

FCC TEST REPORT

Client Name : QUEST USA CORP
Address : 495 FLATBUSH AVE, BROOKLYN NY, 11225 USA
Product Name : WIRELESS CHARGER
Date : Oct. 28, 2021



Shenzhen Anbotek Compliance Laboratory Limited

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TEST REPORT

Applicant : QUEST USA CORP
Manufacturer : TELEPHONE EST(HK)CO.,LTD
Product Name : WIRELESS CHARGER
Model No. : IJWC2104
Trade Mark : N.A.
Rating(s) : Input: DC 5V/1A, 5V/2A, 9V/2A
Phone output: 15W (max)
Earphone output: 5W (max)
USB output: 3W Max

Test Standard(s) : **FCC Part15 Subpart C, Paragraph 15.209**
Test Method(s) : **ANSI C63.10: 2020**

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 Receipt : Sept. 22, 2021
Date of Test : Sept. 22~ Oct. 25, 2021

Prepared By



(Ella Liang)

Approved & Authorized Signer



(Kingkong Jin)

1. General Information

1.1. Client Information

Applicant	:	QUEST USA CORP
Address	:	495 FLATBUSH AVE, BROOKLYN NY, 11225 USA
Manufacturer	:	TELEPHONE EST(HK)CO.,LTD
Address	:	Room 706, 7F, FuLi Tianhe commercial building, Linhe East Road and Tianhe District, Guangzhou, China
Factory	:	Telephone Est Electronics Factory(Zhong Shan)
Address	:	NO.2, Heyuan, Lianfeng Road, Xiaolan Town, Zhongshan City, Guangdong, China.

1.2. Description of Device (EUT)

Product Name	:	WIRELESS CHARGER
Model No.	:	IJWC2104
Trade Mark	:	N.A.
Test Power Supply	:	AC 120V, 60Hz for adapter/AC 240V, 60Hz for adapter
Test Sample No.	:	1-2-1(Normal Sample), 1-2-2(Engineering Sample)
Product Description	Operation Frequency:	110.1-205KHz
	Modulation Type:	FSK
	Antenna Type:	Inductive loop coil Antenna
	Antenna Gain(Peak):	0 dBi (Provided by customer)
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	:	M/N: A2013 Input: 100-240V-0.7A,50-60Hz Output:5V3A,9V3A,12V2.25A,20V1.35A.11V3A
Wireless charging load	:	Shenzhen Ouju Technology Co., Ltd. M/N: CD2531 Power: 5W/7.5W/10W/15W Last Cal.: Oct. 26, 2020 Cal. Interval: 1 Year
Wireless charging load	:	Shenzhen Ouju Technology Co., Ltd. M/N: CD2526 Power: 5W Last Cal.: Oct. 26, 2020 Cal. Interval: 1 Year

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	Wireless Charge Mode

For Conducted Emission	
Final Test Mode	Description
Mode 1	Wireless Charge Mode

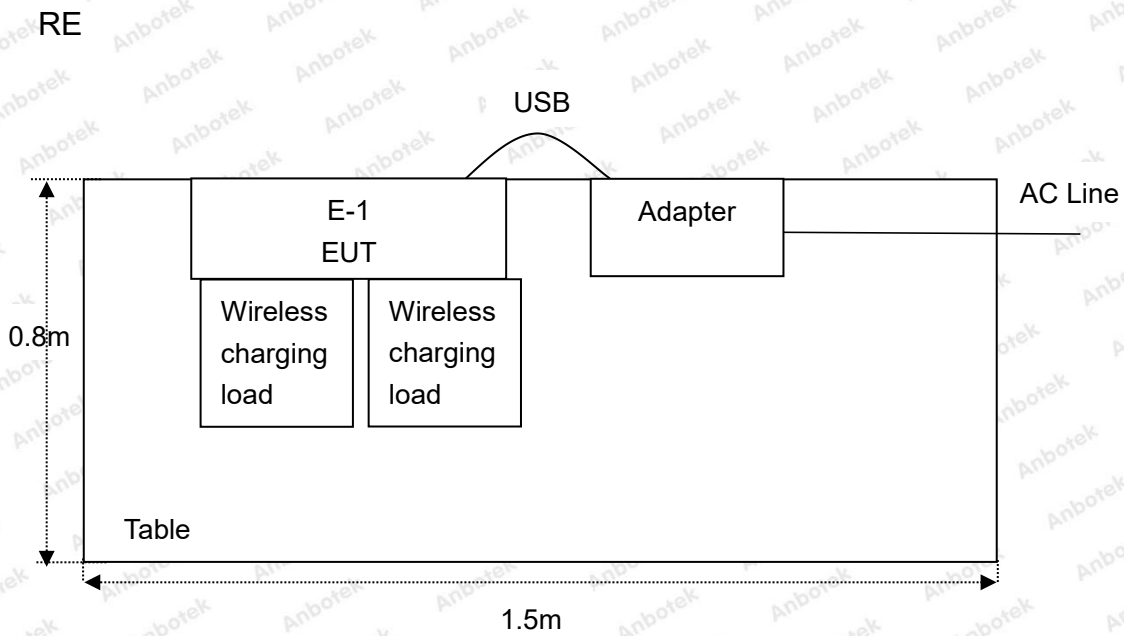
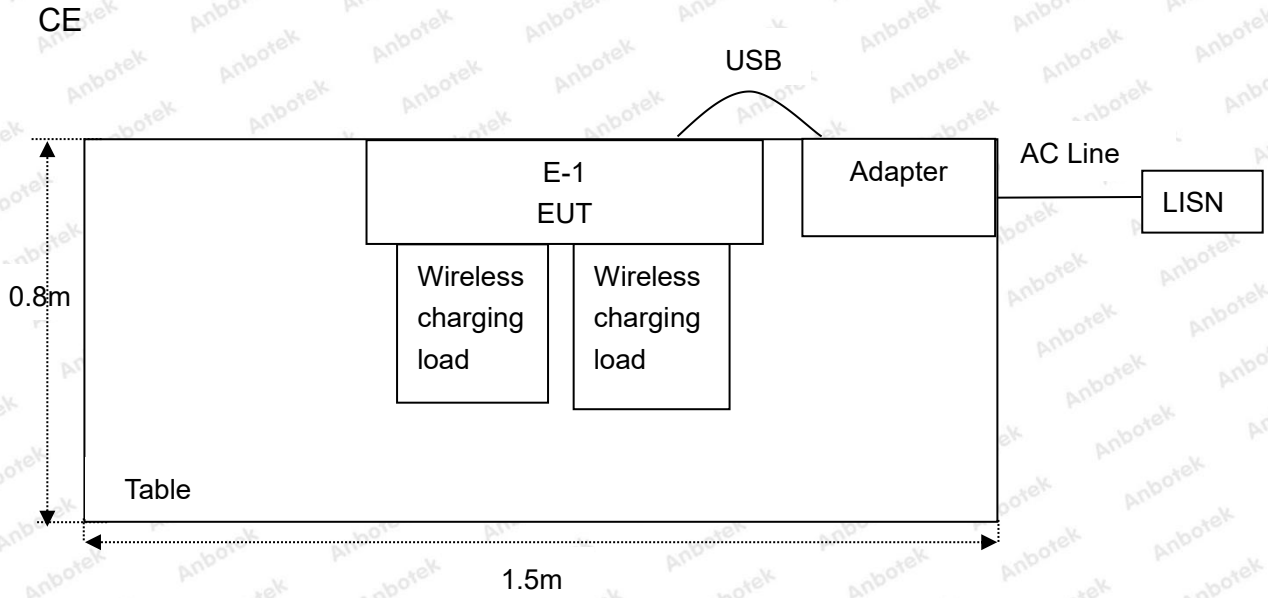
For Radiated Emission	
Final Test Mode	Description
Mode 1	Wireless Charge Mode

Note: (1)Test channel is 0.1285MHz.

(2)All the situation(full load, half load and empty load) has been tested,only the worst situation (full load) was recorded in the report.

(3)The device has ANT0 and ANT1, the total power of ANT0+ANT1 working at the same time is 15W (maximum). During the test, The ANT0, ANT1 and ANT0+ANT1 were tested separately, only the worst case (ANT0+ANT1: 15W (maximum)) is recorded in the report.

1.5. Description Of Test Setup



1.6. 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	Oct. 26, 2020	1 Year
2.	Three Phase V-type Artificial Power Network	CYBERTEK	EM5040DT	E215040DT001	Jul 05, 2021	1 Year
3.	EMI Test Receiver	Rohde & Schwarz	ESCI	100627	Oct. 26, 2020	1 Year
4.	EMI Test Receiver	Rohde & Schwarz	ESR26	101481	Oct. 26, 2020	1 Year
5.	RF Switching Unit	Compliance Direction	RSU-M2	38303	Oct. 26, 2020	1 Year
6.	MAX Spectrum Analysis	Agilent	N9020A	MY51170037	Oct. 26, 2020	1 Year
7.	Preamplifier	SKET Electronic	BK1G18G30 D	KD17503	Oct. 26, 2020	1 Year
8.	Double Ridged Horn Antenna	Instruments corporation	GTH-0118	351600	Nov. 02, 2020	2 Year
9.	Bilog Broadband Antenna	Schwarzbeck	VULB9163	VULB 9163-289	Nov. 02, 2020	2 Year
10.	Loop Antenna	Schwarzbeck	FMZB1519B	00053	Nov. 02, 2020	2 Year
11.	Horn Antenna	A-INFO	LB-180400-K F	J211060628	Nov. 02, 2020	2 Year
12.	Pre-amplifier	SONOMA	310N	186860	Oct. 26, 2020	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	Oct. 26, 2020	1 Year
15.	Power Sensor	DAER	RPR3006W	15I00041SN045	Oct. 26, 2020	1 Year
16.	Power Sensor	DAER	RPR3006W	15I00041SN046	Oct. 26, 2020	1 Year
17.	MXA Spectrum Analysis	Agilent	N9020A	MY51170037	Oct. 26, 2020	1 Year
18.	MXG RF Vector Signal Generator	Agilent	N5182A	MY48180656	Oct. 26, 2020	1 Year
19.	Signal Generator	Agilent	E4421B	MY41000743	Oct. 26, 2020	1 Year
20.	DC Power Supply	IVYTECH	IV3605	1804D360510	Oct. 26, 2020	1 Year
21.	Constant Temperature Humidity Chamber	ZHONGJIAN	ZJ-KHWS80 B	N/A	Oct. 26, 2020	1 Year



1.7. Measurement Uncertainty

Radiation Uncertainty	:	Ur = 3.9 dB (Horizontal)
		Ur = 3.8 dB (Vertical)
Conduction Uncertainty	:	Uc = 3.4 dB

1.8. 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.

ISED-Registration No.: 8058A

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.

Test Location

Shenzhen Anbotek Compliance Laboratory Limited.

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
Part 15.203	Antenna Requirement	PASS

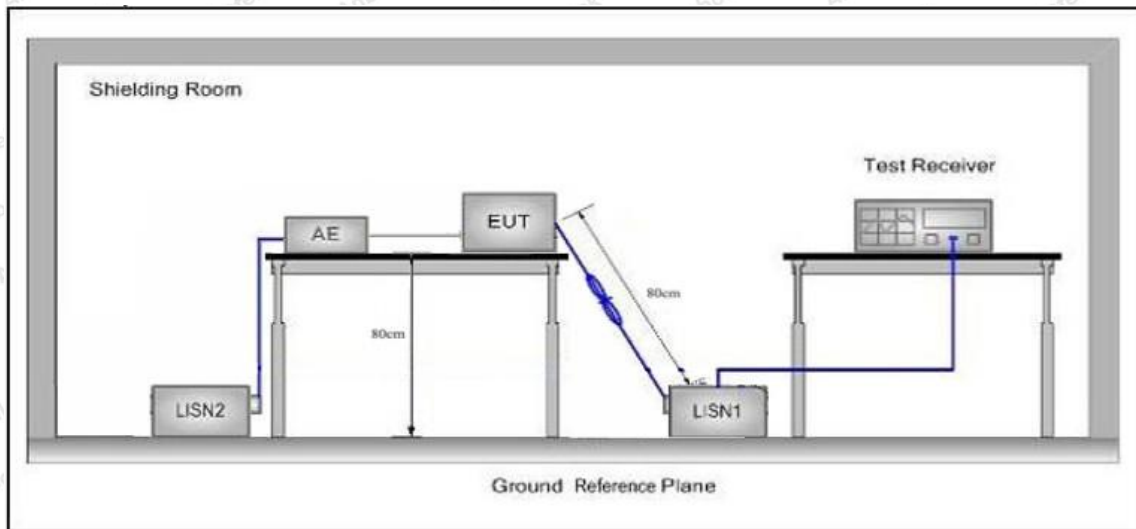
3. Conducted Emission Test

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 C63.10-2020 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

Shenzhen Anbotek Compliance Laboratory Limited

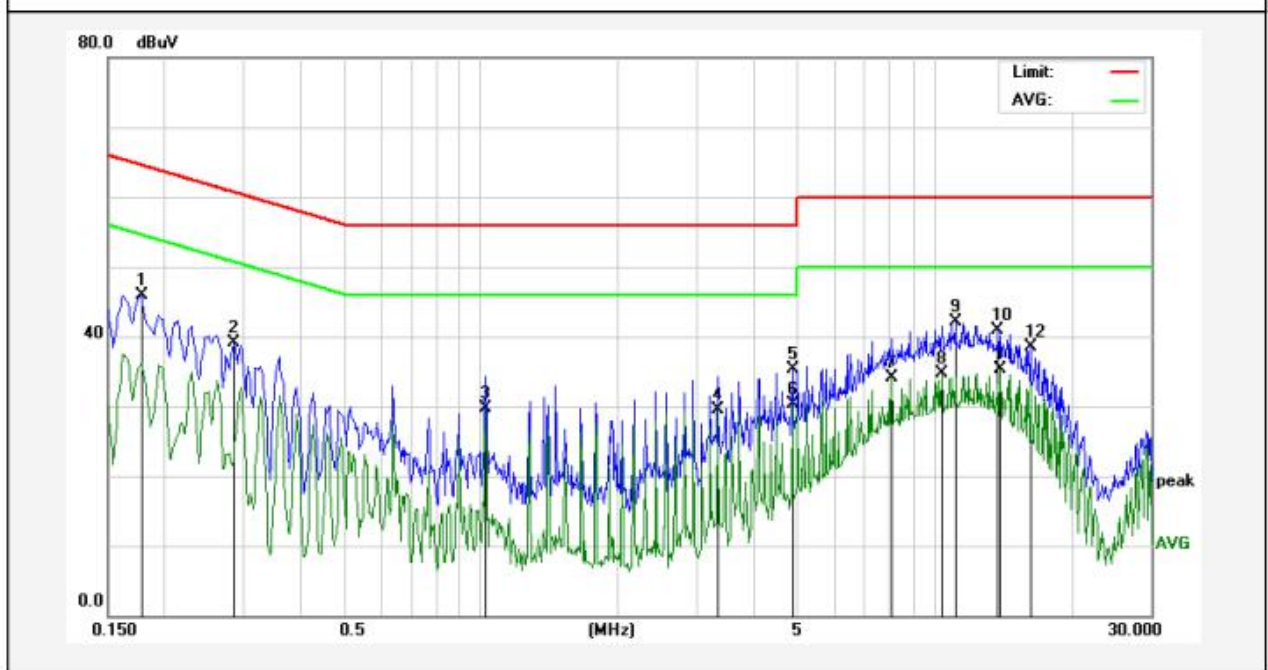
Address: 1/F., Building D, Sogood Science and Technology Park, Sanwei Community, Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China.
 Tel:(86) 755-26066440 Fax: (86) 755-26014772 Email: service@anbotek.com

Code:AB-RF-05-a

Hotline
 400-003-0500
 www.anbotek.com

Conducted Emission Test Data

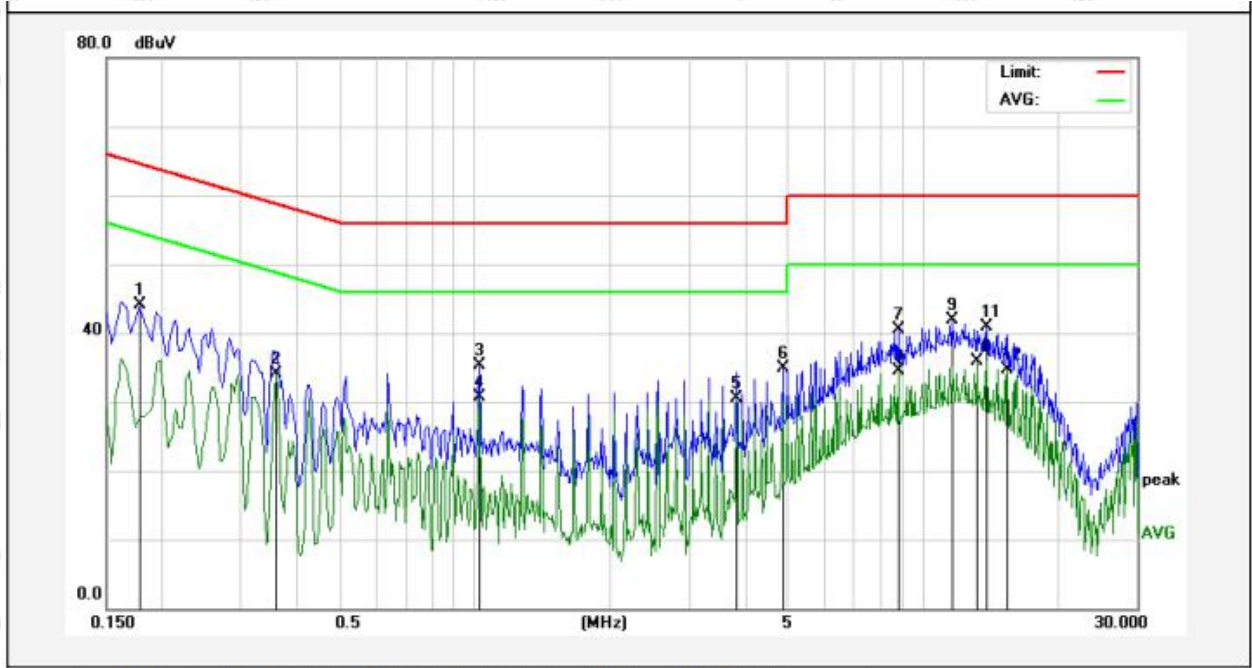
Test Site: 1# Shielded Room
 Operating Condition: Mode 1
 Test Specification: AC 240V, 60Hz for adapter
 Comment: Live Line
 Tem.: 24.1°C Hum.: 48%



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Detector	Remark
1	0.1780	35.77	10.12	45.89	64.57	-18.68	QP	
2	0.2860	28.95	10.13	39.08	60.64	-21.56	QP	
3	1.0220	19.52	10.15	29.67	46.00	-16.33	AVG	
4	3.3260	19.37	10.12	29.49	46.00	-16.51	AVG	
5	4.8580	25.13	10.11	35.24	56.00	-20.76	QP	
6	4.8580	20.24	10.11	30.35	46.00	-15.65	AVG	
7	8.0540	23.99	10.12	34.11	50.00	-15.89	AVG	
8	10.3540	24.56	10.12	34.68	50.00	-15.32	AVG	
9	11.1220	31.90	10.13	42.03	60.00	-17.97	QP	
10	13.8020	30.77	10.16	40.93	60.00	-19.07	QP	
11	13.9300	25.21	10.16	35.37	50.00	-14.63	AVG	
12	16.2300	28.37	10.18	38.55	60.00	-21.45	QP	

Conducted Emission Test Data

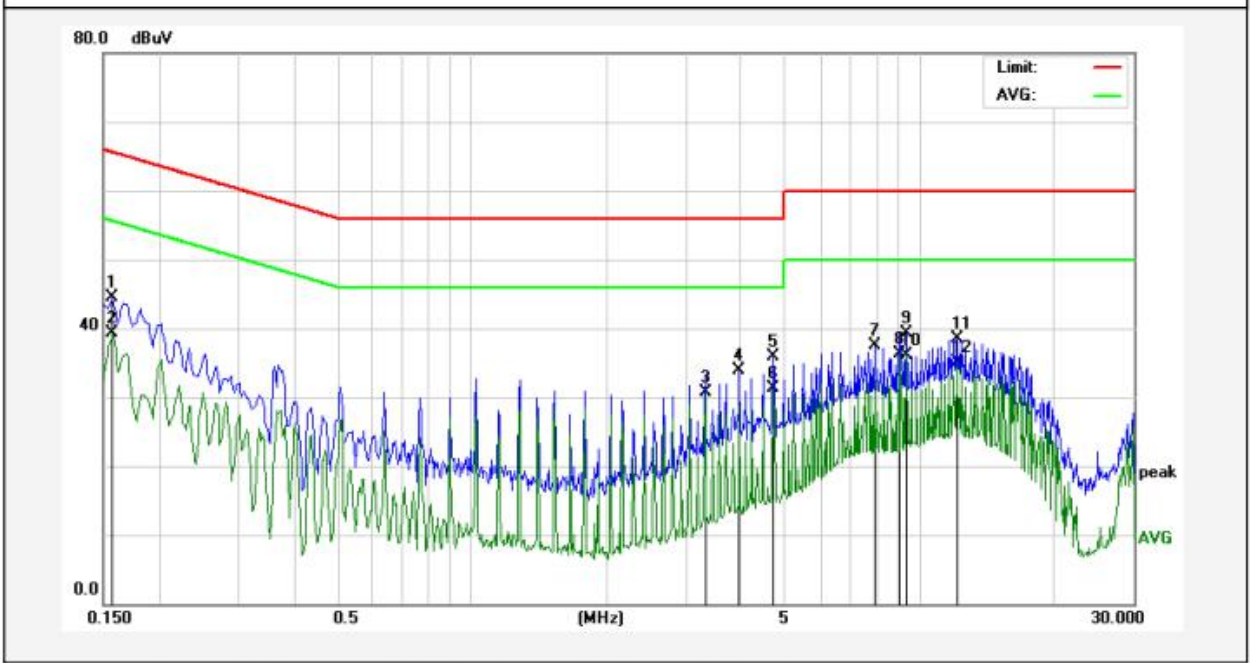
Test Site: 1# Shielded Room
 Operating Condition: Mode 1
 Test Specification: AC 240V, 60Hz for adapter
 Comment: Neutral Line
 Tem.: 24.1°C Hum.: 48%



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Detector	Remark
1	0.1780	33.99	10.12	44.11	64.57	-20.46	QP	
2	0.3580	23.96	10.12	34.08	48.77	-14.69	AVG	
3	1.0220	25.13	10.15	35.28	56.00	-20.72	QP	
4	1.0220	20.53	10.15	30.68	46.00	-15.32	AVG	
5	3.8300	20.47	10.12	30.59	46.00	-15.41	AVG	
6	4.8500	24.85	10.11	34.96	56.00	-21.04	QP	
7	8.8060	30.46	10.12	40.58	60.00	-19.42	QP	
8	8.8060	24.31	10.12	34.43	50.00	-15.57	AVG	
9	11.6140	31.85	10.14	41.99	60.00	-18.01	QP	
10	13.1460	25.76	10.15	35.91	50.00	-14.09	AVG	
11	13.9100	30.79	10.16	40.95	60.00	-19.05	QP	
12	15.4420	24.61	10.17	34.78	50.00	-15.22	AVG	

Conducted Emission Test Data

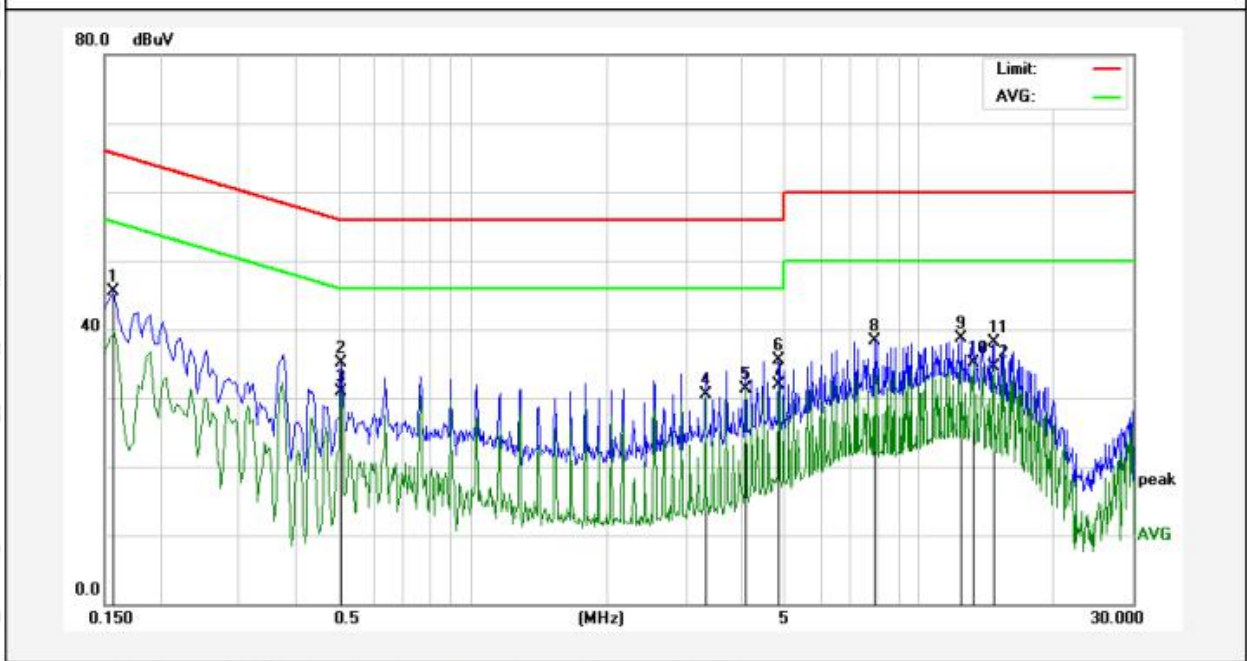
Test Site: 1# Shielded Room
 Operating Condition: Mode 1
 Test Specification: AC 120V, 60Hz for adapter
 Comment: Live Line
 Tem.: 24.1°C Hum.: 48%



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Detector	Remark
1	0.1580	34.42	10.12	44.54	65.56	-21.02	QP	
2	0.1580	29.25	10.12	39.37	55.56	-16.19	AVG	
3	3.3140	20.51	10.12	30.63	46.00	-15.37	AVG	
4	3.9540	23.83	10.12	33.95	56.00	-22.05	QP	
5	4.7180	25.70	10.11	35.81	56.00	-20.19	QP	
6	4.7180	21.28	10.11	31.39	46.00	-14.61	AVG	
7	7.9100	27.47	10.12	37.59	60.00	-22.41	QP	
8	9.0580	26.18	10.12	36.30	50.00	-13.70	AVG	
9	9.3100	29.23	10.12	39.35	60.00	-20.65	QP	
10	9.3100	26.07	10.12	36.19	50.00	-13.81	AVG	
11	12.1220	28.45	10.14	38.59	60.00	-21.41	QP	
12	12.1220	24.97	10.14	35.11	50.00	-14.89	AVG	

Conducted Emission Test Data

Test Site: 1# Shielded Room
 Operating Condition: Mode 1
 Test Specification: AC 120V, 60Hz for adapter
 Comment: Neutral Line
 Tem.: 24.1°C Hum.: 48%



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Detector	Remark
1	0.1580	35.35	10.12	45.47	65.56	-20.09	QP	
2	0.5100	24.91	10.15	35.06	56.00	-20.94	QP	
3	0.5100	20.73	10.15	30.88	46.00	-15.12	AVG	
4	3.3180	20.43	10.12	30.55	46.00	-15.45	AVG	
5	4.0820	21.27	10.11	31.38	46.00	-14.62	AVG	
6	4.8460	25.44	10.11	35.55	56.00	-20.45	QP	
7	4.8460	21.81	10.11	31.92	46.00	-14.08	AVG	
8	7.9060	28.22	10.12	38.34	60.00	-21.66	QP	
9	12.3660	28.51	10.14	38.65	60.00	-21.35	QP	
10	13.1300	24.93	10.15	35.08	50.00	-14.92	AVG	
11	14.6580	27.84	10.17	38.01	60.00	-21.99	QP	
12	14.6580	24.32	10.17	34.49	50.00	-15.51	AVG	

4. Radiation Spurious Emission

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

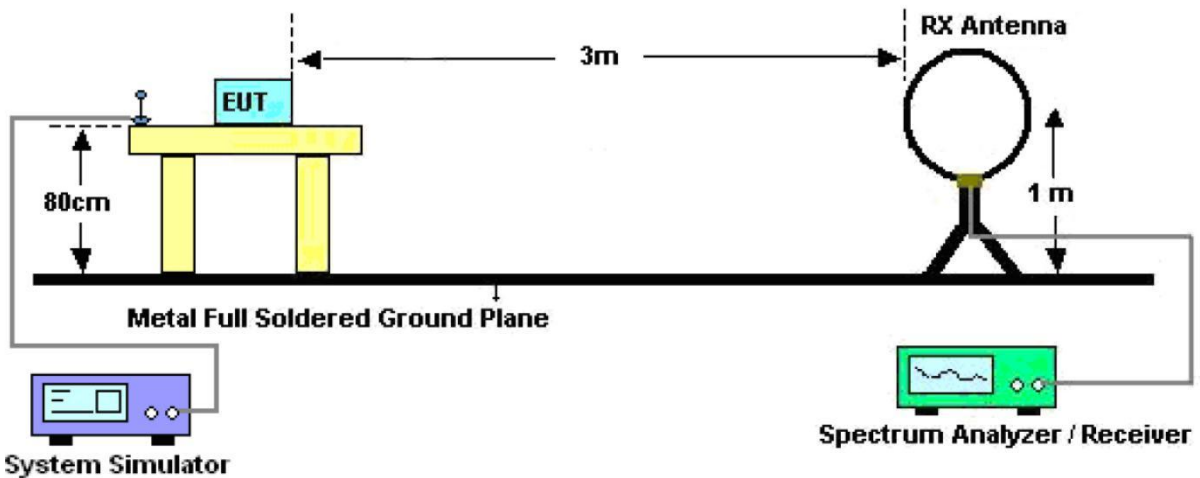


Figure 1. Below 30MHz

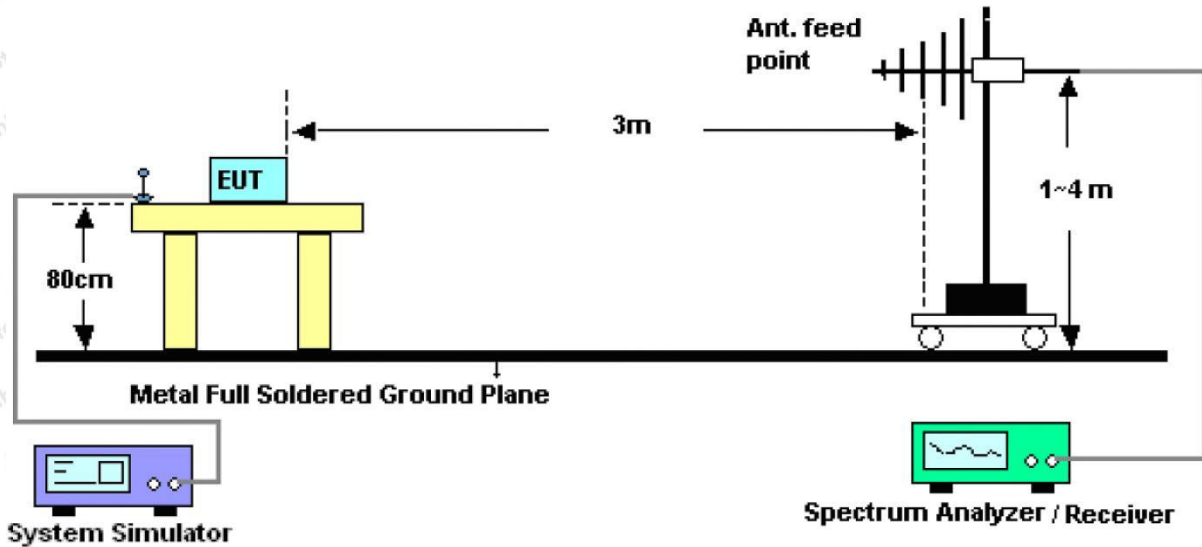


Figure 2. 30MHz to 1GHz

4.3. Test Procedure

For below 1GHz: The EUT is placed on a turntable, which is 0.8m 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

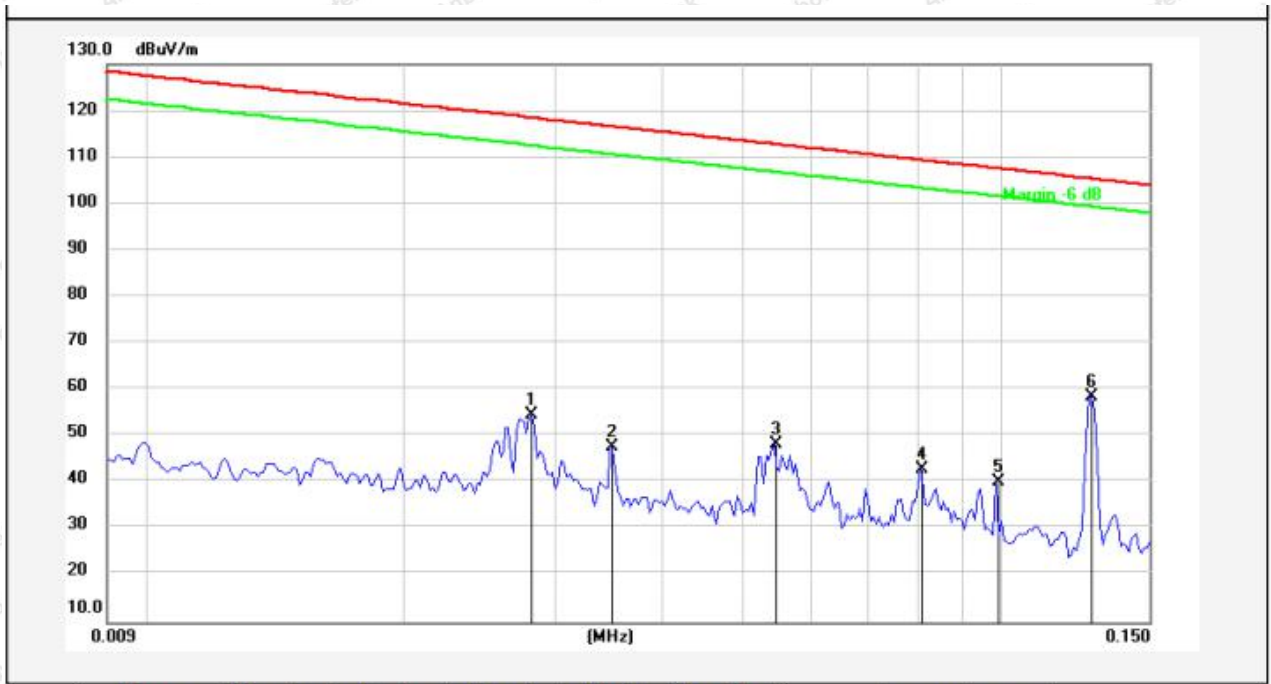
PASS

Note: The data is in TX mode, and this is the worst mode.

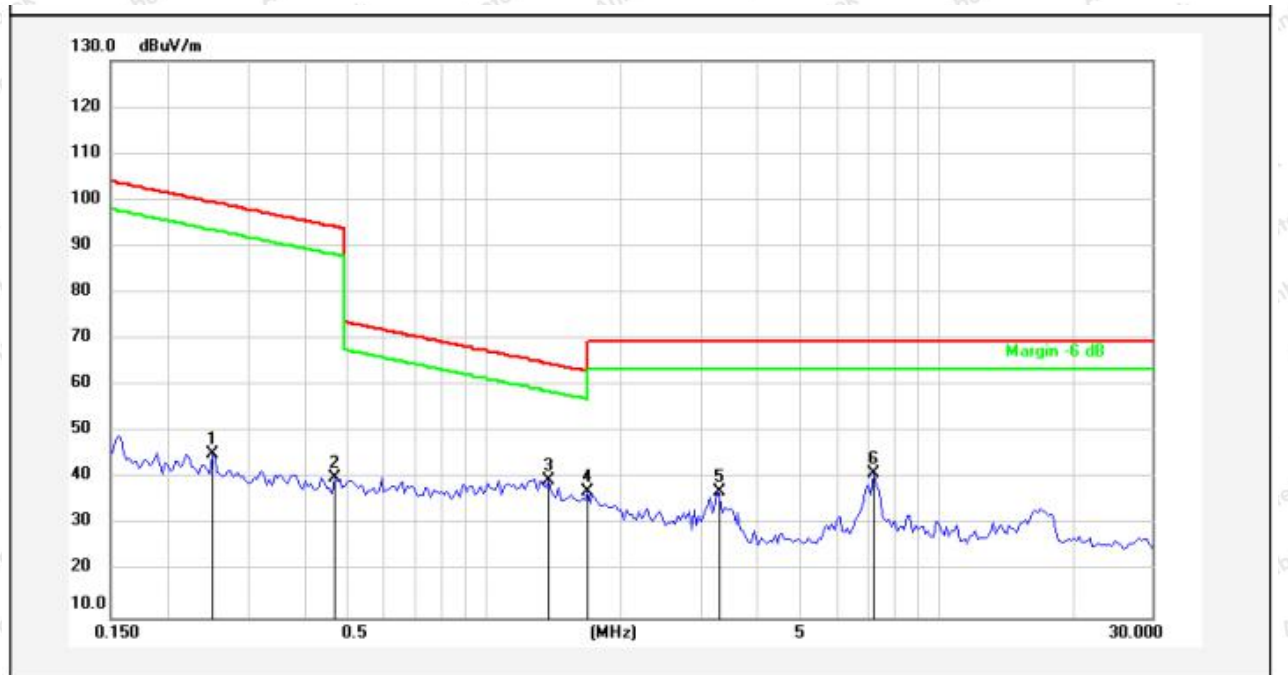
Test Results

(Between 9KHz – 30MHz)

Standard: FCC PART15 C _3m **Power Source:** AC 120V, 60Hz for adapter
Test item: Radiation Test **Temp.(C)/Hum.(%RH):** 22.4°C/49%RH
Test Mode: Mode 1 **Distance:** 3m



No.	Freq. (MHz)	Reading (dBuV)	Factor ()	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	0.0283	34.02	20.40	54.42	118.49	-64.07	peak			
2	0.0352	27.16	20.48	47.64	116.60	-68.96	peak			
3	0.0545	27.99	20.36	48.35	112.81	-64.46	peak			
4	0.0808	22.63	20.36	42.99	109.40	-66.41	peak			
5	0.0991	20.00	20.29	40.29	107.64	-67.35	peak			
6	0.1285	38.15	20.34	58.49	105.39	-46.90	peak			

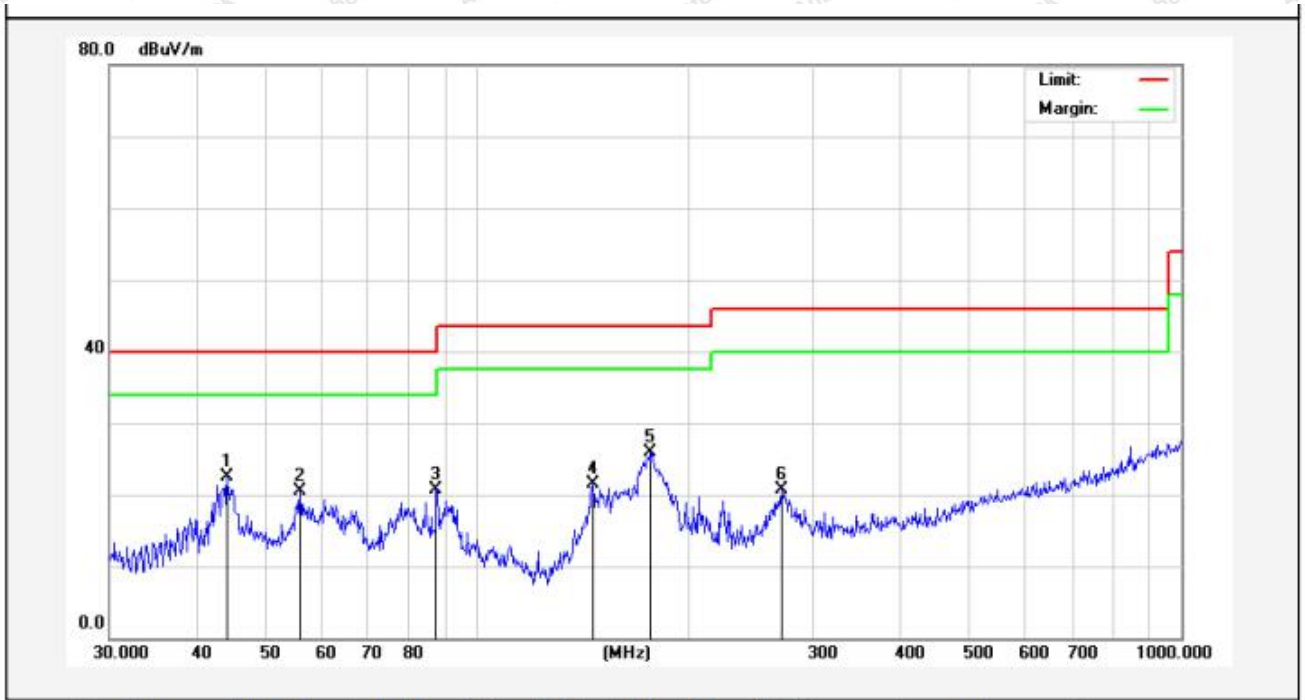


No.	Freq. (MHz)	Reading (dBuV)	Factor ()	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	0.2514	25.04	20.30	45.34	99.58	-54.24	peak			
2	0.4686	19.96	20.27	40.23	94.19	-53.96	peak			
3	1.3884	19.42	20.27	39.69	64.78	-25.09	peak			
4	1.6936	16.78	20.27	37.05	63.06	-26.01	peak			
5	3.2843	16.90	20.33	37.23	69.50	-32.27	peak			
6	7.2710	20.43	20.48	40.91	69.50	-28.59	peak			

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)

Standard:	FCC PART15 C _3m	Polarization:	Horizontal
Test item:	Radiation Test	Power Source:	AC 120V, 60Hz for adapter
Test Mode:	Mode 1	Temp.(C)/Hum.(%RH):	24.3°C/46%RH
Distance:	3m		



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	44.1202	36.99	-14.39	22.60	40.00	-17.40	QP	100	0	
2	56.0007	37.04	-16.46	20.58	40.00	-19.42	QP	100	360	
3	87.4177	41.20	-20.43	20.77	40.00	-19.23	QP	100	0	
4	145.8611	42.36	-20.78	21.58	43.50	-21.92	QP	100	360	
5	176.2686	47.01	-21.01	26.00	43.50	-17.50	QP	100	0	
6	270.3748	37.76	-16.98	20.78	46.00	-25.22	QP	100	360	

Standard: FCC PART15 C_3m **Polarization:** Vertical
Test item: Radiation Test **Power Source:** AC 120V, 60Hz for adapter
Test Mode: Mode 1 **Temp.(C)/Hum.(%RH):** 24.3°C/46%RH
Distance: 3m



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	30.3173	46.58	-17.13	29.45	40.00	-10.55	QP	100	0	
2	34.6385	46.11	-16.34	29.77	40.00	-10.23	QP	100	360	
3	44.1202	48.86	-14.01	34.85	40.00	-5.15	QP	100	0	
4	87.4177	44.20	-16.31	27.89	40.00	-12.11	QP	100	360	
5	145.8611	47.97	-19.97	28.00	43.50	-15.50	QP	100	0	
6	175.0368	43.97	-18.54	25.43	43.50	-18.07	QP	100	360	

5. Antenna Requirement

5.1. Test Standard and Requirement

Test Standard	FCC Part15 Section 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.

5.2. Antenna Connected Construction

The antenna is a Inductive loop coil Antenna which permanently attached, and the best case gain of the antenna is 0 dBi. It complies with the standard requirement.

APPENDIX I -- TEST SETUP PHOTOGRAPH

Photo of Conducted Emission Measurement

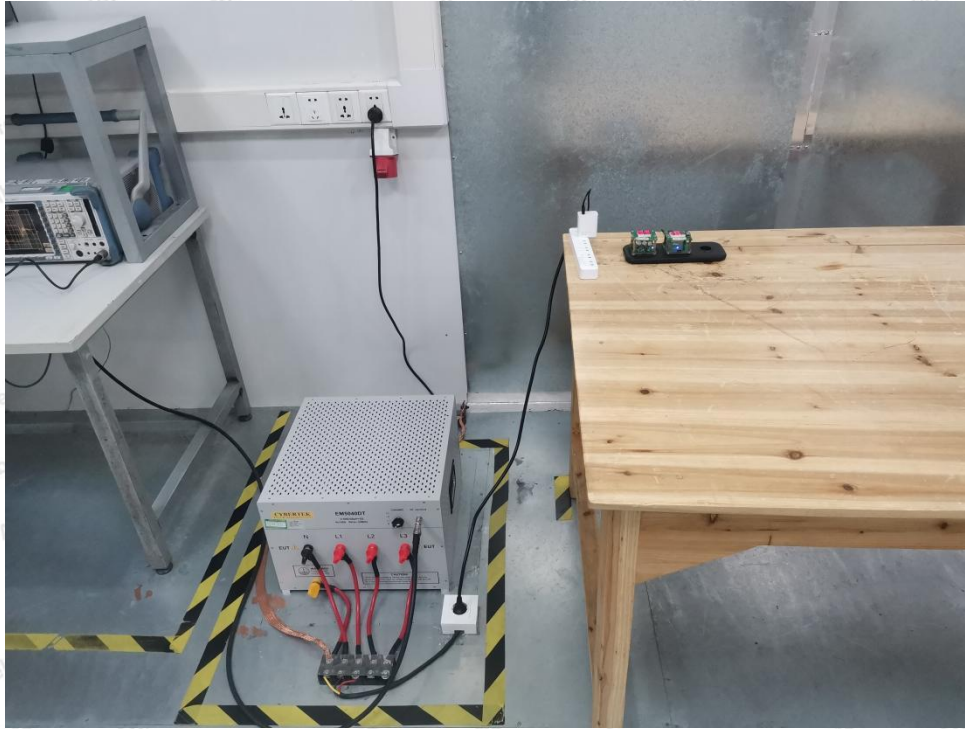


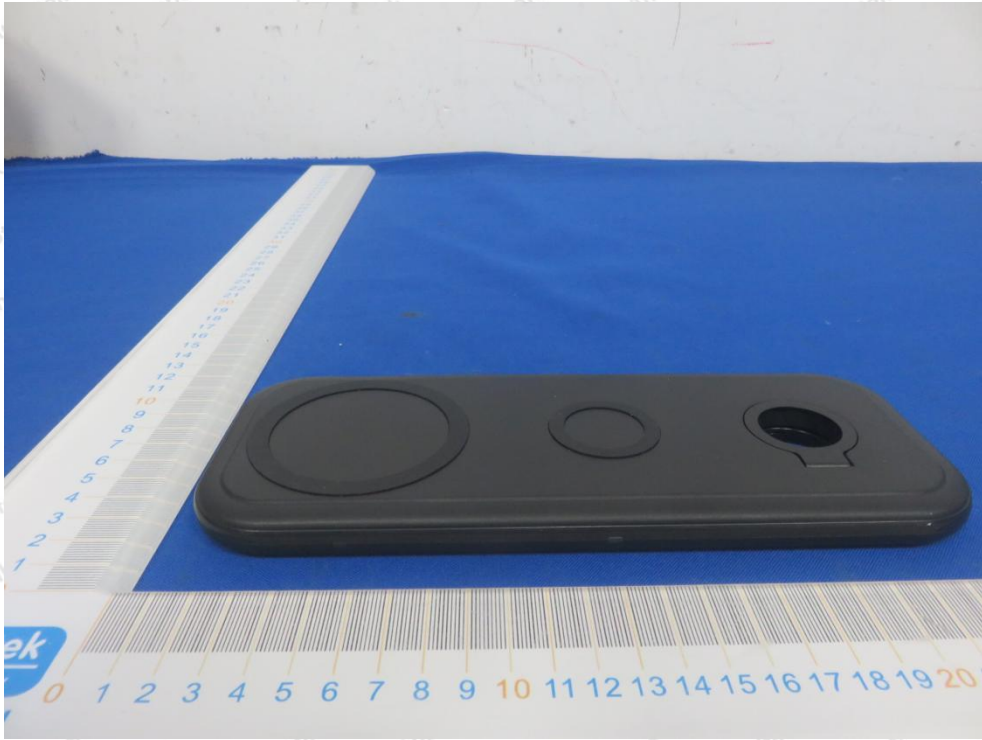
Photo of Radiation Emission Test

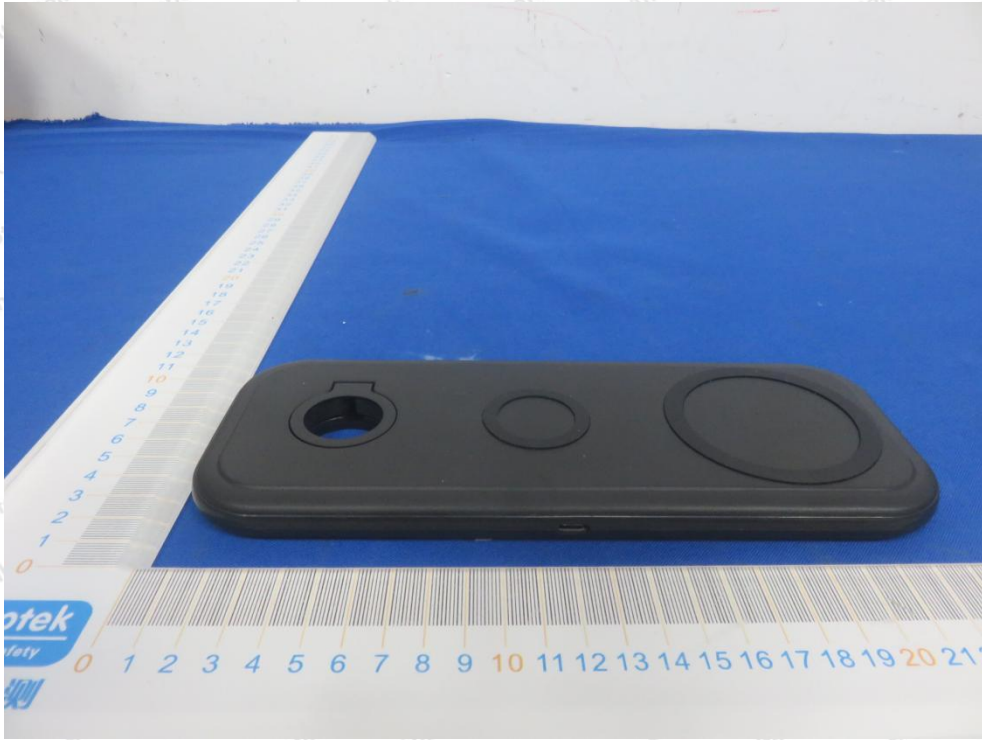




APPENDIX II -- EXTERNAL PHOTOGRAPH

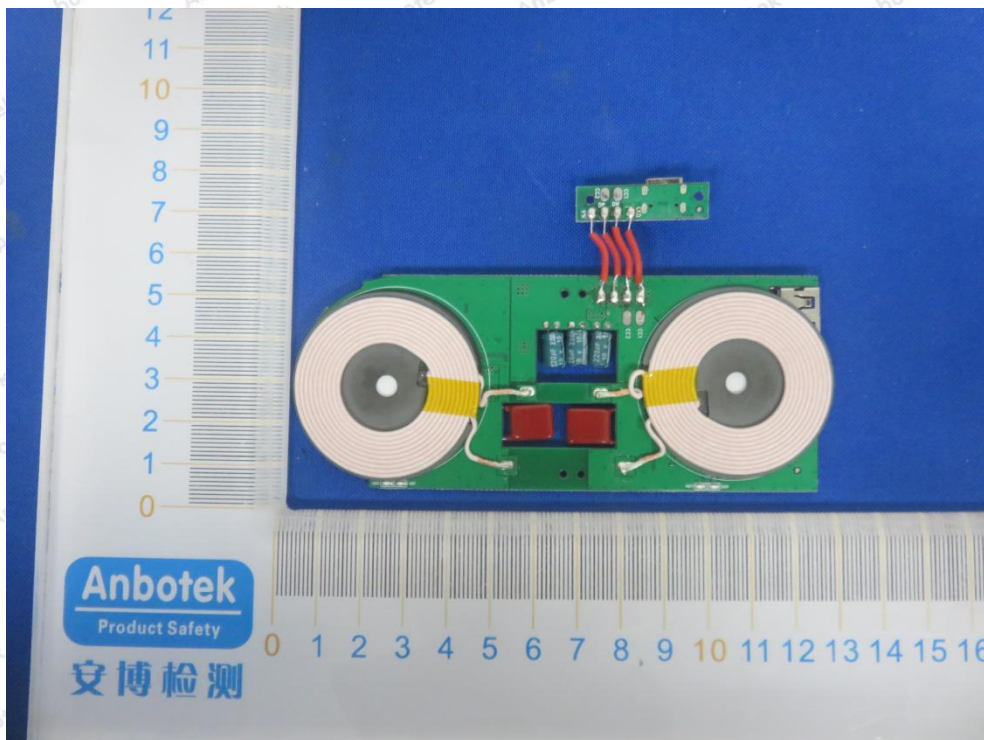


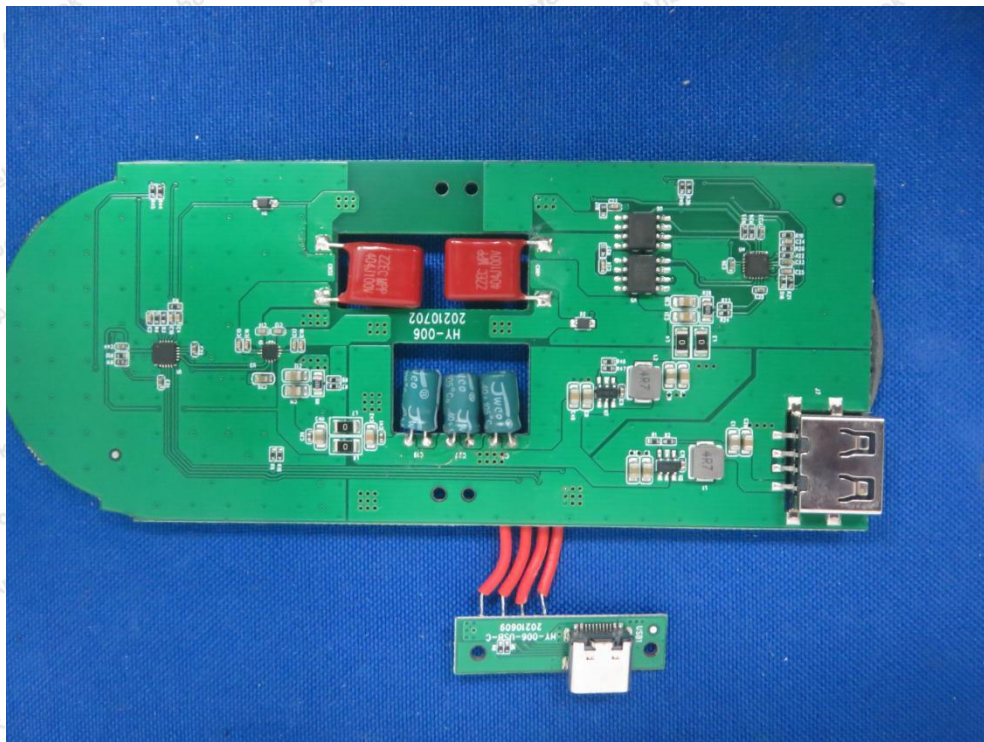
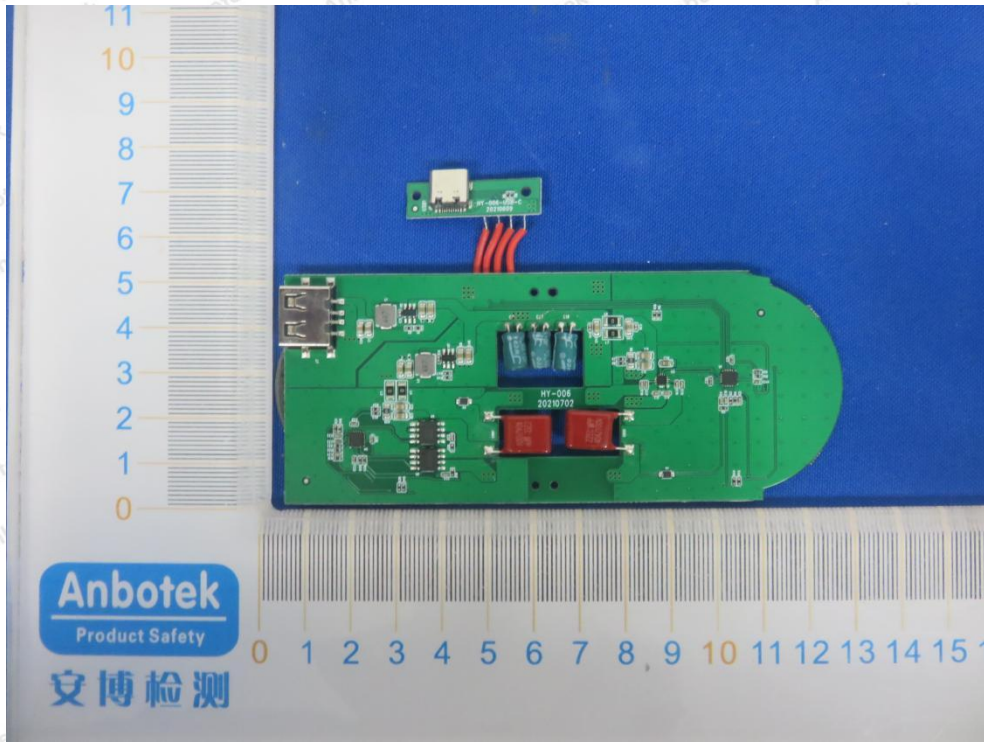


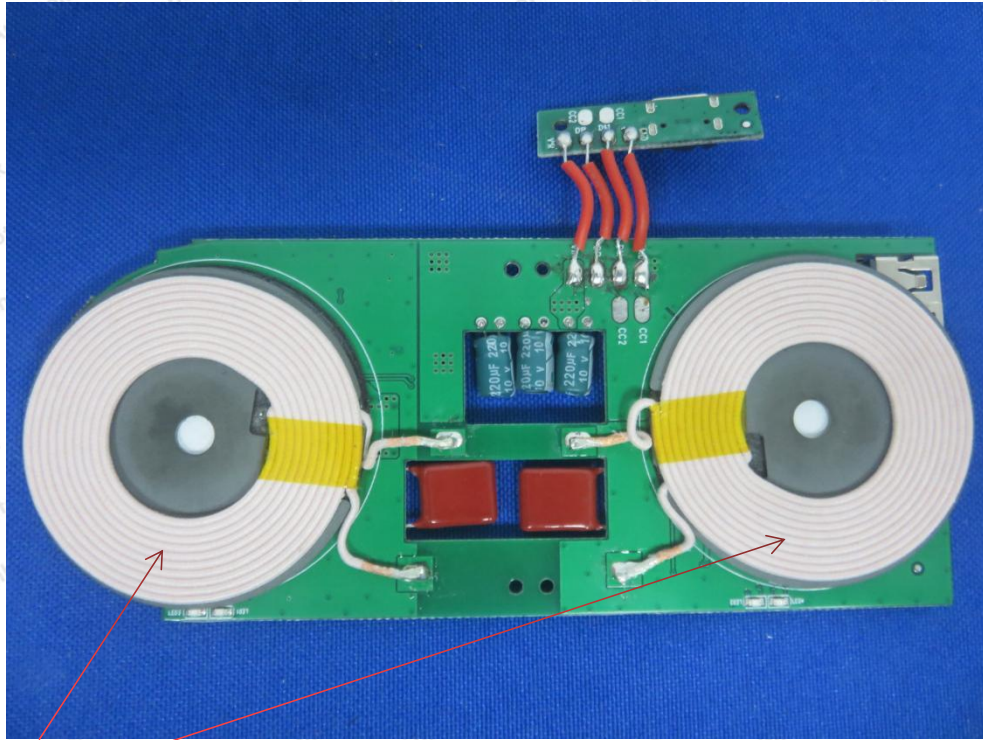




APPENDIX III -- INTERNAL PHOTOGRAPH







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----- End of Report -----