

# FCC REPORT

**Applicant:** Ubio Labs, Inc.

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

**Equipment Under Test (EUT)**

Product Name: Wireless Charging Pad

Model No.: AWC1098

Trade mark: ubiolabs

**FCC ID:** 2ATGY-AWC1098

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

**Date of sample receipt:** 05 Jan., 2021

**Date of Test:** 06 Jan., 2021 to 22 Jan., 2021

**Date of report issue:** 05 Feb., 2021

**Test Result:** PASS\*

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

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 JYT product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

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**2 Version**

| Version No. | Date          | Description |
|-------------|---------------|-------------|
| 00          | 27 Jan., 2021 | Original    |
|             |               |             |
|             |               |             |
|             |               |             |

**Tested By:**

*Wen Zhiy*  
Test Engineer

**Date:**

05 Feb., 2021

**Reviewed By:**

*Ji*  
Project Engineer

**Date:**

05 Feb., 2021

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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   |
| <b>Remark:</b><br>1. Pass: The EUT complies with the essential requirements in the standard.<br>2. The cable insertion loss used by "RF Output Power" and other conduction measurement items is 0.5dB (provided by the customer). |                                     |        |
| <b>Test Method:</b>   | ANSI C63.4-2014<br>ANSI C63.10-2013 |        |

## 5 General Information

### 5.1 Client Information

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

### 5.2 General Description of E.U.T.

|                                    |  |
|------------------------------------|--|
| Product Name:                      | Wireless Charging Pad  |
| Model No.:                         | AWC1098  |
| Operation Frequency:               | 128.3kHz   |
| Modulation type:                   | ASK  |
| Antenna Type:                      | Coil Antenna   |
| Input & Output (Wireless Charger): | Model: AWC1098<br>Input: DC 15V, 3.5A<br>Output (USB-C PD 3.0): DC 5V, 3.0A/ DC 9V, 2.22A<br>Output Wireless: 15W/ 10W/ 7.5W/ 5W |
| AC Adapter:                        | Model: CHG1088<br>Input: AC 110-240V, 50-60 Hz 1.1A<br>Output: 15V / 3.5A  |
| Test Sample Condition:             | The test samples were provided in good working order with no visible defects.  |

### 5.3 Test mode and test samples plans

|  |   |
|--|---|
| Transmitting mode:   | Keep the EUT in transmitting mode with modulation |
| <i>Remark:</i><br><i>Pre-scan input: 15V, 3.5A, output: 5W, 7.5W, 10W, 15W of the Power supply, found output: 15W was worse case mode. So the report only reflects the worse mode.</i> |   |

### 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        |
| Apple        | Mobile phone                 | iPhone 11 Pro | MWDE2CH/A | Doc        |

## 5.5 Measurement Uncertainty

| Parameter                           | Expanded Uncertainty (Confidence of 95%) |
|-------------------------------------|--|
| Conducted Emission (9kHz ~ 150kHz)  | ±1.60 dB                                 |
| Conducted Emission (150kHz ~ 30MHz) | ±2.20 dB                                 |
| Radiated Emission (9kHz ~ 30MHz)    | ±3.12 dB                                 |
| Radiated Emission (30MHz ~ 1000MHz) | ±4.40 dB                                 |
| Radiated Emission (1GHz ~ 18GHz)    | ±5.20 dB                                 |
| Radiated Emission (18GHz ~ 26.5GHz) | ±4.80 dB                                 |

## 5.6 Additions to, deviations, or exclusions from the method

|    |
|----|
| No |
|----|

## 5.7 Laboratory Facility

|  |
|--|
| <p>The test facility is recognized, certified, or accredited by the following organizations:</p> <ul style="list-style-type: none"> <li>● <b>FCC - Designation No.: CN1279</b><br/>Jianyan Testing Group Co., Ltd. has been accredited as a testing laboratory by FCC(Federal Communications Commission). The test firm Registration No. is 892155.</li> <li>● <b>ISED – CAB identifier.: CN0102</b><br/>Jianyan Testing Group Co., Ltd. has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements with ISED#:26114.</li> <li>● <b>A2LA - Registration No.: 5568.01</b><br/>This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: <a href="https://portal.a2la.org/scopepdf/5568-01.pdf">https://portal.a2la.org/scopepdf/5568-01.pdf</a></li> </ul> |
|--|

## 5.8 Laboratory Location

|   |
|---|
| <p>JianYan Testing Group Co., Ltd.<br/>Address: No.760, Fengling Road, Tong'an District, Xiamen, Fujian, China<br/>Tel: +86-592-2273071, Fax:+86-592-2273700<br/>Email: quality@xmabr.com, Website: <a href="http://www.lets.com/">http://www.lets.com/</a></p> |
|---|

## 5.9 Test Instruments list

| Radiated Disturbances: |                 |             |                     |                      |                          |
|------------------------|-----------------|-------------|---------------------|----------------------|--------------------------|
| Test Equipment         | Manufacturer    | Model No.   | Serial No.          | Cal. Date (mm-dd-yy) | Cal. Due date (mm-dd-yy) |
| 3m SAC                 | BOST            | CHC-966     | 966-1#              | 2019-12-27           | 2022-12-26               |
| 3m SAC                 | BOST            | CHC-966     | 966-2#              | 2019-12-27           | 2022-12-26               |
| EMI Test Receiver      | Rohde & Schwarz | ESR 3       | 102330              | 2020-08-05           | 2021-08-04               |
| EMI Test Receiver      | Rohde & Schwarz | ESR 3       | 102329              | 2020-08-06           | 2021-08-05               |
| EMI Test Receiver      | Rohde & Schwarz | ESR 7       | 102259              | 2020-04-12           | 2021-04-11               |
| Spectrum Analyzer      | Agilent         | E4407B      | MY45115531          | 2020-12-27           | 2021-12-26               |
| Spectrum Analyzer      | Rohde & Schwarz | FSV40-N     | 102175              | 2020-04-15           | 2021-04-14               |
| BiConiLog Antenna      | SCHWARZBECK     | VULB 9163   | 1105                | 2020-12-20           | 2021-12-19               |
| BiConiLog Antenna      | SCHWARZBECK     | VULB 9168   | 1066                | 2020-04-11           | 2021-04-10               |
| Horn Antenna           | SCHWARZBECK     | BBHA 9120 D | 911                 | 2020-04-01           | 2021-03-31               |
| Pre-amplifier          | SCHWARZBECK     | BBV9743     | 00009               | 2020-08-06           | 2021-08-05               |
| Pre-amplifier          | SCHWARZBECK     | BBV9744     | 162                 | 2020-12-22           | 2021-12-21               |
| Pre-amplifier          | SCHWARZBECK     | BBV9718C    | 00014               | 2020-04-08           | 2021-04-07               |
| Loop Antenna           | DELI            | DEVISER     | N/A                 | 2019-08-23           | 2022-08-22               |
| EMI Test Software      | Farad           | EZ-EMC      | Version: V.EMCE-3A1 |                      |                          |

| 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 | ESR 3         | 102330              | 2020-08-05           | 2021-08-04               |
| EMI Test Receiver   | Rohde & Schwarz | ESR 3         | 102329              | 2020-08-06           | 2021-08-05               |
| EMI Test Receiver   | Rohde & Schwarz | ESR 7         | 102259              | 2020-04-12           | 2021-04-11               |
| LISN                | Rohde & Schwarz | ENV 216       | 102240              | 2020-08-05           | 2021-08-04               |
| Voltage probe       | Schwarzbeck     | TK9420+VT9420 | 814                 | 2020-08-05           | 2021-08-04               |
| ISN                 | Schwarzbeck     | CAT3 8158     | 95                  | 2020-08-05           | 2021-08-04               |
| EMI Test Software   | Farad           | EZ-EMC        | Version: V.EMCE-3A1 |                      |                          |

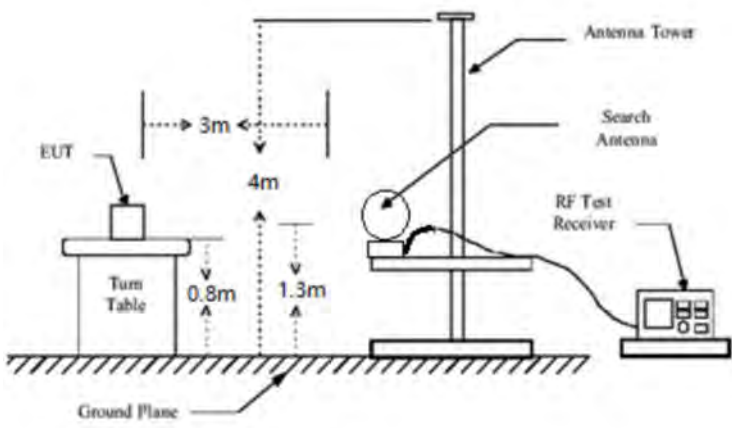
## 6 Test results and Measurement Data

### 6.1 Antenna requirement

|  |                             |
|--|-----------------------------|
| <b>Standard requirement:</b>   | FCC Part15 C Section 15.203 |
| <p>15.203 requirement:<br/>           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.</p> |                             |
| <b>E.U.T Antenna:</b>  | Coil Antenna                |



**6.2 Radiated Emission**

|                       |  |                  |        |              |                  |
|-----------------------|--|------------------|--------|--------------|------------------|
| Test Requirement:     | FCC Part15 C Section 15.209  |                  |        |              |                  |
| 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 |
|                       | Above 1GHz   | Peak             | 1MHz   | 3MHz         | Peak Value       |
| Limit:                | 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            |                  |
|                       | Above 1GHz   | 500              |        | 3            |                  |
| Test Procedure:       | <p>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.</p> <p>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.</p> <p>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.</p> <p>d. For each suspected emission, the EUT was arranged to its worst case and then 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.</p> <p>e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</p> <p>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.</p> |                  |        |              |                  |
| Test setup:           | <p>9kHz-30MHz</p>  <p>30MHz-1GHz</p>   |                  |        |              |                  |

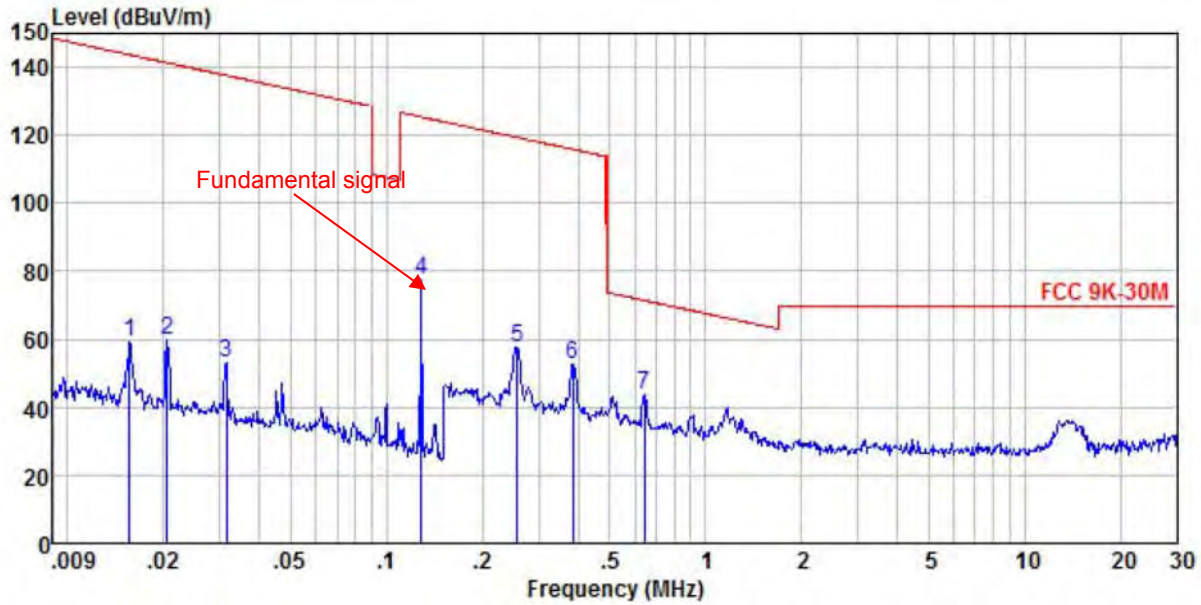
|                          |  |
|--------------------------|--|
|                          |  |
| <p>Test Instruments:</p> | <p>Refer to section 5.9 for details</p>  |
| <p>Test mode:</p>        | <p>Refer to section 5.3 for details</p>  |
| <p>Test results:</p>     | <p>Pass</p>  |
| <p>Remark:</p>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

**Measurement Data:**

**Radiated spurious:**

**Below 1GHz:**

|                        |                       |                       |                           |
|------------------------|-----------------------|-----------------------|---------------------------|
| <b>Product Name:</b>   | Wireless Charging Pad | <b>Product Model:</b> | AWC1098                   |
| <b>Test By:</b>        | Miles Chen            | <b>Test mode:</b>     | Maximum Power Output mode |
| <b>Test Frequency:</b> | 9kHz~30MHz            | <b>Polarization:</b>  | Coxial                    |
| <b>Test Voltage:</b>   | AC 120V/60Hz          | <b>Environment:</b>   | Temp: 24°C      Huni: 57% |

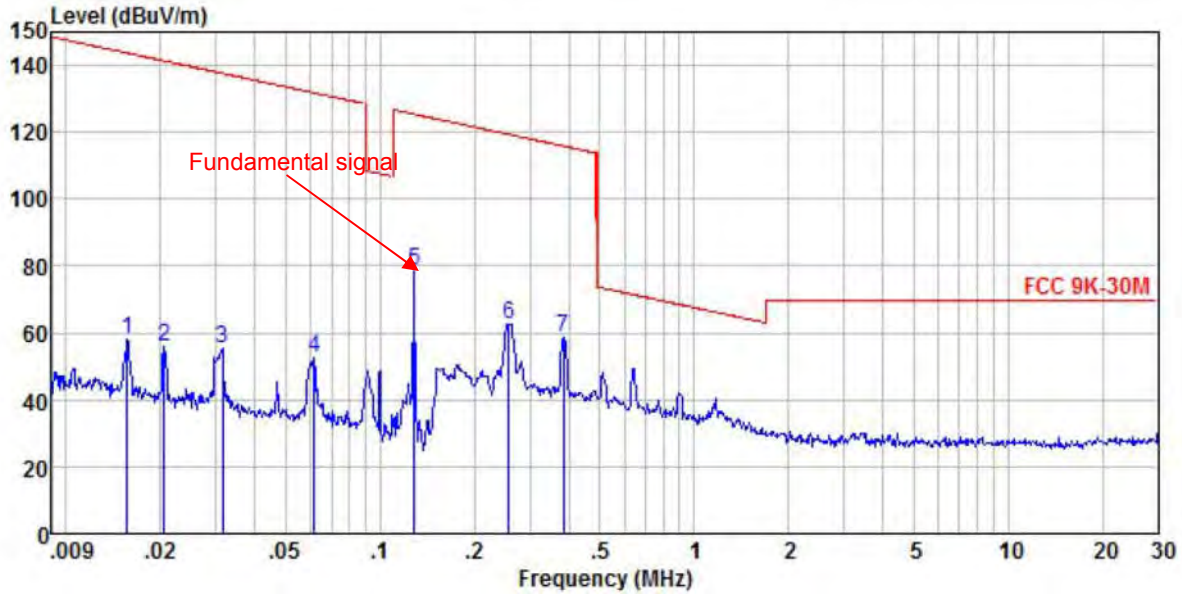


|      | Read  | Antenna | Cable | Preamp | Aux    | Limit  | Over   |        |             |
|------|-------|---------|-------|--------|--------|--------|--------|--------|-------------|
| Freq | Level | Factor  | Loss  | Factor | Factor | Level  | Line   | Limit  | Remark      |
| MHz  | dBuV  | dB/m    | dB    | dB     | dB     | dBuV/m | dBuV/m | dB     |             |
| 1    | 0.016 | 38.69   | 20.38 | 0.01   | 0.00   | 0.00   | 59.08  | 143.71 | -84.63 Peak |
| 2    | 0.021 | 39.43   | 20.30 | 0.01   | 0.00   | 0.00   | 59.74  | 141.31 | -81.57 Peak |
| 3    | 0.031 | 32.69   | 20.24 | 0.02   | 0.00   | 0.00   | 52.95  | 137.65 | -84.70 Peak |
| 4    | 0.129 | 57.59   | 19.92 | 0.03   | 0.00   | 0.00   | 77.54  | 125.43 | -47.89 Peak |
| 5    | 0.257 | 36.98   | 20.47 | 0.05   | 0.00   | 0.00   | 57.50  | 119.43 | -61.93 Peak |
| 6    | 0.385 | 31.98   | 20.67 | 0.06   | 0.00   | 0.00   | 52.71  | 115.90 | -63.19 Peak |
| 7    | 0.642 | 22.70   | 20.69 | 0.09   | 0.00   | 0.00   | 43.48  | 71.46  | -27.98 Peak |

*Remark:*

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

|                        |                       |                       |                           |
|------------------------|-----------------------|-----------------------|---------------------------|
| <b>Product Name:</b>   | Wireless Charging Pad | <b>Product Model:</b> | AWC1098                   |
| <b>Test By:</b>        | Miles Chen            | <b>Test mode:</b>     | Maximum Power Output mode |
| <b>Test Frequency:</b> | 9kHz~30MHz            | <b>Polarization:</b>  | Coplanar                  |
| <b>Test Voltage:</b>   | AC 120V/60Hz          | <b>Environment:</b>   | Temp: 24°C Humi: 57%      |

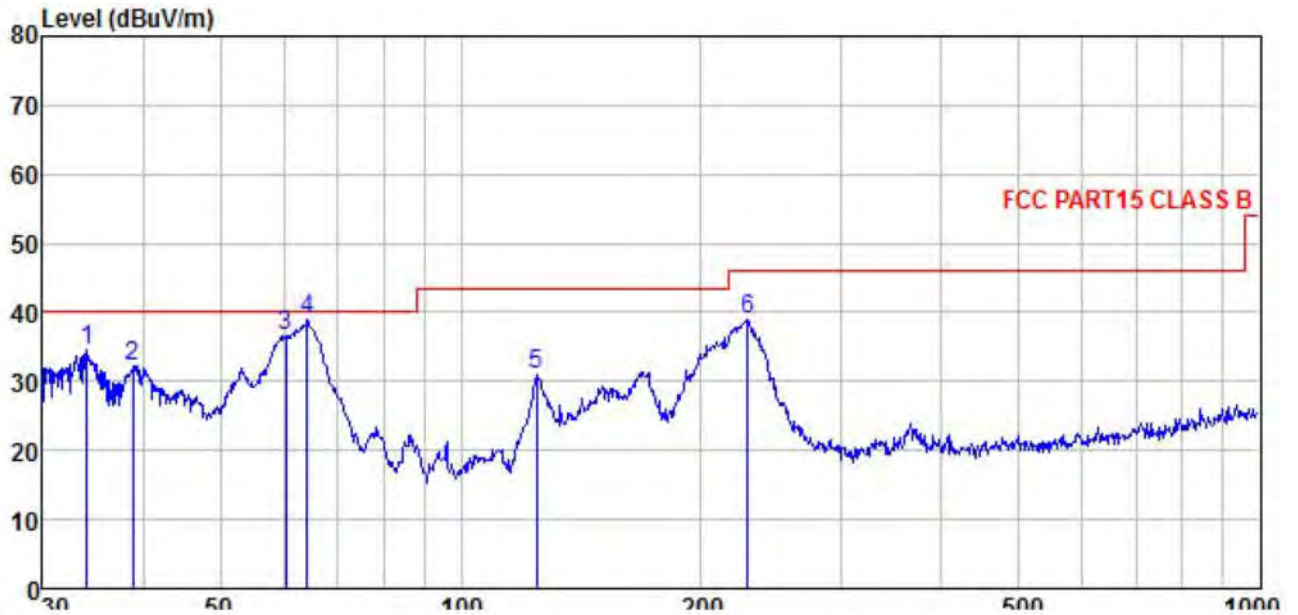


|      | ReadAntenna | Cable Preamp | Aux   | Limit  | Over   |        |        |        |             |
|------|-------------|--------------|-------|--------|--------|--------|--------|--------|-------------|
| Freq | Level       | Factor       | Loss  | Factor | Factor | Level  | Line   | Limit  | Remark      |
| MHz  | dBuV        | dB/m         | dB    | dB     | dB     | dBuV/m | dBuV/m | dB     |             |
| 1    | 0.016       | 37.80        | 20.38 | 0.01   | 0.00   | 0.00   | 58.19  | 143.71 | -85.52 Peak |
| 2    | 0.021       | 35.38        | 20.30 | 0.01   | 0.00   | 0.00   | 55.69  | 141.31 | -85.62 Peak |
| 3    | 0.031       | 35.36        | 20.24 | 0.02   | 0.00   | 0.00   | 55.62  | 137.65 | -82.03 Peak |
| 4    | 0.062       | 31.89        | 20.54 | 0.02   | 0.00   | 0.00   | 52.45  | 131.80 | -79.35 Peak |
| 5    | 0.129       | 58.56        | 19.92 | 0.03   | 0.00   | 0.00   | 78.51  | 125.43 | -46.92 Peak |
| 6    | 0.257       | 36.26        | 20.47 | 0.05   | 0.00   | 0.00   | 56.78  | 119.43 | -62.65 Peak |
| 7    | 0.385       | 32.09        | 20.67 | 0.06   | 0.00   | 0.00   | 52.82  | 115.90 | -63.08 Peak |

**Remark:**

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

|                        |                       |                       |                           |
|------------------------|-----------------------|-----------------------|---------------------------|
| <b>Product Name:</b>   | Wireless Charging Pad | <b>Product Model:</b> | AWC1098                   |
| <b>Test By:</b>        | Miles Chen            | <b>Test mode:</b>     | Maximum Power Output mode |
| <b>Test Frequency:</b> | 30 MHz ~ 1 GHz        | <b>Polarization:</b>  | Vertical                  |
| <b>Test Voltage:</b>   | AC 120V/60Hz          | <b>Environment:</b>   | Temp: 24°C Humi: 57%      |



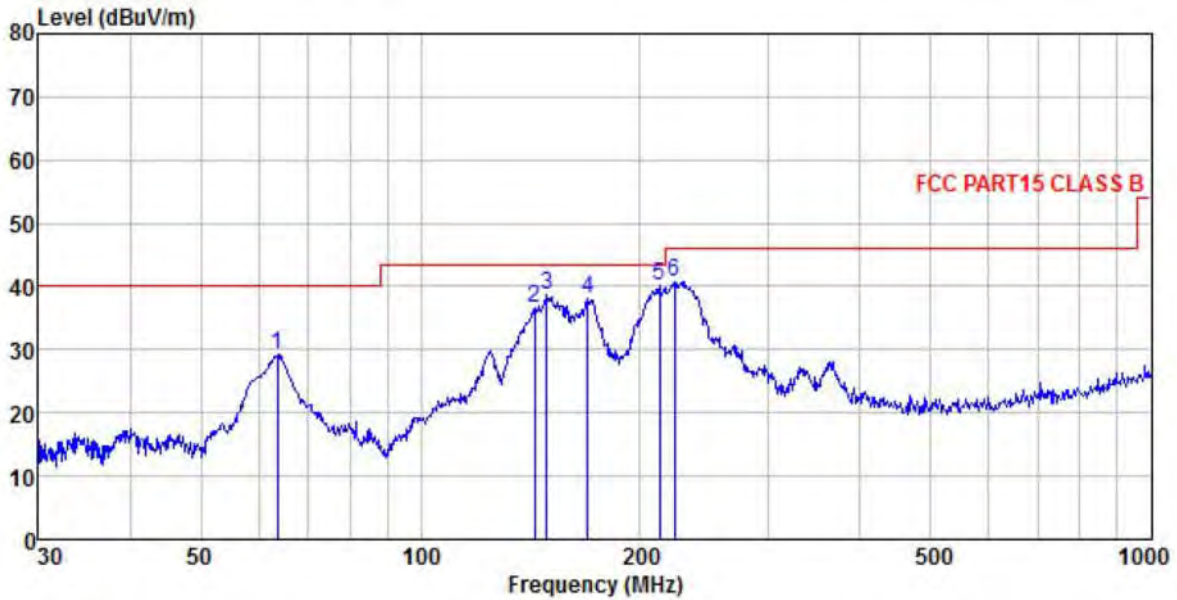
|      | Read    | Antenna | Cable | Aux    | Preamp | Limit  | Over   |        |           |
|------|---------|---------|-------|--------|--------|--------|--------|--------|-----------|
| Freq | Level   | Factor  | Loss  | Factor | Factor | Line   | Limit  | Remark |           |
| MHz  | dBuV    | dB/m    | dB    | dB     | dB     | dBuV/m | dBuV/m | dB     |           |
| 1    | 34.037  | 51.56   | 12.45 | 0.35   | 0.00   | 29.96  | 34.40  | 40.00  | -5.60 QP  |
| 2    | 38.888  | 48.93   | 12.76 | 0.35   | 0.00   | 29.91  | 32.13  | 40.00  | -7.87 QP  |
| 3    | 60.492  | 55.35   | 10.71 | 0.42   | 0.00   | 29.77  | 36.71  | 40.00  | -3.29 QP  |
| 4    | 64.208  | 58.34   | 9.94  | 0.43   | 0.00   | 29.76  | 38.95  | 40.00  | -1.05 QP  |
| 5    | 124.569 | 48.38   | 11.34 | 0.58   | 0.00   | 29.36  | 30.94  | 43.50  | -12.56 QP |
| 6    | 228.490 | 48.36   | 18.42 | 0.75   | 0.00   | 28.66  | 38.87  | 46.00  | -7.13 QP  |

**Remark:**

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss + Aux Factor – Pre-amplifier Factor.
2. The emission levels of other frequencies are very lower than the limit and not show in test report.
3. The Aux Factor is a notch filter switch box loss, this item is not used.



|                        |                       |                       |                           |
|------------------------|-----------------------|-----------------------|---------------------------|
| <b>Product Name:</b>   | Wireless Charging Pad | <b>Product Model:</b> | AWC1098                   |
| <b>Test By:</b>        | Miles Chen            | <b>Test mode:</b>     | Maximum Power Output mode |
| <b>Test Frequency:</b> | 30 MHz ~ 1 GHz        | <b>Polarization:</b>  | Horizontal                |
| <b>Test Voltage:</b>   | AC 120V/60Hz          | <b>Environment:</b>   | Temp: 24°C      Humi: 57% |



|   | Read Freq | Antenna Level | Antenna Factor | Cable Loss | Aux Factor | Preamp Factor | Level  | Limit Line | Over Limit | Remark |
|---|-----------|---------------|----------------|------------|------------|---------------|--------|------------|------------|--------|
|   | MHz       | dBuV          | dB/m           | dB         | dB         | dB            | dBuV/m | dBuV/m     | dB         |        |
| 1 | 63.759    | 48.49         | 10.03          | 0.43       | 0.00       | 29.76         | 29.19  | 40.00      | -10.81     | QP     |
| 2 | 143.326   | 51.42         | 13.87          | 0.61       | 0.00       | 29.25         | 36.65  | 43.50      | -6.85      | QP     |
| 3 | 148.963   | 53.10         | 14.22          | 0.61       | 0.00       | 29.23         | 38.70  | 43.50      | -4.80      | QP     |
| 4 | 169.599   | 49.97         | 16.40          | 0.65       | 0.00       | 29.05         | 37.97  | 43.50      | -5.53      | QP     |
| 5 | 212.270   | 49.81         | 18.35          | 0.73       | 0.00       | 28.75         | 40.14  | 43.50      | -3.36      | QP     |
| 6 | 222.950   | 50.42         | 18.40          | 0.74       | 0.00       | 28.69         | 40.87  | 46.00      | -5.13      | QP     |

**Remark:**

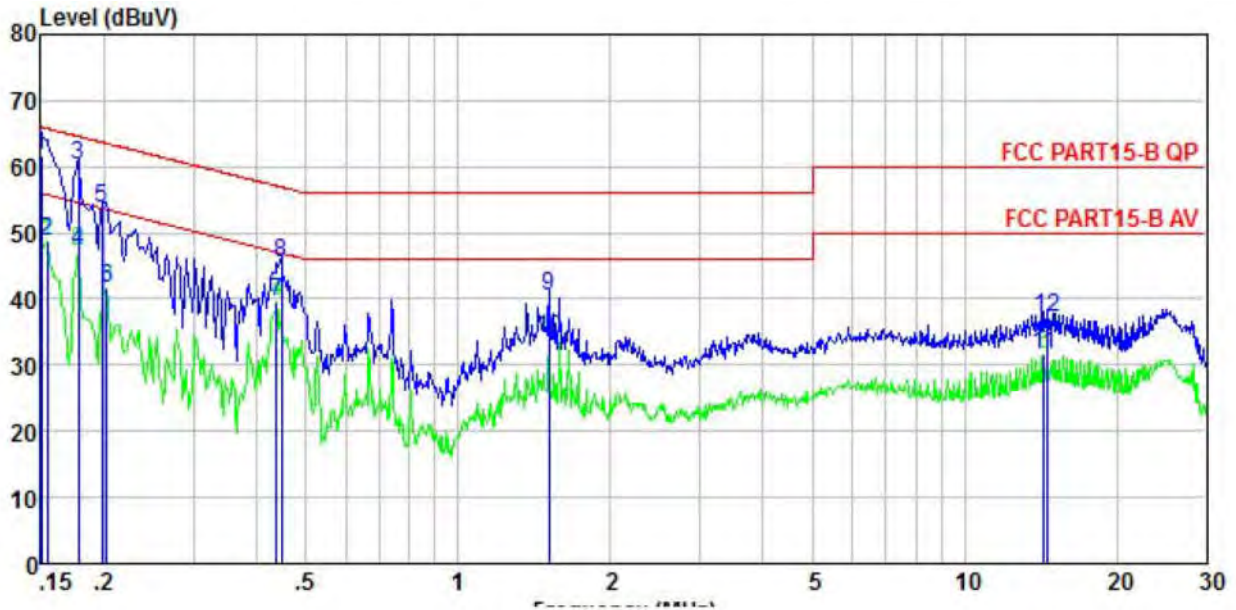
1. Final Level = Receiver Read level + Antenna Factor + Cable Loss + Aux Factor – Pre-amplifier Factor.
2. The emission levels of other frequencies are very lower than the limit and not show in test report.
3. The Aux Factor is a notch filter switch box loss, this item is not used.

### 6.3 Conducted Emission

|  |  |                    |           |     |         |        |
|--|--|--------------------|-----------|-----|---------|--------|
| Test Requirement:                                | FCC Part15 B Section 15.207  |                    |           |     |         |        |
| Test Frequency Range:                            | 150kHz to 30MHz  |                    |           |     |         |        |
| Class / Severity:                                | Class B  |                    |           |     |         |        |
| Receiver setup:                                  | RBW=9kHz, VBW=30kHz  |                    |           |     |         |        |
| Limit:   | Frequency range (MHz)  | Limit (dB $\mu$ V) |           |     |         |        |
|  |  | Quasi-peak         | Average   |     |         |        |
|  | 0.15-0.5   | 66 to 56*          | 56 to 46* |     |         |        |
|  | 0.5-5  | 56                 | 46        |     |         |        |
|  | 0.5-30   | 60                 | 50        |     |         |        |
| * Decreases with the logarithm of the frequency. |  |                    |           |     |         |        |
| Test setup:                                      | <p><i>Remark</i><br/> E.U.T: Equipment Under Test<br/> LISN: Line Impedance Stabilization Network<br/> Test table height=0.8m</p>  |                    |           |     |         |        |
| Test procedure                                   | <ol style="list-style-type: none"> <li>1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network(L.I.S.N.). The provide a 50ohm/50uH coupling impedance for the measuring equipment.</li> <li>2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs).</li> <li>3. 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.</li> </ol> |                    |           |     |         |        |
| 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:   | Wireless Charging Pad | Product Model: | AWC1098                   |
| Test by:        | Miles Chen            | Test mode:     | Maximum Power Output mode |
| Test frequency: | 150 kHz ~ 30 MHz      | Phase:         | Line                      |
| Test voltage:   | AC 120 V/60 Hz        | Environment:   | Temp: 22.5°C Humi: 55%    |



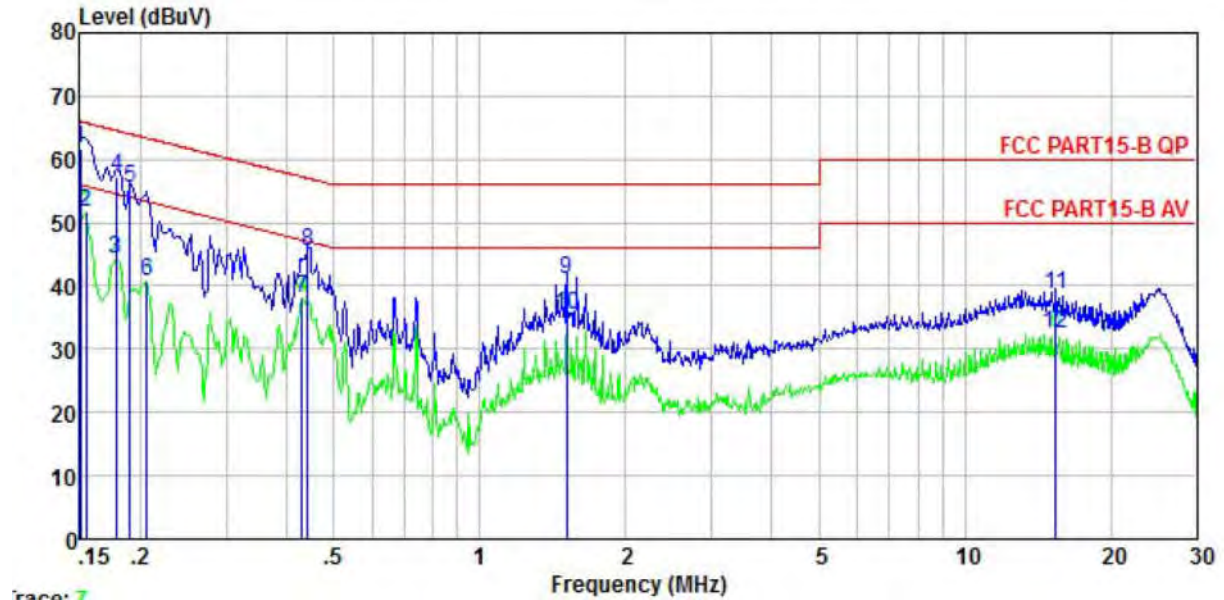
|    | Read Freq | Read Level | LISN Factor | Aux Factor | Cable Loss | Level | Limit Line | Over Limit | Remark  |
|----|-----------|------------|-------------|------------|------------|-------|------------|------------|---------|
|    | MHz       | dBuV       | dB          | dB         | dB         | dBuV  | dBuV       | dB         |         |
| 1  | 0.150     | 51.45      | -0.57       | -0.05      | 10.78      | 61.61 | 66.00      | -4.39      | QP      |
| 2  | 0.154     | 38.45      | -0.57       | -0.06      | 10.78      | 48.60 | 55.78      | -7.18      | Average |
| 3  | 0.178     | 50.04      | -0.58       | -0.12      | 10.77      | 60.11 | 64.59      | -4.48      | QP      |
| 4  | 0.178     | 37.04      | -0.58       | -0.12      | 10.77      | 47.11 | 54.59      | -7.48      | Average |
| 5  | 0.198     | 43.62      | -0.59       | -0.16      | 10.76      | 53.63 | 63.71      | -10.08     | QP      |
| 6  | 0.202     | 31.70      | -0.59       | -0.16      | 10.76      | 41.71 | 53.54      | -11.83     | Average |
| 7  | 0.437     | 29.26      | -0.46       | 0.11       | 10.74      | 39.65 | 47.11      | -7.46      | Average |
| 8  | 0.447     | 35.03      | -0.46       | 0.05       | 10.74      | 45.36 | 56.93      | -11.57     | QP      |
| 9  | 1.511     | 29.98      | -0.55       | -0.01      | 10.92      | 40.34 | 56.00      | -15.66     | QP      |
| 10 | 1.511     | 23.59      | -0.55       | -0.01      | 10.92      | 33.95 | 46.00      | -12.05     | Average |
| 11 | 14.364    | 17.90      | -0.69       | 3.41       | 10.90      | 31.52 | 50.00      | -18.48     | Average |
| 12 | 14.594    | 23.58      | -0.69       | 3.48       | 10.90      | 37.27 | 60.00      | -22.73     | QP      |

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.



|                        |                       |                       |                           |
|------------------------|-----------------------|-----------------------|---------------------------|
| <b>Product name:</b>   | Wireless Charging Pad | <b>Product Model:</b> | AWC1098                   |
| <b>Test by:</b>        | Miles Chen            | <b>Test mode:</b>     | Maximum Power Output mode |
| <b>Test frequency:</b> | 150 kHz ~ 30 MHz      | <b>Phase:</b>         | Neutral                   |
| <b>Test voltage:</b>   | AC 120 V/60 Hz        | <b>Environment:</b>   | Temp: 22.5°C Humi: 55%    |



Trace: 7

|    | Read Freq | Read Level | LISN Factor | Aux Factor | Cable Loss | Level | Limit Line | Over Limit | Remark  |
|----|-----------|------------|-------------|------------|------------|-------|------------|------------|---------|
|    | MHz       | dBuV       | dB          | dB         | dB         | dBuV  | dBuV       | dB         |         |
| 1  | 0.150     | 51.46      | -0.69       | 0.01       | 10.78      | 61.56 | 66.00      | -4.44      | QP      |
| 2  | 0.154     | 41.45      | -0.69       | 0.01       | 10.78      | 51.55 | 55.78      | -4.23      | Average |
| 3  | 0.178     | 34.17      | -0.68       | 0.00       | 10.77      | 44.26 | 54.59      | -10.33     | Average |
| 4  | 0.179     | 47.22      | -0.68       | 0.00       | 10.77      | 57.31 | 64.55      | -7.24      | QP      |
| 5  | 0.190     | 45.40      | -0.67       | 0.00       | 10.76      | 55.49 | 64.02      | -8.53      | QP      |
| 6  | 0.206     | 30.51      | -0.67       | 0.00       | 10.76      | 40.60 | 53.36      | -12.76     | Average |
| 7  | 0.431     | 27.92      | -0.64       | -0.03      | 10.73      | 37.98 | 47.24      | -9.26      | Average |
| 8  | 0.442     | 35.34      | -0.64       | -0.02      | 10.74      | 45.42 | 57.02      | -11.60     | QP      |
| 9  | 1.511     | 30.68      | -0.70       | 0.13       | 10.92      | 41.03 | 56.00      | -14.97     | QP      |
| 10 | 1.511     | 25.03      | -0.70       | 0.13       | 10.92      | 35.38 | 46.00      | -10.62     | Average |
| 11 | 15.388    | 25.70      | -0.85       | 2.87       | 10.90      | 38.62 | 60.00      | -21.38     | QP      |
| 12 | 15.388    | 19.52      | -0.85       | 2.87       | 10.90      | 32.44 | 50.00      | -17.56     | 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 20dB Bandwidth**

|                   |   |
|-------------------|---|
| Test Requirement: | FCC Part15 C Section 15.215 (c)   |
| Receiver setup:   | RBW=1 kHz, VBW=3 kHz, detector: Peak  |
| Limit:            | The fundamental emission be kept within at least the central 80% of the permitted band  |
| Test Procedure:   | <ol style="list-style-type: none"> <li>1. According to the follow Test-setup, keep the relative position between the artificial antenna and the EUT.</li> <li>2. Set the EUT to proper test channel.</li> <li>3. Max hold the radiated emissions, mark the peak power frequency point and the -20dB upper and lower frequency points.</li> <li>4. Read 20dB bandwidth.</li> </ol> |
| Test setup:       | <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected via a red cable to an E.U.T. (Equipment Under Test). Both are placed on a Non-Conducted Table. Below the table is a Ground Reference Plane.</p>   |
| 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)                    | 99% bandwidth (kHz) | Limits |
|---|---------------------|--------|
| 2.78                                    | 2.30                | N/A    |
| <i>Remark: For report purpose only.</i> |                     |        |

Test plot as follows:

