



# MEASUREMENT REPORT

## FCC PART 15.209

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**FCC ID:** 2AKPK-P2C

**APPLICANT:** Omnicharge. Inc

**Application Type:** Certification

**Product:** PORTABLE POWER BANK

**Model No.:** Omni 20C+

**FCC Classification:** Part 15 Low Power Transmitter Below 1705 kHz (DCD)

**FCC Rule Part(s):** Part15 Subpart C

**Test Procedure(s):** ANSI C63.10-2013

**Test Date:** June 19 ~ November 04, 2019

Reviewed By:

\_\_\_\_\_  
( Kevin Guo )

Approved By:

\_\_\_\_\_  
( Robin Wu )



The test results relate only to the samples tested.

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.10-2013. Test results reported herein relate only to the item(s) tested.

The test report shall not be reproduced except in full without the written approval of MRT Technology (Suzhou) Co., Ltd.

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### Revision History

| Report No.    | Version | Description    | Issue Date | Note  |
|---------------|---------|----------------|------------|-------|
| 1906RSU026-U1 | Rev. 01 | Initial Report | 06-18-2020 | Valid |
|               |         |                |            |       |

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## §2.1033 General Information

|                              |                                                                                    |
|------------------------------|------------------------------------------------------------------------------------|
| <b>Applicant:</b>            | Omnicharge. Inc                                                                    |
| <b>Applicant Address:</b>    | 21731 Ventura Blvd STE 180, Woodland Hills, California, United States              |
| <b>Manufacturer:</b>         | Omnicharge. Inc                                                                    |
| <b>Manufacturer Address:</b> | 21731 Ventura Blvd STE 180, Woodland Hills, California, United States              |
| <b>Test Site:</b>            | MRT Technology (Suzhou) Co., Ltd                                                   |
| <b>Test Site Address:</b>    | D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China |

### Test Facility / Accreditations

Measurements were performed at MRT Laboratory located in Tian'edang Rd., Suzhou, China.

- MRT facility is a FCC registered (MRT Reg. No. 893164) test facility with the site description report on file and has met all the requirements specified in ANSI C63.4-2014.
- MRT facility is an IC registered (MRT Reg. No. 11384A-1) test laboratory with the site description on file at Industry Canada.
- MRT facility is a VCCI registered (R-20025, G-20034, C-20020, T-20020) test laboratory with the site description on file at VCCI Council.
- MRT Lab is accredited to ISO 17025 by the American Association for Laboratory Accreditation (A2LA) under the American Association for Laboratory Accreditation Program (A2LA Cert. No. 3628.01) in EMC, Telecommunications, Radio and SAR testing.



## 1. INTRODUCTION

### 1.1. Scope

Measurement and determination of electromagnetic emissions (EMC) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission and the Innovation, Science and Economic Development Canada and Certification and Engineering Bureau.

### 1.2. MRT Test Location

The map below shows the location of the MRT LABORATORY, its proximity to the Taihu Lake. These measurement tests were conducted at the MRT Technology (Suzhou) Co., Ltd. Facility located at D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China. The measurement facility compliant with the test site requirements specified in ANSI C63.4-2014.



## 2. PRODUCT INFORMATION

### 2.1. Feature of Equipment under Test

|                    |                                                                                          |
|--------------------|------------------------------------------------------------------------------------------|
| Product Name:      | PORTABLE POWER BANK                                                                      |
| Model No.:         | Omni 20C+                                                                                |
| Bluetooth Version: | V4.0 Single mode                                                                         |
| Wireless Charging: | 110kHz ~ 205kHz                                                                          |
| Input:             | USB-C Port: 5V=3A , 9V=3A, 12V=3A, 15V=3A, 20V=2.25A                                     |
| Output             | USB-C Port: 5V=3A , 9V=3A, 12V=3A, 15V=3A, 20V=3A<br>USB-A Port: 5V=3A , 9V=2A, 12V=1.5A |
| <b>Accessories</b> |                                                                                          |
| Battery Pack:      | Capacity: 20400mAh                                                                       |

### 2.2. Test System Details

Auxiliary Equipment Used during Test:

| Description               | Manufacturer | Model No. | Serial No. | Power Cord |
|---------------------------|--------------|-----------|------------|------------|
| Wireless Charger Receiver | Lineprinting | N/A       | N/A        | N/A        |

Note: The Wireless Charger Receiver is provided by the manufacturer, and it can control the EUT to be at the maximum output power state.

### 2.3. Test mode

|           |                                                                   |
|-----------|-------------------------------------------------------------------|
| Test Mode | Mode 1: Energy transmission (normal operation with client device) |
|-----------|-------------------------------------------------------------------|

### 2.4. EMI Suppression Device(s)/Modifications

No EMI suppression device(s) were added and/or no modifications were made during testing.

## **2.5. Labeling Requirements**

Per 2.1074 & 15.19; Docket 95-19

The label shall be permanently affixed at a conspicuous location on the device; instruction manual or pamphlet supplied to the user and be readily visible to the purchaser at the time of purchase.

However, when the device is so small wherein placement of the label with specified statement is not practical, only the FCC ID must be displayed on the device per Section 15.19(a)(5). Please see attachment for FCC ID label and label location.

### 3. DESCRIPTION OF TEST

#### 3.1. Evaluation Procedure

The measurement procedures described in the American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices (ANSI C63.10-2013) and were used in the measurement.

**Deviation from measurement procedure.....None**

#### 3.2. AC Line Conducted Emissions

The line-conducted facility is located inside an 8'x4'x4' shielded enclosure. A 1m x 2m wooden table 80cm high is placed 40cm away from the vertical wall and 80cm away from the sidewall of the shielded room. Two 10kHz-30MHz, 50Ω/50uH Line-Impedance Stabilization Networks (LISNs) are bonded to the shielded room floor. Power to the LISNs is filtered by external high-current high-insertion loss power line filters. These filters attenuate ambient signal noise from entering the measurement lines. These filters are also bonded to the shielded enclosure.

The EUT is powered from one LISN and the support equipment is powered from the second LISN. All interconnecting cables more than 1 meter were shortened to a 1 meter length by non-inductive bundling (serpentine fashion) and draped over the back edge of the test table. All cables were at least 40cm above the horizontal reference ground-plane. Power cables for support equipment were routed down to the second LISN while ensuring that that cables were not draped over the second LISN.

Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The RF output of the LISN was connected to the receiver and exploratory measurements were made to determine the frequencies producing the maximum emission from the EUT. The receiver was scanned from 150kHz to 30MHz. The detector function was set to peak mode for exploratory measurements while the bandwidth of the analyzer was set to 9kHz. The EUT, support equipment, and interconnecting cables were arranged and manipulated to maximize each emission. Each emission was also maximized by varying: power lines, the mode of operation or data exchange speed, or support equipment whichever determined the worst-case emission. Once the worst case emissions have been identified, the one EUT cable configuration/arrangement and mode of operation that produced these emissions were used for final measurements on the same test site. The analyzer is set to CISPR quasi-peak and average detectors with a 9kHz resolution bandwidth for final measurements.

An extension cord was used to connect to a single LISN which powered by EUT. The extension cord was calibrated with LISN, the impedance and insertion loss are compliance with the requirements as stated in ANSI C63.10-2013.

### **3.3. Radiated Emissions**

The radiated test facilities consisted of an indoor 3 meter semi-anechoic chamber used for final measurements and exploratory measurements, when necessary. The measurement area is contained within the semi-anechoic chamber which is shielded from any ambient interference. For measurements above 1GHz absorbers are arranged on the floor between the turn table and the Antenna mast in such a way so as to maximize the reduction of reflections. For measurements below 1GHz, the absorbers are removed. A MF Model 210SS turntable is used for radiated measurement. It is a continuously rotatable, remote controlled, metallic turntable and 2 meters (6.56 ft.) in diameter. The turn table is flush with the raised floor of the chamber in order to maintain its function as a ground plane. An 80cm high PVC support structure is placed on top of the turntable. For all measurements, the spectrum was scanned through all EUT azimuths and from 1 to 4 meter receive Antenna height using a broadband Antenna from 30MHz up to the upper frequency shown in 15.33(b)(1) depending on the highest frequency generated or used in the device or on which the device operates or tunes. For frequencies above 1GHz, linearly polarized double ridge horn Antennas were used. For frequencies below 30MHz, a calibrated loop Antenna was used. When exploratory measurements were necessary, they were performed at 1 meter test distance inside the semi-anechoic chamber using broadband Antennas, broadband amplifiers, and spectrum analyzers to determine the frequencies and modes producing the maximum emissions. Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The test set-up for frequencies below 1GHz was placed on top of the 0.8 meter high, 1 x 1.5 meter table; and test set-up for frequencies 1-40GHz was placed on top of the 1.5 meter high, 1 x 1.5 meter table. The EUT, support equipment, and interconnecting cables were arranged and manipulated to maximize each emission. Appropriate precaution was taken to ensure that all emissions from the EUT were maximized and investigated. The system configuration, clock speed, mode of operation or video resolution, if applicable, turntable azimuth, and receive Antenna height was noted for each frequency found.

Final measurements were made in the semi-anechoic chamber using calibrated, linearly polarized broadband and horn Antennas. The test setup was configured to the setup that produced the worst case emissions. The spectrum analyzer was set to investigate all frequencies required for testing to compare the highest radiated disturbances with respect to the specified limits. The turntable containing the EUT was rotated through 360 degrees and the height of the receive Antenna was varied 1 to 4 meters and stopped at the azimuth and height producing the maximum emission. Each emission was maximized by changing the orientation of the EUT through three orthogonal planes and changing the polarity of the receive Antenna, whichever produced the worst-case emissions. According to 3dB Beam-Width of horn Antenna, the horn Antenna should be always directed to the EUT when rising height.

## 4. ANTENNA REQUIREMENTS

### **Excerpt from §15.203 of the FCC Rules/Regulations:**

“An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can 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 shall be considered sufficient to comply with the provisions of this section.”

- The antenna of the unit is **permanently attached**.
- There are no provisions for connection to an external antenna.

### **Conclusion:**

The unit complies with the requirement of §15.203.

## 5. TEST EQUIPMENT CALIBRATION DATE

### Conducted Emissions - SR2

| Instrument         | Manufacturer | Type No.    | Asset No.   | Cali. Interval | Cali. Due Date |
|--------------------|--------------|-------------|-------------|----------------|----------------|
| EMI Test Receiver  | R&S          | ESR3        | MRTSUE06185 | 1 year         | 2020/04/15     |
| Two-Line V-Network | R&S          | ENV 216     | MRTSUE06002 | 1 year         | 2020/06/13     |
| Two-Line V-Network | R&S          | ENV 216     | MRTSUE06003 | 1 year         | 2020/06/13     |
| Thermohygrometer   | Testo        | 608-H1      | MRTSUE06404 | 1 year         | 2020/08/08     |
| Shielding Chamber  | MIX-BEP      | Chamber-SR2 | MRTSUE06215 | N/A            | N/A            |

### Radiated Emissions - AC1

| Instrument                 | Manufacturer | Type No.    | Asset No.   | Cali. Interval | Cali. Due Date |
|----------------------------|--------------|-------------|-------------|----------------|----------------|
| EMI Test Receiver          | R&S          | ESR7        | MRTSUE06001 | 1 year         | 2020/08/01     |
| PXA Signal Analyzer        | Keysight     | 9030B       | MRTSUE06395 | 1 year         | 2020/09/03     |
| Loop Antenna               | Schwarzbeck  | FMZB 1519   | MRTSUE06025 | 1 year         | 2019/11/09     |
| Bilog Period Antenna       | Schwarzbeck  | VULB 9168   | MRTSUE06172 | 1 year         | 2020/03/31     |
| Broad Band Horn Antenna    | Schwarzbeck  | BBHA 9120D  | MRTSUE06023 | 1 year         | 2020/10/13     |
| Broad Band Horn Antenna    | Schwarzbeck  | BBHA 9170   | MRTSUE06024 | 1 year         | 2019/12/17     |
| Microwave System Amplifier | Agilent      | 83017A      | MRTSUE06076 | 1 year         | 2019/11/16     |
| Preamplifier               | Schwarzbeck  | BBV 9721    | MRTSUE06121 | 1 year         | 2020/06/11     |
| Thermohygrometer           | Testo        | 608-H1      | MRTSUE06403 | 1 year         | 2020/08/08     |
| Anechoic Chamber           | TDK          | Chamber-AC1 | MRTSUE06213 | 1 year         | 2020/04/30     |

### Radiated Emission - AC2

| Instrument                     | Manufacturer | Type No.    | Asset No.   | Cali. Interval | Cali. Due Date |
|--------------------------------|--------------|-------------|-------------|----------------|----------------|
| Spectrum Analyzer              | Keysight     | N9038A      | MRTSUE06125 | 1 year         | 2020/08/01     |
| Loop Antenna                   | Schwarzbeck  | FMZB 1519   | MRTSUE06025 | 1 year         | 2019/11/09     |
| Bilog Period Antenna           | Schwarzbeck  | VULB 9162   | MRTSUE06022 | 1 year         | 2020/10/13     |
| Horn Antenna                   | Schwarzbeck  | BBHA9120D   | MRTSUE06171 | 1 year         | 2019/11/09     |
| Broad Band Horn Antenna        | Schwarzbeck  | BBHA 9170   | MRTSUE06024 | 1 year         | 2019/12/17     |
| Broadband Coaxial Preamplifier | Schwarzbeck  | BBV 9718    | MRTSUE06176 | 1 year         | 2019/11/16     |
| Preamplifier                   | Schwarzbeck  | BBV 9721    | MRTSUE06121 | 1 year         | 2020/06/11     |
| Temperature/Humidity Meter     | Minggao      | ETH529      | MRTSUE06170 | 1 year         | 2019/12/13     |
| Anechoic Chamber               | RIKEN        | Chamber-AC2 | MRTSUE06213 | 1 year         | 2020/04/30     |

| Software     | Version | Function          |
|--------------|---------|-------------------|
| EMI Software | V3      | EMI Test Software |

## 6. MEASUREMENT UNCERTAINTY

Where relevant, the following test uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of  $k = 2$ .

| AC Conducted Emission Measurement - SR2                                                                                                                                                                                                 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Measuring Uncertainty for a Level of Confidence of 95% ( $U=2U_c(y)$ ):<br>9kHz~150kHz: 3.84dB<br>150kHz~30MHz: 3.46dB                                                                                                                  |
| Radiated Emission Measurement - AC1                                                                                                                                                                                                     |
| Measuring Uncertainty for a Level of Confidence of 95% ( $U=2U_c(y)$ ):<br>Horizontal: 30MHz~300MHz: 4.07dB<br>300MHz~1GHz: 3.63dB<br>1GHz~18GHz: 4.16dB<br>Vertical: 30MHz~300MHz: 4.18dB<br>300MHz~1GHz: 3.60dB<br>1GHz~18GHz: 4.76dB |
| Radiated Emission Measurement - AC2                                                                                                                                                                                                     |
| Measuring Uncertainty for a Level of Confidence of 95% ( $U=2U_c(y)$ ):<br>Horizontal: 30MHz~300MHz: 3.75dB<br>300MHz~1GHz: 3.53dB<br>1GHz~18GHz: 4.28dB<br>Vertical: 30MHz~300MHz: 3.86dB<br>300MHz~1GHz: 3.53dB<br>1GHz~18GHz: 4.33dB |

## 7. TEST RESULT

### 7.1. Summary

| FCC Part Section(s) | Test Description                         | Test Limit                                           | Test Condition | Test Result | Reference   |
|---------------------|------------------------------------------|------------------------------------------------------|----------------|-------------|-------------|
| 15.207              | AC Conducted Emissions<br>150kHz - 30MHz | < FCC 15.207 limits                                  | Line Conducted | Pass        | Section 7.2 |
| 15.209              | General Field Strength Limits            | FCC Part 15.209 limits                               | Radiated       | Pass        | Section 7.3 |
| 15.215(c)           | 20dB Spectrum Bandwidth                  | 20 dB bandwidth of the emission in the specific band |                | Pass        | Section 7.4 |

**Notes:**

- 1) For radiated emission test, every axis (X, Y, Z) was also verified. The test results shown in the following sections represent the worst-case emissions.
- 2) During AC Conducted emission testing, AC-DC adapter is provided by manufacturer, but it's not for sale with EUT.

## 7.2. Conducted Emission

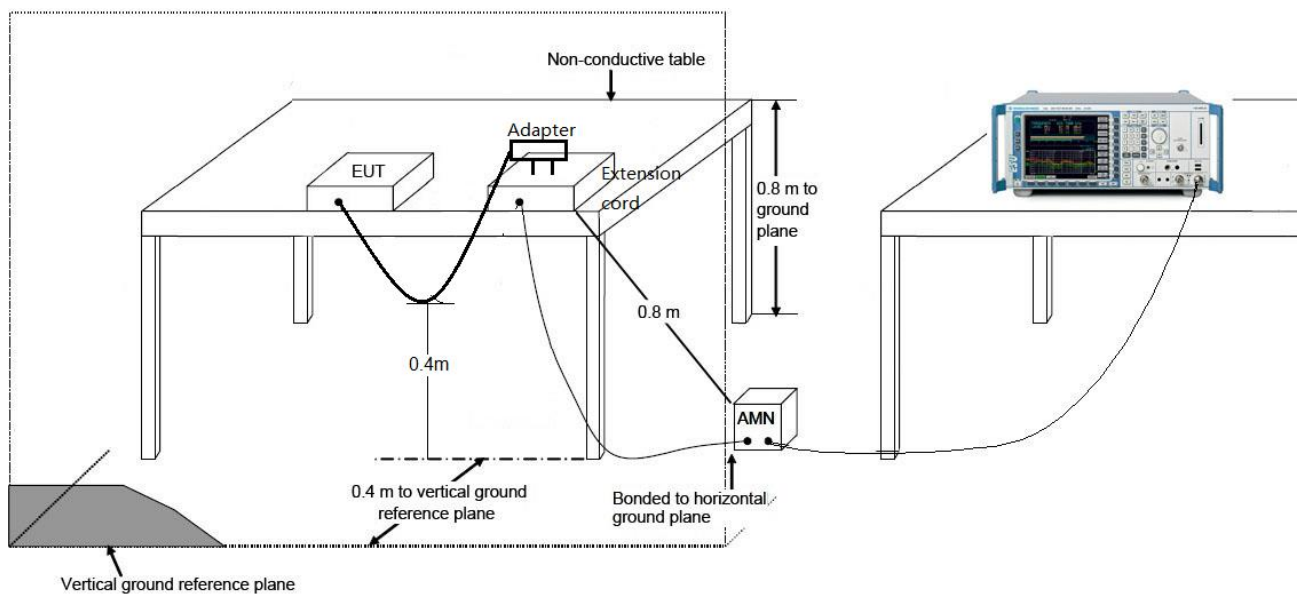
### 7.2.1. Test Limit

| FCC 15.207 Limits |           |           |
|-------------------|-----------|-----------|
| Frequency (MHz)   | QP (dBuV) | AV (dBuV) |
| 0.15 ~ 0.50       | 66 ~ 56   | 56 ~ 46   |
| 0.50 ~ 5.0        | 56        | 46        |
| 5.0 ~ 30          | 60        | 50        |

Note 1: The lower limit shall apply at the transition frequencies.

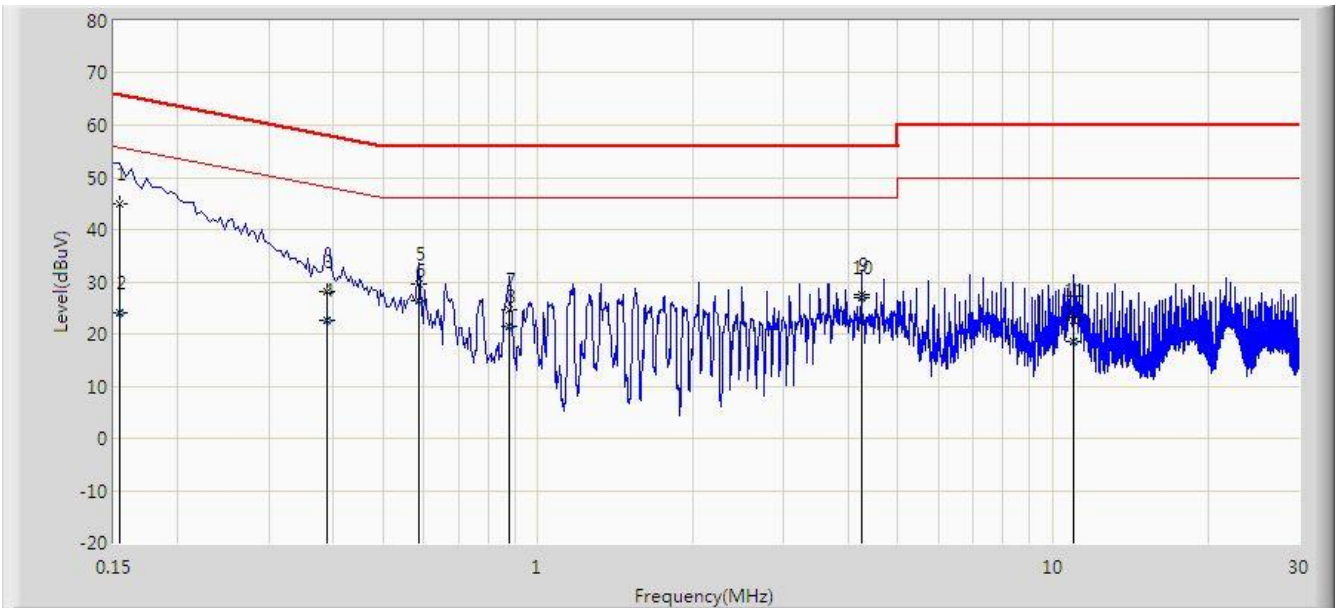
Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.5MHz.

### 7.2.2. Test Setup



### 7.2.3.Test Result

|                                   |                          |
|-----------------------------------|--------------------------|
| Site: SR2                         | Time: 2019/11/04 - 14:56 |
| Limit: FCC_Part15.207_CE_AC Power | Engineer: Liz Yuan       |
| Probe: ENV216_101683_Filter On    | Polarity: Line           |
| EUT: PORTABLE POWER BANK          | Power: AC 120V/60Hz      |
| Test Mode: Energy transmission    |                          |

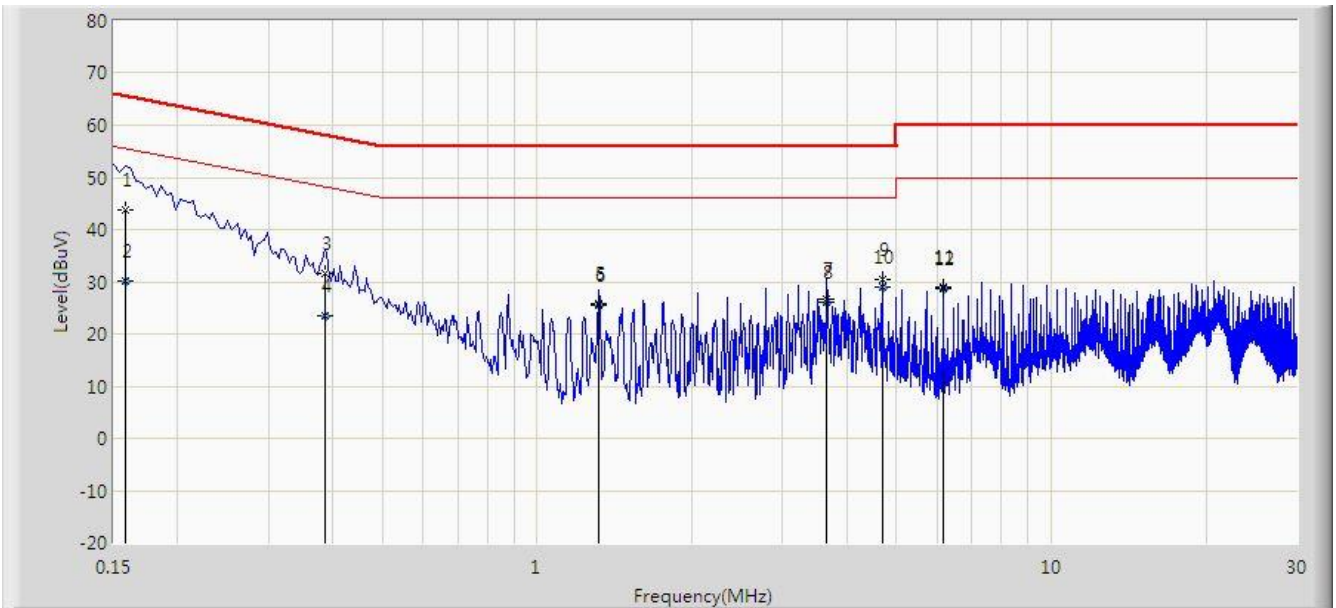


| No | Flag | Mark | Frequency (MHz) | Measure Level (dBuV) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV) | Factor (dB) | Type |
|----|------|------|-----------------|----------------------|----------------------|-----------------|--------------|-------------|------|
| 1  |      |      | 0.154           | 44.882               | 34.142               | -20.900         | 65.781       | 10.740      | QP   |
| 2  |      |      | 0.154           | 24.179               | 13.439               | -31.602         | 55.781       | 10.740      | AV   |
| 3  |      |      | 0.390           | 28.022               | 17.945               | -30.041         | 58.064       | 10.077      | QP   |
| 4  |      |      | 0.390           | 22.605               | 12.528               | -25.459         | 48.064       | 10.077      | AV   |
| 5  |      |      | 0.586           | 29.685               | 19.563               | -26.315         | 56.000       | 10.122      | QP   |
| 6  |      |      | 0.586           | 26.494               | 16.372               | -19.506         | 46.000       | 10.122      | AV   |
| 7  |      |      | 0.882           | 24.603               | 14.633               | -31.397         | 56.000       | 9.970       | QP   |
| 8  |      |      | 0.882           | 21.562               | 11.592               | -24.438         | 46.000       | 9.970       | AV   |
| 9  |      |      | 4.254           | 27.529               | 17.551               | -28.471         | 56.000       | 9.977       | QP   |
| 10 |      | *    | 4.254           | 26.853               | 16.876               | -19.147         | 46.000       | 9.977       | AV   |
| 11 |      |      | 10.998          | 22.721               | 12.613               | -37.279         | 60.000       | 10.107      | QP   |
| 12 |      |      | 10.998          | 18.438               | 8.330                | -31.562         | 50.000       | 10.107      | AV   |

Note: Measure Level (dBμV) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + LISN Factor (dB)

|                                   |                          |
|-----------------------------------|--------------------------|
| Site: SR2                         | Time: 2019/11/04 - 15:03 |
| Limit: FCC_Part15.207_CE_AC Power | Engineer: Liz Yuan       |
| Probe: ENV216_101683_Filter On    | Polarity: Neutral        |
| EUT: PORTABLE POWER BANK          | Power: AC 120V/60Hz      |
| Test Mode: Energy transmission    |                          |



| No | Flag | Mark | Frequency (MHz) | Measure Level (dBuV) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV) | Factor (dB) | Type |
|----|------|------|-----------------|----------------------|----------------------|-----------------|--------------|-------------|------|
| 1  |      |      | 0.158           | 43.648               | 33.358               | -21.921         | 65.568       | 10.290      | QP   |
| 2  |      |      | 0.158           | 30.270               | 19.981               | -25.298         | 55.568       | 10.290      | AV   |
| 3  |      |      | 0.386           | 31.522               | 21.420               | -26.628         | 58.149       | 10.102      | QP   |
| 4  |      |      | 0.386           | 23.373               | 13.271               | -24.776         | 48.149       | 10.102      | AV   |
| 5  |      |      | 1.318           | 25.751               | 15.854               | -30.249         | 56.000       | 9.897       | QP   |
| 6  |      |      | 1.318           | 25.522               | 15.625               | -20.478         | 46.000       | 9.897       | AV   |
| 7  |      |      | 3.662           | 26.746               | 16.807               | -29.254         | 56.000       | 9.939       | QP   |
| 8  |      |      | 3.662           | 26.211               | 16.272               | -19.789         | 46.000       | 9.939       | AV   |
| 9  |      |      | 4.686           | 30.557               | 20.542               | -25.443         | 56.000       | 10.015      | QP   |
| 10 |      | *    | 4.686           | 29.055               | 19.040               | -16.945         | 46.000       | 10.015      | AV   |
| 11 |      |      | 6.150           | 29.040               | 18.915               | -30.960         | 60.000       | 10.125      | QP   |
| 12 |      |      | 6.150           | 28.619               | 18.494               | -21.381         | 50.000       | 10.125      | AV   |

Note: Measure Level (dBμV) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + LISN Factor (dB)

### 7.3. General Radiated Emission

#### 7.3.1. Test Limit

| FCC Part 15.209 Limit |                       |                          |
|-----------------------|-----------------------|--------------------------|
| Frequency (MHz)       | Field Strength (uV/m) | Measurement Distance (m) |
| 0.009 ~ 0.490         | 2400/F(kHz)           | 300                      |
| 0.490 ~ 1.705         | 24000/F(kHz)          | 30                       |
| 1.705 ~ 30.0          | 30                    | 30                       |
| 30 ~ 80               | 100                   | 3                        |
| 80 ~ 216              | 150                   | 3                        |
| 216 ~ 960             | 200                   | 3                        |
| Above 960             | 500                   | 3                        |

Note 1: The lower limit shall apply at the transition frequency.

Note 2: Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

Note 3: E field strength (dBuV/m) = 20 log E field strength (uV/m).

#### 7.3.2. Test Procedure Used

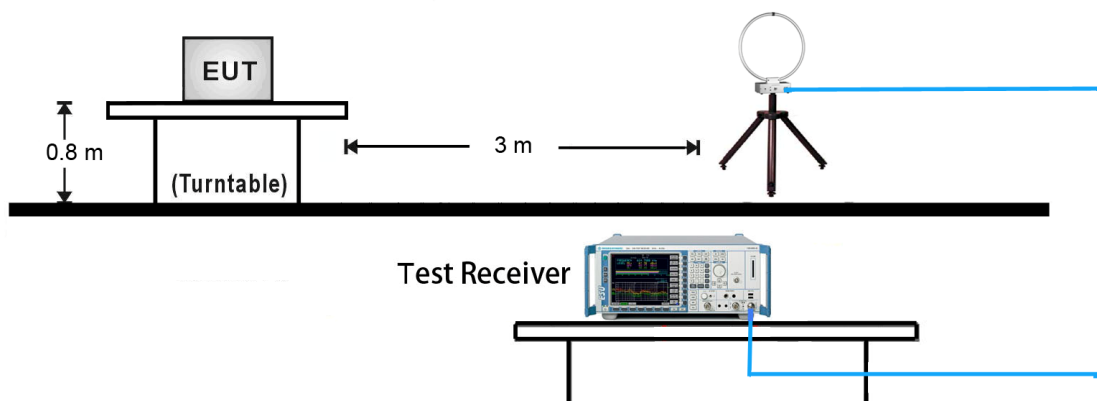
ANSI C63.10 - Section 6.3 (General Requirements)

ANSI C63.10 - Section 6.4 (Standard test method below 30MHz)

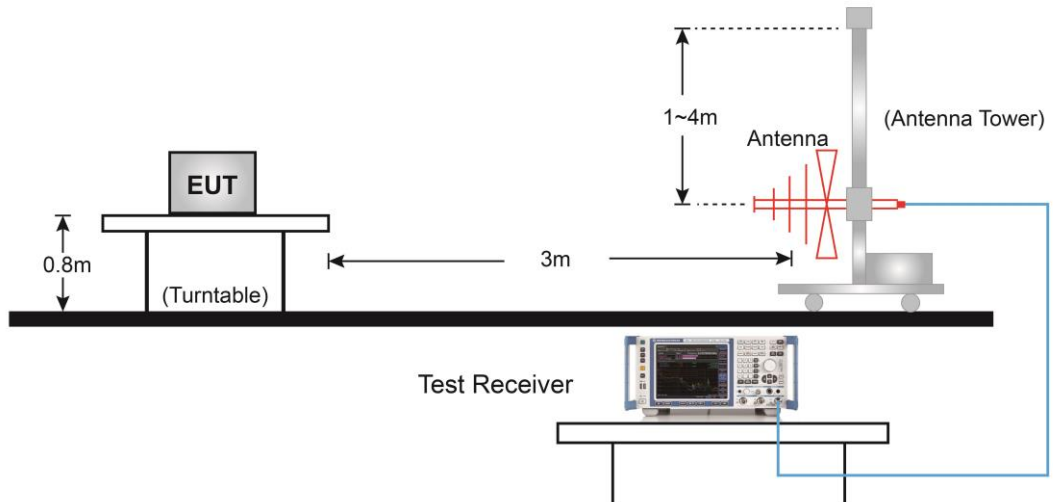
ANSI C63.10 - Section 6.5 (Standard test method above 30MHz to 1GHz)

#### 7.3.3. Test Setup

Below 30MHz Test Setup:



### 30MHz ~ 1GHz Test Setup:



### 7.3.4. Test Result

|               |                     |                   |                         |
|---------------|---------------------|-------------------|-------------------------|
| Product       | PORTABLE POWER BANK | Temperature       | 25°C                    |
| Test Engineer | Snake Ni            | Relative Humidity | 52%                     |
| Test Site     | AC2                 | Test Date         | 2019/06/20 ~ 2019/10/15 |
| Test Mode     | Energy transmission |                   |                         |

| Frequency<br>(MHz)            | Reading<br>Level<br>(dBμV) | Factor<br>(dB) | Measure<br>Level<br>(dBμV/m) | Limit<br>(dBμV/m) | Margin<br>(dB) | Detector | Polarization |
|-------------------------------|----------------------------|----------------|------------------------------|-------------------|----------------|----------|--------------|
| Fundamental Radiated Emission |                            |                |                              |                   |                |          |              |
| 0.142                         | 59.971                     | 20.188         | 80.159                       | 104.558           | -24.399        | Peak     | Face On      |
| Radiated Spurious Emission    |                            |                |                              |                   |                |          |              |
| 0.094                         | 22.508                     | 20.226         | 42.734                       | 108.142           | -65.408        | Peak     | Face On      |
| 0.150                         | 35.798                     | 20.188         | 55.986                       | 104.082           | -48.096        | Peak     | Face On      |
| 0.419                         | 37.021                     | 20.335         | 57.356                       | 95.160            | -37.804        | Peak     | Face On      |
| 43.095                        | 3.207                      | 14.363         | 17.570                       | 40.000            | -22.430        | QP       | Horizontal   |
| 98.385                        | 2.995                      | 12.646         | 15.641                       | 43.500            | -27.859        | QP       | Horizontal   |
| 105.660                       | 2.841                      | 12.953         | 15.794                       | 43.500            | -27.706        | QP       | Horizontal   |
| 464.560                       | 9.936                      | 17.370         | 27.306                       | 46.000            | -18.694        | QP       | Horizontal   |
| 487.840                       | 8.906                      | 17.790         | 26.696                       | 46.000            | -19.304        | QP       | Horizontal   |
| 616.365                       | 8.580                      | 19.869         | 28.449                       | 46.000            | -17.551        | QP       | Horizontal   |
| 35.820                        | 14.691                     | 13.029         | 27.720                       | 40.000            | -12.280        | QP       | Vertical     |
| 42.125                        | 5.628                      | 14.184         | 19.812                       | 40.000            | -20.188        | QP       | Vertical     |
| 63.950                        | 4.727                      | 12.787         | 17.514                       | 40.000            | -22.486        | QP       | Vertical     |
| 103.235                       | 3.204                      | 13.029         | 16.233                       | 43.500            | -27.267        | QP       | Vertical     |
| 241.460                       | 7.592                      | 13.240         | 20.832                       | 46.000            | -25.168        | QP       | Vertical     |
| 534.885                       | 4.395                      | 18.478         | 22.873                       | 46.000            | -23.127        | QP       | Vertical     |

Note 1: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Note 2: Below 30MHz, the loop antenna was positioned in 3 orthogonal planes (X (face on), Y (face off), Z (top)) to determine the orientation resulting in the worst-case emission.

## 7.4. 20dB Spectrum Bandwidth Measurement

### 7.4.1. Test Limit

N/A

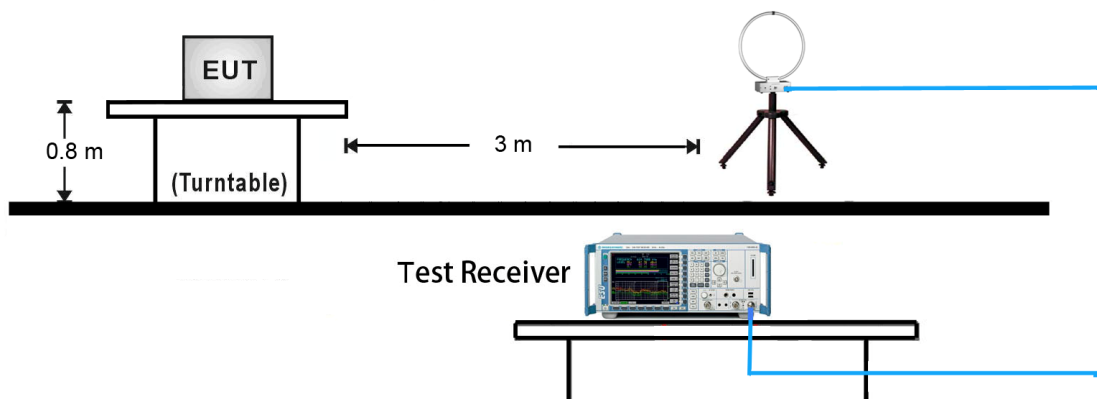
### 7.4.2. Test Procedure Used

ANSI C63.10 Clause 6.9.2

### 7.4.3. Test Setting

1. Set the spectrum span range to overlap the nominal center frequency
2. Set RBW = 1% ~ 5% of the OBW
3. VBW  $\geq 3 \times$  RBW
4. Detector = Peak
5. Trace mode = max hold
6. Sweep = auto couple
7. Allow the trace was allowed to stabilize and marker the highest level.
8. Determine the display level (the highest level - 20dB) and place two markers, one at the lowest frequency and the other at the highest frequency.

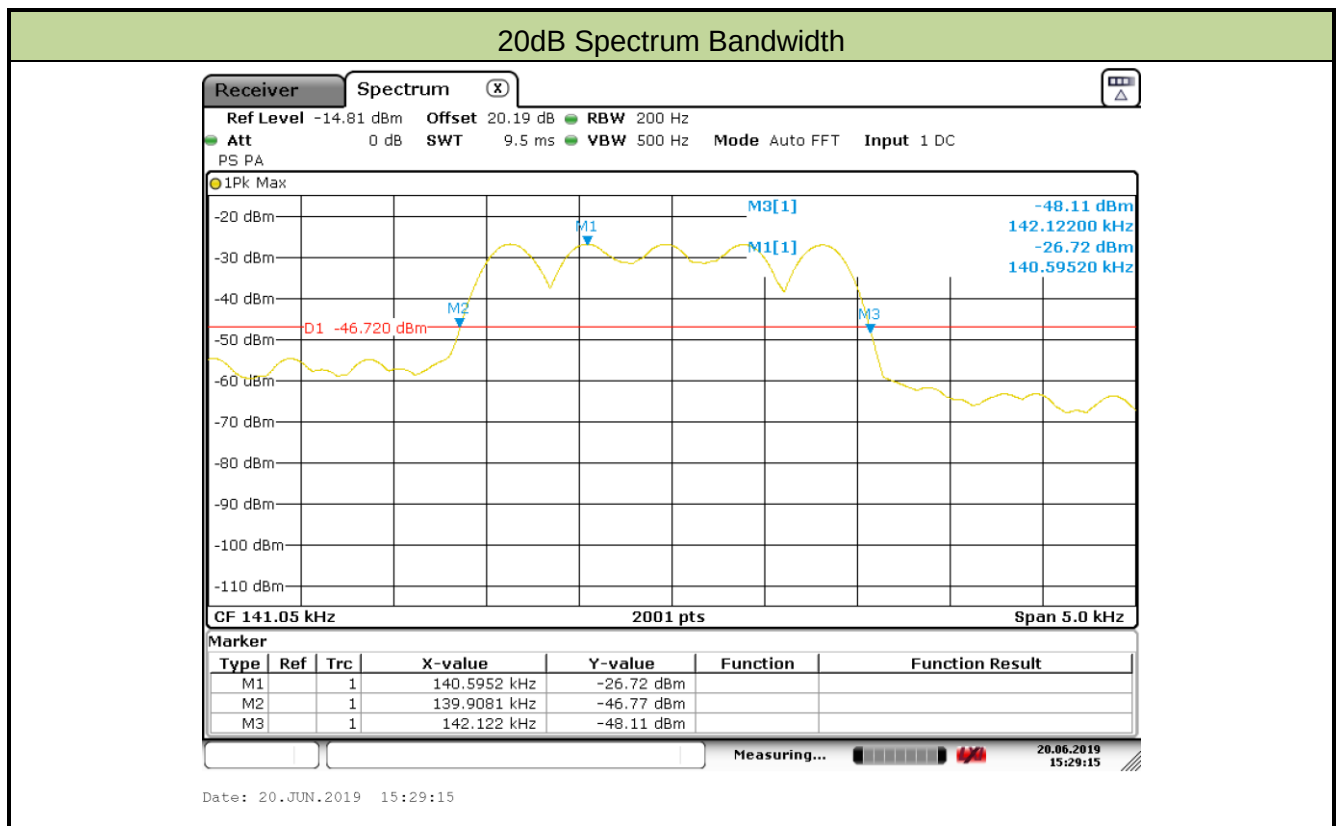
### 7.4.4. Test Setup



### 7.4.5. Test Result

|               |                     |                   |            |
|---------------|---------------------|-------------------|------------|
| Product       | PORTABLE POWER BANK | Temperature       | 25 °C      |
| Test Engineer | Snake Ni            | Relative Humidity | 52%        |
| Test Site     | AC2                 | Test Date         | 2019/06/20 |

| Low Frequency<br>(KHz) | High Frequency<br>(KHz) | Result |
|------------------------|-------------------------|--------|
| 139.908                | 142.122                 | Pass   |



## **8. CONCLUSION**

The data collected relate only the item(s) tested and show that the unit is compliance with Part 15C of the FCC rules.

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The End

## **Appendix A - Test Setup Photograph**

Refer to "1906RSU026-UT" file.

## **Appendix B - EUT Photograph**

Refer to "1906RSU026-UE" file.