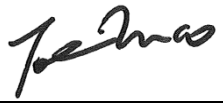
**CTC Laboratories, Inc.**

1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Shenzhen, Guangdong, China
Tel: +86-755- 27521059 Fax: +86-755- 27521011 Http://www.sz-ctc.org.cn

# TEST REPORT

| | |
|---|---|
| **Report No. ·····:** | **CTC20221868E01** |
| **FCC ID·····:** | **2A7TW-P1** |
| **Applicant·····:** | **Shenzhen Lanbon Smart Living Hi-Tech Co., Ltd.** |
| Address·····: | 320 3rd Floor, ZhanRun Business Building, Yunfeng Road No.1 , Dalang,Longhua district,Shenzhen,China |
| Manufacturer·····: | Shenzhen Lanbon Smart Living Hi-Tech Co., Ltd. |
| Address·····: | 320 3rd Floor, ZhanRun Business Building, Yunfeng Road No.1 , Dalang,Longhua district,Shenzhen,China |
| **Product Name·····:** | **Wall-mounted wireless charger** |
| Trade Mark·····: | / |
| Model/Type reference·····: | P1 |
| Listed Model(s) ·····: | P2， P3 ，X1，X2，X3 |
| **Standard·····:** | **47 CFR FCC Part 18** |
| Date of receipt of test sample…: | June 29, 2022 |
| Date of testing……...: | June 30, 2022 to July 9, 2022 |
| Date of issue……....: | July 9, 2022 |
| **Result……:** | **PASS** |

| | | |
|---|---|---|
| Compiled by:<br>(Printed name+signature) | Zoe Xie |  |
| Supervised by:<br>(Printed name+signature) | Miller Ma |  |
| Approved by:<br>(Printed name+signature) | Totti Zhao |  |

| | |
|---|---|
| **Testing Laboratory Name…...:** | **CTC Laboratories, Inc.** |
| Address……: | 1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Shenzhen, Guangdong, China |

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# 1. TEST SUMMARY

## 1.1. Test Standards

The tests were performed according to following standards:
47 CFR FCC Part 18: Industrial, Scientific, and Medical Equipment Unintentional Radiators.
ANSI C63.4: 2014: American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40GHz.

## 1.2. Report version

| Revised No. | Date of issue | Description |
|---|---|---|
| 01 | July 9,2022 | Original |
| | | |
| | | |
| | | |

## 1.3. Test Description

| FCC CFR Title 47 FCC Part 18 | | | |
|---|---|---|---|
| **Test Item** | **Standard Section** | **Result** | **Test Engineer** |
| Conducted Emissions Test | 18.307(b) | Pass | Eva Feng |
| Radiated Emission Test | 18.305(b),(c) | Pass | Ice Lu |

Note: “N/A” is no application.
The measurement uncertainty is not included in the test result.

## 1.4. Test Facility

**Address of the report laboratory**

**CTC Laboratories, Inc.**

Add: 1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Shenzhen, Guangdong, China

**Laboratory accreditation**

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

**CNAS-Lab Code: L5365**

CTC Laboratories, Inc. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation .Criteria for Testing and Calibration Laboratories (identical to ISO/IEC17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories.

**A2LA-Lab Cert. No.: 4340.01**

CTC Laboratories, Inc. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in th e identified field of testing.

**FCC (Registration No.: 951311, Designation Number CN1208)**

CTC Laboratories, Inc. EMC Laboratory has been registered and fully described in a report filed with the (F CC) Federal Communications Commission. The acceptance letter from the FCC is maintained inour files. Registration 951311, Aug 26, 2017.

## 1.5. Measurement Uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to TR-100028-01" Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics; Part 1" and TR-100028-02 "Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics; Part 2 " and is documented in the CTC Laboratories, Inc. quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Below is the best measurement capability for CTC Laboratories, Inc.

| Test | Measurement Frequency Range | U (dB) | Note |
|---|---|---|---|
| Conducted Emission | 9kHz ~ 30MHz | 3.08 | Main Power Port |
| Radiated Emission | 0.009MHz ~ 30MHz | 5.03 | 3m chamber 2 |
| Radiated Emission | 30MHz ~ 1000MHz | 4.51 | 3m chamber 2 |

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

## 1.6. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

| | |
|---|---|
| Normal Temperature: | 25°C |
| Lative Humidity | 55 % |
| Air Pressure | 101kPa |

# 2. GENERAL INFORMATION

## 2.1. Client Information

| | |
|---|---|
| Applicant: | Shenzhen Lanbon Smart Living Hi-Tech Co., Ltd. |
| Address: | 320 3rd Floor, ZhanRun Business Building, Yunfeng Road No.1 , Dalang,Longhua district,Shenzhen,China |
| Manufacturer: | Shenzhen Lanbon Smart Living Hi-Tech Co., Ltd. |
| Address: | 320 3rd Floor, ZhanRun Business Building, Yunfeng Road No.1 , Dalang,Longhua district,Shenzhen,China |

## 2.2. General Description of EUT

| | |
|---|---|
| Product Name: | Wall-mounted wireless charger |
| Marketing Name: | / |
| Model/Type reference: | P1 |
| Listed Model(s): | P2， P3 ，X1，X2，X3 |
| Model Difference: | All these models are identical in the same PCB, Layout and electrical circuit, The only difference is model name |
| Power Supply: | 5Vdc/2A, 9Vdc/2A , 12Vdc/2A from AC/DC Adapter |
| Hardware version: | / |
| Firmware version: | / |
| Serial Number: | 03f6753 |
| **Wireless Charger** | |
| Operation Frequency Range: | 110kHz ~ 205kHz |
| Operation Frequency: | 129kHz |
| Output Power: | 15W,10W,7.5W,5W |
| Antenna Type: | Coil Antenna, 0dBi |

## 2.3. Accessory Equipment information

| Equipment Information | | | |
|---|---|---|---|
| Name | Model | S/N | Manufacturer |
| Phone | P40 PRO | --- | HUAWEI |
| AC/DC Adapter | CD122 | --- | UGREEN |
| **Cable Information** | | | |
| Name | Shielded Type | Ferrite Core | Length |
| USB Cable | With | Without | 1M |

## 2.4. Description of Test Modes

| Test mode | Wireless charging (5W) | Wireless charging (7.5W) | Wireless charging (10W) | Wireless charging (15W) |
|---|---|---|---|---|
| 1 | ■ | | | |
| 2 | | ■ | | |
| 3 | | | ■ | |
| 4 | | | | ■ |

Note: ■ is operation mode.

Pre-scan above all test mode, found below test mode which it was worse case mode, so only show the test data for worse case mode on the test report.

| Test item | Test mode |
|---|---|
| Conducted emission | 4 |
| Radiated emission | 4 |

Note: “N/A” is no application.

## 2.5. Measurement Instruments List

| Conducted emission | | | | | |
|---|---|---|---|---|---|
| Item | Test Equipment | Manufacturer | Model No. | Serial No. | Calibrated until |
| 1 | LISN | R&S | ENV216 | 101112 | Dec. 25, 2022 |
| 2 | LISN | R&S | ENV216 | 101113 | Dec. 25, 2022 |
| 3 | EMI Test Receiver | R&S | ESCS30 | 100353 | Dec. 25, 2022 |
| 4 | ISN CAT6 | Schwarzbeck | NTFM 8158 | 8158-0046 | Dec. 25, 2022 |

| Radiated emission(3m chamber 2) | | | | | |
|---|---|---|---|---|---|
| Item | Test Equipment | Manufacturer | Model No. | Serial No. | Calibrated Until |
| 1 | Trilog-Broadband Antenna | Schwarzbeck | VULB 9168 | 9168-1013 | Jan. 12, 2023 |
| 2 | Horn Antenna | Schwarzbeck | BBHA 9120D | 9120D-647 | Dec. 24, 2022 |
| 3 | Loop Antenna | ZHINAN | ZN30900A | / | Dec. 25, 2022 |
| 4 | Spectrum Analyzer | R&S | FSU26 | 100105 | Dec. 25, 2022 |
| 5 | Spectrum Analyzer | R&S | FSV40-N | 101331 | Mar. 15, 2023 |
| 6 | Pre-Amplifier | SONOMA | 310 | 186194 | Dec. 25, 2022 |
| 7 | Low Noise Pre-Amplifier | EMCI | EMC051835 | 980075 | Dec. 25, 2022 |
| 8 | Test Receiver | R&S | ESCI7 | 100967 | Dec. 25, 2022 |
| 9 | 3m Chamber | Frankonia | EE025 | / | Oct. 23, 2024 |

Note: The Cal. Interval was one year.

# 3. EMC EMISSION TEST

## 3.1. Radiated Emission

**LIMIT**

**FCC CFR Title 47 Part 18 Section 18.305(b):**

| Equipment | Operating frequency | RF Power generated by equipment (watts) | Field strength limit (uV/m) | Distance (meters) |
|---|---|---|---|---|
| Any type unless otherwise specified (miscellaneous) | Any ISM frequency | Below 500<br>500 or more | 25<br>25 × SQRT(power/500) | 300<br>[1]300 |
| | Any non-ISM frequency | Below 500<br>500 or more | 15<br>15 × SQRT(power/500) | 300<br>[1]300 |
| Industrial heaters and RF stabilized arc welders | On or below 5,725 MHz<br>Above 5,725 MHz | Any<br>Any | 10<br>([2]) | 1,600<br>([2]) |
| Medical diathermy | Any ISM frequency<br>Any non-ISM frequency | Any<br>Any | 25<br>15 | 300<br>300 |
| Ultrasonic | Below 490 kHz | Below 500<br>500 or more | 2,400/F(kHz)<br>2,400/F(kHz) × SQRT(power/500) | 300<br>[3]300 |
| | 490 to 1,600 kHz<br>Above 1,600 kHz | Any<br>Any | 24,000/F(kHz)<br>15 | 30<br>30 |
| Induction cooking ranges | Below 90 kHz<br>On or above 90 kHz | Any<br>Any | 1,500<br>300 | [4]30<br>[4]30 |

[1]Field strength may not exceed 10 μV/m at 1600 meters. Consumer equipment operating below 1000 MHz is not permitted the increase in field strength otherwise permitted here for power over 500 watts.

[2]Reduced to the greatest extent possible.

[3]Field strength may not exceed 10 μV/m at 1600 meters. Consumer equipment is not permitted the increase in field strength otherwise permitted here for over 500 watts.

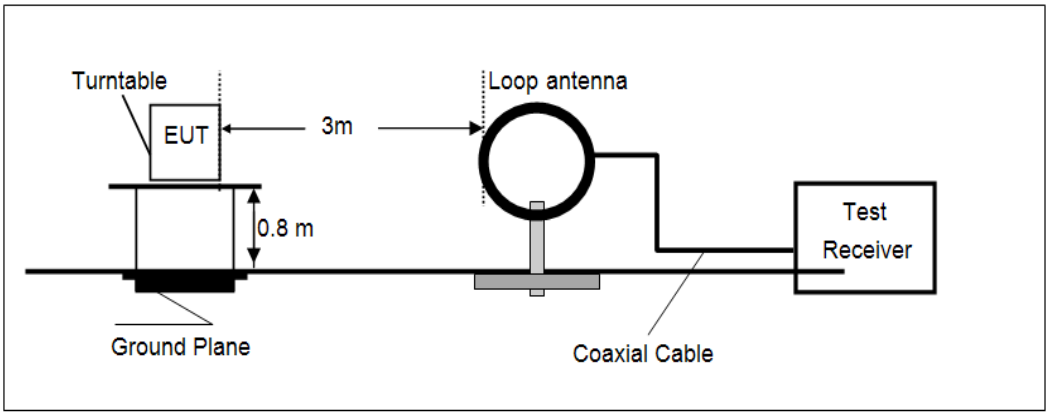
[4]Induction cooking ranges manufactured prior to February 1, 1980, shall be subject to the field strength limits for miscellaneous ISM equipment.

1. This product belongs to non-ISM equipment, the field strength limit is 15uV/m at 300 meter distance.

2. Limit: $20\log^{(15uV/m)} + 40\log^{(300/3)} = 23.52+80=103.52$dBuV/m at 3 meters distance

## TEST CONFIGURATION

**Radiated Emission Test Set-Up Frequency below 30MHz**




## TEST PROCEDURE

1. The EUT was tested according to ANSI C63.4:2014.
2. The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated360 degrees to determine the position of the maximum emission level.
3. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
4. The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna.
5. Use the following spectrum analyzer settings

Span shall wide enough to fully capture the emission being measured;

1) 9kHz – 150kHz, RBW=200Hz, Sweep=auto, Detector function=peak, Trace=max hold;
2) 150kHz – 30MHz, RBW=9kHz, Sweep=auto, Detector function=peak, Trace=max hold; 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.

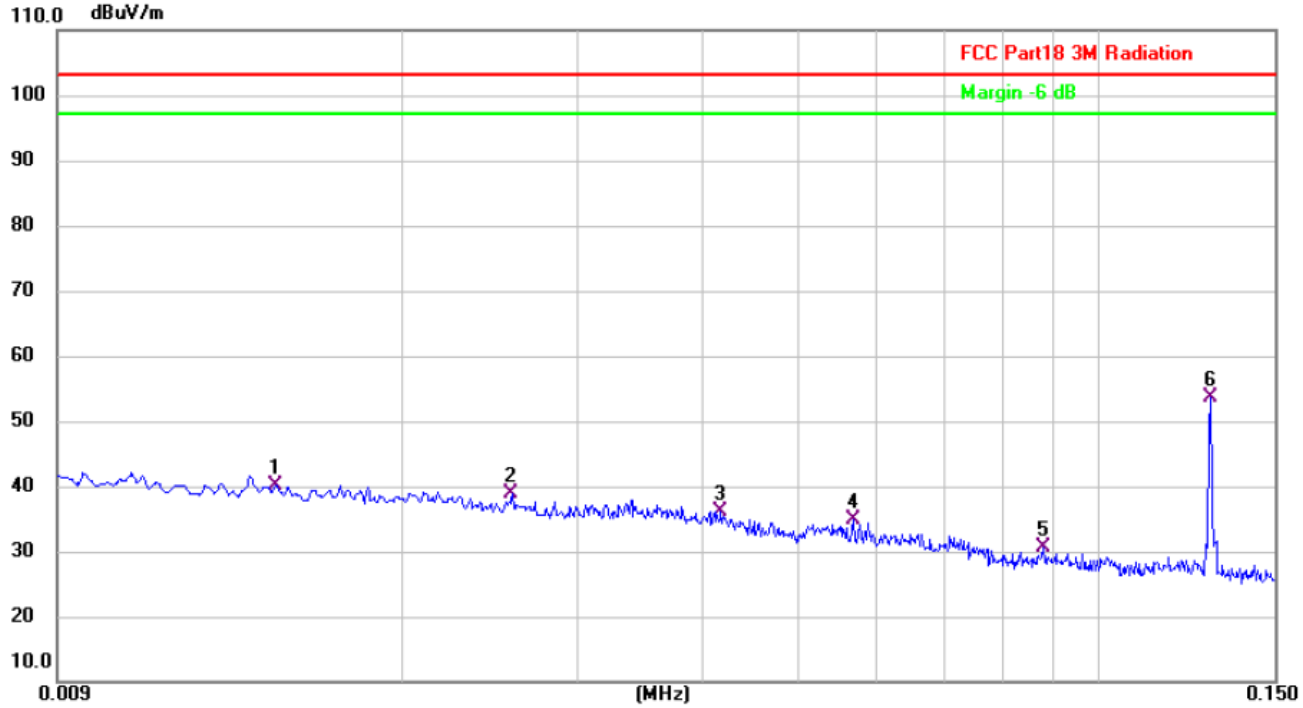
## TEST MODE

Please refer to the clause 2.4.

## TEST RESULTS

**9kHz – 150kHz**

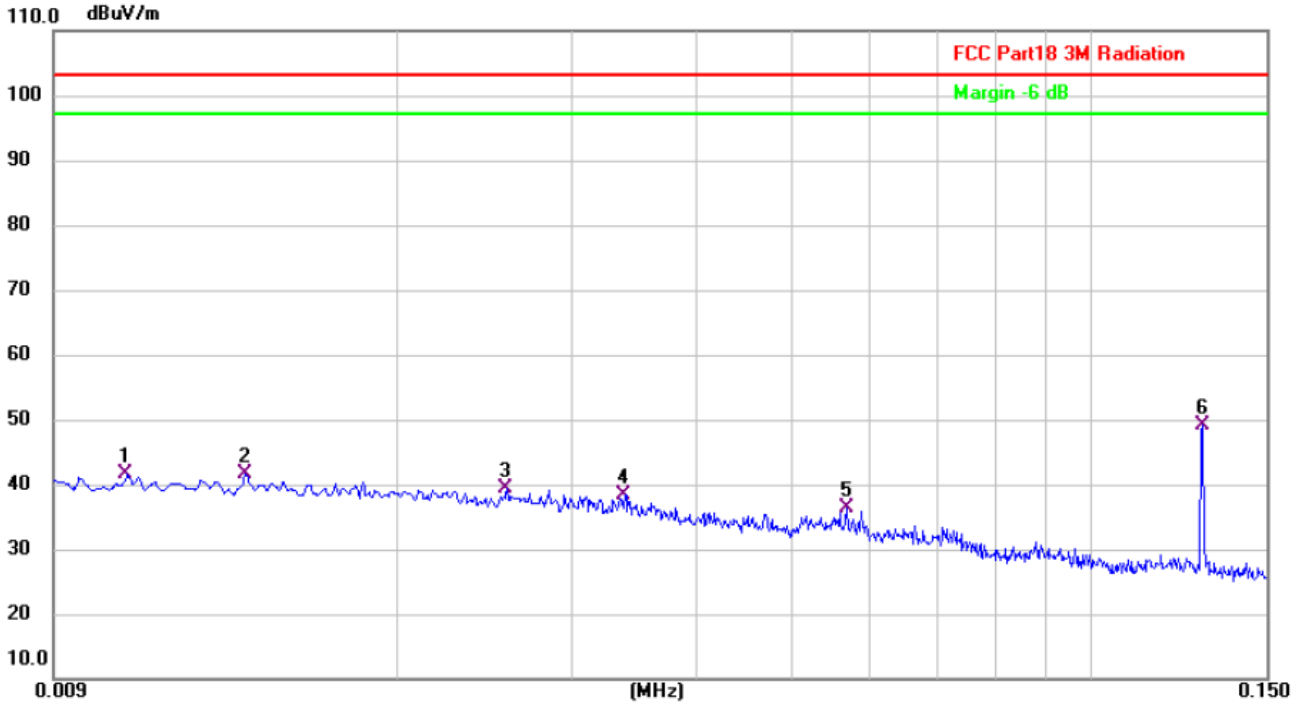
| Test mode | 4 | Polarization | Horizontal |
|---|---|---|---|




| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|
| 1 | 0.0149 | 47.13 | -6.89 | 40.24 | 103.25 | -63.01 | QP |
| 2 | 0.0257 | 48.39 | -9.61 | 38.78 | 103.25 | -64.47 | QP |
| 3 | 0.0417 | 47.37 | -11.12 | 36.25 | 103.25 | -67.00 | QP |
| 4 | 0.0567 | 46.27 | -11.49 | 34.78 | 103.25 | -68.47 | QP |
| 5 | 0.0879 | 44.15 | -13.55 | 30.60 | 103.25 | -72.65 | QP |
| 6 * | 0.1292 | 66.98 | -13.47 | 53.51 | 103.25 | -49.74 | QP |

Remark:
1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
2.Margin value = Level -Limit value

| Test mode | 4 | Polarization | Vertical |
|---|---|---|---|

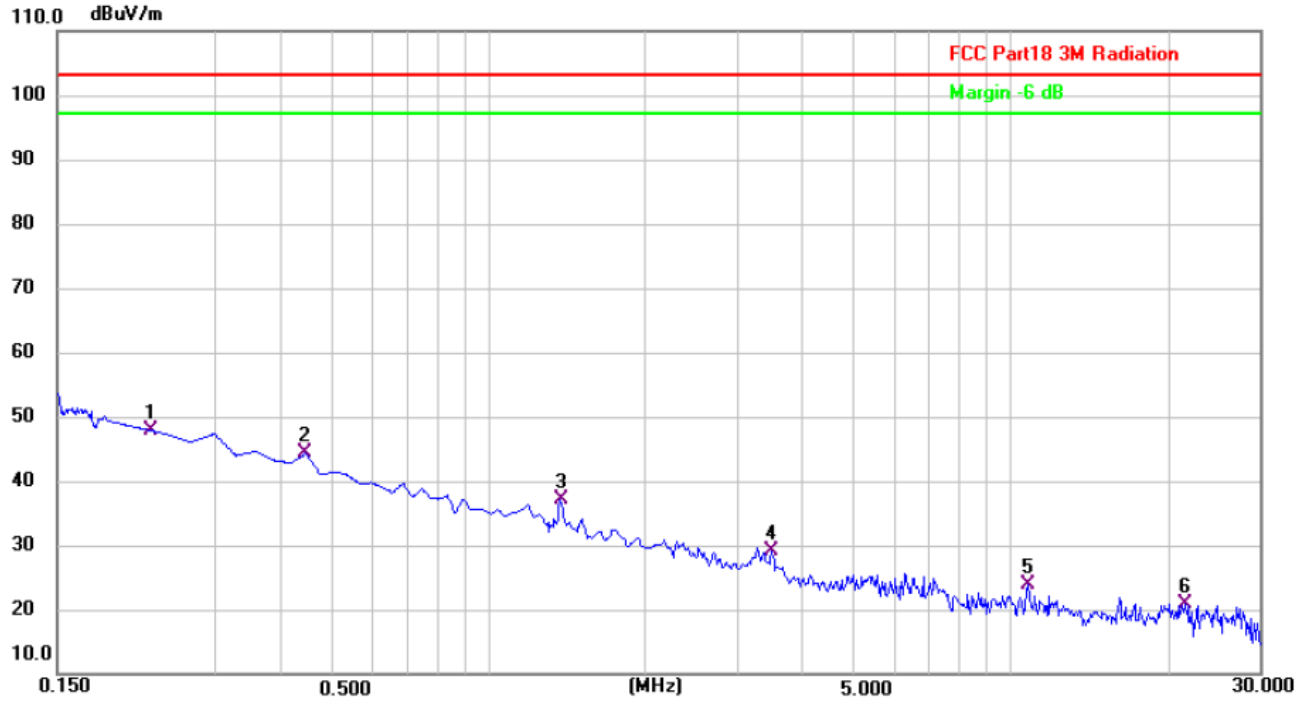



| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|
| 1 | 0.0106 | 47.32 | -5.80 | 41.52 | 103.25 | -61.73 | QP |
| 2 | 0.0140 | 48.17 | -6.66 | 41.51 | 103.25 | -61.74 | QP |
| 3 | 0.0257 | 48.89 | -9.61 | 39.28 | 103.25 | -63.97 | QP |
| 4 | 0.0337 | 49.16 | -10.80 | 38.36 | 103.25 | -64.89 | QP |
| 5 | 0.0567 | 47.77 | -11.49 | 36.28 | 103.25 | -66.97 | QP |
| 6 * | 0.1292 | 62.48 | -13.47 | 49.01 | 103.25 | -54.24 | QP |

Remark:
1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
2.Margin value = Level -Limit value

**150kHz – 30MHz**

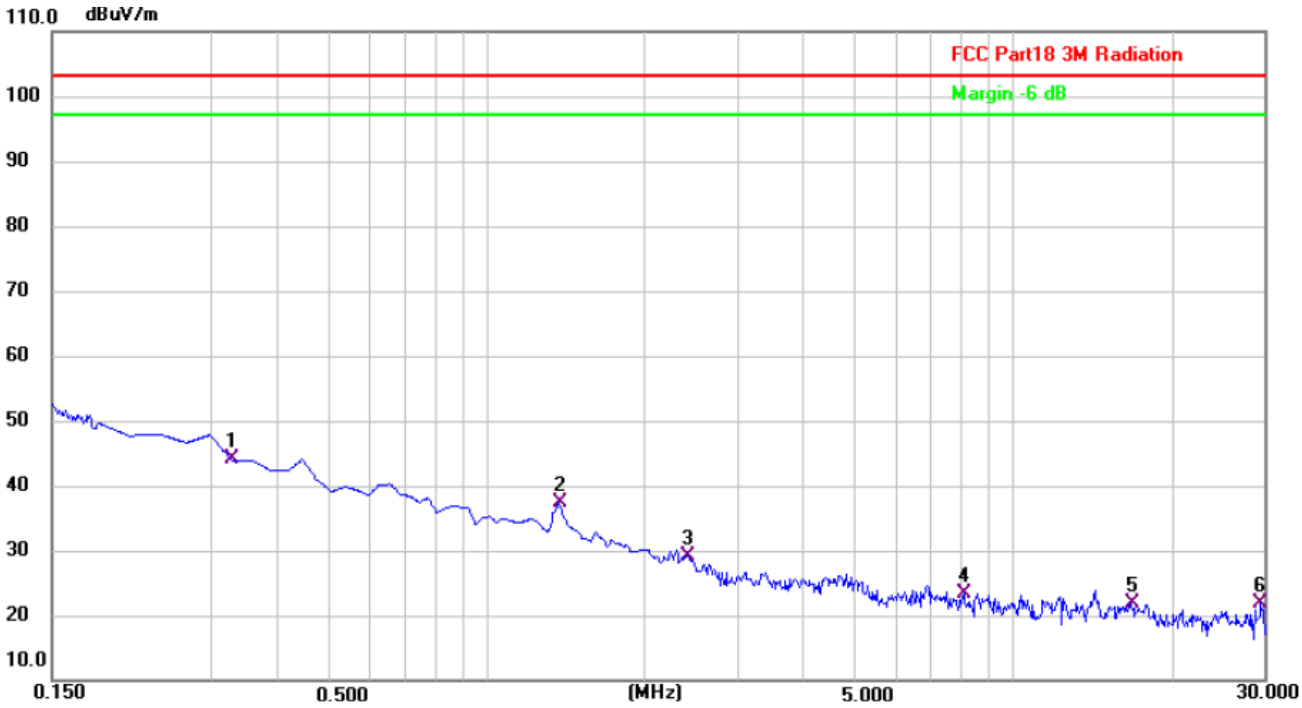
| Test mode | 4 | Polarization | Horizontal |
|---|---|---|---|




| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|
| 1 * | 0.2267 | 61.47 | -13.60 | 47.87 | 103.25 | -55.38 | QP |
| 2 | 0.4485 | 57.99 | -13.71 | 44.28 | 103.25 | -58.97 | QP |
| 3 | 1.3736 | 50.92 | -13.80 | 37.12 | 103.25 | -66.13 | QP |
| 4 | 3.4931 | 36.30 | -7.24 | 29.06 | 103.25 | -74.19 | QP |
| 5 | 10.8063 | 38.82 | -15.03 | 23.79 | 103.25 | -79.46 | QP |
| 6 | 21.6121 | 36.15 | -15.32 | 20.83 | 103.25 | -82.42 | QP |

Remark:
1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
2.Margin value = Level -Limit value

| Test mode | 4 | Polarization | Vertical |
|---|---|---|---|




| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|
| 1 * | 0.3267 | 57.75 | -13.65 | 44.10 | 103.25 | -59.15 | QP |
| 2 | 1.3736 | 51.22 | -13.80 | 37.42 | 103.25 | -65.83 | QP |
| 3 | 2.4186 | 43.26 | -14.06 | 29.20 | 103.25 | -74.05 | QP |
| 4 | 8.0900 | 38.42 | -15.01 | 23.41 | 103.25 | -79.84 | QP |
| 5 | 16.8360 | 36.80 | -14.99 | 21.81 | 103.25 | -81.44 | QP |
| 6 | 29.6716 | 36.76 | -14.97 | 21.79 | 103.25 | -81.46 | QP |

Remark:
1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
2.Margin value = Level -Limit value

## 3.2. Conducted Emission (AC Mains)

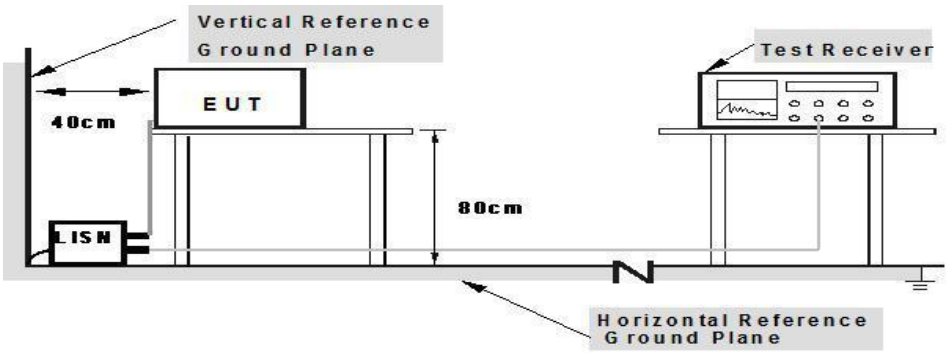
**LIMIT**

**FCC CFR Title 47 Part 18 Section 18.307(b):**

| Frequency range (MHz) | Limit (dBuV) | |
|---|---|---|
| | Quasi-peak | Average |
| 0.15-0.5 | 66 to 56* | 56 to 46* |
| 0.5-5 | 56 | 46 |
| 5-30 | 60 | 50 |

* Decreases with the logarithm of the frequency.

**TEST CONFIGURATION**




Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

**TEST PROCEDURE**

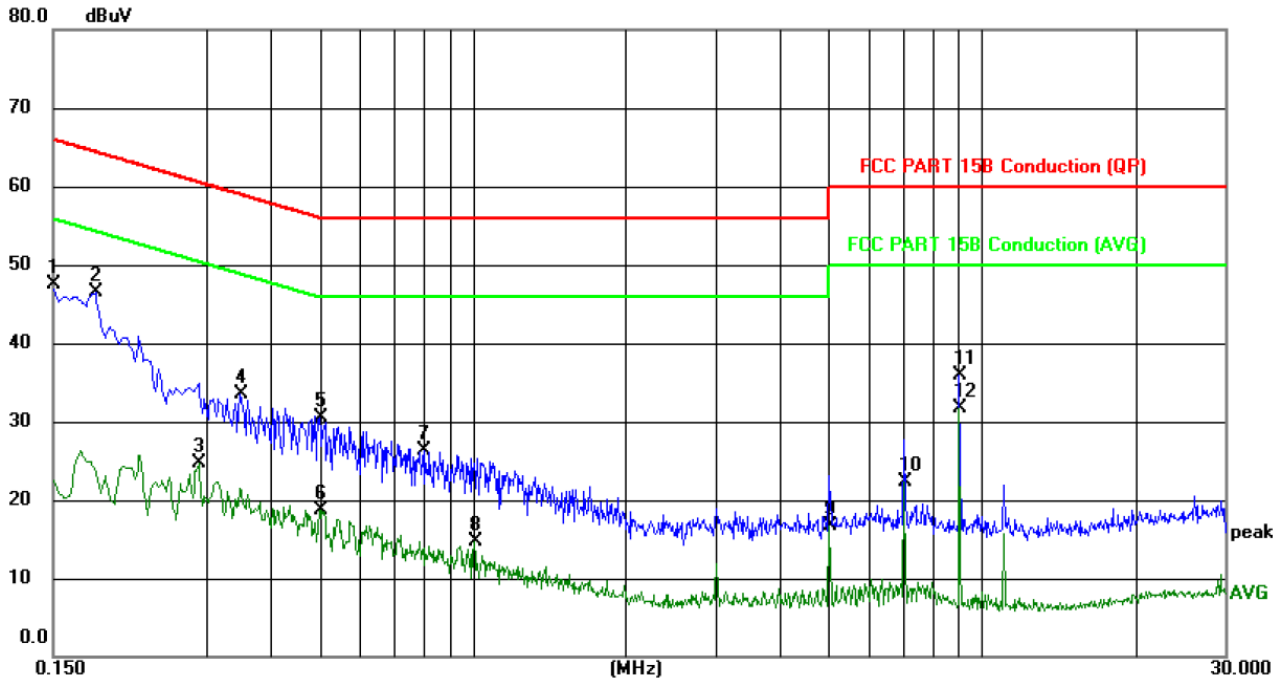
1. The EUT was setup according to ANSI C63.4-2014.
2. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface.
3. The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). The LISN provides a 50 ohm /50uH coupling impedance for the measuring equipment.
4. The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs)
5. Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source.
6. The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.
7. Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHzusing a receiver bandwidth of 9 kHz.
8. During the above scans, the emissions were maximized by cable manipulation.

**TEST MODE**

Please refer to the clause 2.4.

**TEST RESULTS**

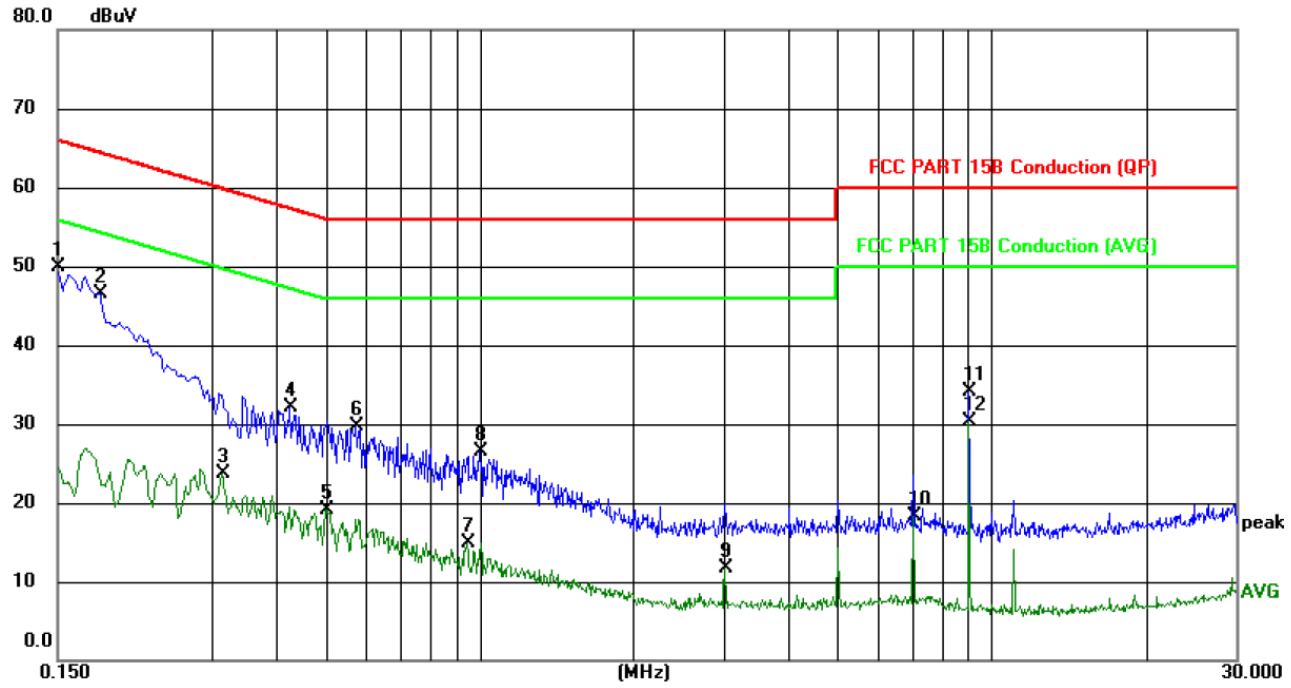
| Test mode | 4 | Terminal | Line |
|---|---|---|---|




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Margin | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector |
| 1 | | 0.1500 | 38.20 | 9.29 | 47.49 | 66.00 | -18.51 | QP |
| 2 | * | 0.1820 | 36.66 | 9.75 | 46.41 | 64.39 | -17.98 | QP |
| 3 | | 0.2900 | 14.69 | 9.95 | 24.64 | 50.52 | -25.88 | AVG |
| 4 | | 0.3500 | 23.58 | 9.87 | 33.45 | 58.96 | -25.51 | QP |
| 5 | | 0.5020 | 20.60 | 9.88 | 30.48 | 56.00 | -25.52 | QP |
| 6 | | 0.5020 | 8.73 | 9.88 | 18.61 | 46.00 | -27.39 | AVG |
| 7 | | 0.8020 | 16.36 | 10.02 | 26.38 | 56.00 | -29.62 | QP |
| 8 | | 1.0060 | 4.73 | 9.89 | 14.62 | 46.00 | -31.38 | AVG |
| 9 | | 5.0300 | 6.62 | 10.17 | 16.79 | 50.00 | -33.21 | AVG |
| 10 | | 7.0420 | 12.05 | 10.30 | 22.35 | 50.00 | -27.65 | AVG |
| 11 | | 9.0540 | 25.58 | 10.34 | 35.92 | 60.00 | -24.08 | QP |
| 12 | | 9.0540 | 21.43 | 10.34 | 31.77 | 50.00 | -18.23 | AVG |

Emission Level= Read Level+ Correct Factor

| Test mode | 4 | Terminal | Neutral |
|---|---|---|---|




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Margin | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector |
| 1 | * | 0.1500 | 40.37 | 9.61 | 49.98 | 66.00 | -16.02 | QP |
| 2 | | 0.1820 | 36.77 | 9.77 | 46.54 | 64.39 | -17.85 | QP |
| 3 | | 0.3140 | 13.64 | 10.15 | 23.79 | 49.86 | -26.07 | AVG |
| 4 | | 0.4260 | 22.14 | 10.05 | 32.19 | 57.33 | -25.14 | QP |
| 5 | | 0.5020 | 8.93 | 10.08 | 19.01 | 46.00 | -26.99 | AVG |
| 6 | | 0.5740 | 19.52 | 10.12 | 29.64 | 56.00 | -26.36 | QP |
| 7 | | 0.9460 | 4.63 | 10.25 | 14.88 | 46.00 | -31.12 | AVG |
| 8 | | 1.0020 | 16.22 | 10.24 | 26.46 | 56.00 | -29.54 | QP |
| 9 | | 3.0180 | 1.08 | 10.64 | 11.72 | 46.00 | -34.28 | AVG |
| 10 | | 7.0380 | 7.83 | 10.44 | 18.27 | 50.00 | -31.73 | AVG |
| 11 | | 9.0500 | 23.61 | 10.51 | 34.12 | 60.00 | -25.88 | QP |
| 12 | | 9.0500 | 19.71 | 10.51 | 30.22 | 50.00 | -19.78 | AVG |

Emission Level= Read Level+ Correct Factor

**********THE END**********