**Wendell** Electrical Testing Lab

# FCC Test Report

| Report No: WD-RF-R-190342-I0 |
|---|

| | | |
|---|---|---|
| **Product Name** | : | Time Clock |
| **Model Name** | : | NT8000X-XX(X can be 0~9 or a~z or A~Z or blank) |
| **Series Model Name** | : | NT8000Y-YY(Y can be 0~9 or a~z or A~Z or blank) |
| **FCC  ID** | : | 2ASPANOVATIME-HID |
| **Applicant** | : | NOVAtime Technology, Inc. |
| **Received Date** | : | Feb. 18, 2019 |
| **Tested Date** | : | May. 09, 2019 ~ Jun. 26, 2019 |
| **Applicable Standard** | : | 47 CFR FCC Part 15, Subpart C (Section 15.209)<br>ANSI C63.10 : 2013 |

**ilac-MRA**

**TAF** Testing Laboratory 2965

## Wendell Industrial Co., Ltd
## Wendell Electrical Testing Lab.

# Test Report

Issued Date:    June 26, 2019

Project No.:    19Q021808

| | |
|---|---|
| **Product Name** | Time Clock |
| **Trade Name** | NOVAtime Technology, Inc. |
| **Model Name** | NT8000X-XX(X can be 0~9 or a~z or A~Z or blank) |
| **Series Model Name** | NT8000Y-YY(Y can be 0~9 or a~z or A~Z or blank) |
| **FCC ID** | 2ASPANOVATIME-HID |
| **Applicant** | NOVAtime Technology, Inc. |
| **Manufacturer** | unitech electronics co., ltd. |
| **EUT Rated Voltage** | AC 100 ~ 240V / 50 or 60Hz、PoE |
| **EUT Test Voltage** | AC 120V / 60Hz |
| **EUT Supports Radios Application** | WLAN 802.11a/b/g<br>WLAN 802.11n (HT20/HT40)<br>Bluetooth BR/EDR/LE<br>RFID |
| **Applicable Standard** | 47 CFR FCC Part 15, Subpart C (Section 15.209)<br>ANSI C63.10 : 2013 |
| **Test Result** | Complied |

Documented    :

( Specialist / Emma Lu )

Technical  Engineer    :

( Deputy Section Manager / Jack Chang )

Approved    :

( Project Manager /  Gary Wu )

# Table of Contents

# Document Revision History

| Report No. | Issue date | Description |
|---|---|---|
| WD-RF-R-190342-I0 | June 26, 2019 | Initial report |

# Summary of Test Result

| Ref. Std. Clause | Test Items | Result |
|---|---|---|
| 15.203 | Antenna Requirement | Pass |
| 15.209 | Radiated Emissions | Pass |
| 15.207 | AC Conducted Emission | Pass |

# 1    Generation Information

## 1.1    Applicant

NOVAtime Technology, Inc.
9680 Haven Avenue, Suite #200, Rancho Cucamonga, CA 91730

## 1.2    Manufacturer

unitech electronics co., ltd.
5FI., No.136, Lane 235, Pao-Chiao Rd., Hsin-Tien Dist, New Taipei City, Taiwan 231, R.O.C.

## 1.3    Description of Equipment under Test

| | |
|---|---|
| **Product Name** | Time Clock |
| **Model No.** | NT8000X-XX(X can be 0~9 or a~z or A~Z or blank) |
| **Series Model No.** | NT8000Y-YY(Y can be 0~9 or a~z or A~Z or blank) |
| **FCC ID** | 2ASPANOVATIME-HID |
| **Frequency Range** | 125 kHz |
| **Antenna Information** | Refer to the table "Antenna List" |
| **EUT Supports Radios Application** | WLAN 802.11a/b/g<br>WLAN 802.11n (HT20/HT40)<br>Bluetooth BR/EDR/LE<br>RFID |
| **EUT Rated Voltage** | AC 100 ~ 240V / 50 or 60Hz、PoE |
| **EUT Test Voltage** | AC 120V / 60Hz |

**The EUT uses following adapter.**

| | |
|---|---|
| **Trade Name** | ENG Electric co., Ltd. |
| **Model No.** | 6A-601DB12 |
| **Input Power** | AC 100 ~ 240V / 50 or 60Hz、PoE |
| **Output Power** | DC 12V/5.0A |
| **Power Line** | Non-shielded, 1 Core, 1.5m |

**Antenna List**

| No. | Manufacturer | Model No. | Antenna Type | Peak Gain |
|---|---|---|---|---|
| 1 | Microprogram | 3DAT-8000-LL001 | Coil Antenna | -- |

Remark: The antenna of EUT is conforming to FCC 15.203

**Channel List**

| Channel | Frequency (kHz) |
|---------|-----------------|
| 01 | 125 |

**Test Frequencies in each operating band**

| Frequency range over which the device operates in each operating band (Note 1) | Number of test frequencies required | Location of test frequencies inside the operating frequency range (Note 1,2) |
|---|---|---|
| ≤ 1 MHz | 1 | near centre |
| > 1 MHz and ≤ 10 MHz | 2 | 1 near high end, 1 near low end |
| > 10 MHz | 3 | 1 near high end, 1 near centre, and 1 near low end |

**Note 1:** The frequency range over which the device operates in a given operating band is the difference between the highest and lowest frequencies on which the device can be tuned within that given operating band. The frequency range can be smaller than or equal to the operating band, but cannot be greater than the operating band.

**Note 2:** In the third column of table 1, "near" means as close as possible to or at the centre / low end / high end of the frequency range over which the device operates.

**Firmware / Software Version**

| 1 | **Product Name** | Time Clock |
|---|---|---|
| 2 | **Model No.** | NT8000X-XX(X can be 0~9 or a~z or A~Z or blank) |
| 3 | **Test SW Version** | N/A |
| 4 | **RF power setting in TEST SW** | ☒ RF power setting was not able to alter during testing. ☐ RF power setting was able to alter during testing. (See the following table) |

**Parameters of test software setting**

| Type of Modulation | Channel | Frequency (kHz) | Set Value |
|---|---|---|---|
| -- | 01 | 125 | Default |

**Test Mode**

| Mode 1 | Transmit RFID |
| --- | --- |

Note:

1. This device is a Time Clock with a built-in Wi-Fi、Bluetooth and RFID transceiver.

2. Main model: NT8000X-XX (X can be 0~9 or a~z or A~Z or blank), series model: NT8000Y-YY (Y can be 0~9 or a~z or A~Z or blank). The difference lies in the fingerprint recognizer function.

3. The EUT supports "Power over Ethernet" and "Adapter", the worst case is the adapter power supply. The final test mode selects the adapter power and records it in the report.

4. These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15 Subpart C Paragraph 15.209.

5. The radiation measurements are performed in X, Y, Z axis positioning. Only the X axis worst case is shown in the report.

## 1.4 Configuration of Tested System
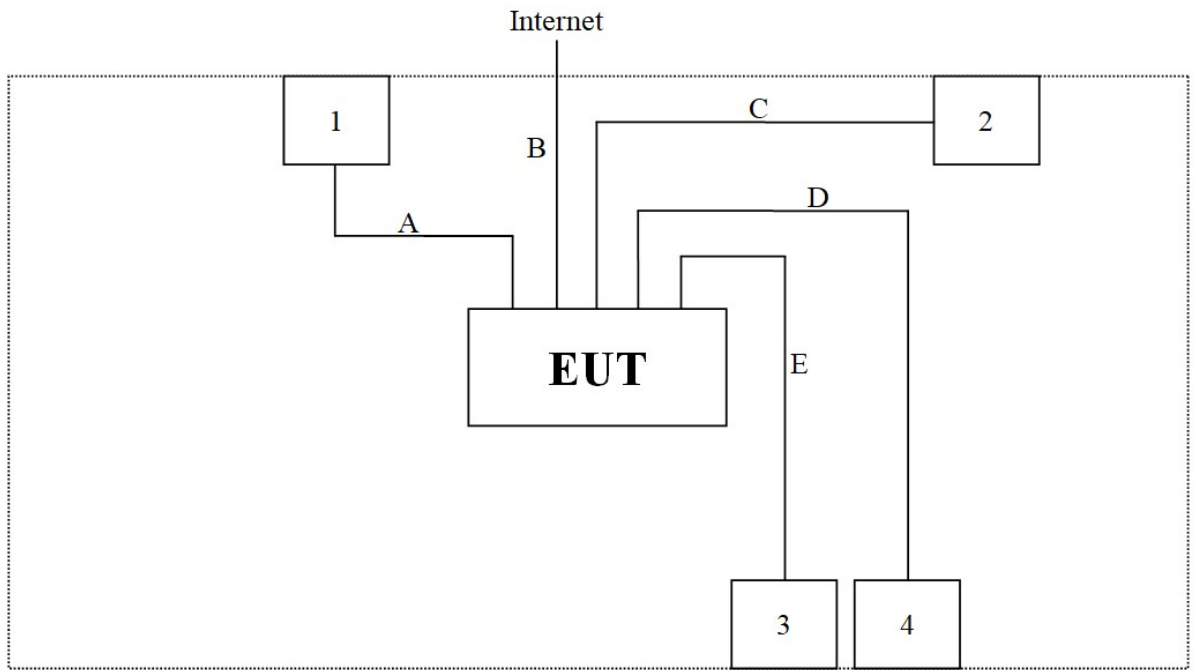


## 1.5 EUT Exercise Software

1. Setup the EUT as shown in Section 1.4
2. Turn on the power of all equipment.
3. Using tag to trigger RFID continuous transmission.
4. Verify that the EUT works properly.

## 1.6 Tested System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

| No. | Product | Manufacturer | Model No. | Serial No. | Power Cord |
|-----|---------|--------------|-----------|-----------|-----------|
| 1 | Adapter | ENG Electric co., Ltd. | 6A-601DB12 | N/A | Non-shielded, 1 Core, 1.5m |
| 2 | Notebook PC | acer | N16Q1 | NXVF4TA023742254147600 | Non-shielded, 1 Core, 0.8m |
| 3 | USB Keyboard | Lemel | 5105U | G6450015686 | Non-shielded, Non-Core, 1.5m |
| 4 | USB Mouse | Lemel | M83 | 201707K31002387 | Non-shielded, Non-Core, 1.5m |

| No. | Signal Cable Type | Signal cable Description |
|-----|-------------------|-------------------------|
| A | Power Cable | Non-shielded, 1 Core, 1.5m |
| B | LAN Cable | Non-shielded, Non-Core, 10m |
| C | USB Cable | Shielded, Non-Core, 1m |
| D | USB Mouse | Non-shielded, Non-Core, 1.5m |
| E | USB Keyboard | Non-shielded, Non-Core, 1.5m |

## 1.7 Test Facility

| Items | Required (IEC 60068-1) | Actual |
|---|---|---|
| Temperature (°C) | 15-35 | 25 |
| Humidity (% RH) | 25-75 | 55 |
| Barometric pressure (mbar) | 860-1060 | 1001 |

**Description:** Accredited by TAF
Accredited Number: 2965

**Issued by:** Wendell Industrial Co., Ltd

**Lab Address:** 6F/6F-1, No.188, Baoqiao Rd., Xindian Dist.,
New Taipei City 23145, Taiwan R.O.C

**Test Lab:** Wendell Electrical Testing Lab.

**Test Location:** No.67-9, Shimen Rd., Tucheng Dist.,
New Taipei City 236, Taiwan R.O.C

**FCC Accreditation Number:** TW2965
**FCC Designation Number:** TW1118

## 1.8 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence (level based on a coverage factor K=2)

| Measurement Project | Measuring Range | Expended Uncertainty |
|---|---|---|
| AC Conducted Emission | 0.150 ~ 30 MHz | 2.9 dB |
| Radiated Emission | 0.009 ~ 30 MHz | 3.8 dB |
| | 30 ~ 1000 MHz | 3.5 dB |
| DC Power Supply | 0.5 ~ 30 V | 1.7 % |
| Temperature | 15 ~ 30 °C | 0.8 °C |
| Humidity | 40 ~ 80 % | 3.8 % |

**Note:** Please note that the measurement uncertainty are provided for informational purpose only and are not used in determining the Pass/Fail results.

## 1.9   List of Test Equipment

**For AC Conduction measurements / Conducted Room**

| | Equipment | Manufacturer | Model No. | Serial No. | Cal. Date | Due Date |
|---|---|---|---|---|---|---|
| ✓ | EMI Test Receiver | R&S | ESR3 | 102309 | 2019/5/16 | 2020/5/15 |
| ✓ | 2-Line V-Network LISN | R&S | ENV216 | 101185 | 2019/5/20 | 2020/5/19 |
| ✓ | LISN | SCHWARZBECK | NSLK 8127RC | 05028 | 2019/5/20 | 2020/5/19 |
| ✓ | Transient Limiter | EM Electronics Corporation | EM-7600 | 857 | 2019/5/16 | 2020/5/15 |
| ✓ | 50ohm Cable | EMCI | EMCCFD300-BM-BM-5000 | 170613 | 2019/5/16 | 2020/5/15 |
| ✓ | 50 ohm terminal impedance | HUBER+SUHNER | 50 ohm terminal impedance | CT-1-109-1 | 2019/5/13 | 2020/5/12 |

Remark:
1. All equipments are calibrated every one year.
2. The test instruments marked with "✓" are used to measure the final test results.
3. Test Software version: FARAD EZ-EMC Ver.EMC-CON 3A1

**For Radiated measurements / 9x6x6 Semi Anechoic Room**

| | Equipment | Manufacturer | Model No. | Serial No. | Cal. Date | Due Date |
|---|---|---|---|---|---|---|
| ✓ | Spectrum Analyzer | Keysight | N9010A | MY52220228 | 2019/4/25 | 2020/4/24 |
| ✓ | EMI Receiver | Keysight | N9038A | MY51210173 | 2018/12/5 | 2019/12/4 |
| ✓ | Pre-Amplifier | EMEC | EMC330 | 060668 | 2018/10/16 | 2019/10/15 |
| | Pre-Amplifier | EMCI | EMC051845SE | 980525 | 2018/10/11 | 2019/10/10 |
| | Pre-Amplifier | EMCI | EMC184045SE | 980515 | 2018/10/10 | 2019/10/9 |
| | Pre-Amplifier | EMEC | EM01G18G | 060648 | 2018/10/11 | 2019/10/10 |
| ✓ | Cable | EMEC | EM-CB400 | 105060103 | 2018/10/18 | 2019/10/17 |
| ✓ | Cable | EMEC | EM-CB400 | 105060102 | 2018/10/18 | 2019/10/17 |
| ✓ | Cable | EMEC | EM-CB400 | 105060101 | 2018/10/18 | 2019/10/17 |
| | Cable | EMCI | EMC102-KM-KM-600 | 170637 | 2018/10/10 | 2019/10/9 |
| | Cable | HUBER+SUHNER | SF102 | MY2751/2 | 2018/10/10 | 2019/10/9 |
| | Cable | EMCI | EMC102-KM-KM-3000 | 170635 | 2018/10/10 | 2019/10/9 |
| ✓ | Loop Antenna | EMCI | LPA600 | 277 | 2018/4/19 | 2020/4/18 |
| ✓ | TRILOG super broad Antenna | Schwarzbeck | VULB 9168 | VULB 9168-700 & 1421 | 2018/10/19 | 2019/10/18 |
| | Horn Antenna | Schwarzbeck | BBHA 9120D | 01557 | 2018/10/9 | 2019/10/8 |
| | Horn Antenna | Schwarzbeck | BBHA 9170 | 703 | 2018/10/11 | 2019/10/10 |
| | RF Filter | EMEC | BRF-2400-2500 | 002 | 2018/10/10 | 2019/10/9 |
| | RF Filter | EMEC | BRF-5150-5350 | 104 | 2018/10/10 | 2019/10/9 |
| | RF Filter | EMEC | BRF-5470-5725 | 092 | 2018/10/10 | 2019/10/9 |
| | RF Filter | EMEC | BRF-5725-5875 | 091 | 2018/10/10 | 2019/10/9 |
| | RF Filter | EMEC | HPF-2800 | 002 | 2018/10/10 | 2019/10/9 |
| | RF Filter | EMEC | HPF-5850 | 059 | 2018/10/10 | 2019/10/9 |

Remark:

1. The test instruments marked with "✓" are used to measure the final test results.
2. Test Software version: FARAD EZ-EMC Ver.WD-03A1-1

# 2 Test Result

## 2.1 Antenna Requirement

### 2.1.1 Standard Applicable

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.

### 2.1.2 Antenna Connected Construction

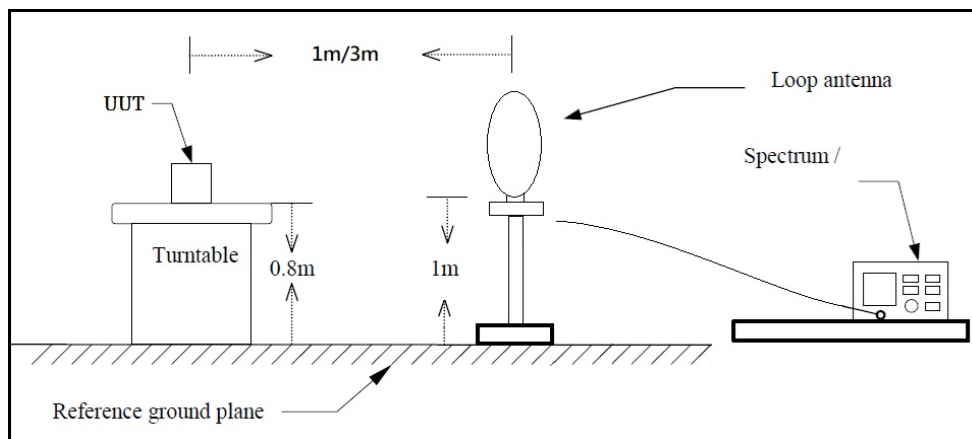Non-standard antenna connector is used.

## 2.2 Radiated Emissions Measurement

### 2.2.1 Limit

| 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 |
| Above 960 | 500 | 3 |

### 2.2.2 Test Setup

**Below 30MHz**



**Above 30MHz**
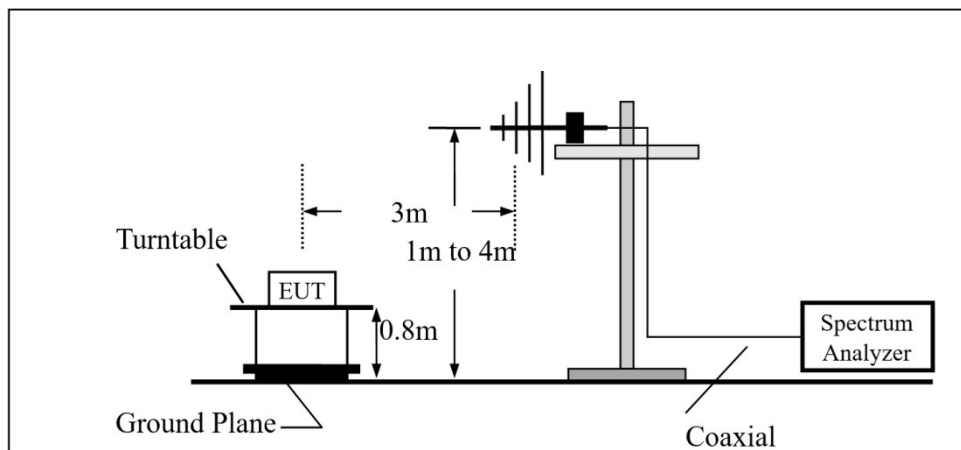
## 2.2.3 Test Procedure

The EUT was setup according to ANSI C63.10, 2013 for compliance to FCC 47CFR 15.209 requirements.

**For Radiated emission below 30MHz**

(1) The EUT was placed on the top of a rotating table 0.8 meters above the ground in a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.

(2) The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

(3) Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.

(4) For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

(5) The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

## 2.2.4 Test Result

**Below 30 MHz Data**

| Test Mode : | Mode 1: Transmit RFID | Test Date : | 2019/06/26 |
|---|---|---|---|
| Test Frequency: | 125 KHz. | Temperature : | 25 ℃ |
| Polarization : | X axis; Horizontal | Relative Humidity : | 65 % |

| No. | Frequency (MHz) | Reading (dBuV/m) | Correct Factor (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 0.0517 | 33.3900 | 63.7700 | 97.1600 | 132.4193 | -35.2593 | QP |
| 2 | 0.1250 | 45.9000 | 56.1200 | 102.0200 | 124.7509 | -22.7309 | AVG |
| 3 | 0.1327 | 36.7100 | 55.8000 | 92.5100 | 124.2317 | -31.7217 | AVG |
| 4 | 0.1500 | 38.1300 | 55.0800 | 93.2100 | 123.1672 | -29.9572 | AVG |
| 5 | 1.3740 | 31.1300 | 40.4300 | 71.5600 | 83.9293 | -12.3693 | QP |
| 6 | 6.4185 | 10.9000 | 37.2600 | 48.1600 | 88.6273 | -40.4673 | QP |
| 7 | 28.2687 | 6.5500 | 39.5300 | 46.0800 | 88.6273 | -42.5473 | QP |

**Remark：**

(1) Actual test distance = 1 meters

(2) Correction Factor = Antenna factor + Cable loss –Amplifier gain

(3) Result Value = Reading Level + Correct Factor

(4) Margin Level = Measurement Value –Limit Value

(5) The other emission levels were very low against the limit

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| Test Mode : | Mode 1: Transmit RFID | Test Date : | 2019/06/26 |
|---|---|---|---|
| Test Frequency: | 125 KHz. | Temperature : | 25 ℃ |
| Polarization : | X axis; Vertical | Relative Humidity : | 65 % |

| No. | Frequency (MHz) | Reading (dBuV/m) | Correct Factor (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 0.0520 | 34.7600 | 63.7200 | 98.4800 | 132.3690 | -33.8890 | QP |
| 2 | 0.1250 | 44.3900 | 56.1200 | 100.5100 | 124.7509 | -24.2409 | AVG |
| 3 | 0.1318 | 36.7600 | 55.8400 | 92.6000 | 124.2908 | -31.6908 | AVG |
| 4 | 0.2097 | 30.6300 | 52.6100 | 83.2400 | 120.2571 | -37.0171 | AVG |
| 5 | 1.3740 | 26.5700 | 40.4300 | 67.0000 | 83.9293 | -16.9293 | QP |
| 6 | 6.6871 | 8.6300 | 37.3200 | 45.9500 | 88.6273 | -42.6773 | QP |
| 7 | 26.3881 | 6.0700 | 38.9300 | 45.0000 | 88.6273 | -43.6273 | QP |

**Remark：**

(1) Actual test distance = 1 meters

(2) Correction Factor = Antenna factor + Cable loss –Amplifier gain

(3) Result Value = Reading Level + Correct Factor

(4) Margin Level = Measurement Value –Limit Value

(5) The other emission levels were very low against the limit

**Above 30MHz Data**

| Test Mode : | Mode 1: Transmit RFID | Test Date : | 2019/06/24 |
|---|---|---|---|
| Test Frequency: | 125 KHz | Temperature : | 25 ℃ |
| Polarization : | Horizontal | Relative Humidity : | 65 % |



| No. | Frequency (MHz) | Reading (dBuV/m) | Correct Factor (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 71.7100 | 50.90 | -12.52 | 38.38 | 40.00 | -1.62 | QP |
| 2 | 84.3200 | 54.03 | -15.33 | 38.70 | 40.00 | -1.30 | QP |
| 3 | 162.8900 | 48.55 | -9.68 | 38.87 | 43.50 | -4.63 | QP |
| 4 | 222.0600 | 55.30 | -12.27 | 43.03 | 46.00 | -2.97 | QP |
| 5 | 480.0800 | 46.04 | -4.77 | 41.27 | 46.00 | -4.73 | QP |
| 6 | 900.0900 | 40.57 | 2.11 | 42.68 | 46.00 | -3.32 | QP |
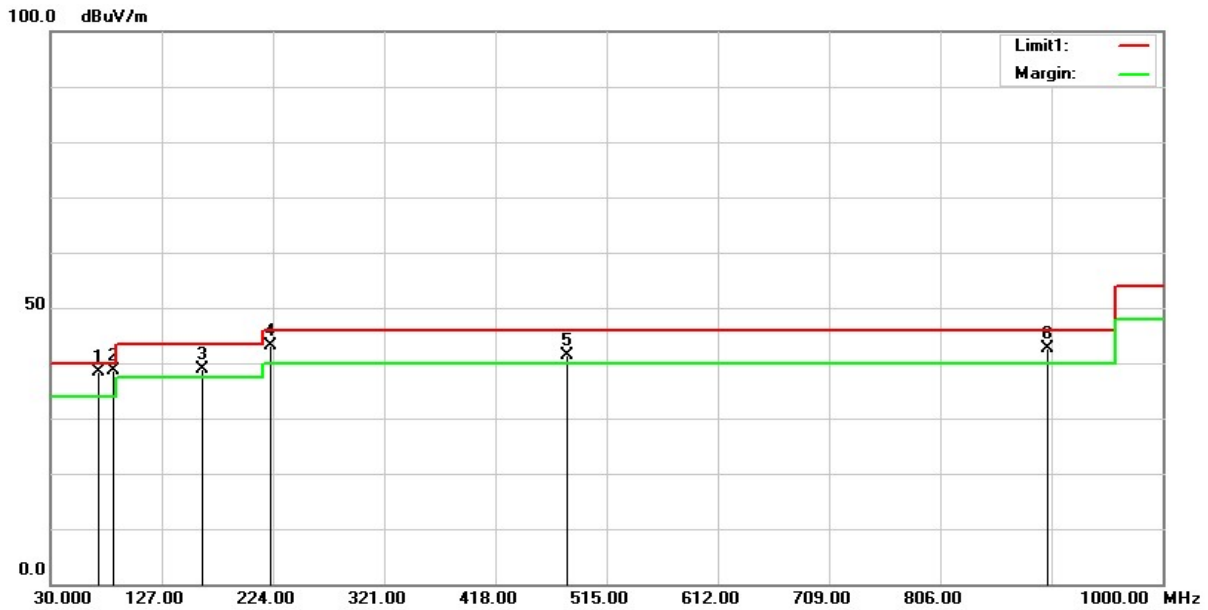
**Remark**：

    (1)    Correction Factor = Antenna factor + Cable loss –Amplifier gain

    (2)    Result Value = Reading Level + Correct Factor

    (3)    Margin Level = Measurement Value –Limit Value

    (4)    The other emission levels were very low against the limit

**Wendell** Electrical Testing Lab

| Test Mode : | Mode 1: Transmit RFID | Test Date : | 2019/06/24 |
|---|---|---|---|
| Test Frequency: | 125 KHz | Temperature : | 25 ℃ |
| Polarization : | Vertical | Relative Humidity : | 65 % |



| No. | Frequency (MHz) | Reading (dBuV/m) | Correct Factor (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 71.7100 | 51.06 | -12.52 | 38.54 | 40.00 | -1.46 | QP |
| 2 | 79.4700 | 53.30 | -14.33 | 38.97 | 40.00 | -1.03 | QP |
| 3 | 230.7900 | 53.93 | -11.57 | 42.36 | 46.00 | -3.64 | QP |
| 4 | 480.0800 | 48.44 | -4.77 | 43.67 | 46.00 | -2.33 | QP |
| 5 | 600.3600 | 45.69 | -2.02 | 43.67 | 46.00 | -2.33 | QP |
| 6 | 900.0900 | 42.15 | 2.11 | 44.26 | 46.00 | -1.74 | QP |

**Remark**：

    (1)    Correction Factor = Antenna factor + Cable loss –Amplifier gain

    (2)    Result Value = Reading Level + Correct Factor

    (3)    Margin Level = Measurement Value –Limit Value

    (4)    The other emission levels were very low against the limit
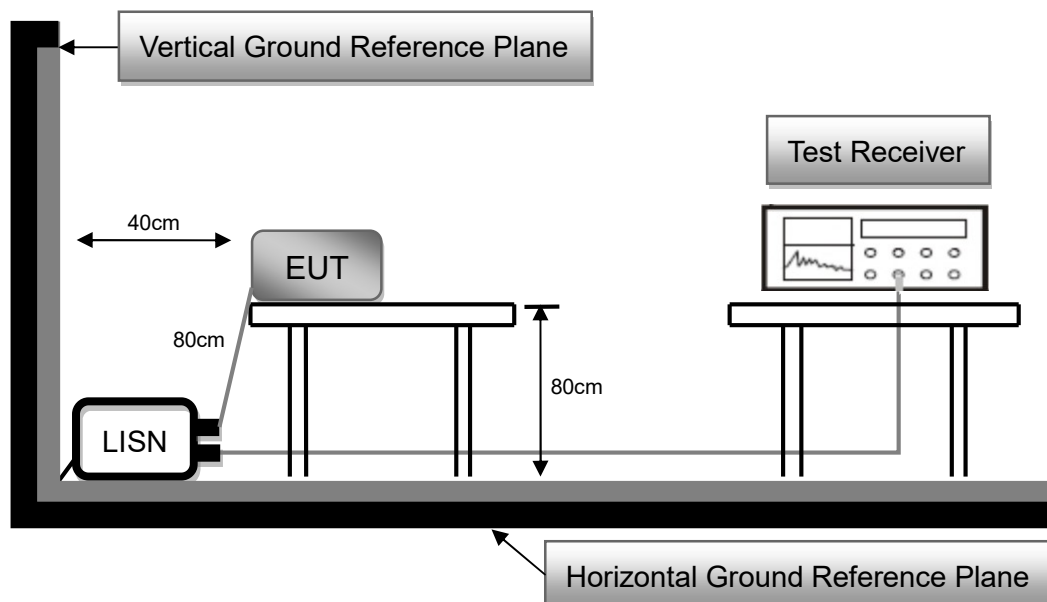
## 2.3 AC Conducted Emissions Measurement

### 2.3.1 Limit

| Frequency (MHz) | FCC Part 15 Subpart C Paragraph 15.207 (dBµV) Limit | |
| --- | --- | --- |
| | Quasi-peak | Average |
| 0.15 to 0.5 | 66 to 56* | 56 to 46* |
| 0.50 to 5.0 | 56 | 46 |
| 5.0 to 30.0 | 60 | 50 |

*Decreases with the logarithm of the frequency
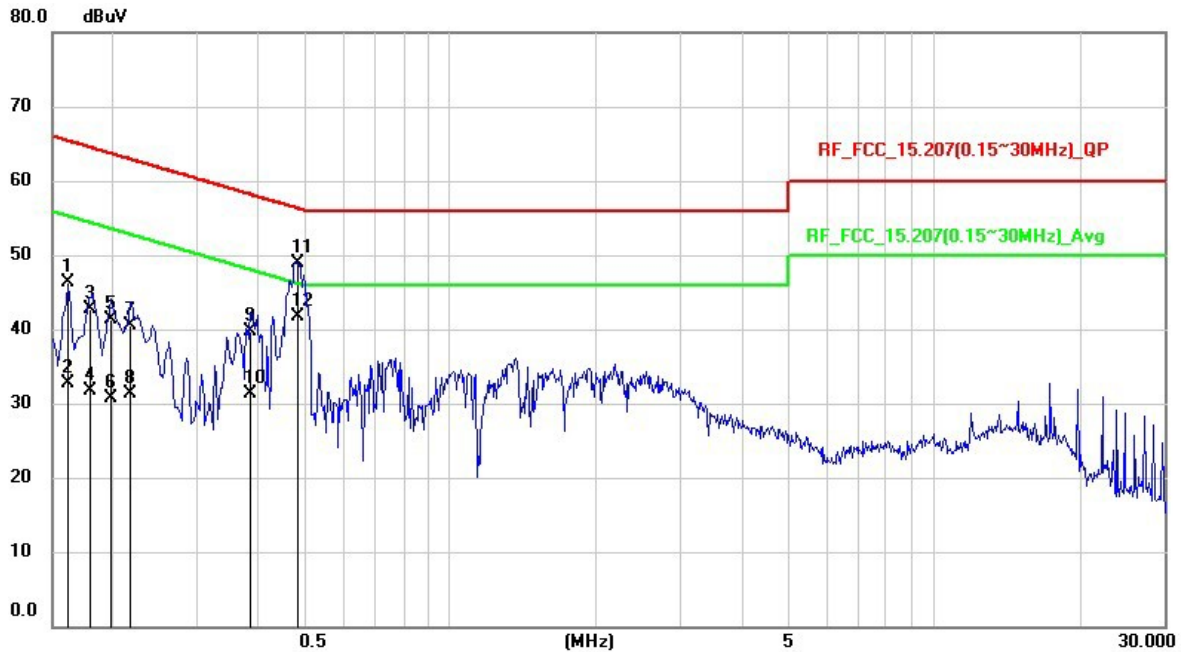
### 2.3.2 Test Setup

### 2.3.3 Test Procedure

1.  The EUT was placed 0.8 meter height wooden table from the horizontal ground plane with EUT being connected to power source through a line impedance stabilization network (LISN). The LISN at least be 80 cm from nearest chassis of EUT.

2.  The line impedance stabilization network (LISN) provides 50 ohm/50uH of coupling impedance for the measuring instrument. All other support equipments powered from additional LISN(s).

3.  Interrelating cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle. All I/O cables were positioned to simulate typical usage.

4.  All I/O cables that are not connected to a peripheral shall be bundle in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

5.  The EMI test receiver connected to LISN powering the EUT. The actual test configuration, please refer to EUT test photos.

6.  The receiver scanned from 150kHz to 30MHz for emissions in each of test modes. A scan was taken on both power lines, Line and Neutral, recording at least six highest emissions.

7.  The EUT and cable configuration of the above highest emission levels were recorded. The test data of the worst case was recorded.

## 2.3.4 Test Result

| Test Voltage : | 120Vac, 60Hz | Frequency Range: | 0.15-30 MHz |
|---|---|---|---|
| Test Mode : | Transmit RFID | 6dB Bandwidth : | 9 kHz |
| Test Date : | 2019/06/05 | Phase : | L |
| Temperature : | 25℃ | Humidity : | 65 % |



| No. | Frequency (MHz) | Reading Level (dBuV) | Correct Factor (dB) | Measurement (dBuV) | Limit (dBuV) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|
| 1 | 0.1611 | 36.43 | 9.84 | 46.27 | 65.41 | -19.14 | QP |
| 2 | 0.1611 | 22.92 | 9.84 | 32.76 | 55.41 | -22.65 | AVG |
| 3 | 0.1791 | 32.78 | 9.83 | 42.61 | 64.53 | -21.92 | QP |
| 4 | 0.1791 | 21.85 | 9.83 | 31.68 | 54.53 | -22.85 | AVG |
| 5 | 0.1987 | 31.51 | 9.83 | 41.34 | 63.66 | -22.32 | QP |
| 6 | 0.1987 | 20.85 | 9.83 | 30.68 | 53.66 | -22.98 | AVG |
| 7 | 0.2171 | 30.72 | 9.83 | 40.55 | 62.93 | -22.38 | QP |
| 8 | 0.2171 | 21.43 | 9.83 | 31.26 | 52.93 | -21.67 | AVG |
| 9 | 0.3863 | 29.87 | 9.84 | 39.71 | 58.14 | -18.43 | QP |
| 10 | 0.3863 | 21.53 | 9.84 | 31.37 | 48.14 | -16.77 | AVG |
| 11 | 0.4814 | 39 | 9.84 | 48.84 | 56.31 | -7.47 | QP |
| 12 | 0.4814 | 31.96 | 9.84 | 41.8 | 46.31 | -4.51 | AVG |

Remark:

1. QP = Quasi Peak, AVG = Average

2. Correction Factor = Insertion loss of LISN + Cable loss

3. Measurement Value = Reading Level + Correct Factor

4. Margin Level = Measurement Value –Limit Value

| Test Voltage : | 120Vac, 60Hz | Frequency Range: | 0.15-30 MHz |
|---|---|---|---|
| Test Mode : | Transmit RFID | 6dB Bandwidth : | 9 kHz |
| Test Date : | 2019/06/05 | Phase : | N |
| Temperature : | 25°C | Humidity : | 65 % |



| No. | Frequency (MHz) | Reading Level (dBuV) | Correct Factor (dB) | Measurement (dBuV) | Limit (dBuV) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|
| 1 | 0.1534 | 37.13 | 9.83 | 46.96 | 65.81 | -18.85 | QP |
| 2 | 0.1534 | 22.35 | 9.83 | 32.18 | 55.81 | -23.63 | AVG |
| 3 | 0.1709 | 34.86 | 9.83 | 44.69 | 64.92 | -20.23 | QP |
| 4 | 0.1709 | 21.27 | 9.83 | 31.1 | 54.92 | -23.82 | AVG |
| 5 | 0.19 | 33.14 | 9.82 | 42.96 | 64.04 | -21.08 | QP |
| 6 | 0.19 | 23.33 | 9.82 | 33.15 | 54.04 | -20.89 | AVG |
| 7 | 0.2272 | 30.94 | 9.82 | 40.76 | 62.55 | -21.79 | QP |
| 8 | 0.2272 | 20.77 | 9.82 | 30.59 | 52.55 | -21.96 | AVG |
| 9 | 0.3992 | 31.08 | 9.84 | 40.92 | 57.87 | -16.95 | QP |
| 10 | 0.3992 | 23.06 | 9.84 | 32.9 | 47.87 | -14.97 | AVG |
| 11 | 0.4819 | 39.28 | 9.84 | 49.12 | 56.31 | -7.19 | QP |
| 12 | 0.4819 | 32.17 | 9.84 | 42.01 | 46.31 | -4.3 | AVG |
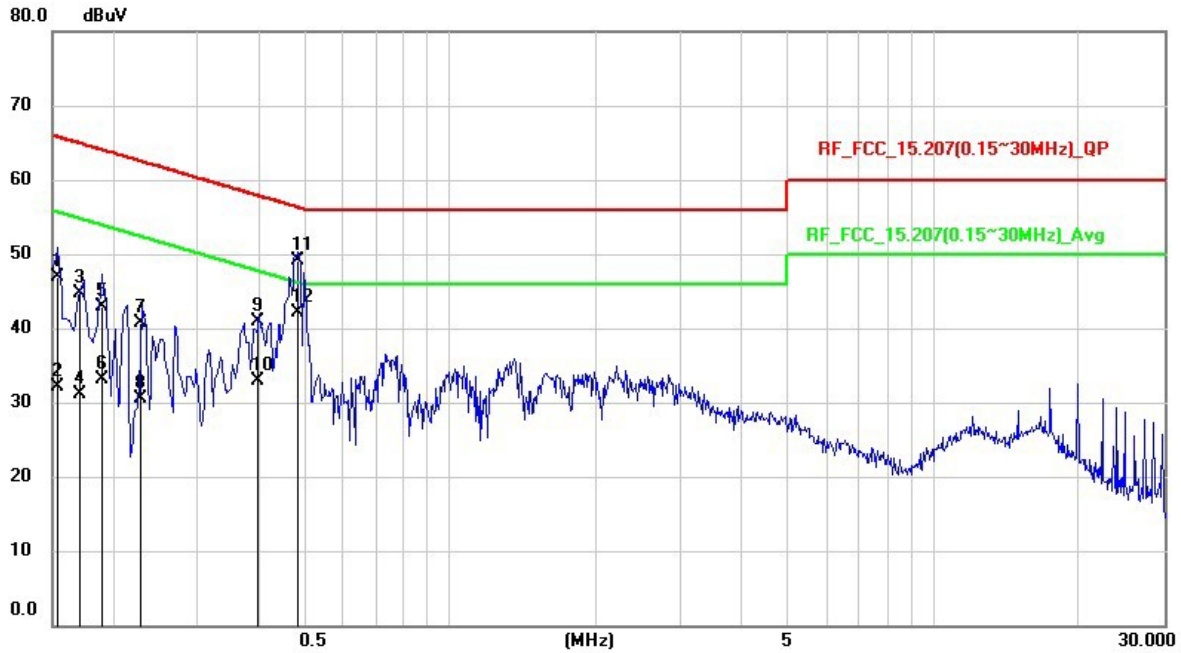
Remark:

1. QP = Quasi Peak, AVG = Average

2. Correction Factor = Insertion loss of LISN + Cable loss

3. Measurement Value = Reading Level + Correct Factor

4. Margin Level = Measurement Value –Limit Value

**- END ---**