

FCC

RF

TEST REPORT

ISSUED BY
Shenzhen BALUN Technology Co., Ltd.



FOR
Tablet Computer

ISSUED TO
Mason America, Inc

506 2nd Ave Suite 1400, Seattle WA, 98104



Tested by: Hu Chao
Hu Chao
(Engineer)

Date: Jul. 05, 2018

Approved by: Wei Yanquan
Wei Yanquan
(Chief Engineer)

Date: Jul. 05, 2018



Report No.: BL-HK1860102-402

EUT Name: Tablet Computer

Model Name: I3399A

Brand Name: Mason

Test Standard: 47 CFR Part 15 Subpart C

FCC ID: 2AJZP-I3399A

Test Conclusion: Pass

Test Date: Jun. 13, 2018 ~ Jun. 28, 2018

Date of Issue: Jul. 05, 2018

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Revision History

| <u>Version</u> | <u>Issue Date</u> | <u>Revisions Content</u> |
|----------------|----------------------|--------------------------|
| <u>Rev. 01</u> | <u>Jul. 05, 2018</u> | <u>Initial Issue</u> |

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1 ADMINISTRATIVE DATA (GENERAL INFORMATION)

1.1 Identification of the Testing Laboratory

| | |
|--------------|---|
| Company Name | Shenzhen BALUN Technology Co., Ltd. |
| Address | Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China |
| Phone Number | +86 755 6685 0100 |

1.2 Identification of the Responsible Testing Location

| | |
|---------------------------|---|
| Test Location | Shenzhen BALUN Technology Co., Ltd. |
| Address | Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China |
| Accreditation Certificate | <p>The laboratory has been listed by Industry Canada to perform electromagnetic emission measurements. The recognition numbers of test site are 11524A-1.</p> <p>The laboratory is a testing organization accredited by FCC as a accredited testing laboratory. The designation number is CN1196.</p> <p>The laboratory is a testing organization accredited by American Association for Laboratory Accreditation(A2LA) according to ISO/IEC 17025.The accreditation certificate is 4344.01.</p> <p>The laboratory is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L6791.</p> |
| Description | All measurement facilities used to collect the measurement data are located at Block B, FL 1, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China 518055 |

1.3 Laboratory Condition

| | |
|---------------------------|--------------------|
| Ambient Temperature | 20°C to 25°C |
| Ambient Relative Humidity | 45% to 55% |
| Ambient Pressure | 100 kPa to 102 kPa |

1.4 Announce

- (1) The test report reference to the report template version v5.1.
- (2) The test report is invalid if not marked with the signatures of the persons responsible for preparing and approving the test report.
- (3) The test report is invalid if there is any evidence and/or falsification.
- (4) The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein.
- (5) This document may not be altered or revised in any way unless done so by BALUN and all revisions are duly noted in the revisions section.
- (6) Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.

2 PRODUCT INFORMATION

2.1 Applicant Information

| | |
|-----------|---|
| Applicant | Mason America, Inc |
| Address | 506 2nd Ave Suite 1400, Seattle WA, 98104 |

2.2 Manufacturer Information

| | |
|--------------|--|
| Manufacturer | SHENZHEN ELECTRON TECHNOLOGY CO., LTD. |
| Address | Bld.2, Yingfeng Industrial Zone, Tantou Community, Songgang Street, Bao'an, Shenzhen, China 518000 |

2.3 Factory Information

| | |
|---------|-----|
| Factory | N/A |
| Address | N/A |

2.4 General Description for Equipment under Test (EUT)

| | |
|---|-----------------|
| EUT Name | Tablet Computer |
| Under Test Model Name | I3399A |
| Series Model Name | N/A |
| Description of Model name differentiation | N/A |
| Hardware Version | R08-V2.1 |
| Software Version | Mason OS 2.0.0 |
| Dimensions (Approx.) | N/A |
| Weight (Approx.) | N/A |

2.5 Ancillary Equipment

| | | |
|-----------------------|------------------|-----------------------------|
| Ancillary Equipment 1 | Adapter | |
| | Brand Name | N/A |
| | Model No. | FJ-SW1204000 |
| | Serial No. | N/A |
| | Rated Input | 100-240 V~, 50/60 Hz, 1.5 A |
| | Rated Output | 12 V= 4 A |
| Ancillary Equipment 2 | Power Line | |
| | Length (Approx.) | 1.5 m |
| Ancillary Equipment 3 | Voice Tube | |

2.6 Technical Information

| | |
|-----------------------------------|---|
| Network and Wireless connectivity | WIFI 802.11b, 802.11g, 802.11n(HT20) NFC |
|-----------------------------------|---|

The requirement for the following technical information of the EUT was tested in this report:

| | |
|-------------------------|--|
| Modulation Type | ASK |
| Product Type | <input checked="" type="checkbox"/> Mobile <input type="checkbox"/> Portable <input type="checkbox"/> Fix Location |
| Frequency Range | 13.56 MHz |
| Receiver Categorization | 3 |
| Number of channel | 1 |
| Tested Channel | 1 |
| Antenna Gain | 0 dBi |
| Antenna Type | FPC Antenna |

3 SUMMARY OF TEST RESULTS

3.1 Test Standards

| No. | Identity | Document Title |
|-----|--|--|
| 1 | 47 CFR Part 15, Subpart C (10-1-16 Edition) | Miscellaneous Wireless Communications Services |
| 2 | ANSI C63.10-2013 | American National Standard for Testing Unlicensed Wireless Devices |

3.2 Verdict

| No. | Description | FCC Part No. | Test Result | Verdict |
|-----|---|---------------------|-------------|----------------------|
| 1 | Antenna Requirement | 15.203 | -- | Pass ^{Note} |
| 2 | Emissions Bandwidth | 2.1049 | ANNEX A.1 | Pass |
| 3 | Field Strength of Fundamental Emissions | 15.225(a) | ANNEX A.2 | Pass |
| 4 | Radiated Emissions | 15.225(d) 15.209 | ANNEX A.3 | Pass |
| 5 | Frequency Stability | 15.225(e) | ANNEX A.4 | Pass |
| 6 | Conducted Emission | 15.207 | ANNEX A.5 | Pass |

Note: The EUT has a permanently and irreplaceable attached antenna, which complies with the requirement FCC 15.203.

4 GENERAL TEST CONFIGURATIONS

4.1 Test Environments

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

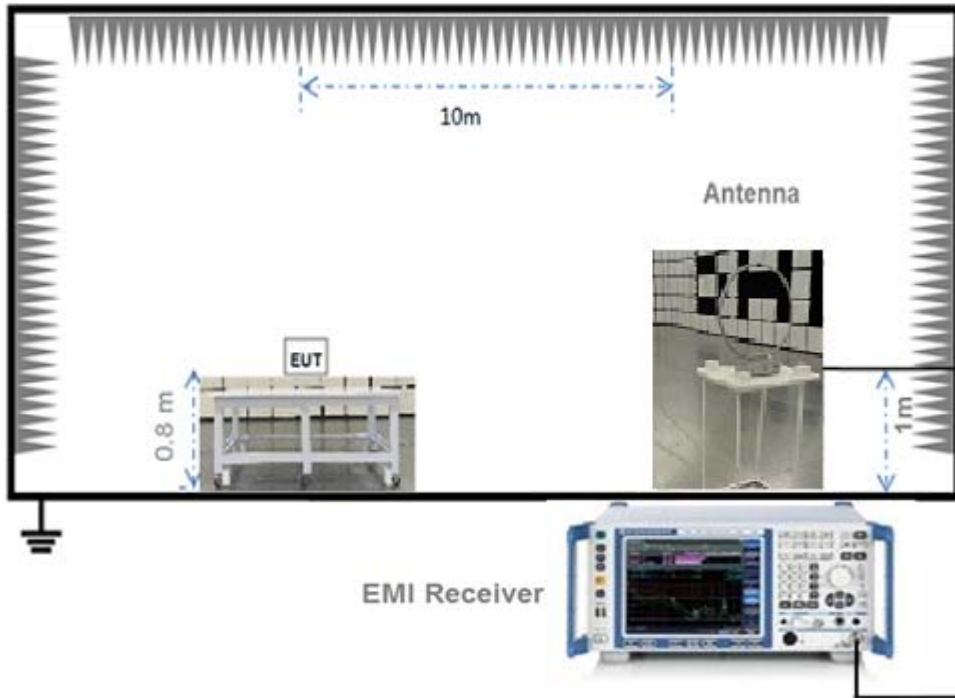
| | | |
|----------------------------|-------------------------|----------------|
| Relative Humidity | 45% to 55% | |
| Atmospheric Pressure | 100 kPa to 102 kPa | |
| Temperature | NT (Normal Temperature) | +22°C to +25°C |
| Working Voltage of the EUT | NV (Normal Voltage) | 230 V |

4.2 Test Equipment List

| Description | Manufacturer | Model | Serial No. | Cal. Date | Cal. Due |
|-----------------------------------|----------------------|-------------------|------------|------------|------------|
| Spectrum Analyzer | ROHDE&SCHWARZ | FSV-30 | 103118 | 2018.06.11 | 2019.06.10 |
| Vector Signal Generator | ROHDE&SCHWARZ | SMBV100A | 260592 | 2018.06.11 | 2019.06.10 |
| Signal Generator | ROHDE&SCHWARZ | SMB100A | 177746 | 2018.06.11 | 2019.06.10 |
| Switch Unit with OSP-B157 | ROHDE&SCHWARZ | OSP120 | 101270 | 2018.06.11 | 2019.06.10 |
| Spectrum Analyzer | AGILENT | E4440A | MY45304434 | 2017.11.07 | 2018.11.06 |
| EMI Receiver | ROHDE&SCHWARZ | ESRP | 101036 | 2018.06.21 | 2019.06.20 |
| LISN | SCHWARZBECK | NSLK 8127 | 8127-687 | 2018.06.21 | 2019.06.20 |
| Bluetooth Tester | ROHDE&SCHWARZ | CBT | 101005 | 2018.06.11 | 2019.06.10 |
| Power Splitter | KMW | DCPD-LDC | 1305003215 | -- | -- |
| Power Sensor | ROHDE&SCHWARZ | NRP-Z21 | 103971 | 2018.06.11 | 2019.06.10 |
| Attenuator (20 dB) | KMW | ZA-S1-201 | 110617091 | -- | -- |
| Attenuator (6 dB) | KMW | ZA-S1-61 | 1305003189 | -- | -- |
| DC Power Supply | ROHDE&SCHWARZ | HMP2020 | 018141664 | 2018.06.21 | 2019.06.20 |
| Temperature Chamber | ANGELANTIONI SCIENCE | NTH64-40A | 1310 | 2018.06.26 | 2019.06.25 |
| Test Antenna-Loop | SCHWARZBECK | FMZB 1519 | 1519-037 | 2017.11.09 | 2019.11.08 |
| Test Antenna-Bi-Log(30 MHz-3 GHz) | SCHWARZBECK | VULB 9163 | 9163-624 | 2016.07.12 | 2018.07.11 |
| Test Antenna-Horn(1-18 GHz) | SCHWARZBECK | BBHA 9120D | 9120D-1148 | 2018.06.21 | 2019.06.20 |
| Test Antenna-Horn(15-26.5 GHz) | SCHWARZBECK | BBHA 9170 | 9170-305 | 2018.06.21 | 2019.06.20 |
| Anechoic Chamber | EMC TECHNOLOGY LTD | 21.1m*11.6m*7.35m | N/A | 2017.02.21 | 2019.02.20 |
| Shielded Enclosure | ChangNing | CN-130701 | 130703 | -- | -- |

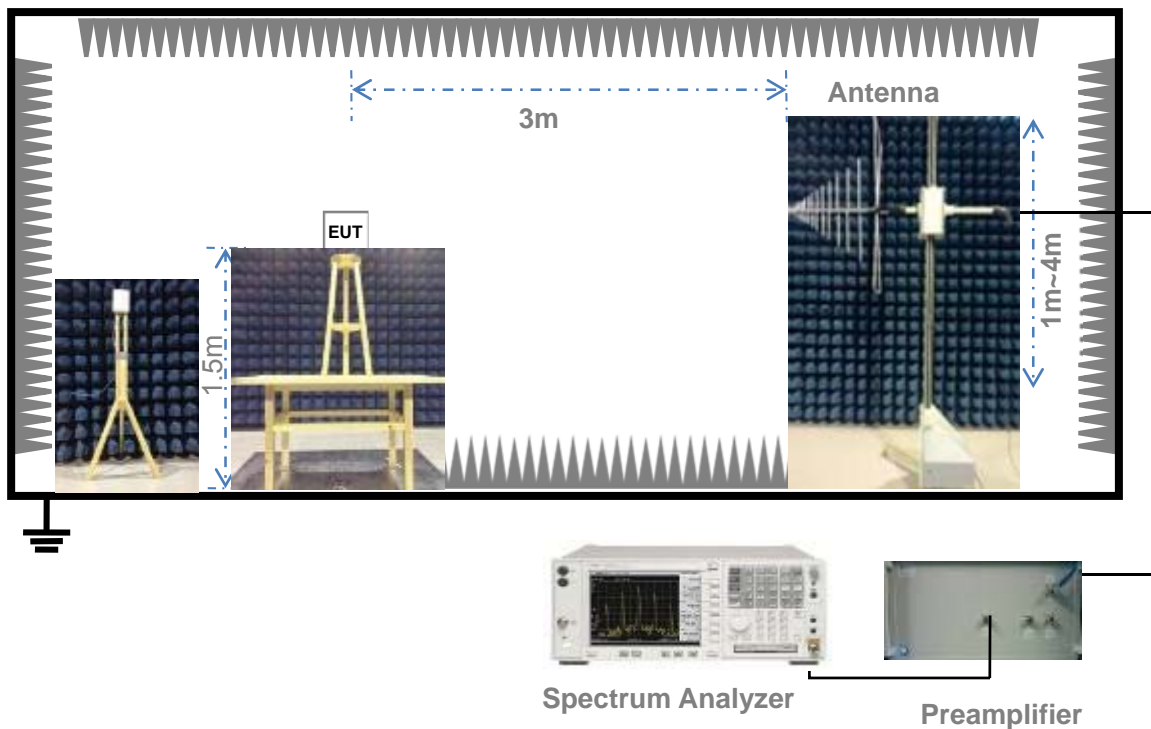
4.3 Description of Test Setup

4.3.1 For Radiated Test (Below 30 MHz)



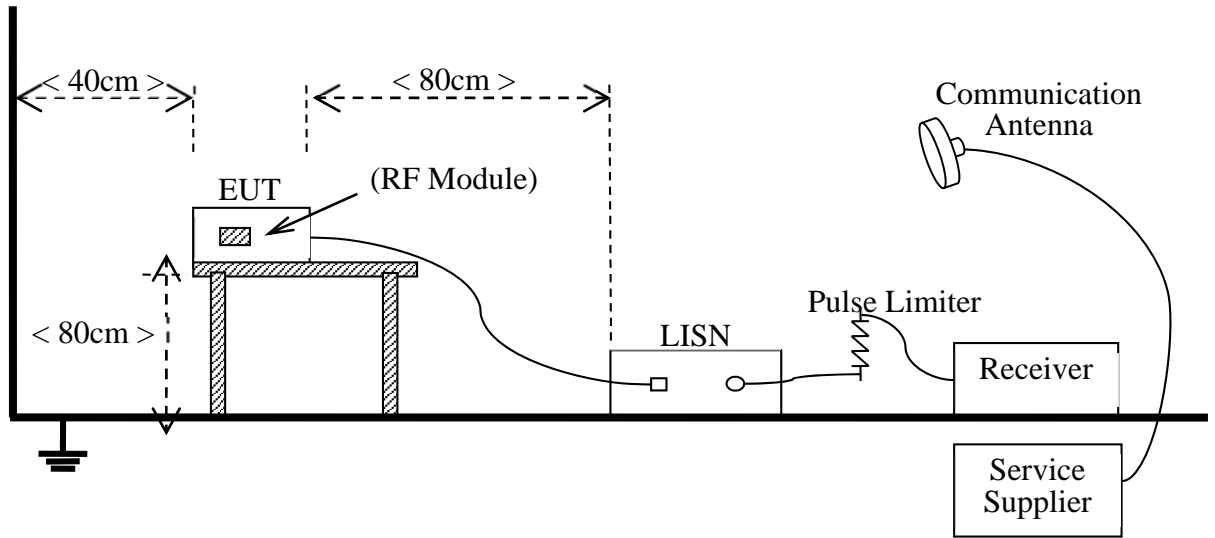
(Diagram 1)

4.3.2 For Radiated Test (30 MHz-1 GHz)



(Diagram 2)

4.3.3 For AC Power Supply Port Test



(Diagram 3)

5 TEST ITEMS

5.1 Antenna Requirements

5.1.1 Relevant Standards

FCC §15.203 & 15.247(b); RSS-Gen 7.1.4


An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of § 15.211, § 15.213, § 15.217, § 15.219, or § 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with § 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

If directional gain of transmitting antennas is greater than 6 dBi, the power shall be reduced by the same level in dB comparing to gain minus 6 dBi. For the fixed point-to-point operation, the power shall be reduced by one dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi. 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 FCC rule.

5.1.2 Antenna Anti-Replacement Construction

The Antenna Anti-Replacement as following method:

| Protected Method | Description |
|---|--|
| The antenna is embedded in the product. | An embedded-in antenna design is used. |

| Reference Documents | Item |
|---------------------|--|
| Photo |  |

5.1.3 Antenna Gain

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.

5.2 Emission Bandwidth

5.2.1 Definition

FCC §2.1049&15.215(c); RSS-Gen

Emissions from the intentional radiator shall be confined within a band 200 kHz wide centered on the operating frequency.

5.2.2 Test Setup

See section 4.1.1 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

5.2.3 Test Procedure

The 20dB bandwidth is measured with a spectrum analyzer connected via a receiver antenna placed near the EUT while the EUT is operating in transmission mode.

Use the following spectrum analyzer settings:

Span = approximately 2 to 3 times the 20 dB bandwidth

RBW \geq 1% of the 20 dB bandwidth

VBW \geq RBW

Sweep = auto

Detector function = peak

Trace = max hold

5.2.4 Test Result

Please refer to ANNEX A.1

5.3 Field Strength of Fundamental Emissions and Radiated Emissions

5.3.1 Limit

FCC §15.225(a), (b), (c); RSS-Gen B.6

According to FCC section 15.225, for <30 MHz, Radiated emissions were measured according to ANSI C63.4. The EUT was set to transmit at the highest output power. The EUT was set 10 meter away from the measuring antenna. The loop antenna was positioned 1 meter above the ground from the center of the loop. The measuring bandwidth was set to 10 KHz. (Note: During testing the receive antenna was rotated about its axis to maximize the emission from the EUT)

There was no detected Restricted bands and Radiated spurious emission below 30MHz. The 30m limit was converted to 3m Limit using square factor(x) as it was found by measurements as follows; 3 m Limit(dBuV/m) = $20\log(X)+40\log(30/3)= 20\log(15848)+40\log(30/3) = 124\text{dBuV}$

Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

| Frequency range (MHz) | Field Strength@30m | | Field Strength@3m |
|-----------------------|--------------------|--------------------------|--------------------------|
| | $\mu\text{V/m}$ | $\text{dB}\mu\text{V/m}$ | $\text{dB}\mu\text{V/m}$ |
| Below 13.110 | 30 | 29.5 | 69.5 |
| 13.110 ~ 13.410 | 106 | 40.5 | 80.5 |
| 13.410 ~ 13.553 | 334 | 50.5 | 90.5 |
| 13.553 ~13.567 | 15.848 | 84 | 124 |
| 13.567 ~ 13.710 | 334 | 50.5 | 90.5 |
| 13.710 ~14.010 | 106 | 40.5 | 80.5 |
| Above 14.010 | 30 | 29.5 | 69.5 |

NOTE:

1. Field Strength ($\text{dB}\mu\text{V/m}$) = $20*\log[\text{Field Strength } (\mu\text{V/m})]$.
2. In the emission tables above, the tighter limit applies at the band edges.

FCC §15.225(d)

According to FCC section 15.209 (a), except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

| Frequency (MHz) | Field Strength ($\mu\text{V/m}$) |
|-----------------|------------------------------------|
| 0.009 - 0.490 | $2400/\text{F}(\text{kHz})$ |
| 0.490 - 1.705 | $24000/\text{F}(\text{kHz})$ |
| 1.705 - 30.0 | 30 |
| 30 - 88 | 100 |
| 88 - 216 | 150 |
| 216 - 960 | 200 |
| Above 960 | 500 |

Note:

3. For Above 1000 MHz, the emission limit in this paragraph is based on measurement instrumentation employing an average detector, measurement using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.
4. For above 1000 MHz, limit field strength of harmonics: 54dBuV/m@3m (AV) and 74dBuV/m@3m (PK).

5.3.2 Test Setup

See section 4.1.1 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

5.3.3 Test Procedure

The measurement frequency range is from 9 kHz to the 10th harmonic of the fundamental frequency. The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. Mid channels on all channel bandwidth verified. Only the worst RB size/offset presented. The power of the EUT transmitting frequency should be ignored.

All Spurious Emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

Use the following spectrum analyzer settings:

Span = wide enough to fully capture the emission being measured

RBW = 1 MHz for $f \geq 1$ GHz, 100 kHz for $f < 1$ GHz

VBW \geq RBW

Sweep = auto

Detector function = peak

Trace = max hold

5.3.4 Test Result

Please refer to ANNEX A.2

5.4 Frequency Tolerance

5.4.1 Limit

FCC §15.225(e); RSS-Gen B.6

The frequency tolerance of the carrier signal shall be maintained within $\pm 0.01\%$ of the operating frequency over a temperature variation of -20 degrees to $+50$ degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

5.4.2 Test Setup

See section 4.1.1 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

5.4.3 Test Procedure

1. The test is performed in a Temperature Chamber.
2. The EUT is configured as MS + DC Power Supply.

5.4.4 Test Result

Please refer to ANNEX A.4.

5.5 Conducted Emission

5.5.1 Limit

FCC §15.207; RSS-Gen

For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μ H/50 Ω line impedance stabilization network (LISN).

| Frequency range (MHz) | Conducted Limit (dB μ V) | |
|--------------------------|------------------------------|----------|
| | Quai-peak | Average |
| 0.15 - 0.50 | 66 to 56 | 56 to 46 |
| 0.50 - 5 | 56 | 46 |
| 0.50 - 30 | 60 | 50 |

5.5.2 Test Setup

See section 4.1.1 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

5.5.3 Test Procedure

The maximum conducted interference is searched using Peak (PK), if the emission levels more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed. Refer to recorded points and plots below.

Devices subject to Part 15 must be tested for all available U.S. voltages and frequencies (such as a nominal 120 VAC, 50/60 Hz and 240 VAC, 50/60 Hz) for which the device is capable of operation. A device rated for 50/60 Hz operation need not be tested at both frequencies provided the radiated and line conducted emissions are the same at both frequencies.

5.5.4 Test Result

Please refer to ANNEX A.5.

ANNEX A TEST RESULT

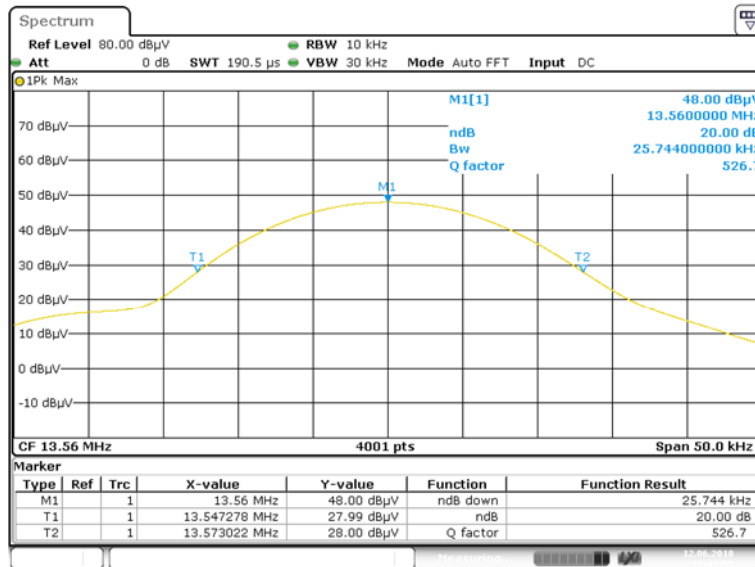
A.1 Emission Bandwidth

Test Data

| Frequency (MHz) | Emission Bandwidth(20dB down) (kHz) | Occupied Bandwidth(99%) (kHz) |
|-----------------|-------------------------------------|-------------------------------|
| 13.56 | 25.744 | 21.195 |

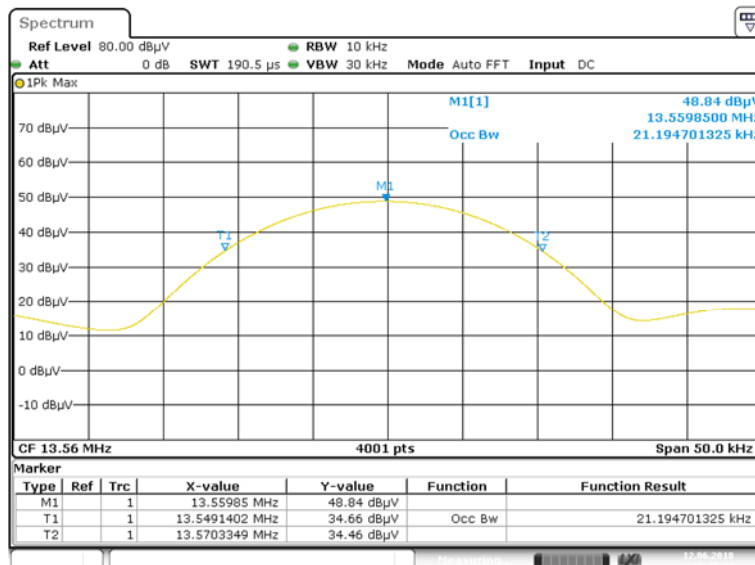
Test Plots

Emission Bandwidth



Date: 12.JUN.2018 12:44:00

99% Occupied Bandwidth



Date: 12.JUN.2018 12:45:22

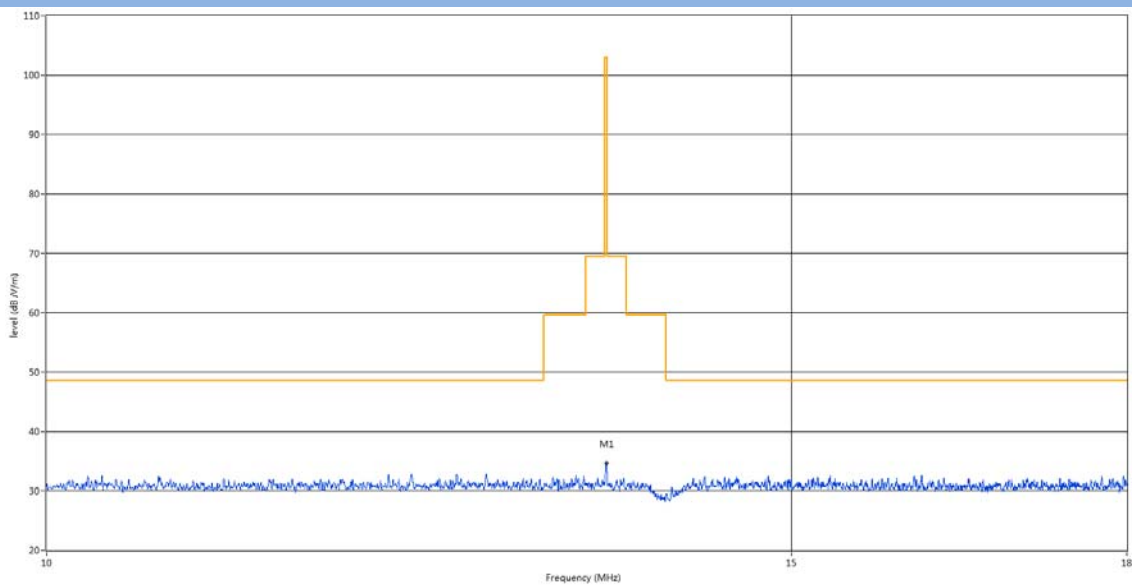
A.2 Field Strength of Fundamental Emissions(at 10m chamber)

Test Data

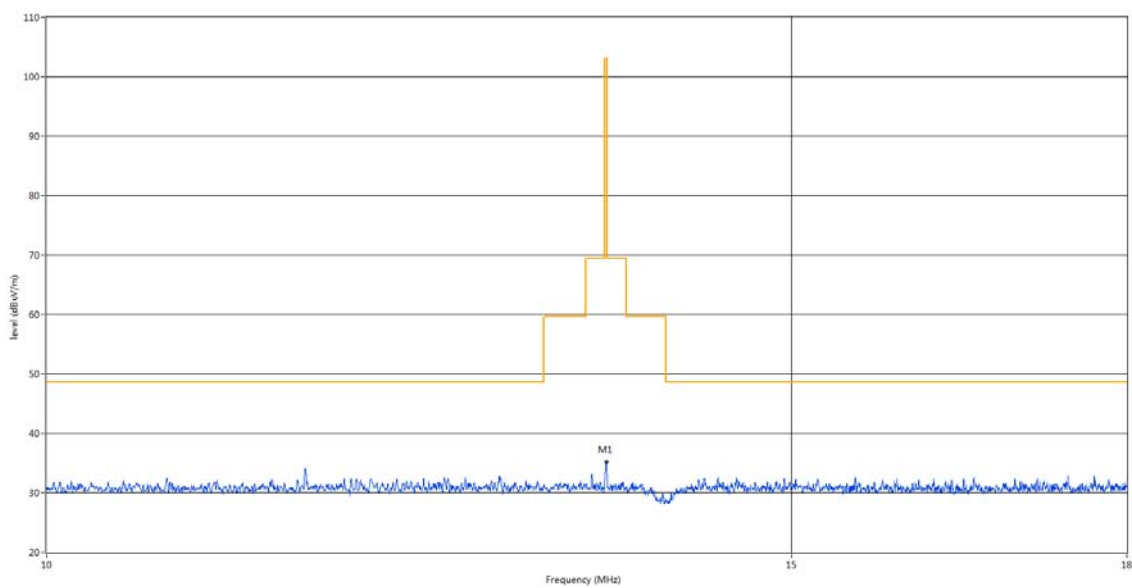
| Field Strength of Fundamental Emissions Value | | | | | |
|---|----------|-------------------------|---------------------|------------|-------------|
| Frequency (MHz) | Detector | Field Strength (dBUV/m) | Limit @10m (dBUV/m) | Antenna | Margin (dB) |
| 13.56 | PEAK | 34.68 | 103.0 | Vertical | 68.32 |
| 13.56 | PEAK | 35.14 | 103.0 | Horizontal | 67.86 |

Test Plots

ANT-LOOP ANT V



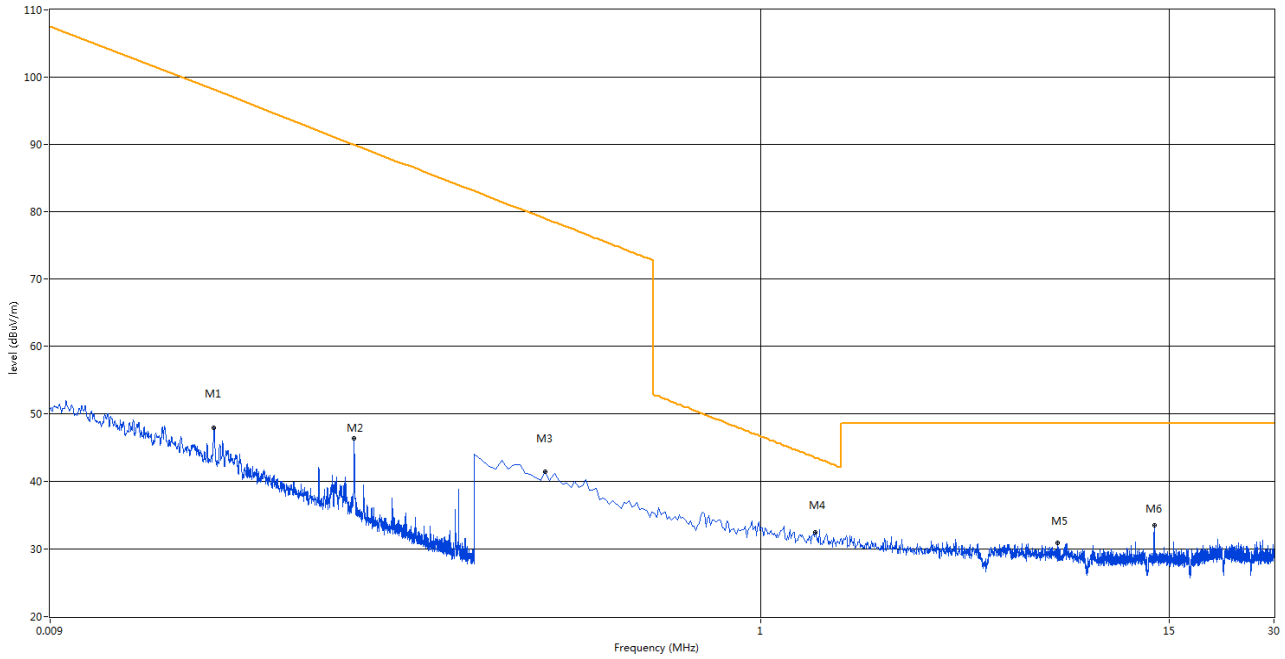
ANT-LOOP ANT H



A.3 Radiated Emissions

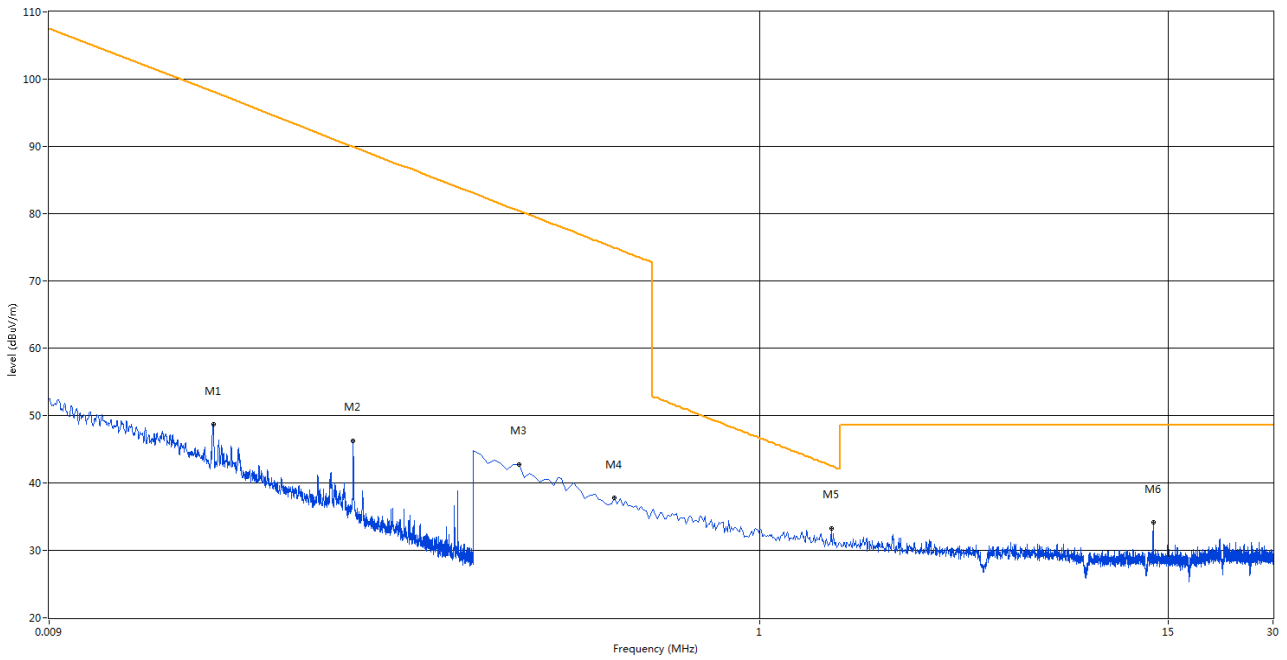
The Data and Plots (9 kHz ~ 30 MHz)(at 10m chamber)

Below 30 MHz ANT V



| No. | Frequency (MHz) | Results (dBuV/m) | Factor (dB) | Limit (dBuV/m) | Margin (dB) | Detector | Table (o) | Height (cm) | ANT | Verdict |
|-----|-----------------|------------------|-------------|----------------|-------------|----------|-----------|-------------|----------|---------|
| 1 | 0.027 | 47.88 | 20.25 | 98.1 | 50.22 | Peak | 52.00 | 100 | Vertical | Pass |
| 2 | 0.067 | 46.32 | 20.18 | 90.0 | 43.68 | Peak | 131.00 | 100 | Vertical | Pass |
| 3 | 0.240 | 41.35 | 20.12 | 79.0 | 37.65 | Peak | 44.00 | 100 | Vertical | Pass |
| 4 | 1.434 | 32.50 | 20.52 | 43.5 | 11.00 | Peak | 44.00 | 100 | Vertical | Pass |
| 5 | 7.142 | 30.93 | 20.82 | 48.5 | 17.57 | Peak | 1.00 | 100 | Vertical | Pass |
| 6 | 13.560 | 33.50 | 20.86 | 48.5 | 15.00 | Peak | 141.00 | 100 | Vertical | N/A |

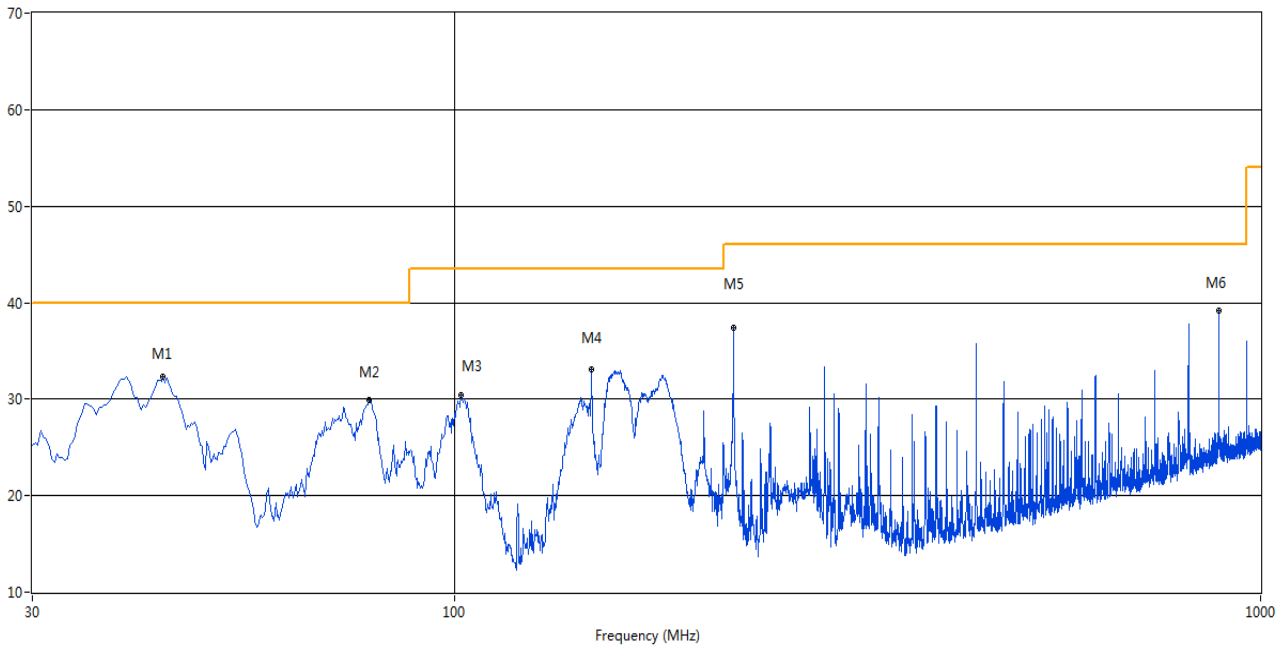
Below 30 MHz ANT H



| No. | Frequency (MHz) | Results (dBuV/m) | Factor (dB) | Limit (dBuV/m) | Margin (dB) | Detector | Table (o) | Height (cm) | ANT | Verdict |
|-----|-----------------|------------------|-------------|----------------|-------------|----------|-----------|-------------|------------|---------|
| 1 | 0.027 | 48.69 | 20.25 | 98.1 | 49.41 | Peak | 122.00 | 100 | Horizontal | Pass |
| 2 | 0.067 | 46.15 | 20.18 | 90.0 | 43.85 | Peak | 113.00 | 100 | Horizontal | Pass |
| 3 | 0.202 | 42.75 | 20.10 | 80.5 | 37.75 | Peak | 326.00 | 100 | Horizontal | Pass |
| 4 | 0.381 | 37.74 | 20.17 | 75.0 | 37.26 | Peak | 17.00 | 100 | Horizontal | Pass |
| 5 | 1.605 | 33.24 | 20.48 | 42.5 | 9.26 | Peak | 282.00 | 100 | Horizontal | Pass |
| 6 | 13.560 | 34.14 | 20.86 | 48.5 | 14.36 | Peak | 291.00 | 100 | Horizontal | N/A |

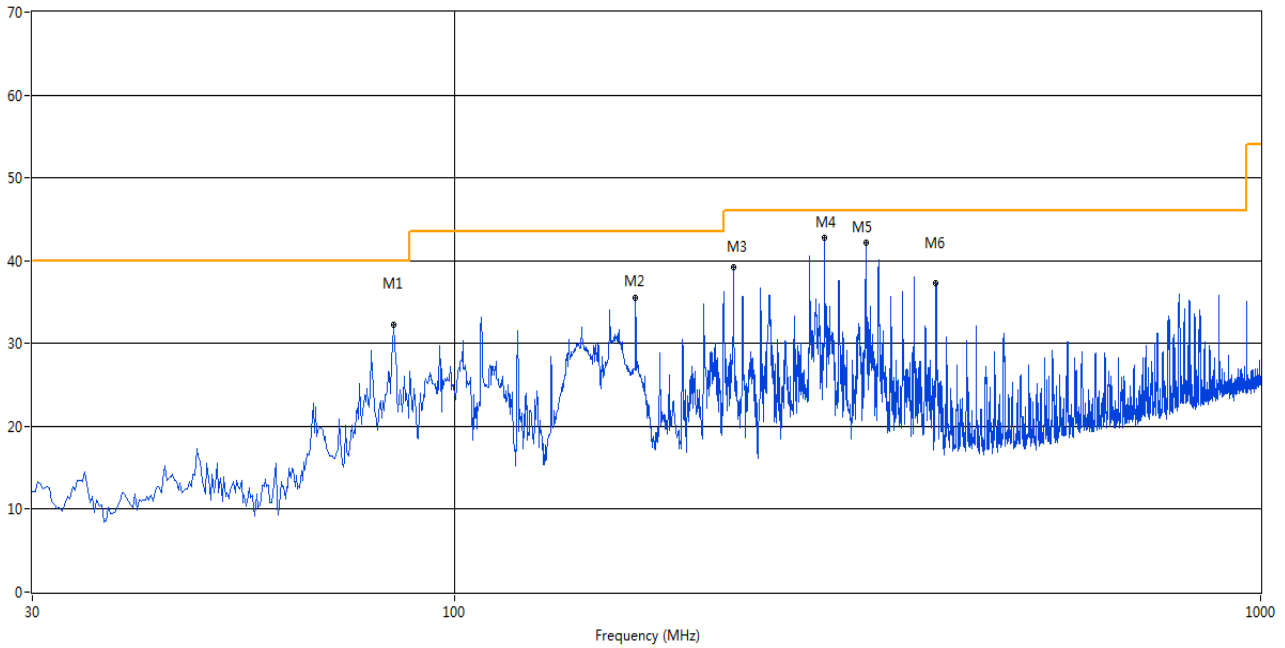
Test Data and Plots (30 MHz ~ 10th Harmonic)(at 3m chamber)

30 MHz to 1 GHz, ANT Vertical



| No. | Frequency (MHz) | Results (dBuV/m) | Factor (dB) | Limit (dBuV/m) | Margin (dB) | Detector | Table (o) | Height (cm) | ANT | Verdict |
|-----|-----------------|------------------|-------------|----------------|-------------|----------|-----------|-------------|----------|---------|
| 1 | 43.580 | 32.36 | -23.53 | 40.0 | 7.64 | Peak | 0.00 | 200 | Vertical | Pass |
| 2 | 78.500 | 29.98 | -28.88 | 40.0 | 10.02 | Peak | 0.00 | 200 | Vertical | Pass |
| 3 | 102.022 | 30.46 | -24.39 | 43.5 | 13.04 | Peak | 262.00 | 100 | Vertical | Pass |
| 4 | 148.098 | 33.09 | -27.93 | 43.5 | 10.41 | Peak | 204.60 | 100 | Vertical | Pass |
| 5 | 222.060 | 37.42 | -24.01 | 46.0 | 8.58 | Peak | 187.50 | 200 | Vertical | Pass |
| 6 | 887.965 | 39.15 | -9.64 | 46.0 | 6.85 | Peak | 0.00 | 200 | Vertical | Pass |

30 MHz to 1 GHz, ANT Horizontal



| No. | Frequency (MHz) | Results (dBuV/m) | Factor (dB) | Limit (dBuV/m) | Margin (dB) | Detector | Table (o) | Height (cm) | ANT | Verdict |
|-----|-----------------|------------------|-------------|----------------|-------------|----------|-----------|-------------|------------|---------|
| 1 | 84.077 | 32.30 | -27.97 | 40.0 | 7.70 | Peak | 360.00 | 200 | Horizontal | Pass |
| 2 | 167.982 | 35.50 | -26.96 | 43.5 | 8.00 | Peak | 140.10 | 200 | Horizontal | Pass |
| 3 | 222.060 | 39.19 | -24.01 | 46.0 | 6.81 | Peak | 291.30 | 300 | Horizontal | Pass |
| 4 | 288.020 | 42.82 | -21.65 | 46.0 | 3.18 | Peak | 289.80 | 100 | Horizontal | Pass |
| 5 | 323.910 | 42.16 | -20.62 | 46.0 | 3.84 | Peak | 302.80 | 100 | Horizontal | Pass |
| 6 | 395.932 | 37.22 | -18.93 | 46.0 | 8.78 | Peak | 285.50 | 100 | Horizontal | Pass |

A.4 Frequency Stability

Note 1: Because the 85% and 115% of the rated supply voltage value exceeds the cut-off voltage upper and lower limit of the manufacturer, the cut-off voltage of EUT is test here.

Note 2: The operating temperature range of the EUT is 0°C to 45°C.

| | |
|----------------------|-------------|
| OPERATING FREQUENCY: | 13560000 Hz |
| REFERENCE VOLTAGE: | 12 V |
| DEVIATION LIMIT: | ±0.01% |

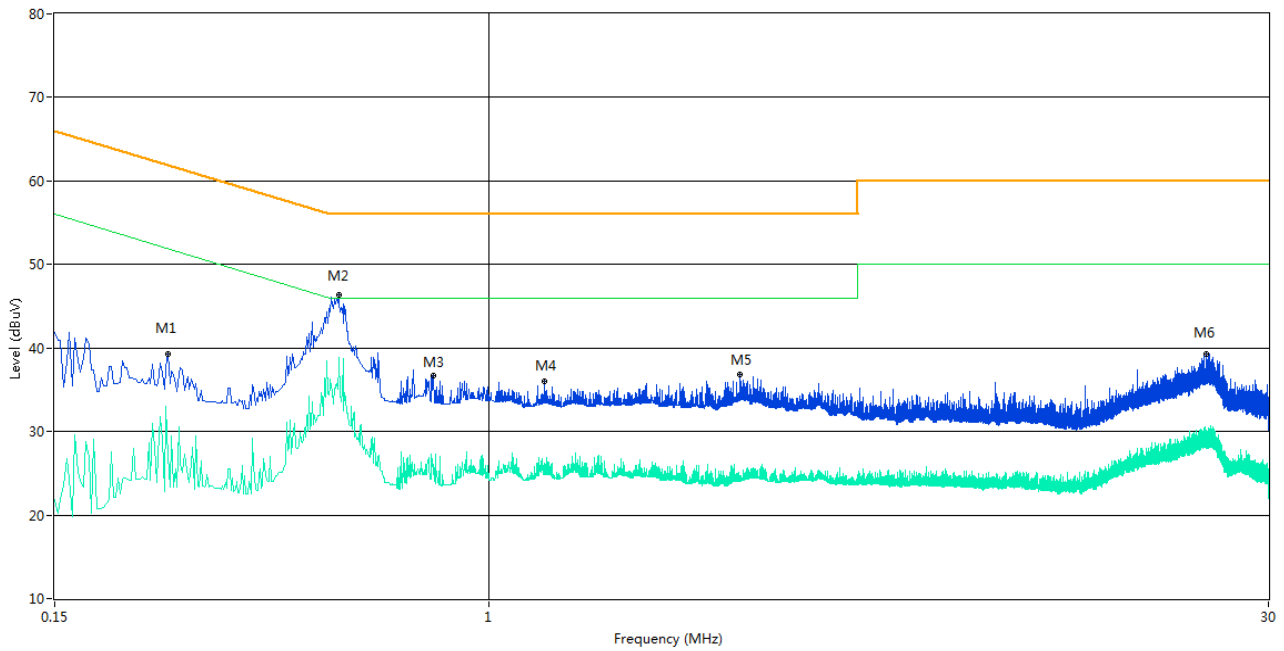
| VOLTAGE (%) | Test Conditions | | Frequency(Hz) | Deviation(ppm) | Verdict |
|---------------------|-----------------|------------------|---------------|----------------|---------|
| | Power (VDC) | Temperature (°C) | | | |
| 100 | 110 | 0 | 13559947 | -0.00009598 | Pass |
| 100 | | +10 | 13560027 | -0.00000473 | |
| 100 | | +20 | 13560045 | -0.00000819 | |
| 100 | | +25 | 13560031 | -0.00000634 | |
| 100 | | +30 | 13559970 | -0.00009664 | |
| 100 | | +40 | 13560007 | -0.00000129 | |
| 100 | | +45 | 13559962 | -0.00009378 | |
| EUT Cut-Off Voltage | | 100 | +20 | 13560010 | |
| EUT Cut-Off Voltage | 240 | +20 | 13560021 | -0.00000335 | |

A.5 Conducted Emissions

Note 1: Devices subject to Part 15 must be tested for all available U.S. voltages and frequencies (such as a nominal 120 VAC, 60 Hz and 240 VAC, 50 Hz) for which the device is capable of operation. So, The configuration 120 VAC, 60 Hz and 240 VAC, 50 Hz were tested respectively, but only the worst configuration (120 VAC, 60 Hz) shown here.

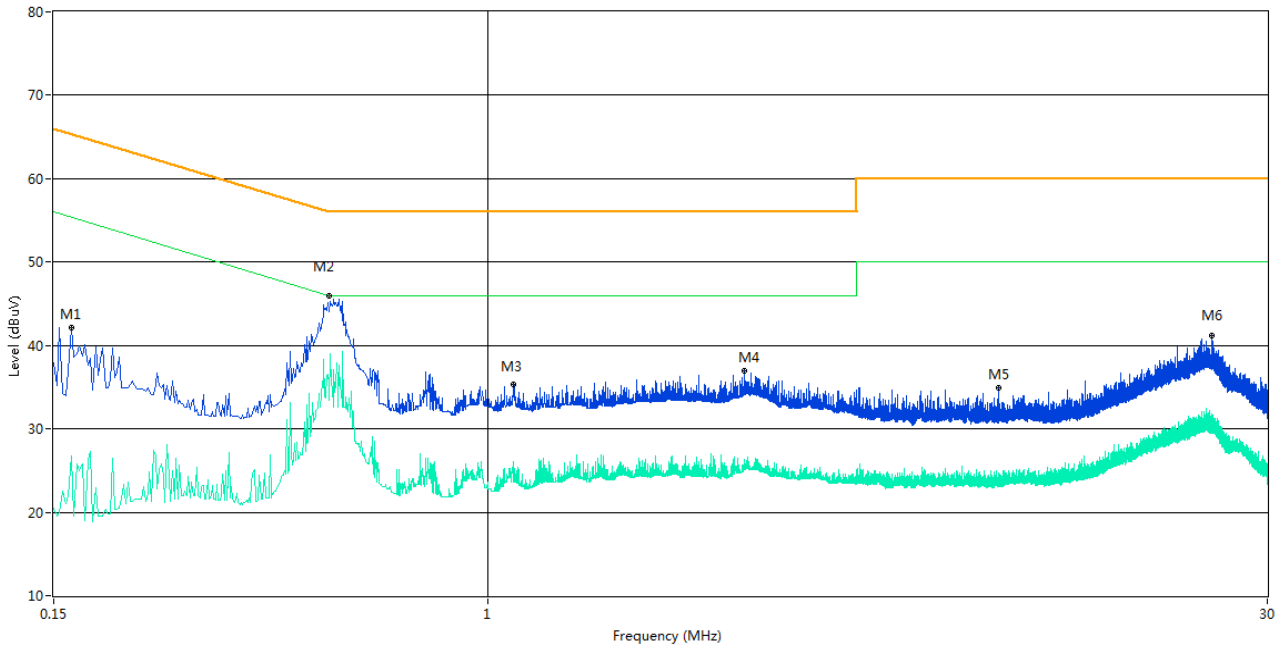
Test Data and Plots

PHASE L



| No. | Frequency (MHz) | Results (dBuV) | Factor (dB) | Limit (dBuV) | Margin (dB) | Detector | Line | Verdict |
|-----|-----------------|----------------|-------------|--------------|-------------|----------|--------|---------|
| 1 | 0.246 | 39.2 | 10.04 | 61.9 | 22.70 | Peak | L Line | Pass |
| 1** | 0.246 | 27.1 | 10.04 | 51.9 | 24.80 | AV | L Line | Pass |
| 2 | 0.518 | 46.4 | 10.05 | 56.0 | 9.60 | Peak | L Line | Pass |
| 2** | 0.518 | 37.8 | 10.05 | 46.0 | 8.20 | AV | L Line | Pass |
| 3 | 0.784 | 36.7 | 10.05 | 56.0 | 19.30 | Peak | L Line | Pass |
| 3** | 0.784 | 26.1 | 10.05 | 46.0 | 19.90 | AV | L Line | Pass |
| 4 | 1.274 | 36.0 | 10.07 | 56.0 | 20.00 | Peak | L Line | Pass |
| 4** | 1.274 | 26.2 | 10.07 | 46.0 | 19.80 | AV | L Line | Pass |
| 5 | 2.992 | 36.9 | 10.12 | 56.0 | 19.10 | Peak | L Line | Pass |
| 5** | 2.992 | 24.7 | 10.12 | 46.0 | 21.30 | AV | L Line | Pass |
| 6 | 22.830 | 39.3 | 10.67 | 60.0 | 20.70 | Peak | L Line | Pass |
| 6** | 22.830 | 28.0 | 10.67 | 50.0 | 22.00 | AV | L Line | Pass |

PHASE N



| No. | Frequency (MHz) | Results (dBuV) | Factor (dB) | Limit (dBuV) | Margin (dB) | Detector | Line | Verdict |
|-----|-----------------|----------------|-------------|--------------|-------------|----------|--------|---------|
| 1 | 0.162 | 42.2 | 10.04 | 65.4 | 23.20 | Peak | N Line | Pass |
| 1** | 0.162 | 26.8 | 10.04 | 55.4 | 28.60 | AV | N Line | Pass |
| 2 | 0.510 | 45.5 | 10.05 | 56.0 | 10.50 | Peak | N Line | Pass |
| 2** | 0.510 | 37.1 | 10.05 | 46.0 | 8.90 | AV | N Line | Pass |
| 3 | 1.118 | 35.4 | 10.06 | 56.0 | 20.60 | Peak | N Line | Pass |
| 3** | 1.118 | 24.5 | 10.06 | 46.0 | 21.50 | AV | N Line | Pass |
| 4 | 3.056 | 36.9 | 10.12 | 56.0 | 19.10 | Peak | N Line | Pass |
| 4** | 3.056 | 25.2 | 10.12 | 46.0 | 20.80 | AV | N Line | Pass |
| 5 | 9.302 | 34.9 | 10.29 | 60.0 | 25.10 | Peak | N Line | Pass |
| 5** | 9.302 | 23.7 | 10.29 | 50.0 | 26.30 | AV | N Line | Pass |
| 6 | 23.532 | 41.1 | 10.69 | 60.0 | 18.90 | Peak | N Line | Pass |
| 6** | 23.532 | 29.6 | 10.69 | 50.0 | 20.40 | AV | N Line | Pass |

ANNEX C TEST SETUP PHOTOS

Please refer the document "BL-HK1860102-AE2.PDF".

ANNEX D EUT EXTERNAL PHOTOS

Please refer the document "BL-HK1860102-AW.PDF".

ANNEX E EUT INTERNAL PHOTOS

Please refer the document "BL-HK1860102-AI.PDF".

--END OF REPORT--