

**FCC 47 CFR PART 15 SUBPART E &
INDUSTRY CANADA RSS-247
(Class II Permissive Change)**

TEST REPORT

For

802.11a/b/g/n/ac RTL8821AE Combo module

Model: RTL8821AE

Trade Name: REALTEK

Issued to

**Realtek Semiconductor Corp.
No. 2, Innovation Road II, Hsinchu Science Park, Hsinchu 300, Taiwan**

Issued by

**Compliance Certification Services Inc.
No.11, Wugong 6th Rd., Wugu Dist.,
New Taipei City 24891, Taiwan. (R.O.C.)
<http://www.ccsrf.com>
service@ccsrf.com**
Issued Date: August 5, 2015



Note: This report shall not be reproduced except in full, without the written approval of Compliance Certification Services Inc. This document may be altered or revised by Compliance Certification Services Inc. personnel only, and shall be noted in the revision section of the document.

**Revision History**

| Rev. | Issue Date | Revisions | Effect Page | Revised By |
|------|----------------|---------------|-------------|-------------|
| 00 | August 5, 2015 | Initial Issue | ALL | Kelly Cheng |

TABLE OF CONTENTS

| | |
|--|-----------|
| 1. TEST RESULT CERTIFICATION | 4 |
| 2. EUT DESCRIPTION..... | 5 |
| 3. TEST METHODOLOGY..... | 6 |
| 3.1 EUT CONFIGURATION | 6 |
| 3.2 EUT EXERCISE | 6 |
| 3.3 GENERAL TEST PROCEDURES..... | 6 |
| 3.4 FCC PART 15.205 RESTRICTED BANDS OF OPERATIONS..... | 7 |
| 3.5 DESCRIPTION OF TEST MODES..... | 8 |
| 4. INSTRUMENT CALIBRATION | 9 |
| 4.1 MEASURING INSTRUMENT CALIBRATION | 9 |
| 4.2 MEASUREMENT EQUIPMENT USED | 9 |
| 4.3 MEASUREMENT UNCERTAINTY | 9 |
| 5 FACILITIES AND ACCREDITATIONS | 10 |
| 5.1 FACILITIES | 10 |
| 5.2 LABORATORY ACCREDITATIONS AND LISTING..... | 10 |
| 5.3 TABLE OF ACCREDITATIONS AND LISTINGS..... | 11 |
| 6 SETUP OF EQUIPMENT UNDER TEST | 12 |
| 6.1 SETUP CONFIGURATION OF EUT | 12 |
| 6.2 SUPPORT EQUIPMENT | 12 |
| 7 RSS-247 REQUIREMENTS | 13 |
| 7.1 MAXIMUM CONDUCTED OUTPUT POWER | 13 |
| 7.2 BAND EDGES MEASUREMENT | 15 |
| 7.3 RADIATED EMISSIONS | 24 |
| APPENDIX II PHOTOGRAPHS OF TEST SETUP..... | 57 |
| APPENDIX 1 - PHOTOGRAPHS OF EUT | |

1. TEST RESULT CERTIFICATION

Applicant: Realtek Semiconductor Corp.
No. 2, Innovation Road II, Hsinchu Science Park, Hsinchu
300, Taiwan

Manufacturer: Realtek Semiconductor Corp.
No. 2, Innovation Road II, Hsinchu Science Park, Hsinchu
300, Taiwan

Equipment Under Test: 802.11a/b/g/n/ac RTL8821AE Combo module

Trade Name: REALTEK

Model: RTL8821AE

Date of Test: July 29 ~ August 3, 2015

| APPLICABLE STANDARDS | |
|---|-------------------------|
| STANDARD | TEST RESULT |
| FCC 47 CFR Part 15 Subpart E Industry Canada RSS-247 Issue 1 | No non-compliance noted |

We hereby certify that:

Compliance Certification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

The test results of this report relate only to the tested sample identified in this report.

Approved by



Miller Lee
Manager
Compliance Certification Services Inc.

Reviewed by



Angel Cheng
Section Manager
Compliance Certification Services Inc.

2. EUT DESCRIPTION

| | | | |
|--|--|------------------------|-------------|
| Product | 802.11a/b/g/n/ac RTL8821AE Combo module | | |
| Trade Name | REALTEK | | |
| Model Number | RTL8821AE | | |
| Model Discrepancy | N/A | | |
| Power Supply | Powered from host device | | |
| Received Date | July 22, 2015 | | |
| Frequency Range | IEEE 802.11a/ IEEE 802.11n HT 20 MHz: 5745~5825 MHz IEEE 802.11n HT 40 MHz: 5755~5795 MHz IEEE 802.11ac VHT 80 mode: 5775MHz | | |
| Transmit Power | IEEE 802.11a mode: 13.70 dBm IEEE 802.11n HT 20 MHz mode: 13.65 dBm IEEE 802.11n HT 40 MHz mode: 13.30 dBm IEEE 802.11ac VHT 80 MHz mode: 11.20 dBm | | |
| Modulation Technique & Transmit Data Rate | IEEE 802.11a: OFDM (54, 48, 36, 24, 18, 12, 9, 6 Mbps) IEEE 802.11n HT 20 MHz mode: OFDM (6.5, 7.2, 13, 14.4, 14.44, 19.5, 21.7, 26, 28.89, 28.9, 39, 43.3, 43.33 52, 57.78, 57.8, 58.5, 65.0, 72.2, 78, 86.67, 104, 115.56, 117, 130, 144.44 Mbps) IEEE 802.11n HT 40 MHz mode: OFDM (13.5, 15, 27, 30, 40.5, 45, 54, 60, 81, 90, 108, 120, 121.5, 135, 150, 162, 180, 216, 240, 243, 270, 300 Mbps) IEEE 802.11ac VHT 80 mode: OFDM (29.3, 58.5, 87.8, 117, 175.5, 234, 263.3, 292.5, 351, 390, 468, 526.5, 585, 702, 780 Mbps) | | |
| Number of Channels | IEEE 802.11a mode: 5 Channels IEEE 802.11n HT 20 MHz mode: 5 Channels IEEE 802.11n HT 40 MHz mode: 2 Channels IEEE 802.11ac VHT 80 mode: 1 Channels | | |
| Antenna Specification | 1. High-Tek Electronics Co., Ltd PIFA Antenna P/N : 025.900CR.0001 (Main) / 2.48 dBi (Worse) 025.900CR.0001 (Aux) / 1.70 dBi 2. Wistron Neweb Corporation PIFA Antenna P/N : 025.900CR.0011 (Main) / -4.39 dBi 025.900CR.0011 (Aux) / -3.04 dBi | | |
| Host Brand | Lenovo | Host Model Name | Flex 3-1570 |
| | | | Flex 3-1535 |
| | | | Flex 3-1580 |
| Class II Permissive Change | Adding the portable platforms Flex 3-1580, The host have the same antenna type as originally approved with lower gains. | | |

Remark:

1. The sample selected for test was engineering sample that approximated to production product and was provided by manufacturer.
2. This submittal(s) (test report) is intended for FCC&IC ID: **TX2-RTL8821AE** & **6317A-RTL8821AE** filing to comply with FCC Part 15C, Section 15.207, 15.209 and IC RSS-247 & RSS-GEN.
3. Choosing the maximum antenna gain for the test.

3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.10: 2013 and FCC CFR 47 Part 15.207, 15.209, 15.407 and KDB 789033 D02 General UNII Test Procedures New Rules v01.

The tests documented in this report were performed in accordance with IC RSS-247, IC RSS-Gen and ANSI C63.10:2013.

This submittal(s) (test report) is intended for IC Certification with Industry Canada RSS-247.

3.1 EUT CONFIGURATION

The EUT configuration for testing is installed for RF field strength measurement to meet the Commissions requirement, and is operated in a manner intended to generate the maximum emission in a continuous normal application.

3.2 EUT EXERCISE

The EUT is operated in the engineering mode to fix the Tx frequency for the purposes of measurement.

According to its specifications, the EUT must comply with the requirements of Section 15.407 under the FCC Rules Part 15 Subpart E.

3.3 GENERAL TEST PROCEDURES

Conducted Emissions

The EUT is placed on the turntable, which is positioned at 0.8 m above the ground plane. According to the requirements in ANSI C63.10: 2013 for IC, ANSI C63.10: 2009 for FCC, the conducted emission from the EUT is measured in the frequency range between 0.15 MHz and 30MHz, using the CISPR Quasi-Peak detector mode.

Radiated Emissions

The EUT is placed on the turntable, which is 1.5 m above the ground plane. The turntable is then rotated for 360 degrees to determine the proper orientation for the maximum emission level. The EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission level. And, each emission is to be maximized by changing the horizontal and vertical polarization of the receiving antenna. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in ANSI C63.10: 2013 for IC, ANSI C63.10: 2009 for FCC.

3.4 FCC PART 15.205 RESTRICTED BANDS OF OPERATIONS

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

| MHz | MHz | MHz | GHz |
|----------------------------|---------------------|-----------------|------------------|
| 0.090 - 0.110 | 16.42 - 16.423 | 399.9 - 410 | 4.5 - 5.15 |
| ¹ 0.495 - 0.505 | 16.69475 - 16.69525 | 608 - 614 | 5.35 - 5.46 |
| 2.1735 - 2.1905 | 16.80425 - 16.80475 | 960 - 1240 | 7.25 - 7.75 |
| 4.125 - 4.128 | 25.5 - 25.67 | 1300 - 1427 | 8.025 - 8.5 |
| 4.17725 - 4.17775 | 37.5 - 38.25 | 1435 - 1626.5 | 9.0 - 9.2 |
| 4.20725 - 4.20775 | 73 - 74.6 | 1645.5 - 1646.5 | 9.3 - 9.5 |
| 6.215 - 6.218 | 74.8 - 75.2 | 1660 - 1710 | 10.6 - 12.7 |
| 6.26775 - 6.26825 | 108 - 121.94 | 1718.8 - 1722.2 | 13.25 - 13.4 |
| 6.31175 - 6.31225 | 123 - 138 | 2200 - 2300 | 14.47 - 14.5 |
| 8.291 - 8.294 | 149.9 - 150.05 | 2310 - 2390 | 15.35 - 16.2 |
| 8.362 - 8.366 | 156.52475 - | 2483.5 - 2500 | 17.7 - 21.4 |
| 8.37625 - 8.38675 | 156.52525 | 2655 - 2900 | 22.01 - 23.12 |
| 8.41425 - 8.41475 | 156.7 - 156.9 | 3260 - 3267 | 23.6 - 24.0 |
| 12.29 - 12.293 | 162.0125 - 167.17 | 3332 - 3339 | 31.2 - 31.8 |
| 12.51975 - 12.52025 | 167.72 - 173.2 | 3345.8 - 3358 | 36.43 - 36.5 |
| 12.57675 - 12.57725 | 240 - 285 | 3600 - 4400 | (²) |
| 13.36 - 13.41 | 322 - 335.4 | | |

¹ Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

² Above 38.6

(b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

3.5 DESCRIPTION OF TEST MODES

The EUT (model: RTL8821AE) had been tested under operating condition.

Software used to control the EUT for staying in continuous transmitting and receiving mode was programmed.

After verification, all tests were carried out with the worst case test modes as shown below except radiated spurious emission below 1GHz, which worst case was in normal link mode only.

IEEE 802.11a mode / 5745 ~ 5825MHz

Channel Low (5745MHz), Channel Mid (5785MHz) and Channel High (5825MHz) with 6Mbps data rate were chosen for full testing.

IEEE 802.11n HT 20 MHz mode / 5745 ~ 5825MHz

Channel Low(5745MHz), Channel Mid(5785MHz) and Channel High(5825MHz) with 6.5Mbps data rate were chosen for full testing.

IEEE 802.11n HT 40 MHz mode / 5755 ~ 5795MHz

Channel Low(5755MHz) and Channel High(5795MHz) with 13.5Mbps data rate were chosen for full testing.

IEEE 802.11ac VHT 80 MHz mode for 5775MHz:

Channel (5775MHz) with 6.5Mbps data rate were chosen for full testing.

The field strength of spurious emission was measured in the following position: The EUT has Notebook mode, Flat mode, Tent mode, Stand mode, Tablet X, Y and Z axis modes. The worst emission was found in Tablet X axis mode and the worst case was recorded.

4. INSTRUMENT CALIBRATION

4.1 MEASURING INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards.

4.2 MEASUREMENT EQUIPMENT USED

Equipment Used for Emissions Measurement

Remark: Each piece of equipment is scheduled for calibration once a year and Loop Antenna is scheduled for calibration once three years.

| Wugu 966 Chamber A | | | | |
|--------------------|--------------------|---------------------|---------------|-----------------|
| Name of Equipment | Manufacturer | Model | Serial Number | Calibration Due |
| Spectrum Analyzer | Agilent | E4446A | US42510268 | 09/18/2015 |
| EMI Test Receiver | R&S | ESCI | 100064 | 06/04/2016 |
| Bilog Antenna | Sunol Sciences | JB3 | A030105 | 08/19/2015 |
| Horn Antenna | EMCO | 3117 | 00055165 | 01/26/2016 |
| Horn Antenna | EMCO | 3116 | 26370 | 12/25/2015 |
| Turn Table | CCS | CC-T-1F | N/A | N.C.R |
| Antenna Tower | CCS | CC-A-1F | N/A | N.C.R |
| Controller | CCS | CC-C-1F | N/A | N.C.R |
| Pre-Amplifier | MITEQ | 1652-3000 | 1490939 | 08/09/2016 |
| Pre-Amplifier | EMC | EMC 01265 | 4035 | 06/04/2016 |
| Pre-Amplifier | MITEQ | AMF-6F-260400-40-8P | 985646 | 12/25/2015 |
| Coaxial Cable | Huber+Suhner | 102 | 29212/2 | 12/25/2015 |
| Coaxial Cable | Huber+Suhner | 102 | 29406/2 | 12/25/2015 |
| Test S/W | EZ-EMC (CCS-3A1RE) | | | |

4.3 MEASUREMENT UNCERTAINTY

| PARAMETER | UNCERTAINTY |
|---------------------------------------|-------------|
| Powerline Conducted Emission | N/A |
| 3M Semi Anechoic Chamber / 30M~200M | +/- 4.0138 |
| 3M Semi Anechoic Chamber / 200M~1000M | +/- 3.9483 |
| 3M Semi Anechoic Chamber / 1G~8G | +/- 2.5975 |
| 3M Semi Anechoic Chamber / 8G~18G | +/- 2.6112 |
| 3M Semi Anechoic Chamber / 18G~26G | +/- 2.7389 |
| 3M Semi Anechoic Chamber / 26G~40G | +/- 2.9683 |

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

5 FACILITIES AND ACCREDITATIONS

5.1 FACILITIES

All measurement facilities used to collect the measurement data are located at

- No.199, Chunghsen Road, Hsintien City, Taipei Hsien, Taiwan, R.O.C.
Tel: 886-2-2217-0894 / Fax: 886-2-2217-1029
- No.11, Wugong 6th Rd., Wugu Dist., New Taipei City 248, Taiwan (R.O.C.)
Tel: 886-2-2299-9720 / Fax: 886-2-2298-4045
- No.81-1, Lane 210, Bade 2nd Rd., Lujhu Township, Taoyuan County 33841, TAIWAN, R.O.C.
Tel: 886-3-324-0332 / Fax: 886-3-324-5235

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.10: 2013 for IC, ANSI C63.10: 2009 for FCC and CISPR Publication 22.

All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

5.2 LABORATORY ACCREDITATIONS AND LISTING

The test facilities used to perform radiated and conducted emissions tests are accredited by American Association for Laboratory Accreditation Program for the specific scope accreditation under Lab Code: 0824-01 to perform Electromagnetic Interference tests according to FCC Part 15 and CISPR 22 requirements. In addition, the test facilities are listed with Industry Canada, Certification and Engineering Bureau, IC 2324G-1 for 3M Semi Anechoic Chamber A, IC 2324G-2 for 3M Semi Anechoic Chamber B.

5.3 TABLE OF ACCREDITATIONS AND LISTINGS

| Country | Agency | Scope of Accreditation | Logo |
|---------|-----------------|--|---|
| USA | FCC | 3M Semi Anechoic Chamber (FCC MRA: TW1039) to perform FCC Part 15 measurements |  FCC MRA: TW1039 |
| Taiwan | TAF | LP0002, RTTE01, FCC Method-47 CFR Part 15 Subpart C, D, E, RSS-247, RSS-310 IDA TS SRD, AS/NZS 4268, AS/NZS 4771, TS 12.1 & 12.2, ETSI EN 300 440-1, ETSI EN 300 440-2, ETSI EN 300 328, ETSI EN 300 220-1, ETSI EN 300 220-2, ETSI EN 301 893, ETSI EN 301 489-1/3/7/17 FCC OET Bulletin 65 + Supplement C, EN 50360, EN 50361, EN 50371, RSS 102, EN 50383, EN 50385, EN 50392, IEC 62209, CNS 14958-1, CNS 14959 FCC Method -47 CFR Part 15 Subpart B IEC / EN 61000-3-2, IEC / EN 61000-3-3, IEC / EN 61000-4-2/3/4/5/6/8/11 |  Testing Laboratory 1309 |
| Canada | Industry Canada | 3M Semi Anechoic Chamber (IC 2324G-1 / IC 2324G-2) to perform |  IC 2324G-1 IC 2324G-2 |

* No part of this report may be used to claim or imply product endorsement by A2LA or any agency of the US Government.

6 SETUP OF EQUIPMENT UNDER TEST

6.1 SETUP CONFIGURATION OF EUT

See test photographs attached in Appendix II for the actual connections between EUT and support equipment.

6.2 SUPPORT EQUIPMENT

| No. | Device Type | Brand | Model | Series No. | FCC ID | Data Cable | Power Cord |
|-----|-------------|--------|-------------|------------|---------|------------|---|
| 1 | Notebook PC | Lenovo | Flex 3-1580 | N/A | FCC DOC | N/A | AC I/P: Unshielded, 1.8m DC O/P: Unshielded, 1.8m with a core |

Remark:

1. *All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.*
2. *Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.*

7 RSS-247 REQUIREMENTS

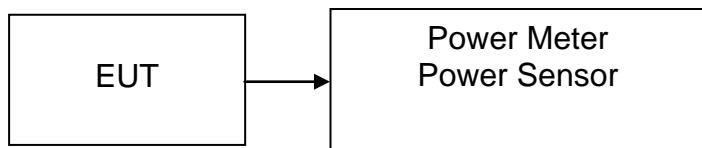
7.1 MAXIMUM CONDUCTED OUTPUT POWER

LIMIT

The maximum peak output power of the intentional radiator shall not exceed the following:

1. According to §15.407, for systems using digital modulation in the bands of 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz: 1 Watt.
2. According to RSS-247 §, for systems employing digital modulation techniques operating in the bands 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz, the maximum peak conducted output power shall not exceed 1 W.

Test Configuration



TEST PROCEDURE

The transmitter output is connected to the Power Meter. The Power Meter is set to the peak power detection.

TEST RESULTS

No non-compliance noted

Test Data**Test mode: IEEE 802.11a mode / 5745 ~ 5825MHz**

| Channel | Frequency (MHz) | Output Power (dBm) | Output Power (W) |
|---------|-----------------|--------------------|------------------|
| Low | 5745 | *13.70 | 0.0234 |
| Mid | 5785 | 13.60 | 0.0229 |
| High | 5825 | 13.60 | 0.0229 |

Test mode: IEEE 802.11n HT 20 MHz mode / 5245 ~ 5825MHz

| Channel | Frequency (MHz) | Output Power (dBm) | Output Power (W) |
|---------|-----------------|--------------------|------------------|
| Low | 5745 | 13.59 | 0.0229 |
| Mid | 5785 | *13.65 | 0.0232 |
| High | 5825 | 13.61 | 0.0230 |

Test mode: IEEE 802.11n HT 40 MHz mode / 5755 ~ 5795MHz

| Channel | Frequency (MHz) | Output Power (dBm) | Output Power (W) |
|---------|-----------------|--------------------|------------------|
| Low | 5755 | *13.30 | 0.0214 |
| High | 5795 | 13.20 | 0.0209 |

Test mode: IEEE 802.11ac VHT 80 MHz mode / 5775MHz

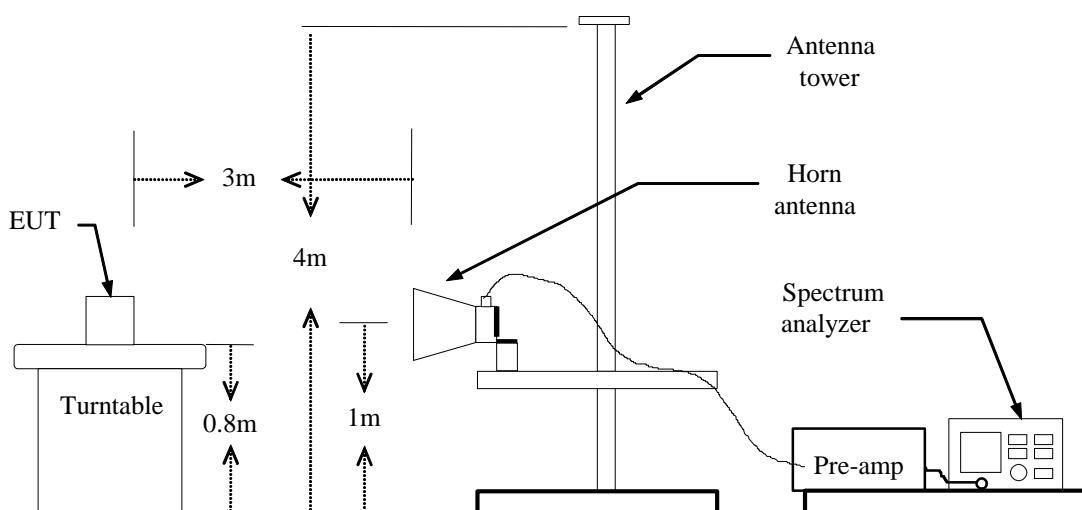
| Channel | Frequency (MHz) | Output Power (dBm) | Output Power (W) |
|---------|-----------------|--------------------|------------------|
| Mid | 5775 | *11.20 | 0.0132 |

7.2 BAND EDGES MEASUREMENT

LIMIT

According to §15.407 & RSS-247 §, in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in 15.209(a) (see Section 15.205(c)).

Test Configuration



TEST PROCEDURE

1. The EUT is placed on a turntable, which is 1.5m above the ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
4. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:
 - (a) PEAK: RBW=VBW=1MHz / Sweep=AUTO
 - (b) AVERAGE: RBW=1MHz,
if duty cycle $\geq 98\%$, VBW=10Hz.
if duty cycle $< 98\%$ VBW=1/T.

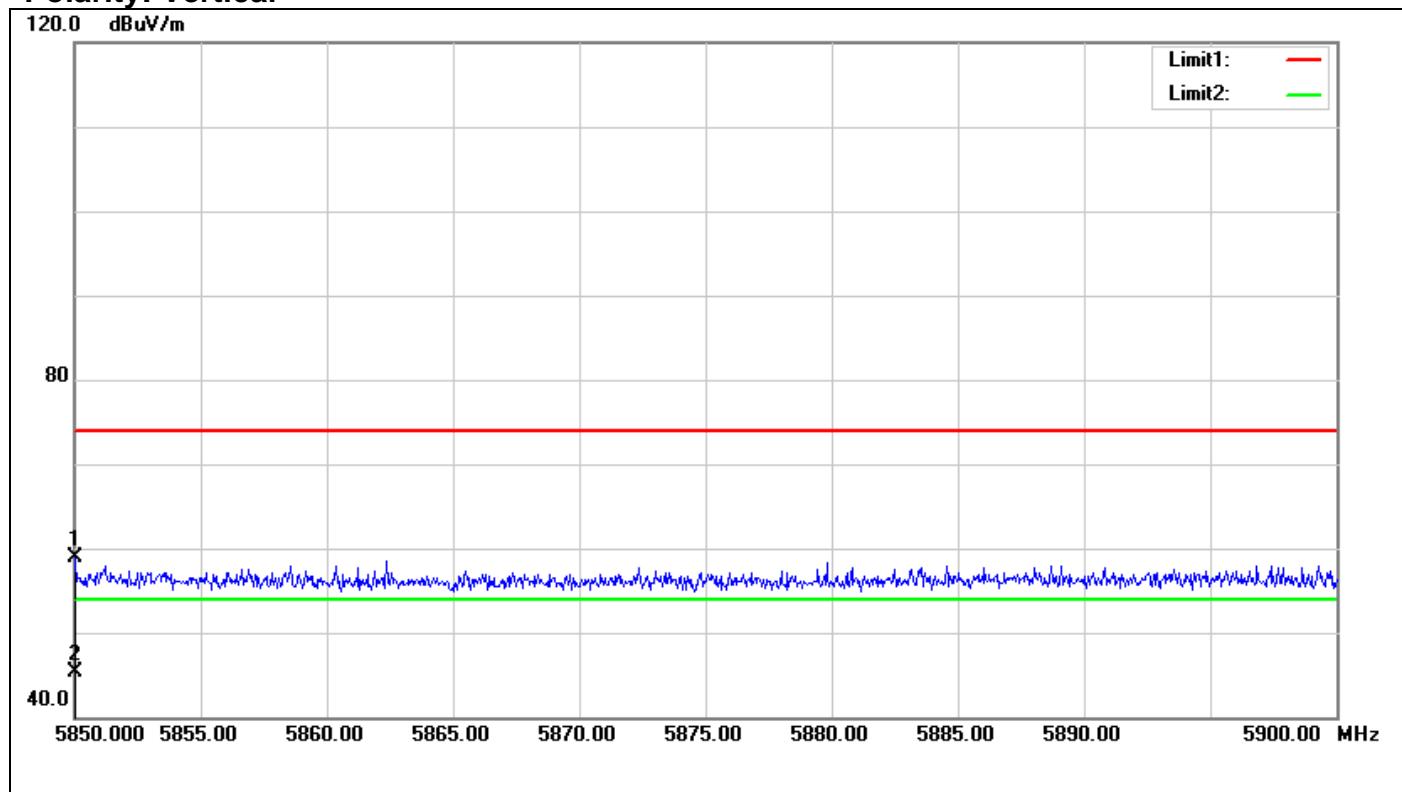
IEEE 802.11a mode: = 100%, VBW=10Hz
IEEE 802.11n HT 20 MHz mode: =100%, VBW=10Hz
IEEE 802.11n HT 40 MHz mode: = 100%, VBW=10Hz
IEEE 802.11ac VHT 80 MHz mode: = 100%, VBW=10Hz
5. Repeat the procedures until all the PEAK and AVERAGE versus POLARIZATION are measured.
6. Correction factor: Result = Spectrum Reading + cable loss(spectrum to Amp) - Amp Gain + Cable loss(Amp to receive Ant)+ Receive Ant

TEST RESULTS

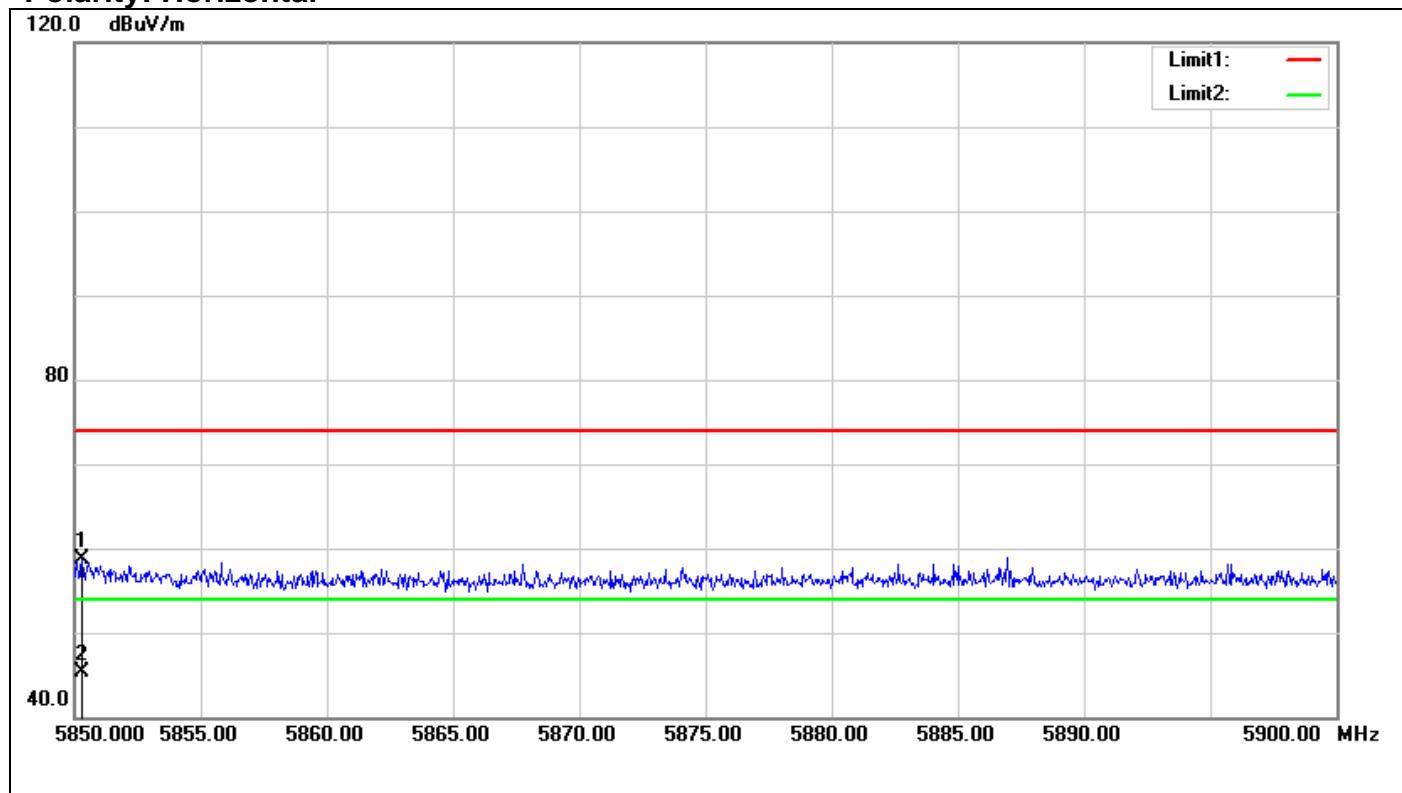
Refer to attach spectrum analyzer data chart.

Band Edges (IEEE 802.11a mode / CH 5825 MHz)

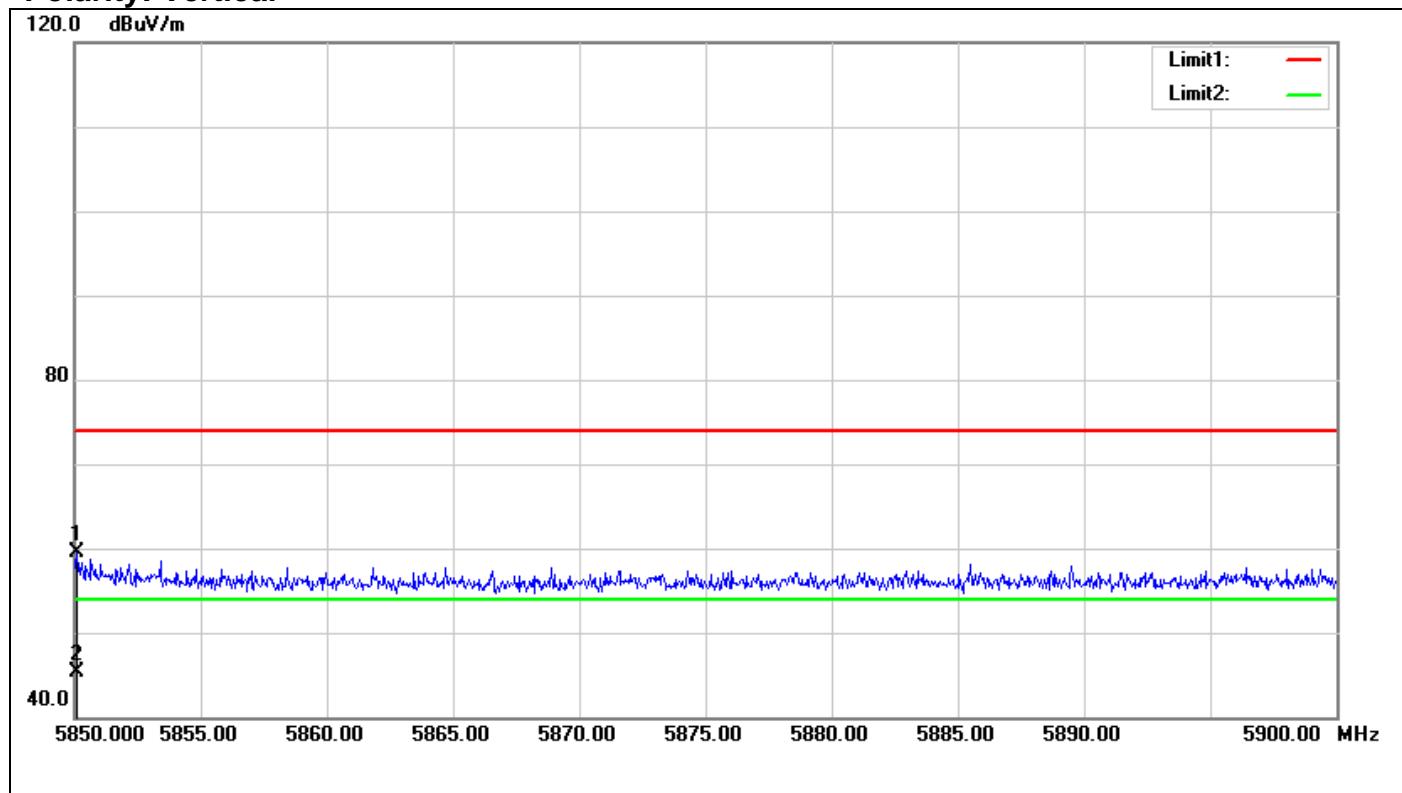
Polarity: Vertical



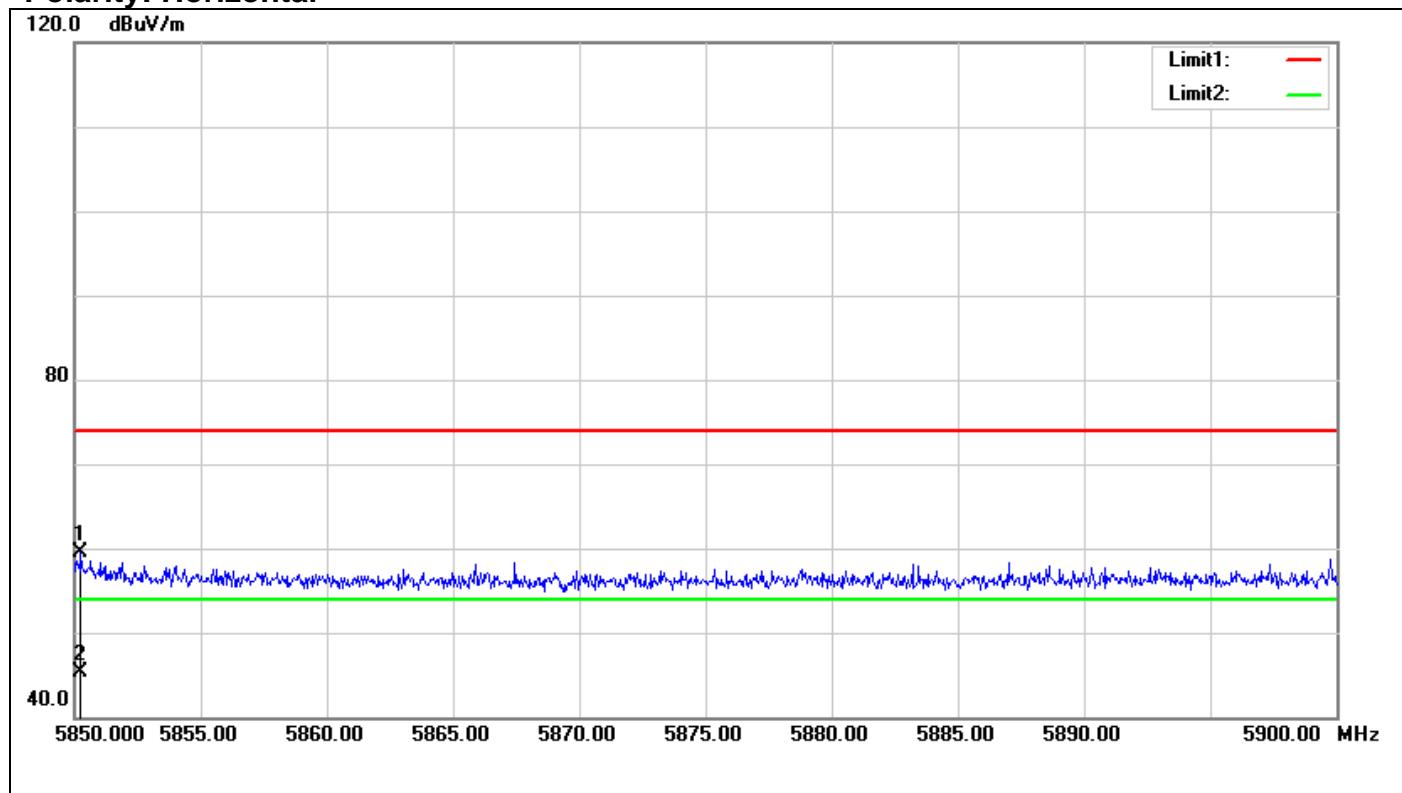
| No. | Frequency (MHz) | Reading (dBuV) | Correct Factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Height (cm) | Degree (°) | Remark |
|-----|-----------------|----------------|----------------------|-----------------|----------------|-------------|-------------|------------|--------|
| 1 | 5850.000 | 52.08 | 6.74 | 58.82 | 74.00 | -15.18 | 100 | 359 | peak |
| 2 | 5850.000 | 38.48 | 6.74 | 45.22 | 54.00 | -8.78 | 100 | 359 | AVG |

Polarity: Horizontal

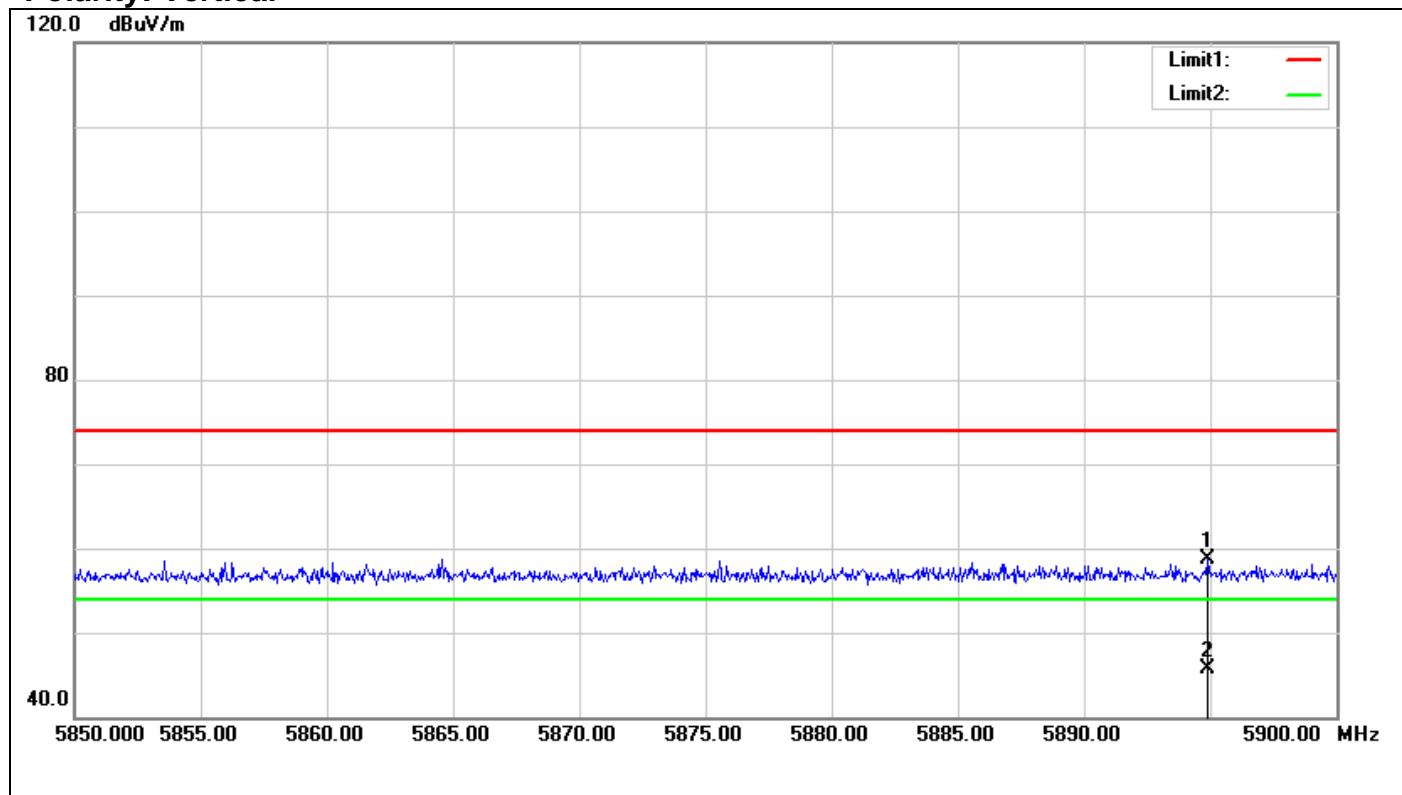
| No. | Frequency | Reading | Correct | Result | Limit | Margin | Height | Degree | Remark |
|-----|-----------|---------|--------------|----------|----------|--------|--------|--------|--------|
| | (MHz) | (dBuV) | Factor(dB/m) | (dBuV/m) | (dBuV/m) | (dB) | (cm) | (°) | |
| 1 | 5850.300 | 52.05 | 6.74 | 58.79 | 74.00 | -15.21 | 100 | 232 | peak |
| 2 | 5850.300 | 38.58 | 6.74 | 45.32 | 54.00 | -8.68 | 100 | 232 | AVG |

Band Edges (IEEE 802.11n HT 20 MHz mode / CH 5825 MHz)**Polarity: Vertical**

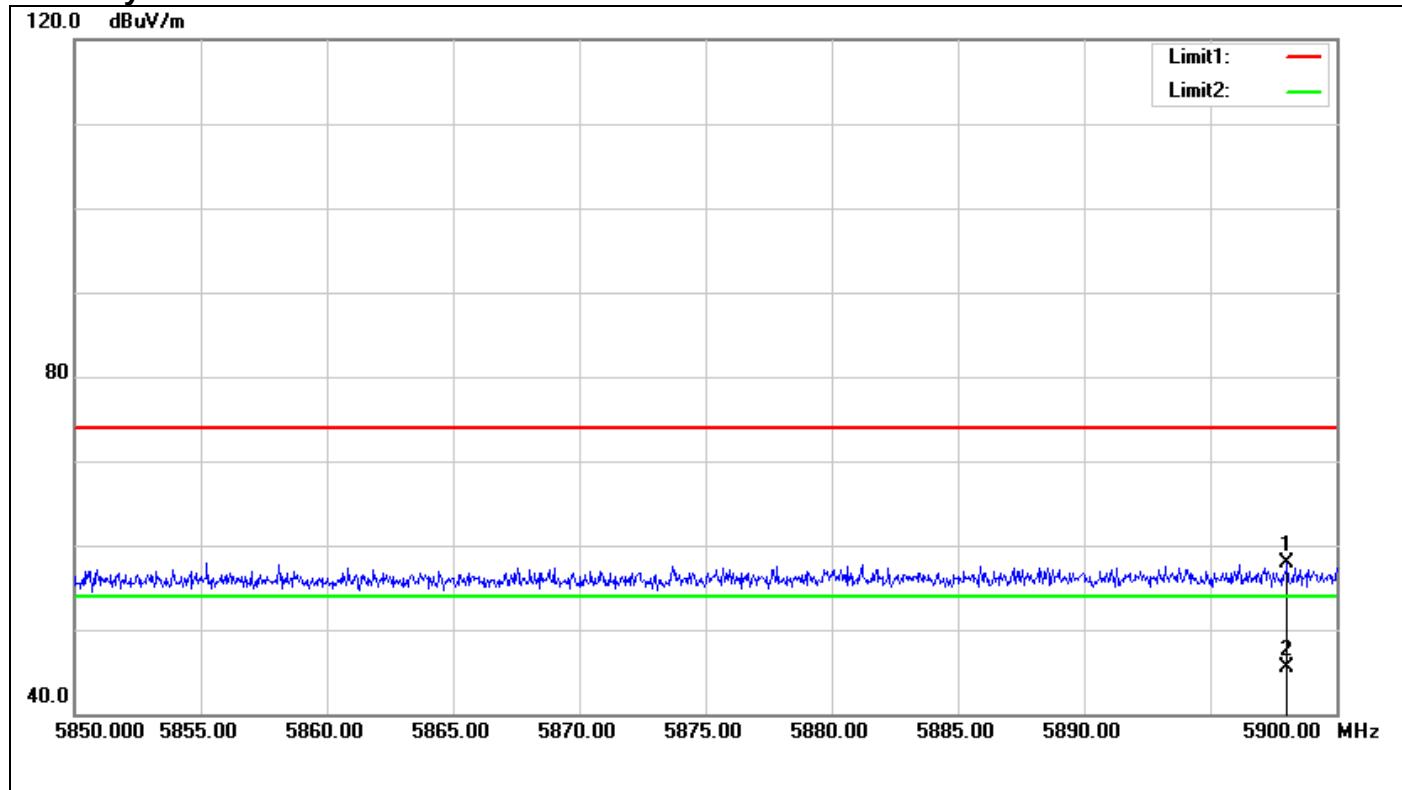
| No. | Frequency (MHz) | Reading (dBuV) | Correct Factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Height (cm) | Degree (°) | Remark |
|-----|--------------------|-------------------|-------------------------|--------------------|-------------------|----------------|----------------|---------------|--------|
| 1 | 5850.100 | 52.67 | 6.74 | 59.41 | 74.00 | -14.59 | 100 | 2 | peak |
| 2 | 5850.100 | 38.65 | 6.74 | 45.39 | 54.00 | -8.61 | 100 | 2 | AVG |

Polarity: Horizontal

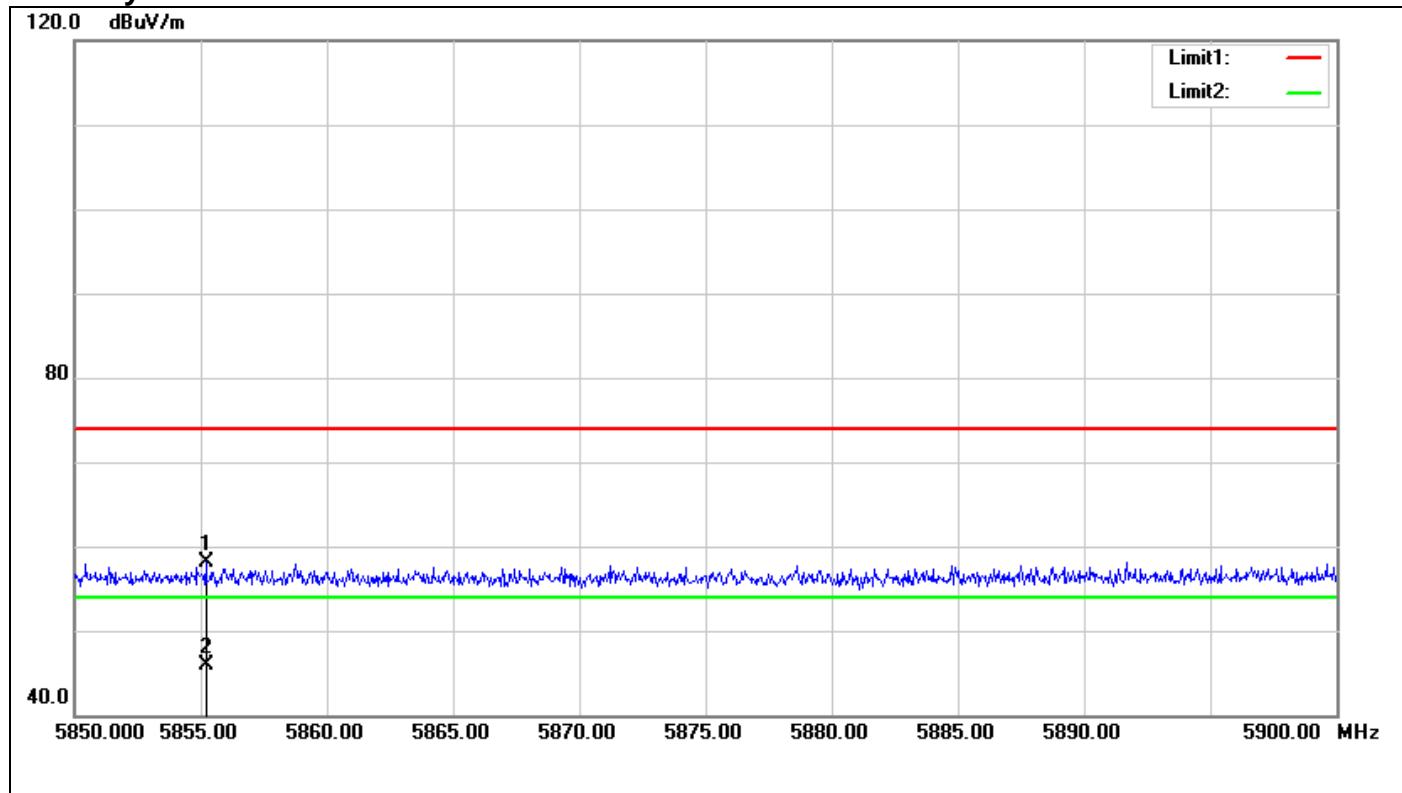
| No. | Frequency | Reading | Correct | Result | Limit | Margin | Height | Degree | Remark |
|-----|-----------|---------|---------|--------|--------------|----------|----------|--------|--------|
| | | | (MHz) | (dBuV) | Factor(dB/m) | (dBuV/m) | (dBuV/m) | (dB) | (cm) |
| 1 | 5850.250 | 52.67 | 6.74 | 59.41 | 74.00 | -14.59 | 100 | 38 | peak |
| 2 | 5850.250 | 38.49 | 6.74 | 45.23 | 54.00 | -8.77 | 100 | 38 | AVG |

Band Edges (IEEE 802.11n HT 40 MHz mode / CH 5795 MHz)**Polarity: Vertical**

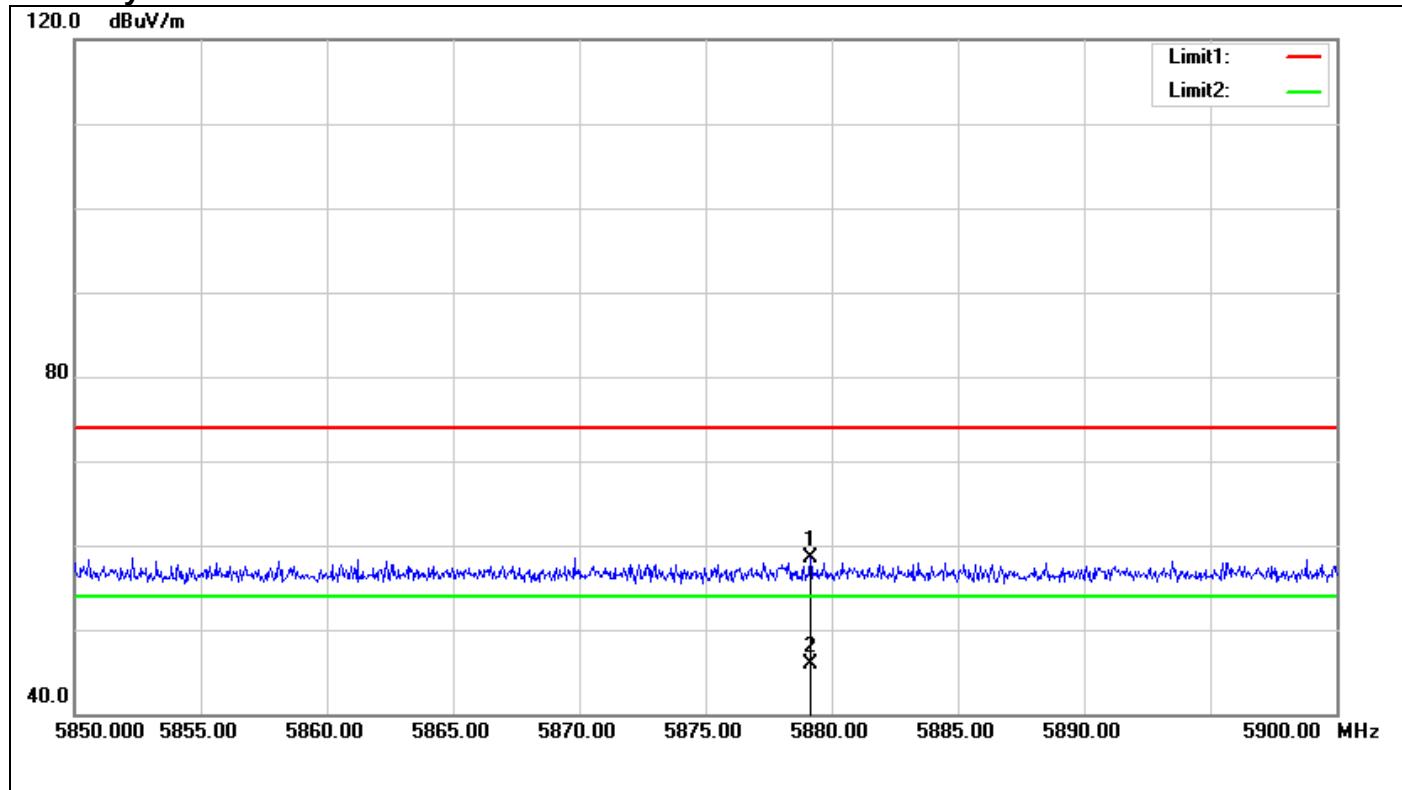
| No. | Frequency (MHz) | Reading (dBuV) | Correct Factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Height (cm) | Degree (°) | Remark |
|-----|--------------------|-------------------|-------------------------|--------------------|-------------------|----------------|----------------|---------------|--------|
| 1 | 5894.900 | 51.75 | 6.93 | 58.68 | 74.00 | -15.32 | 100 | 237 | peak |
| 2 | 5894.900 | 38.70 | 6.93 | 45.63 | 54.00 | -8.37 | 100 | 237 | AVG |

Polarity: Horizontal

| No. | Frequency | Reading | Correct | Result | Limit | Margin | Height | Degree | Remark |
|-----|-----------|---------|--------------|----------|----------|--------|--------|--------|--------|
| | (MHz) | (dBuV) | Factor(dB/m) | (dBuV/m) | (dBuV/m) | (dB) | (cm) | (°) | |
| 1 | 5898.050 | 51.02 | 6.95 | 57.97 | 74.00 | -16.03 | 100 | 214 | peak |
| 2 | 5898.050 | 38.48 | 6.95 | 45.43 | 54.00 | -8.57 | 100 | 214 | AVG |

Band Edges (IEEE 802.11ac VHT 80 MHz mode / CH 5775 MHz)**Polarity: Vertical**

| No. | Frequency | Reading | Correct | Result | Limit | Margin | Height | Degree | Remark |
|-----|-----------|---------|--------------|----------|----------|--------|--------|--------|--------|
| | (MHz) | (dBuV) | Factor(dB/m) | (dBuV/m) | (dBuV/m) | (dB) | (cm) | (°) | |
| 1 | 5855.200 | 51.36 | 6.76 | 58.12 | 74.00 | -15.88 | 100 | 53 | peak |
| 2 | 5855.200 | 39.06 | 6.76 | 45.82 | 54.00 | -8.18 | 100 | 53 | AVG |

Polarity: Horizontal

| No. | Frequency | Reading | Correct | Result | Limit | Margin | Height | Degree | Remark |
|-----|-----------|---------|--------------|----------|----------|--------|--------|--------|--------|
| | (MHz) | (dBuV) | Factor(dB/m) | (dBuV/m) | (dBuV/m) | (dB) | (cm) | (°) | |
| 1 | 5879.150 | 51.68 | 6.87 | 58.55 | 74.00 | -15.45 | 100 | 214 | peak |
| 2 | 5879.150 | 38.96 | 6.87 | 45.83 | 54.00 | -8.17 | 100 | 214 | AVG |

7.3 RADIATED EMISSIONS

LIMIT

All spurious emissions shall comply with the limits of §15.209(a) and RSS-Gen Table 2 & Table 5.

RSS-Gen Table 2 & Table 5: General Field Strength Limits for Transmitters and Receivers at Frequencies Above 30 MHz (Note)

| Frequency (MHz) | Field Strength microvolts/m at 3 metres (watts, e.i.r.p.) | |
|--------------------|--|--------------|
| | Transmitters | Receivers |
| 30-88 | 100 (3 nW) | 100 (3 nW) |
| 88-216 | 150 (6.8 nW) | 150 (6.8 nW) |
| 216-960 | 200 (12 nW) | 200 (12 nW) |
| Above 960 | 500 (75 nW) | 500 (75 nW) |

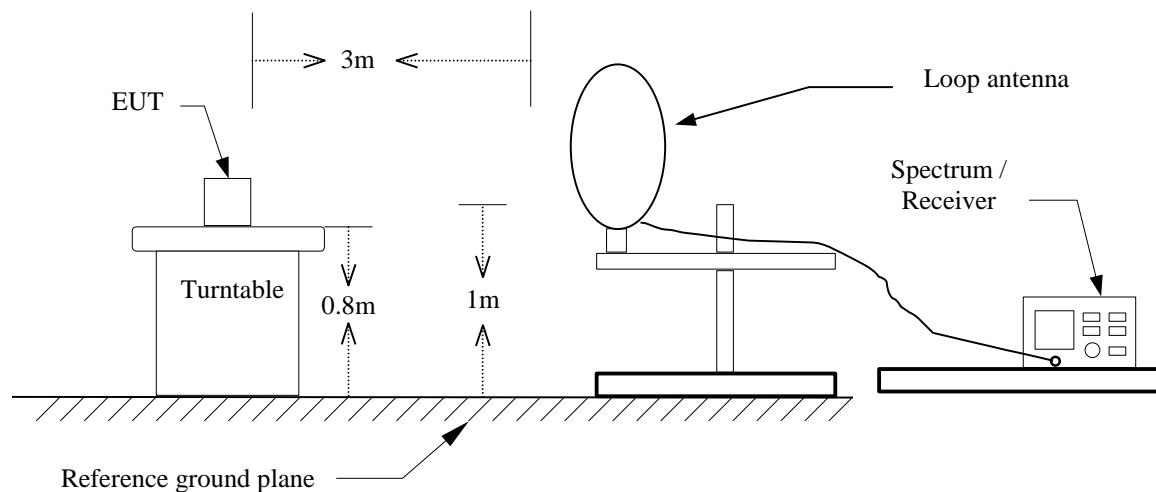
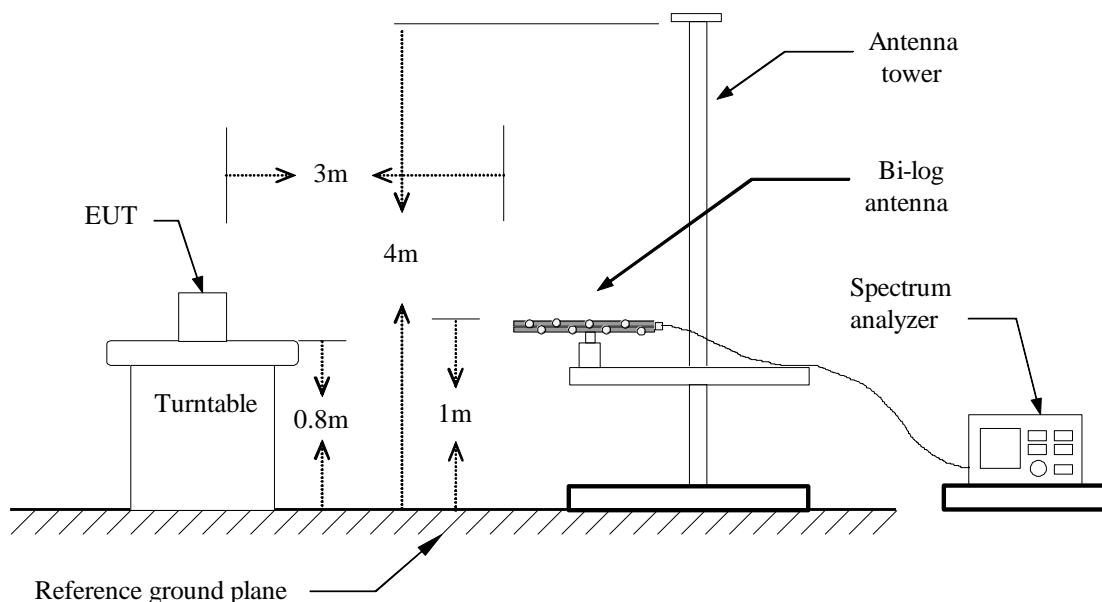
Note: *Measurements for compliance with limits in the above table may be performed at distances other than 3 metres, in accordance with Section 7.2.7.

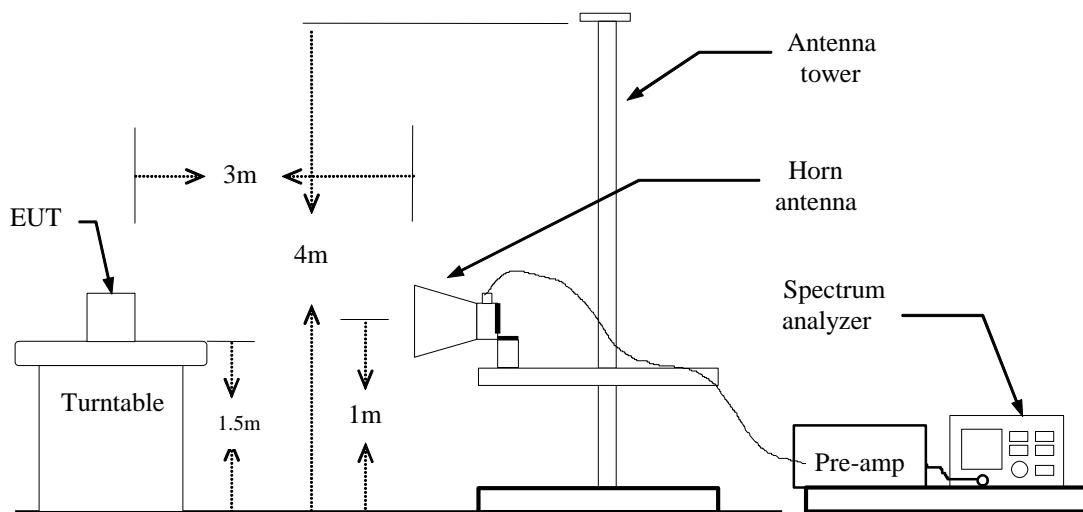
Transmitting devices are not permitted in Table 1 bands or, unless stated otherwise, in TV bands (54-72 MHz, 76-88 MHz, 174-216 MHz, 470-608 MHz and 614-806 MHz).

RSS-Gen Table 6: General Field Strength Limits for Transmitters at Frequencies Below 30 MHz (Transmit)

| Frequency | Field Strength (microvolts/m) | Magnetic H-Field (microamperes/m) | Measurement Distance (metres) |
|---------------|----------------------------------|---|-------------------------------------|
| 9-490 kHz | 2,400/F (F in kHz) | 2,400/377F (F in kHz) | 3000 |
| 490-1,705 kHz | 24,000/F (F in kHz) | 24,000/377F (F in kHz) | 30 |
| 1.705-30 MHz | 30 | N/A | 30 |

Note: The emission limits for the bands 9-90 kHz and 110-490 kHz are based on measurements employing an average detector.

Test Configuration**9kHz ~ 30MHz****30MHz ~ 1GHz**

Above 1 GHz

TEST PROCEDURE

1. The EUT is placed on a turntable, which is 1.5m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Set the spectrum analyzer in the following setting as:

Below 1GHz:

RBW=100kHz / VBW=300kHz / Sweep=AUTO

Above 1GHz:

(a) PEAK: RBW=VBW=1MHz / Sweep=AUTO

(b) AVERAGE: RBW=1MHz,
if duty cycle \geq 98%, VBW=10Hz.
if duty cycle < 98% VBW=1/T.

IEEE 802.11a mode: = 100%, VBW=10Hz

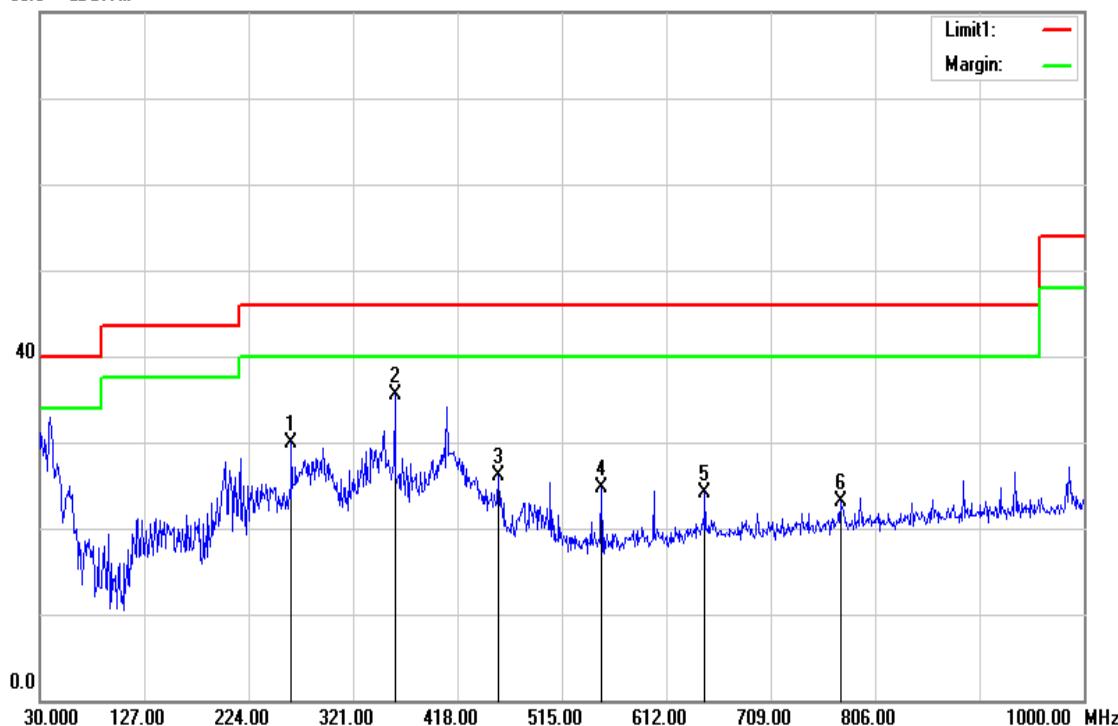
IEEE 802.11n HT 20 MHz mode: =100%, VBW=10Hz

IEEE 802.11n HT 40 MHz mode: = 100%, VBW=10Hz

IEEE 802.11ac VHT 80 MHz mode: = 100%, VBW=10Hz

7. Repeat above procedures until the measurements for all frequencies are complete.
8. Correction factor: Result = Spectrum Reading + cable loss(spectrum to Amp) - Amp Gain + Cable loss(Amp to receive Ant)+ Receive Ant

Note: We checked every harmonics frequencies from Fundamental frequencies with reduced VBW, and we mark a point to prove pass or not if we find any emission. For this case, there are no emissions hidden in the noise floor.

Below 1 GHz**Operation Mode:** Normal Link**Test Date:** June 29, 2015**Temperature:** 27°C**Tested by:** Jason Lu**Humidity:** 53% RH**Polarity:** Ver.80.0 dB_{UV}/m

| Frequency (MHz) | Reading (dB _{UV}) | Correction Factor (dB/m) | Result (dB _{UV} /m) | Limit (dB _{UV} /m) | Margin (dB) | Remark | Ant.Pol. (H/V) |
|-----------------|-----------------------------|--------------------------|------------------------------|-----------------------------|-------------|--------|----------------|
| 263.7700 | 45.13 | -15.26 | 29.87 | 46.00 | -16.13 | peak | V |
| 359.8000 | 48.13 | -12.66 | 35.47 | 46.00 | -10.53 | peak | V |
| 455.8300 | 36.17 | -10.08 | 26.09 | 46.00 | -19.91 | peak | V |
| 551.8600 | 33.08 | -8.46 | 24.62 | 46.00 | -21.38 | peak | V |
| 647.8900 | 30.64 | -6.62 | 24.02 | 46.00 | -21.98 | peak | V |
| 773.9900 | 27.84 | -4.72 | 23.12 | 46.00 | -22.88 | peak | V |

Remark:

1. No emission found between lowest internal used/generated frequency to 30MHz (9kHz~30MHz).
2. Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using peak/quasi-peak detector mode.
3. Quasi-peak test would be performed if the peak result were greater than the quasi-peak limit or as required by the applicant.
4. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
5. Margin (dB) = Remark result (dB_{UV}/m) – Quasi-peak limit (dB_{UV}/m).

Operation Mode: Normal Link

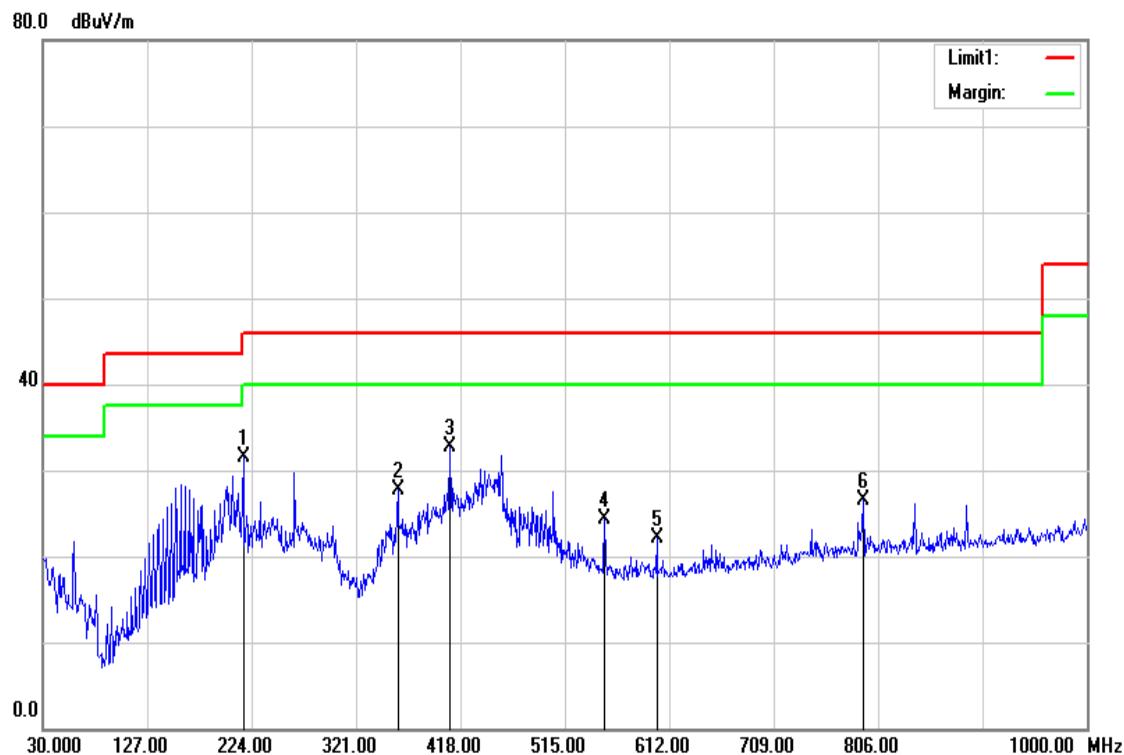
Test Date: June 29, 2015

Temperature: 27°C

Tested by: Jason Lu

Humidity: 53% RH

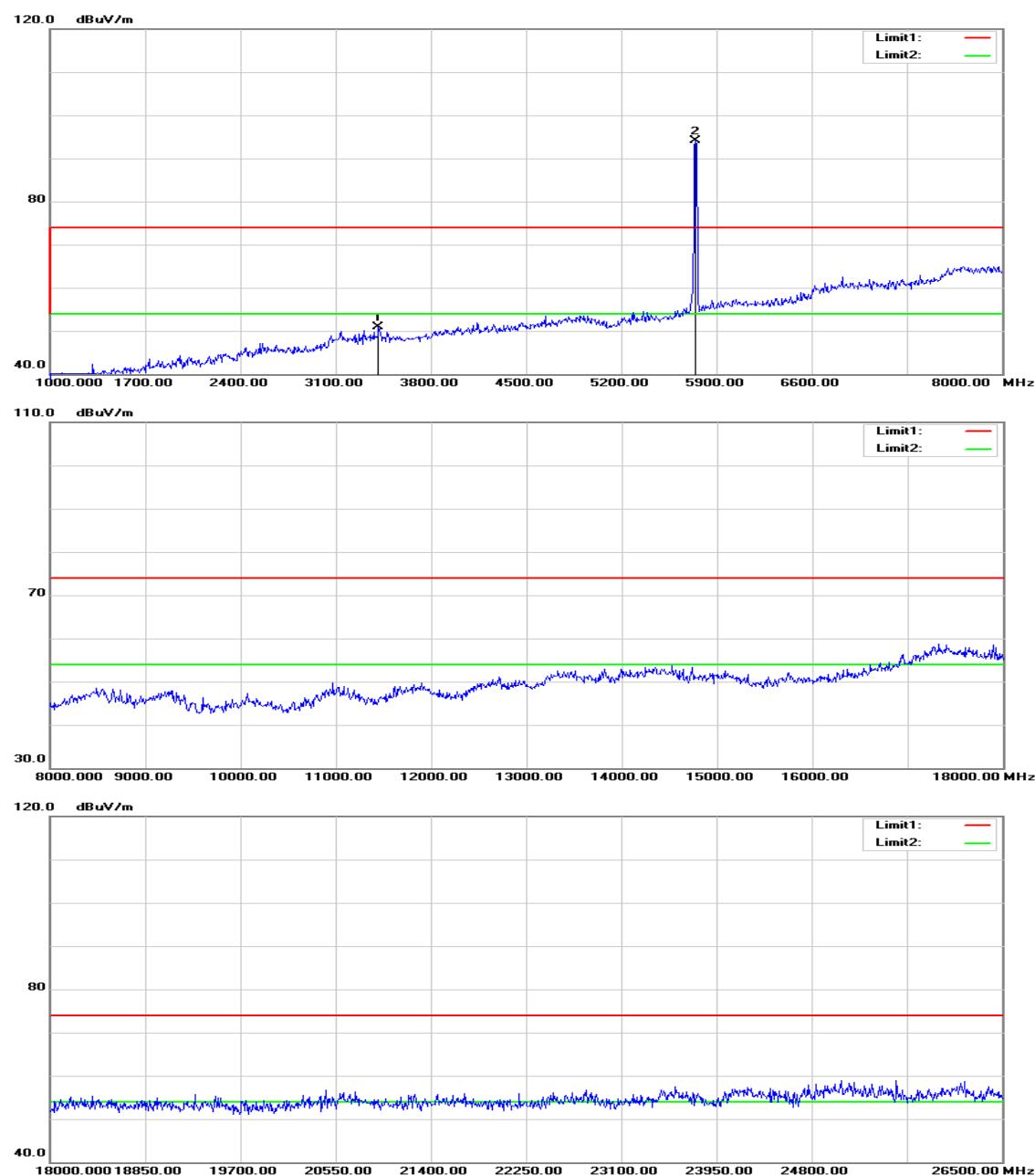
Polarity: Hor.

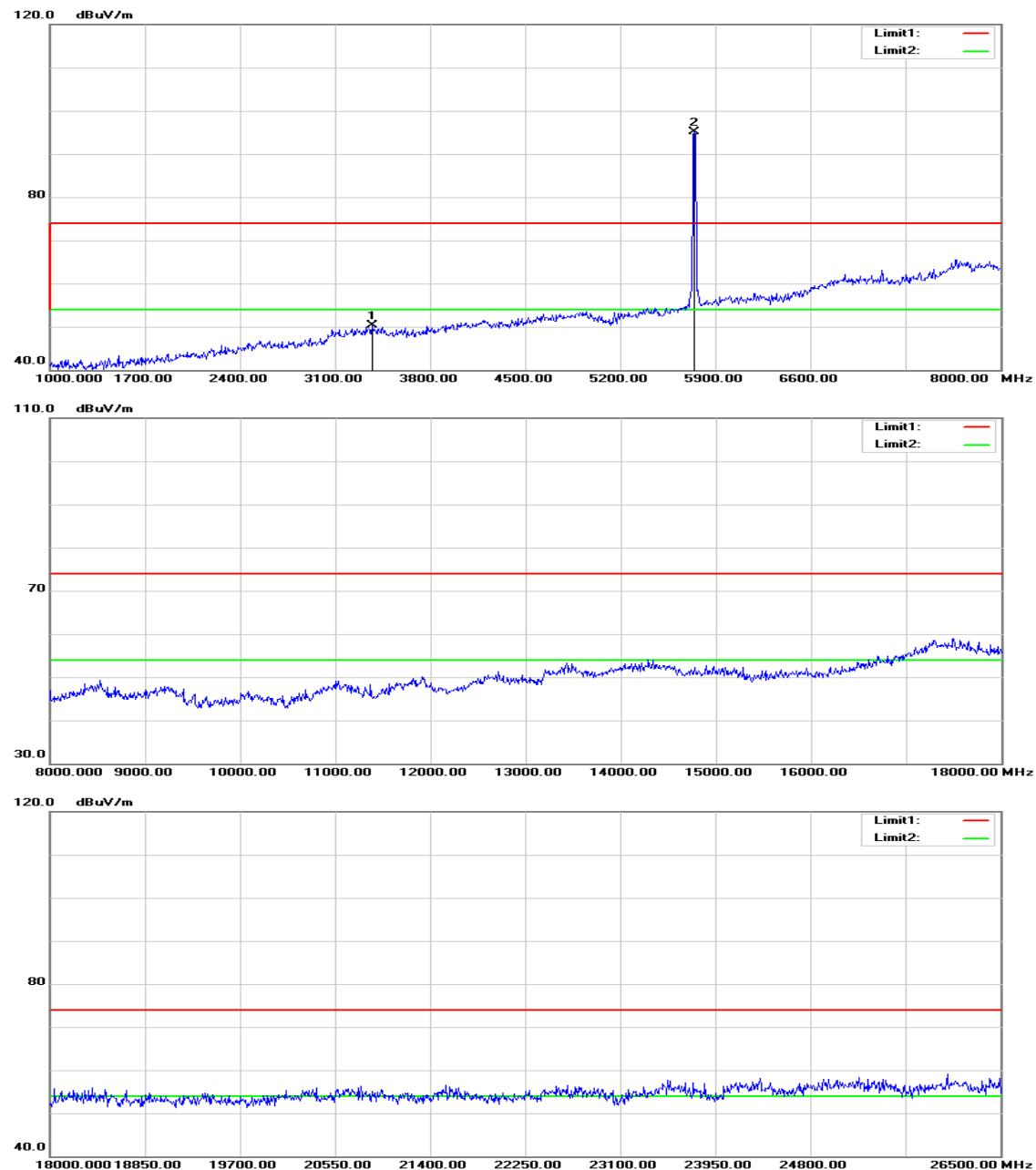


| Frequency (MHz) | Reading (dBuV) | Correction Factor (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark | Ant.Pol. (H/V) |
|-----------------|----------------|--------------------------|-----------------|----------------|-------------|--------|----------------|
| 216.2400 | 48.20 | -16.69 | 31.51 | 46.00 | -14.49 | peak | H |
| 359.8000 | 40.45 | -12.66 | 27.79 | 46.00 | -18.21 | peak | H |
| 408.3000 | 44.11 | -11.45 | 32.66 | 46.00 | -13.34 | peak | H |
| 551.8600 | 32.85 | -8.46 | 24.39 | 46.00 | -21.61 | peak | H |
| 600.3600 | 29.89 | -7.75 | 22.14 | 46.00 | -23.86 | peak | H |
| 792.4200 | 31.11 | -4.56 | 26.55 | 46.00 | -19.45 | peak | H |

Remark:

1. No emission found between lowest internal used/generated frequency to 30MHz (9kHz~30MHz).
2. Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using peak/quasi-peak detector mode.
3. Quasi-peak test would be performed if the peak result were greater than the quasi-peak limit or as required by the applicant.
4. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
5. Margin (dB) = Remark result (dBuV/m) – Quasi-peak limit (dBuV/m).

Above 1 GHz**TX / IEEE 802.11a mode / CH Low****Polarity: Vertical**

Polarity: Horizontal

Operation Mode:

TX / IEEE 802.11a mode / CH Low

Test Date: August 2, 2015

Temperature: 27°C

Tested by: Jason Lu

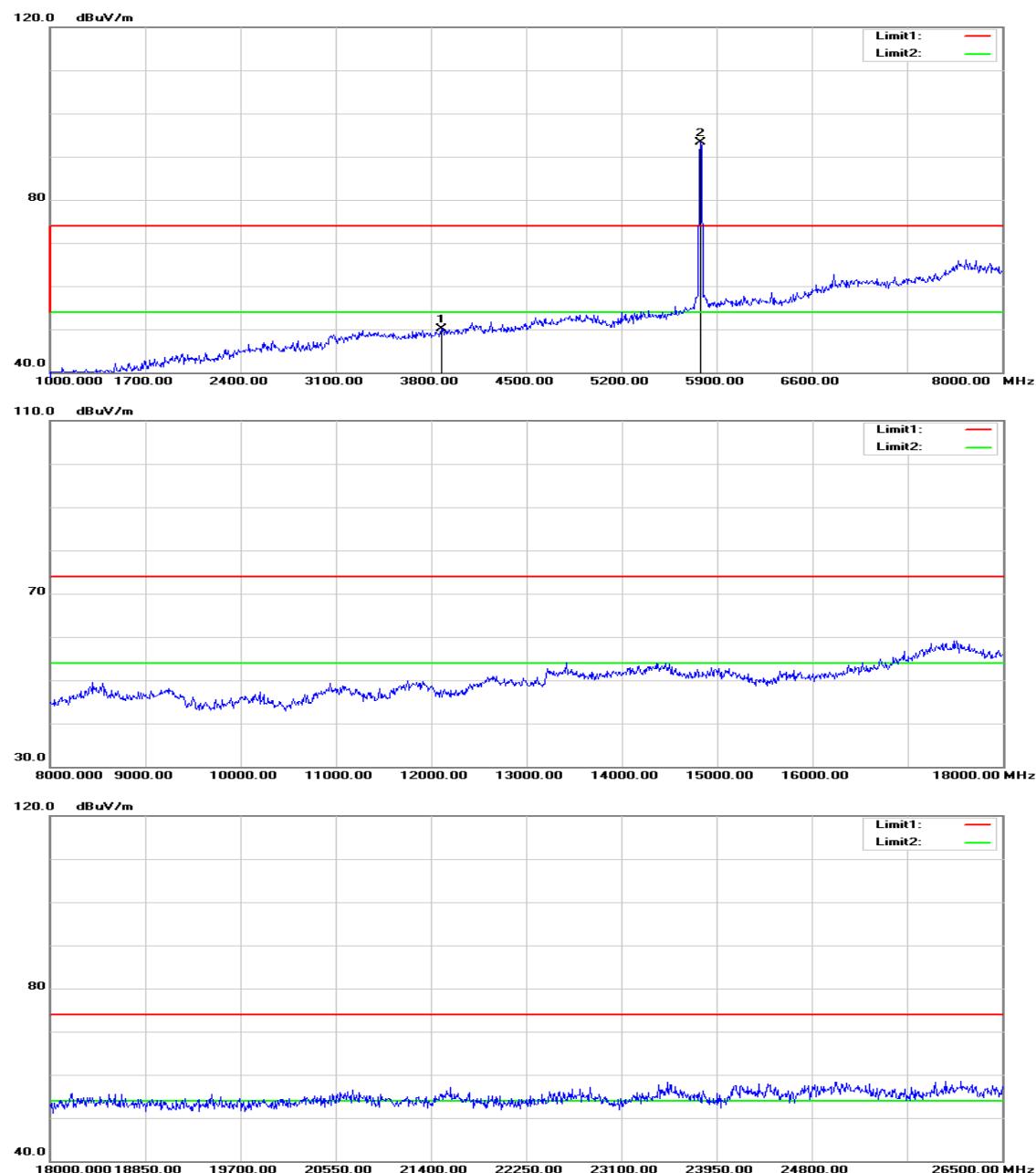
Humidity: 53% RH

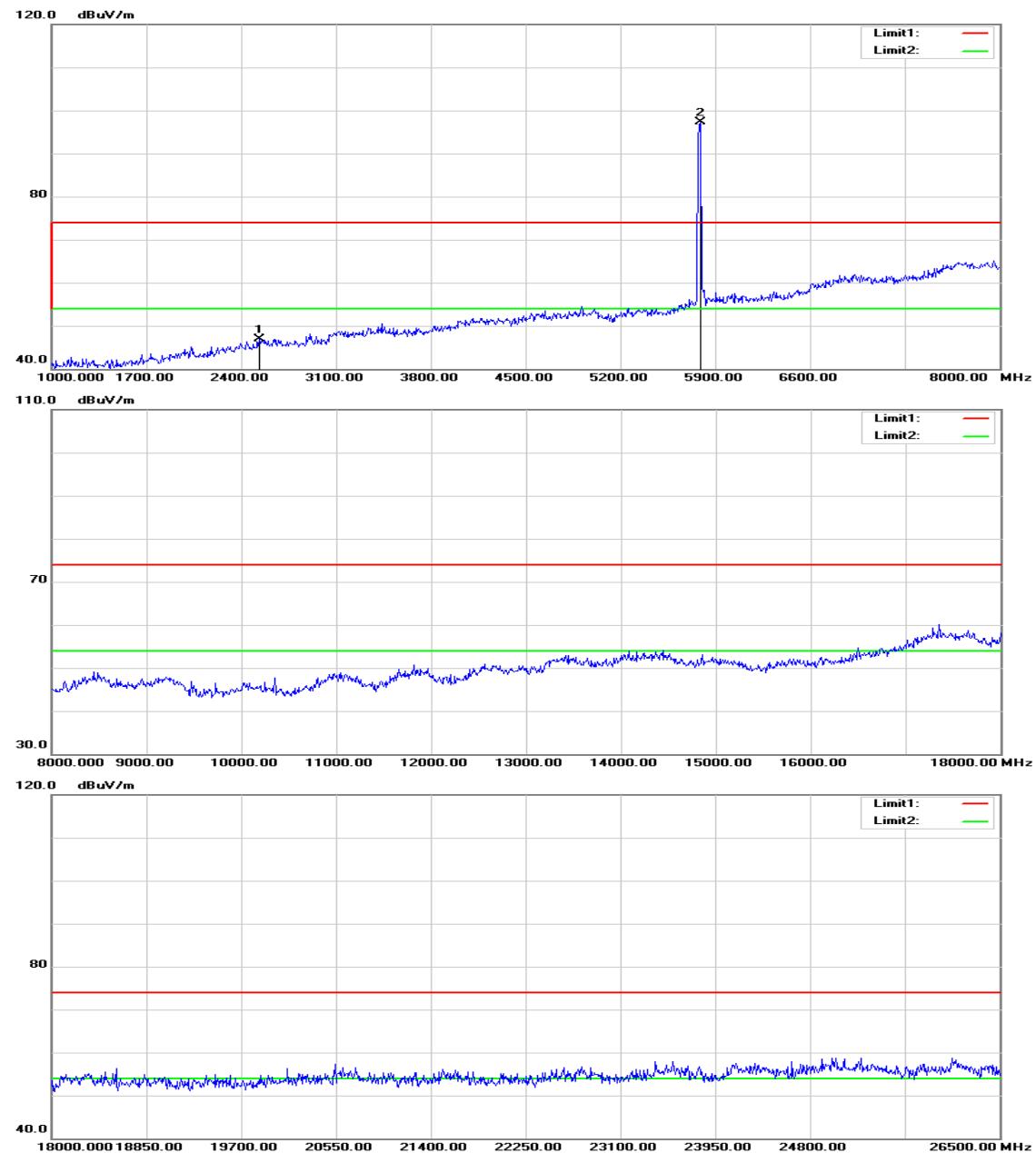
Polarity: Ver. / Hor.

| Frequency (MHz) | Reading (dBuV) | Correction (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark | Ant.Pol. (H/V) |
|-----------------|----------------|-------------------|-----------------|----------------|-------------|--------|----------------|
| 3415.000 | 52.09 | -1.11 | 50.98 | 74.00 | -23.02 | peak | V |
| N/A | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| 3373.000 | 51.57 | -1.21 | 50.36 | 74.00 | -23.64 | peak | H |
| N/A | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit.
4. Data of measurement within this frequency range shown “ --- ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with “ N/A ” remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).

TX / IEEE 802.11a mode / CH Mid**Polarity: Vertical**

Polarity: Horizontal

Operation Mode:

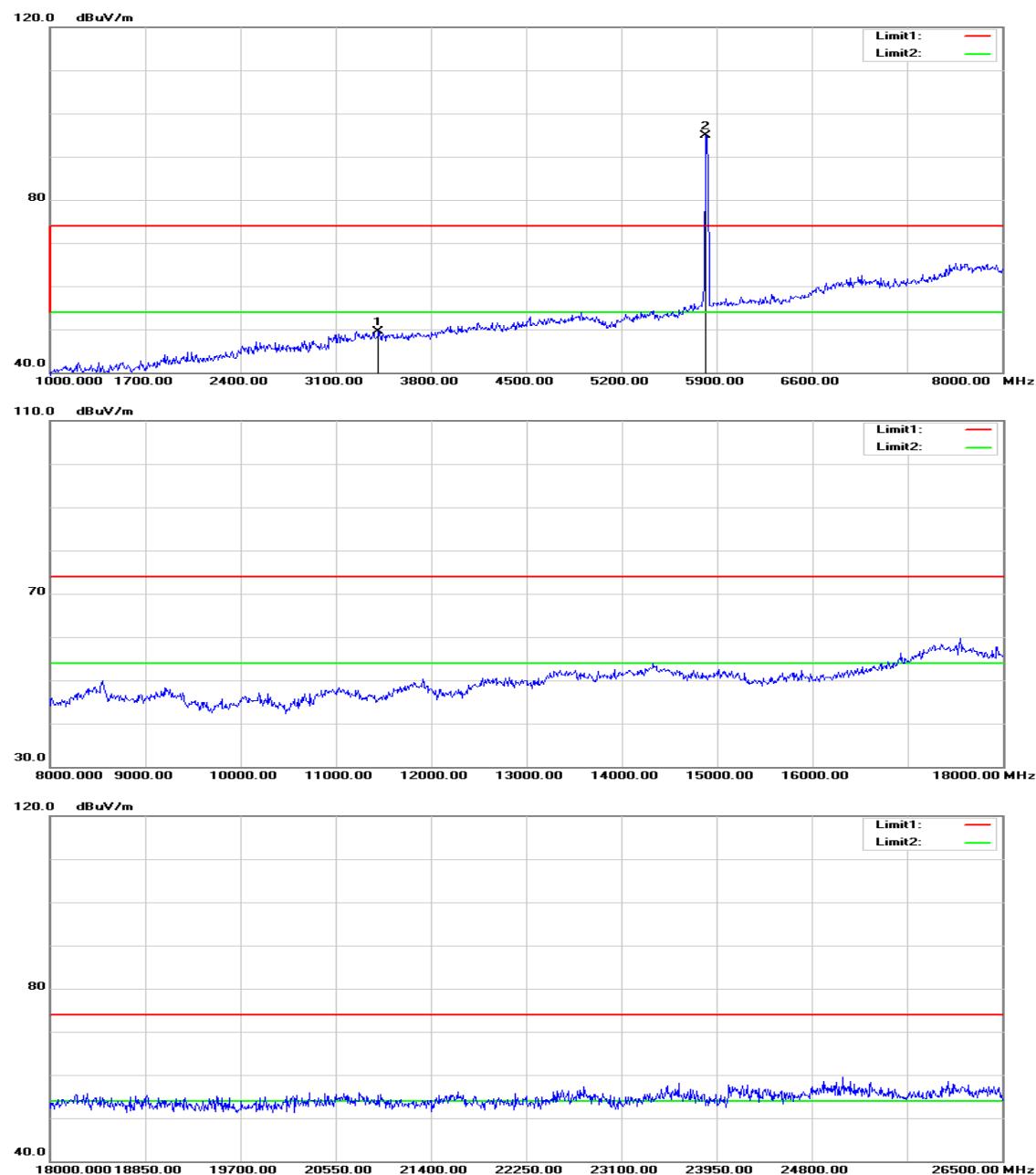
TX / IEEE 802.11a mode / CH Mid

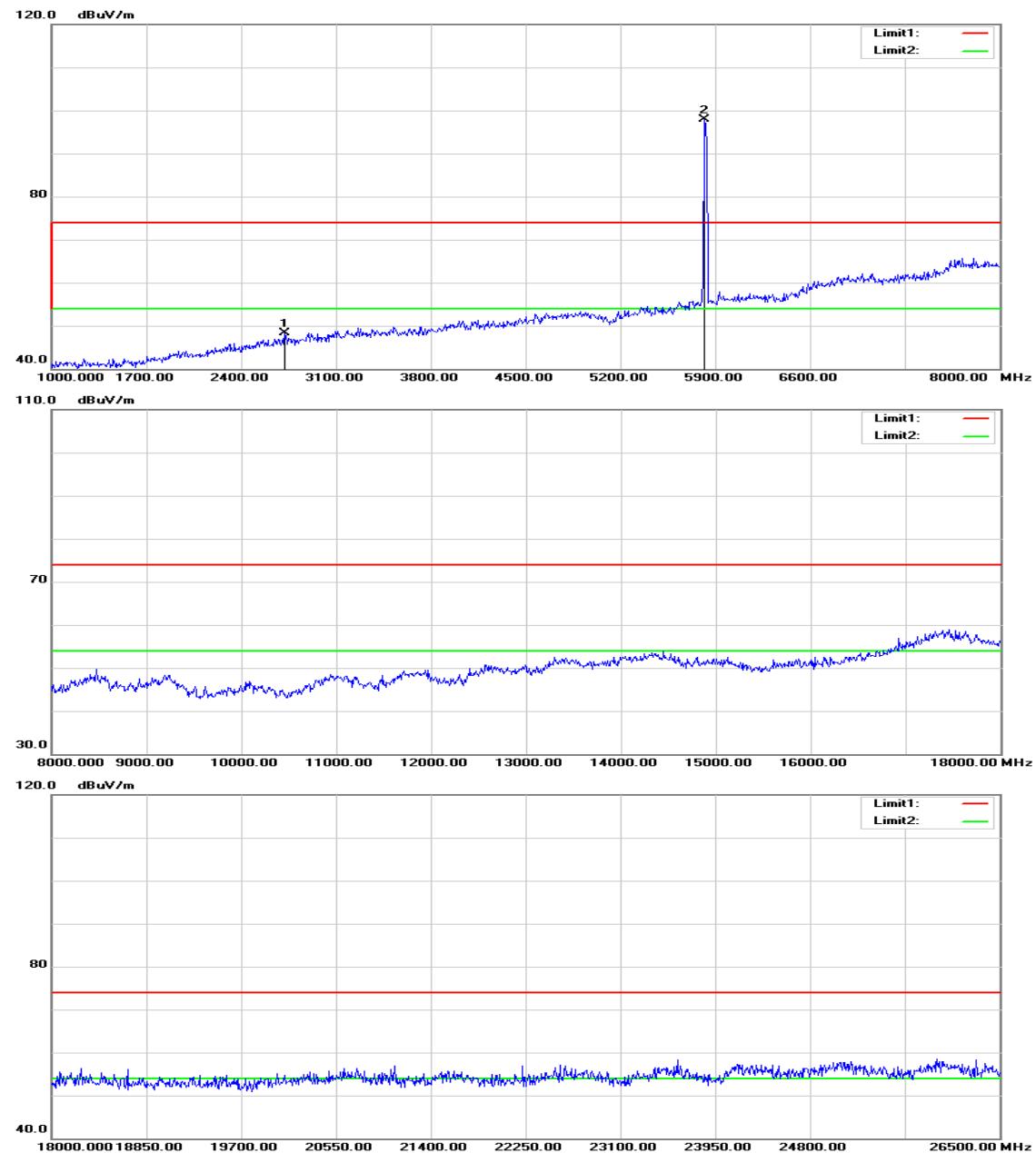
Test Date: August 2, 2015**Temperature:** 27°C**Tested by:** Jason Lu**Humidity:** 53% RH**Polarity:** Ver. / Hor.

| Frequency (MHz) | Reading (dBuV) | Correction (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark | Ant.Pol. (H/V) |
|-----------------|----------------|-------------------|-----------------|----------------|-------------|--------|----------------|
| 3877.000 | 49.40 | 0.70 | 50.10 | 74.00 | -23.90 | peak | V |
| N/A | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| 2533.000 | 49.95 | -3.05 | 46.90 | 74.00 | -27.10 | peak | H |
| N/A | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit.*
4. *Data of measurement within this frequency range shown “ --- ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with “ N/A ” remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

TX / IEEE 802.11a mode / CH High**Polarity: Vertical**

Polarity: Horizontal

Operation Mode: TX / IEEE 802.11a mode / CH High **Test Date:** August 2, 2015

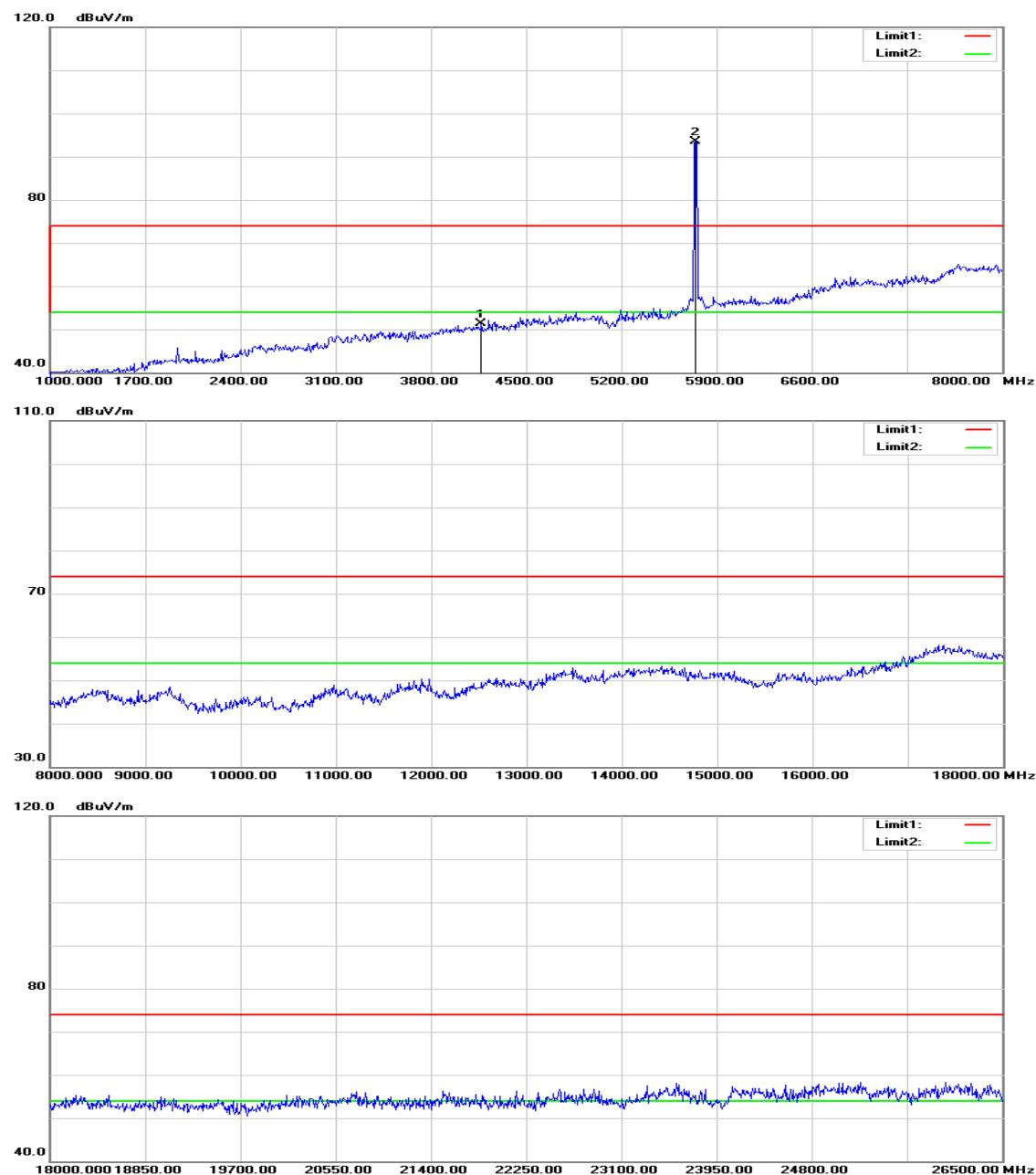
Temperature: 27°C **Tested by:** Jason Lu

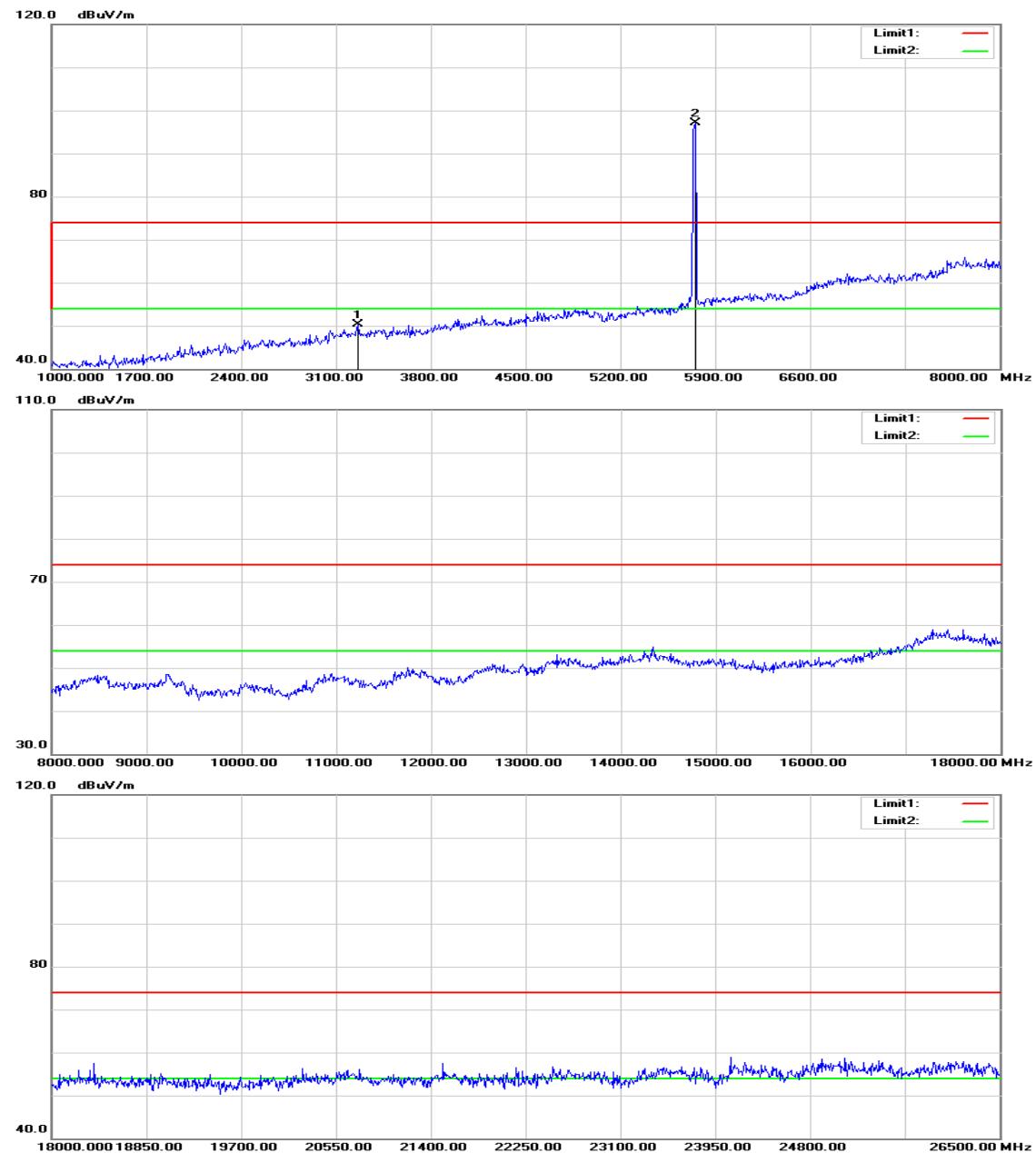
Humidity: 53% RH **Polarity:** Ver. / Hor.

| Frequency (MHz) | Reading (dBuV) | Correction (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark | Ant.Pol. (H/V) |
|-----------------|----------------|-------------------|-----------------|----------------|-------------|--------|----------------|
| 3415.000 | 50.56 | -1.11 | 49.45 | 74.00 | -24.55 | peak | V |
| N/A | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| 2722.000 | 50.98 | -2.67 | 48.31 | 74.00 | -25.69 | peak | H |
| N/A | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit.*
4. *Data of measurement within this frequency range shown “ --- ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with “ N/A ” remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

TX / IEEE 802.11n HT 20 MHz mode / CH Low**Polarity: Vertical**

Polarity: Horizontal

Operation Mode: TX / IEEE 802.11n HT 20 MHz mode / CH Low **Test Date:** August 2, 2015

Temperature: 27°C

Tested by: Jason Lu

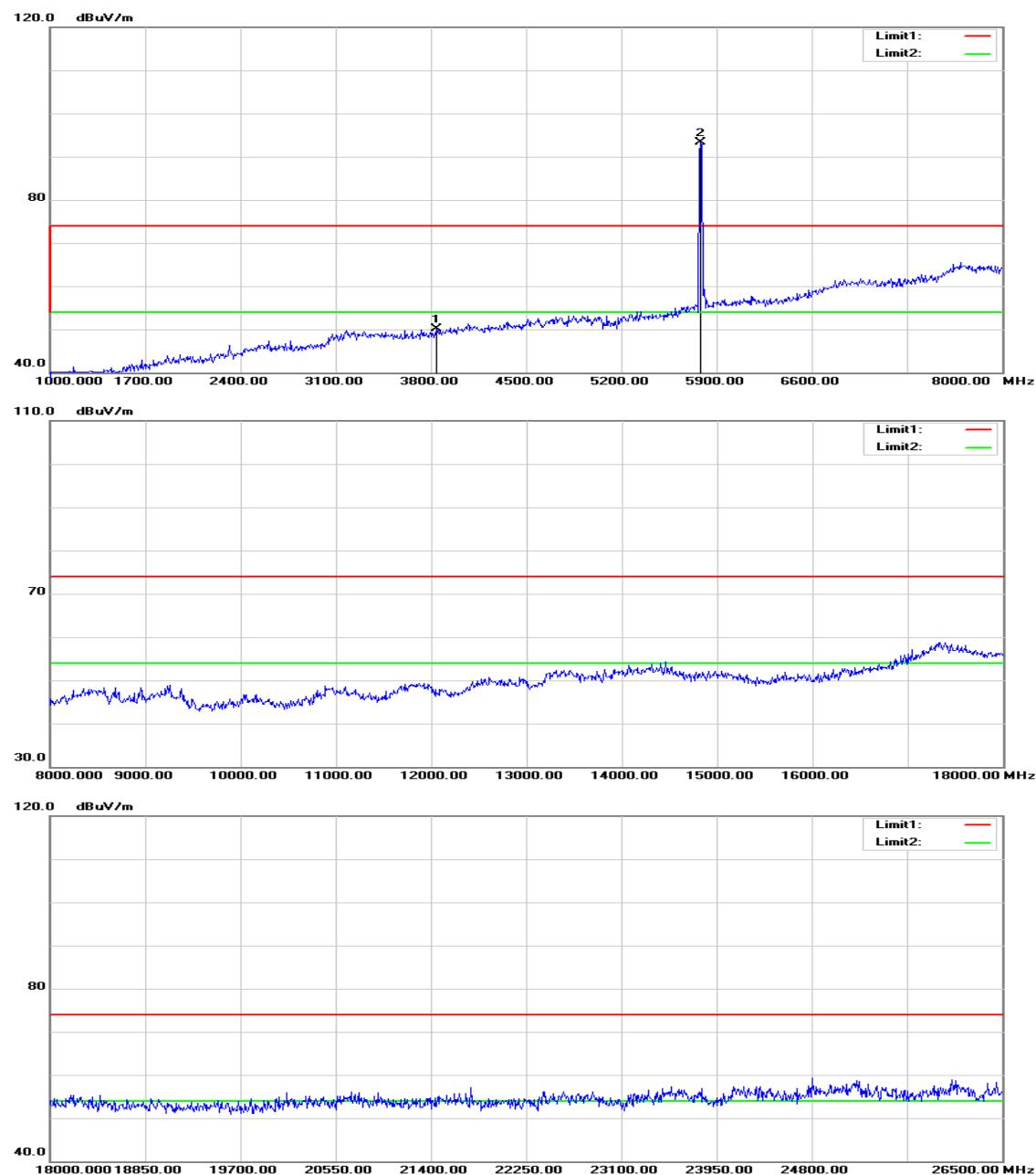
Humidity: 53% RH

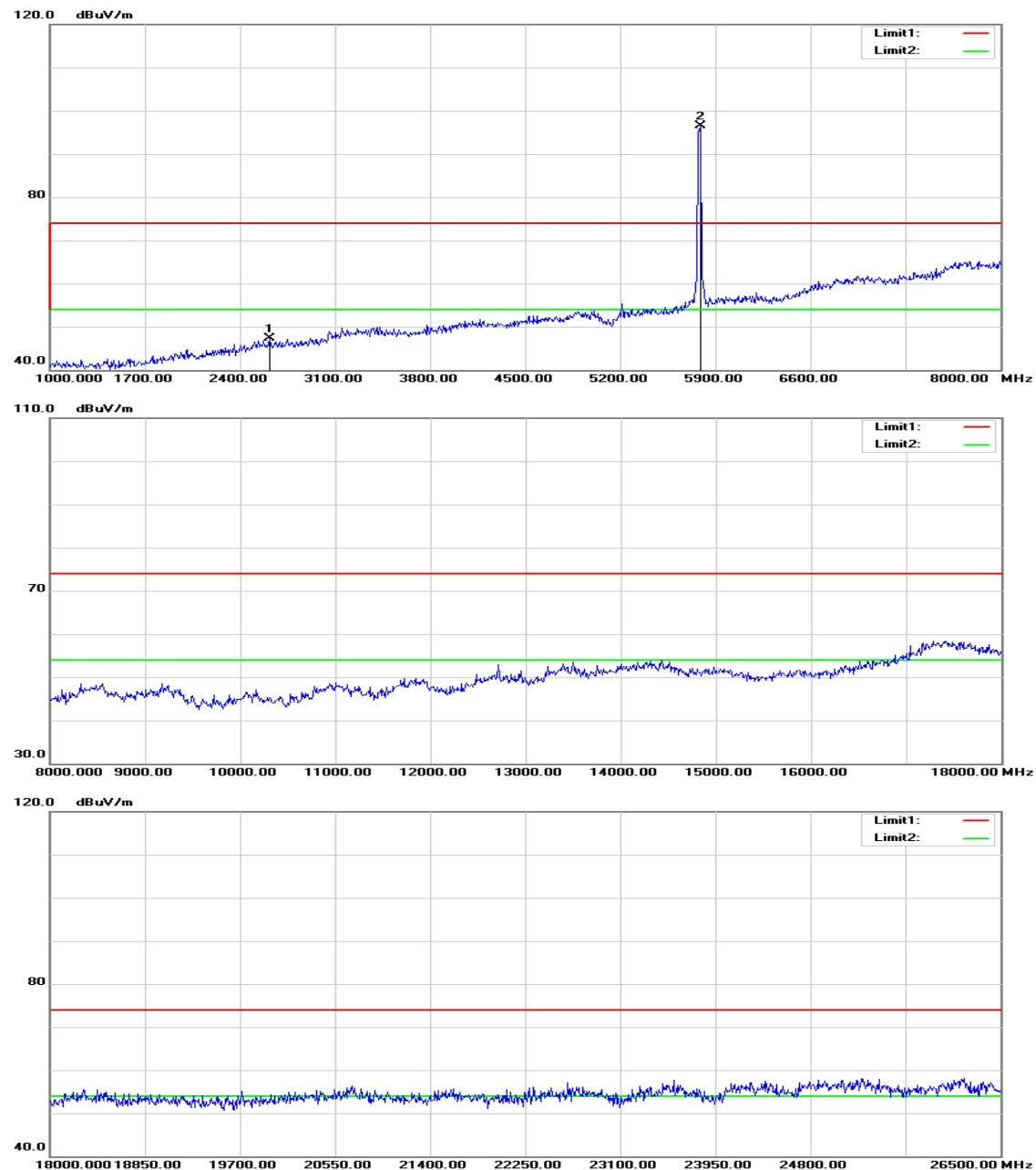
Polarity: Ver. / Hor.

| Frequency (MHz) | Reading (dBuV) | Correction (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark | Ant.Pol. (H/V) |
|-----------------|----------------|-------------------|-----------------|----------------|-------------|--------|----------------|
| 4171.000 | 49.33 | 1.88 | 51.21 | 74.00 | -22.79 | peak | V |
| N/A | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| 3261.000 | 51.79 | -1.48 | 50.31 | 74.00 | -23.69 | peak | H |
| N/A | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown “ --- ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with “ N/A ” remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).

TX / IEEE 802.11n HT 20 MHz mode / CH Mid**Polarity: Vertical**

Polarity: Horizontal

Operation Mode: TX / IEEE 802.11n HT 20 MHz mode / CH Mid **Test Date:** August 2, 2015

Temperature: 27°C

Tested by: Jason Lu

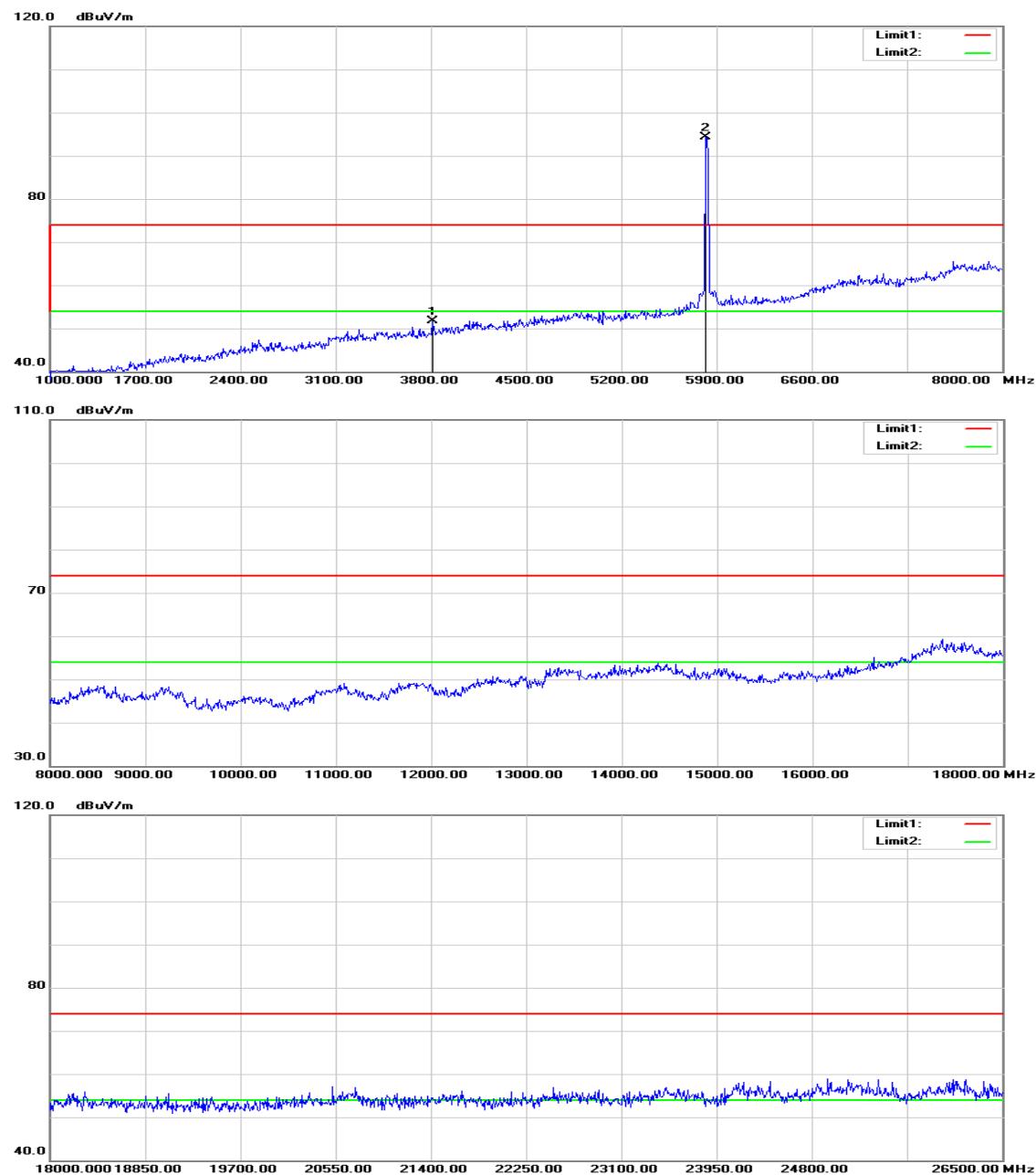
Humidity: 53% RH

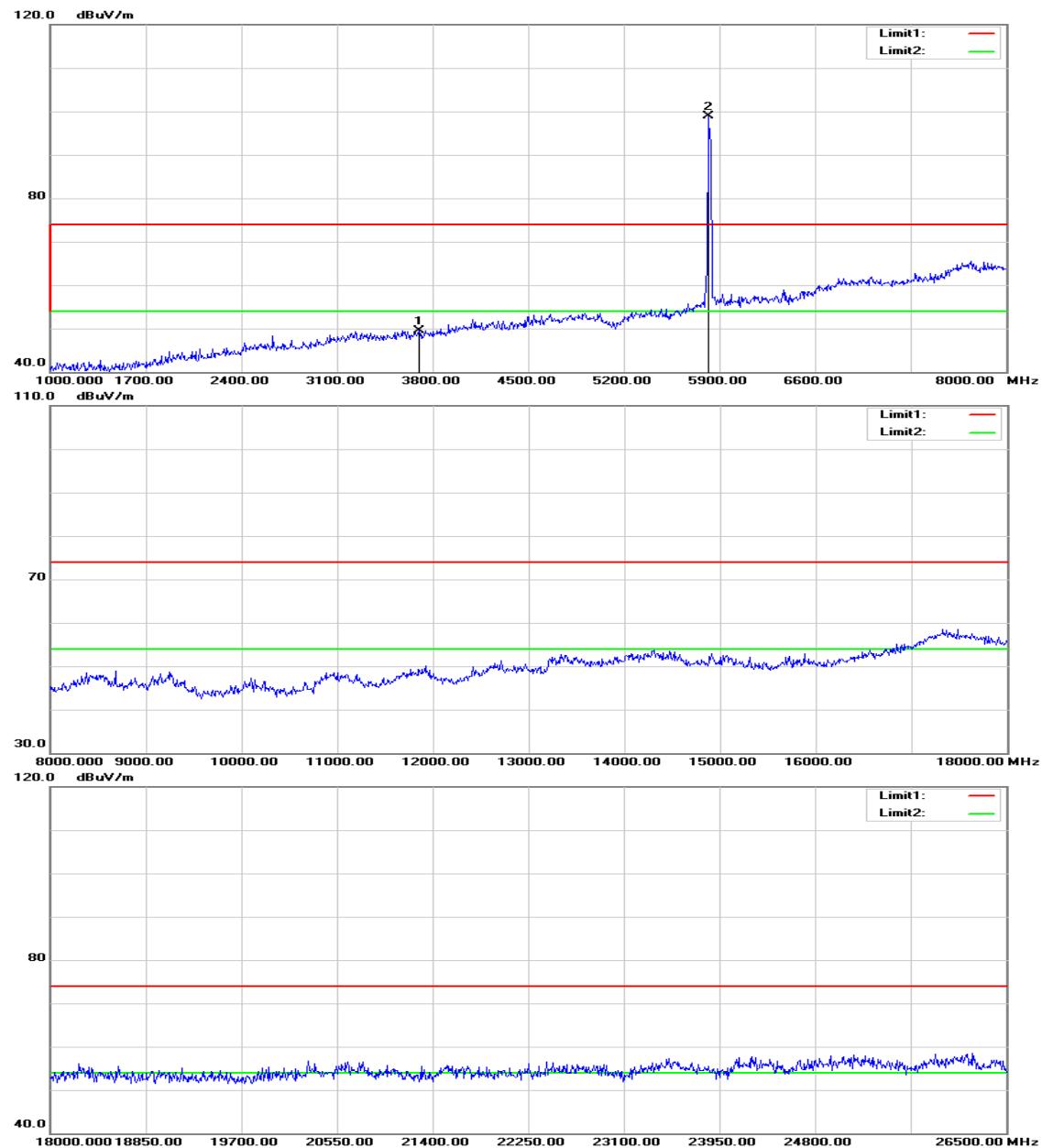
Polarity: Ver. / Hor.

| Frequency (MHz) | Reading (dBuV) | Correction (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark | Ant.Pol. (H/V) |
|-----------------|----------------|-------------------|-----------------|----------------|-------------|--------|----------------|
| 3842.000 | 49.64 | 0.55 | 50.19 | 74.00 | -23.81 | peak | V |
| N/A | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| 2617.000 | 50.26 | -2.88 | 47.38 | 74.00 | -26.62 | peak | H |
| N/A | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown “ --- ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with “ N/A ” remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).

TX / IEEE 802.11n HT 20 MHz mode / CH High**Polarity: Vertical**

Polarity: Horizontal

Operation Mode: TX / IEEE 802.11n HT 20 MHz mode / CH
High

Test Date: August 2, 2015

Temperature: 27°C

Tested by: Jason Lu

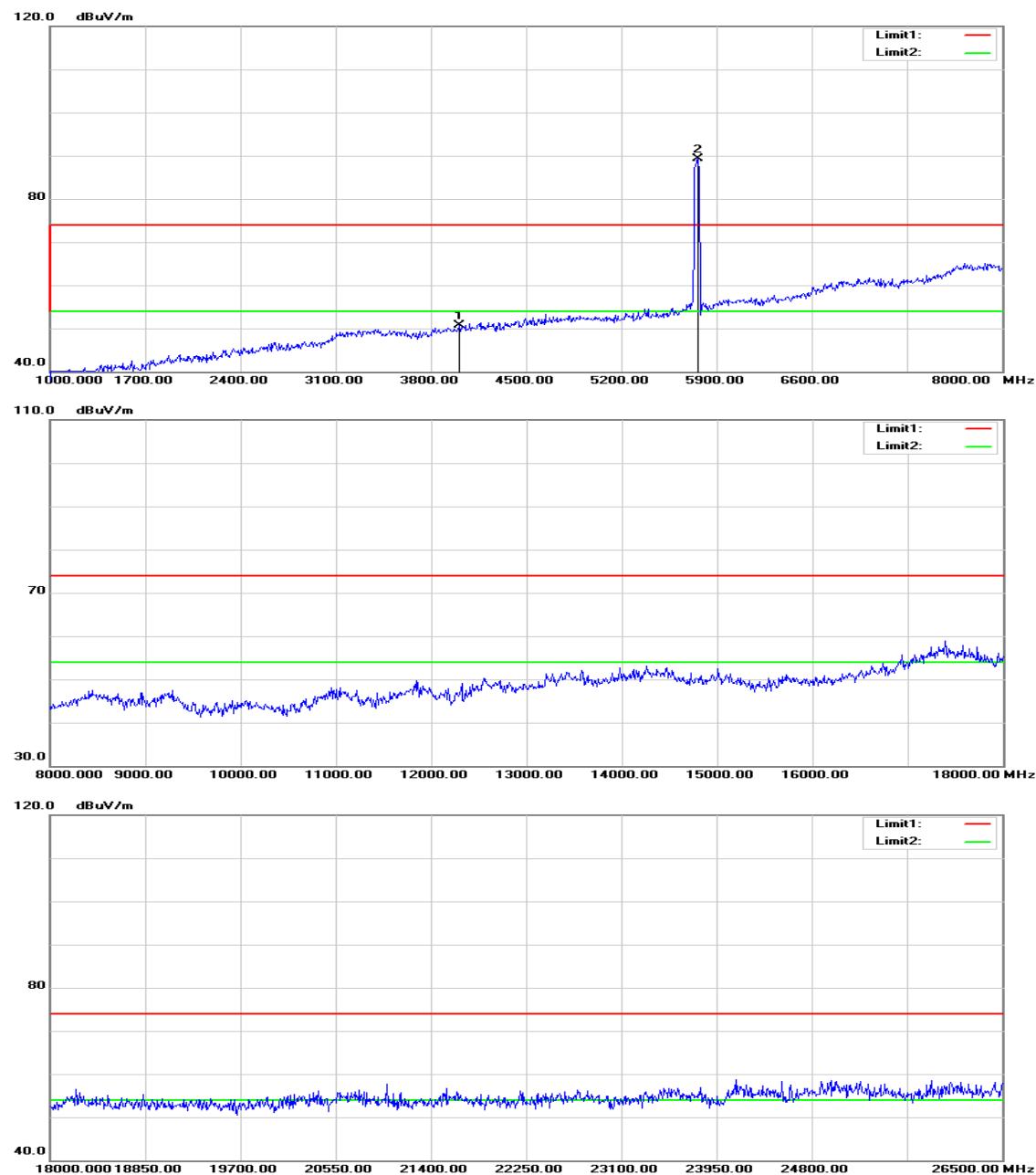
Humidity: 53% RH

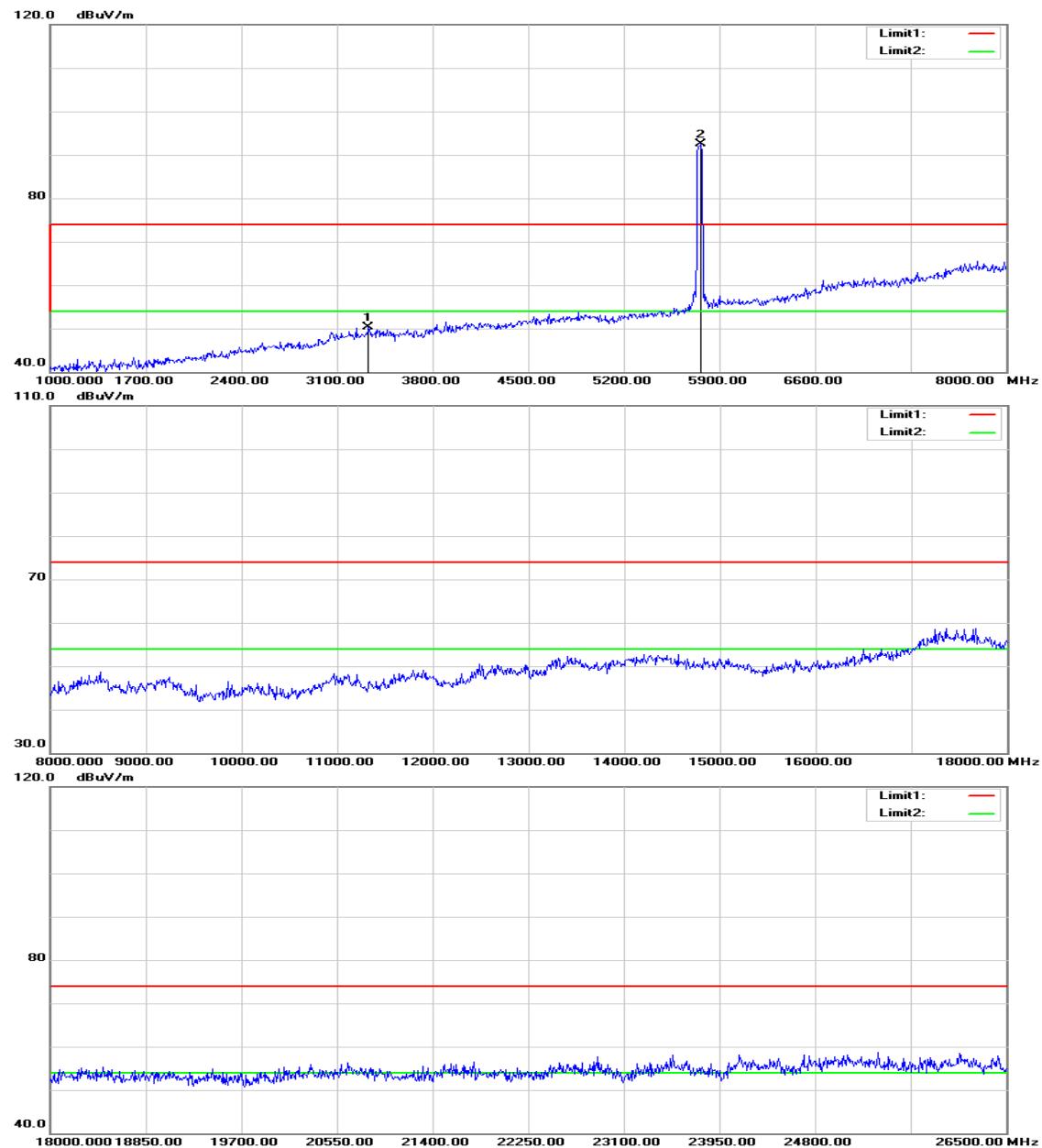
Polarity: Ver. / Hor.

| Frequency (MHz) | Reading (dBuV) | Correction (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark | Ant.Pol. (H/V) |
|-----------------|----------------|-------------------|-----------------|----------------|-------------|--------|----------------|
| 3814.000 | 51.21 | 0.43 | 51.64 | 74.00 | -22.36 | peak | V |
| N/A | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| 3702.000 | 49.60 | -0.05 | 49.55 | 74.00 | -24.45 | peak | H |
| N/A | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown “ --- ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with “ N/A ” remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).

TX / IEEE 802.11n HT 40 MHz mode / CH Low**Polarity: Vertical**

Polarity: Horizontal

Operation Mode: TX / IEEE 802.11n HT 40 MHz mode
/ CH Low

Test Date: August 3, 2015

Temperature: 27°C

Tested by: Jason Lu

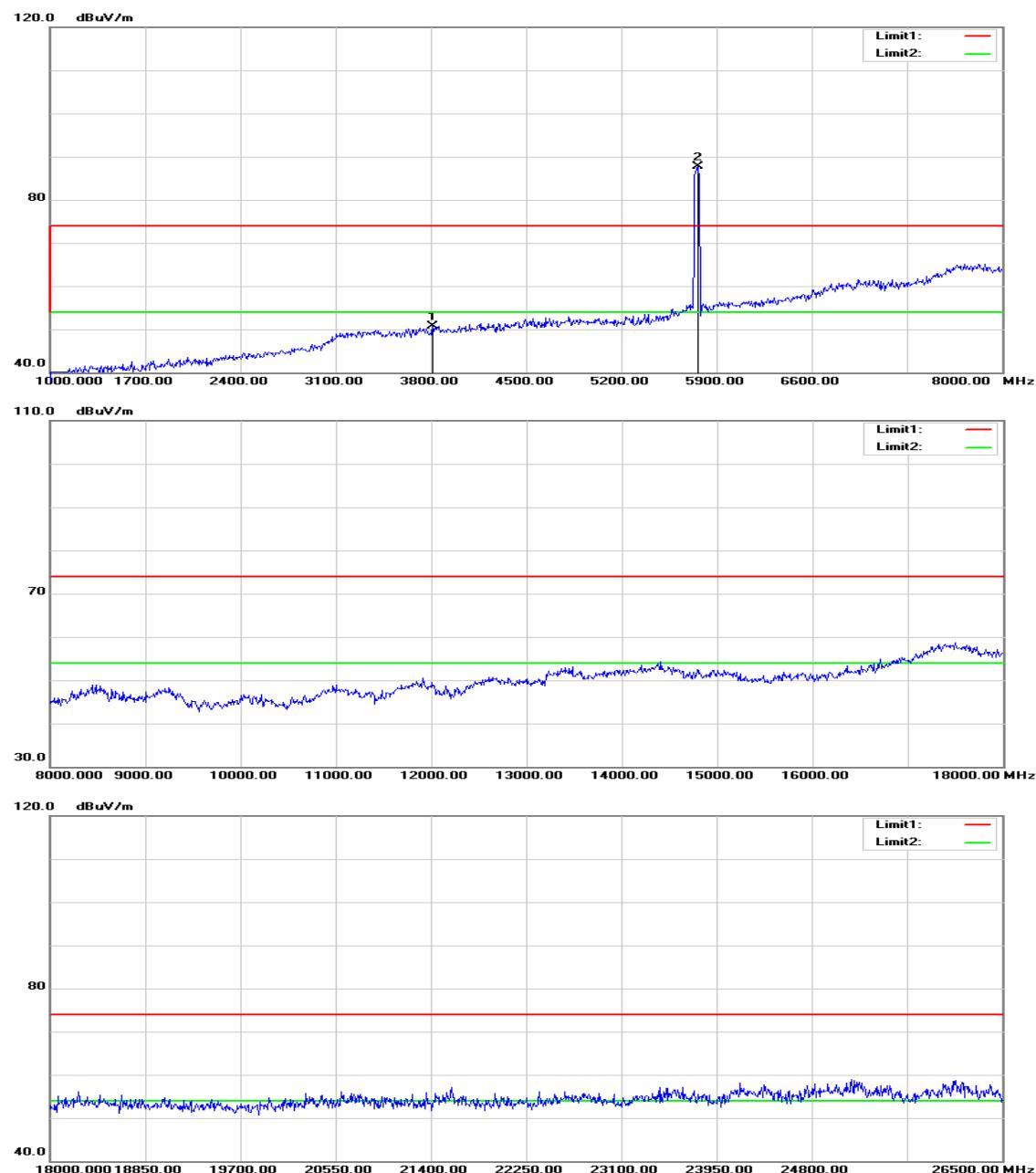
Humidity: 53% RH

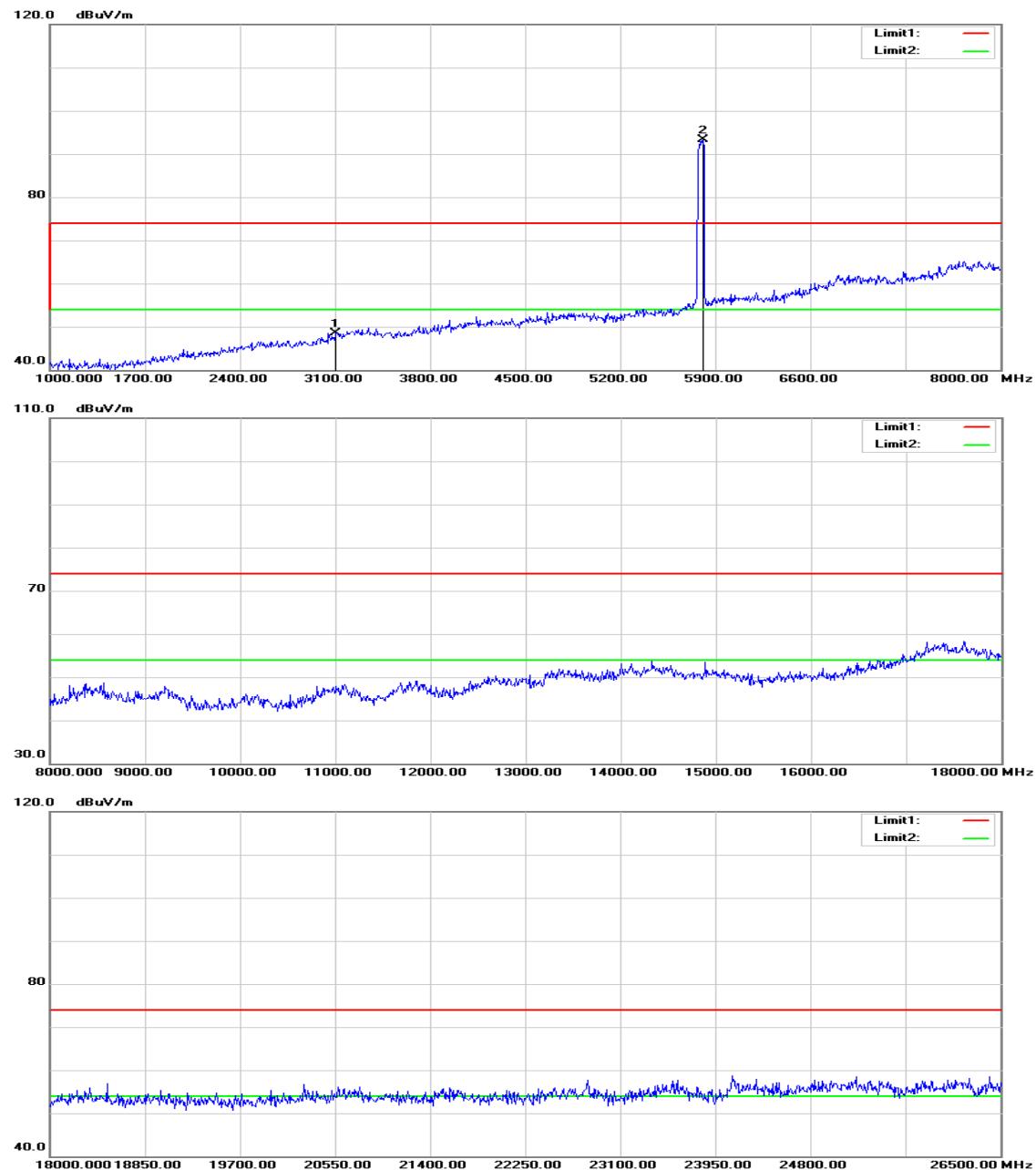
Polarity: Ver. / Hor.

| Frequency (MHz) | Reading (dBuV) | Correction (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark | Ant.Pol. (H/V) |
|-----------------|----------------|-------------------|-----------------|----------------|-------------|--------|----------------|
| 4010.000 | 49.45 | 1.27 | 50.72 | 74.00 | -23.28 | peak | V |
| N/A | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| 3331.000 | 51.53 | -1.32 | 50.21 | 74.00 | -23.79 | peak | H |
| N/A | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit or as required by the applicant.*
4. *Data of measurement within this frequency range shown “ --- ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with “ N/A ” remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

TX / IEEE 802.11n HT 40 MHz mode / CH High**Polarity: Vertical**

Polarity: Horizontal

Operation Mode: TX / IEEE 802.11n HT 40 MHz mode
/ CH High

Test Date: August 3, 2015

Temperature: 27°C

Tested by: Jason Lu

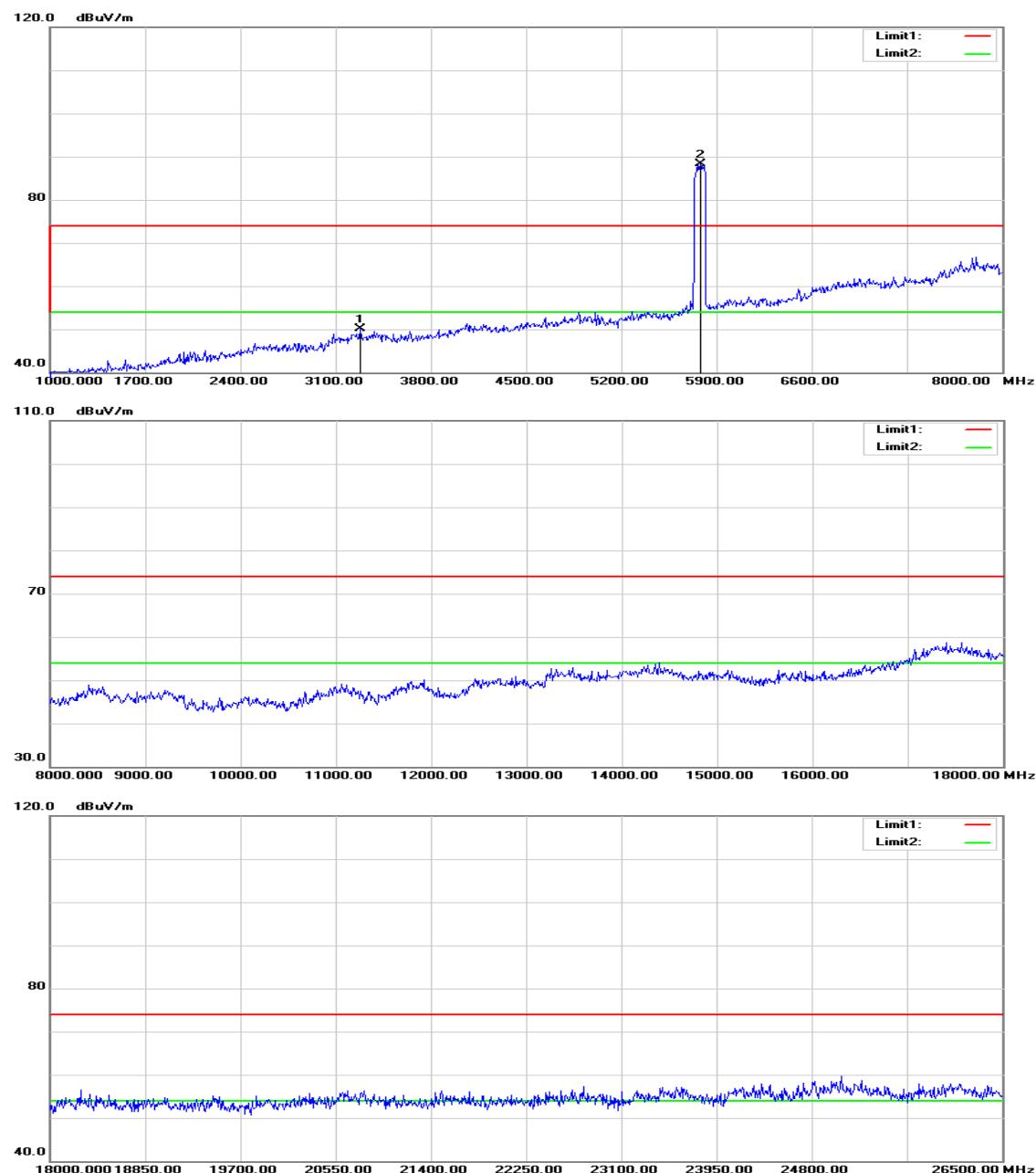
Humidity: 53% RH

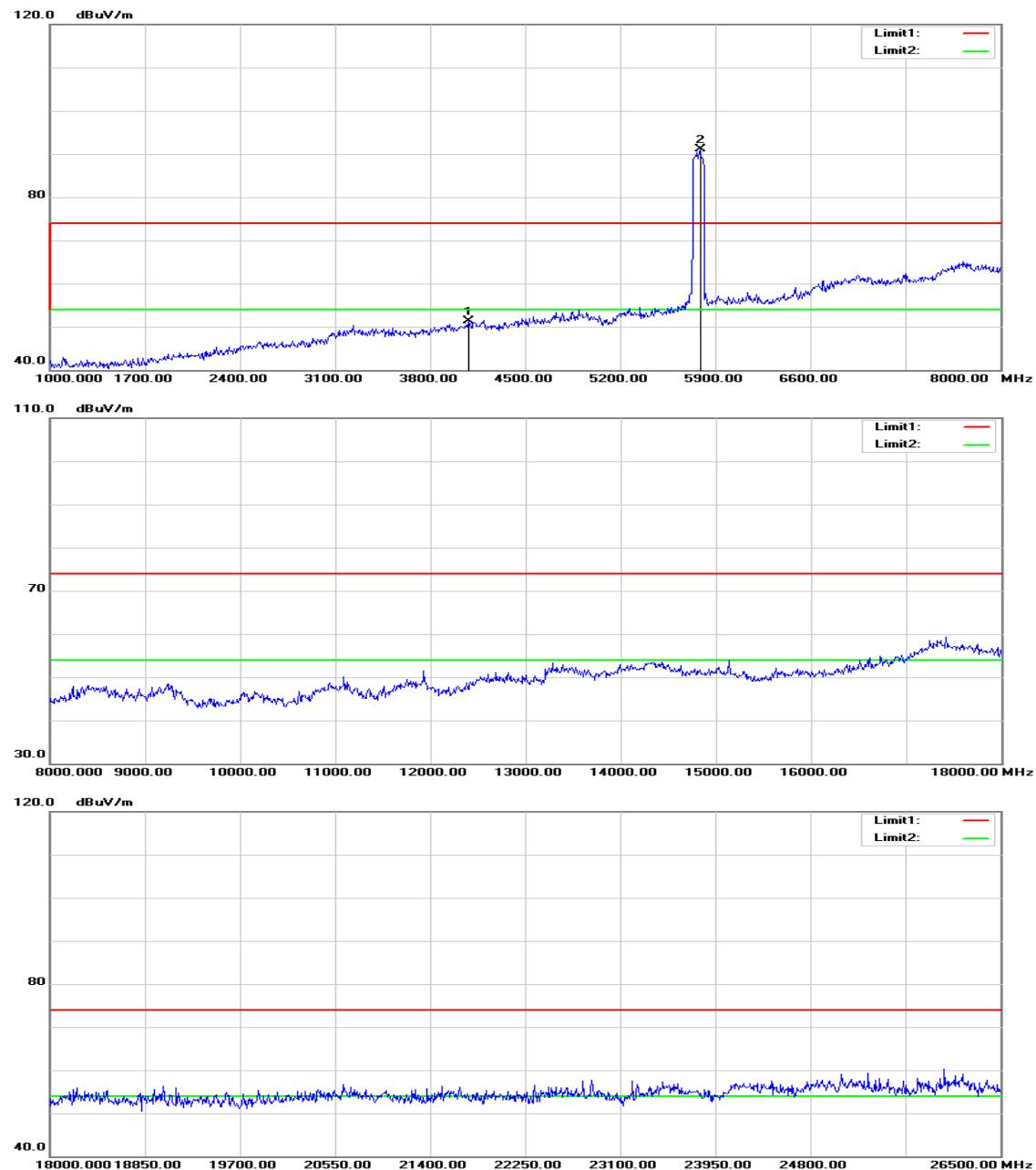
Polarity: Ver. / Hor.

| Frequency (MHz) | Reading (dBuV) | Correction (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark | Ant.Pol. (H/V) |
|-----------------|----------------|-------------------|-----------------|----------------|-------------|--------|----------------|
| 3814.000 | 50.33 | 0.43 | 50.76 | 74.00 | -23.24 | peak | V |
| N/A | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| 3107.000 | 50.36 | -1.85 | 48.51 | 74.00 | -25.49 | peak | H |
| N/A | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown “ --- ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with “ N/A ” remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).

Tx / IEEE 802.11ac VHT 80 MHz mode / CH Mid**Polarity: Vertical**

Polarity: Horizontal

Operation Mode: Tx / IEEE 802.11ac VHT 80 MHz mode / CH Mid **Test Date:** August 3, 2015

Temperature: 27°C **Tested by:** Jason Lu

Humidity: 53% RH **Polarity:** Ver. / Hor.

| Frequency (MHz) | Reading (dBuV) | Correction (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark | Ant.Pol. (H/V) |
|-----------------|----------------|-------------------|-----------------|----------------|-------------|--------|----------------|
| 3282.000 | 51.45 | -1.43 | 50.02 | 74.00 | -23.98 | peak | V |
| N/A | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| 4080.000 | 49.86 | 1.53 | 51.39 | 74.00 | -22.61 | peak | H |
| N/A | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown “ --- ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with “ N/A ” remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).