



**FCC 47 CFR PART 15 SUBPART C**

**TEST REPORT**

*For*

**UL Listed 10000 mAh Fast Wireless Power Bank Stand Kit**

**MODEL NUMBER: MSL-W184Q**

**FCC ID: 2AN8FMSL-W184Q**

**REPORT NUMBER: 4789185994.1-2**

**ISSUE DATE: November 21, 2019**

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Revision History

| Rev. | Issue Date | Revisions     | Revised By |
|------|------------|---------------|------------|
| V0   | 11/21/2019 | Initial Issue |            |



| Summary of Test Results   |            |         |
|---|------------|---------|
| Description of Test Item  | Standard   | Results |
| Power Line Conducted Emission Test  | FCC 15.207 | PASS    |
| Radiated Emission Test  | FCC 15.209 | PASS    |
| 20dB Bandwidth  | FCC 15.215 | PASS    |
| This test report is only published to and used by the applicant, and it is not for evidence purpose in China. |            |         |



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## 1. ATTESTATION OF TEST RESULTS

### Applicant Information

Company Name: ShenZhen Mossloo Industrial CO., Ltd.  
Address: Rd One No.4 Science Industrial Park Shangxue Village Bantian  
St Longgang District Shenzhen Guangdong

### Manufacturer Information

Company Name: ShenZhen Mossloo Industrial CO., Ltd.  
Address: Rd One No.4 Science Industrial Park Shangxue Village Bantian  
St Longgang District Shenzhen Guangdong

### EUT Description

EUT Name: UL Listed 10000 mAh Fast Wireless Power Bank Stand Kit  
Model: MSL-W184Q  
Brand Name: MSL  
Sample Status: Normal  
Sample ID: 2581812  
Sample Received Date: September 26, 2019  
Date of Tested: September 27, 2019 ~ November 21, 2019

| APPLICABLE STANDARDS         |              |
|------------------------------|--------------|
| STANDARD                     | TEST RESULTS |
| CFR 47 FCC PART 15 SUBPART C | PASS         |

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Checked By:

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Laboratory Leader

Approved By:

Stephen Guo  
Laboratory Manager



## 2. TEST METHODOLOGY

All tests were performed in accordance with the standard FCC CFR 47 Part 2, FCC CFR 47 Part 15C KDB414788 D01 Radiated Test Site v01 and ANSI C63.10-2013.

## 3. FACILITIES AND ACCREDITATION

|                           |   |
|---------------------------|---|
| Test Location             | UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch.   |
| Address                   | Building 10, Innovation Technology Park, Song Shan Lake Hi tech Development Zone, Dongguan, 523808, China   |
| Accreditation Certificate | <p><b>A2LA (Certificate No.: 4102.01)</b><br/>UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with A2LA.</p> <p><b>FCC (FCC Designation No.: CN1187)</b><br/>UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. Has been recognized to perform compliance testing on equipment subject to the Commission's Declaration of Conformity (DoC) and Certification rules</p> <p><b>IC(Company No.: 21320)</b><br/>UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been registered and fully described in a report filed with Industry Canada. The Company Number is 21320.</p> <p><b>VCCI (Registration No.: G-20019, R-20004, C-20012 and T-20011)</b><br/>UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with VCCI, the Membership No. is 3793.<br/>Facility Name:<br/>Chamber D, the VCCI registration No. is G-20019 and R-20004<br/>Shielding Room B, the VCCI registration No. is C-20012 and T-20011</p> |

Note:

1. All tests measurement facilities use to collect the measurement data are located at Building 10, Innovation Technology Park, Song Shan Lake Hi tech Development Zone, Dongguan, 523808, China
2. The test anechoic chamber in UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch had been calibrated and compared to the open field sites and the test anechoic chamber is shown to be equivalent to or worst case from the open field site.
3. For below 30MHz, lab had performed measurements at test anechoic chamber and comparing to measurements obtained on an open field site. And these measurements below 30MHz had been correlated to measurements performed on an OFS.



## 4. CALIBRATION AND UNCERTAINTY

### 4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

### 4.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

| Test Item                                      | Measurement Frequency Range | K | U(dB) |
|--|-----------------------------|---|-------|
| Conducted disturbance at mains terminals ports | 0.15MHz ~ 30MHz             | 2 | 3.62  |
| Radiated disturbance test                      | 9kHz-150kHz                 | 2 | 3.32  |
|  | 150kHz-30MHz                | 2 | 3.72  |
| Radiated Emission Test                         | 30MHz~1GHz                  | 2 | 4.00  |

Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.



## 5. EQUIPMENT UNDER TEST

### 5.1. DESCRIPTION OF EUT

|                     |   |
|---------------------|---|
| EUT Name            | UL Listed 10000 mAh Fast Wireless Power Bank Stand Kit  |
| EUT Description     | The EUT is a power bank with wireless charging function.  |
| Model               | MSL-W184Q   |
| Operation Frequency | 110 ~ 205kHz  |
| Antenna type        | Coil  |
| Ratings             | Capacity: 10000mAh/3.7V/74Wh<br>Type-C Input: 5V/2A, 9V/2A<br>USB A Output: 5V/2.4A (Max)<br>Wireless Output: 5W/7.5W/10W |

Note 1: The EUT have 2 coils, but only 1 coil active at any moment in time, both the coils and circuit before antenna are the same.

Note 2: Because of the limited of the circuit, the 2 coils can't be active at the same time.

### 5.2. TEST MODE

| Mode   | Description  |
|--------|--|
| Mode 1 | Power Bank charging by charging base and with 5W wireless charging load  |
| Mode 2 | Power Bank charging by type-C (5V/2A) and with 5W wireless charging load |
| Mode 3 | Power Bank charging by type-C (9V/2A) and with 5W wireless charging load |
| Mode 4 | Power Bank with USB A 5V/2.4A load and 5W wireless charging load         |
| Mode 5 | Power Bank with 7.5W wireless charging load                              |
| Mode 6 | Power Bank with 10W wireless charging load                               |

Note 1: Because the coils and circuit before antenna are the same, Coil 1, Coil 2 and Coil 1+Coil 2 (Only one coil can be activated) modes had been conducted pre-scanned to determine the worst-case mode from both coils, but only the worst data were recorded in this report.

Note 2: The wireless charging function only support 5W output but USB A port can't work when the power bank was under charged.

Note 3: The wireless charging function only support 5W output when the USB A port discharging.

Note 4: When the wireless charging output is more than 7.5W, the USB A output port can't work normally.





### 5.3. TEST ENVIRONMENT

| Environment Parameter | Selected Values During Tests |               |
|-----------------------|------------------------------|---------------|
| Relative Humidity     | 55 ~ 65%                     |               |
| Atmospheric Pressure: | 1018Pa                       |               |
| Temperature           | TN                           | 22 ~ 28°C     |
| Voltage :             | VL                           | /             |
|                       | VN                           | DC 5V & DC 9V |
|                       | VH                           | /             |

Note: VL= Lower Extreme Test Voltage  
VN= Nominal Voltage  
VH= Upper Extreme Test Voltage  
TN= Normal Temperature

### 5.4. ACCESSORY

#### SUPPORT EQUIPMENT

| Item | Equipment                           | Brand Name | Model Name | Series No. |
|------|-------------------------------------|------------|------------|------------|
| 1    | Wireless charger RX artificial load | /          | /          | /          |
| 2    | Electric Resistance Load            | /          | /          | /          |

#### I/O CABLES

| Cable No | Port       | Connector Type | Cable Type | Cable Length(m) | Remarks |
|----------|------------|----------------|------------|-----------------|---------|
| 1        | USB A      | USB            | Shielded   | 1.0 m           | /       |
| 2        | USB type-C | USB type-C     | Shielded   | 1.0 m           | /       |

#### ACCESSORY

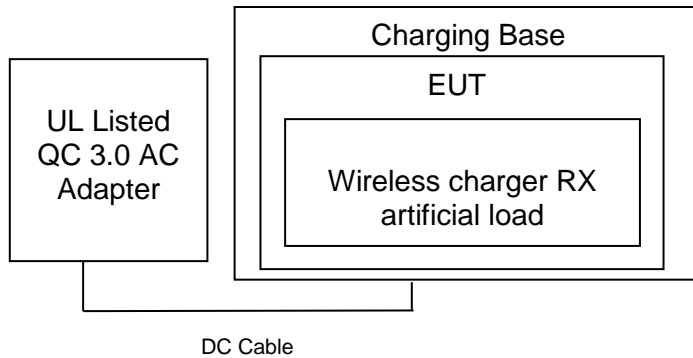
| Item | Accessory                   | Brand Name | Model Name  | Description   |
|------|-----------------------------|------------|-------------|---|
| 1    | UL Listed QC 3.0 AC Adapter | /          | GW-TCQC3-A1 | Input: AC 100~240V, 50/60Hz, 0.8A MAX<br>Output: DC 5V/3A, DC 9V/2A, 12V/1.5A |

#### TEST SETUP

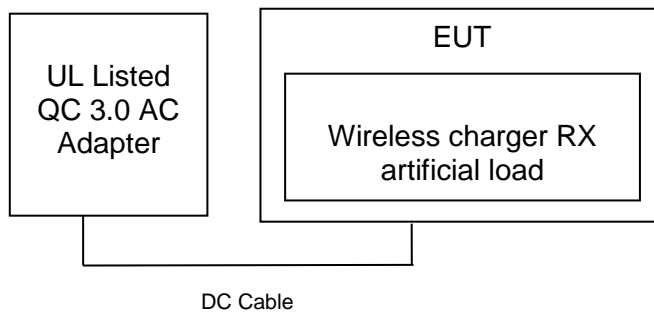
The EUT support wireless charging.

**SETUP DIAGRAM FOR TEST**

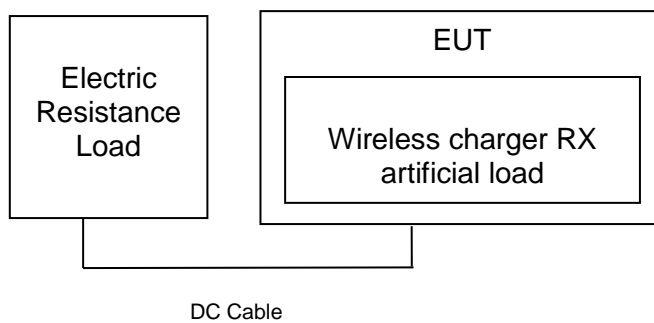
## Mode 1



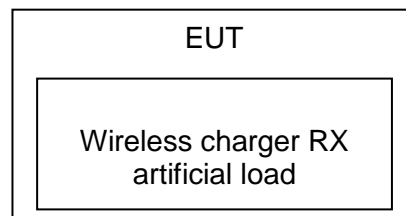
## Mode 2 and Mode 3



## Mode 4



## Mode 5 and Mode 6



**5.5. MEASURING INSTRUMENT LIST**

| Conducted Emissions                 |   |              |                    |                   |              |             |
|-------------------------------------|---|--------------|--------------------|-------------------|--------------|-------------|
| Instrument                          |   |              |                    |                   |              |             |
| Used                                | Equipment                               | Manufacturer | Model No.          | Serial No.        | Last Cal.    | Next Cal.   |
| <input checked="" type="checkbox"/> | EMI Test Receiver                       | R&S          | ESR3               | 101961            | Dec.10,2018  | Dec.10,2019 |
| <input checked="" type="checkbox"/> | Two-Line V-<br>Network                  | R&S          | ENV216             | 101983            | Dec.10,2018  | Dec.10,2019 |
| Software                            |   |              |                    |                   |              |             |
| Used                                | Description                             |              | Manufacturer       | Name              |              | Version     |
| <input checked="" type="checkbox"/> | Test Software for Conducted disturbance |              | Farad              | EZ-EMC            |              | Ver. UL-3A1 |
| Radiated Emissions                  |   |              |                    |                   |              |             |
| Instrument                          |   |              |                    |                   |              |             |
| Used                                | Equipment                               | Manufacturer | Model No.          | Serial No.        | Last Cal.    | Next Cal.   |
| <input checked="" type="checkbox"/> | MXE EMI Receiver                        | KESIGHT      | N9038A             | MY56400036        | Dec.10,2018  | Dec.10,2019 |
| <input checked="" type="checkbox"/> | Hybrid Log<br>Periodic Antenna          | TDK          | HLP-3003C          | 130960            | Sep.17,2018  | Sep.17,2021 |
| <input checked="" type="checkbox"/> | Preamplifier                            | HP           | 8447D              | 2944A09099        | Dec.10,2018  | Dec.10,2019 |
| <input checked="" type="checkbox"/> | Loop antenna                            | Schwarzbeck  | 1519B              | 00008             | Jan.17, 2019 | Jan.17,2022 |
| <input checked="" type="checkbox"/> | Preamplifier                            | TDK          | PA-02-001-<br>3000 | TRS-302-<br>00050 | Jan. 07,2019 | Jan.07,2020 |
| Software                            |   |              |                    |                   |              |             |
| Used                                | Description                             |              | Manufacturer       | Name              |              | Version     |
| <input checked="" type="checkbox"/> | Test Software for Radiated disturbance  |              | Farad              | EZ-EMC            |              | Ver. UL-3A1 |
| Other instruments                   |   |              |                    |                   |              |             |
| Used                                | Equipment                               | Manufacturer | Model No.          | Serial No.        | Last Cal.    | Next Cal.   |
| <input checked="" type="checkbox"/> | Spectrum Analyzer                       | Keysight     | N9030A             | MY55410512        | Dec.10,2018  | Dec.10,2019 |

## 6. 20dB BANDWIDTH TEST

### LIMITS

#### 20dB Bandwidth

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in § 15.215, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

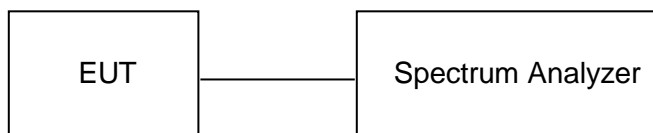
### TEST PROCEDURE

Connect the UUT to the spectrum analyser and use the following settings:

|                  |  |
|------------------|--|
| Center Frequency | The centre frequency of the channel under test |
| Detector         | Peak   |
| RBW              | 1% to 5% of the occupied bandwidth             |
| VBW              | approximately 3×RBW                            |
| Trace            | Max hold                                       |
| Sweep            | Auto couple                                    |

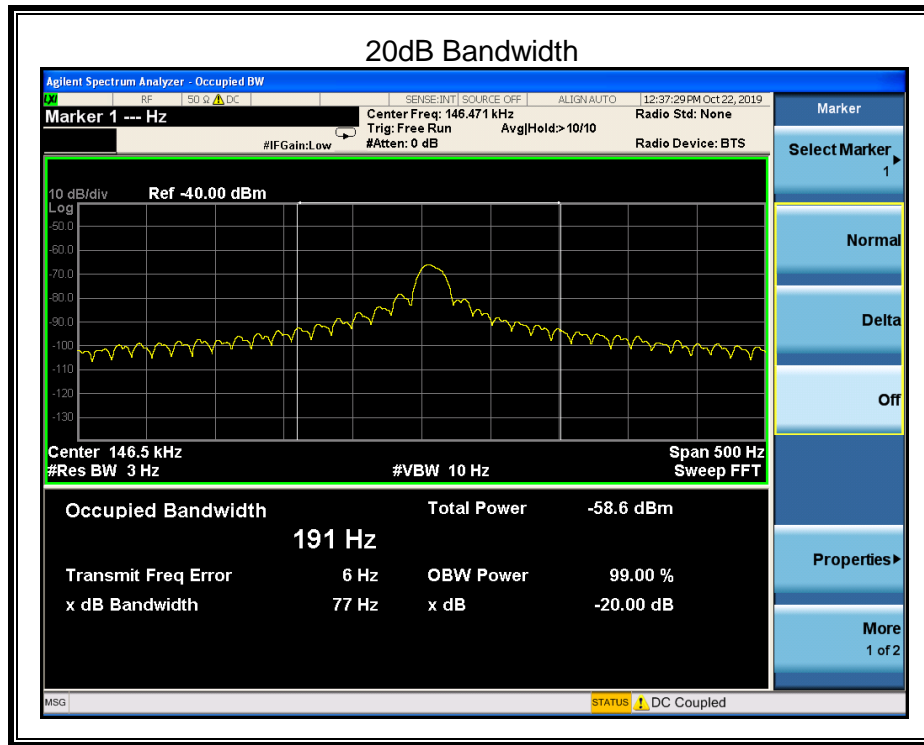
Allow the trace to stabilize and measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 99%/20 dB relative to the maximum level measured in the fundamental emission.

### TEST SETUP



### RESULTS

| Frequency (KHz) | 20dB Bandwidth (Hz) | 99% Bandwidth (Hz) |
|-----------------|---------------------|--------------------|
| 146.5           | 77                  | 191                |



Note: All the modes have been tested, only the worst data record in the report.



## 7. EMISSION TEST

### LIMITS

Please refer to FCC §15.205 and §15.209

Radiation Disturbance Test Limit for FCC (Class B)(9KHz-1GHz)

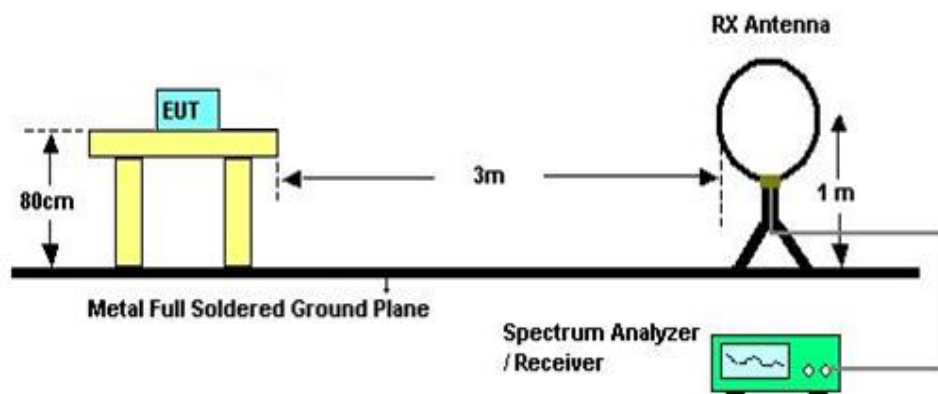
| Frequency (MHz) | Field Strength (microvolts/meter) | Measurement Distance (meters) |
|-----------------|-----------------------------------|-------------------------------|
| 0.009~0.490     | 2400/F(KHz)                       | 300                           |
| 0.490~1.705     | 24000/F(KHz)                      | 30                            |
| 1.705~30.0      | 30                                | 30                            |
| 30~88           | 100                               | 3                             |
| 88~216          | 150                               | 3                             |
| 216~960         | 200                               | 3                             |
| 960~1000        | 500                               | 3                             |

Note: 1) At frequencies at or above 30 MHz, measurements may be performed at a distance other than what is specified provided: measurements are not made in the near field except where it can be shown that near field measurements are appropriate due to the characteristics of the device; and it can be demonstrated that the signal levels needed to be measured at the distance employed can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 meters unless it can be further demonstrated that measurements at a distance of 30 meters or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse linear-distance for field strength measurements; inverse-linear-distance-squared for power density measurements).

(2) At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed below 30 MHz, when performing measurements at a closer distance than specified, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). This paragraph (f) shall not apply to Access BPL devices operating below 30 MHz.

## TEST SETUP AND PROCEDURE

Below 30MHz (Loop Antenna)

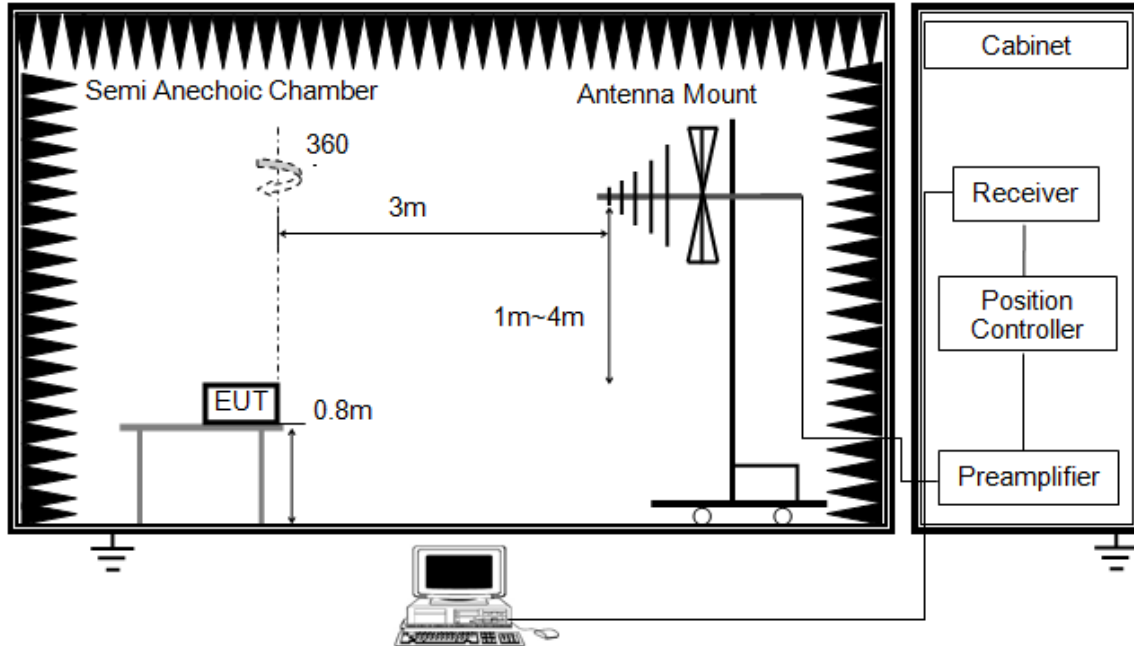


The setting of the spectrum analyzer

|       |  |
|-------|--|
| RBW   | 200Hz (From 9kHz to 0.15MHz)/ 9KHz (From 0.15MHz to 30MHz) |
| VBW   | 200Hz (From 9kHz to 0.15MHz)/ 9KHz (From 0.15MHz to 30MHz) |
| Sweep | Auto   |
| Trace | Max hold   |

1. The testing follows the guidelines in ANSI C63.10-2013 and 414788 D01 Radiated Test Site v01.
2. The EUT was arranged to its worst case and then turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both Horizontal, Face-on and Face-off polarizations of the antenna are set to make the measurement.
3. The EUT was placed on a turntable with 80cm meter above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a 1m height antenna tower.
5. The radiated emission limits are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.
6. For measurement below 1GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
7. Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30m open area test site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 414788.

Below 1G and above 30MHz



The setting of the spectrum analyzer

|          |          |
|----------|----------|
| RBW      | 120K     |
| VBW      | 300K     |
| Sweep    | Auto     |
| Detector | Peak/QP  |
| Trace    | Max hold |

1. The testing follows the guidelines in ANSI C63.10-2013.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
3. The EUT was placed on a turntable with 0.8m above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. For measurement below 1GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

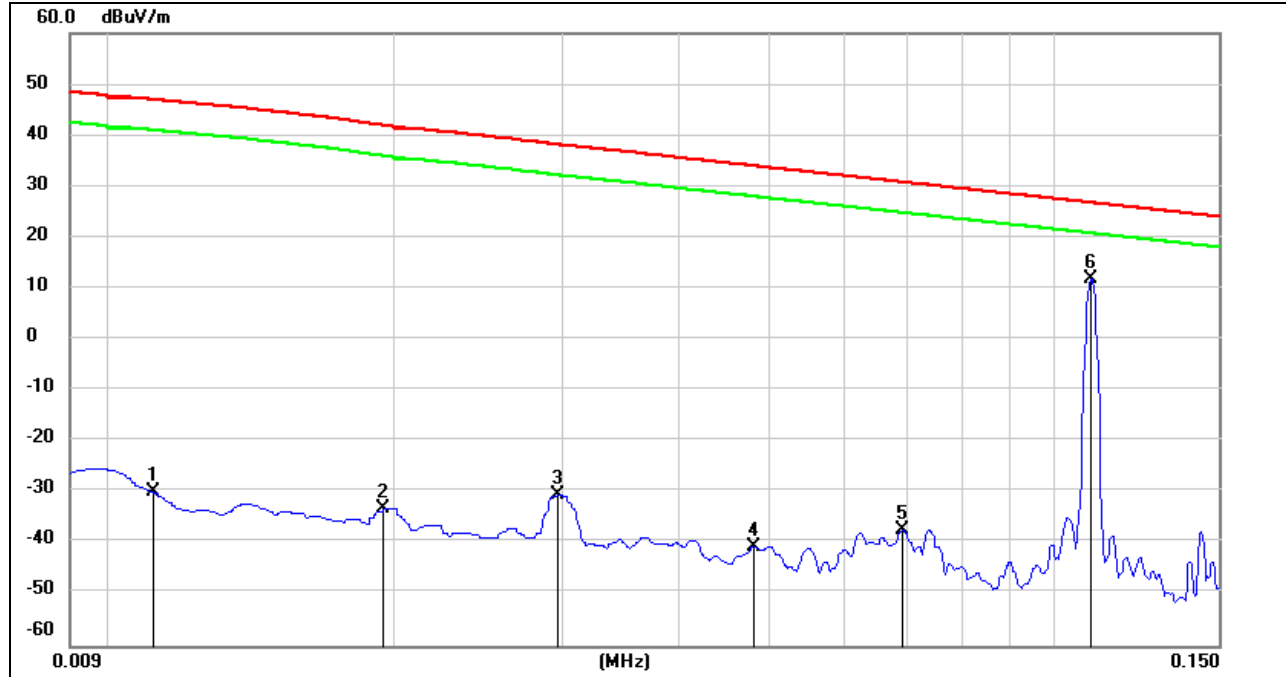


## RESULTS

### 7.1. SPURIOUS EMISSIONS BELOW 30MHz

#### FCC PART 15C BELOW 30MHz SPURIOUS EMISSIONS (MODE 6, LOOP ANTENNA FACE ON TO THE EUT, WORST-CASE CONFIGURATION)

9kHz~ 150kHz



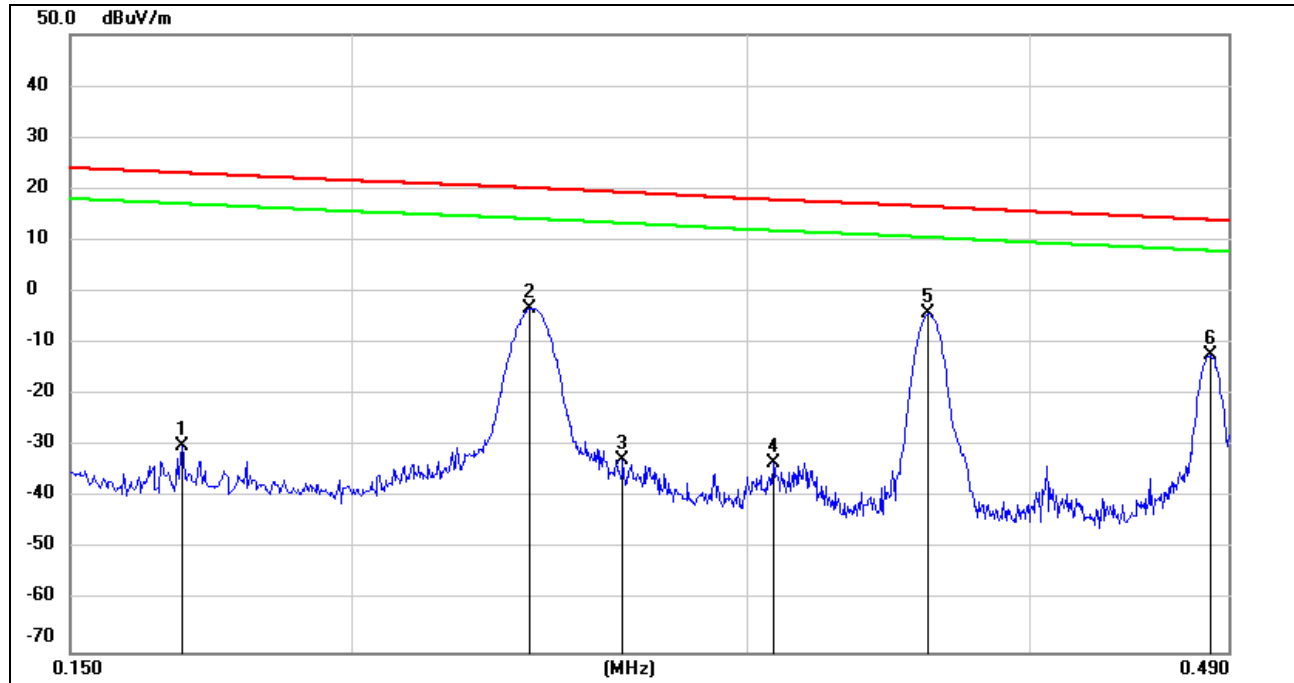
| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|-----|-----------------|----------------|----------------|-----------------|----------------|-------------|--------|
| 1   | 0.0110          | 71.58          | -101.52        | -29.94          | 47.00          | -76.94      | peak   |
| 2   | 0.0194          | 67.80          | -101.02        | -33.22          | 41.94          | -75.16      | peak   |
| 3   | 0.0298          | 70.74          | -101.11        | -30.37          | 38.13          | -68.50      | peak   |
| 4   | 0.0480          | 60.75          | -101.35        | -40.60          | 34.01          | -74.61      | peak   |
| 5   | 0.0693          | 63.59          | -100.99        | -37.40          | 30.79          | -68.19      | peak   |
| 6   | 0.1118          | 113.32         | -101.41        | 11.91           | 26.80          | -14.89      | peak   |

Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.

3. All 3 polarizations(Horizontal, Face-on and Face-off) of the loop antenna had been tested, but only the worst data recorded in the report.

4. The test was performed at 3m test site, but we added the corresponding factor to extrapolated the result to the specified distance according to FCC 15.31(f)(2).

150kHz ~ 490kHz

| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|-----|-----------------|----------------|----------------|-----------------|----------------|-------------|--------|
| 1   | 0.1684          | 71.90          | -101.87        | -29.97          | 23.08          | -53.05      | peak   |
| 2   | 0.2398          | 98.69          | -101.80        | -3.11           | 20.18          | -23.29      | peak   |
| 3   | 0.2639          | 69.06          | -101.78        | -32.72          | 19.33          | -52.05      | peak   |
| 4   | 0.3078          | 68.67          | -101.78        | -33.11          | 17.86          | -50.97      | peak   |
| 5   | 0.3608          | 97.54          | -101.76        | -4.22           | 16.54          | -20.76      | peak   |
| 6   | 0.4808          | 89.47          | -101.71        | -12.24          | 13.98          | -26.22      | peak   |

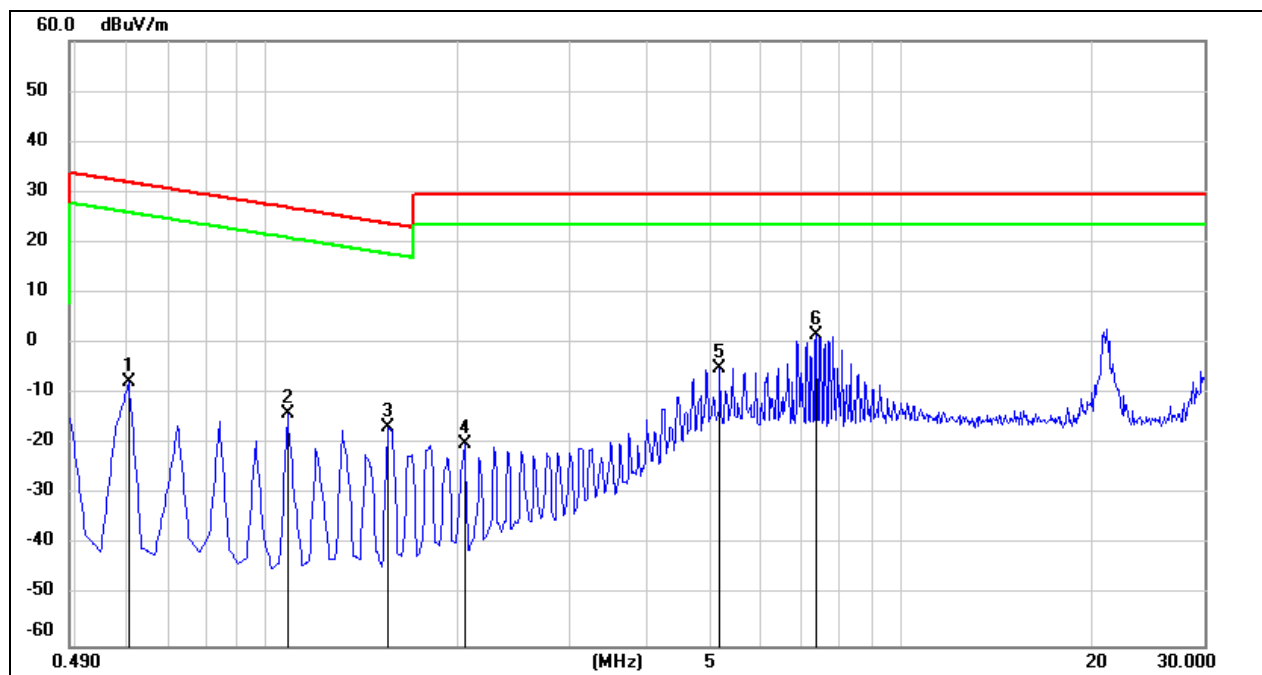
Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.

3. All 3 polarizations(Horizontal, Face-on and Face-off) of the loop antenna had been tested, but only the worst data recorded in the report.

4. The test was performed at 3m test site, but we added the corresponding factor to extrapolated the result to the specified distance according to FCC 15.31(f)(2).

### 490kHz ~ 30MHz



| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| 1   | 0.6080             | 93.13             | -100.87           | -7.74              | 31.93             | -39.67         | peak   |
| 2   | 1.0802             | 82.57             | -96.65            | -14.08             | 26.94             | -41.02         | peak   |
| 3   | 1.5524             | 75.59             | -92.37            | -16.78             | 23.79             | -40.57         | peak   |
| 4   | 2.0540             | 67.98             | -87.85            | -19.87             | 29.54             | -49.41         | peak   |
| 5   | 5.1821             | 57.04             | -61.90            | -4.86              | 29.54             | -34.40         | peak   |
| 6   | 7.3658             | 63.14             | -61.58            | 1.56               | 29.54             | -27.98         | peak   |

Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.

3. All 3 polarizations(Horizontal, Face-on and Face-off) of the loop antenna had been tested, but only the worst data recorded in the report.

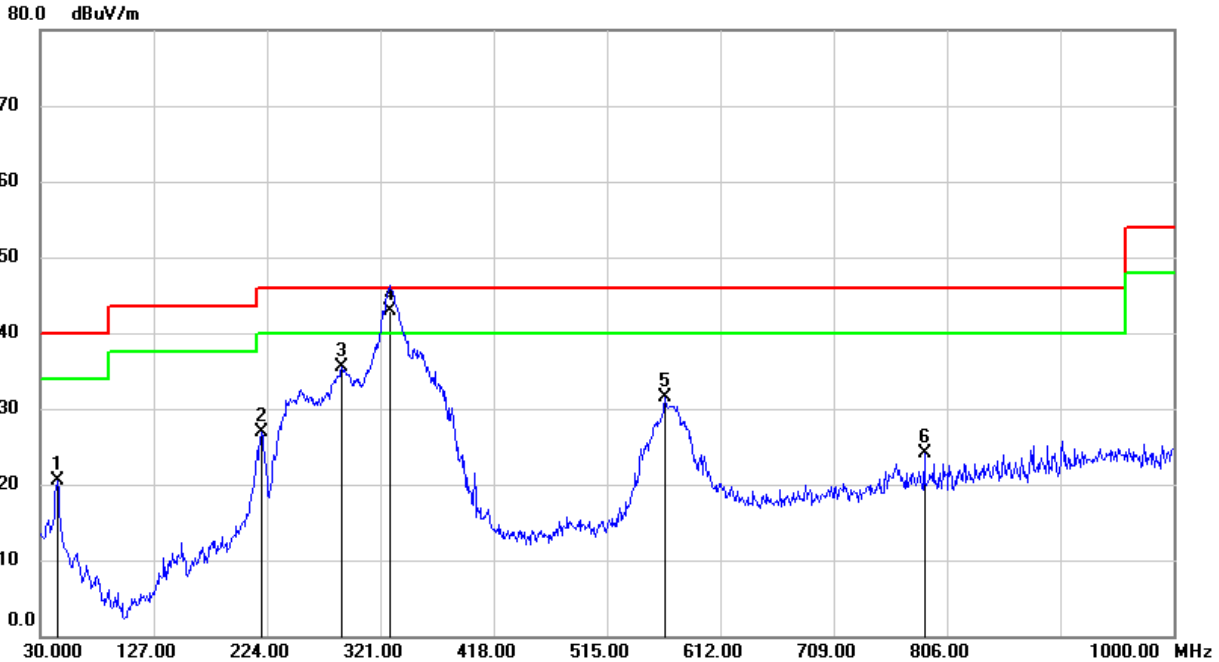
4. The test was performed at 3m test site, but we added the corresponding factor to extrapolated the result to the specified distance according to FCC 15.31(f)(2).

Note: All the modes have been tested, only the worst data record in the report.



## 7.2. SPURIOUS EMISSIONS 30MHz - 1GHz

### FCC PART15C SPURIOUS EMISSIONS (MODE 6, WORST-CASE CONFIGURATION, HORIZONTAL)



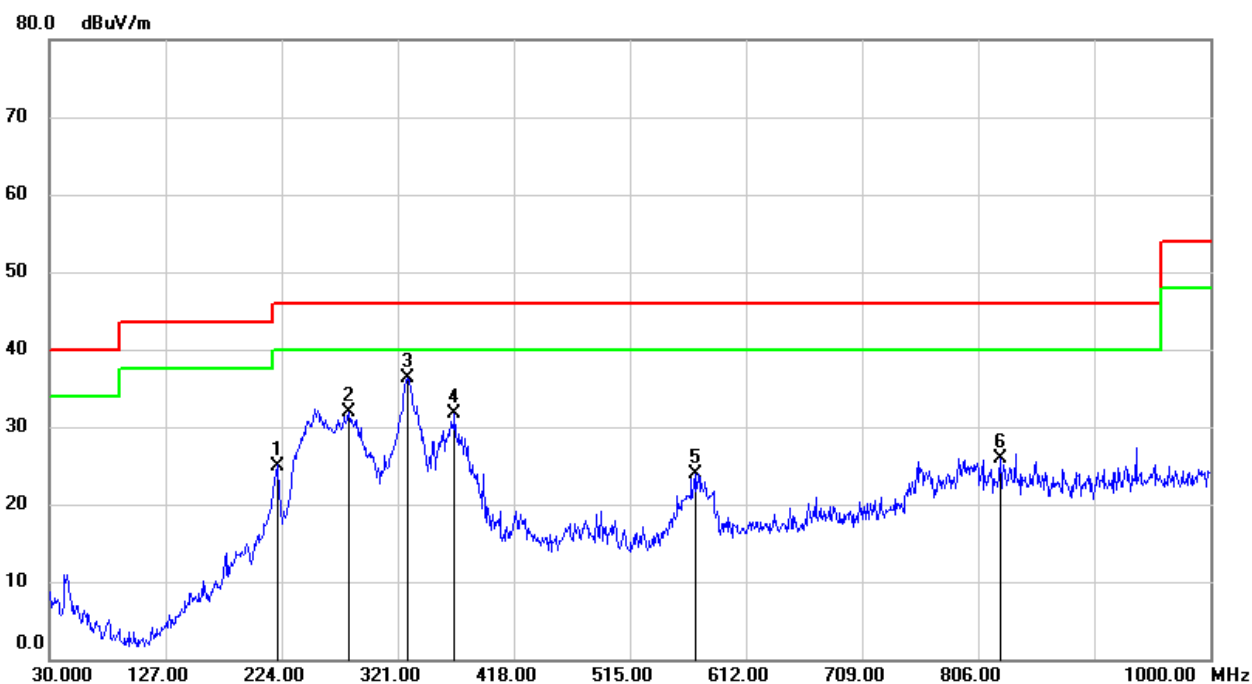
| No. | Frequency (MHz) | Reading (dBuV/m) | Correct dB/m | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|-----|-----------------|------------------|--------------|-----------------|----------------|-------------|--------|
| 1   | 44.5500         | 38.55            | -18.05       | 20.50           | 40.00          | -19.50      | QP     |
| 2   | 219.1500        | 43.76            | -16.87       | 26.89           | 46.00          | -19.11      | QP     |
| 3   | 288.0200        | 50.01            | -14.50       | 35.51           | 46.00          | -10.49      | QP     |
| 4   | 328.7600        | 56.40            | -13.57       | 42.83           | 46.00          | -3.17       | QP     |
| 5   | 564.4699        | 40.64            | -9.17        | 31.47           | 46.00          | -14.53      | QP     |
| 6   | 786.6000        | 29.66            | -5.56        | 24.10           | 46.00          | -21.90      | QP     |

Note: 1. Result Level = Read Level + Correct Factor.

2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.

3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

4. All the noise are created from the digital circuit. It is not created by wireless charging circuit.

**FCC PART15C SPURIOUS EMISSIONS (MODE 6, WORST-CASE CONFIGURATION, VERTICAL)**

| No. | Frequency (MHz) | Reading (dBuV/m) | Correct dB/m | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|-----|-----------------|------------------|--------------|-----------------|----------------|-------------|--------|
| 1   | 220.1200        | 41.93            | -16.93       | 25.00           | 46.00          | -21.00      | QP     |
| 2   | 280.2600        | 46.76            | -14.85       | 31.91           | 46.00          | -14.09      | QP     |
| 3   | 328.7600        | 49.87            | -13.57       | 36.30           | 46.00          | -9.70       | QP     |
| 4   | 368.5300        | 44.56            | -12.83       | 31.73           | 46.00          | -14.27      | QP     |
| 5   | 569.3200        | 32.99            | -9.01        | 23.98           | 46.00          | -22.02      | QP     |
| 6   | 824.4300        | 30.82            | -4.86        | 25.96           | 46.00          | -20.04      | QP     |

Note: 1. Result Level = Read Level + Correct Factor.

2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.

3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto

4. All the noise are created from the digital circuit. It is not created by wireless charging circuit.

Note: All the modes had been tested, but only the worst data recorded in the report.

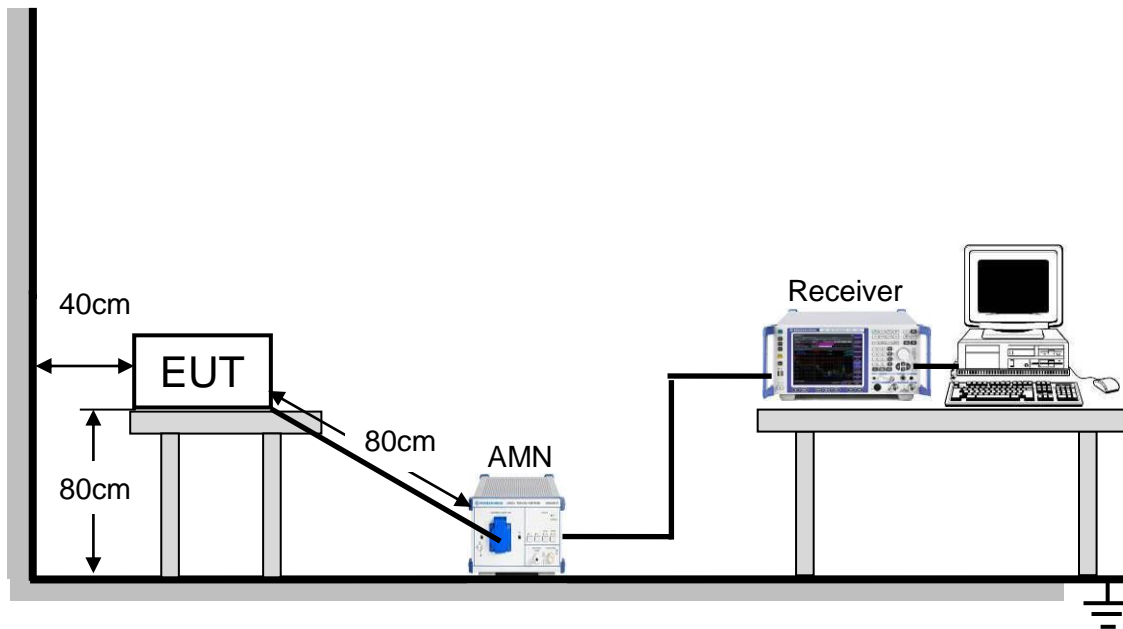
## 8. AC POWER LINE CONDUCTED EMISSIONS

### LIMITS

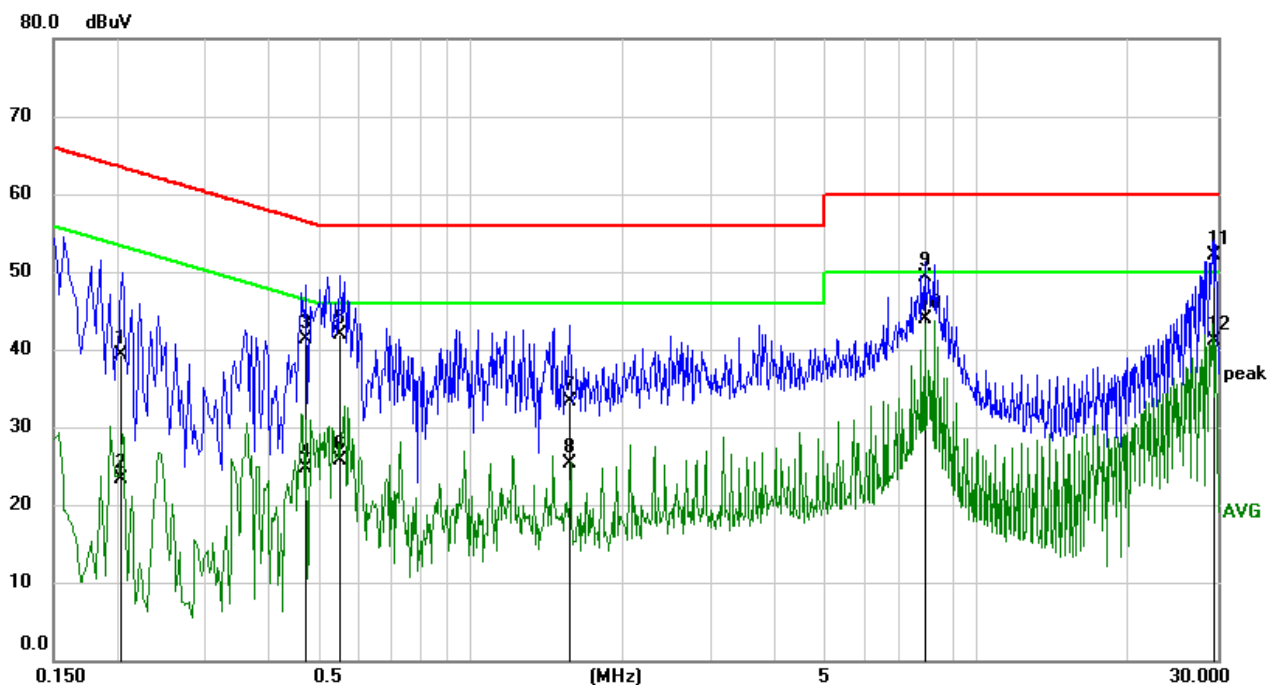
Please refer to FCC §15.207 (a) .

| FREQUENCY (MHz) | (dBuV)     |           |
|-----------------|------------|-----------|
|                 | Quasi-peak | Average   |
| 0.15 -0.5       | 66 - 56 *  | 56 - 46 * |
| 0.50 -5.0       | 56.00      | 46.00     |
| 5.0 -30.0       | 60.00      | 50.00     |

### TEST SETUP AND PROCEDURE



The EUT is put on a table of non-conducting material that is 0.8m high. The vertical conducting wall of shielding is located 40cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through an Artificial Mains Network (A.M.N.). An EMI Measurement Receiver (R&S Test Receiver ESR3) is used to test the emissions from both sides of AC line. According to the requirements in Section 6.2 of ANSI C63.10-2013. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak and average detector mode. The bandwidth of EMI test receiver is set at 9kHz. The arrangement of the equipment is installed to meet the standards and operating in a manner, which tends to maximize its emission characteristics in a normal application.

**TEST RESULTS****LINE L RESULTS (MODE 1, WORST-CASE CONFIGURATION)**

| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB) | Result<br>(dBuV) | Limit<br>(dBuV) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-----------------|------------------|-----------------|----------------|--------|
| 1   | 0.2031             | 29.68             | 9.60            | 39.28            | 63.48           | -24.20         | QP     |
| 2   | 0.2031             | 13.74             | 9.60            | 23.34            | 53.48           | -30.14         | AVG    |
| 3   | 0.4706             | 31.73             | 9.60            | 41.33            | 56.50           | -15.17         | QP     |
| 4   | 0.4706             | 15.08             | 9.60            | 24.68            | 46.50           | -21.82         | AVG    |
| 5   | 0.5568             | 32.34             | 9.60            | 41.94            | 56.00           | -14.06         | QP     |
| 6   | 0.5568             | 16.16             | 9.60            | 25.76            | 46.00           | -20.24         | AVG    |
| 7   | 1.5806             | 23.66             | 9.62            | 33.28            | 56.00           | -22.72         | QP     |
| 8   | 1.5806             | 15.75             | 9.62            | 25.37            | 46.00           | -20.63         | AVG    |
| 9   | 7.9033             | 39.58             | 9.72            | 49.30            | 60.00           | -10.70         | QP     |
| 10  | 7.9033             | 34.18             | 9.72            | 43.90            | 50.00           | -6.10          | AVG    |
| 11  | 29.6677            | 42.28             | 9.79            | 52.07            | 60.00           | -7.93          | QP     |
| 12  | 29.6677            | 31.28             | 9.79            | 41.07            | 50.00           | -8.93          | AVG    |

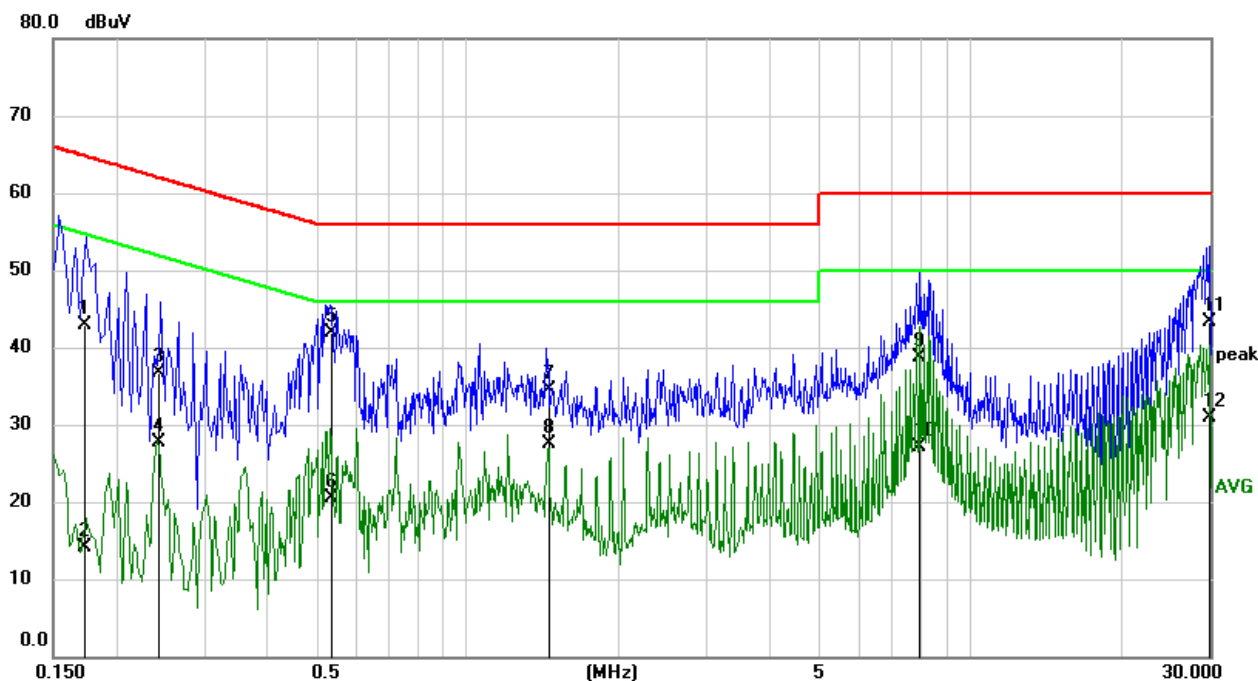
Note: 1. Result = Reading +Correct Factor.

2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).

4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.

5. The extension cord/outlet strip was calibrated with the LISN as required by ANSI C63.10:2013 Clause 6.2.2.

**LINE N RESULTS (MODE 1, WORST-CASE CONFIGURATION)**

| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB) | Result<br>(dBuV) | Limit<br>(dBuV) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-----------------|------------------|-----------------|----------------|--------|
| 1   | 0.1723             | 33.21             | 9.60            | 42.81            | 64.85           | -22.04         | QP     |
| 2   | 0.1723             | 4.60              | 9.60            | 14.20            | 54.85           | -40.65         | AVG    |
| 3   | 0.2427             | 27.13             | 9.60            | 36.73            | 62.00           | -25.27         | QP     |
| 4   | 0.2427             | 18.16             | 9.60            | 27.76            | 52.00           | -24.24         | AVG    |
| 5   | 0.5379             | 32.40             | 9.60            | 42.00            | 56.00           | -14.00         | QP     |
| 6   | 0.5379             | 10.86             | 9.60            | 20.46            | 46.00           | -25.54         | AVG    |
| 7   | 1.4515             | 24.87             | 9.61            | 34.48            | 56.00           | -21.52         | QP     |
| 8   | 1.4515             | 17.84             | 9.61            | 27.45            | 46.00           | -18.55         | AVG    |
| 9   | 7.9835             | 29.03             | 9.72            | 38.75            | 60.00           | -21.25         | QP     |
| 10  | 7.9835             | 17.39             | 9.72            | 27.11            | 50.00           | -22.89         | AVG    |
| 11  | 29.9549            | 33.38             | 9.87            | 43.25            | 60.00           | -16.75         | QP     |
| 12  | 29.9549            | 21.07             | 9.87            | 30.94            | 50.00           | -19.06         | AVG    |

Note: 1. Result = Reading +Correct Factor.

2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).

4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.

5. The extension cord/outlet strip was calibrated with the LISN as required by ANSI C63.10:2013 Clause 6.2.2.

Note: All the modes had been tested, but only the worst data recorded in the report.

**END OF REPORT**