

# FCC TEST REPORT

For

Anker Technology Co., Limited

PowerPort Wireless 5 Stand

Model No.: A2523

Prepared For : Anker Technology Co., Limited  
Address : Room 1318-19, Hollywood Plaza, 610 Nathan Road, Mongkok, Kowloon,  
Hongkong

Prepared By : Shenzhen Anbotek Compliance Laboratory Limited  
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Report Number : SZAWW180207002-01

Date of Test : Feb. 07~Mar. 14, 2018

Date of Report : Mar. 14, 2018

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# TEST REPORT

Applicant : Anker Technology Co., Limited  
Manufacturer : Anker Technology Co., Limited  
Product Name : PowerPort Wireless 5 Stand  
Model No. : A2523  
Trade Mark :   
Rating(s) : Input: DC 5V, 2A  
Output: DC 5V, 1A

**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 : Feb. 07~Mar. 14, 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	:	Anker Technology Co., Limited
Address	:	Room 1318-19, Hollywood Plaza, 610 Nathan Road, Mongkok, Kowloon, Hongkong
Manufacturer	:	Anker Technology Co., Limited
Address	:	Room 1318-19, Hollywood Plaza, 610 Nathan Road, Mongkok, Kowloon, Hongkong

### 1.2. Description of Device (EUT)

Product Name	:	PowerPort Wireless 5 Stand
Model No.	:	A2523
Trade Mark	:	
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

Mobile Phone	:	Manufacturer: NOKIA
		M/N: N920 S/N: 356355051634804 CE, FCC, DOC
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 generated from EUT, the test system was pre-scanning tested based on the consideration of following EUT operation mode or test configuration mode which possibly 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

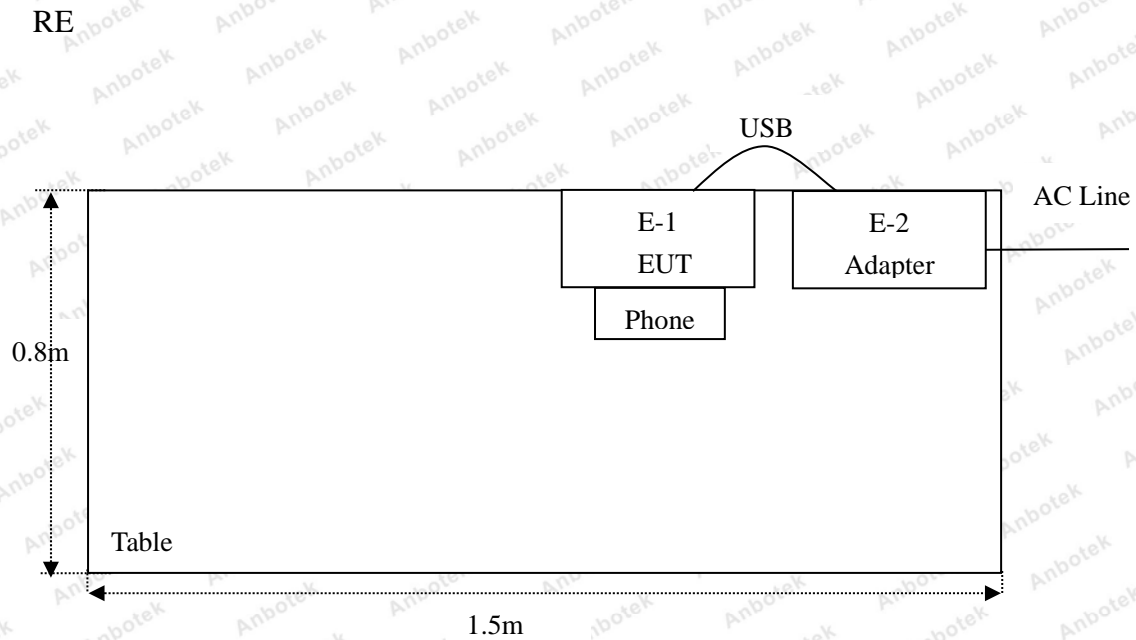
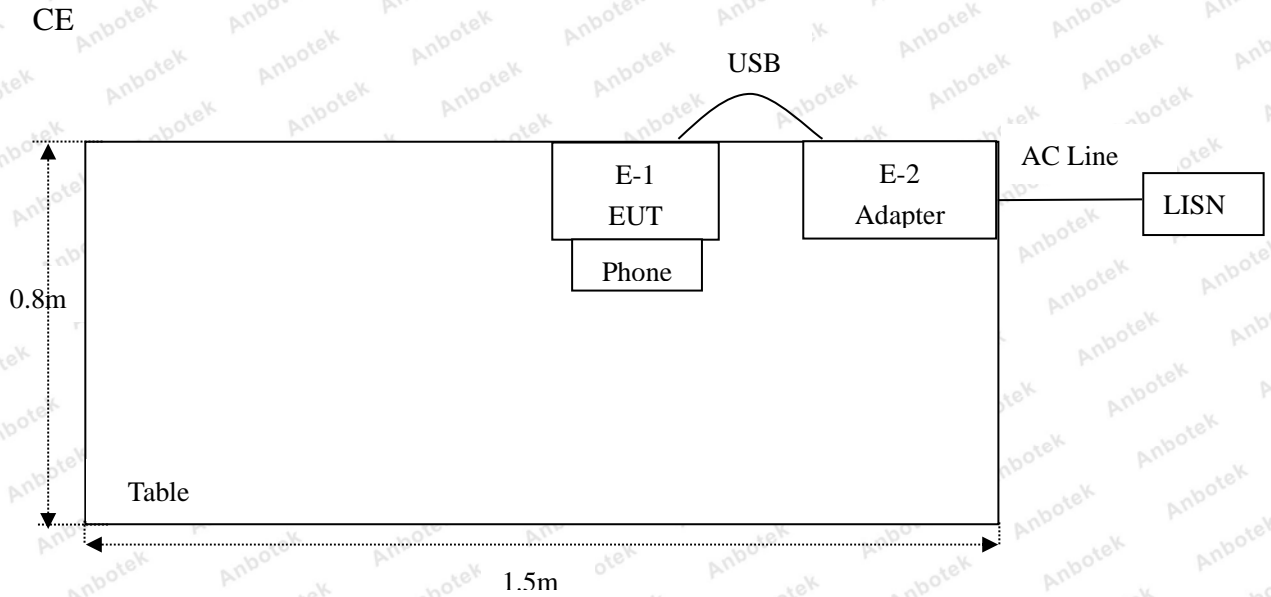
For Conducted Emission	
Final Test Mode	Description
Mode 4	Keeping TX+Charging mode

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

### 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	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	BK1G18G30 D	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	Schwarzbeck	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-HWHS80 B	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 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 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

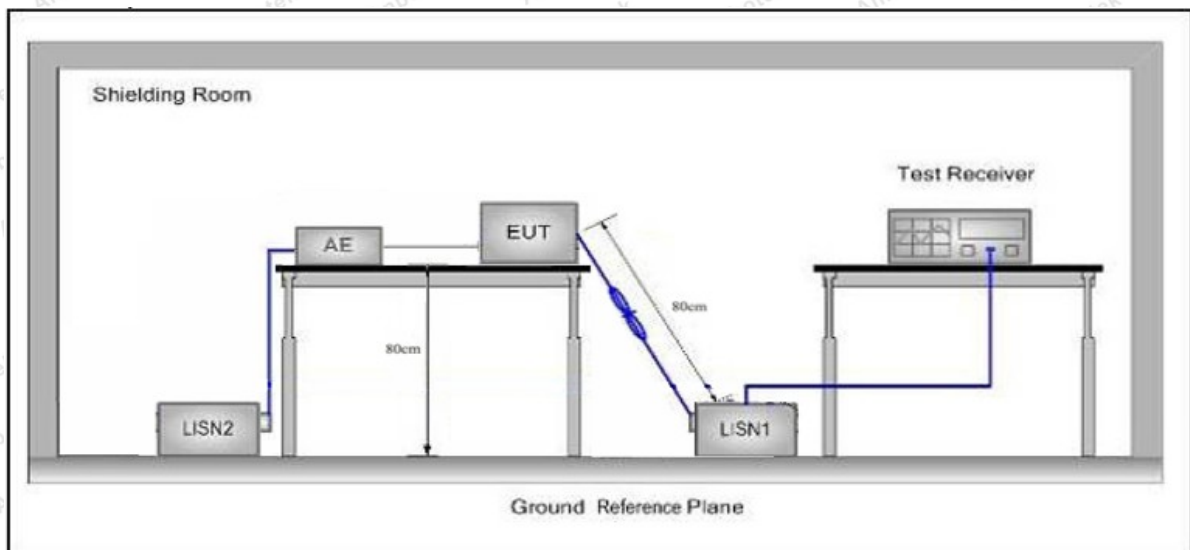
### 3. Conducted Emission Test

#### 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.

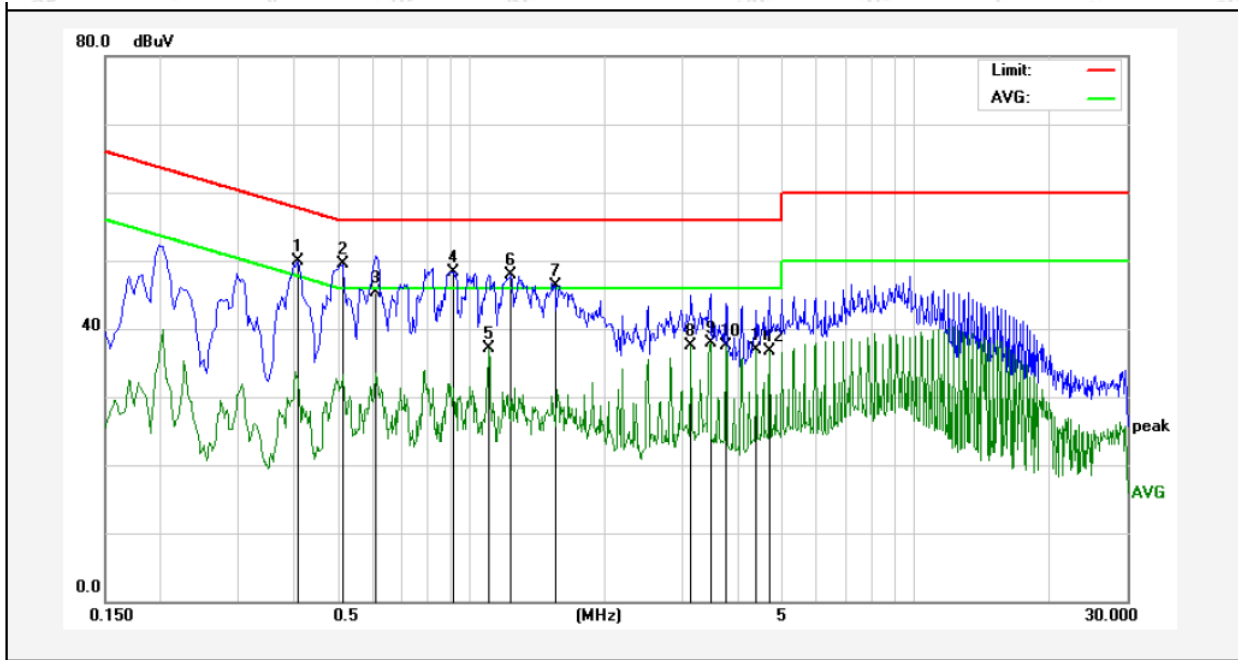
The frequency range from 150kHz to 30MHz is checked.

#### 3.4. Test Data

Please to see the following pages

**Conducted Emission Test Data**

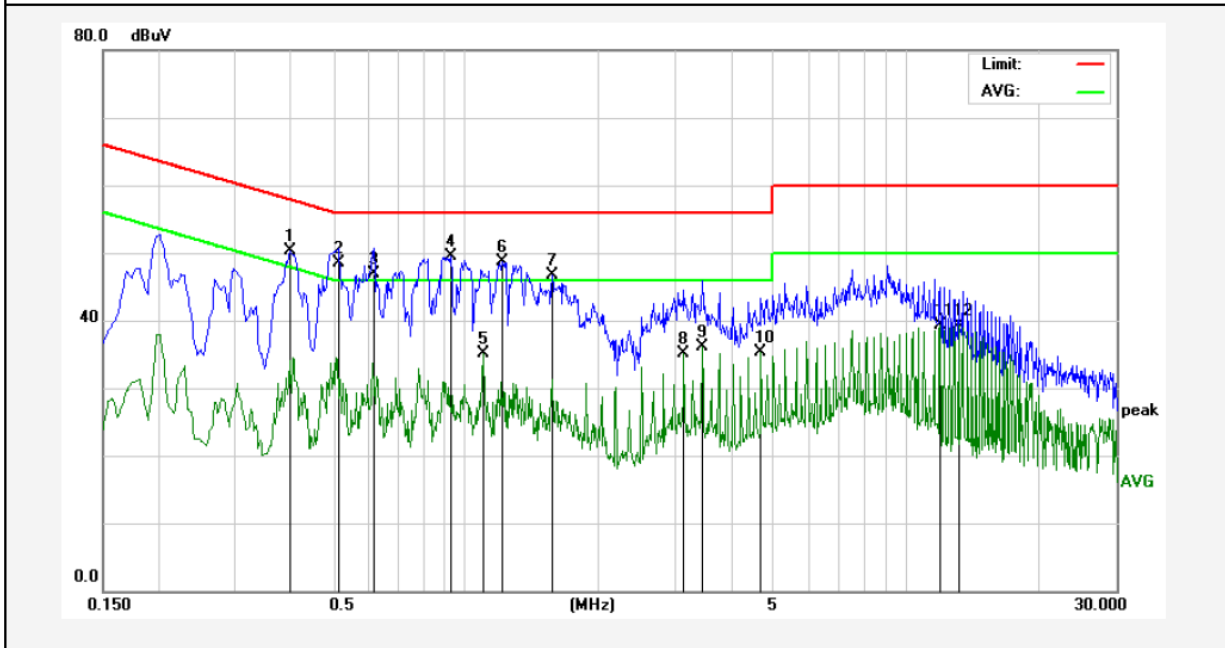
Test Site: 1# Shielded Room  
 Operating Condition: Keeping TX+Charging mode  
 Test Specification: AC 120V, 60Hz for adapter  
 Comment: Live Line  
 Tem.:22.3°C Hum.:57%



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Over Limit (dB)	Detector	Remark
1	0.4100	29.89	19.94	49.83	57.65	-7.82	QP	
2	0.5140	29.50	19.98	49.48	56.00	-6.52	QP	
3	0.6100	25.34	20.01	45.35	56.00	-10.65	QP	
4	0.9180	28.17	20.10	48.27	56.00	-7.73	QP	
5	1.0940	17.02	20.12	37.14	46.00	-8.86	AVG	
6	1.2300	27.82	20.12	47.94	56.00	-8.06	QP	
7	1.5500	26.26	20.13	46.39	56.00	-9.61	QP	
8	3.1340	17.28	20.16	37.44	46.00	-8.56	AVG	
9	3.4540	17.70	20.17	37.87	46.00	-8.13	AVG	
10	3.7580	17.31	20.17	37.48	46.00	-8.52	AVG	
11	4.3859	16.64	20.19	36.83	46.00	-9.17	AVG	
12	4.6979	16.54	20.20	36.74	46.00	-9.26	AVG	

**Conducted Emission Test Data**

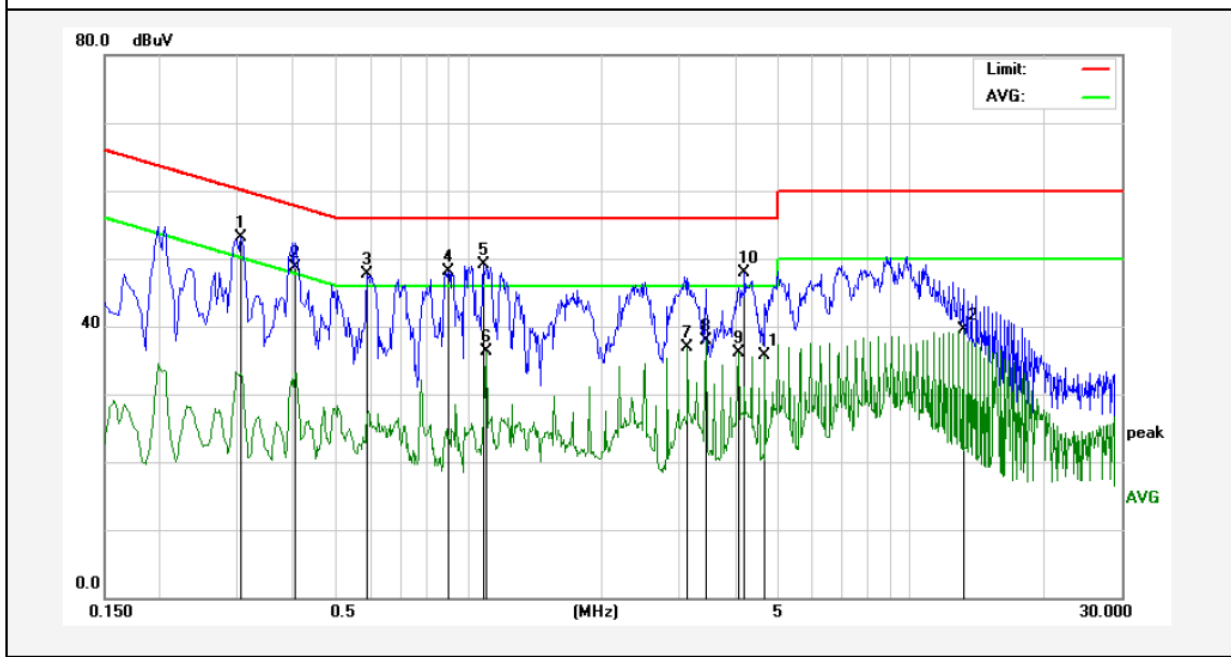
Test Site: 1# Shielded Room  
 Operating Condition: Keeping TX+Charging mode  
 Test Specification: AC 120V, 60Hz for adapter  
 Comment: Neutral Line  
 Tem.:22.3℃ Hum.:57%



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Over Limit (dB)	Detector	Remark
1	0.3980	30.46	19.93	50.39	57.89	-7.50	QP	
2	0.5140	28.44	19.98	48.42	56.00	-7.58	QP	
3	0.6180	26.89	20.02	46.91	56.00	-9.09	QP	
4	0.9260	29.34	20.10	49.44	56.00	-6.56	QP	
5	1.0940	15.06	20.12	35.18	46.00	-10.82	AVG	
6	1.2100	28.49	20.12	48.61	56.00	-7.39	QP	
7	1.5700	26.50	20.13	46.63	56.00	-9.37	QP	
8	3.1300	15.02	20.16	35.18	46.00	-10.82	AVG	
9	3.4460	15.92	20.17	36.09	46.00	-9.91	AVG	
10	4.6940	15.05	20.20	35.25	46.00	-10.75	AVG	
11	11.9379	18.96	20.31	39.27	50.00	-10.73	AVG	
12	13.1620	18.96	20.29	39.25	50.00	-10.75	AVG	

**Conducted Emission Test Data**

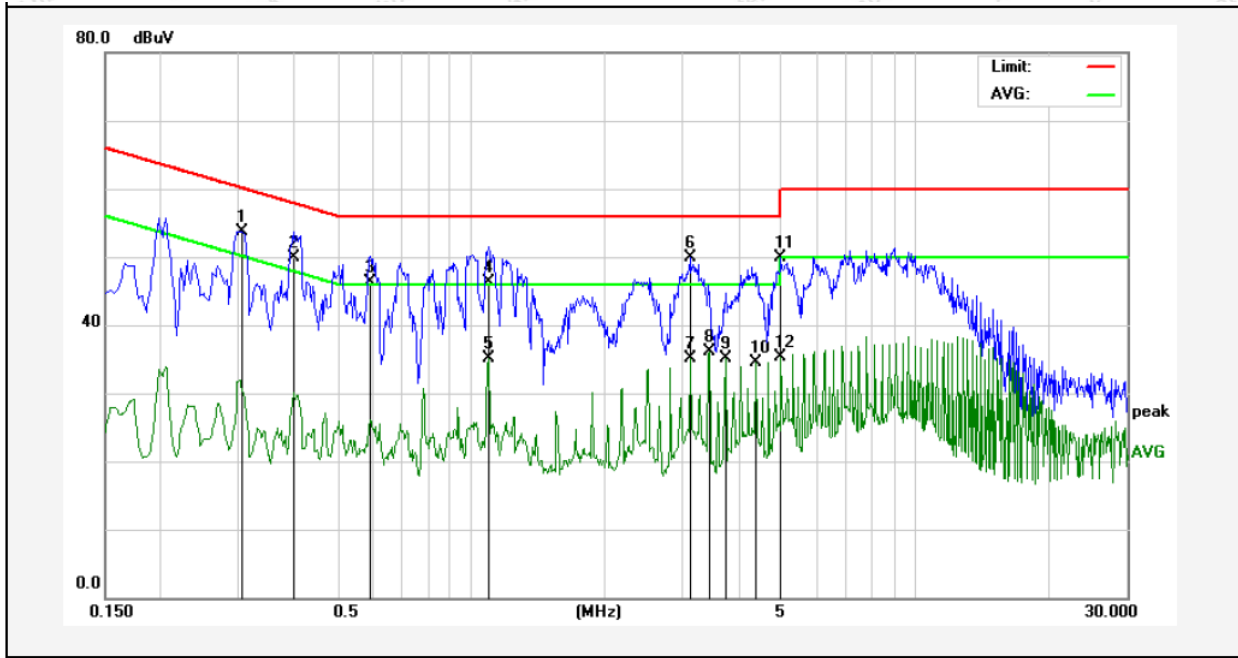
Test Site: 1# Shielded Room  
 Operating Condition: Keeping TX+Charging mode  
 Test Specification: AC 240V, 60Hz for adapter  
 Comment: Live Line  
 Tem.:22.3°C Hum.:57%



No.	Freq. (MHz)	Reading (dBUV)	Factor (dB)	Result (dBUV)	Limit dBUV	Over Limit (dB)	Detector	Remark
1	0.3060	33.21	19.89	53.10	60.08	-6.98	QP	
2	0.4060	28.80	19.94	48.74	57.73	-8.99	QP	
3	0.5899	27.70	20.01	47.71	56.00	-8.29	QP	
4	0.9020	27.99	20.09	48.08	56.00	-7.92	QP	
5	1.0820	29.00	20.12	49.12	56.00	-6.88	QP	
6	1.0940	16.21	20.12	36.33	46.00	-9.67	AVG	
7	3.1340	16.65	20.16	36.81	46.00	-9.19	AVG	
8	3.4380	17.71	20.17	37.88	46.00	-8.12	AVG	
9	4.0739	15.90	20.18	36.08	46.00	-9.92	AVG	
10	4.2180	27.65	20.19	47.84	56.00	-8.16	QP	
11	4.6900	15.48	20.20	35.68	46.00	-10.32	AVG	
12	13.1580	19.27	20.29	39.56	50.00	-10.44	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°C Hum.:57%



No.	Freq. (MHz)	Reading (dBUV)	Factor (dB)	Result (dBUV)	Limit dBUV	Over Limit (dB)	Detector	Remark
1	0.3060	33.78	19.89	53.67	60.08	-6.41	QP	
2	0.3980	30.04	19.93	49.97	57.89	-7.92	QP	
3	0.5940	26.30	20.01	46.31	56.00	-9.69	QP	
4	1.0940	26.10	20.12	46.22	56.00	-9.78	QP	
5	1.0940	15.07	20.12	35.19	46.00	-10.81	AVG	
6	3.1180	29.69	20.16	49.85	56.00	-6.15	QP	
7	3.1180	14.98	20.16	35.14	46.00	-10.86	AVG	
8	3.4460	15.92	20.17	36.09	46.00	-9.91	AVG	
9	3.7420	14.96	20.17	35.13	46.00	-10.87	AVG	
10	4.3859	14.32	20.19	34.51	46.00	-11.49	AVG	
11	4.9899	29.67	20.21	49.88	56.00	-6.12	QP	
12	4.9899	15.04	20.21	35.25	46.00	-10.75	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

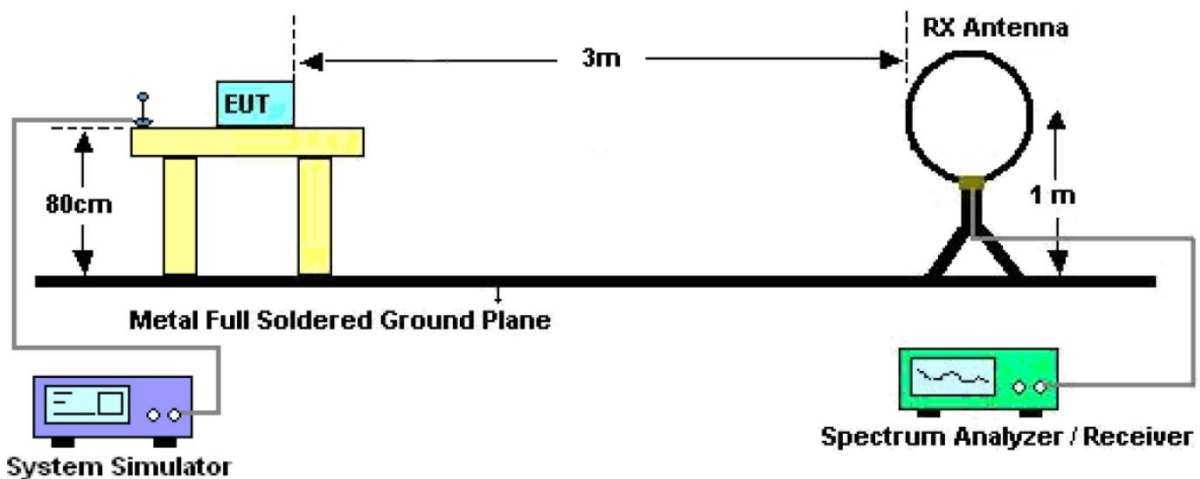


Figure 1. Below 30MHz

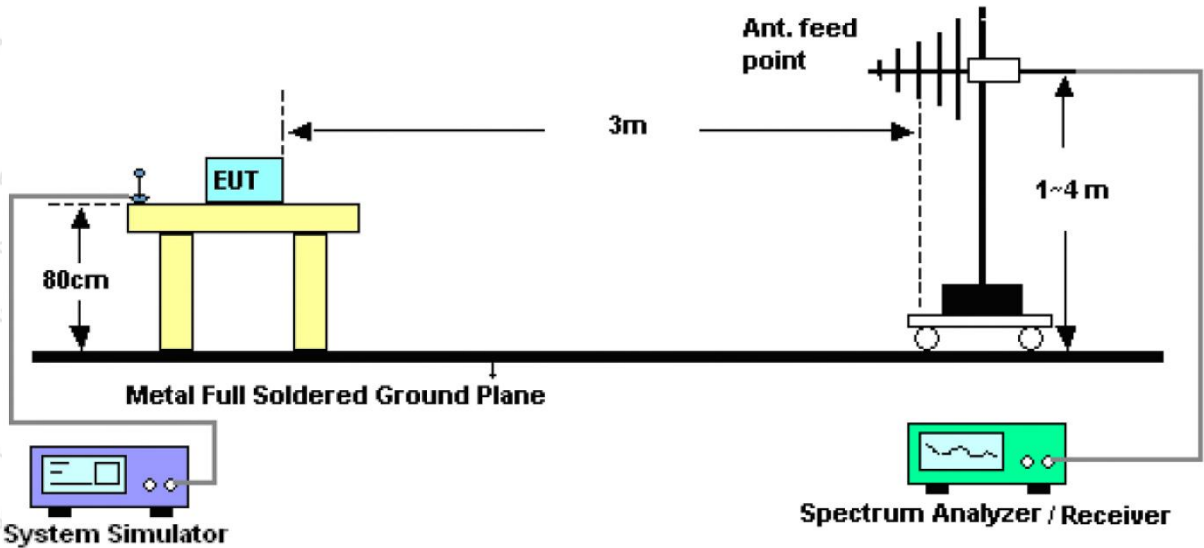


Figure 2. 30MHz to 1GHz

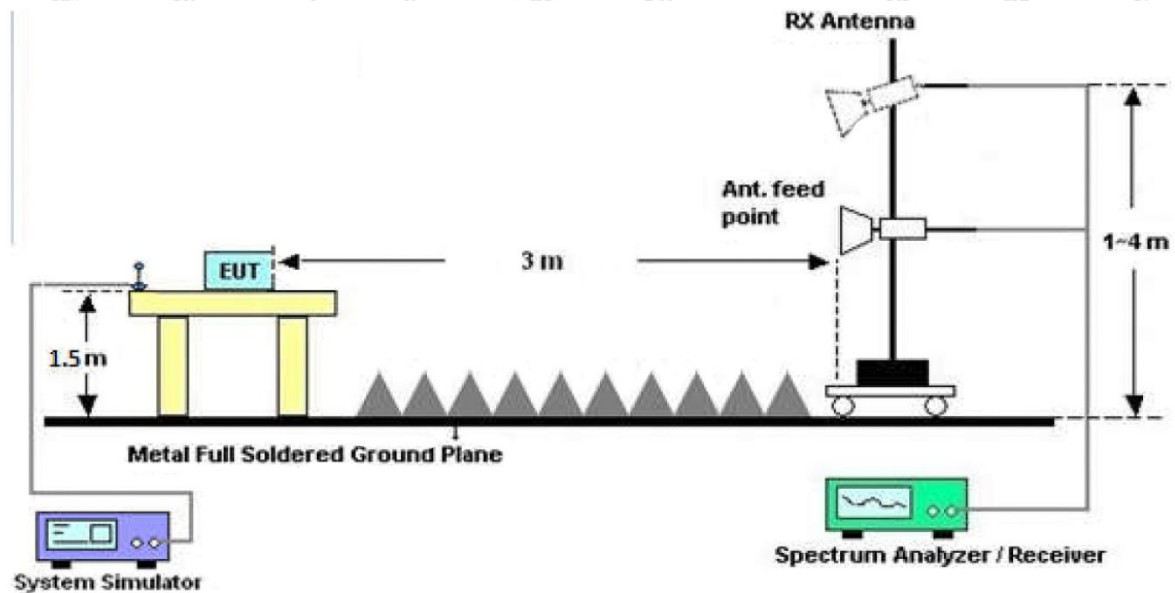


Figure 3. Above 1 GHz

### 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.

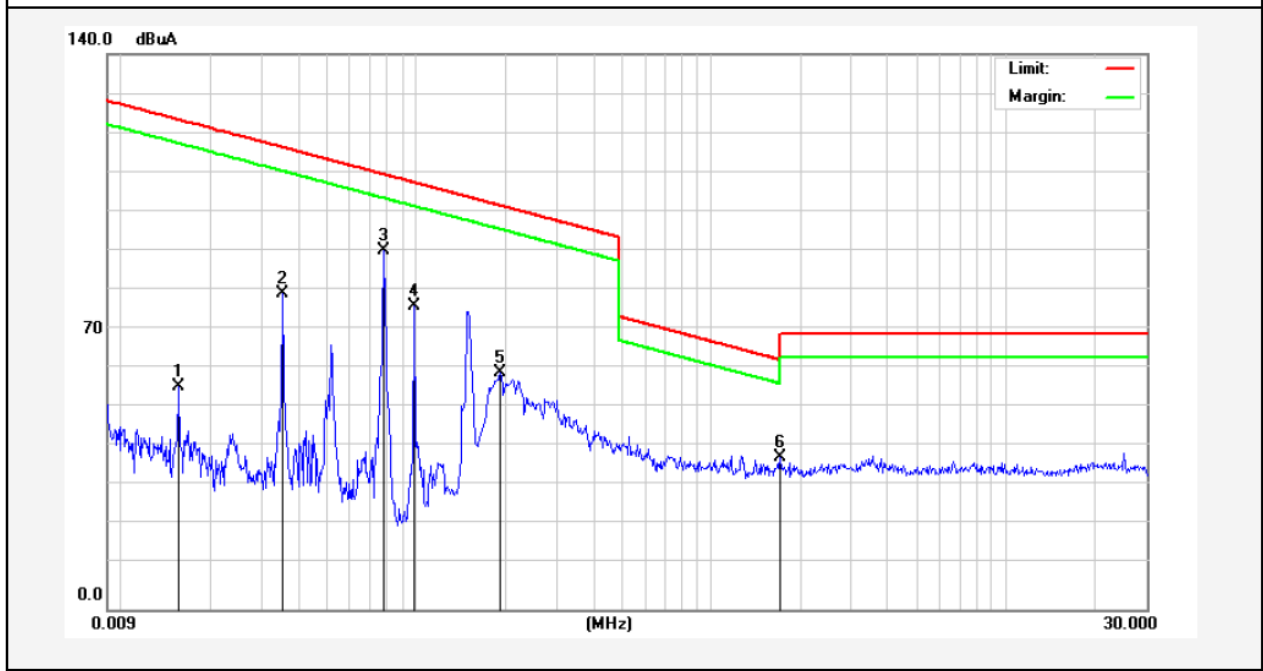
#### 4.4. Test Data

**PASS**

**Test Results**

(Between 9KHz – 30MHz)

<b>Job No.:</b>	<b>SZAWW180207002-01</b>	<b>Power Source:</b>	<b>AC 120V, 60Hz for adapter</b>
<b>Standard:</b>	<b>FCC PART15 C _3m</b>	<b>Temp.(C)/Hum.(%RH):</b>	<b>24.4(C)/50%RH</b>
<b>Test item:</b>	<b>Radiation Test</b>	<b>Distance:</b>	<b>3m</b>
<b>Test Mode:</b>	<b>Mode 4</b>		

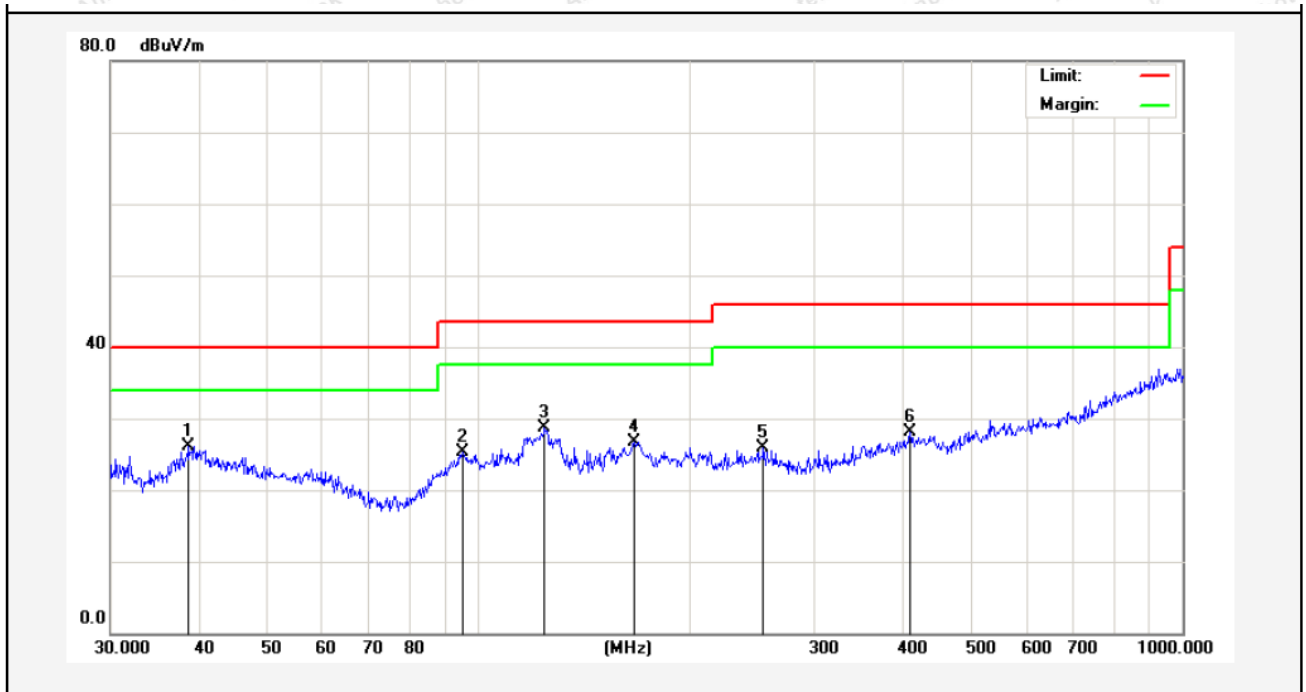


Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	degree (dge)
0.0232	34.12	19.28	2.53	0	55.93	140.15	-84.22	Peak	84
0.0232	30.67	19.28	2.53	0	52.48	120.15	-67.67	AV	84
0.0354	49.29	19.28	2.53	0	71.10	136.50	-65.40	Peak	120
0.0354	47.75	19.28	2.53	0	69.56	116.50	-46.94	AV	120
0.0495	40.08	19.30	2.54	0	61.92	133.60	-71.68	Peak	180
0.0495	37.80	19.30	2.54	0	59.64	113.60	-53.96	AV	180
0.1740	64.39	19.38	2.55	0	86.32	122.74	-36.42	Peak	320
0.1740	62.52	19.38	2.55	0	84.45	102.74	-18.29	AV	320
0.5180	40.77	19.53	2.59	0	62.89	73.32	-10.43	QP	90
0.8620	27.81	20.34	2.60	0	50.75	68.89	-18.14	QP	76

**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.

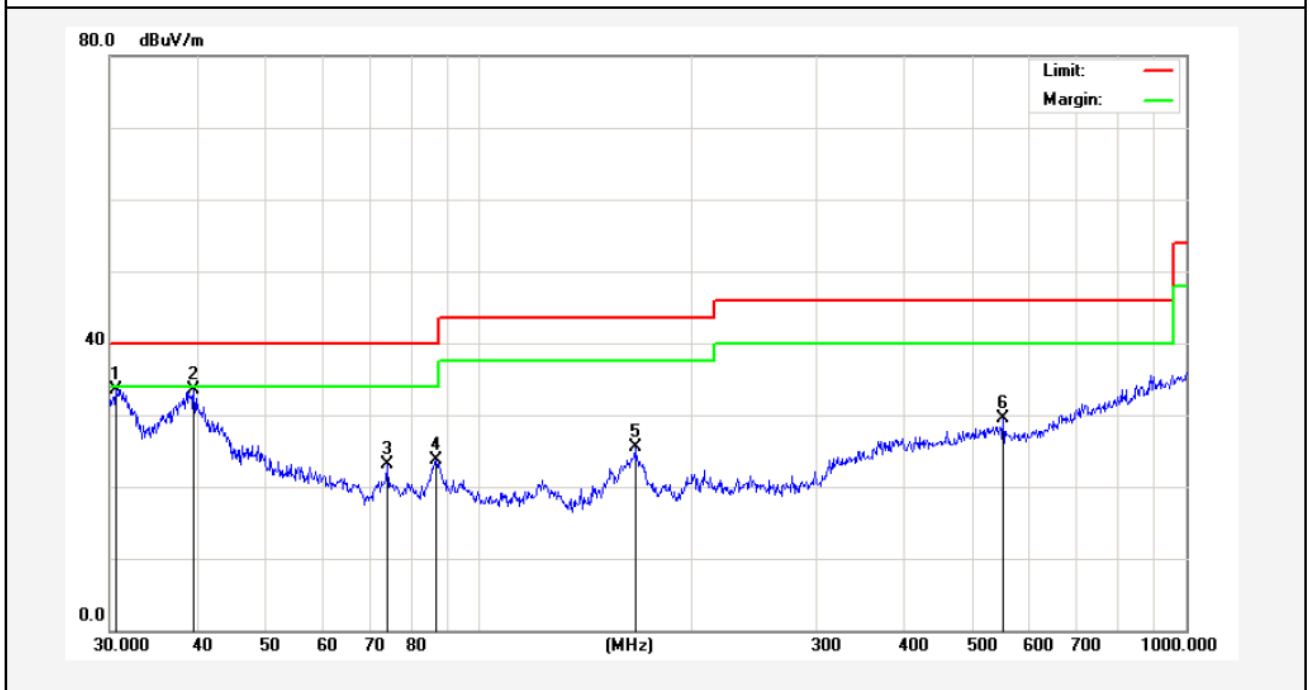
(Between 30MHz -1000 MHz)

<b>Job No.:</b>	<b>SZAWW180207002-01</b>	<b>Polarization:</b>	<b>Horizontal</b>
<b>Standard:</b>	<b>FCC PART15 C _3m</b>	<b>Power Source:</b>	<b>AC 120V, 60Hz for adapter</b>
<b>Test item:</b>	<b>Radiation Test</b>	<b>Temp.(C)/Hum.(%RH):</b>	<b>24.4(C)/50%RH</b>
<b>Test Mode:</b>	<b>Mode 4</b>	<b>Distance:</b>	<b>3m</b>



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	38.7518	35.23	-9.05	26.18	40.00	-13.82	QP	300	11	
2	95.0930	40.43	-15.20	25.23	43.50	-18.27	QP	300	31	
3	124.1330	44.29	-15.50	28.79	43.50	-14.71	QP	300	64	
4	166.0680	40.87	-14.07	26.80	43.50	-16.70	QP	300	119	
5	253.8367	38.07	-12.26	25.81	46.00	-20.19	QP	300	167	
6	410.3825	34.79	-6.62	28.17	46.00	-17.83	QP	300	234	

<b>Job No.:</b>	<b>SZAWW180207002-01</b>	<b>Plarization:</b>	<b>Vertical</b>
<b>Standard:</b>	<b>FCC PART15 C _3m</b>	<b>Power Source:</b>	<b>AC 120V, 60Hz for adapter</b>
<b>Test item:</b>	<b>Radiation Test</b>	<b>Temp.(C)/Hum.(%RH):</b>	<b>24.4(C)/50%RH</b>
<b>Test Mode:</b>	<b>Mode 4</b>	<b>Distance:</b>	<b>3m</b>



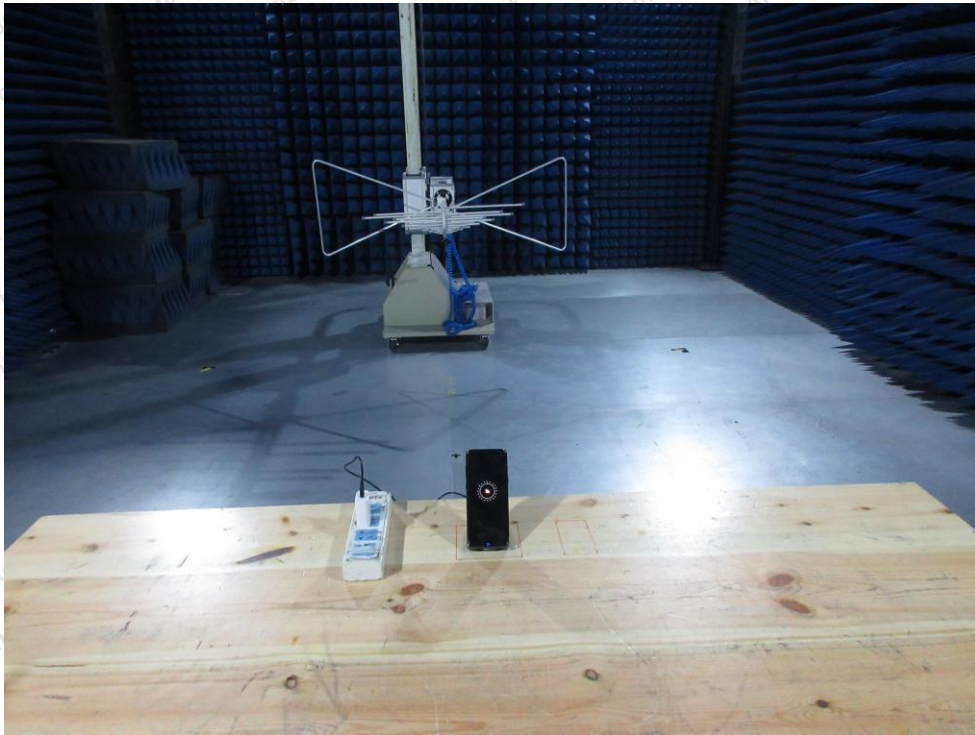
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	30.6379	44.89	-11.36	33.53	40.00	-6.47	QP	300	13	
2	39.4371	41.10	-7.67	33.43	40.00	-6.57	QP	300	64	
3	74.1351	37.51	-14.46	23.05	40.00	-16.95	QP	300	94	
4	86.8068	35.41	-11.71	23.70	40.00	-16.30	QP	300	134	
5	166.0680	36.17	-10.68	25.49	43.50	-18.01	QP	300	227	
6	550.9480	33.60	-4.08	29.52	46.00	-16.48	QP	300	305	

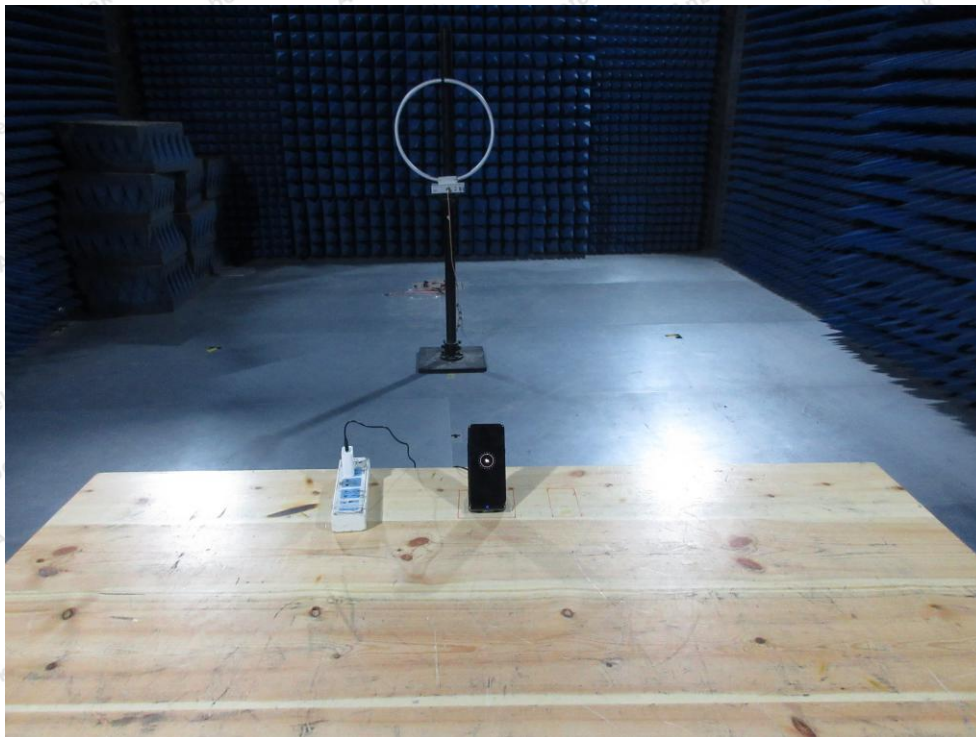
## APPENDIX I -- TEST SETUP PHOTOGRAPH

Photo of Conducted Emission Measurement

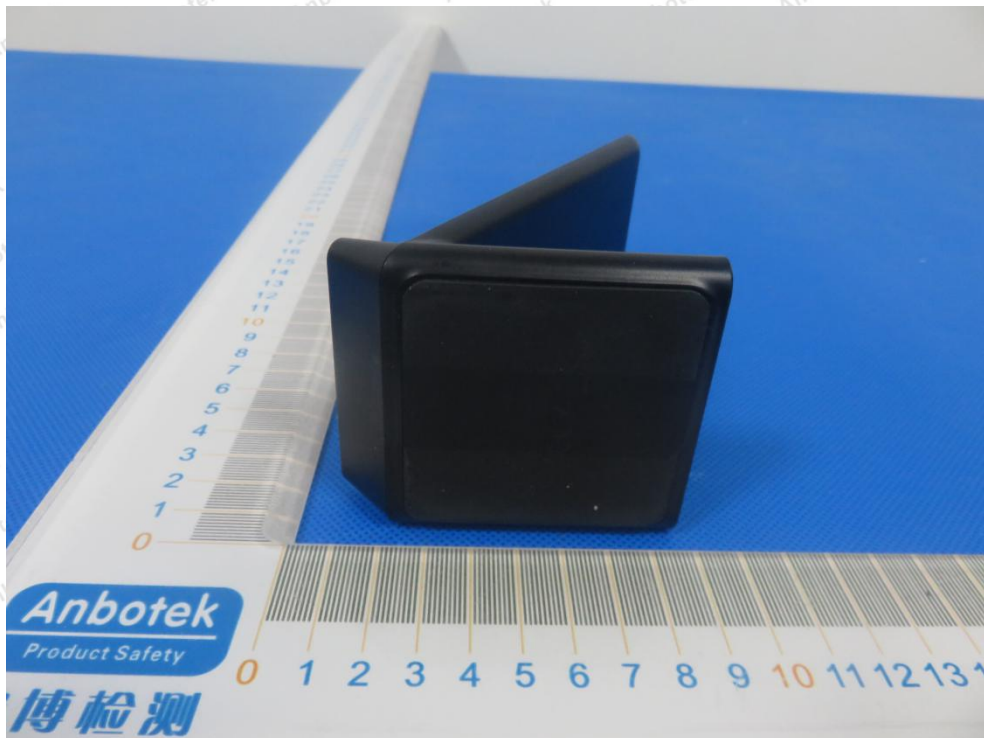


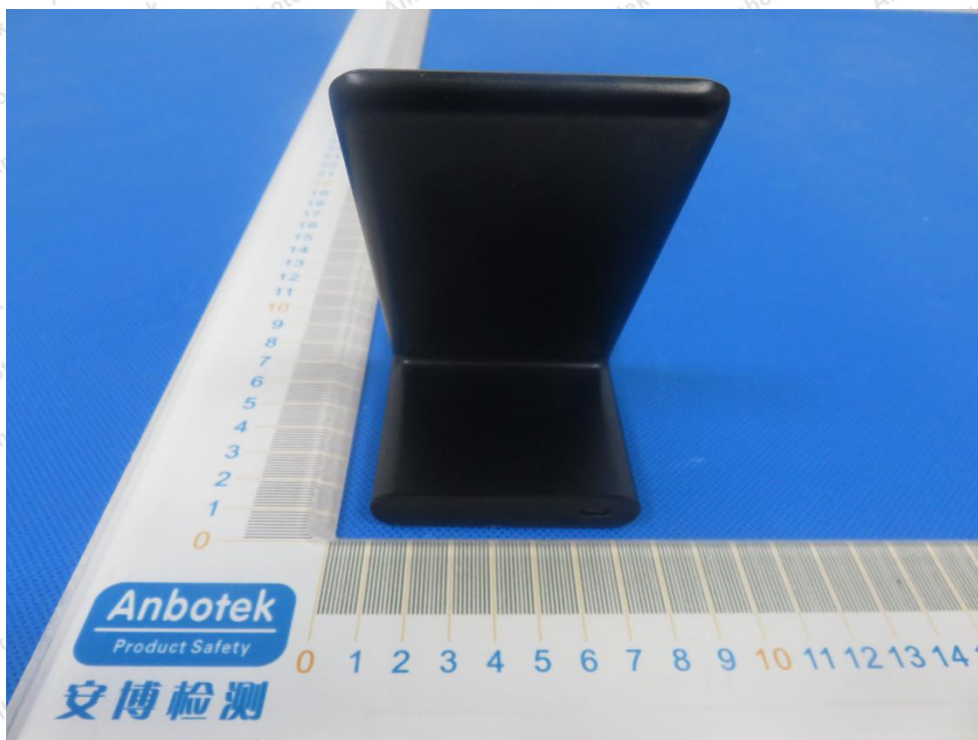
Photo of Radiation Emission Test



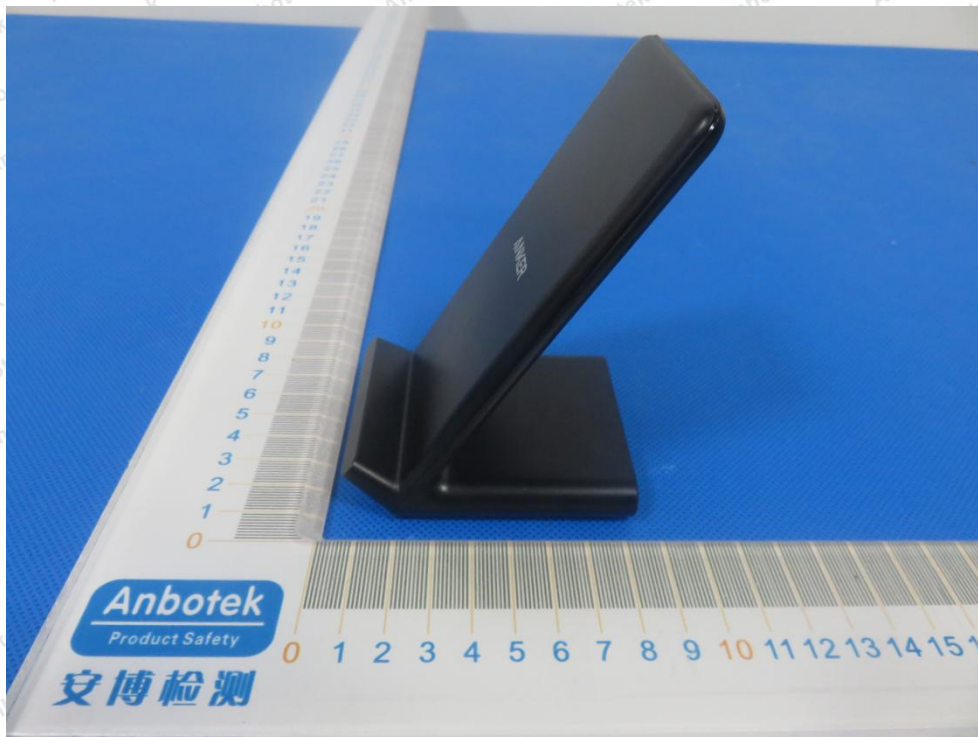
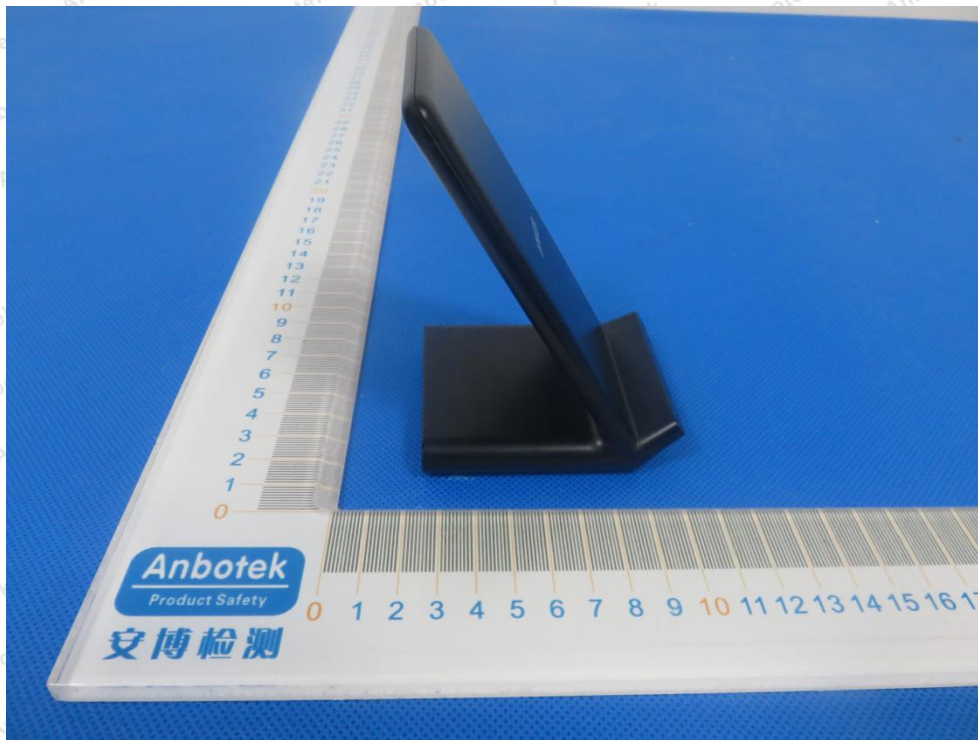


## APPENDIX II -- EXTERNAL PHOTOGRAPH

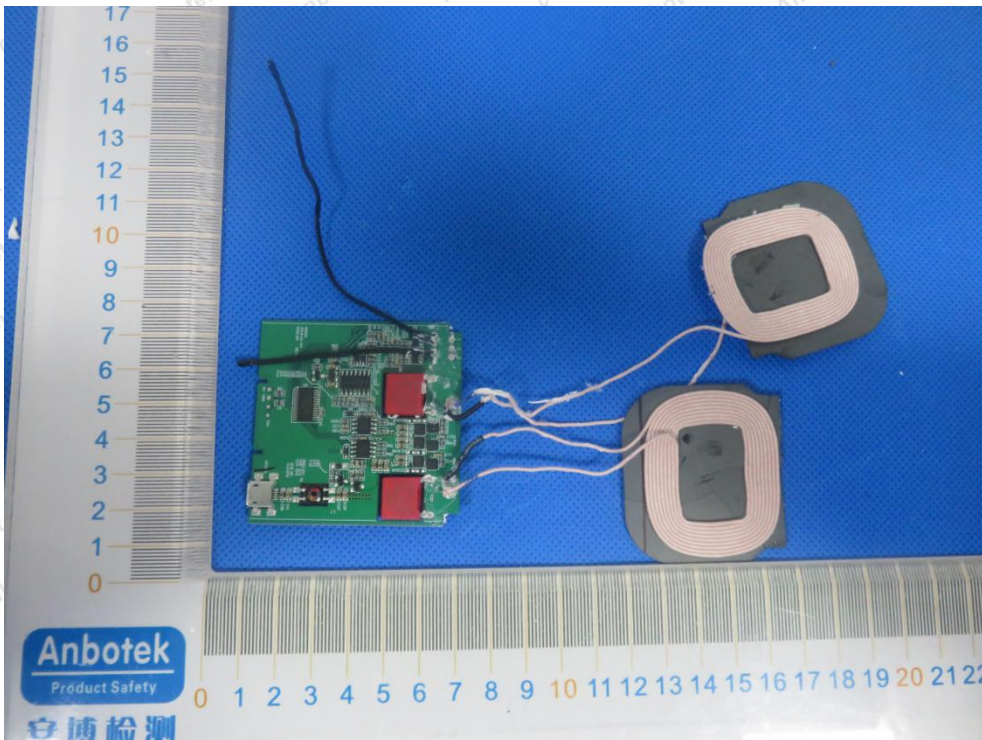




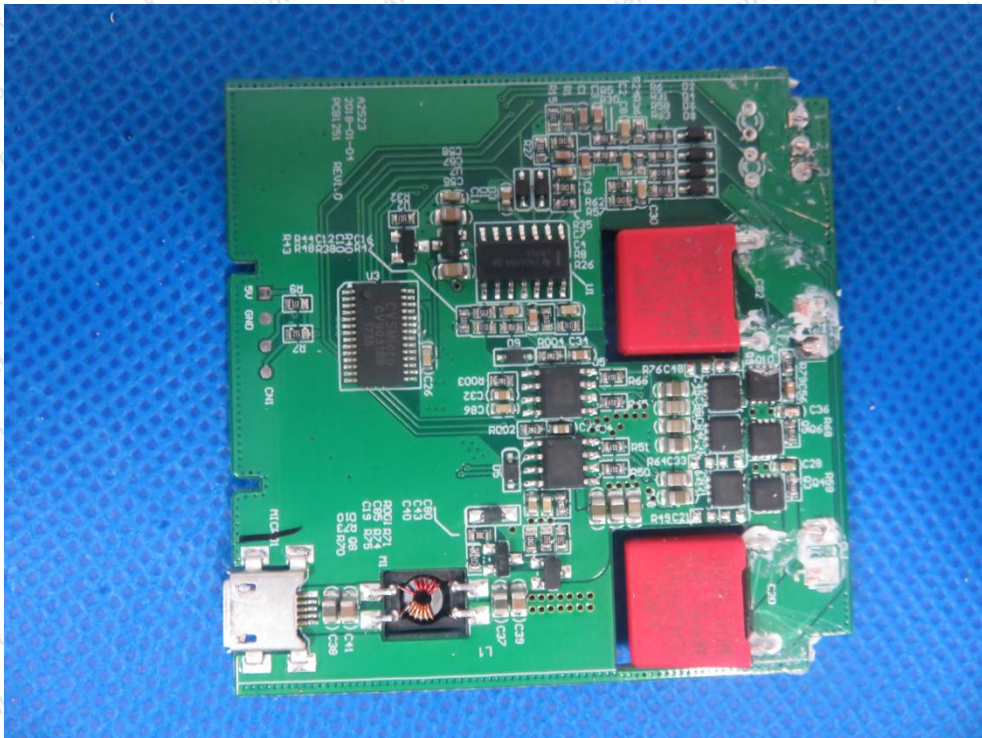
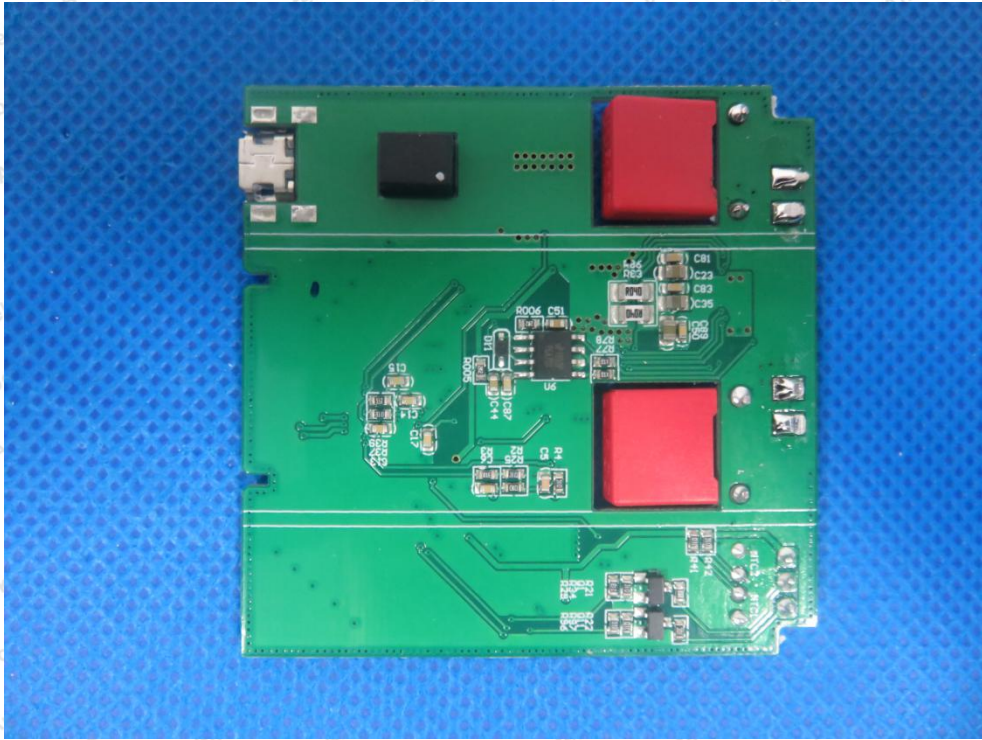


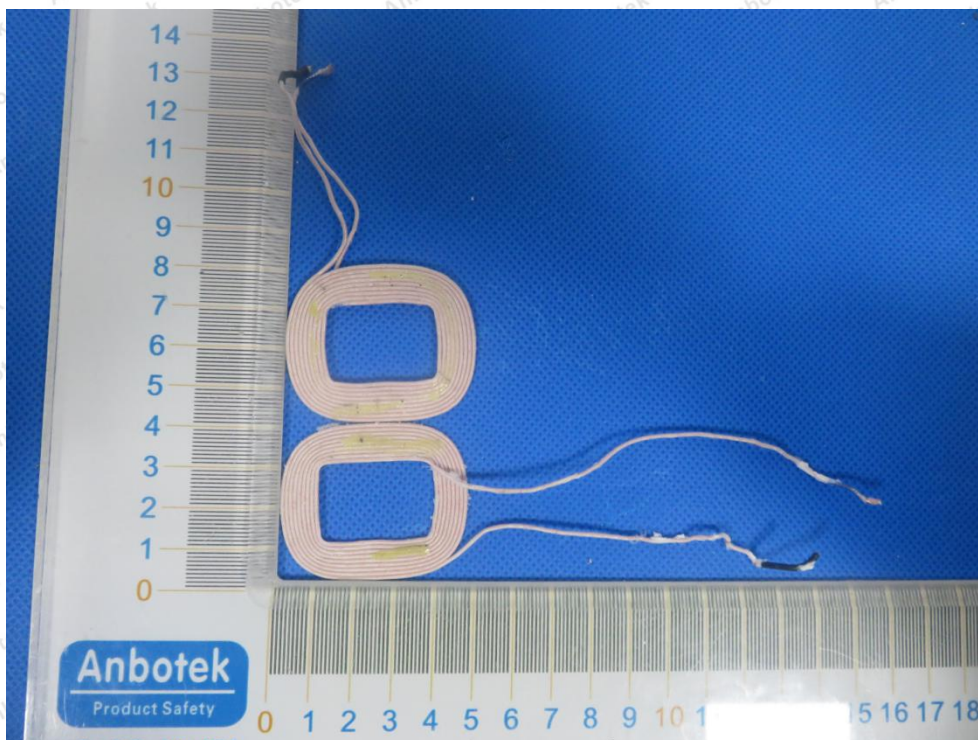
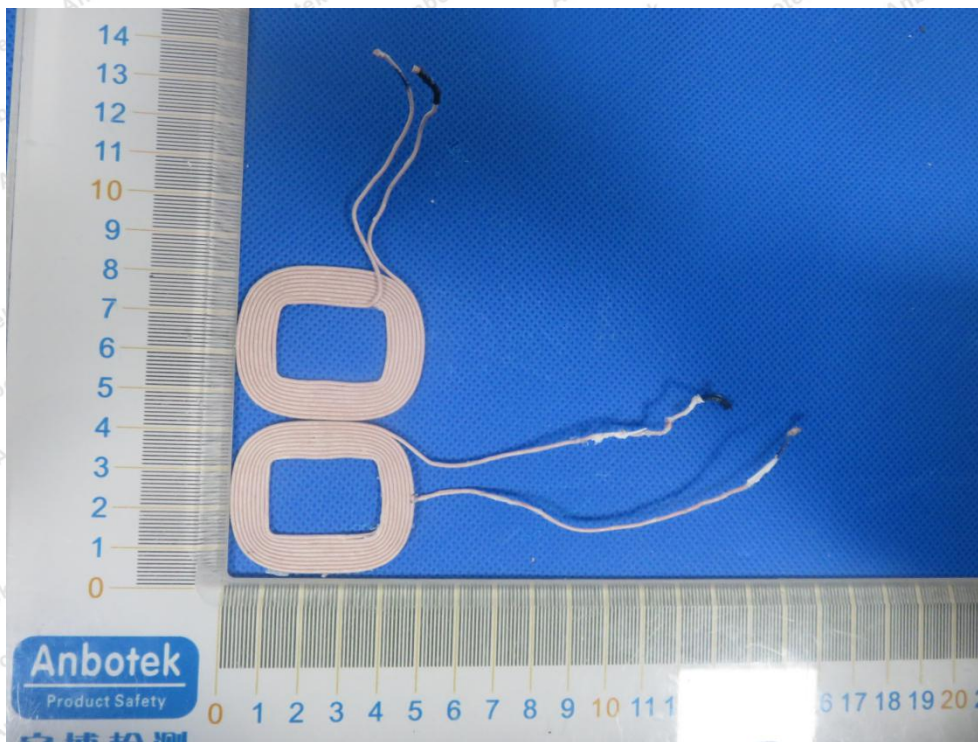


### APPENDIX III -- INTERNAL PHOTOGRAPH









End of Report