

TEST REPORT

Reference No...... : WTS19S07043725W001
FCC ID : 2ATGY-WCC1002
Applicant..... : Ubio Labs, Inc.
Address..... : 2821 Northup Way, Suite 250, Bellevue, WA 98004, USA
Manufacturer : Huizhou CCA Industrial Co. Ltd.
Address..... : Section B, 2nd Floor, Building A, No.122, Hongchuan Avenue North,
Tongqiao Industrial Base, Zhongkai Gaoxin District, Huizhou City,
Guangdong, China
Product..... : UbioLabs Wireless Car Mount
Model(s) : WCC1002
Standards..... : FCC Part 15 subpart C:2019
Date of Receipt sample : 2019-07-01
Date of Test..... : 2019-07-02 to 2019-07-10
Date of Issue..... : 2019-07-11
Test Result..... : **Pass**

Remarks:

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

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1 Laboratories Introduction

Waltek Services (Shenzhen) Co., Ltd is a professional third-party testing and certification laboratory with multi-year product testing and certification experience, established strictly in accordance with ISO/IEC 17025 requirements, and accredited by ILAC (International Laboratory Accreditation Cooperation) member. A2LA (American Association for Laboratory Accreditation, the certification number is 4243.01) of USA, CNAS (China National Accreditation Service for Conformity Assessment, the registration number is L3110) of China. Meanwhile, Waltek has got recognition as registration and accreditation laboratory from EMSD (Electrical and Mechanical Services Department), and American Energy star, FCC(The Federal Communications Commission), CEC(California energy efficiency), ISED Canada (Innovation, Science and Economic Development Canada). It's the strategic partner and data recognition laboratory of international authoritative organizations, such as Intertek(ETL-SEMKO), TÜV Rheinland, TÜV SÜD, etc.



Waltek Services (Shenzhen) Co., Ltd is one of the largest and the most comprehensive third party testing laboratory in China. Our test capability covered four large fields: safety test.

ElectroMagneticCompatibility(EMC), and energy performance, wireless radio. As a professional, comprehensive, justice international test organization, we still keep the scientific and rigorous work attitude to help each client satisfy the international standards and assist their product enter into globe market smoothly.

1.1 Test Facility

A. Accreditations for Conformity Assessment (International)

| Country/Region | Scope Covered By | Scope | Note |
|---|------------------|------------------------|------|
| USA | ISO/IEC 17025 | FCC ID \ SDoC(VOC/DOC) | 1 |
| Canada | | IC ID \ VOC | 2 |
| Japan | | MIC-T \ MIC-R | - |
| Europe | | EMCD \ RED | - |
| Taiwan | | NCC | - |
| Hong Kong | | OFCA | - |
| Australia | | RCM | - |
| India | | WPC | - |
| Thailand | | NTC | - |
| Singapore | | IDA | - |
| Note: 1. FCC Designation No.: CN1201. Test Firm Registration No.: 523476. 2. ISED CAB identifier : CN0013. Test Firm Registration No.: 7760A. | | | |

B.TCBs and Notify Bodies Recognized Testing Laboratory.

| Recognized Testing Laboratory of ... | Notify body number |
|---|--------------------|
| TUV Rheinland | Optional. |
| Intertek | |
| TUV SUD | |
| SGS | |
| Phoenix Testlab GmbH | 0700 |
| Element Materials Technology Warwick Ltd. | 0891 |
| Timco Engineering, Inc. | 1177 |
| Eurofins Product Service GmbH | 0681 |

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3 Revision History

| Test report No. | Date of Receipt sample | Date of Test | Date of Issue | Purpose | Comment | Approved |
|--------------------|------------------------|--------------------------------|---------------|----------|---------|----------|
| WTS19S07043725W001 | 2019-07-01 | 2019-07-02 to 2019-07-10 | 2019-07-11 | original | - | Valid |

4 General Information

4.1 General Description of E.U.T

| | |
|-----------------------|-----------------------------|
| Product: | UbioLabs Wireless Car Mount |
| Model(s): | WCC1002 |
| Type of Modulation: | ASK |
| Frequency Range: | 0.112-0.205MHz |
| Antenna installation: | Coil Antenna; |

4.2 Details of accessories

| | |
|----------|---|
| Ratings: | Input: 5-9Vdc /2A Max Output: 5W-10W Max |
|----------|---|

5 Equipment Used during Test

5.1 Equipments List

| 3m Semi-anechoic Chamber for RadiationEmissions Test site | | | | | | |
|---|---------------------------------|-----------------|---------------|------------|-----------------------|----------------------|
| Item | Equipment | Manufacturer | Model No. | Serial No | Last Calibration Date | Calibration Due Date |
| 1 | Test Receiver | R&S | ESCI | 101296 | 2019-04-20 | 2020-04-19 |
| 2 | Trilog Broadband Antenna | SCHWARZBECK | VULB9160 | 9160-3325 | 2019-04-19 | 2020-04-18 |
| 3 | Amplifier | ANRITSU | MH648A | M43381 | 2019-04-20 | 2020-04-19 |
| 4 | Cable | HUBER+SUHNER | CBL2 | 525178 | 2019-04-20 | 2020-04-19 |
| 5 | Active Loop Antenna | Com-Power Corp. | AL-130R | 10160007 | 2019-04-17 | 2020-04-16 |
| RF Conducted Testing | | | | | | |
| Item | Equipment | Manufacturer | Model No. | Serial No. | Last Calibration Date | Calibration Due Date |
| 1. | EMC Analyzer (9k~26.5GHz) | Agilent | E7405A | MY45114943 | 2018-09-15 | 2019-09-14 |
| 2. | Spectrum Analyzer (9k-6GHz) | R&S | FSL6 | 100959 | 2018-11-18 | 2019-11-17 |
| 3. | Signal Analyzer (9k~26.5GHz) | Agilent | N9010A | MY50520207 | 2019-04-19 | 2020-04-18 |
| 4. | Humidity Chamber | GF | GTH-225-40-1P | IAA061213 | 2018-09-15 | 2019-09-14 |

5.2 Description of Support Units

| Equipment | Manufacturer | Model No. | Specification |
|----------------------------|-------------------------------------|-----------|------------------|
| Wireless charging receiver | Waltek Services (Shenzhen) Co., Ltd | / | Max. 15W |
| Universal Car Charger | DSG Retail Ltd. | S610WCS19 | Input: DC 12-24V |

5.3 Measurement Uncertainty

| Test Item | Frequency Range | Uncertainty | Note |
|-----------------------------|-----------------|-------------|------|
| Conducted Emissions | 150kHz~30MHz | ±3.64dB | (1) |
| Radiated Spurious Emissions | 26KHz~30MHz | ±3.03dB | (1) |
| Radiated Spurious Emissions | 30MHz~1000MHz | ±5.03dB | (1) |

(1)This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

5.4 Test Equipment Calibration

All the test equipments used are valid and calibrated by GUANG ZHOU GRG METROLOGY & TEST CO., LTD. address is No.163, Pingyun Rd. West of Huangpu Ave, Tianhe District, Guangzhou, Guangdong, China.

5.5 Test Mode

All the test model(s) and condition(s) mentioned were considered and evaluated respectively by performing full tests, the worst data were recorded and reported.

| Description | Test channel |
|------------------------------|--------------|
| Transmitting with Full Load* | 150.50kHz |
| Transmitting with Half Load | 150.50kHz |
| Transmitting with No Load | 150.50kHz |

All the mode were tested and passed, "*" show the worst case mode which were recorded in this report.

6 Test Summary

| Test Items | Test Requirement | Result |
|---|------------------|--------|
| Conducted Emissions | 15.207 | N/A |
| Radiated Spurious Emissions | 15.209 | PASS |
| Occupied Bandwidth | 15.215 | PASS |
| Antenna Requirement | 15.203 | PASS |
| Note: Pass=Compliance; NC=Not Compliance; NT=Not Tested; N/A=Not Applicable | | |

7 Radiated Spurious Emissions

Test Requirement: FCC CFR47 Part 15 Section 15.209

Test Method: ANSI C63.10:2013

Test Result: PASS

Measurement Distance: 3m

Limit:

FCC Part15 Paragraph 15.209

| Frequency (MHz) | Field Strength | | Field Strength Limit at 3m Measurement Dist | |
|--------------------|----------------|-----------------|---|--------------------------------|
| | uV/m | Distance (m) | uV/m | dBuV/m |
| 0.009 ~ 0.490 | 2400/F(kHz) | 300 | 10000 * 2400/F(kHz) | $20\log^{(2400/F(kHz))} + 80$ |
| 0.490 ~ 1.705 | 24000/F(kHz) | 30 | 100 * 24000/F(kHz) | $20\log^{(24000/F(kHz))} + 40$ |
| 1.705 ~ 30 | 30 | 30 | 100 * 30 | $20\log^{(30)} + 40$ |
| 30 ~ 88 | 100 | 3 | 100 | $20\log^{(100)}$ |
| 88 ~ 216 | 150 | 3 | 150 | $20\log^{(150)}$ |
| 216 ~ 960 | 200 | 3 | 200 | $20\log^{(200)}$ |
| Above 960 | 500 | 3 | 500 | $20\log^{(500)}$ |

7.1 EUT Operation

Operating Environment:

Temperature: 23.5 °C

Humidity: 51.1% RH

Atmospheric Pressure: 101.2kPa

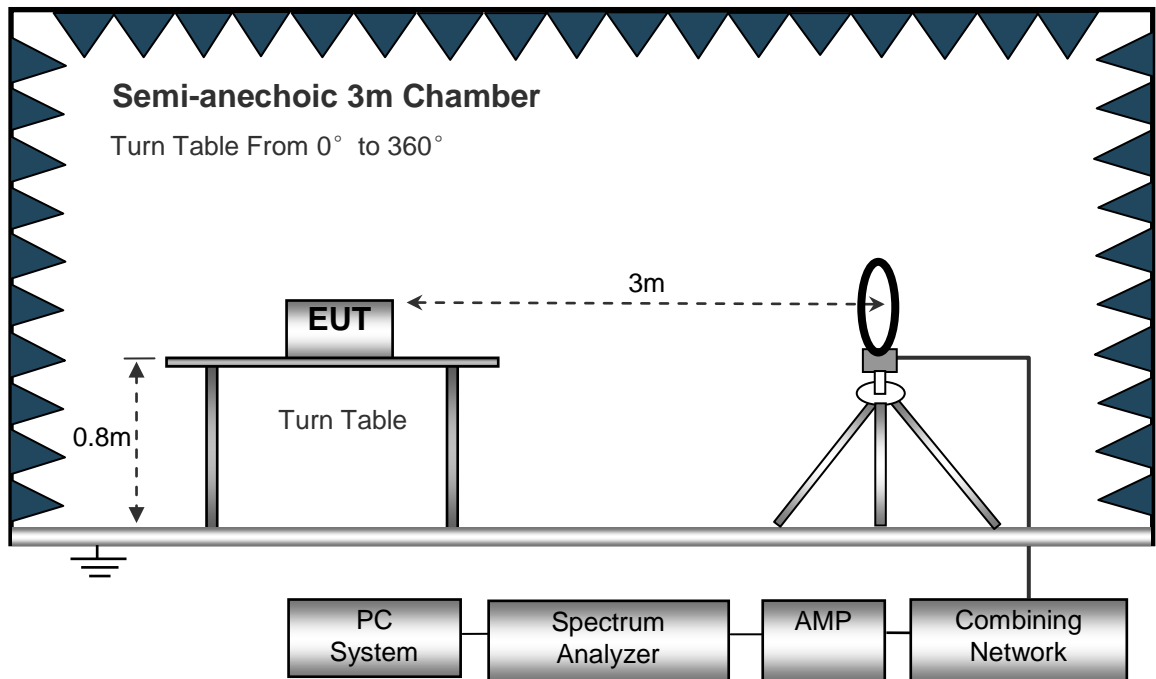
EUT Operation: Refer to section 5.5

Only the worst case transmitting mode were record in the report. the worst case were shown in the report.

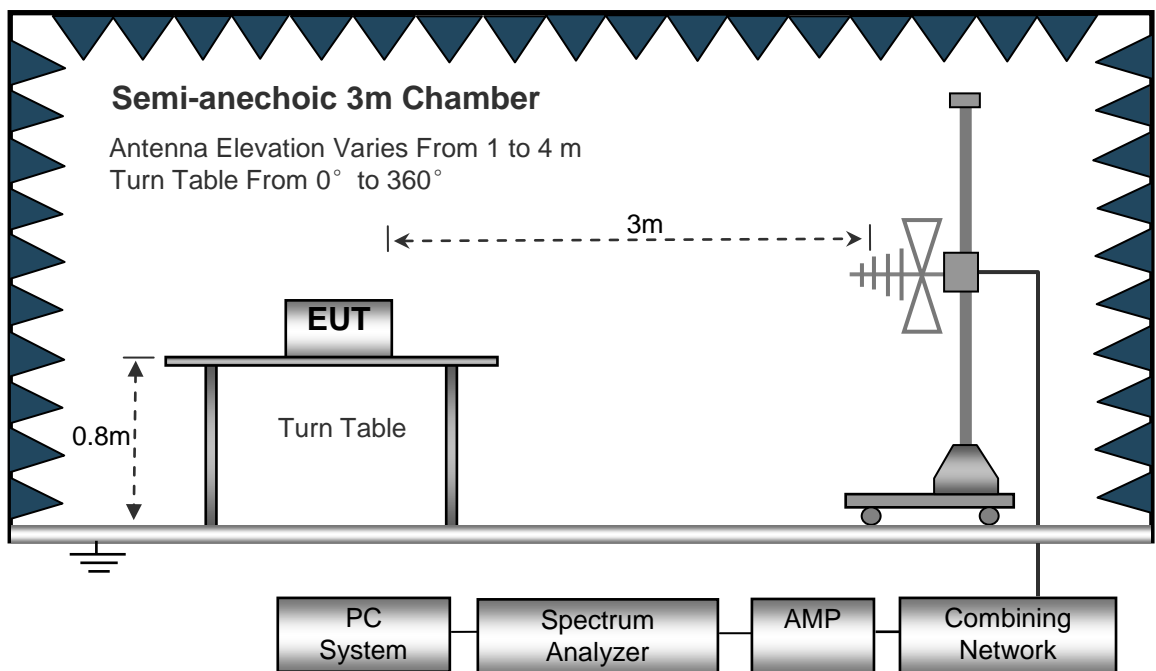
7.2 Test Setup

The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site, using the setup accordance with the ANSI C63.10: 2013.

The test setup for emission measurement below 30MHz.



The test setup for emission measurement from 30 MHz to 1 GHz.



7.3 Spectrum Analyzer Setup

Below 30MHz

Sweep Speed Auto
IF Bandwidth..... 10kHz
Video Bandwidth..... 10kHz
Resolution Bandwidth..... 10kHz

30MHz ~ 1GHz

Sweep Speed Auto
Detector PK
Resolution Bandwidth..... 100kHz
Video Bandwidth..... 300kHz

7.4 Test Procedure

1. The EUT is placed on a turntable, which is 0.8m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is moved from 1m to 4m to find out the maximum emissions. The spectrum was investigated from the lowest radio frequency signal generated in the device, without going below 9 kHz, up to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until the measurements for all frequencies are complete.
7. The radiation measurements are tested under 3-axes(X, Y, Z) position(X denotes lying on the table, Y denotes side stand and Z denotes vertical stand). After pre-test, It was found that the worse radiation emission was get at the X position. So the data shown was the X position only.

7.5 Summary of Test Results

Test Frequency:9KHz ~ 30MHz, Note: Correct factor = Cable loss + Antenna factor

| Frequency | Receiver Reading | Turn table Angle | RX Antenna | | Corrected Factor | Corrected Amplitude | FCC Part 15. 209 | |
|-----------|------------------|------------------|------------|-------|------------------|---------------------|------------------|--------|
| | | | Height | Polar | | | Limit | Margin |
| (kHz) | (dB μ V) | Degree | (m) | (H/V) | (dB) | (dB μ V/m) | (dB μ V/m) | (dB) |
| 150.50 | 70.35 | 320 | 2.0 | H | 10.54 | 80.89 | 104.05 | -23.16 |
| 150.50 | 68.48 | 68 | 1.3 | V | 10.54 | 79.02 | 104.05 | -25.03 |

Test Frequency: 30MHz ~ 1GHz

| Frequency | Receiver Reading | Detector | Turn table Angle | RX Antenna | | Corrected Factor | Corrected Amplitude | FCC Part 15.209 | |
|-----------|------------------|--------------|------------------|------------|-------|------------------|---------------------|-----------------|--------|
| | | | | Height | Polar | | | Limit | Margin |
| (MHz) | (dB μ V) | (PK/QP /Ave) | Degree | (m) | (H/V) | (dB) | (dB μ V/m) | (dB μ V/m) | (dB) |
| 75.45 | 55.39 | QP | 189 | 1.3 | H | -18.87 | 36.52 | 40.00 | -3.48 |
| 75.45 | 49.04 | QP | 49 | 2.0 | V | -18.87 | 30.17 | 40.00 | -9.83 |
| 147.40 | 49.64 | QP | 77 | 1.1 | H | -14.40 | 35.24 | 43.50 | -8.26 |
| 147.40 | 45.65 | QP | 201 | 1.5 | V | -14.40 | 31.25 | 43.50 | -12.25 |
| 246.81 | 57.36 | QP | 7 | 1.2 | H | -15.86 | 41.50 | 46.00 | -4.50 |
| 246.81 | 52.87 | QP | 185 | 1.2 | V | -15.86 | 37.01 | 46.00 | -8.99 |

8 Bandwidth Measurement

Test Requirement:

FCC CFR47 Part 15 Section 15.215

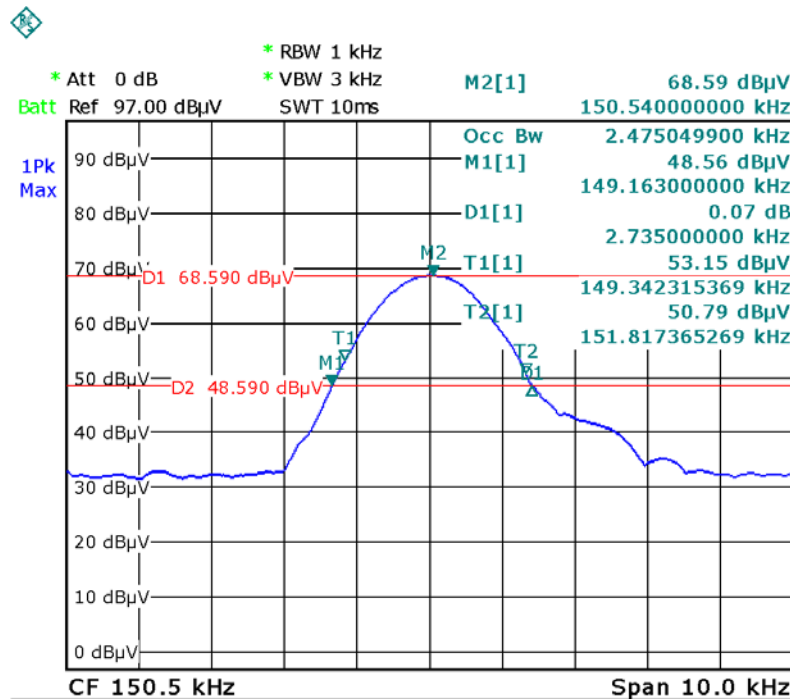
8.1 Test Procedure

1. The transmitter shall be operated at its maximum carrier power measured under normal test conditions;
2. The span of the analyzer shall be set to capture all products of the modulation process,including the emission skirts.
3. The resolution bandwidth (RBW) shall be in the range of 1% to 5% of the occupied bandwidth (OBW) and video bandwidth (VBW) shall be approximately 3x RBW.

8.2 Test ResultPlot:

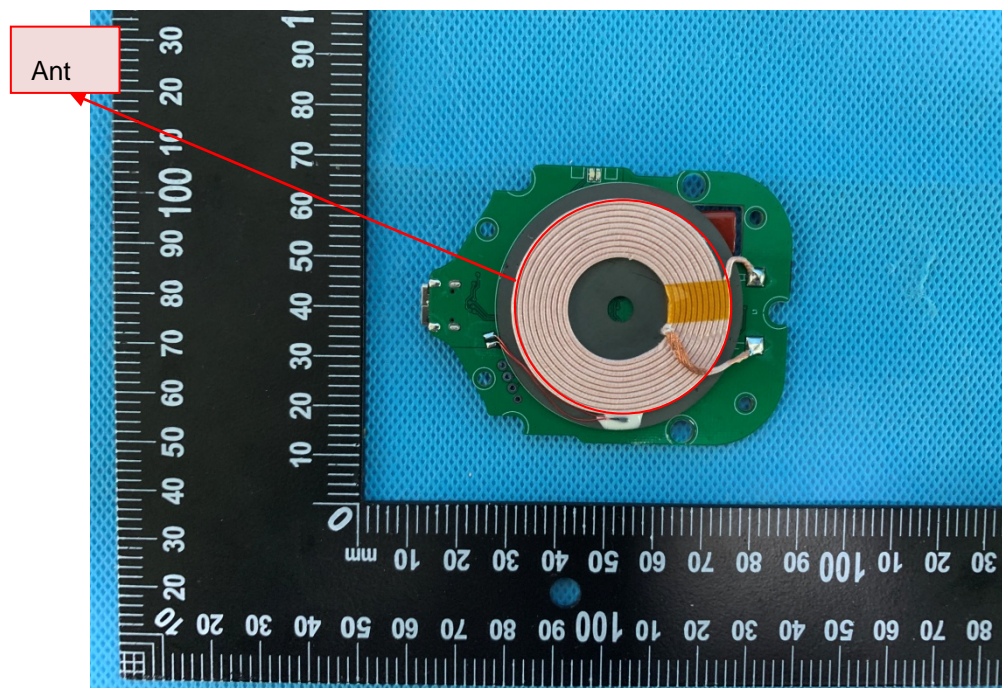
| Test Channel(kHz) | 99% Bandwidth(kHz) | 20dB Bandwidth Emission(kHz) |
|-------------------|--------------------|------------------------------|
| 150.50 | 2.475 | 2.735 |

Test result plot as follows:



9 Antenna Requirement

According to the FCC Part 15 Paragraph 15.203, 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 to the intentional radiator shall be considered sufficient to comply with the provisions of this section. This product has a Coil antenna, fulfill the requirement of this section.



10 Photographs-Test Setup

Note: Refer to the file WCC1002_Tsup Pho.

11 Photographs - Constructional Details

11.1 External View

Note: Refer to the file WCC1002_ExtPho.

11.2 Internal View

Note: Refer to the file WCC1002_IntPho.

===== End of Report =====