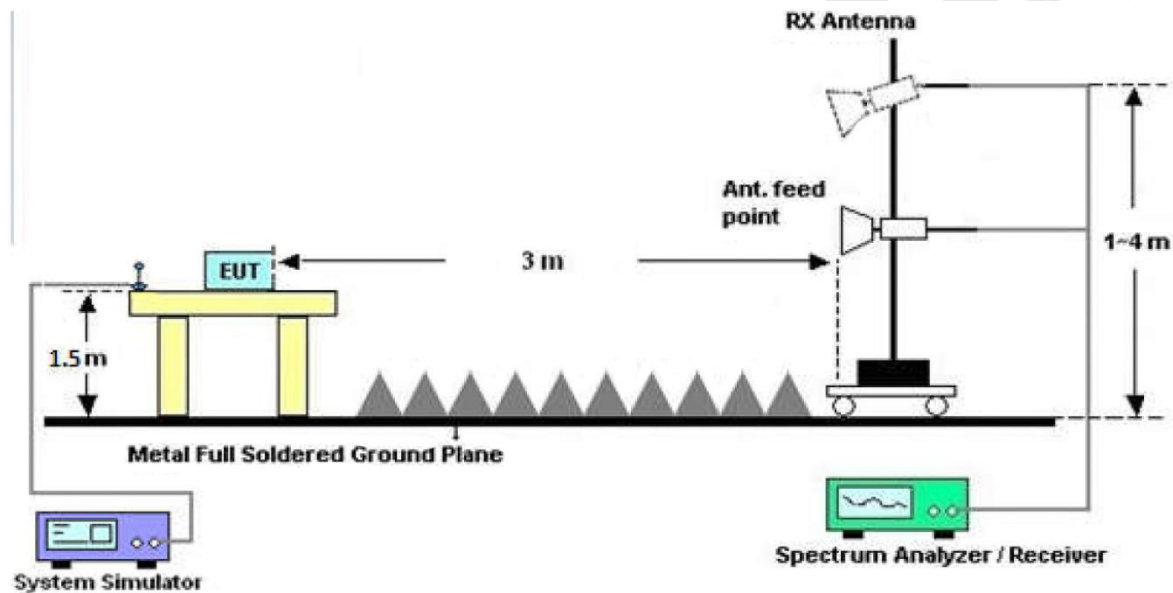


Figure 3. Above 1 GHz

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

Anbotek

Test Results

(Between 9KHz – 30MHz)

Job No.: SZAWW171213004-01

Standard: FCC PART15 C_3m

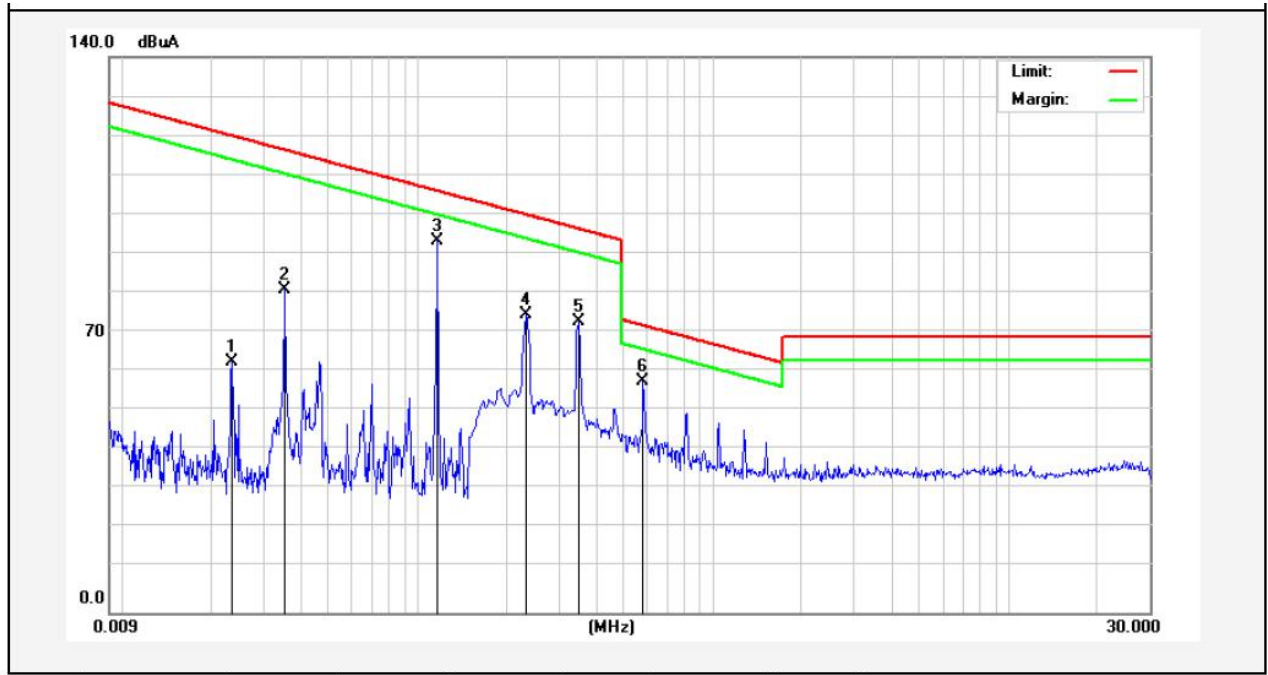
Power Source: AC 120V, 60Hz for adapter

Test item: Radiation Test

Temp.(C)/Hum.(%RH): 24.4(C)/50%RH

Test Mode: TX+Charging Mode

Distance: 3m

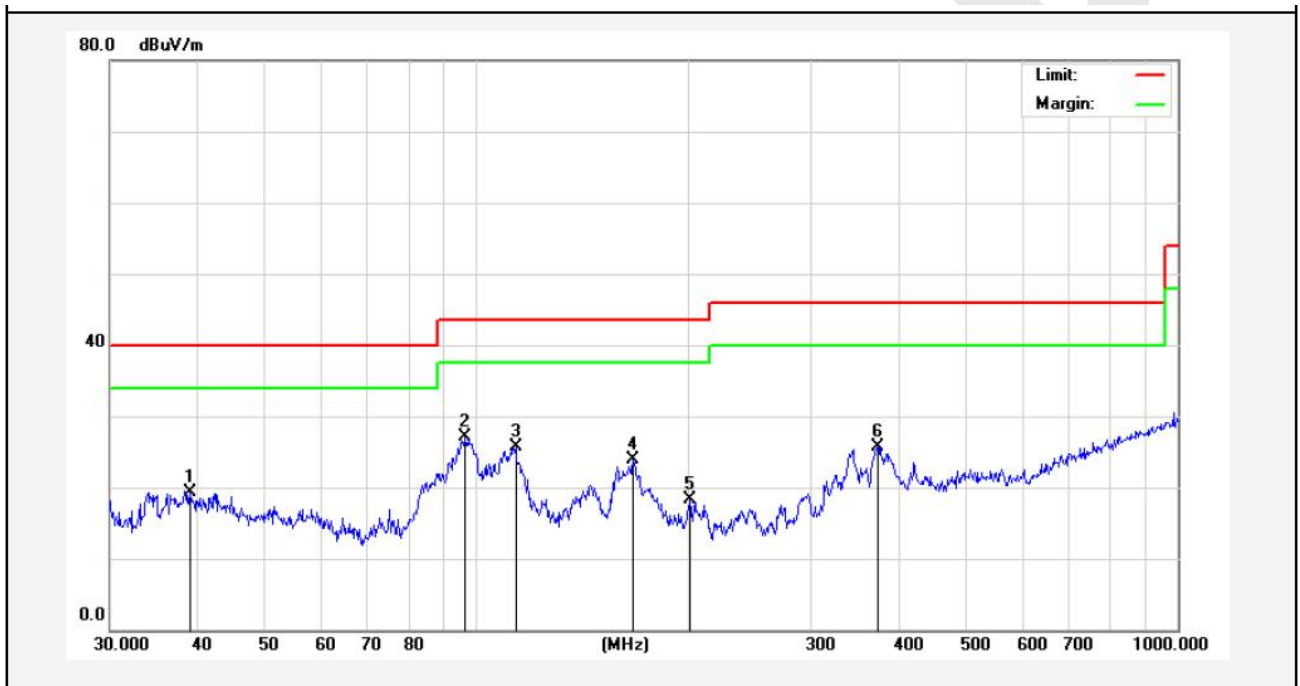


Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	degree (dgc)
0.0234	41.57	19.26	2.50	0	63.33	120.15	-56.82	Peak	25
0.0234	38.55	19.26	2.50	0	60.31	100.15	-39.84	AV	25
0.0355	59.56	19.28	2.53	0	81.37	116.54	-35.17	Peak	33
0.0355	57.16	19.28	2.53	0	78.97	96.54	-17.57	AV	33
0.1164	71.95	19.29	2.54	0	93.78	106.25	-12.47	Peak	110
0.1164	59.15	19.29	2.54	0	80.98	86.25	-5.27	AV	110
0.2340	53.17	19.40	2.56	0	75.13	100.20	-25.07	Peak	120
0.2340	50.36	19.40	2.56	0	72.32	80.20	-7.88	AV	120
0.3500	51.10	19.53	2.59	0	73.22	96.71	-23.49	Peak	341
0.3500	25.80	19.53	2.59	0	47.92	76.71	-28.79	AV	341
0.5820	35.26	20.35	2.61	0	58.22	72.30	-14.08	QP	0

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.:	SZAWW171213004-01	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:	TX+Charging Mode	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	39.0245	34.18	-14.90	19.28	40.00	-20.72	QP	300	71	
2	96.4362	48.16	-21.09	27.07	43.50	-16.43	QP	300	134	
3	113.7143	46.67	-20.88	25.79	43.50	-17.71	QP	300	196	
4	167.2368	43.80	-19.92	23.88	43.50	-19.62	QP	300	261	
5	201.3930	37.29	-18.90	18.39	43.50	-25.11	QP	300	306	
6	373.3112	39.18	-13.40	25.78	46.00	-20.22	QP	300	360	

Job No.:	SZAWW171213004-01	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:	TX+Charging Mode	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	30.0000	49.89	-17.55	32.34	40.00	-7.66	QP	300	63	
2	36.5092	49.21	-15.27	33.94	40.00	-6.06	QP	300	134	
3	48.6719	44.30	-15.24	29.06	40.00	-10.94	QP	300	175	
4	96.4362	47.44	-15.09	32.35	43.50	-11.15	QP	300	255	
5	112.9196	44.49	-14.83	29.66	43.50	-13.84	QP	300	270	
6	162.0414	43.83	-16.81	27.02	43.50	-16.48	QP	300	360	

APPENDIX I -- TEST SETUP PHOTOGRAPH

Photo of Conducted Emission Measurement

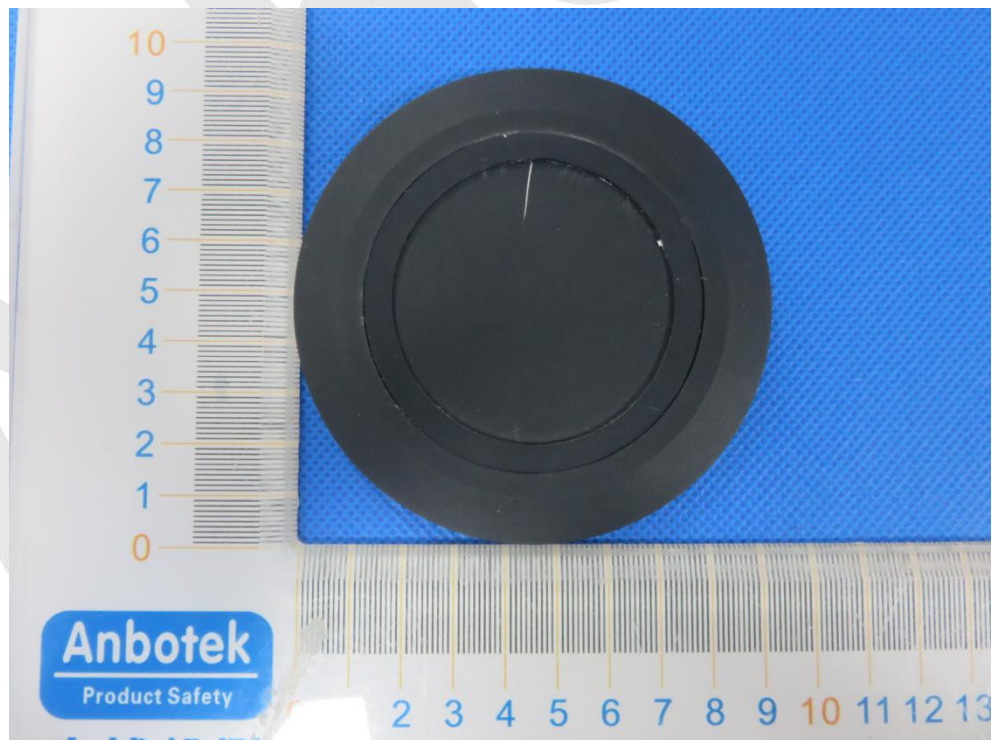


Photo of Radiation Emission Test





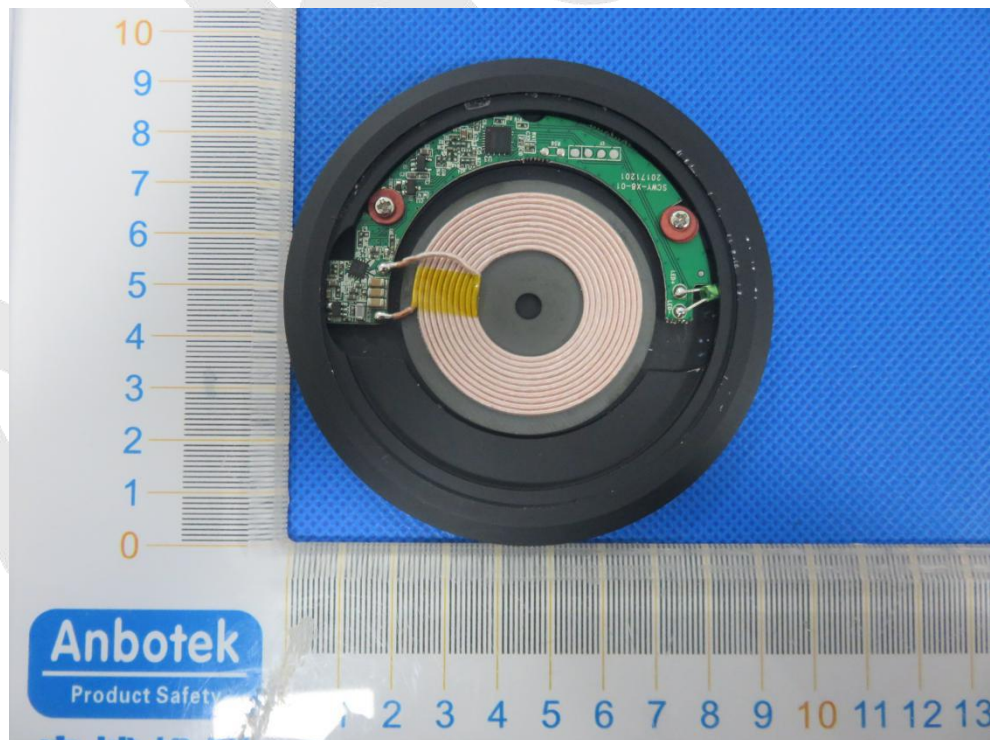
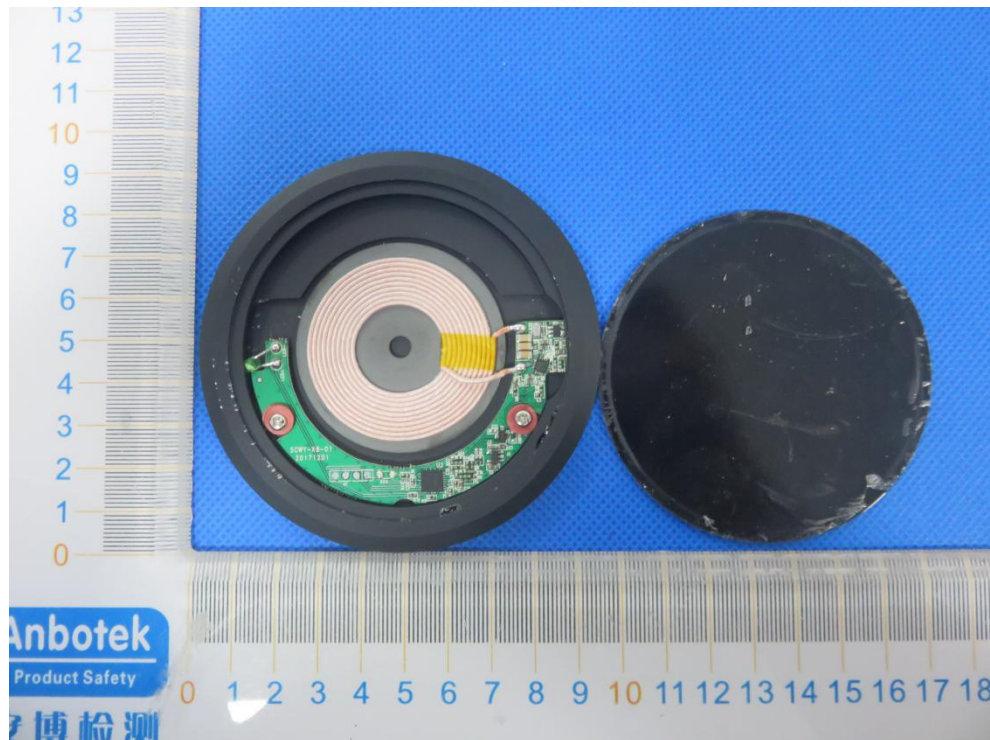
APPENDIX II -- EXTERNAL PHOTOGRAPH

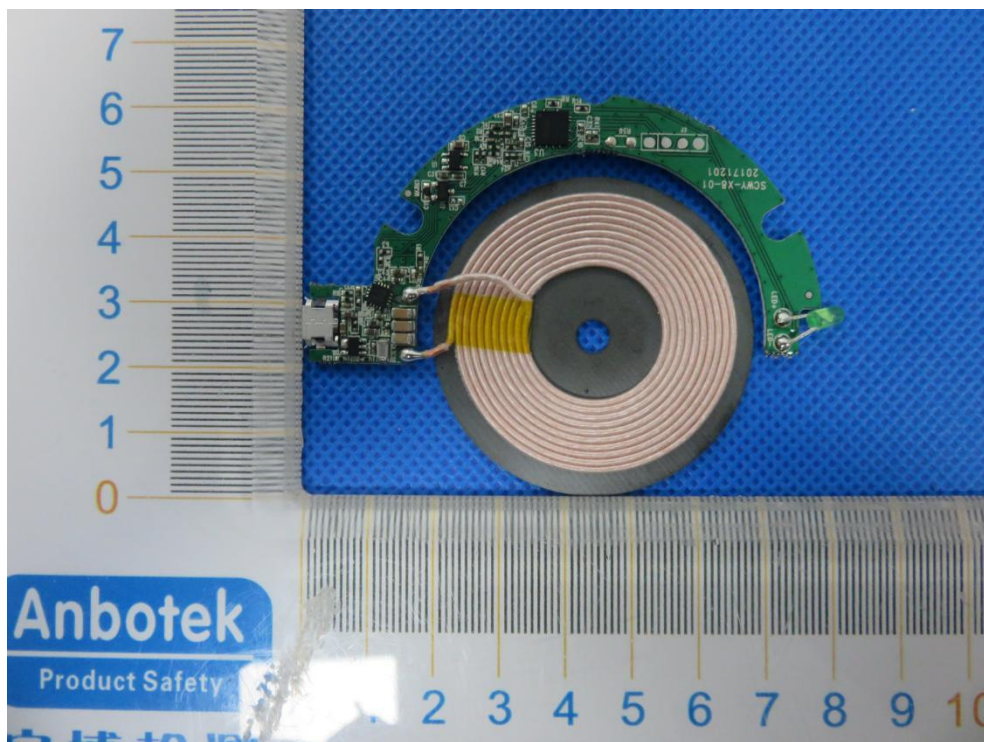


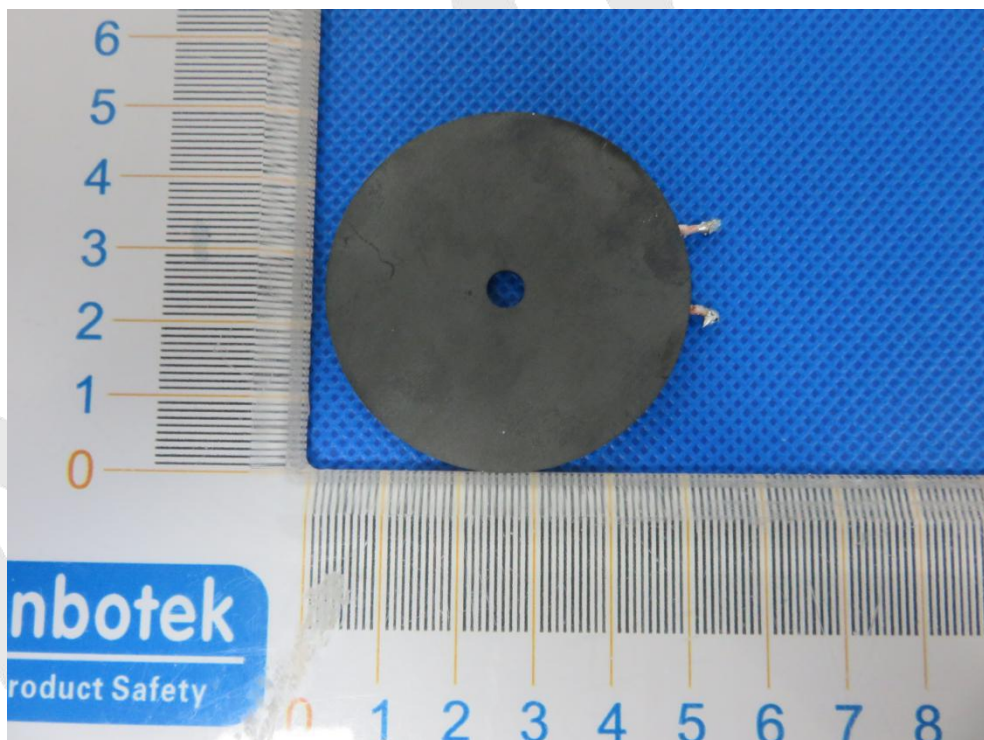


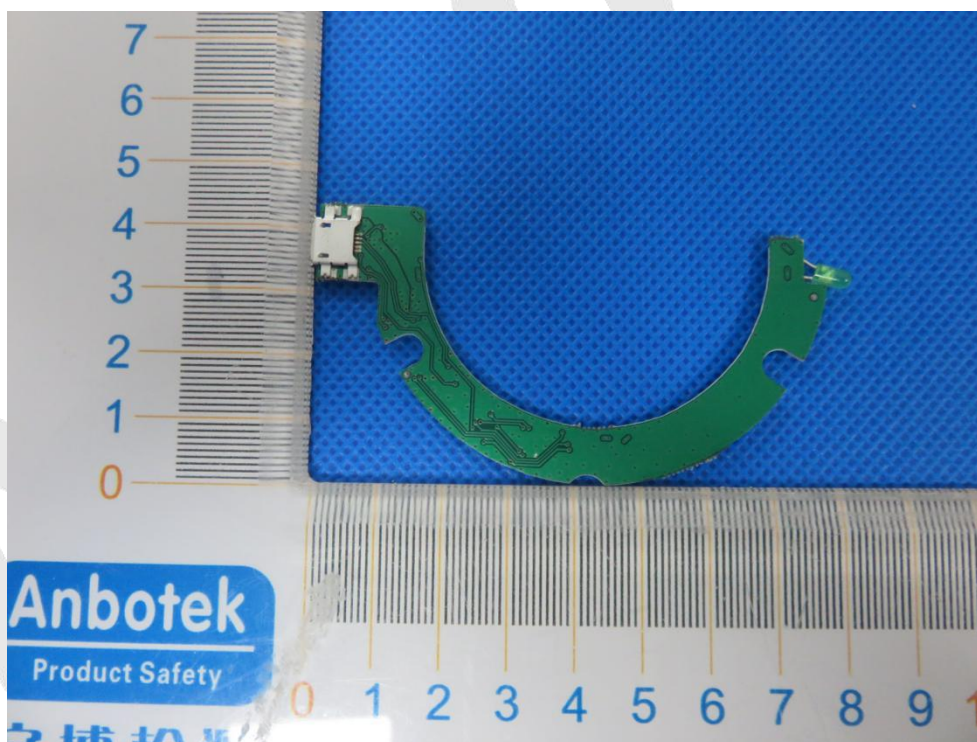
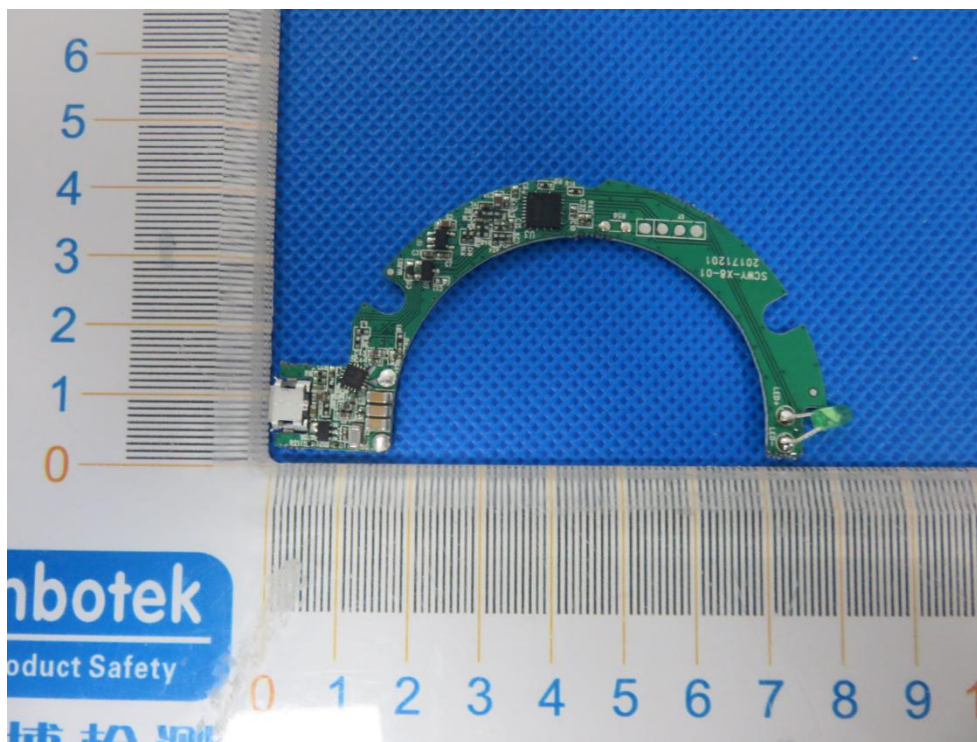


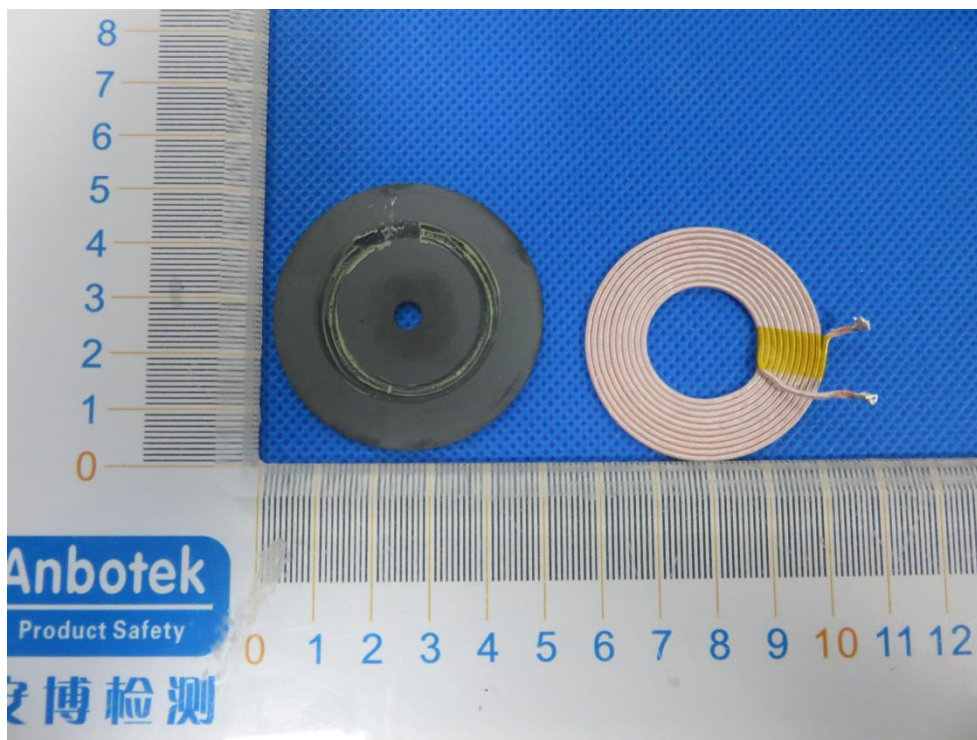
APPENDIX III -- INTERNAL PHOTOGRAPH

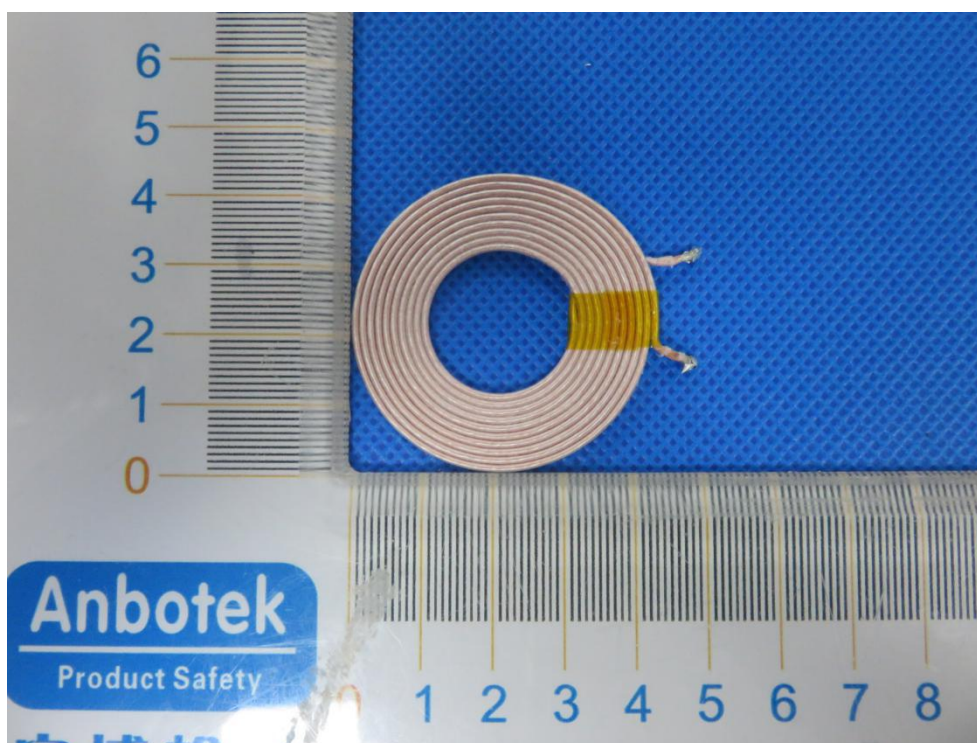












End of Report