

FCC REPORT

Applicant: Ubiolabs, Inc.

Address of Applicant: 2821 Northup Way, Suite 250 Bellevue, WA 98004 USA

Equipment Under Test (EUT)

Product Name: Ubiolabs Wireless Charging Pad

Model No.: AWC1021A, AWC1021B

Trade mark: ubiolabs

FCC ID: 2ATGY-AWC1021

Applicable standards: FCC CFR Title 47 Part 15 Subpart C Section 15.209

Date of sample receipt: 02 Jul., 2019

Date of Test: 03 Jul., to 06 Nov., 2019

Date of report issue: 22 Nov., 2019

Test Result: PASS *

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

Authorized Signature:



Bruce Zhang
Laboratory Manager

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the CCIS product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards.

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2 Version

Version No.	Date	Description
00	06 Nov., 2019	Original
01	22 Nov., 2019	Update pages 12 and 13

Prepared By:


YT Yang

Report Clerk

Date:

22 Nov., 2019

Check By:


Wimer Zhang

Project Engineer

Date:

22 Nov., 2019

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4 Test Summary

Test Item	Section in CFR 47	Result
Spurious emissions	15.209	Pass
20dB Bandwidth	15.215(c)	Pass
Conducted Emission	15.207	Pass
Remark:		
1. Pass: The EUT complies with the essential requirements in the standard. 2. The cable insertion loss used by "RF Output Power" and other conduction measurement items is 0.5dB (provided by the customer).		
Test Method:	ANSI C63.4-2014 ANSI C63.10-2013	

5 General Information

5.1 Client Information

Applicant:	Ubio Labs, Inc.
Address of Applicant:	2821 Northup Way, Suite 250 Bellevue, WA 98004 USA
Factory:	SHENZHEN LANNENGSHITONG ELECTRONICS CO., LTD
Address:	Floor3 No.40, Xinhe Road, Shangmugu Village, Pinghu Neighborhood, Longgang District, Shenzhen City, Guangdong Province, China.

5.2 General Description of E.U.T.

Product Name:	Ubiolabs Wireless Charging Pad
Model No.:	AWC1021A, AWC1021B
Operation Frequency:	117kHz ~ 239kHz
Modulation type:	ASK
Antenna Type:	Coil Antenna
Power supply (Wireless Charger):	Model: CHG1096 Input: DC 15V, 3.5A Output: Wireless 1 (5W-10W Max) Wireless 2 (5W-10W Max) USB A (DC 5V 2.4A 12W)
Test Sample Condition:	The test samples were provided in good working order with no visible defects.
Remark:	The Model No.: AWC1021A, AWC1021B are identical inside, the electrical circuit design, layout, components used and internal wiring, with only difference being model name and color.

5.3 Test mode

Transmitting mode:	Keep the EUT in transmitting mode with modulation
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5.4 Description of Support Units

Manufacturer	Description	Model	S/N	FCC ID/DoC
Skytek	Wireless charging match load	N/A	N/A	N/A

5.5 Measurement Uncertainty

Parameter	Expanded Uncertainty (Confidence of 95%)
Conducted Emission (9kHz ~ 30MHz)	±1.60 dB (k=2)
Radiated Emission (9kHz ~ 30MHz)	±3.12 dB (k=2)
Radiated Emission (30MHz ~ 1000MHz)	±4.32 dB (k=2)
Radiated Emission (1GHz ~ 18GHz)	±5.38 dB (k=2)
Radiated Emission (18GHz ~ 26.5GHz)	±3.36 dB (k=2)

5.6 Description of Cable Used

N/A

5.7 Laboratory Facility

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

- **FCC - Designation No.: CN1211**

Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been accredited as a testing laboratory by FCC(Federal Communications Commission). The test firm Registration No. is 727551.

- **ISED – CAB identifier.: CN0021**

The 3m Semi-anechoic chamber of Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

- **CNAS - Registration No.: CNAS L6048**

Shenzhen Zhongjian Nanfang Testing Co., Ltd. is accredited to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L6048.

- **A2LA - Registration No.: 4346.01**

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: <https://portal.a2la.org/scopepdf/4346-01.pdf>

5.8 Laboratory Location

Shenzhen Zhongjian Nanfang Testing Co., Ltd.

Address: No. B-C, 1/F., Building 2, Laodong No.2 Industrial Park, Xixiang Road,

Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755-23118282, Fax: +86-755-23116366

Email: info@ccis-cb.com, Website: http://www.ccis-cb.com

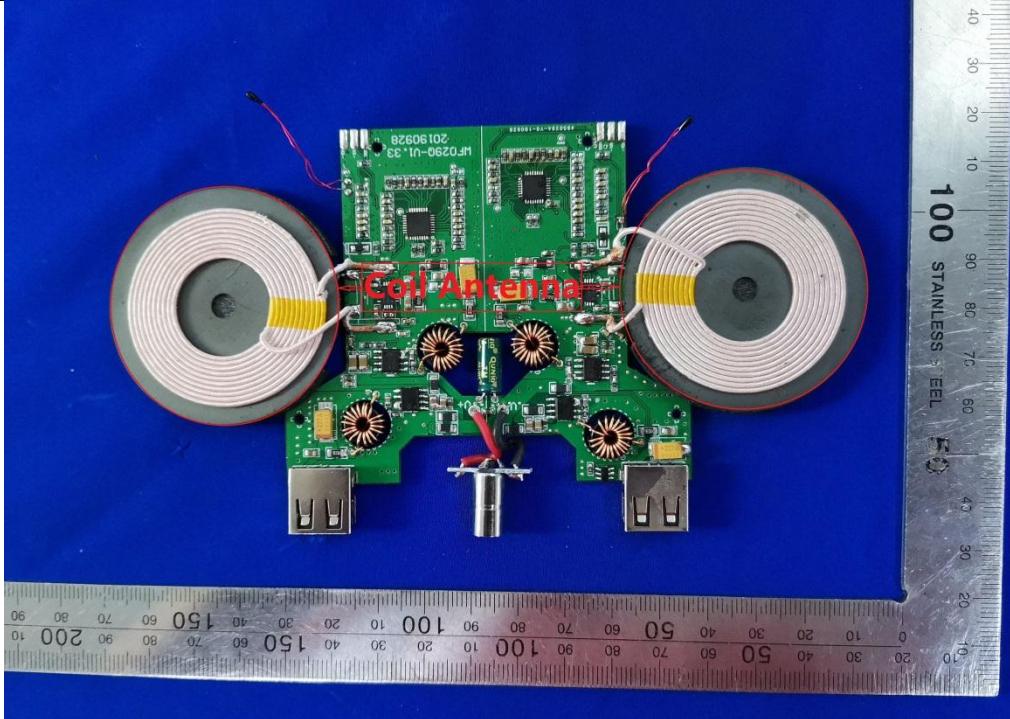
5.9 Test Instrumentslist

Radiated Emission:					
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
3m SAC	SAEMC	9m*6m*6m	966	07-22-2017	07-21-2020
BiConiLog Antenna	SCHWARZBECK	VULB9163	497	03-16-2019	03-15-2020
Horn Antenna	SCHWARZBECK	BBHA9120D	916	03-16-2019	03-15-2020
Horn Antenna	SCHWARZBECK	BBHA9120D	1805	06-22-2017	06-21-2020
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170582	11-21-2018	11-20-2019
Loop Antenna	SCHWARZBECK	FMZB 1519 B	00044	04-28-2019	04-27-2020
EMI Test Software	AUDIX	E3	Version: 6.110919b		
Pre-amplifier	HP	8447D	2944A09358	03-07-2019	03-06-2020
Pre-amplifier	CD	PAP-1G18	11804	03-07-2019	03-06-2020
Spectrum analyzer	Rohde & Schwarz	FSP30	101454	03-07-2019	03-06-2020
Spectrum analyzer	Rohde & Schwarz	FSP40	100363	11-21-2018	11-20-2019
EMI Test Receiver	Rohde & Schwarz	ESRP7	101070	03-07-2019	03-06-2020
Simulated Station	Anritsu	MT8820C	6201026545	03-07-2019	03-06-2020
Cable	ZDECL	Z108-NJ-NJ-81	1608458	03-07-2019	03-06-2020
Cable	MICRO-COAX	MFR64639	K10742-5	03-07-2019	03-06-2020
Cable	SUHNER	SUCOFLEX100	58193/4PE	03-07-2019	03-06-2020

Conducted Emission:					
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
EMI Test Receiver	Rohde & Schwarz	ESCI	101189	03-07-2019	03-06-2020
Pulse Limiter	SCHWARZBECK	OSRAM 2306	9731	03-07-2019	03-06-2020
LISN	CHASE	MN2050D	1447	03-19-2019	03-18-2020
LISN	Rohde & Schwarz	ESH3-Z5	8438621/010	07-21-2018	07-20-2019
Cable	HP	10503A		07-21-2019	07-20-2020
EMI Test Software	AUDIX	E3	Version: 6.110919b		

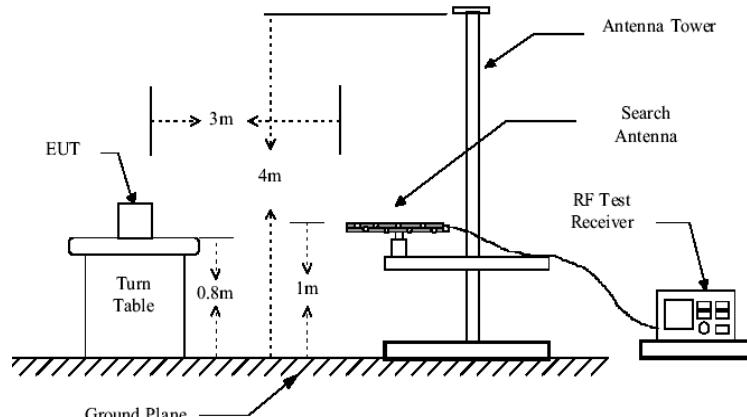
6 Test results and Measurement Data

6.1 Antenna requirement

Standard requirement:	FCC Part15 C Section 15.203
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.
E.U.T Antenna:	

6.2 Radiated Emission

Test Requirement:	FCC Part15 C Section 15.209						
Test Method:	ANSI C63.4:2014						
Test Frequency Range:	9kHz to 1000MHz						
Test site:	Measurement Distance: 3m(Semi-Anechoic Chamber)						
Receiver setup:	Frequency	Detector	RBW	VBW	Remark		
	9kHz-150kHz	Quasi-peak	200Hz	600Hz	Quasi-peak Value		
	150kHz-30MHz	Quasi-peak	9kHz	30kHz	Quasi-peak Value		
	30MHz-1GHz	Quasi-peak	120kHz	300kHz	Quasi-peak Value		
Limit:	Above 1GHz	Peak	1MHz	3MHz	Peak Value		
	Frequency (MHz)	Limit (uV/m @3m)		Distance (m)			
	0.009-0.490	2400/F(kHz)		300			
	0.490-1.705	24000/F(kHz)		30			
	1.705-30	30		30			
	30-88	100		3			
	88-216	150		3			
	216-960	200		3			
Test Procedure:	Above 1GHz	500		3			
	a.	The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.					
	b.	The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.					
	c.	The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.					
	d.	For each suspected emission, the EUT was arranged to its worst case and the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.					
	e.	The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.					
	f.	If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.					
Test setup:	<p>9kHz-30MHz</p> <p>30MHz-1GHz</p>						



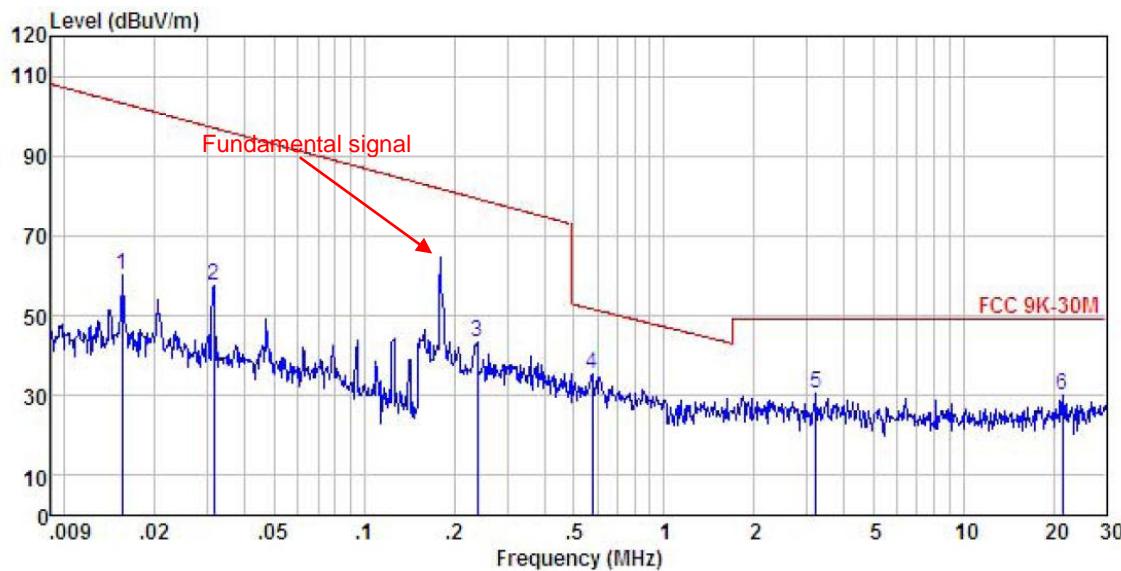
Test Instruments:	Refer to section 5.9 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass
Remark:	The emission levels of above 1 GHz are very lower than the limit and not show in test report.

Measurement Data:**a) Fundamental field strength**

Peak value				
Test Polarization	Frequency (kHz)	H-field@3m (dB μ V)	Limit@3m (dB μ V)	Result
Horizontal	178.00	69.51	83.49	Pass
Vertical	178.00	68.77	83.49	Pass
Average value				
Test Polarization	Frequency (kHz)	H-field@3m (dB μ V)	Limit@3m (dB μ V)	Result
Horizontal	178.00	51.95	63.49	Pass
Vertical	178.00	49.87	63.49	Pass

b) Radiated spurious (By 9 kHz ~ 30 MHz):

Product name:	Ubiolabs Wireless Charging Pad	Product model:	AWC1021A
Test by:	YT	Test mode:	Working mode
Test frequency:	9 kHz ~ 30 MHz	Phase:	Horizontal
Test voltage:	AC 120 V/60 Hz	Environment:	Temp: 22.5°C Huni: 55%

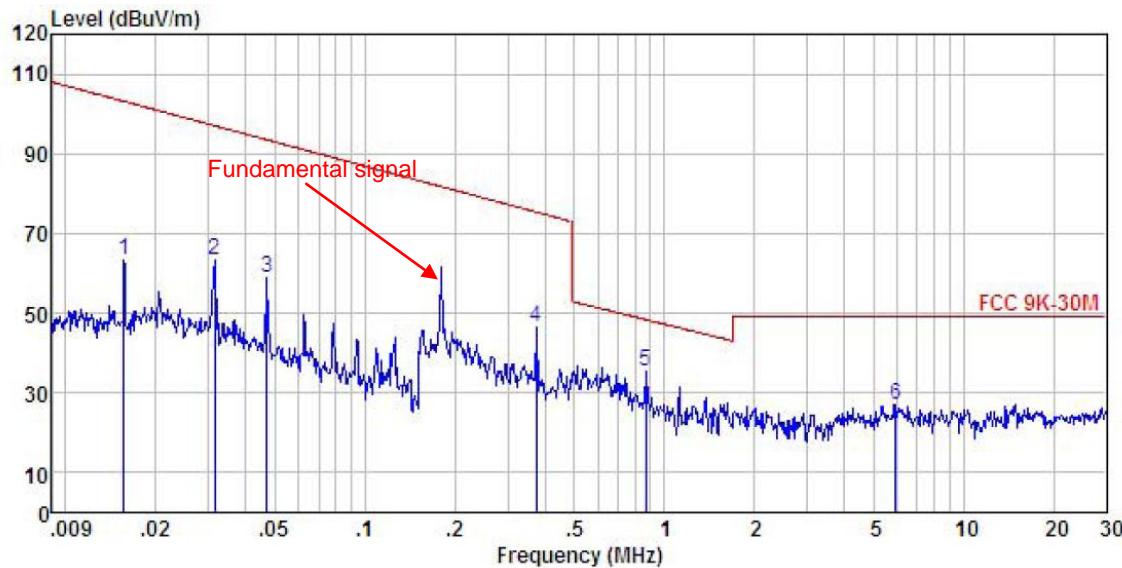


Freq MHz	Read Level dBuV	Antenna Factor dB/m	Cable Loss dB	Preamp Factor dB	Limit Level dBuV/m	Line Limit dBuV/m	Over Limit dB	Remark
1	0.016	37.77	-25.86	0.05	0.00	63.46	103.17	-39.71 Peak
2	0.031	37.52	-25.95	0.12	0.00	63.19	97.06	-33.87 Peak
3	0.047	33.27	-25.99	0.17	0.00	58.95	93.51	-34.56 Peak
4	0.373	20.78	-26.27	0.37	0.00	46.38	75.40	-29.02 Peak
5	0.866	9.67	-26.30	0.60	0.00	35.47	48.43	-12.96 Peak
6	5.923	1.74	-26.55	0.52	0.00	27.21	49.00	-21.79 Peak

Notes:

- Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.
- The emission levels of other frequencies are very lower than the limit and not show in test report.

Product name:	Ubiolabs Wireless Charging Pad	Product model:	AWC1021A
Test by:	YT	Test mode:	Working mode
Test frequency:	9 kHz ~ 30 MHz	Phase:	Vertical
Test voltage:	AC 120 V/60 Hz	Environment:	Temp: 22.5°C Huni: 55%

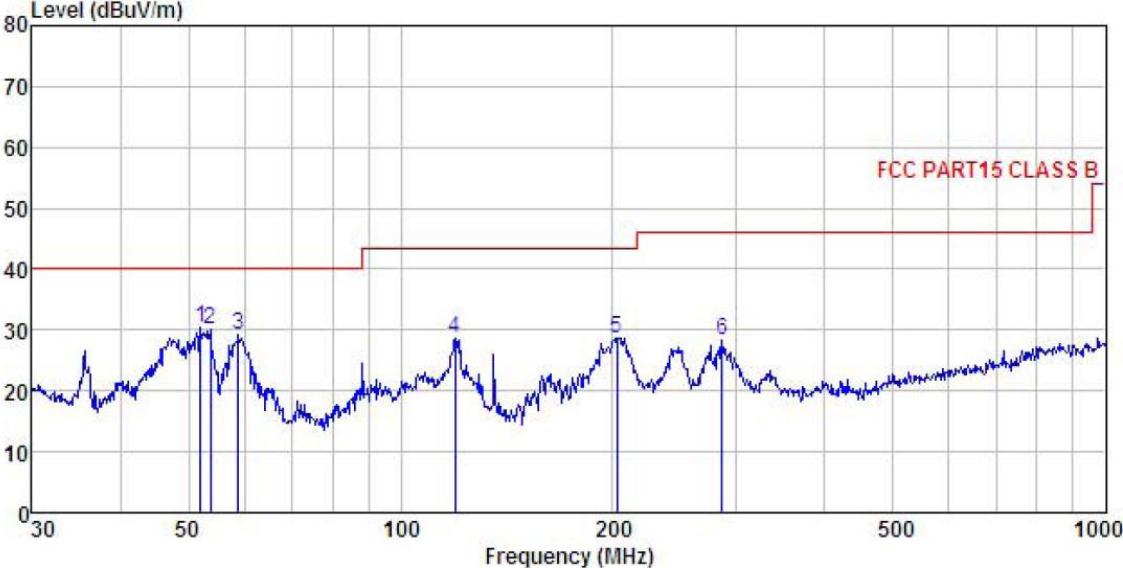


	Read Freq	Antenna Level	Cable Factor	Preamp Loss	Preamp Factor	Limit Level	Line Level	Over Line Limit	Over Limit Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	0.015	34.51	-25.86	0.05	0.00	60.20	103.24	-43.04	Peak
2	0.031	31.86	-25.95	0.12	0.00	57.53	97.06	-39.53	Peak
3	0.238	17.92	-26.22	0.34	0.00	43.54	79.30	-35.76	Peak
4	0.577	9.60	-26.30	0.50	0.00	35.30	51.68	-16.38	Peak
5	3.224	5.15	-26.55	0.66	0.00	30.76	49.00	-18.24	Peak
6	21.512	4.05	-26.21	0.68	0.00	30.02	49.00	-18.98	Peak

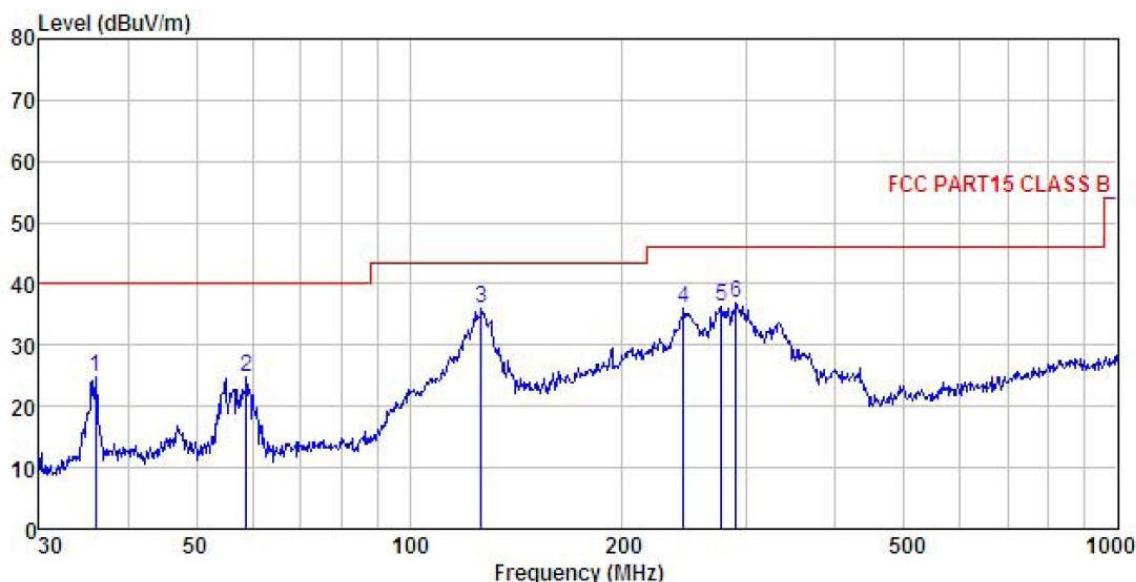
Notes:

- Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.
- The emission levels of other frequencies are very lower than the limit and not show in test report.

Radiated spurious (By 30 MHz ~ 1 GHz):

Product Name:	Ubiolabs Wireless Charging Pad		Product Model:	AWC1021A																																																																																	
Test By:	YT		Test mode:	Working mode																																																																																	
Test Frequency:	30 MHz ~ 1 GHz		Polarization:	Vertical																																																																																	
Test Voltage:	AC 120/60Hz		Environment:	Temp: 24°C Huni: 57%																																																																																	
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<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Freq</th> <th style="text-align: center;">Read Level</th> <th style="text-align: center;">Antenna Factor</th> <th style="text-align: center;">Cable Loss</th> <th style="text-align: center;">Preamp Factor</th> <th style="text-align: center;">Level</th> <th style="text-align: center;">Limit</th> <th style="text-align: center;">Over Line</th> <th style="text-align: center;">Over Limit</th> <th style="text-align: center;">Remark</th> </tr> <tr> <th style="text-align: center;">MHz</th> <th style="text-align: center;">dBuV</th> <th style="text-align: center;">dB/m</th> <th style="text-align: center;">dB</th> <th style="text-align: center;">dB</th> <th style="text-align: center;">dBuV/m</th> <th style="text-align: center;">dBuV/m</th> <th style="text-align: center;">dBuV/m</th> <th style="text-align: center;">dB</th> <th></th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">52.025</td> <td style="text-align: center;">46.89</td> <td style="text-align: center;">11.90</td> <td style="text-align: center;">1.29</td> <td style="text-align: center;">29.81</td> <td style="text-align: center;">30.27</td> <td style="text-align: center;">40.00</td> <td style="text-align: center;">-9.73</td> <td>QP</td> </tr> <tr> <td style="text-align: center;">2</td> <td style="text-align: center;">53.693</td> <td style="text-align: center;">46.95</td> <td style="text-align: center;">11.71</td> <td style="text-align: center;">1.32</td> <td style="text-align: center;">29.81</td> <td style="text-align: center;">30.17</td> <td style="text-align: center;">40.00</td> <td style="text-align: center;">-9.83</td> <td>QP</td> </tr> <tr> <td style="text-align: center;">3</td> <td style="text-align: center;">58.819</td> <td style="text-align: center;">46.19</td> <td style="text-align: center;">11.45</td> <td style="text-align: center;">1.38</td> <td style="text-align: center;">29.78</td> <td style="text-align: center;">29.24</td> <td style="text-align: center;">40.00</td> <td style="text-align: center;">-10.76</td> <td>QP</td> </tr> <tr> <td style="text-align: center;">4</td> <td style="text-align: center;">119.436</td> <td style="text-align: center;">45.06</td> <td style="text-align: center;">10.93</td> <td style="text-align: center;">2.16</td> <td style="text-align: center;">29.39</td> <td style="text-align: center;">28.76</td> <td style="text-align: center;">43.50</td> <td style="text-align: center;">-14.74</td> <td>QP</td> </tr> <tr> <td style="text-align: center;">5</td> <td style="text-align: center;">202.810</td> <td style="text-align: center;">43.84</td> <td style="text-align: center;">10.72</td> <td style="text-align: center;">2.87</td> <td style="text-align: center;">28.81</td> <td style="text-align: center;">28.62</td> <td style="text-align: center;">43.50</td> <td style="text-align: center;">-14.88</td> <td>QP</td> </tr> <tr> <td style="text-align: center;">6</td> <td style="text-align: center;">285.978</td> <td style="text-align: center;">40.47</td> <td style="text-align: center;">13.37</td> <td style="text-align: center;">2.90</td> <td style="text-align: center;">28.47</td> <td style="text-align: center;">28.27</td> <td style="text-align: center;">46.00</td> <td style="text-align: center;">-17.73</td> <td>QP</td> </tr> </tbody> </table>						Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit	Over Line	Over Limit	Remark	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dBuV/m	dB		1	52.025	46.89	11.90	1.29	29.81	30.27	40.00	-9.73	QP	2	53.693	46.95	11.71	1.32	29.81	30.17	40.00	-9.83	QP	3	58.819	46.19	11.45	1.38	29.78	29.24	40.00	-10.76	QP	4	119.436	45.06	10.93	2.16	29.39	28.76	43.50	-14.74	QP	5	202.810	43.84	10.72	2.87	28.81	28.62	43.50	-14.88	QP	6	285.978	40.47	13.37	2.90	28.47	28.27	46.00	-17.73	QP
Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit	Over Line	Over Limit	Remark																																																																												
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<p>Remark:</p> <ol style="list-style-type: none"> Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor. The emission levels of other frequencies are very lower than the limit and not show in test report. 																																																																																					

Product Name:	Ubiolabs Wireless Charging Pad	Product Model:	AWC1021A
Test By:	YT	Test mode:	Working mode
Test Frequency:	30 MHz ~ 1 GHz	Polarization:	Horizontal
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24°C Huni: 57%

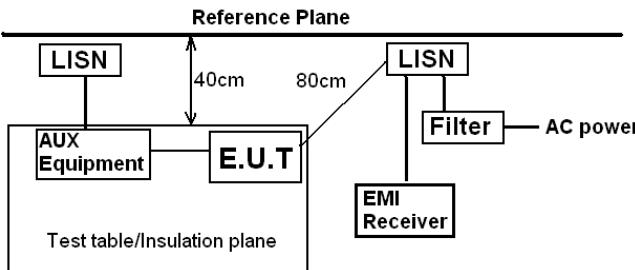


Freq MHz	Read Level dBuV	Antenna Factor dB/m	Cable Loss Factor dB	Preamp Level dB	Line Level dBuV/m	Line Limit dBuV/m	Over Line Limit dB	Over Line Limit Remark
1 36.001	42.27	11.43	1.07	29.94	24.83	40.00	-15.17	QP
2 58.819	41.66	11.45	1.38	29.78	24.71	40.00	-15.29	QP
3 126.329	52.76	10.44	2.24	29.35	36.09	43.50	-7.41	QP
4 244.232	49.39	12.46	2.82	28.57	36.10	46.00	-9.90	QP
5 276.124	48.68	13.20	2.88	28.49	36.27	46.00	-9.73	QP
6 289.002	48.94	13.41	2.91	28.47	36.79	46.00	-9.21	QP

Remark:

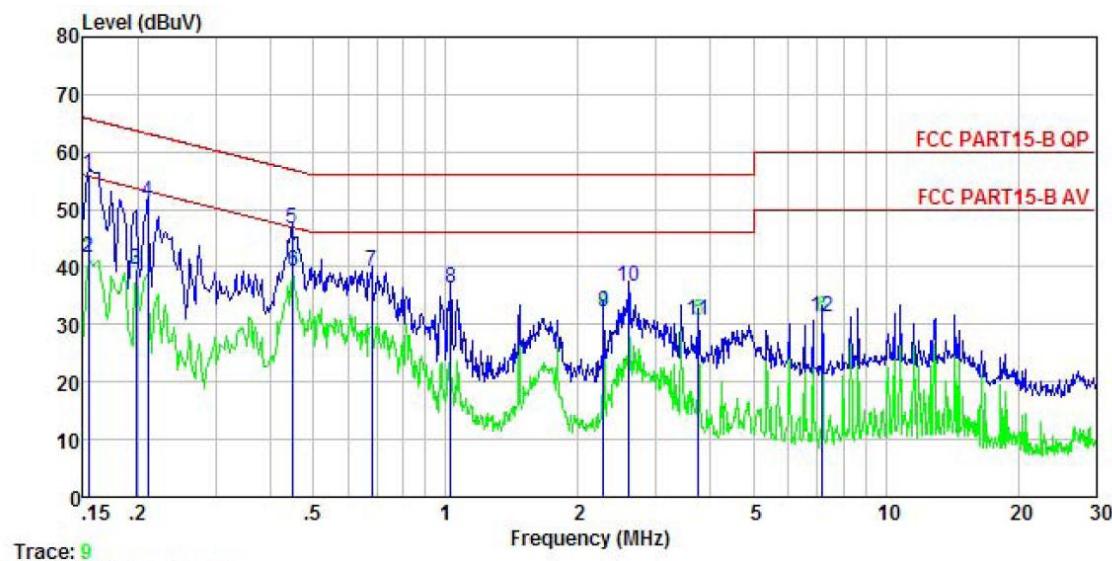
1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

6.3 Conducted Emission

Test Requirement:	FCC Part 15 B Section 15.107					
Test Method:	ANSI C63.4:2014					
Test Frequency Range:	150kHz to 30MHz					
Class / Severity:	Class B					
Receiver setup:	RBW=9kHz, VBW=30kHz					
Limit:	Frequency range (MHz)	Limit (dB μ V)				
		Quasi-peak	Average			
		0.15-0.5	66 to 56*			
		0.5-5	56			
		0.5-30	46			
	* Decreases with the logarithm of the frequency.					
Test setup:	 <p>Reference Plane</p> <p>LISN</p> <p>40cm</p> <p>80cm</p> <p>AUX Equipment</p> <p>E.U.T</p> <p>Test table/Insulation plane</p> <p>EMI Receiver</p> <p>Filter</p> <p>AC power</p> <p>Remark: E.U.T: Equipment Under Test LISN: Line Impedance Stabilization Network Test table height=0.8m</p>					
Test procedure	<ol style="list-style-type: none"> The E.U.T and simulators are connected to the main power through a line impedance stabilization network(L.I.S.N.). They provide a 50ohm/50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs). Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2014 on conducted measurement. 					
Test environment:	Temp.:	23 °C	Humid.:	56%	Press.:	101kPa
Test Instruments:	Refer to section 5.9 for details					
Test mode:	Refer to section 5.3 for details					
Test results:	Pass					

Measurement Data:

Product name:	Ubiolabs Wireless Charging Pad	Product model:	AWC1021A
Test by:	YT	Test mode:	Working mode
Test frequency:	150 kHz ~ 30 MHz	Phase:	Line
Test voltage:	AC 120 V/60 Hz	Environment:	Temp: 22.5°C Huni: 55%

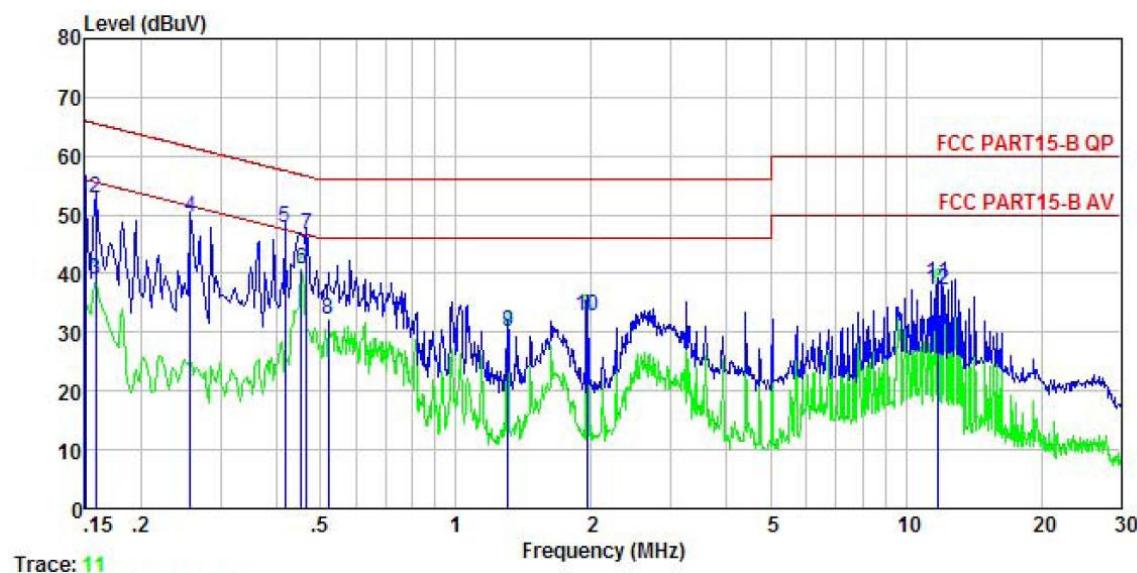


Freq	Read	LISN	Cable	Limit	Over	Remark
	Level	Factor	Loss			
MHz	dBuV	dB	dB	dBuV	dBuV	dB
1	0.154	45.88	-0.45	10.78	56.21	65.78 -9.57 QP
2	0.154	31.23	-0.45	10.78	41.56	55.78 -14.22 Average
3	0.198	29.13	-0.41	10.76	39.48	53.71 -14.23 Average
4	0.211	40.88	-0.41	10.76	51.23	63.18 -11.95 QP
5	0.447	36.24	-0.38	10.74	46.60	56.93 -10.33 QP
6	0.449	29.01	-0.38	10.74	39.37	46.89 -7.52 Average
7	0.679	28.85	-0.38	10.77	39.24	56.00 -16.76 QP
8	1.027	25.86	-0.38	10.87	36.35	56.00 -19.65 QP
9	2.285	21.64	-0.42	10.95	32.17	46.00 -13.83 Average
10	2.608	25.98	-0.43	10.93	36.48	56.00 -19.52 QP
11	3.759	20.14	-0.46	10.90	30.58	46.00 -15.42 Average
12	7.175	21.14	-0.54	10.81	31.41	50.00 -18.59 Average

Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level =Receiver Read level + LISN Factor + Cable Loss.

Product name:	Ubiolabs Wireless Charging Pad	Product model:	AWC1021A
Test by:	YT	Test mode:	Working mode
Test frequency:	150 kHz ~ 30 MHz	Phase:	Neutral
Test voltage:	AC 120 V/60 Hz	Environment:	Temp: 22.5°C Huni: 55%

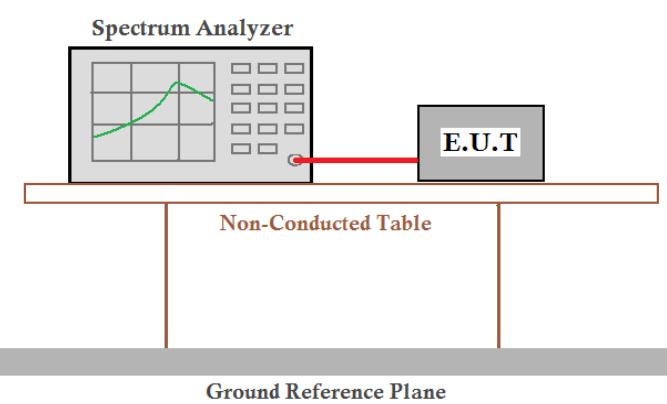


Freq MHz	Read Level dBuV	LISN Factor	Cable Loss dB	Limit Line dBuV	Over Line dBuV	Over Limit dB	Remark
	MHz	dB	dB				
1	0.150	43.08	-0.68	10.78	53.18	66.00	-12.82 QP
2	0.158	42.85	-0.68	10.77	52.94	65.56	-12.62 QP
3	0.158	28.77	-0.68	10.77	38.86	55.56	-16.70 Average
4	0.258	39.46	-0.65	10.75	49.56	61.51	-11.95 QP
5	0.417	37.69	-0.64	10.73	47.78	57.51	-9.73 QP
6	0.454	30.60	-0.65	10.74	40.69	46.80	-6.11 Average
7	0.466	36.61	-0.65	10.75	46.71	56.58	-9.87 QP
8	0.521	21.95	-0.65	10.76	32.06	46.00	-13.94 Average
9	1.303	19.91	-0.65	10.90	30.16	46.00	-15.84 Average
10	1.959	22.37	-0.67	10.96	32.66	46.00	-13.34 Average
11	11.807	28.12	-0.80	10.92	38.24	60.00	-21.76 QP
12	11.807	27.21	-0.80	10.92	37.33	50.00	-12.67 Average

Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level = Receiver Read level + LISN Factor + Cable Loss.

6.4 Bandwidth

Test Requirement:	FCC Part15 C Section 15.215 (c)
Test Method:	ANSI C63.4:2009
Receiver setup:	RBW=1 kHz, VBW=3 kHz, detector: Peak
Limit:	The fundamental emission be kept within atleast the central 80% of the permitted band
Test Procedure:	<ol style="list-style-type: none"> 1. According to the follow Test-setup, keep the relative position between the artificial antenna and the EUT. 2. Set the EUT to proper test channel. 3. Max hold the radiated emissions, mark the peak power frequency point and the -20dB upper and lower frequency points. 4. Read 20dB bandwidth.
Test setup:	
Test Instruments:	Refer to section 5.9 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Measurement Data

20dB bandwidth (kHz)	Limits
3.00	N/A
2.80	

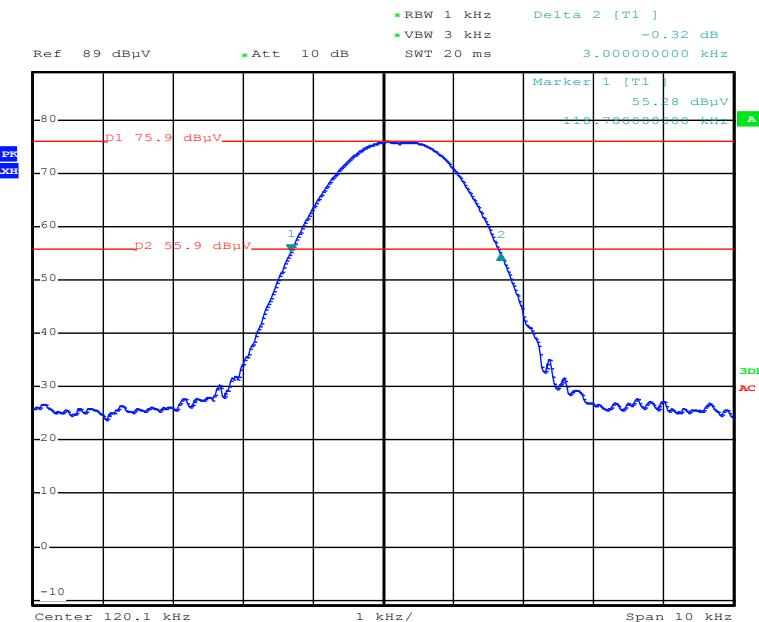
Remark: For report purpose only.

99% bandwidth (kHz)	Limits
2.26	N/A
2.32	

Remark: For report purpose only.

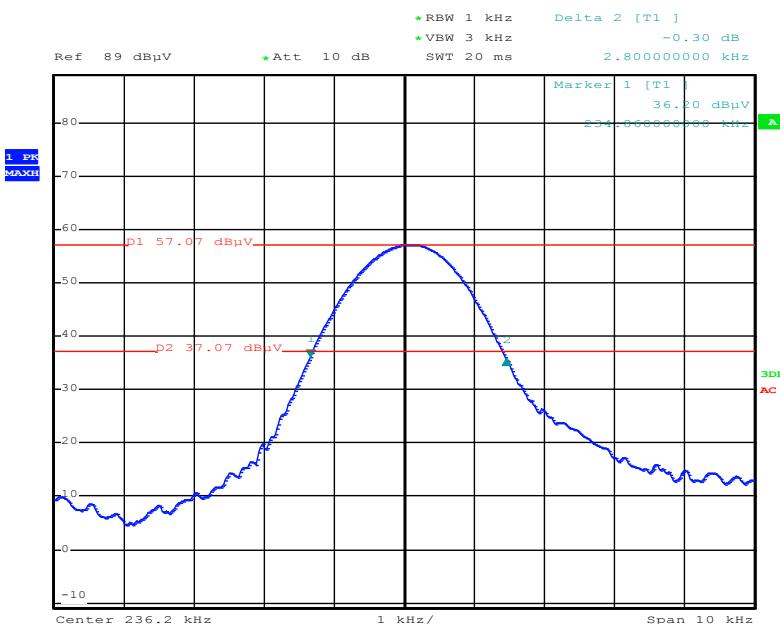
Test plot as follows:

Test Frequency= 120.10 kHz



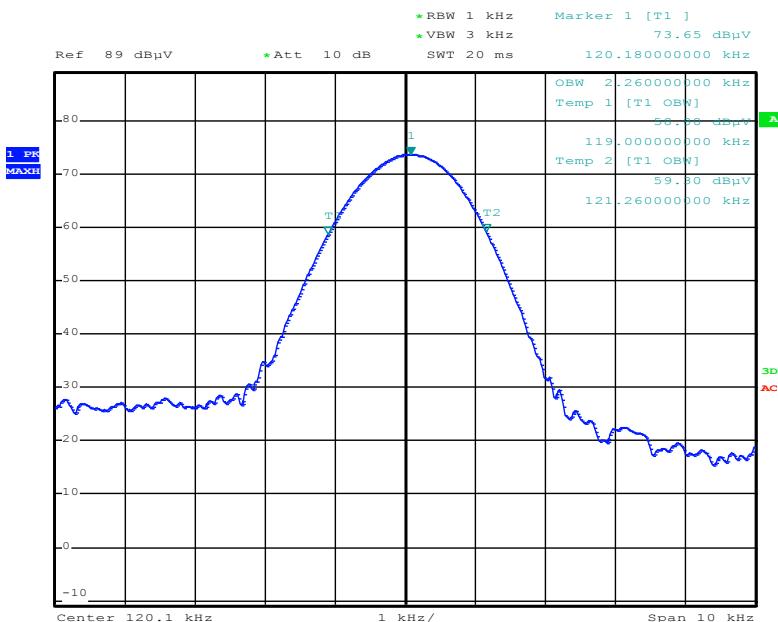
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Test Frequency= 236.20 kHz



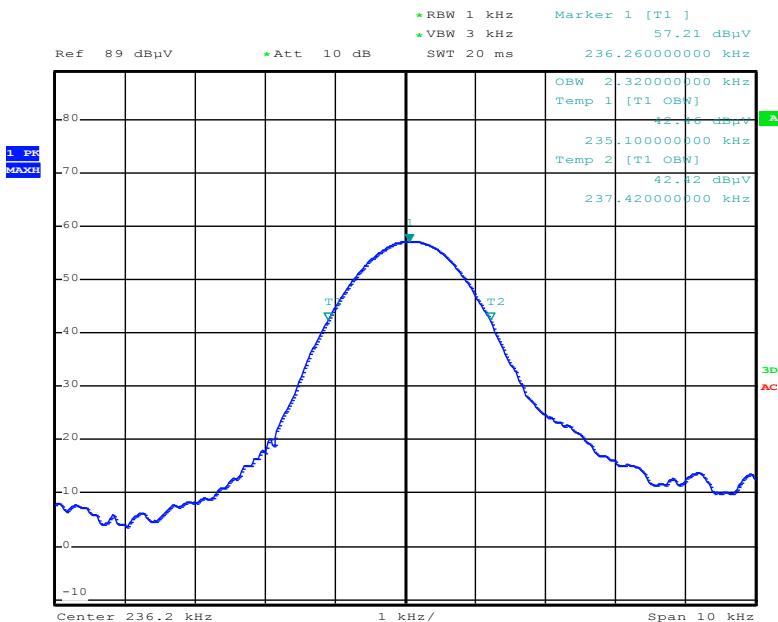
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Test Frequency= 120.10 kHz



Date: 5.AUG.2019 18:31:29

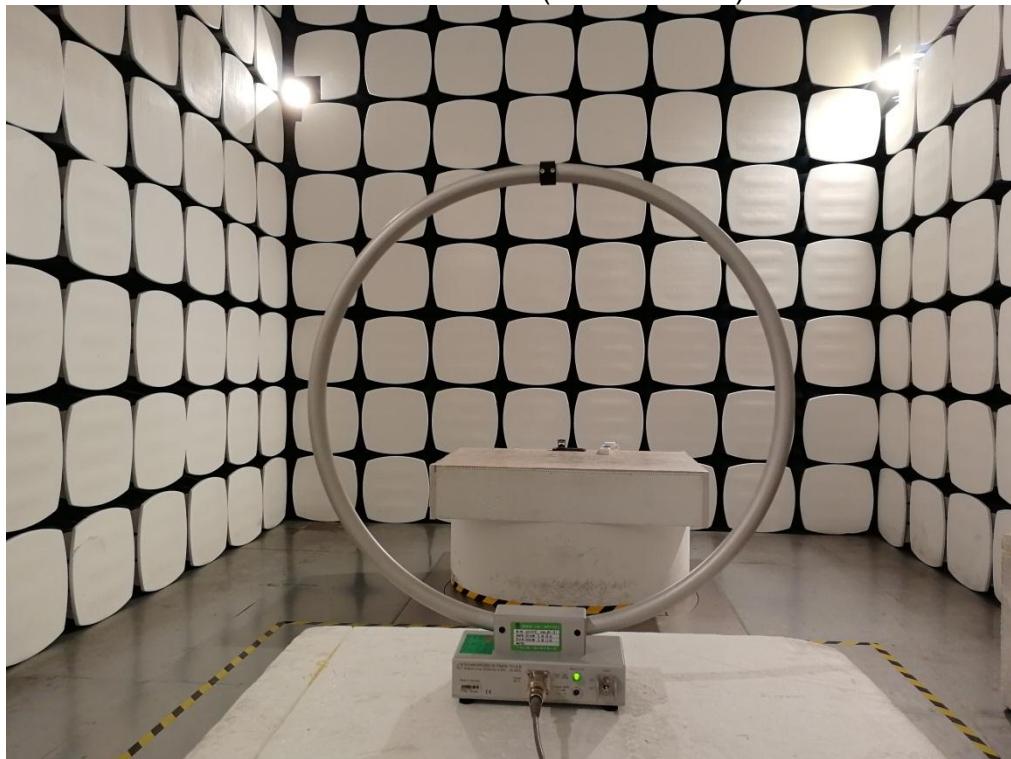
Test Frequency= 236.20 kHz



Date: 5.AUG.2019 18:26:08

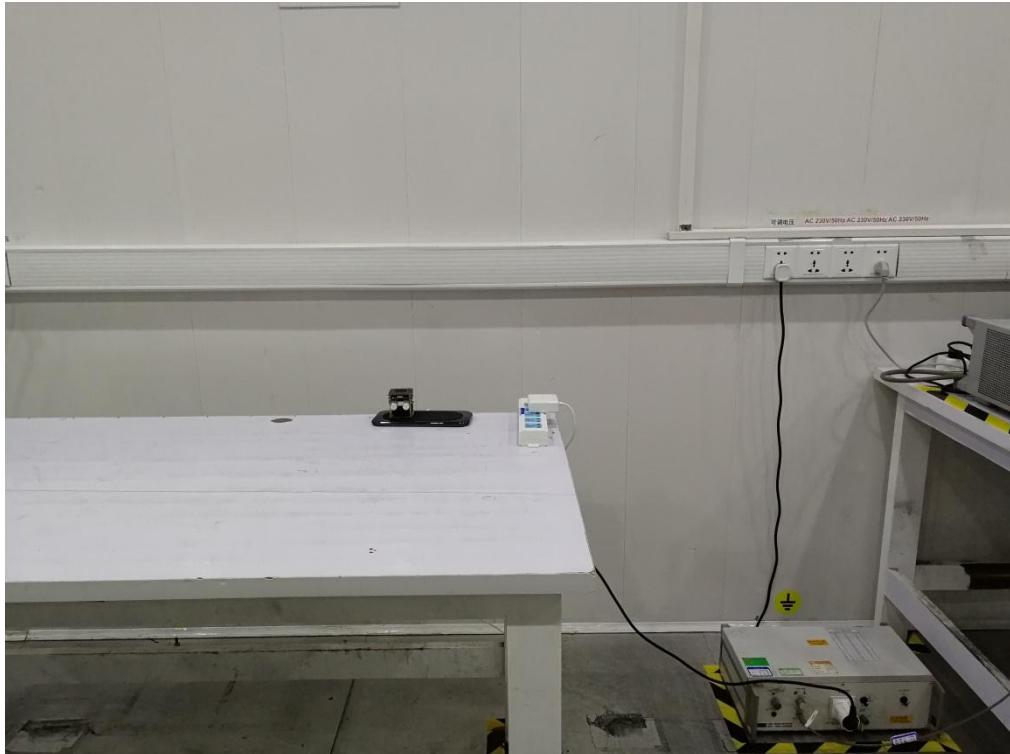
7 Test Setup Photos

Radiated Emission(9kHz-30MHz)



Radiated Emission(30MHz-1000MHz)



Conducted Emission

8 EUT Constructional Details

Reference to the test report No.: CCISE190700901

-----End of report-----