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FCC RADIO TEST REPORT

| | |
|---------------------|--|
| Applicant's company | NETGEAR, Inc. |
| Applicant Address | 350 East Plumeria Drive, San Jose, California 95134, USA |
| FCC ID | PY313200231 |

| | |
|-------------------|---------------------------------------|
| Product Name | WiFi Range Extender |
| Brand Name | NETGEAR |
| Model No. | EX6100, EX6000 |
| Test Rule Part(s) | 47 CFR FCC Part 15 Subpart E § 15.407 |
| Test Freq. Range | 5250 ~ 5350MHz / 5470 ~ 5725MHz |
| Received Date | Oct. 14, 2013 |
| Final Test Date | Mar. 27, 2015 |
| Submission Type | Class II Change |

Statement

Test result included is for the IEEE 802.11n and IEEE 802.11a/ac of the product.

The test result in this report refers exclusively to the presented test model / sample.

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The measurements and test results shown in this test report were made in accordance with the procedures and found in compliance with the limit given in **ANSI C63.10-2013, 47 CFR FCC Part 15 Subpart E, KDB789033 D02 v01, KDB662911 D01 v02r01, KDB644545 D03 v01.**

The test equipment used to perform the test is calibrated and traceable to NML/ROC.



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History of This Test Report

| REPORT NO. | VERSION | DESCRIPTION | ISSUED DATE |
|-------------|---------|-------------------------|---------------|
| FR3O1622-01 | Rev. 01 | Initial issue of report | Apr. 27, 2015 |
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1. VERIFICATION OF COMPLIANCE

Product Name : WiFi Range Extender
Brand Name : NETGEAR
Model No. : EX6100, EX6000
Applicant : NETGEAR, Inc.
Test Rule Part(s) : 47 CFR FCC Part 15 Subpart E § 15.407

Sporton International as requested by the applicant to evaluate the EMC performance of the product sample received on Oct. 14, 2013 would like to declare that the tested sample has been evaluated and found to be in compliance with the tested rule parts. The data recorded as well as the test configuration specified is true and accurate for showing the sample's EMC nature.

A handwritten signature in blue ink that reads 'Sam Chen'. The signature is written in a cursive style and is positioned above a horizontal line.

Sam Chen

SPORTON INTERNATIONAL INC.

2. SUMMARY OF THE TEST RESULT

| Applied Standard: 47 CFR FCC Part 15 Subpart E | | | | |
|--|--------------|--|----------|-------------|
| Part | Rule Section | Description of Test | Result | Under Limit |
| 4.1 | 15.207 | AC Power Line Conducted Emissions | Complies | 14.92 dB |
| 4.2 | 15.407(a) | 26dB Spectrum Bandwidth and 99% Occupied Bandwidth | Complies | - |
| 4.3 | 15.407(a) | Maximum Conducted Output Power | Complies | 0.02 dB |
| 4.4 | 15.407(a) | Power Spectral Density | Complies | 0.04 dB |
| 4.5 | 15.407(b) | Radiated Emissions | Complies | 0.07 dB |
| 4.6 | 15.407(b) | Band Edge Emissions | Complies | 0.07 dB |
| 4.7 | 15.407(g) | Frequency Stability | Complies | - |
| 4.8 | 15.203 | Antenna Requirements | Complies | - |

Note: AC power line conducted emissions test results and radiated emissions below 1GHz test results are based on original report: FR3O1622.

3. GENERAL INFORMATION

3.1. Product Details

| Items | Description |
|--------------------------------|--|
| Product Type | WLAN (1TX, 1RX) |
| Radio Type | Intentional Transceiver |
| Power Type | From internal power supply |
| Modulation | IEEE 802.11a: OFDM IEEE 802.11n/ac: see the below table |
| Data Modulation | IEEE 802.11a/n: OFDM (BPSK / QPSK / 16QAM / 64QAM) IEEE 802.11ac: OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM) |
| Data Rate (Mbps) | IEEE 802.11a: OFDM (6/9/12/18/24/36/48/54) IEEE 802.11n/ac: see the below table |
| Frequency Range | 5250 ~ 5350MHz / 5470 ~ 5725MHz |
| Channel Number | 12 for 20MHz bandwidth ; 5 for 40MHz bandwidth 2 for 80MHz bandwidth |
| Channel Band Width (99%) | Band 2: IEEE 802.11a: 17.13 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 17.85 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.25 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 75.70 MHz Band 3: IEEE 802.11a: 16.86 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 17.61 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 36.80 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 75.70 MHz |
| Maximum Conducted Output Power | Band 2: IEEE 802.11a: 23.84 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 23.98 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 23.87 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 15.09 dBm Band 3: IEEE 802.11a: 23.81 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 23.81 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 23.81 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 16.22 dBm |
| Carrier Frequencies | Please refer to section 3.4 |
| Antenna | Please refer to section 3.3 |

| Items | Description | |
|-----------------------------|---|--|
| Communication Mode | <input checked="" type="checkbox"/> IP Based (Load Based) | <input type="checkbox"/> Frame Based |
| TPC Function | <input checked="" type="checkbox"/> With TPC | <input type="checkbox"/> Without TPC |
| Weather Band (5600~5650MHz) | <input type="checkbox"/> With 5600~5650MHz | <input checked="" type="checkbox"/> Without 5600~5650MHz |
| Beamforming Function | <input type="checkbox"/> With beamforming | <input checked="" type="checkbox"/> Without beamforming |
| Operating Mode | <input type="checkbox"/> Outdoor access point | |
| | <input checked="" type="checkbox"/> Indoor access point | |
| | <input type="checkbox"/> Fixed point-to-point access points | |
| | <input type="checkbox"/> Mobile and portable client devices | |

Antenna and Band width

| Antenna | Single (TX) | | |
|---------------|-------------|--------|--------|
| | 20 MHz | 40 MHz | 80 MHz |
| IEEE 802.11a | V | X | X |
| IEEE 802.11n | V | V | X |
| IEEE 802.11ac | V | V | V |

IEEE 11n/ac Spec.

| Protocol | Number of Transmit Chains (NTX) | Data Rate / MCS |
|------------------|---------------------------------|-----------------|
| 802.11n (HT20) | 1 | MCS 0-7 |
| 802.11n (HT40) | 1 | MCS 0-7 |
| 802.11ac (VHT20) | 1 | MCS 0-9/Nss1 |
| 802.11ac (VHT40) | 1 | MCS 0-9/Nss1 |
| 802.11ac (VHT80) | 1 | MCS 0-9/Nss1 |

Note 1: IEEE Std. 802.11n modulation consists of HT20 and HT40 (HT: High Throughput).

Then EUT supports HT20 and HT40.

Note 2: IEEE Std. 802.11ac modulation consists of VHT20, VHT40, VHT80 and VHT160 (VHT: Very High Throughput). Then EUT supports VHT20, VHT40 and VHT80.

Note 3: Modulation modes consist of below configuration:

HT20/HT40: IEEE 802.11n, VHT20/VHT40/VHT80: IEEE 802.11ac

3.2. Accessories

| Description |
|-----------------------------------|
| RJ-45 cable*1: Non-shielded, 1.5m |

3.3. Table for Filed Antenna

| Ant. | Brand | Model No. | Type | Connector | Gain (dBi) | | Remark |
|------|-------------|---------------|--------|-----------|------------|---------------------|----------|
| | | | | | 2.4GHz | 5GHz Band 1, Band 4 | |
| 1 | Master Wave | X6100-98242 | Dipole | I-PEX | 3.31 | - | External |
| 2 | Foxconn | FX01H74-0G-EF | PCB | I-PEX | 3.66 | - | Internal |
| 3 | Master Wave | X6100-98242 | Dipole | I-PEX | - | 5 | External |

| Ant. | 5GHz Band 2~Band 3 | | | |
|------|--------------------|------------|-----------|------------|
| | Frequency | Gain (dBi) | Frequency | Gain (dBi) |
| 3 | 5260 MHz | 3.7 | 5510 MHz | 3.4 |
| | 5270 MHz | 3.7 | 5530 MHz | 3.6 |
| | 5290 MHz | 4.0 | 5550 MHz | 3.6 |
| | 5300 MHz | 4.0 | 5580 MHz | 2.9 |
| | 5310 MHz | 4.1 | 5670 MHz | 3.3 |
| | 5320 MHz | 4.1 | 5700 MHz | 3.5 |
| | 5500 MHz | 3.2 | - | - |

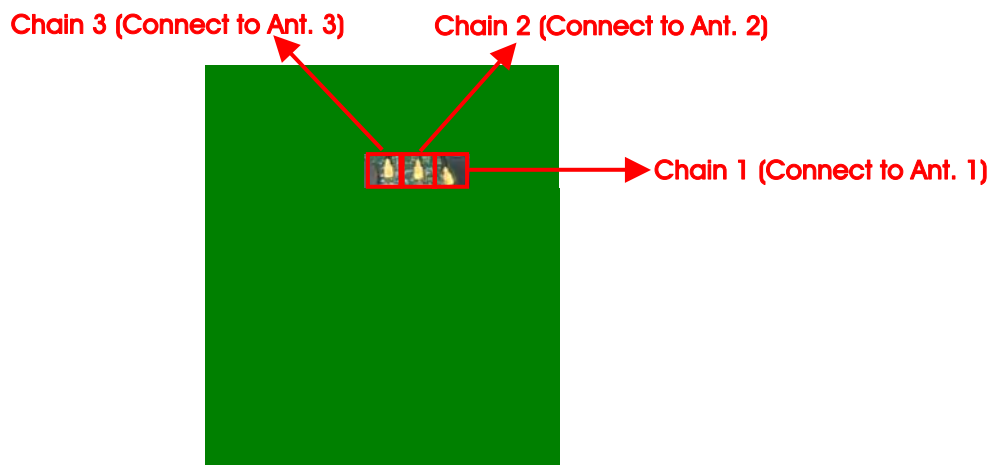
Note: There are three antennas provided to this EUT and all of them can be used as transmitting and receiving antenna

For 2.4GHz Band (2TX/2RX):

Chain 1 and Chain 2 could transmit/receive simultaneously.

For 5GHz Band (1TX/1RX):

Only Chain 3 can be used as transmitting/receiving antenna.



3.4. Table for Carrier Frequencies

There are three bandwidth systems.

For 20MHz bandwidth systems, use Channel 52, 56, 60, 64, 100, 104, 108, 112, 116, 132, 136, 140.

For 40MHz bandwidth systems, use Channel 54, 62, 102, 110, 134.

For 80MHz bandwidth systems, use Channel 58, 106.

| Frequency Band | Channel No. | Frequency | Channel No. | Frequency |
|-------------------------|-------------|-----------|-------------|-----------|
| 5250~5350 MHz Band 2 | 52 | 5260 MHz | 60 | 5300 MHz |
| | 54 | 5270 MHz | 62 | 5310 MHz |
| | 56 | 5280 MHz | 64 | 5320 MHz |
| | 58 | 5290 MHz | - | - |
| 5470~5725 MHz Band 3 | 100 | 5500 MHz | 112 | 5560 MHz |
| | 102 | 5510 MHz | 116 | 5580 MHz |
| | 104 | 5520 MHz | 132 | 5660 MHz |
| | 106 | 5530 MHz | 134 | 5670 MHz |
| | 108 | 5540 MHz | 136 | 5680 MHz |
| | 110 | 5550 MHz | 140 | 5700 MHz |

3.5. Table for Test Modes

Preliminary tests were performed in different data rate to find the worst radiated emission. The data rate shown in the table below is the worst-case rate with respect to the specific test item. Investigation has been done on all the possible configurations for searching the worst cases. The following table is a list of the test modes shown in this test report.

| Test Items | Mode | | Data Rate | Channel | Chain |
|--|-------------|----------|-----------|----------------------|-------|
| AC Power Conducted Emission | Normal Link | | - | - | - |
| Max. Conducted Output Power | 11a/BPSK | Band 2-3 | 6Mbps | 52/60/64/100/116/140 | 3 |
| | 11ac VHT20 | Band 2-3 | MCS0/Nss1 | 52/60/64/100/116/140 | 3 |
| | 11ac VHT40 | Band 2-3 | MCS0/Nss1 | 54/62/102/110/134 | 3 |
| | 11ac VHT80 | Band 2-3 | MCS0/Nss1 | 58/106 | 3 |
| Power Spectral Density | 11a/BPSK | Band 2-3 | 6Mbps | 52/60/64/100/116/140 | 3 |
| | 11ac VHT20 | Band 2-3 | MCS0/Nss1 | 52/60/64/100/116/140 | 3 |
| | 11ac VHT40 | Band 2-3 | MCS0/Nss1 | 54/62/102/110/134 | 3 |
| | 11ac VHT80 | Band 2-3 | MCS0/Nss1 | 58/106 | 3 |
| 26dB Spectrum Bandwidth 99% Occupied Bandwidth Measurement | 11a/BPSK | Band 2-3 | 6Mbps | 52/60/64/100/116/140 | 3 |
| | 11ac VHT20 | Band 2-3 | MCS0/Nss1 | 52/60/64/100/116/140 | 3 |
| | 11ac VHT40 | Band 2-3 | MCS0/Nss1 | 54/62/102/110/134 | 3 |
| | 11ac VHT80 | Band 2-3 | MCS0/Nss1 | 58/106 | 3 |
| Radiated Emission Above 1GHz | 11a/BPSK | Band 2-3 | 6Mbps | 52/60/64/100/116/140 | 3 |
| | 11ac VHT20 | Band 2-3 | MCS0/Nss1 | 52/60/64/100/116/140 | 3 |
| | 11ac VHT40 | Band 2-3 | MCS0/Nss1 | 54/62/102/110/134 | 3 |
| | 11ac VHT80 | Band 2-3 | MCS0/Nss1 | 58/106 | 3 |
| Radiated Emission Below 1GHz | Normal Link | | - | - | - |
| Band Edge Emission | 11a/BPSK | Band 2-3 | 6Mbps | 52/60/64/100/140 | 3 |
| | 11ac VHT20 | Band 2-3 | MCS0/Nss1 | 52/60/64/100/140 | 3 |
| | 11ac VHT40 | Band 2-3 | MCS0/Nss1 | 54/62/102/110/134 | 3 |
| | 11ac VHT80 | Band 2-3 | MCS0/Nss1 | 58/106 | 3 |
| Frequency Stability | 20 MHz | Band 2-3 | - | 60/116 | 3 |
| | 40 MHz | Band 2-3 | - | 62/110 | 3 |
| | 80 MHz | Band 2-3 | - | 58/106 | 3 |

Note: VHT20/VHT40 covers HT20/HT40, due to same modulation.

The following test modes were performed for all tests:

For Radiated Emissions Below 1GHz test:

Mode 1. Place EUT in X axis

Mode 2. Place EUT in Y axis

Mode 3. Place EUT in Z axis

Mode 1 is the worst case, so it was selected to record in this test report.

For Radiated Emission Above 1GHz test:

The EUT was performed at 3-axis and the worst-case was found at Y axis.

So the measurement will follow this same mode.

3.6. Table for Testing Locations

| Test Site Location | | | | | |
|--------------------|--|----------|--------------|-------------|--------------|
| Address: | No.8, Lane 724, Bo-ai St., Jhubei City, Hsinchu County 302, Taiwan, R.O.C. | | | | |
| TEL: | 886-3-656-9065 | | | | |
| FAX: | 886-3-656-9085 | | | | |
| Test Site No. | Site Category | Location | FCC Reg. No. | IC File No. | VCCI Reg. No |
| 03CH01-CB | SAC | Hsin Chu | 262045 | IC 4086D | - |
| CO01-CB | Conduction | Hsin Chu | 262045 | IC 4086D | - |
| TH01-CB | OVEN Room | Hsin Chu | - | - | - |

Open Area Test Site (OATS); Semi Anechoic Chamber (SAC).

3.7. Table for Multiple Listing

The model numbers in the following table are all refer to the identical product.

| Model No. | Description |
|-----------|---|
| EX6100 | The models are identical except for the housing colors as marketing strategy. |
| EX6000 | |

3.8. Table for Class II Change

This product is an extension of original one reported under Sporton project number: FR3O1622

Below is the table for the change of the product with respect to the original one.

| Modifications | Performance Checking |
|--|---|
| 1. Adding Band 2 and Band 3 (5250~5350 MHz, 5470~5725 MHz) for this device. 2. Adding a new model number "EX6000", and it shares the same PCBA as original model number "EX6100". It only changes housing color for different marketing strategy. | 1. 26dB Spectrum Bandwidth and 99% Occupied Bandwidth. 2. Maximum Conducted Output Power. 3. Power Spectral Density. 4. Radiated Emissions Above 1GHz. 5. Band Edge Emissions. 6. Frequency Stability. 7. Maximum Permissible Exposure. |

Note: Maximum Permissible Exposure of 5GHz Band (DTS) and 2.4GHz Band are based on original test report (please refer to Appendix B).

3.9. Table for Supporting Units

For Test Site No: CO01-CB

| Support Unit | Brand | Model | FCC ID |
|--------------|--------|------------|----------------|
| Notebook*3 | DELL | E6430 | QDS-BRCM1049LE |
| Wireless AP | Planex | GW-AP54SGX | N/A |

For Test Site No: 03CH01-CB (Below 1GHz)

| Support Unit | Brand | Model | FCC ID |
|----------------|---------|---------|----------------|
| Notebook | DELL | M1340 | E2K4965AGNM |
| Notebook | DELL | E6430 | QDS-BRCM1049LE |
| Notebook | DELL | D420 | E2KWM3945ABG |
| Wireless ac AP | Netgear | R6300V2 | PY31300227 |

For Test Site No: 03CH01-CB (Above 1GHz) and TH01-CB

| Support Unit | Brand | Model | FCC ID |
|--------------|-------|-------|--------|
| Notebook | DELL | M1330 | DoC |

3.10. Table for Parameters of Test Software Setting

During testing, Channel and Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

| Test Software Version | MT7xxE QA V2.0.5.0 | | | | | |
|--------------------------|----------------------|----------|----------|----------|----------|----------|
| Mode | Test Frequency (MHz) | | | | | |
| | NCB: 20MHz | | | | | |
| | 5260 MHz | 5300 MHz | 5320 MHz | 5500 MHz | 5580 MHz | 5700 MHz |
| 802.11a | 1D | 1D | 19 | 16 | 1A | 18 |
| 802.11ac MCS0/Nss1 VHT20 | 1F | 1F | 1B | 17 | 1B | 18 |
| Mode | NCB: 40MHz | | | | | |
| 802.11ac MCS0/Nss1 VHT40 | 5270 MHz | 5310 MHz | 5510 MHz | 5550 MHz | 5670 MHz | |
| | 1F | 14 | 0D | 1B | 1B | |
| Mode | NCB: 80MHz | | | | | |
| 802.11ac MCS0/Nss1 VHT80 | 5290 MHz | | | 5530 MHz | | |
| | 0C | | | 0B | | |

3.11. EUT Operation during Test

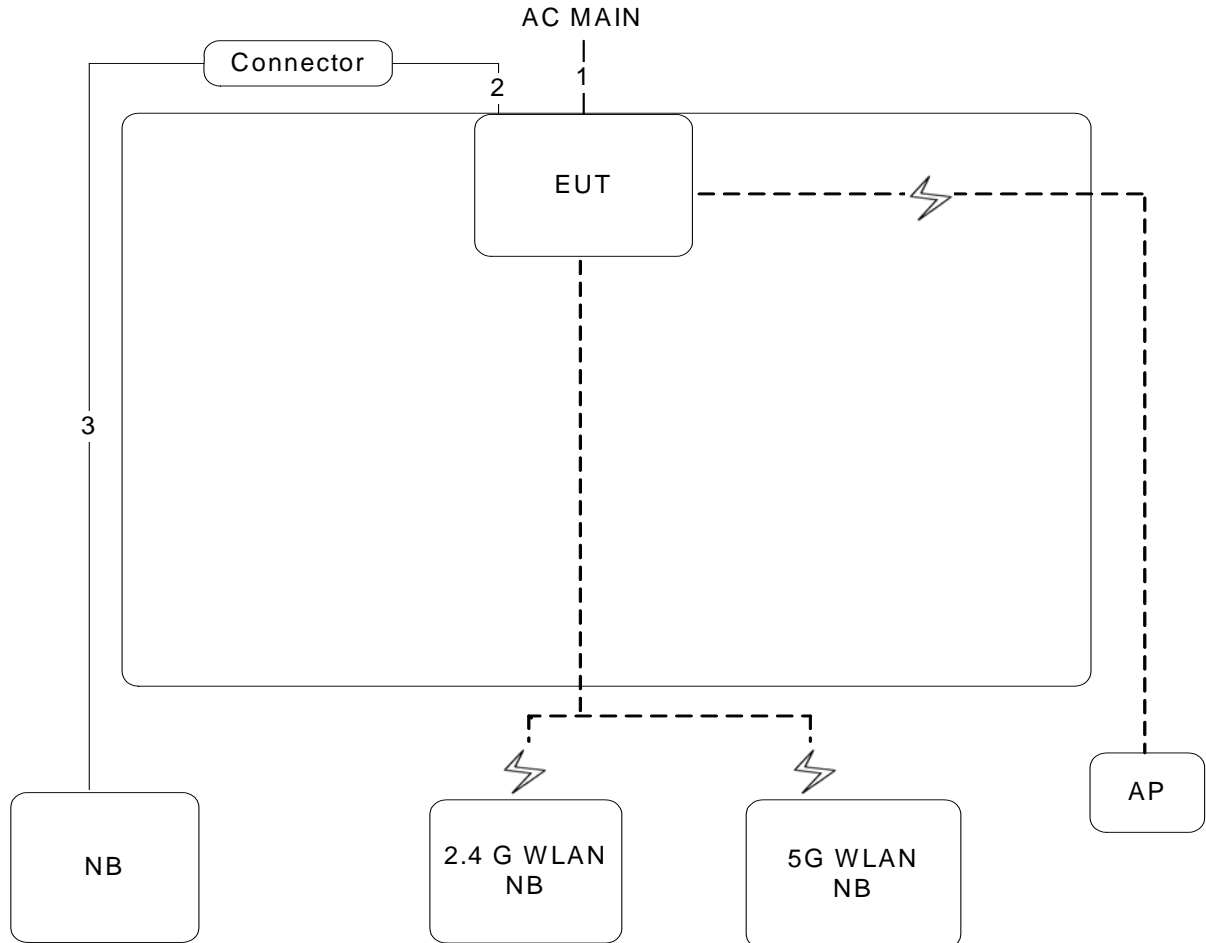
The EUT was programmed to be in continuously transmitting mode.

3.12. Duty Cycle

| Mode | On Time (ms) | On+Off Time (ms) | Duty Cycle (%) | Duty Factor (dB) | 1/T Minimum VBW (kHz) |
|--------------------------|--------------|------------------|----------------|------------------|-----------------------|
| 802.11a | 1.000 | 1.000 | 100.00 | 0.00 | 0.01 |
| 802.11ac MCS0/Nss1 VHT20 | 1.000 | 1.000 | 100.00 | 0.00 | 0.01 |
| 802.11ac MCS0/Nss1 VHT40 | 1.000 | 1.000 | 100.00 | 0.00 | 0.01 |
| 802.11ac MCS0/Nss1 VHT80 | 1.000 | 1.000 | 100.00 | 0.00 | 0.01 |

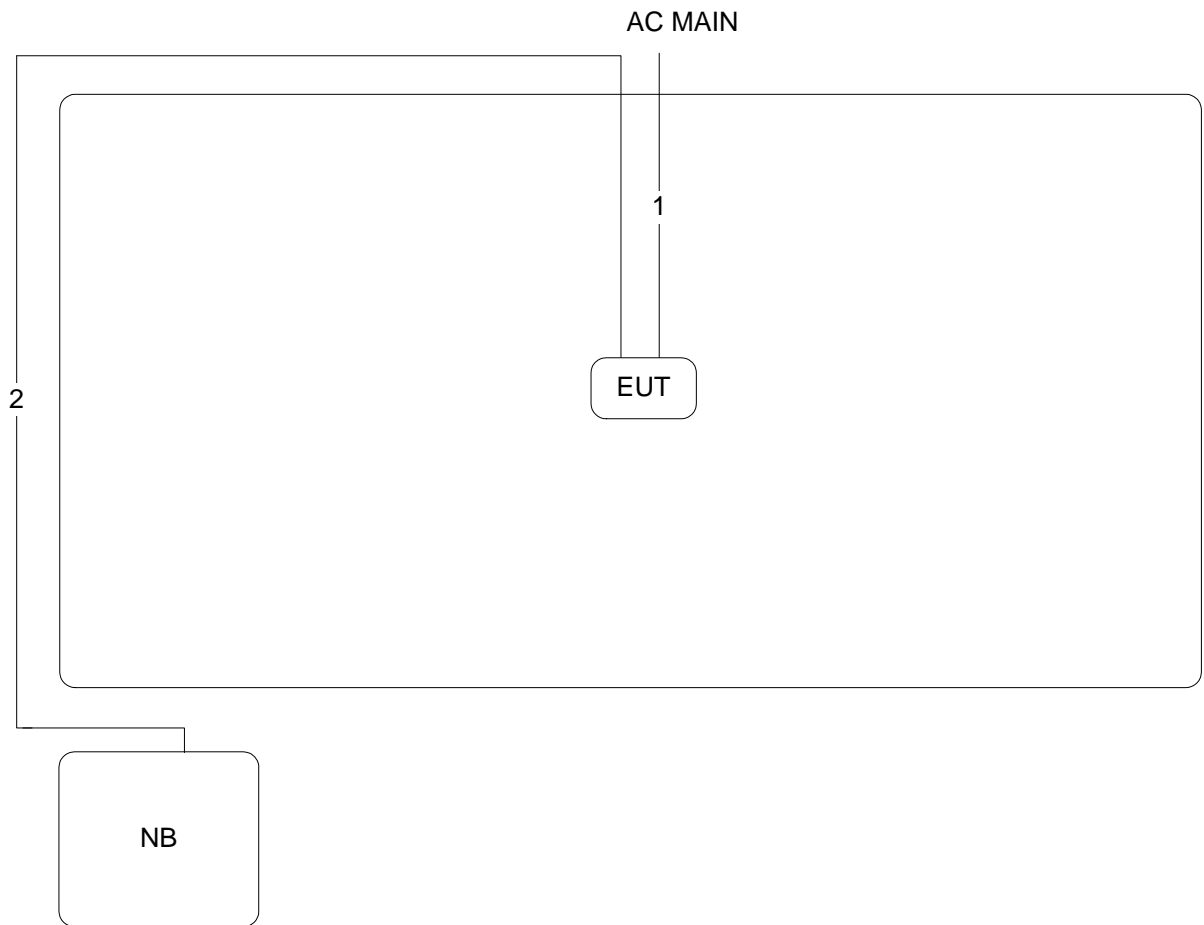
3.13. Test Configurations

3.13.1. AC Power Line Conduction and Radiation Emissions (30MHz~1GHz) Test Configuration



| Item | Connection | Shielded | Length |
|------|-------------|----------|--------|
| 1 | Power cable | No | 1.8m |
| 2 | RJ-45 cable | No | 1.5m |
| 3 | RJ-45 cable | No | 10m |

3.13.2. Radiation Emissions (Above 1GHz) Test Configuration



| Item | Connection | Shielded | Length |
|------|-------------|----------|--------|
| 1 | Power cable | No | 1.8m |
| 2 | RJ-45 cable | No | 10m |

4. TEST RESULT

4.1. AC Power Line Conducted Emissions Measurement

4.1.1. Limit

For this product that is designed to connect to the AC power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed below limits table.

| Frequency (MHz) | QP Limit (dBuV) | AV Limit (dBuV) |
|-----------------|-----------------|-----------------|
| 0.15~0.5 | 66~56 | 56~46 |
| 0.5~5 | 56 | 46 |
| 5~30 | 60 | 50 |

4.1.2. Measuring Instruments and Setting

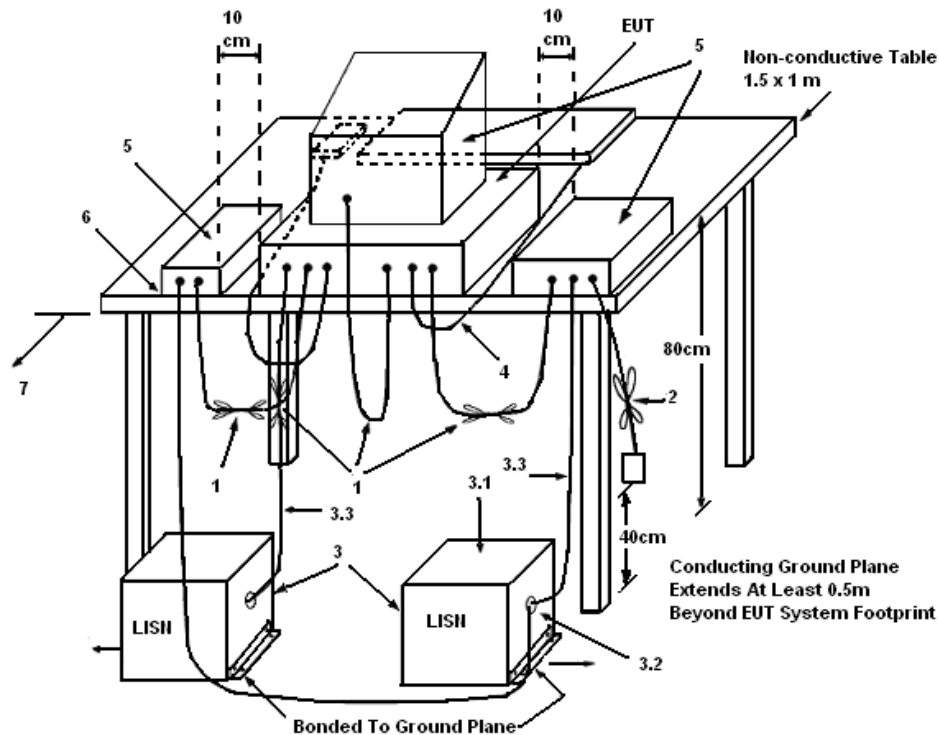
Please refer to section 5 of equipments list in this report. The following table is the setting of the receiver.

| Receiver Parameters | Setting |
|---------------------|----------|
| Attenuation | 10 dB |
| Start Frequency | 0.15 MHz |
| Stop Frequency | 30 MHz |
| IF Bandwidth | 9 kHz |

4.1.3. Test Procedures

1. Configure the EUT according to ANSI C63.10. The EUT or host of EUT has to be placed 0.4 meter far from the conducting wall of the shielding room and at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT or host of EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connected to the other LISNs. The LISN should provide 50uH/50ohms coupling impedance.
4. The frequency range from 150 kHz to 30 MHz was searched.
5. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. The measurement has to be done between each power line and ground at the power terminal.

4.1.4. Test Setup Layout



LEGEND:

- (1) Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- (2) I/O cables that are not connected to a peripheral shall be bundled 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.
- (3) EUT connected to one LISN. Unused LISN measuring port connectors shall be terminated in 50 Ω . LISN can be placed on top of, or immediately beneath, reference ground plane.
 - (3.1) All other equipment powered from additional LISN(s).
 - (3.2) Multiple outlet strip can be used for multiple power cords of non-EUT equipment.
 - (3.3) LISN at least 80 cm from nearest part of EUT chassis.
- (4) Cables of hand-operated devices, such as keyboards, mice, etc., shall be placed as for normal use.
- (5) Non-EUT components of EUT system being tested.
- (6) Rear of EUT, including peripherals, shall all be aligned and flush with rear of tabletop.
- (7) Rear of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the ground plane.

4.1.5. Test Deviation

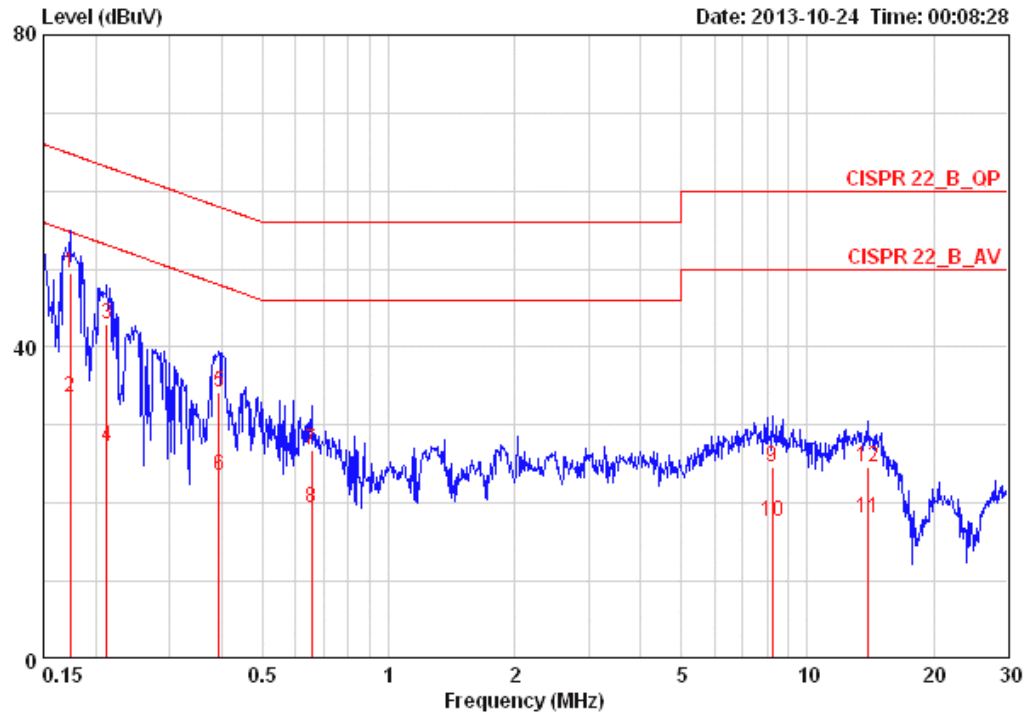
There is no deviation with the original standard.

4.1.6. EUT Operation during Test

The EUT was placed on the test table and programmed in normal function.

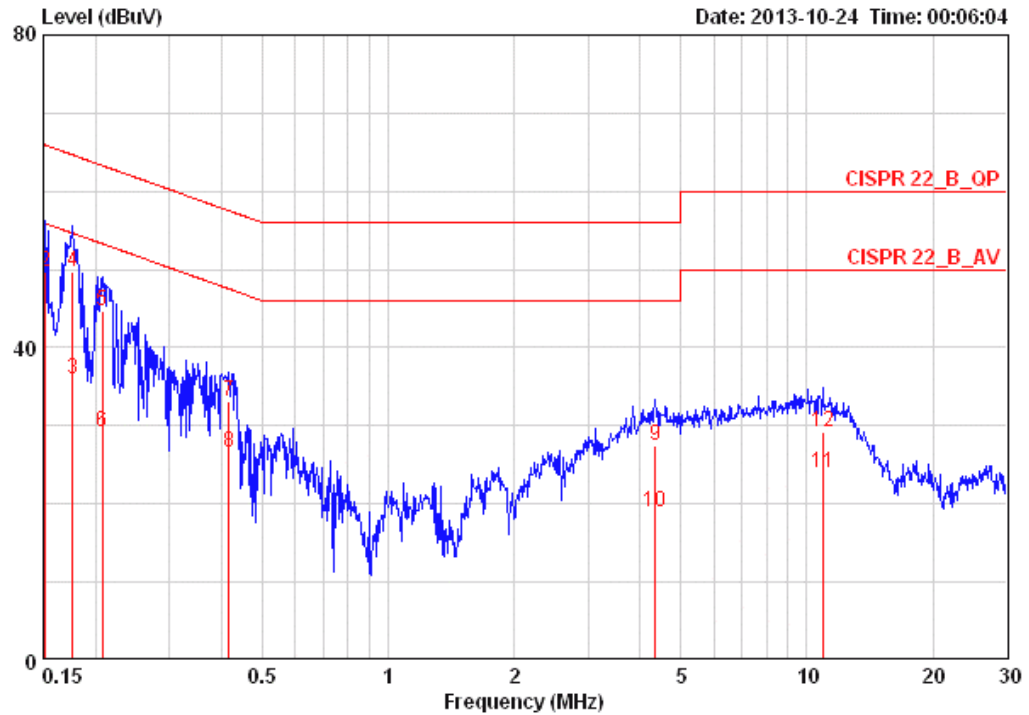
4.1.7. Results of AC Power Line Conducted Emissions Measurement

| | | | |
|---------------|-------------|----------|------|
| Temperature | 24°C | Humidity | 55% |
| Test Engineer | Hank Yang | Phase | Line |
| Configuration | Normal Link | | |



| | Freq | Level | Over Limit | Limit Line | Read Level | LISN Factor | Cable Loss | Pol/Phase | Remark |
|----|---------|-------|------------|------------|------------|-------------|------------|-----------|---------|
| | MHz | dBuV | dB | dBuV | dBuV | dB | dB | | |
| 1 | 0.17399 | 49.41 | -15.36 | 64.77 | 49.07 | 0.15 | 0.19 | LINE | QP |
| 2 | 0.17399 | 33.56 | -21.21 | 54.77 | 33.22 | 0.15 | 0.19 | LINE | AVERAGE |
| 3 | 0.21279 | 42.97 | -20.13 | 63.10 | 42.62 | 0.15 | 0.20 | LINE | QP |
| 4 | 0.21279 | 27.14 | -25.96 | 53.10 | 26.79 | 0.15 | 0.20 | LINE | AVERAGE |
| 5 | 0.39344 | 34.24 | -23.75 | 57.99 | 33.89 | 0.15 | 0.20 | LINE | QP |
| 6 | 0.39344 | 23.50 | -24.49 | 47.99 | 23.15 | 0.15 | 0.20 | LINE | AVERAGE |
| 7 | 0.65430 | 26.83 | -29.17 | 56.00 | 26.47 | 0.16 | 0.20 | LINE | QP |
| 8 | 0.65430 | 19.48 | -26.52 | 46.00 | 19.12 | 0.16 | 0.20 | LINE | AVERAGE |
| 9 | 8.235 | 24.61 | -35.39 | 60.00 | 24.01 | 0.30 | 0.30 | LINE | QP |
| 10 | 8.235 | 17.57 | -32.43 | 50.00 | 16.97 | 0.30 | 0.30 | LINE | AVERAGE |
| 11 | 13.915 | 18.03 | -31.97 | 50.00 | 17.24 | 0.39 | 0.40 | LINE | AVERAGE |
| 12 | 13.915 | 24.54 | -35.46 | 60.00 | 23.75 | 0.39 | 0.40 | LINE | QP |

| | | | |
|---------------|-------------|----------|---------|
| Temperature | 24°C | Humidity | 55% |
| Test Engineer | Hank Yang | Phase | Neutral |
| Configuration | Normal Link | | |



| | Freq | Level | Over Limit | Limit Line | Read Level | LISN Factor | Cable Loss | Pol/Phase | Remark |
|----|---------|-------|------------|------------|------------|-------------|------------|-----------|---------|
| | MHz | dBuV | dB | dBuV | dBuV | dB | dB | | |
| 1 | 0.15160 | 28.30 | -27.61 | 55.91 | 28.04 | 0.08 | 0.18 | NEUTRAL | AVERAGE |
| 2 | 0.15160 | 49.78 | -16.13 | 65.91 | 49.52 | 0.08 | 0.18 | NEUTRAL | QP |
| 3 | 0.17584 | 35.92 | -18.76 | 54.68 | 35.65 | 0.08 | 0.19 | NEUTRAL | AVERAGE |
| 4 | 0.17584 | 49.76 | -14.92 | 64.68 | 49.49 | 0.08 | 0.19 | NEUTRAL | QP |
| 5 | 0.20723 | 44.72 | -18.60 | 63.32 | 44.44 | 0.08 | 0.20 | NEUTRAL | QP |
| 6 | 0.20723 | 29.13 | -24.19 | 53.32 | 28.85 | 0.08 | 0.20 | NEUTRAL | AVERAGE |
| 7 | 0.41705 | 33.08 | -24.43 | 57.51 | 32.80 | 0.08 | 0.20 | NEUTRAL | QP |
| 8 | 0.41705 | 26.52 | -20.99 | 47.51 | 26.24 | 0.08 | 0.20 | NEUTRAL | AVERAGE |
| 9 | 4.338 | 27.41 | -28.59 | 56.00 | 26.97 | 0.14 | 0.31 | NEUTRAL | QP |
| 10 | 4.338 | 19.04 | -26.96 | 46.00 | 18.60 | 0.14 | 0.31 | NEUTRAL | AVERAGE |
| 11 | 10.905 | 23.87 | -26.13 | 50.00 | 23.24 | 0.25 | 0.38 | NEUTRAL | AVERAGE |
| 12 | 10.905 | 29.28 | -30.72 | 60.00 | 28.65 | 0.25 | 0.38 | NEUTRAL | QP |

Note:

Level = Read Level + LISN Factor + Cable Loss.

4.2. 26dB Bandwidth and 99% Occupied Bandwidth Measurement

4.2.1. Limit

No restriction limits.

4.2.2. Measuring Instruments and Setting

Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

| 26dB Bandwidth | |
|------------------------|--|
| Spectrum Parameters | Setting |
| Attenuation | Auto |
| Span Frequency | > 26dB Bandwidth |
| RBW | Approximately 1% of the emission bandwidth |
| VBW | VBW > RBW |
| Detector | Peak |
| Trace | Max Hold |
| Sweep Time | Auto |
| 99% Occupied Bandwidth | |
| Spectrum Parameters | Setting |
| Span | 1.5 times to 5.0 times the OBW |
| RBW | 1 % to 5 % of the OBW |
| VBW | $\geq 3 \times \text{RBW}$ |
| Detector | Peak |
| Trace | Max Hold |

4.2.3. Test Procedures

For Radiated 26dB Bandwidth and 99% Occupied Bandwidth Measurement:

1. The transmitter was radiated to the spectrum analyzer in peak hold mode.
2. Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

4.2.4. Test Setup Layout

For Radiated 26dB Bandwidth and 99% Occupied Bandwidth Measurement:

This test setup layout is the same as that shown in section 4.5.4.

4.2.5. Test Deviation

There is no deviation with the original standard.

4.2.6. EUT Operation during Test

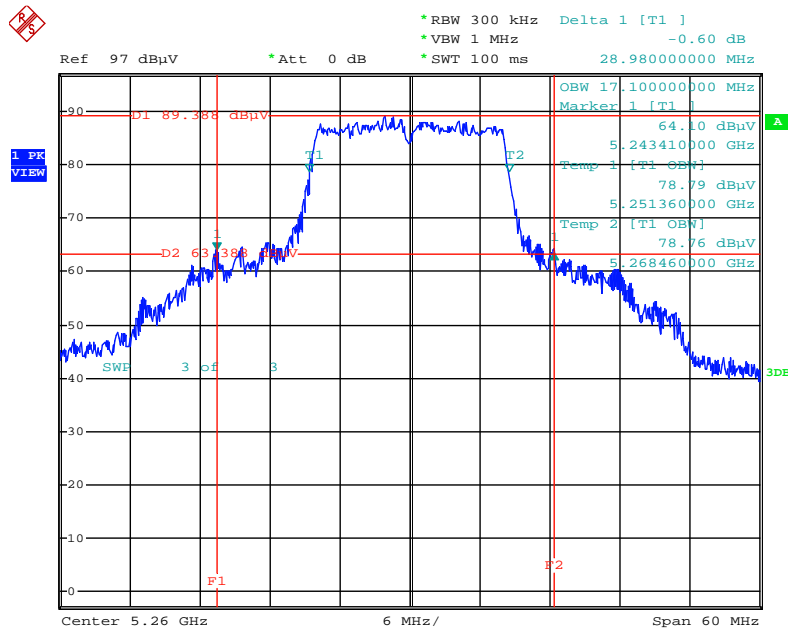
The EUT was programmed to be in continuously transmitting mode.

4.2.7. Test Result of 26dB Bandwidth and 99% Occupied Bandwidth

| | | | |
|----------------------|-------------|-----------------|-----|
| Temperature | 20°C | Humidity | 60% |
| Test Engineer | Lucas Huang | | |

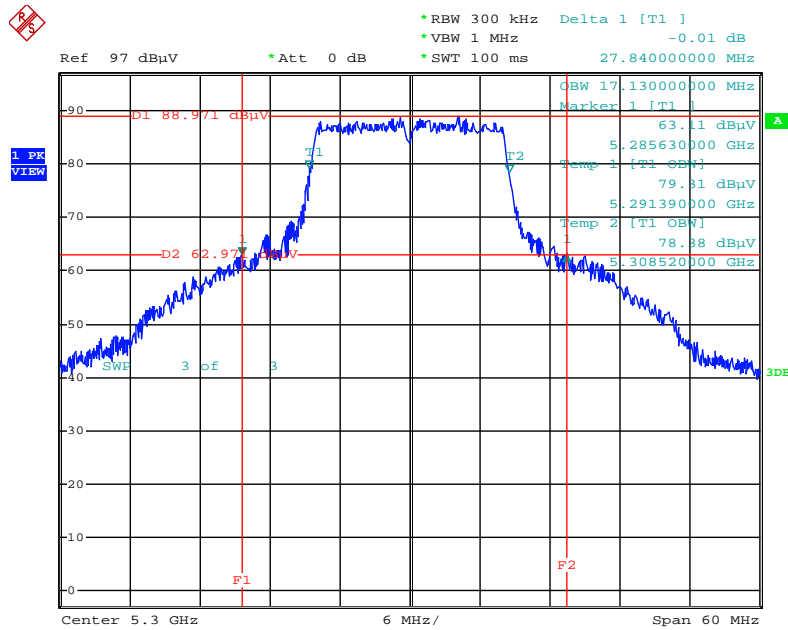
| Mode | Frequency | 26dB Bandwidth (MHz) | 99% Occupied Bandwidth (MHz) |
|-----------------------------|-----------|----------------------|------------------------------|
| 802.11a | 5260 MHz | 28.98 | 17.10 |
| | 5300 MHz | 27.84 | 17.13 |
| | 5320 MHz | 19.95 | 16.77 |
| | 5500 MHz | 19.86 | 16.74 |
| | 5580 MHz | 23.01 | 16.86 |
| | 5700 MHz | 19.80 | 16.68 |
| 802.11ac MCS0/Nss1 VHT20 | 5260 MHz | 31.86 | 17.85 |
| | 5300 MHz | 33.03 | 17.79 |
| | 5320 MHz | 20.58 | 17.61 |
| | 5500 MHz | 20.61 | 17.61 |
| | 5580 MHz | 20.40 | 17.61 |
| | 5700 MHz | 20.40 | 17.58 |
| 802.11ac MCS0/Nss1 VHT40 | 5270 MHz | 71.80 | 37.25 |
| | 5310 MHz | 41.95 | 36.55 |
| | 5510 MHz | 41.90 | 36.60 |
| | 5550 MHz | 50.70 | 36.70 |
| | 5670 MHz | 41.80 | 36.80 |
| 802.11ac MCS0/Nss1 VHT80 | 5290 MHz | 82.10 | 75.70 |
| | 5530 MHz | 82.00 | 75.70 |

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 3 / 5260 MHz



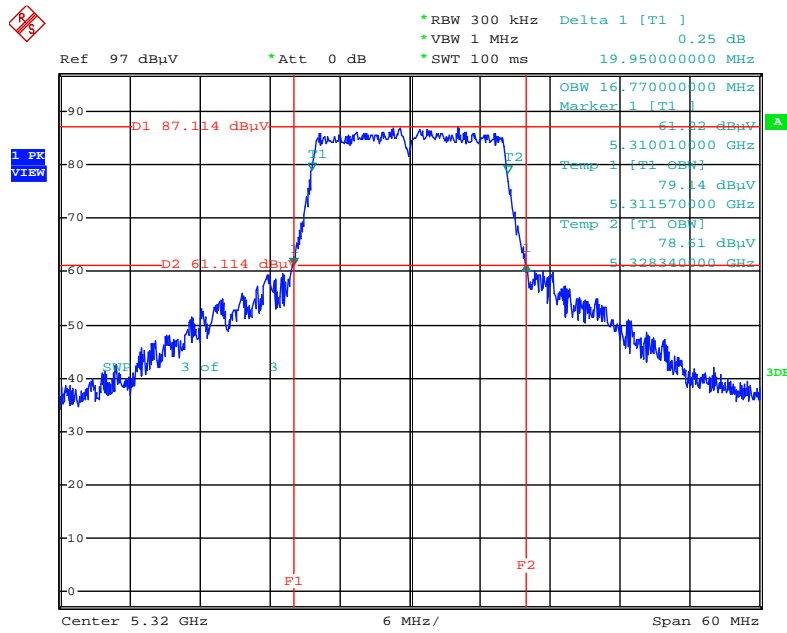
Date: 27.MAR.2015 00:40:59

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 3 / 5300 MHz



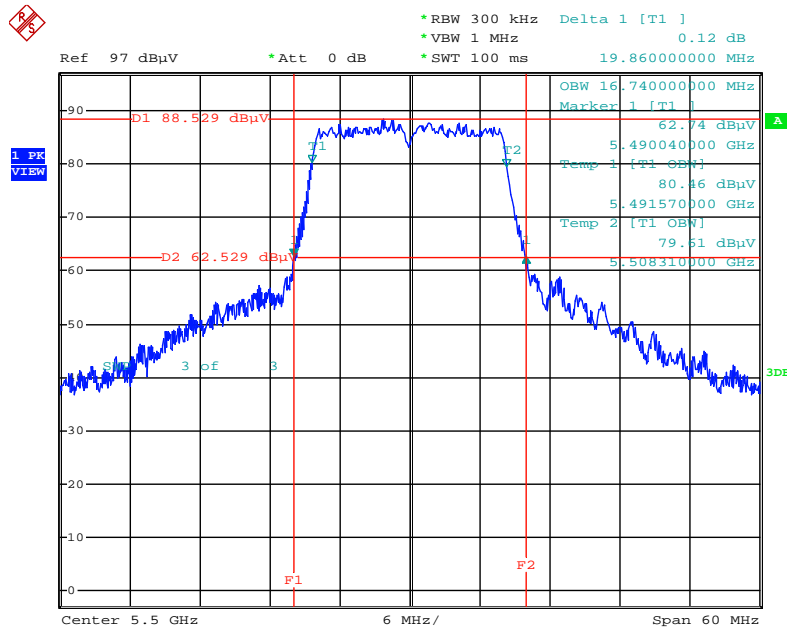
Date: 27.MAR.2015 00:42:29

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 3 / 5320 MHz



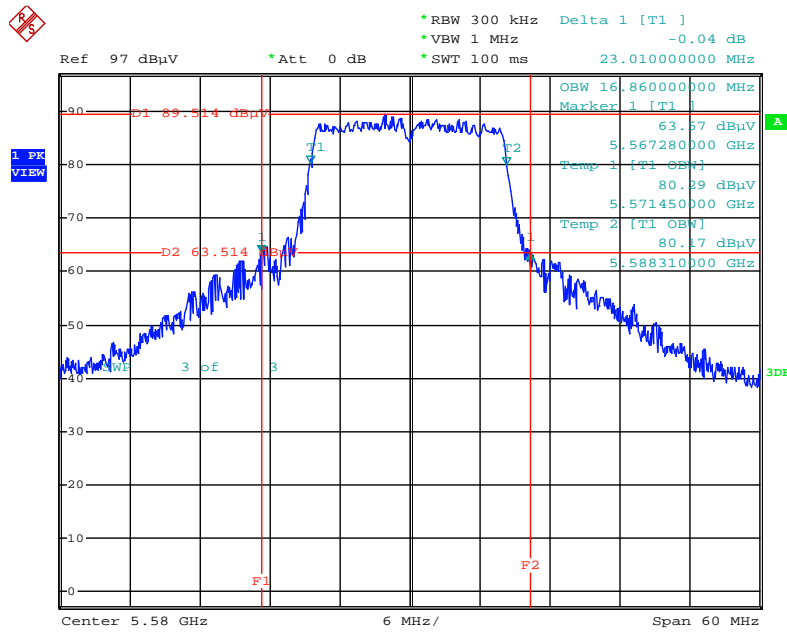
Date: 27.MAR.2015 00:44:12

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 3 / 5500 MHz



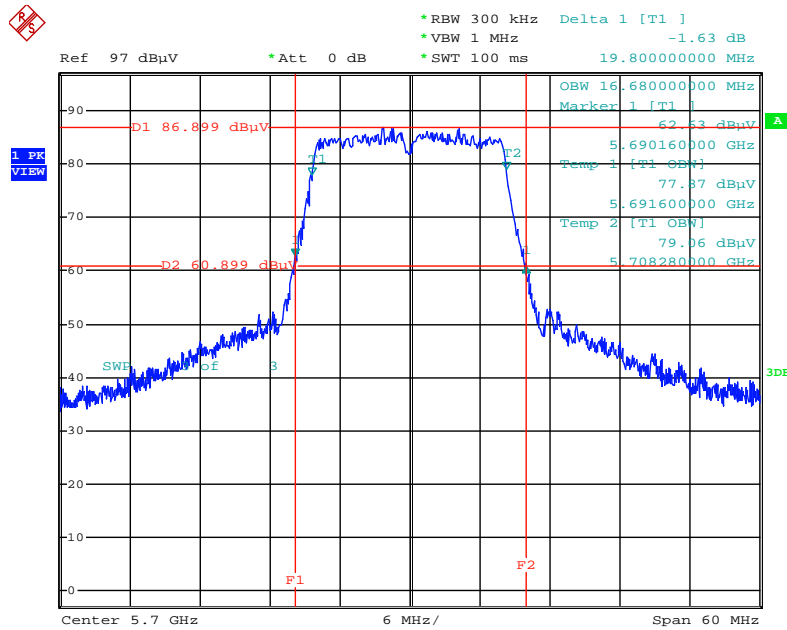
Date: 27.MAR.2015 00:45:47

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 3 / 5580 MHz



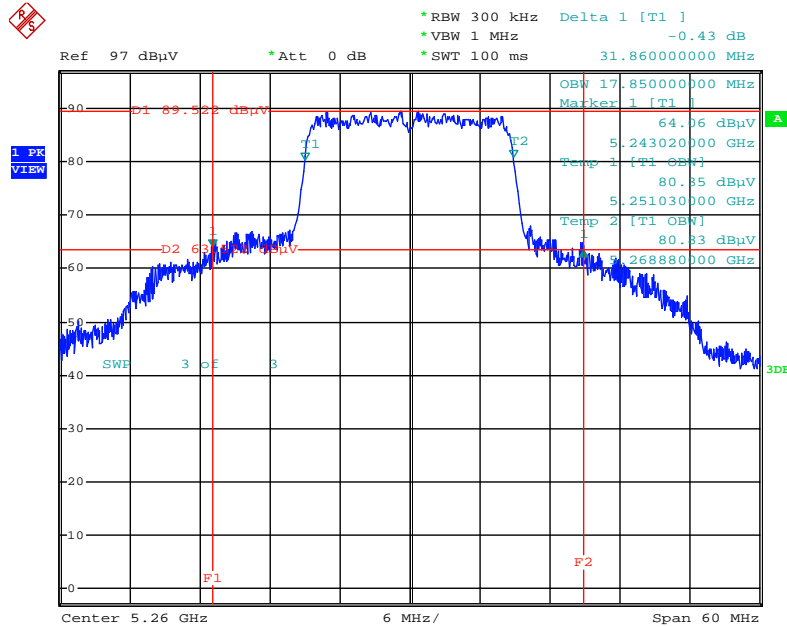
Date: 27.MAR.2015 00:47:20

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 3 / 5700 MHz



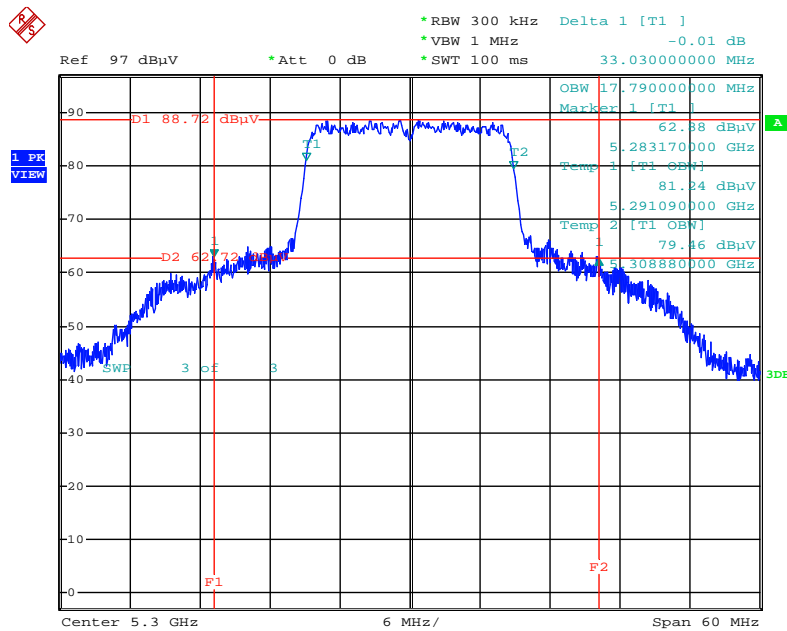
Date: 27.MAR.2015 00:48:13

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 3 / 5260 MHz



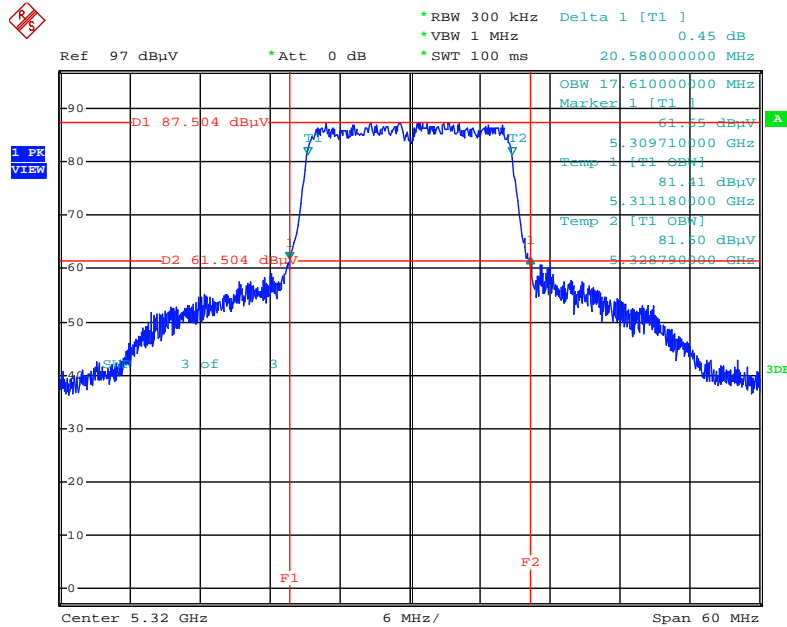
Date: 27.MAR.2015 00:50:01

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 3 / 5300 MHz



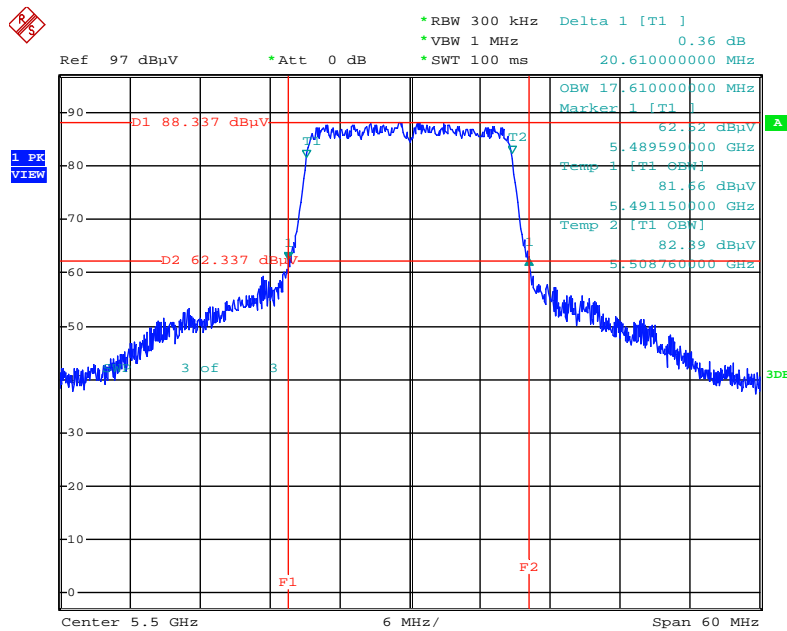
Date: 27.MAR.2015 00:51:23

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 3 / 5320 MHz



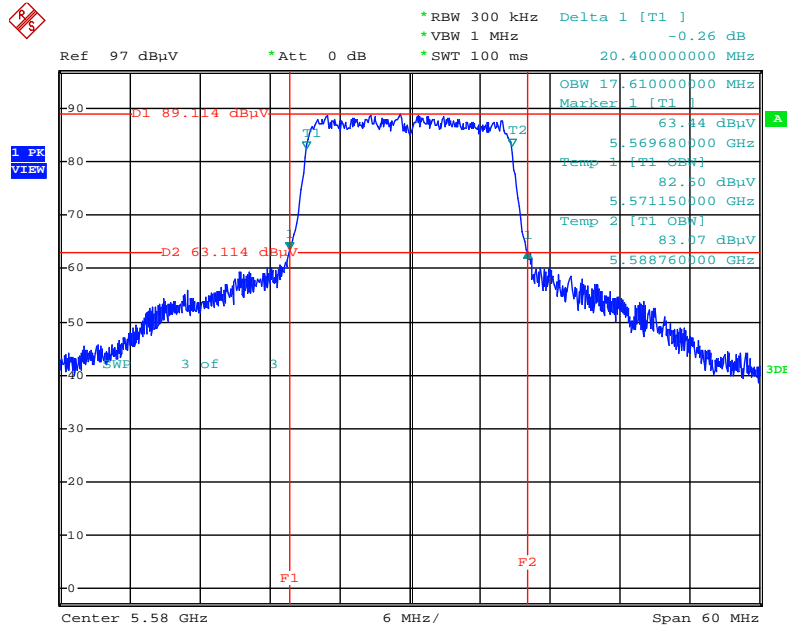
Date: 27.MAR.2015 00:52:05

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 3 / 5500 MHz



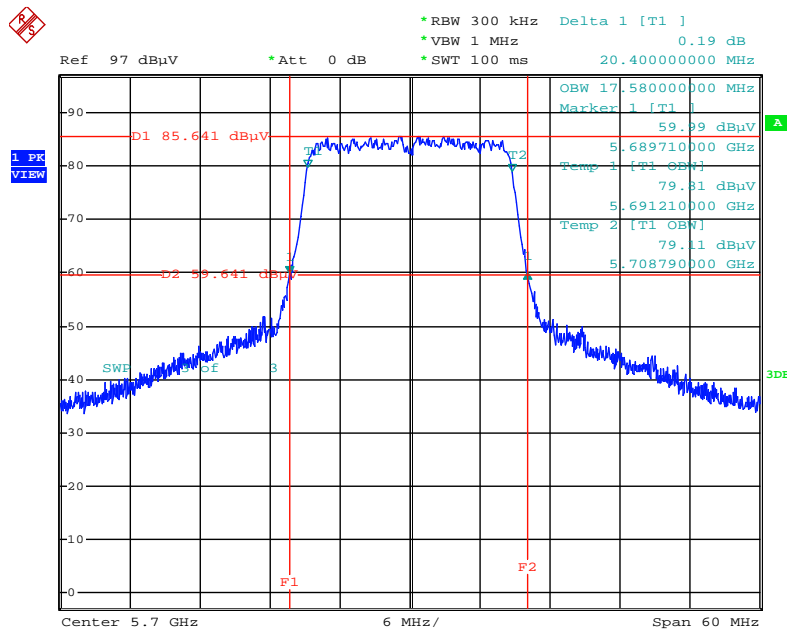
Date: 27.MAR.2015 00:52:45

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 3 / 5580 MHz



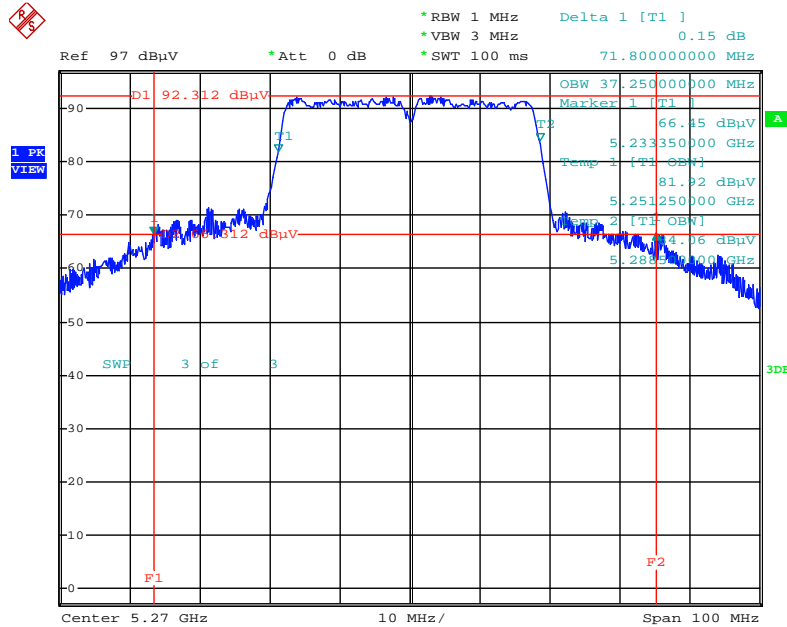
Date: 27.MAR.2015 00:53:27

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 3 / 5700 MHz



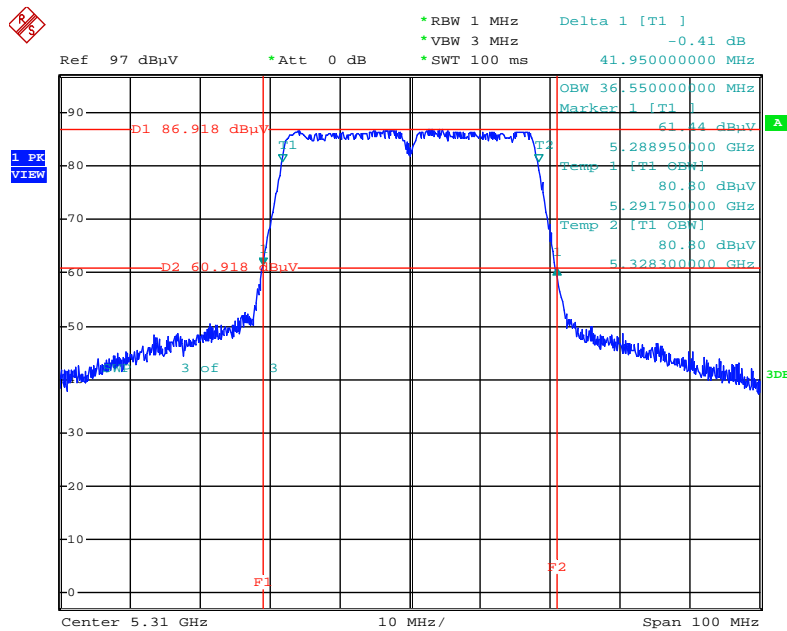
Date: 27.MAR.2015 00:54:12

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 3 / 5270 MHz



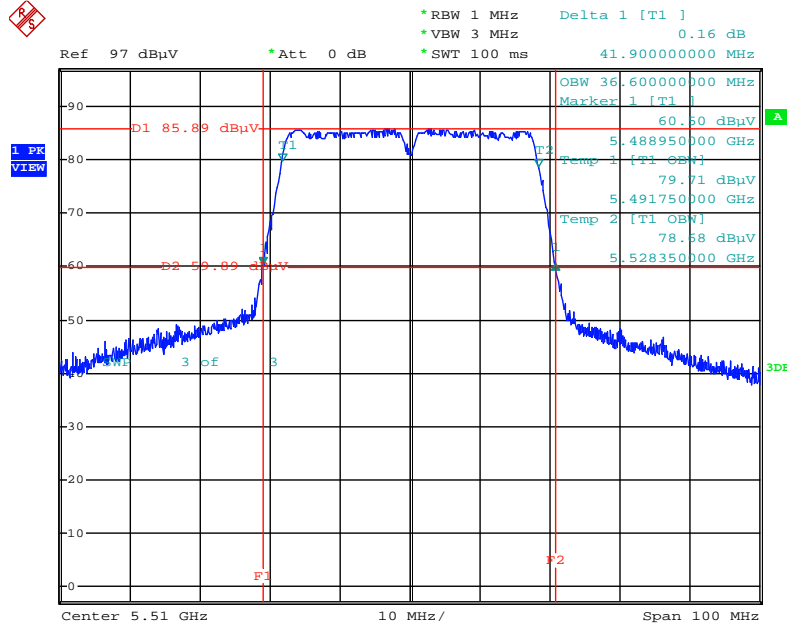
Date: 27.MAR.2015 00:55:44

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 3 / 5310 MHz



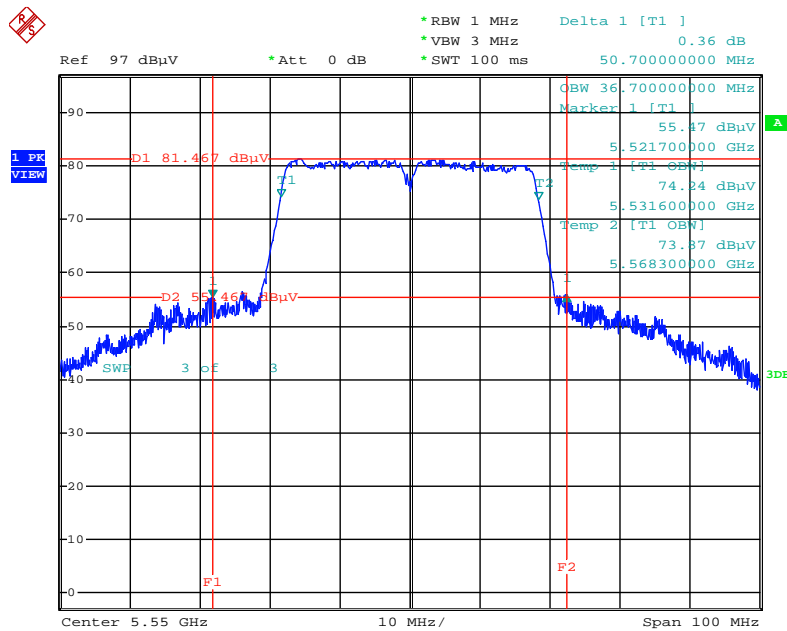
Date: 27.MAR.2015 00:56:44

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 3 / 5510 MHz



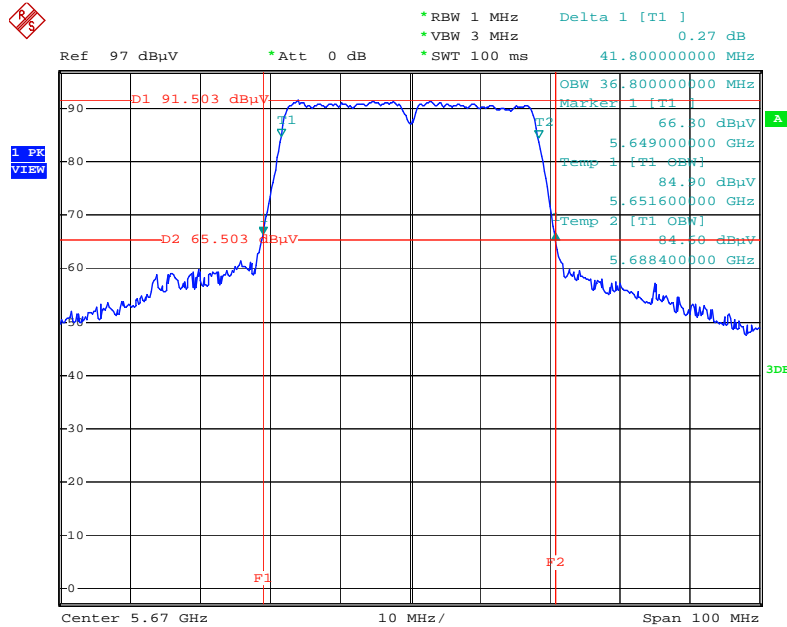
Date: 27.MAR.2015 00:57:43

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 3 / 5550 MHz



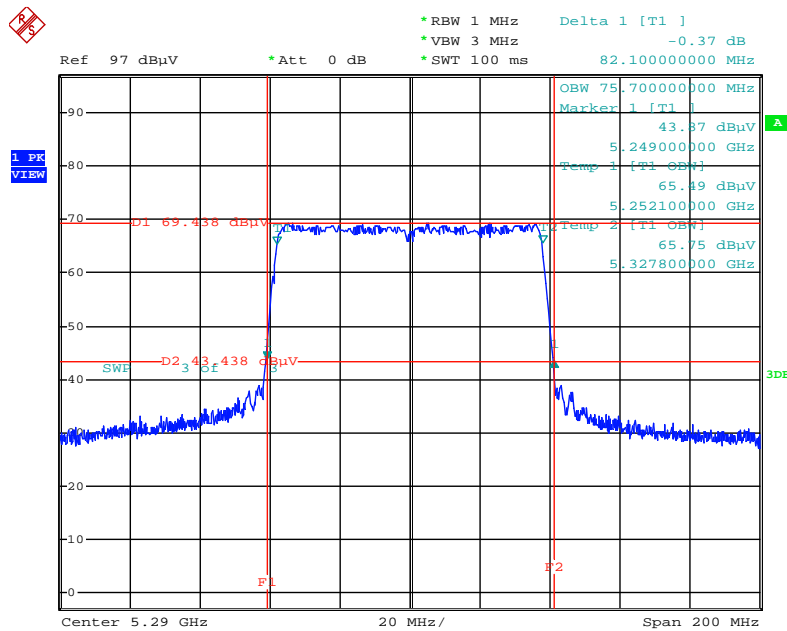
Date: 27.MAR.2015 01:00:19

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 3 / 5670 MHz



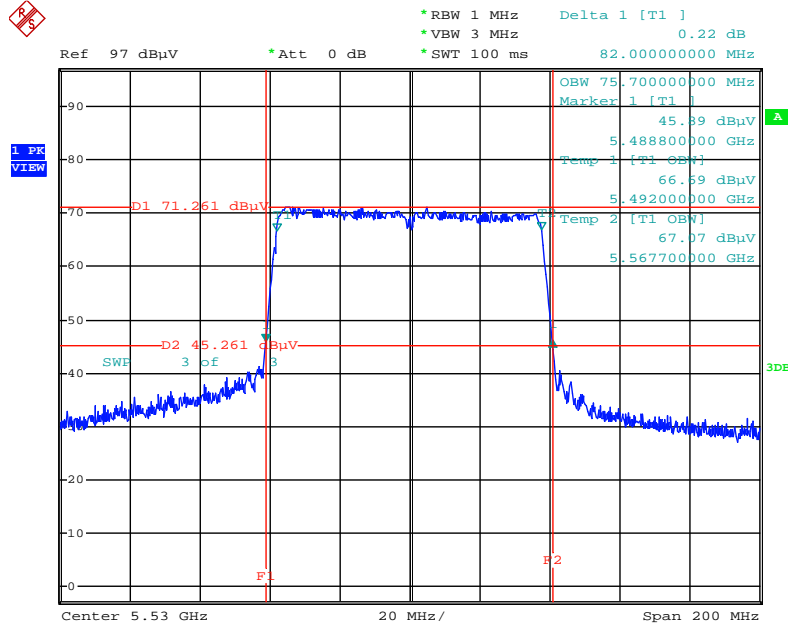
Date: 27.MAR.2015 14:55:34

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 3 / 5290 MHz



Date: 27.MAR.2015 01:01:30

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 3 / 5530 MHz



Date: 27.MAR.2015 01:02:36

4.3. Maximum Conducted Output Power Measurement

4.3.1. Limit

| Frequency Band | | Limit |
|-------------------------------------|-----------------|--|
| <input checked="" type="checkbox"/> | 5.25-5.35 GHz | The maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW (24dBm) or 11 dBm 10 log B, where B is the 26 dB emission bandwidth in megahertz. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. |
| <input checked="" type="checkbox"/> | 5.470-5.725 GHz | |

4.3.2. Measuring Instruments and Setting

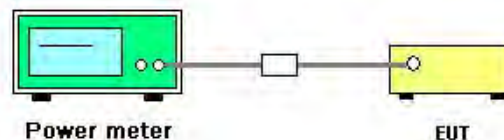
Please refer to section 5 of equipments list in this report. The following table is the setting of the power meter.

| Power Meter Parameter | Setting |
|-----------------------|---------|
| Detector | AVERAGE |

4.3.3. Test Procedures

1. The transmitter output (antenna port) was connected to the power meter.
2. Test was performed in accordance with KDB789033 D02 v01 for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - section (E) Maximum conducted output power =>3. Measurement using a Power Meter (PM) =>b) Method PM-G (Measurement using a gated RF average power meter).
3. Multiple antenna systems was performed in accordance with KDB662911 D01 v02r01 Emissions Testing of Transmitters with Multiple Outputs in the Same Band.
4. When measuring maximum conducted output power with multiple antenna systems, add every result of the values by mathematic formula.

4.3.4. Test Setup Layout



4.3.5. Test Deviation

There is no deviation with the original standard.

4.3.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.3.7. Test Result of Maximum Conducted Output Power

| | | | |
|---------------|-------------|-----------|---------------|
| Temperature | 20°C | Humidity | 60% |
| Test Engineer | Lucas Huang | Test Date | Mar. 27, 2015 |

| Mode | Frequency | Conducted Power (dBm) | Max. Limit (dBm) | Result |
|--------------------------------|-----------|-----------------------|------------------|----------|
| | | Chain 3 | | |
| 802.11a | 5260 MHz | 23.82 | 24.00 | Complies |
| | 5300 MHz | 23.84 | 24.00 | Complies |
| | 5320 MHz | 21.74 | 24.00 | Complies |
| | 5500 MHz | 22.62 | 23.98 | Complies |
| | 5580 MHz | 23.81 | 24.00 | Complies |
| | 5700 MHz | 21.21 | 23.97 | Complies |
| 802.11ac MCS0/Nss1 VHT20 | 5260 MHz | 23.98 | 24.00 | Complies |
| | 5300 MHz | 23.95 | 24.00 | Complies |
| | 5320 MHz | 22.19 | 24.00 | Complies |
| | 5500 MHz | 22.51 | 24.00 | Complies |
| | 5580 MHz | 23.81 | 24.00 | Complies |
| | 5700 MHz | 20.59 | 24.00 | Complies |
| 802.11ac MCS0/Nss1 VHT40 | 5270 MHz | 23.87 | 24.00 | Complies |
| | 5310 MHz | 18.90 | 24.00 | Complies |
| | 5510 MHz | 17.34 | 24.00 | Complies |
| | 5550 MHz | 23.81 | 24.00 | Complies |
| | 5670 MHz | 22.48 | 24.00 | Complies |
| 802.11ac MCS0/Nss1 VHT80 | 5290 MHz | 15.09 | 24.00 | Complies |
| | 5530 MHz | 16.22 | 24.00 | Complies |

Note: 1. 802.11a 5500 MHz power limit = $11 + 10 \cdot \log(B)$ or 24dBm; $11 + 10 \cdot \log(19.86) = 23.98\text{dBm} < 24\text{dBm}$, so limit = 23.98dBm.

2. 802.11a 5700 MHz power limit = $11 + 10 \cdot \log(B)$ or 24dBm; $11 + 10 \cdot \log(19.80) = 23.97\text{dBm} < 24\text{dBm}$, so limit = 23.97dBm.

4.4. Power Spectral Density Measurement

4.4.1. Limit

The following table is power spectral density limits and decrease power density limit rule refer to section 4.3.1.

| | Frequency Band | Limit |
|-------------------------------------|-----------------|------------|
| <input checked="" type="checkbox"/> | 5.25-5.35 GHz | 11 dBm/MHz |
| <input checked="" type="checkbox"/> | 5.470-5.725 GHz | 11 dBm/MHz |

4.4.2. Measuring Instruments and Setting

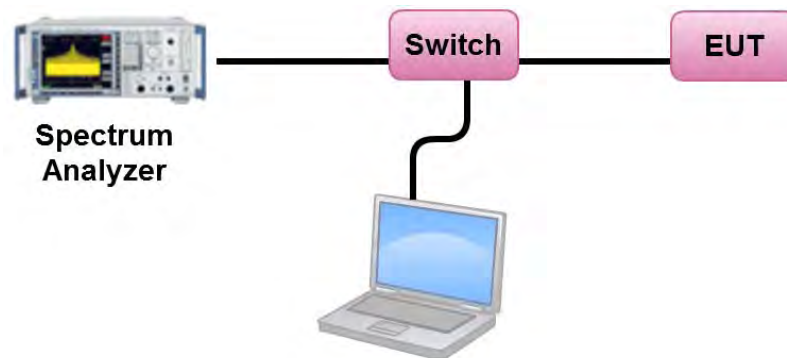
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

| Spectrum Parameter | Setting |
|--------------------|--|
| Attenuation | Auto |
| Span Frequency | Encompass the entire emissions bandwidth (EBW) of the signal |
| RBW | 1000 kHz |
| VBW | 3000 kHz |
| Detector | RMS |
| Trace | AVERAGE |
| Sweep Time | Auto |
| Trace Average | 100 times |

4.4.3. Test Procedures

1. The transmitter output (antenna port) was connected RF switch to the spectrum analyzer.
2. Test was performed in accordance with KDB789033 D02 v01 for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - section (F) Maximum Power Spectral Density (PSD).
3. Multiple antenna systems was performed in accordance KDB662911 D01 v02r01 in-Band Power Spectral Density (PSD) Measurements (a) Measure and sum the spectra across the outputs.
4. When measuring first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3 and so on up to the Nth output to obtain the value for the first frequency bin of the summed spectrum. The summed spectrum value for each of the other frequency bins is computed in the same way.

4.4.4. Test Setup Layout



4.4.5. Test Deviation

There is no deviation with the original standard.

4.4.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.4.7. Test Result of Power Spectral Density

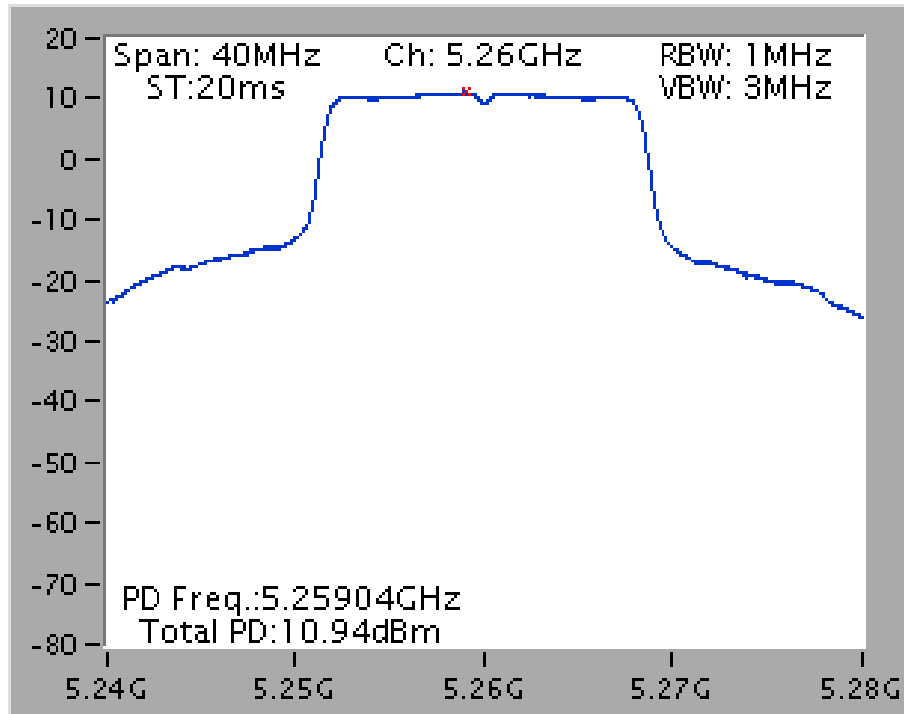
| | | | |
|----------------------|-------------|------------------|---------------|
| Temperature | 20°C | Humidity | 60% |
| Test Engineer | Lucas Huang | Test Date | Mar. 27, 2015 |

| Mode | Frequency | Power Density (dBm/MHz) | Max. Limit (dBm/MHz) | Result |
|-----------------------------|-----------|-------------------------|----------------------|----------|
| 802.11a | 5260 MHz | 10.94 | 11.00 | Complies |
| | 5300 MHz | 10.89 | 11.00 | Complies |
| | 5320 MHz | 8.98 | 11.00 | Complies |
| | 5500 MHz | 9.81 | 11.00 | Complies |
| | 5580 MHz | 10.84 | 11.00 | Complies |
| | 5700 MHz | 8.37 | 11.00 | Complies |
| 802.11ac MCS0/Nss1 VHT20 | 5260 MHz | 10.96 | 11.00 | Complies |
| | 5300 MHz | 10.95 | 11.00 | Complies |
| | 5320 MHz | 9.23 | 11.00 | Complies |
| | 5500 MHz | 9.52 | 11.00 | Complies |
| | 5580 MHz | 10.83 | 11.00 | Complies |
| | 5700 MHz | 7.55 | 11.00 | Complies |
| 802.11ac MCS0/Nss1 VHT40 | 5270 MHz | 7.55 | 11.00 | Complies |
| | 5310 MHz | 2.62 | 11.00 | Complies |
| | 5510 MHz | 1.20 | 11.00 | Complies |
| | 5550 MHz | 7.51 | 11.00 | Complies |
| | 5670 MHz | 6.39 | 11.00 | Complies |
| 802.11ac MCS0/Nss1 VHT80 | 5290 MHz | -4.00 | 11.00 | Complies |
| | 5530 MHz | -2.67 | 11.00 | Complies |

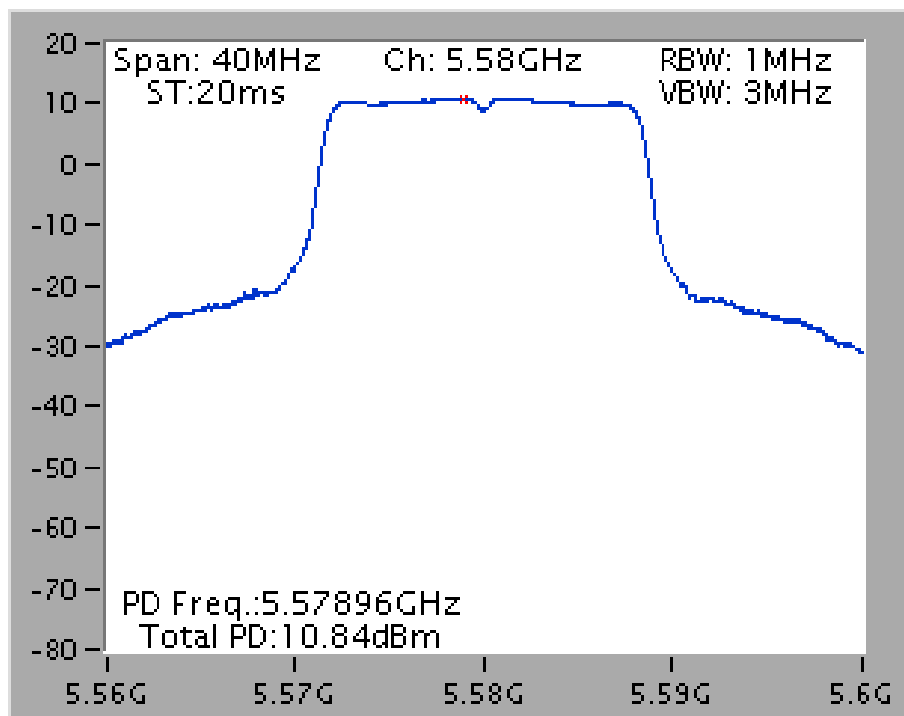
Note: All the test values were listed in the report.

For plots, only the channel with worse result was shown.

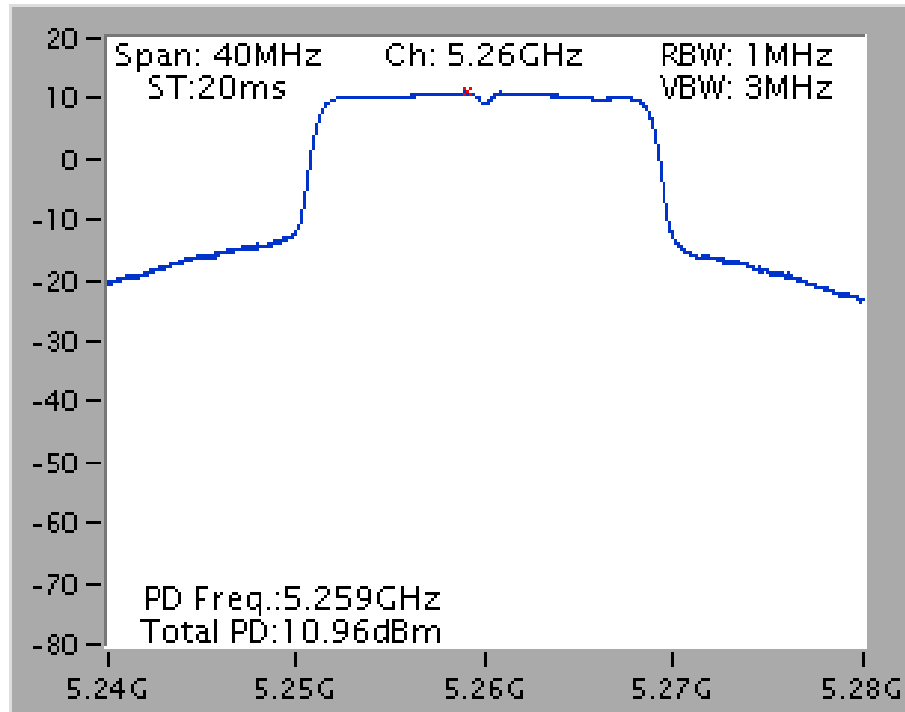
Power Density Plot on Configuration IEEE 802.11a / Chain 3 / 5260 MHz



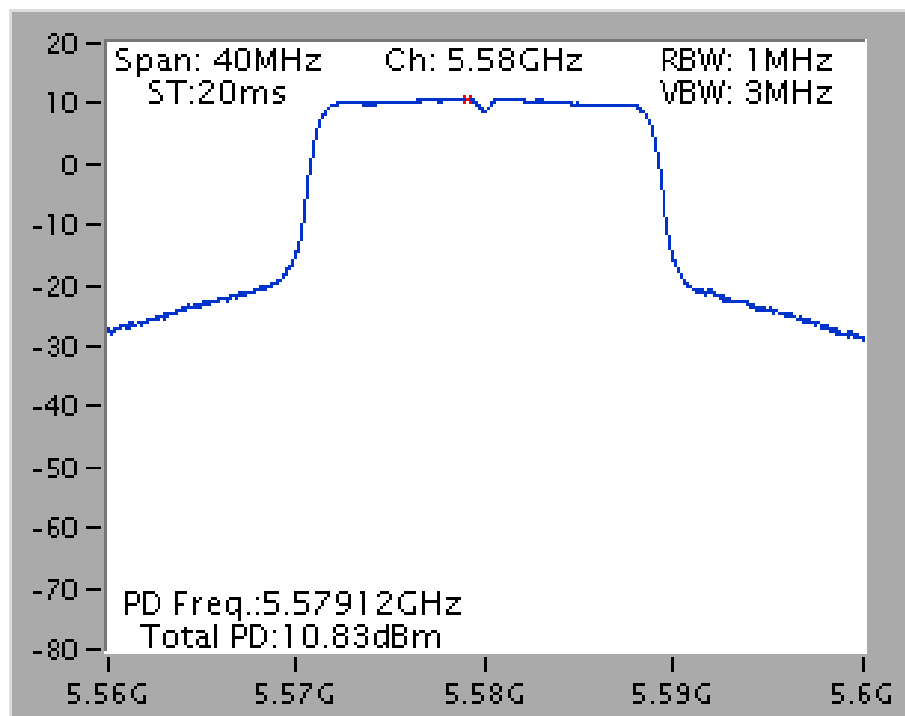
Power Density Plot on Configuration IEEE 802.11a / Chain 3 / 5580 MHz



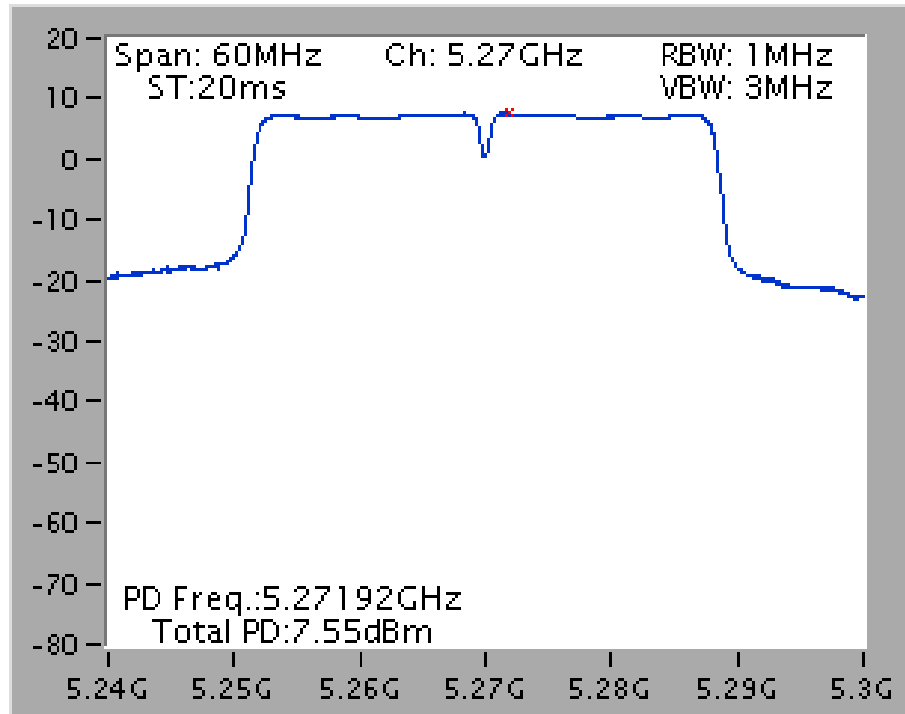
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 3 / 5260 MHz



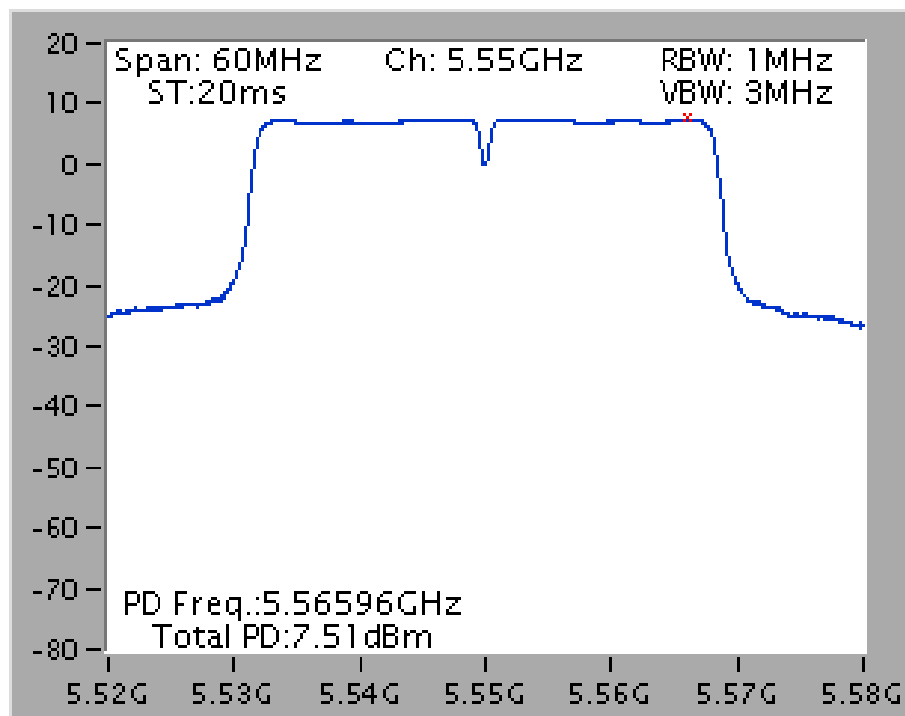
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 3 / 5580 MHz



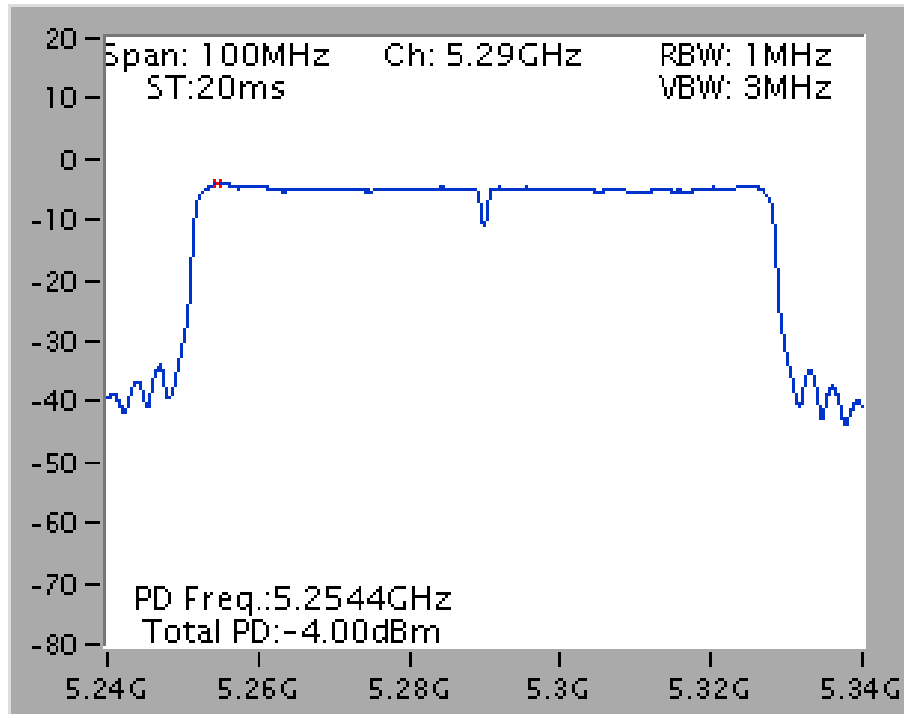
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 3 / 5270 MHz



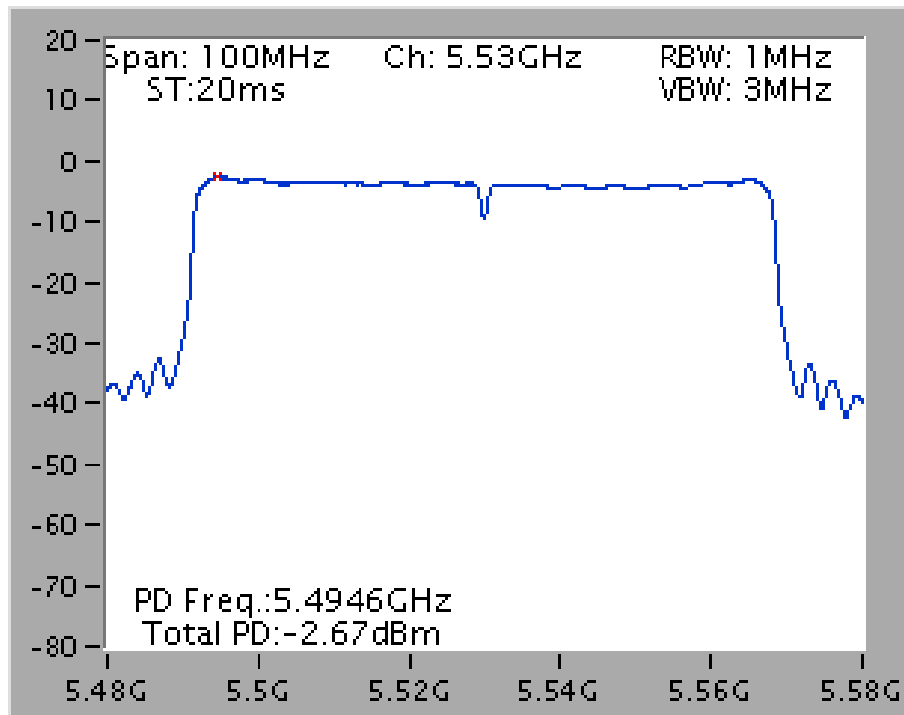
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 3 / 5550 MHz



Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 3 / 5290 MHz



Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 3 / 5530 MHz



4.5. Radiated Emissions Measurement

4.5.1. Limit

For transmitters operating in the 5.25-5.35 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

For transmitters operating in the 5.470-5.725 GHz band: all emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

In addition, In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

| Frequencies (MHz) | Field Strength (micorvolts/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 |

4.5.2. Measuring Instruments and Setting

Please refer to section 5 of equipments list in this report. The following table is the setting of spectrum analyzer and receiver.

| Spectrum Parameter | Setting |
|---|---|
| Attenuation | Auto |
| Start Frequency | 1000 MHz |
| Stop Frequency | 40 GHz |
| RBW / VBW (Emission in restricted band) | 1 MHz / 3MHz for Peak, 1 MHz / 1/T for Average |
| RBW / VBW (Emission in non-restricted band) | 1 MHz / 3MHz for peak |

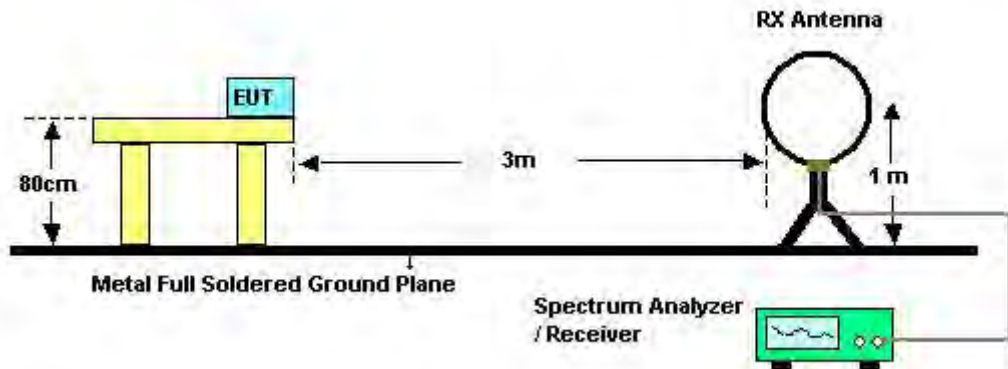
| Receiver Parameter | Setting |
|------------------------|-----------------------------------|
| Attenuation | Auto |
| Start ~ Stop Frequency | 9kHz~150kHz / RBW 200Hz for QP |
| Start ~ Stop Frequency | 150kHz~30MHz / RBW 9kHz for QP |
| Start ~ Stop Frequency | 30MHz~1000MHz / RBW 120kHz for QP |

4.5.3. Test Procedures

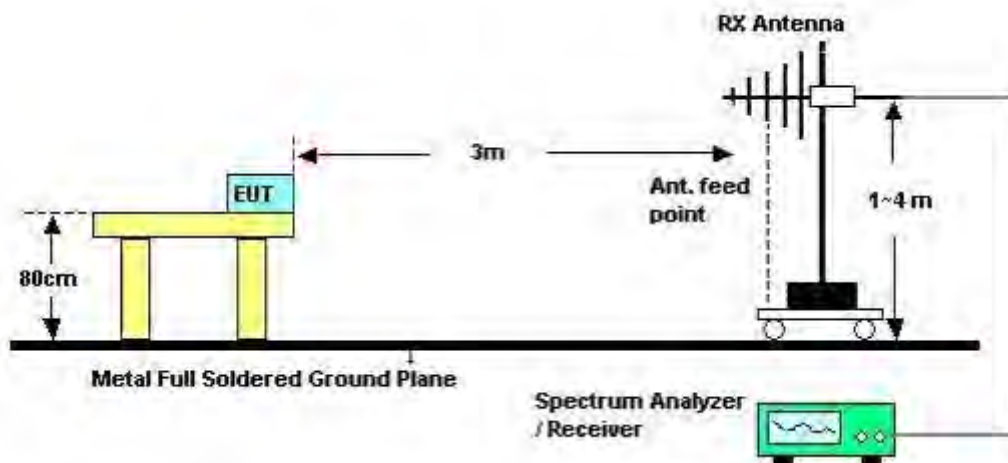
1. Configure the EUT according to ANSI C63.10. The EUT was placed on the top of the turntable 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 1m & 3m far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. For emissions above 1GHz, use 1MHz VBW and 3MHz RBW for peak reading. Then 1MHz RBW and 1/T VBW for average reading in spectrum analyzer.
7. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
8. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
9. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High – Low scan is not required in this case.

4.5.4. Test Setup Layout

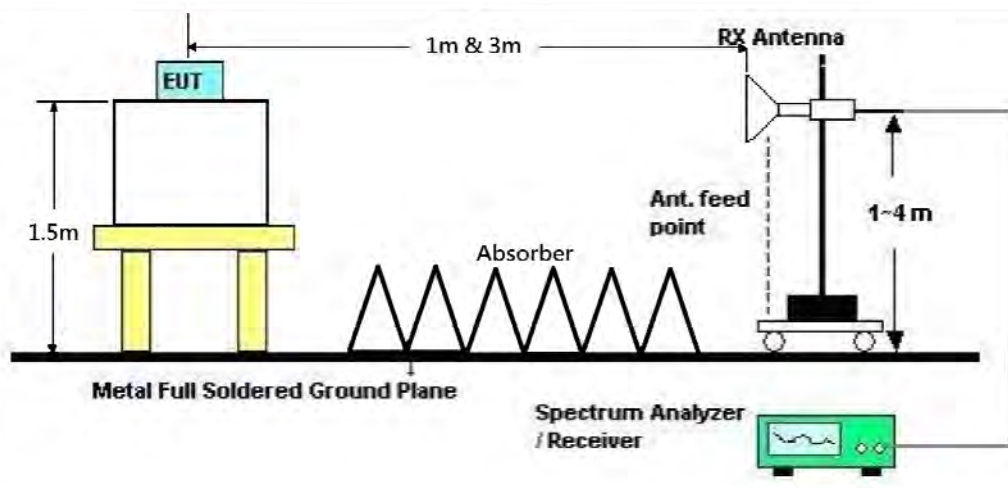
For Radiated Emissions: 9kHz ~30MHz



For Radiated Emissions: 30MHz~1GHz



For Radiated Emissions: Above 1GHz



4.5.5. Test Deviation

There is no deviation with the original standard.

4.5.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.5.7. Results of Radiated Emissions (9kHz~30MHz)

| | | | |
|----------------------|---------------|-----------------------|-------------|
| Temperature | 25°C | Humidity | 54% |
| Test Engineer | Nick Peng | Configurations | Normal Link |
| Test Date | Nov. 01, 2013 | | |

| Freq. (MHz) | Level (dBuV) | Over Limit (dB) | Limit Line (dBuV) | Remark |
|--------------------|---------------------|------------------------|--------------------------|---------------|
| - | - | - | - | See Note |

Note:

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

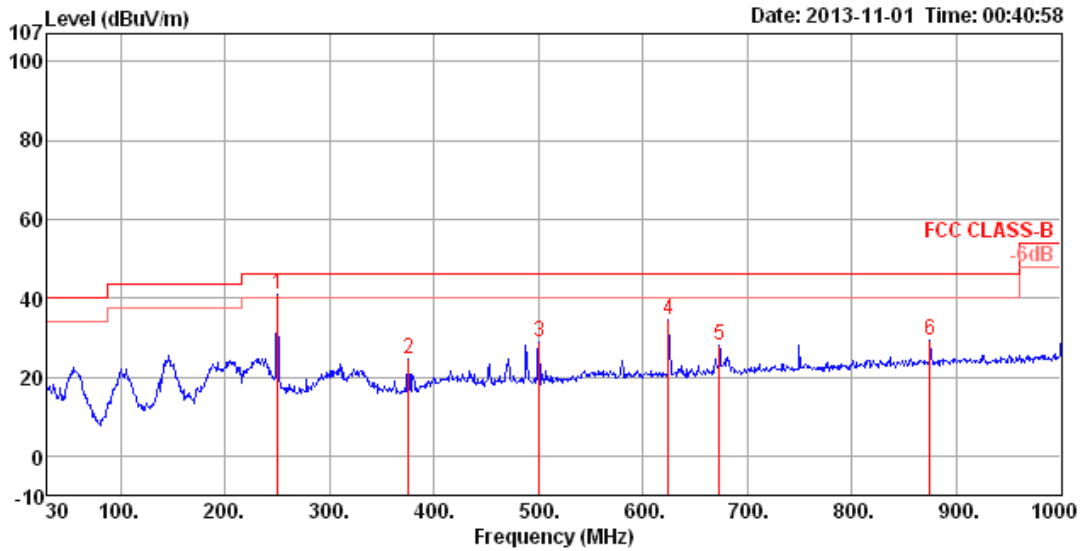
Distance extrapolation factor = $40 \log(\text{specific distance} / \text{test distance})$ (dB);

Limit line = specific limits (dBuV) + distance extrapolation factor.

4.5.8. Results of Radiated Emissions (30MHz~1GHz)

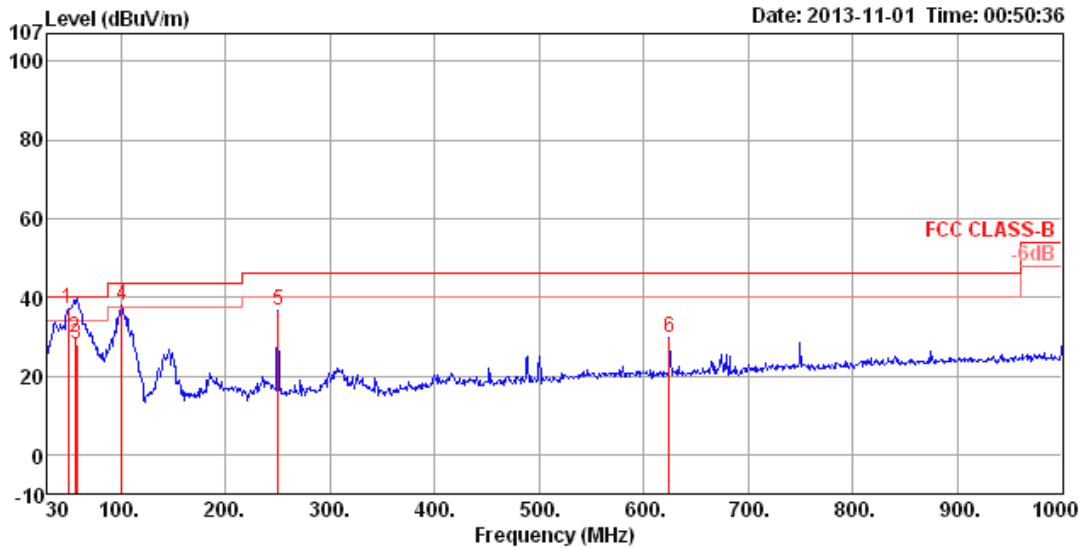
| | | | |
|---------------|-----------|----------------|-------------|
| Temperature | 25°C | Humidity | 54% |
| Test Engineer | Nick Peng | Configurations | Normal Link |

Horizontal



| | Freq | Level | Limit | Over | Read | Cable | Antenna | Preamp | A/Pos | T/Pos | Pol/Phase | Remark |
|---|--------|--------|--------|--------|-------|-------|---------|--------|-------|-------|------------|--------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB | dB/m | dB | cm | deg | | |
| 1 | 250.19 | 40.78 | 46.00 | -5.22 | 58.46 | 1.90 | 11.91 | 31.49 | 150 | 44 | HORIZONTAL | Peak |
| 2 | 375.32 | 24.58 | 46.00 | -21.42 | 38.64 | 2.44 | 14.93 | 31.43 | 100 | 64 | HORIZONTAL | Peak |
| 3 | 500.45 | 28.79 | 46.00 | -17.21 | 40.46 | 2.82 | 16.92 | 31.41 | 150 | 201 | HORIZONTAL | Peak |
| 4 | 624.61 | 34.61 | 46.00 | -11.39 | 44.22 | 3.18 | 18.61 | 31.40 | 150 | 78 | HORIZONTAL | Peak |
| 5 | 673.11 | 28.17 | 46.00 | -17.83 | 37.41 | 3.32 | 18.81 | 31.37 | 100 | 34 | HORIZONTAL | Peak |
| 6 | 874.87 | 29.43 | 46.00 | -16.57 | 36.45 | 3.89 | 20.24 | 31.15 | 150 | 211 | HORIZONTAL | Peak |

Vertical



| | Freq | Level | Limit Line | Over Limit | Read Level | Cable Loss | Antenna Factor | Preamp Factor | A/Pos | T/Pos | Pol/Phase | Remark |
|---|--------|--------|------------|------------|------------|------------|----------------|---------------|-------|-------|-----------|--------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB | dB/m | dB | cm | deg | | |
| 1 | 49.40 | 36.99 | 40.00 | -3.01 | 60.07 | 0.83 | 7.88 | 31.79 | 100 | 228 | VERTICAL | Peak |
| 2 | 56.19 | 29.89 | 40.00 | -10.11 | 55.10 | 0.87 | 5.70 | 31.78 | 100 | 30 | VERTICAL | QP |
| 3 | 58.13 | 27.87 | 40.00 | -12.13 | 53.46 | 0.88 | 5.31 | 31.78 | 125 | 133 | VERTICAL | QP |
| 4 | 100.81 | 38.10 | 43.50 | -5.40 | 58.07 | 1.19 | 10.44 | 31.60 | 125 | 22 | VERTICAL | Peak |
| 5 | 250.19 | 36.66 | 46.00 | -9.34 | 54.34 | 1.90 | 11.91 | 31.49 | 125 | 126 | VERTICAL | Peak |
| 6 | 624.61 | 29.87 | 46.00 | -16.13 | 39.48 | 3.18 | 18.61 | 31.40 | 150 | 88 | VERTICAL | Peak |

Note:

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

4.5.9. Results for Radiated Emissions (1GHz~40GHz)

| | | | |
|----------------------|---------------|-----------------------|------------------------------|
| Temperature | 25°C | Humidity | 54% |
| Test Engineer | Kenneth Huang | Configurations | IEEE 802.11a CH 52 / Chain 3 |
| Test Date | Mar. 20, 2015 | | |

Horizontal

| | Freq | Level | Limit Line | Over Limit | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | A/Pos | T/Pos | Pol/Phase | Remark |
|---|----------|--------|------------|------------|-------------------|----------------|------------|---------------|-------|-------|------------|---------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB/m | dB | dB | cm | deg | | |
| 1 | 15781.66 | 60.38 | 63.54 | -3.16 | 44.13 | 38.00 | 13.07 | 34.82 | 154 | 230 | HORIZONTAL | Average |
| 2 | 15787.38 | 73.85 | 83.54 | -9.69 | 57.62 | 37.99 | 13.07 | 34.83 | 154 | 230 | HORIZONTAL | Peak |

Vertical

| | Freq | Level | Limit Line | Over Limit | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | A/Pos | T/Pos | Pol/Phase | Remark |
|---|----------|--------|------------|------------|-------------------|----------------|------------|---------------|-------|-------|-----------|---------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB/m | dB | dB | cm | deg | | |
| 1 | 15779.64 | 77.10 | 83.54 | -6.44 | 60.83 | 38.02 | 13.07 | 34.82 | 153 | 220 | VERTICAL | Peak |
| 2 | 15782.46 | 62.88 | 63.54 | -0.66 | 46.68 | 37.95 | 13.07 | 34.82 | 153 | 220 | VERTICAL | Average |



| | | | |
|----------------------|---------------|-----------------------|------------------------------|
| Temperature | 25°C | Humidity | 54% |
| Test Engineer | Kenneth Huang | Configurations | IEEE 802.11a CH 60 / Chain 3 |
| Test Date | Mar. 20, 2015 | | |

Horizontal

| | Freq | Level | Limit Line | Over Limit | Read Level | Cable Loss | Antenna Factor | Preamp Factor | T/Pos | A/Pos | Remark | Pol/Phase |
|---|----------|--------|------------|------------|------------|------------|----------------|---------------|-------|-------|---------|------------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB | dB/m | dB | deg | cm | | |
| 1 | 10599.94 | 55.00 | 63.54 | -8.54 | 45.41 | 6.21 | 38.38 | 35.00 | 65 | 164 | Average | HORIZONTAL |
| 2 | 10602.26 | 69.29 | 83.54 | -14.25 | 59.69 | 6.21 | 38.38 | 34.99 | 65 | 164 | Peak | HORIZONTAL |
| 3 | 15896.64 | 71.10 | 83.54 | -12.44 | 60.07 | 7.68 | 38.38 | 35.03 | 241 | 160 | Peak | HORIZONTAL |
| 4 | 15897.57 | 56.85 | 63.54 | -6.69 | 45.82 | 7.68 | 38.38 | 35.03 | 241 | 160 | Average | HORIZONTAL |

Vertical

| | Freq | Level | Limit Line | Over Limit | Read Level | Cable Loss | Antenna Factor | Preamp Factor | T/Pos | A/Pos | Remark | Pol/Phase |
|---|----------|--------|------------|------------|------------|------------|----------------|---------------|-------|-------|---------|-----------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB | dB/m | dB | deg | cm | | |
| 1 | 10600.00 | 49.97 | 63.54 | -13.57 | 40.38 | 6.21 | 38.38 | 35.00 | 355 | 195 | Average | VERTICAL |
| 2 | 10602.32 | 64.46 | 83.54 | -19.08 | 54.86 | 6.21 | 38.38 | 34.99 | 355 | 195 | Peak | VERTICAL |
| 3 | 15902.26 | 56.81 | 63.54 | -6.73 | 45.78 | 7.69 | 38.37 | 35.03 | 228 | 186 | Average | VERTICAL |
| 4 | 15902.55 | 71.38 | 83.54 | -12.16 | 60.35 | 7.69 | 38.37 | 35.03 | 228 | 186 | Peak | VERTICAL |



| | | | |
|----------------------|---------------|-----------------------|------------------------------|
| Temperature | 25°C | Humidity | 54% |
| Test Engineer | Kenneth Huang | Configurations | IEEE 802.11a CH 64 / Chain 3 |
| Test Date | Mar. 20, 2015 | | |

Horizontal

| | Freq | Level | Limit Line | Over Limit | Read Level | Cable Loss | Antenna Factor | Preamp Factor | T/Pos | A/Pos | Remark | Pol/Phase |
|---|----------|--------|------------|------------|------------|------------|----------------|---------------|-------|-------|---------|------------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB | dB/m | dB | deg | cm | | |
| 1 | 10636.29 | 66.05 | 83.54 | -17.49 | 56.42 | 6.23 | 38.37 | 34.97 | 68 | 165 | Peak | HORIZONTAL |
| 2 | 10639.88 | 51.84 | 63.54 | -11.70 | 42.21 | 6.23 | 38.37 | 34.97 | 68 | 165 | Average | HORIZONTAL |
| 3 | 15959.19 | 46.25 | 63.54 | -17.29 | 35.32 | 7.70 | 38.33 | 35.10 | 22 | 161 | Average | HORIZONTAL |
| 4 | 15961.45 | 62.14 | 83.54 | -21.40 | 51.21 | 7.70 | 38.33 | 35.10 | 22 | 161 | Peak | HORIZONTAL |

Vertical

| | Freq | Level | Limit Line | Over Limit | Read Level | Cable Loss | Antenna Factor | Preamp Factor | T/Pos | A/Pos | Remark | Pol/Phase |
|---|----------|--------|------------|------------|------------|------------|----------------|---------------|-------|-------|---------|-----------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB | dB/m | dB | deg | cm | | |
| 1 | 10636.18 | 61.89 | 83.54 | -21.65 | 52.26 | 6.23 | 38.37 | 34.97 | 48 | 160 | Peak | VERTICAL |
| 2 | 10640.06 | 48.94 | 63.54 | -14.60 | 39.31 | 6.23 | 38.37 | 34.97 | 48 | 160 | Average | VERTICAL |
| 3 | 15957.28 | 43.65 | 63.54 | -19.89 | 32.72 | 7.70 | 38.33 | 35.10 | 250 | 173 | Average | VERTICAL |
| 4 | 15961.33 | 61.39 | 83.54 | -22.15 | 50.46 | 7.70 | 38.33 | 35.10 | 250 | 173 | Peak | VERTICAL |



| | | | |
|----------------------|---------------|-----------------------|-------------------------------|
| Temperature | 25°C | Humidity | 54% |
| Test Engineer | Kenneth Huang | Configurations | IEEE 802.11a CH 100 / Chain 3 |
| Test Date | Mar. 20, 2015 | | |

Horizontal

| | Freq | Level | Limit Line | Over Limit | Read Level | Cable Loss | Antenna Factor | Preamp Factor | T/Pos | A/Pos | Remark | Pol/Phase |
|---|----------|--------|------------|------------|------------|------------|----------------|---------------|-------|-------|---------|------------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB | dB/m | dB | deg | cm | | |
| 1 | 11000.06 | 57.71 | 63.54 | -5.83 | 47.72 | 6.40 | 38.30 | 34.71 | 75 | 163 | Average | HORIZONTAL |
| 2 | 11002.14 | 73.37 | 83.54 | -10.17 | 63.38 | 6.40 | 38.30 | 34.71 | 75 | 163 | Peak | HORIZONTAL |

Vertical

| | Freq | Level | Limit Line | Over Limit | Read Level | Cable Loss | Antenna Factor | Preamp Factor | T/Pos | A/Pos | Remark | Pol/Phase |
|---|----------|--------|------------|------------|------------|------------|----------------|---------------|-------|-------|---------|-----------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB | dB/m | dB | deg | cm | | |
| 1 | 10999.83 | 55.73 | 63.54 | -7.81 | 45.74 | 6.40 | 38.30 | 34.71 | 39 | 162 | Average | VERTICAL |
| 2 | 11002.26 | 69.58 | 83.54 | -13.96 | 59.59 | 6.40 | 38.30 | 34.71 | 39 | 162 | Peak | VERTICAL |



| | | | |
|----------------------|---------------|-----------------------|-------------------------------|
| Temperature | 25°C | Humidity | 54% |
| Test Engineer | Kenneth Huang | Configurations | IEEE 802.11a CH 116 / Chain 3 |
| Test Date | Mar. 20, 2015 | | |

Horizontal

| | Freq | Level | Limit Line | Over Limit | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | A/Pos | T/Pos | Pol/Phase | Remark |
|---|----------|--------|------------|------------|-------------------|----------------|------------|---------------|-------|-------|------------|---------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB/m | dB | dB | cm | deg | | |
| 1 | 11156.38 | 76.71 | 83.54 | -6.83 | 60.79 | 40.10 | 10.84 | 35.02 | 156 | 184 | HORIZONTAL | Peak |
| 2 | 11160.14 | 63.46 | 63.54 | -0.08 | 47.54 | 40.10 | 10.84 | 35.02 | 156 | 184 | HORIZONTAL | Average |
| 3 | 16738.70 | 57.49 | 63.54 | -6.05 | 39.05 | 40.07 | 13.62 | 35.25 | 143 | 156 | HORIZONTAL | Average |
| 4 | 16741.59 | 71.81 | 83.54 | -11.73 | 53.35 | 40.08 | 13.63 | 35.25 | 143 | 156 | HORIZONTAL | Peak |

Vertical

| | Freq | Level | Limit Line | Over Limit | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | A/Pos | T/Pos | Pol/Phase | Remark |
|---|----------|--------|------------|------------|-------------------|----------------|------------|---------------|-------|-------|-----------|---------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB/m | dB | dB | cm | deg | | |
| 1 | 11156.09 | 71.84 | 83.54 | -11.70 | 55.90 | 40.12 | 10.84 | 35.02 | 155 | 272 | VERTICAL | Peak |
| 2 | 11160.07 | 58.68 | 63.54 | -4.86 | 42.76 | 40.10 | 10.84 | 35.02 | 155 | 272 | VERTICAL | Average |
| 3 | 16738.55 | 58.73 | 63.54 | -4.81 | 40.25 | 40.10 | 13.62 | 35.24 | 154 | 148 | VERTICAL | Average |
| 4 | 16741.45 | 72.95 | 83.54 | -10.59 | 54.47 | 40.10 | 13.63 | 35.25 | 154 | 148 | VERTICAL | Peak |



| | | | |
|----------------------|---------------|-----------------------|-------------------------------|
| Temperature | 25°C | Humidity | 54% |
| Test Engineer | Kenneth Huang | Configurations | IEEE 802.11a CH 140 / Chain 3 |
| Test Date | Mar. 20, 2015 | | |

Horizontal

| | Freq | Level | Limit Line | Over Limit | Read Level | Cable Loss | Antenna Factor | Preamp Factor | T/Pos | A/Pos | Remark | Pol/Phase |
|---|----------|--------|------------|------------|------------|------------|----------------|---------------|-------|-------|---------|------------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB | dB/m | dB | deg | cm | | |
| 1 | 11399.83 | 56.38 | 63.54 | -7.16 | 46.24 | 6.51 | 38.30 | 34.67 | 77 | 163 | Average | HORIZONTAL |
| 2 | 11400.41 | 69.92 | 83.54 | -13.62 | 59.78 | 6.51 | 38.30 | 34.67 | 77 | 163 | Peak | HORIZONTAL |

Vertical

| | Freq | Level | Limit Line | Over Limit | Read Level | Cable Loss | Antenna Factor | Preamp Factor | T/Pos | A/Pos | Remark | Pol/Phase |
|---|----------|--------|------------|------------|------------|------------|----------------|---------------|-------|-------|---------|-----------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB | dB/m | dB | deg | cm | | |
| 1 | 11399.94 | 53.77 | 63.54 | -9.77 | 43.63 | 6.51 | 38.30 | 34.67 | 34 | 159 | Average | VERTICAL |
| 2 | 11401.10 | 66.93 | 83.54 | -16.61 | 56.79 | 6.51 | 38.30 | 34.67 | 34 | 159 | Peak | VERTICAL |
| 3 | 15900.52 | 55.16 | 63.54 | -8.38 | 44.13 | 7.69 | 38.37 | 35.03 | 223 | 188 | Average | VERTICAL |
| 4 | 15906.37 | 71.24 | 83.54 | -12.30 | 60.23 | 7.69 | 38.37 | 35.05 | 223 | 188 | Peak | VERTICAL |



| | | | |
|----------------------|---------------|-----------------------|---|
| Temperature | 25°C | Humidity | 54% |
| Test Engineer | Kenneth Huang | Configurations | IEEE 802.11ac MCS0/Nss1 VHT20 CH 52 / Chain 3 |
| Test Date | Mar. 20, 2015 | | |

Horizontal

| | Freq | Level | Limit Line | Over Limit | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | A/Pos | T/Pos | Pol/Phase | Remark |
|---|----------|--------|------------|------------|-------------------|----------------|------------|---------------|-------|-------|------------|---------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB/m | dB | dB | cm | deg | | |
| 1 | 15782.97 | 58.71 | 63.54 | -4.83 | 42.46 | 38.00 | 13.07 | 34.82 | 158 | 126 | HORIZONTAL | Average |
| 2 | 15786.51 | 75.46 | 83.54 | -8.08 | 59.21 | 38.00 | 13.07 | 34.82 | 158 | 126 | HORIZONTAL | Peak |

Vertical

| | Freq | Level | Limit Line | Over Limit | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | A/Pos | T/Pos | Pol/Phase | Remark |
|---|----------|--------|------------|------------|-------------------|----------------|------------|---------------|-------|-------|-----------|---------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB/m | dB | dB | cm | deg | | |
| 1 | 15783.04 | 63.02 | 63.54 | -0.52 | 46.82 | 37.95 | 13.07 | 34.82 | 159 | 219 | VERTICAL | Average |
| 2 | 15786.44 | 79.78 | 83.54 | -3.76 | 63.58 | 37.95 | 13.07 | 34.82 | 159 | 219 | VERTICAL | Peak |



| | | | |
|----------------------|---------------|-----------------------|---|
| Temperature | 25°C | Humidity | 54% |
| Test Engineer | Kenneth Huang | Configurations | IEEE 802.11ac MCS0/Nss1 VHT20 CH 60 / Chain 3 |
| Test Date | Mar. 20, 2015 | | |

Horizontal

| | Freq | Level | Limit Line | Over Limit | Read Level | CableAntenna Loss | Antenna Factor | Preamp Factor | T/Pos | A/Pos | Remark | Pol/Phase |
|---|----------|--------|------------|------------|------------|-------------------|----------------|---------------|-------|-------|---------|------------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB | dB/m | dB | deg | cm | | |
| 1 | 10597.92 | 71.21 | 83.54 | -12.33 | 61.62 | 6.21 | 38.38 | 35.00 | 65 | 166 | Peak | HORIZONTAL |
| 2 | 10600.70 | 56.21 | 63.54 | -7.33 | 46.62 | 6.21 | 38.38 | 35.00 | 65 | 166 | Average | HORIZONTAL |
| 3 | 15895.60 | 56.11 | 63.54 | -7.43 | 45.08 | 7.68 | 38.38 | 35.03 | 41 | 164 | Average | HORIZONTAL |
| 4 | 15906.48 | 73.03 | 83.54 | -10.51 | 62.02 | 7.69 | 38.37 | 35.05 | 41 | 164 | Peak | HORIZONTAL |

Vertical

| | Freq | Level | Limit Line | Over Limit | Read Level | CableAntenna Loss | Antenna Factor | Preamp Factor | T/Pos | A/Pos | Remark | Pol/Phase |
|---|----------|--------|------------|------------|------------|-------------------|----------------|---------------|-------|-------|---------|-----------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB | dB/m | dB | deg | cm | | |
| 1 | 10598.03 | 66.62 | 83.54 | -16.92 | 57.03 | 6.21 | 38.38 | 35.00 | 53 | 160 | Peak | VERTICAL |
| 2 | 10599.42 | 52.68 | 63.54 | -10.86 | 43.09 | 6.21 | 38.38 | 35.00 | 53 | 160 | Average | VERTICAL |
| 3 | 15903.88 | 54.47 | 63.54 | -9.07 | 43.44 | 7.69 | 38.37 | 35.03 | 226 | 184 | Average | VERTICAL |
| 4 | 15906.42 | 72.08 | 83.54 | -11.46 | 61.07 | 7.69 | 38.37 | 35.05 | 226 | 184 | Peak | VERTICAL |



| | | | |
|----------------------|---------------|-----------------------|---|
| Temperature | 25°C | Humidity | 54% |
| Test Engineer | Kenneth Huang | Configurations | IEEE 802.11ac MCS0/Nss1 VHT20 CH 64 / Chain 3 |
| Test Date | Mar. 20, 2015 | | |

Horizontal

| | Freq | Level | Limit Line | Over Limit | Read Level | CableAntenna Loss | Antenna Factor | Preamp Factor | T/Pos | A/Pos | Remark | Pol/Phase |
|---|----------|--------|------------|------------|------------|-------------------|----------------|---------------|-------|-------|---------|------------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB | dB/m | dB | deg | cm | | |
| 1 | 10639.25 | 66.99 | 83.54 | -16.55 | 57.36 | 6.23 | 38.37 | 34.97 | 71 | 164 | Peak | HORIZONTAL |
| 2 | 10639.65 | 51.00 | 63.54 | -12.54 | 41.37 | 6.23 | 38.37 | 34.97 | 71 | 164 | Average | HORIZONTAL |
| 3 | 15958.84 | 64.13 | 83.54 | -19.41 | 53.20 | 7.70 | 38.33 | 35.10 | 22 | 164 | Peak | HORIZONTAL |
| 4 | 15964.34 | 46.92 | 63.54 | -16.62 | 35.99 | 7.70 | 38.33 | 35.10 | 22 | 164 | Average | HORIZONTAL |

Vertical

| | Freq | Level | Limit Line | Over Limit | Read Level | CableAntenna Loss | Antenna Factor | Preamp Factor | T/Pos | A/Pos | Remark | Pol/Phase |
|---|----------|--------|------------|------------|------------|-------------------|----------------|---------------|-------|-------|---------|-----------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB | dB/m | dB | deg | cm | | |
| 1 | 10639.02 | 62.85 | 83.54 | -20.69 | 53.22 | 6.23 | 38.37 | 34.97 | 52 | 160 | Peak | VERTICAL |
| 2 | 10639.65 | 48.27 | 63.54 | -15.27 | 38.64 | 6.23 | 38.37 | 34.97 | 52 | 160 | Average | VERTICAL |
| 3 | 15958.55 | 43.55 | 63.54 | -19.99 | 32.62 | 7.70 | 38.33 | 35.10 | 252 | 175 | Average | VERTICAL |
| 4 | 15958.84 | 62.93 | 83.54 | -20.61 | 52.00 | 7.70 | 38.33 | 35.10 | 252 | 175 | Peak | VERTICAL |



| | | | |
|----------------------|---------------|-----------------------|--|
| Temperature | 25°C | Humidity | 54% |
| Test Engineer | Kenneth Huang | Configurations | IEEE 802.11ac MCS0/Nss1 VHT20 CH 100 / Chain 3 |
| Test Date | Mar. 20, 2015 | | |

Horizontal

| | Freq | Level | Limit | Over | Read | CableAntenna | Preamp | T/Pos | A/Pos | Remark | Pol/Phase | |
|---|----------|--------|--------|--------|-------|--------------|--------|-------|-------|--------|-----------|------------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB | dB/m | dB | deg | cm | | |
| 1 | 10999.19 | 72.91 | 83.54 | -10.63 | 62.92 | 6.40 | 38.30 | 34.71 | 74 | 164 | Peak | HORIZONTAL |
| 2 | 10999.65 | 57.55 | 63.54 | -5.99 | 47.56 | 6.40 | 38.30 | 34.71 | 74 | 164 | Average | HORIZONTAL |

Vertical

| | Freq | Level | Limit | Over | Read | CableAntenna | Preamp | T/Pos | A/Pos | Remark | Pol/Phase | |
|---|----------|--------|--------|--------|-------|--------------|--------|-------|-------|--------|-----------|----------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB | dB/m | dB | deg | cm | | |
| 1 | 10998.15 | 69.39 | 83.54 | -14.15 | 59.40 | 6.40 | 38.30 | 34.71 | 40 | 161 | Peak | VERTICAL |
| 2 | 10999.71 | 55.16 | 63.54 | -8.38 | 45.17 | 6.40 | 38.30 | 34.71 | 40 | 161 | Average | VERTICAL |



| | | | |
|----------------------|---------------|-----------------------|--|
| Temperature | 25°C | Humidity | 54% |
| Test Engineer | Kenneth Huang | Configurations | IEEE 802.11ac MCS0/Nss1 VHT20 CH 116 / Chain 3 |
| Test Date | Mar. 20, 2015 | | |

Horizontal

| | Freq | Level | Limit | Over | ReadAntenna | Cable | Preamp | A/Pos | T/Pos | Pol/Phase | Remark |
|---|----------|--------|--------|--------|-------------|-------|--------|-------|-------|-----------|--------------------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB/m | dB | dB | cm | deg | |
| 1 | 11157.90 | 78.81 | 83.54 | -4.73 | 62.89 | 40.10 | 10.84 | 35.02 | 159 | 46 | HORIZONTAL Peak |
| 2 | 11159.93 | 63.47 | 63.54 | -0.07 | 47.55 | 40.10 | 10.84 | 35.02 | 159 | 46 | HORIZONTAL Average |
| 3 | 16740.29 | 55.76 | 63.54 | -7.78 | 37.31 | 40.07 | 13.63 | 35.25 | 164 | 213 | HORIZONTAL Average |
| 4 | 16746.51 | 71.91 | 83.54 | -11.63 | 53.44 | 40.09 | 13.63 | 35.25 | 164 | 213 | HORIZONTAL Peak |

Vertical

| | Freq | Level | Limit | Over | ReadAntenna | Cable | Preamp | A/Pos | T/Pos | Pol/Phase | Remark |
|---|----------|--------|--------|-------|-------------|-------|--------|-------|-------|-----------|------------------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB/m | dB | dB | cm | deg | |
| 1 | 11159.71 | 60.63 | 63.54 | -2.91 | 44.71 | 40.10 | 10.84 | 35.02 | 165 | 269 | VERTICAL Average |
| 2 | 11162.61 | 75.42 | 83.54 | -8.12 | 59.50 | 40.10 | 10.84 | 35.02 | 165 | 269 | VERTICAL Peak |
| 3 | 16735.73 | 57.40 | 63.54 | -6.14 | 38.92 | 40.10 | 13.62 | 35.24 | 164 | 214 | VERTICAL Average |
| 4 | 16746.51 | 74.13 | 83.54 | -9.41 | 55.65 | 40.10 | 13.63 | 35.25 | 164 | 214 | VERTICAL Peak |



| | | | |
|----------------------|---------------|-----------------------|--|
| Temperature | 25°C | Humidity | 54% |
| Test Engineer | Kenneth Huang | Configurations | IEEE 802.11ac MCS0/Nss1 VHT20 CH 140 / Chain 3 |
| Test Date | Mar. 20, 2015 | | |

Horizontal

| | Freq | Level | Limit Line | Over Limit | Read Level | CableAntenna Loss | Antenna Factor | Preamp Factor | T/Pos | A/Pos | Remark | Pol/Phase |
|---|----------|--------|------------|------------|------------|-------------------|----------------|---------------|-------|-------|---------|------------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB | dB/m | dB | deg | cm | | |
| 1 | 11399.13 | 70.20 | 83.54 | -13.34 | 60.06 | 6.51 | 38.30 | 34.67 | 68 | 163 | Peak | HORIZONTAL |
| 2 | 11399.48 | 54.59 | 63.54 | -8.95 | 44.45 | 6.51 | 38.30 | 34.67 | 68 | 163 | Average | HORIZONTAL |

Vertical

| | Freq | Level | Limit Line | Over Limit | Read Level | CableAntenna Loss | Antenna Factor | Preamp Factor | T/Pos | A/Pos | Remark | Pol/Phase |
|---|----------|--------|------------|------------|------------|-------------------|----------------|---------------|-------|-------|---------|-----------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB | dB/m | dB | deg | cm | | |
| 1 | 11399.19 | 67.17 | 83.54 | -16.37 | 57.03 | 6.51 | 38.30 | 34.67 | 31 | 159 | Peak | VERTICAL |
| 2 | 11399.54 | 51.73 | 63.54 | -11.81 | 41.59 | 6.51 | 38.30 | 34.67 | 31 | 159 | Average | VERTICAL |

| | | | |
|----------------------|---------------|-----------------------|---|
| Temperature | 25°C | Humidity | 54% |
| Test Engineer | Kenneth Huang | Configurations | IEEE 802.11ac MCS0/Nss1 VHT40 CH 54 / Chain 3 |
| Test Date | Mar. 20, 2015 | | |

Horizontal

| | Freq | Level | Limit | Over | Read | CableAntenna | Preamp | T/Pos | A/Pos | Remark | Pol/Phase | |
|---|----------|--------|--------|--------|-------|--------------|--------|-------|-------|--------|-----------|------------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB | dB/m | dB | deg | cm | | |
| 1 | 15807.34 | 65.67 | 83.54 | -17.87 | 54.54 | 7.65 | 38.45 | 34.97 | 242 | 160 | Peak | HORIZONTAL |
| 2 | 15813.13 | 51.95 | 63.54 | -11.59 | 40.82 | 7.65 | 38.45 | 34.97 | 242 | 160 | Average | HORIZONTAL |

Vertical

| | Freq | Level | Limit | Over | Read | CableAntenna | Preamp | T/Pos | A/Pos | Remark | Pol/Phase | |
|---|----------|--------|--------|--------|-------|--------------|--------|-------|-------|--------|-----------|----------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB | dB/m | dB | deg | cm | | |
| 1 | 15807.45 | 64.67 | 83.54 | -18.87 | 53.54 | 7.65 | 38.45 | 34.97 | 208 | 161 | Peak | VERTICAL |
| 2 | 15813.01 | 49.86 | 63.54 | -13.68 | 38.73 | 7.65 | 38.45 | 34.97 | 208 | 161 | Average | VERTICAL |



| | | | |
|----------------------|---------------|-----------------------|---|
| Temperature | 25°C | Humidity | 54% |
| Test Engineer | Kenneth Huang | Configurations | IEEE 802.11ac MCS0/Nss1 VHT40 CH 62 / Chain 3 |
| Test Date | Mar. 20, 2015 | | |

Horizontal

| | Freq | Level | Limit Line | Over Limit | Read Level | CableAntenna Loss | Antenna Factor | Preamp Factor | T/Pos | A/Pos | Remark | Pol/Phase |
|---|----------|--------|------------|------------|------------|-------------------|----------------|---------------|-------|-------|---------|------------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB | dB/m | dB | deg | cm | | |
| 1 | 10618.96 | 56.28 | 83.54 | -27.26 | 46.67 | 6.22 | 38.38 | 34.99 | 63 | 166 | Peak | HORIZONTAL |
| 2 | 10619.65 | 43.05 | 63.54 | -20.49 | 33.44 | 6.22 | 38.38 | 34.99 | 63 | 166 | Average | HORIZONTAL |
| 3 | 15926.17 | 56.42 | 83.54 | -27.12 | 45.42 | 7.69 | 38.36 | 35.05 | 305 | 169 | Peak | HORIZONTAL |
| 4 | 15940.49 | 44.28 | 63.54 | -19.26 | 33.32 | 7.70 | 38.34 | 35.08 | 305 | 169 | Average | HORIZONTAL |

Vertical

| | Freq | Level | Limit Line | Over Limit | Read Level | CableAntenna Loss | Antenna Factor | Preamp Factor | T/Pos | A/Pos | Remark | Pol/Phase |
|---|----------|--------|------------|------------|------------|-------------------|----------------|---------------|-------|-------|---------|-----------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB | dB/m | dB | deg | cm | | |
| 1 | 10593.84 | 53.91 | 83.54 | -29.63 | 44.33 | 6.20 | 38.38 | 35.00 | 264 | 163 | Peak | VERTICAL |
| 2 | 10620.23 | 43.06 | 63.54 | -20.48 | 33.45 | 6.22 | 38.38 | 34.99 | 264 | 163 | Average | VERTICAL |
| 3 | 15928.92 | 44.19 | 63.54 | -19.35 | 33.19 | 7.69 | 38.36 | 35.05 | 305 | 163 | Average | VERTICAL |
| 4 | 15931.01 | 56.13 | 83.54 | -27.41 | 45.16 | 7.69 | 38.36 | 35.08 | 305 | 163 | Peak | VERTICAL |

| | | | |
|----------------------|---------------|-----------------------|--|
| Temperature | 25°C | Humidity | 54% |
| Test Engineer | Kenneth Huang | Configurations | IEEE 802.11ac MCS0/Nss1 VHT40 CH 102 / Chain 3 |
| Test Date | Mar. 20, 2015 | | |

Horizontal

| | Freq | Level | Limit Line | Over Limit | Read Level | CableAntenna Loss | Antenna Factor | Preamp Factor | T/Pos | A/Pos | Remark | Pol/Phase |
|---|----------|--------|------------|------------|------------|-------------------|----------------|---------------|-------|-------|---------|------------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB | dB/m | dB | deg | cm | | |
| 1 | 11019.51 | 40.55 | 63.54 | -22.99 | 30.56 | 6.40 | 38.30 | 34.71 | 359 | 169 | Average | HORIZONTAL |
| 2 | 11021.16 | 53.43 | 83.54 | -30.11 | 43.44 | 6.40 | 38.30 | 34.71 | 359 | 169 | Peak | HORIZONTAL |

Vertical

| | Freq | Level | Limit Line | Over Limit | Read Level | CableAntenna Loss | Antenna Factor | Preamp Factor | T/Pos | A/Pos | Remark | Pol/Phase |
|---|----------|--------|------------|------------|------------|-------------------|----------------|---------------|-------|-------|---------|-----------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB | dB/m | dB | deg | cm | | |
| 1 | 11019.80 | 45.42 | 63.54 | -18.12 | 35.43 | 6.40 | 38.30 | 34.71 | 42 | 162 | Average | VERTICAL |
| 2 | 11020.98 | 58.25 | 83.54 | -25.29 | 48.26 | 6.40 | 38.30 | 34.71 | 42 | 162 | Peak | VERTICAL |

| | | | |
|----------------------|---------------|-----------------------|--|
| Temperature | 25°C | Humidity | 54% |
| Test Engineer | Kenneth Huang | Configurations | IEEE 802.11ac MCS0/Nss1 VHT40 CH 110 / Chain 3 |
| Test Date | Mar. 20, 2015 | | |

Horizontal

| | Freq | Level | Limit Line | Over Limit | Read Level | CableAntenna Loss | Antenna Factor | Preamp Factor | T/Pos | A/Pos | Remark | Pol/Phase |
|---|----------|--------|------------|------------|------------|-------------------|----------------|---------------|-------|-------|---------|------------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB | dB/m | dB | deg | cm | | |
| 1 | 11099.88 | 61.64 | 63.54 | -1.90 | 51.61 | 6.43 | 38.30 | 34.70 | 76 | 178 | Average | HORIZONTAL |
| 2 | 11100.81 | 74.00 | 83.54 | -9.54 | 63.97 | 6.43 | 38.30 | 34.70 | 76 | 178 | Peak | HORIZONTAL |

Vertical

| | Freq | Level | Limit Line | Over Limit | Read Level | CableAntenna Loss | Antenna Factor | Preamp Factor | T/Pos | A/Pos | Remark | Pol/Phase |
|---|----------|--------|------------|------------|------------|-------------------|----------------|---------------|-------|-------|---------|-----------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB | dB/m | dB | deg | cm | | |
| 1 | 11099.88 | 56.38 | 63.54 | -7.16 | 46.35 | 6.43 | 38.30 | 34.70 | 302 | 159 | Average | VERTICAL |
| 2 | 11100.81 | 68.04 | 83.54 | -15.50 | 58.01 | 6.43 | 38.30 | 34.70 | 302 | 159 | Peak | VERTICAL |



| | | | |
|----------------------|---------------|-----------------------|--|
| Temperature | 25°C | Humidity | 54% |
| Test Engineer | Kenneth Huang | Configurations | IEEE 802.11ac MCS0/Nss1 VHT40 CH 134 / Chain 3 |
| Test Date | Mar. 20, 2015 | | |

Horizontal

| | Freq | Level | Limit Line | Over Limit | Read Level | CableAntenna Loss | Antenna Factor | Preamp Factor | T/Pos | A/Pos | Remark | Pol/Phase |
|---|----------|--------|------------|------------|------------|-------------------|----------------|---------------|-------|-------|---------|------------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB | dB/m | dB | deg | cm | | |
| 1 | 11337.34 | 67.44 | 83.54 | -16.10 | 57.33 | 6.49 | 38.30 | 34.68 | 74 | 162 | Peak | HORIZONTAL |
| 2 | 11340.00 | 56.80 | 63.54 | -6.74 | 46.69 | 6.49 | 38.30 | 34.68 | 74 | 162 | Average | HORIZONTAL |

Vertical

| | Freq | Level | Limit Line | Over Limit | Read Level | CableAntenna Loss | Antenna Factor | Preamp Factor | T/Pos | A/Pos | Remark | Pol/Phase |
|---|----------|--------|------------|------------|------------|-------------------|----------------|---------------|-------|-------|---------|-----------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB | dB/m | dB | deg | cm | | |
| 1 | 11340.00 | 51.52 | 63.54 | -12.02 | 41.41 | 6.49 | 38.30 | 34.68 | 286 | 161 | Average | VERTICAL |
| 2 | 11340.46 | 63.19 | 83.54 | -20.35 | 53.07 | 6.49 | 38.30 | 34.67 | 286 | 161 | Peak | VERTICAL |

| | | | |
|----------------------|---------------|-----------------------|---|
| Temperature | 25°C | Humidity | 54% |
| Test Engineer | Kenneth Huang | Configurations | IEEE 802.11ac MCS0/Nss1 VHT80 CH 58 / Chain 3 |
| Test Date | Mar. 20, 2015 | | |

Horizontal

| | Freq | Level | Limit Line | Over Limit | Read Level | CableAntenna Loss | Antenna Factor | Preamp Factor | T/Pos | A/Pos | Remark | Pol/Phase |
|---|----------|--------|------------|------------|------------|-------------------|----------------|---------------|-------|-------|---------|------------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB | dB/m | dB | deg | cm | | |
| 1 | 15830.06 | 43.70 | 63.54 | -19.84 | 32.59 | 7.66 | 38.44 | 34.99 | 191 | 167 | Average | HORIZONTAL |
| 2 | 15834.54 | 57.12 | 83.54 | -26.42 | 46.03 | 7.66 | 38.42 | 34.99 | 191 | 167 | Peak | HORIZONTAL |

Vertical

| | Freq | Level | Limit Line | Over Limit | Read Level | CableAntenna Loss | Antenna Factor | Preamp Factor | T/Pos | A/Pos | Remark | Pol/Phase |
|---|----------|--------|------------|------------|------------|-------------------|----------------|---------------|-------|-------|---------|-----------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB | dB/m | dB | deg | cm | | |
| 1 | 15879.70 | 56.27 | 83.54 | -27.27 | 45.23 | 7.67 | 38.40 | 35.03 | 220 | 160 | Peak | VERTICAL |
| 2 | 15904.30 | 44.86 | 63.54 | -18.68 | 33.83 | 7.69 | 38.37 | 35.03 | 218 | 160 | Average | VERTICAL |

| | | | |
|----------------------|---------------|-----------------------|--|
| Temperature | 25°C | Humidity | 54% |
| Test Engineer | Kenneth Huang | Configurations | IEEE 802.11ac MCS0/Nss1 VHT80 CH 106 / Chain 3 |
| Test Date | Mar. 20, 2015 | | |

Horizontal

| | Freq | Level | Limit | Over | Read | CableAntenna | Preamp | T/Pos | A/Pos | Remark | Pol/Phase | |
|---|----------|--------|--------|--------|-------|--------------|--------|-------|-------|--------|-----------|------------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB | dB/m | dB | deg | cm | | |
| 1 | 11059.86 | 41.29 | 63.54 | -22.25 | 31.27 | 6.42 | 38.30 | 34.70 | 139 | 173 | Average | HORIZONTAL |
| 2 | 11079.39 | 54.11 | 83.54 | -29.43 | 44.09 | 6.42 | 38.30 | 34.70 | 139 | 173 | Peak | HORIZONTAL |

Vertical

| | Freq | Level | Limit | Over | Read | CableAntenna | Preamp | T/Pos | A/Pos | Remark | Pol/Phase | |
|---|----------|--------|--------|--------|-------|--------------|--------|-------|-------|--------|-----------|----------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB | dB/m | dB | deg | cm | | |
| 1 | 11060.00 | 41.52 | 63.54 | -22.02 | 31.50 | 6.42 | 38.30 | 34.70 | 139 | 166 | Average | VERTICAL |
| 2 | 11074.33 | 54.71 | 83.54 | -28.83 | 44.69 | 6.42 | 38.30 | 34.70 | 291 | 166 | Peak | VERTICAL |

Note:

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

4.6. Band Edge Emissions Measurement

4.6.1. Limit

For transmitters operating in the 5.25-5.35 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

For transmitters operating in the 5.470-5.725 GHz band: all emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

In addition, In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

| Frequencies (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 |

4.6.2. Measuring Instruments and Setting

Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

| Spectrum Parameter | Setting |
|---|---|
| Attenuation | Auto |
| Span Frequency | 100 MHz |
| RBW / VBW (Emission in restricted band) | 1 MHz / 3MHz for Peak, 1 MHz / 1/T for Average |
| RBW / VBW (Emission in non-restricted band) | 1 MHz / 3MHz for Peak |

4.6.3. Test Procedures

The test procedure is the same as section 4.5.3, only the frequency range investigated is limited to 100MHz around bandedges.

4.6.4. Test Setup Layout

This test setup layout is the same as that shown in section 4.5.4.

4.6.5. Test Deviation

There is no deviation with the original standard.

4.6.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.6.7. Test Result of Band Edge and Fundamental Emissions

| | | | |
|----------------------|-------------------------------|-----------------------|--------------------------------------|
| Temperature | 25°C | Humidity | 54% |
| Test Engineer | Kenneth Huang | Configurations | IEEE 802.11a CH 52, 60, 64 / Chain 3 |
| Test Date | Mar. 19, 2015 / Mar. 20, 2015 | | |

Channel 52

| | Freq | Level | Limit | Over | ReadAntenna | Cable | Preamp | A/Pos | T/Pos | Pol/Phase | Remark | |
|---|---------|--------|--------|--------|-------------|-------|--------|-------|-------|-----------|----------|---------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB/m | dB | dB | cm | deg | | |
| 1 | 5150.00 | 69.73 | 83.54 | -13.81 | 30.88 | 31.52 | 7.33 | 0.00 | 163 | 288 | VERTICAL | Peak |
| 2 | 5150.00 | 56.80 | 63.54 | -6.74 | 17.95 | 31.52 | 7.33 | 0.00 | 163 | 288 | VERTICAL | Average |
| 3 | 5258.70 | 128.58 | | | 89.54 | 31.61 | 7.43 | 0.00 | 163 | 288 | VERTICAL | Peak |
| 4 | 5259.13 | 118.31 | | | 79.27 | 31.61 | 7.43 | 0.00 | 163 | 288 | VERTICAL | Average |
| 5 | 5350.00 | 72.42 | 83.54 | -11.12 | 33.22 | 31.68 | 7.52 | 0.00 | 163 | 288 | VERTICAL | Peak |
| 6 | 5350.00 | 59.21 | 63.54 | -4.33 | 20.01 | 31.68 | 7.52 | 0.00 | 163 | 288 | VERTICAL | Average |

Item 3, 4 are the fundamental frequency at 5260 MHz.

Channel 60

| | Freq | Level | Limit | Over | ReadAntenna | Cable | Preamp | A/Pos | T/Pos | Pol/Phase | Remark | |
|---|---------|--------|--------|-------|-------------|-------|--------|-------|-------|-----------|----------|---------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB/m | dB | dB | cm | deg | | |
| 1 | 5298.26 | 128.67 | | | 89.56 | 31.64 | 7.47 | 0.00 | 160 | 286 | VERTICAL | Peak |
| 2 | 5299.13 | 119.07 | | | 79.96 | 31.64 | 7.47 | 0.00 | 160 | 286 | VERTICAL | Average |
| 3 | 5350.00 | 77.02 | 83.54 | -6.52 | 37.82 | 31.68 | 7.52 | 0.00 | 160 | 286 | VERTICAL | Peak |
| 4 | 5352.03 | 63.22 | 63.54 | -0.32 | 24.02 | 31.68 | 7.52 | 0.00 | 160 | 286 | VERTICAL | Average |

Item 1, 2 are the fundamental frequency at 5300 MHz.

Channel 64

| | Freq | Level | Limit | Over | ReadAntenna | Cable | Preamp | A/Pos | T/Pos | Pol/Phase | Remark | |
|---|---------|--------|--------|-------|-------------|-------|--------|-------|-------|-----------|----------|---------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB/m | dB | dB | cm | deg | | |
| 1 | 5320.58 | 114.68 | | | 75.54 | 31.65 | 7.49 | 0.00 | 159 | 288 | VERTICAL | Average |
| 2 | 5323.18 | 124.31 | | | 85.16 | 31.65 | 7.50 | 0.00 | 159 | 288 | VERTICAL | Peak |
| 3 | 5350.00 | 78.18 | 83.54 | -5.36 | 38.98 | 31.68 | 7.52 | 0.00 | 159 | 288 | VERTICAL | Peak |
| 4 | 5350.00 | 63.05 | 63.54 | -0.49 | 23.85 | 31.68 | 7.52 | 0.00 | 159 | 288 | VERTICAL | Average |

Item 1, 2 are the fundamental frequency at 5320 MHz.

| | | | |
|----------------------|---------------|-----------------------|------------------------------------|
| Temperature | 25°C | Humidity | 54% |
| Test Engineer | Kenneth Huang | Configurations | IEEE 802.11a CH 100, 140 / Chain 3 |
| Test Date | Mar. 19, 2015 | | |

Channel 100

| | Freq | Level | Limit Line | Over Limit | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | A/Pos | T/Pos | Pol/Phase | Remark |
|---|---------|--------|------------|------------|-------------------|----------------|------------|---------------|-------|-------|-----------|---------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB/m | dB | dB | cm | deg | | |
| 1 | 5460.00 | 73.78 | 83.54 | -9.76 | 34.40 | 31.76 | 7.62 | 0.00 | 157 | 289 | VERTICAL | Peak |
| 2 | 5460.00 | 60.55 | 63.54 | -2.99 | 21.17 | 31.76 | 7.62 | 0.00 | 157 | 289 | VERTICAL | Average |
| 3 | 5468.70 | 78.54 | 83.54 | -5.00 | 39.13 | 31.78 | 7.63 | 0.00 | 157 | 289 | VERTICAL | Peak |
| 4 | 5470.00 | 62.82 | 63.54 | -0.72 | 23.41 | 31.78 | 7.63 | 0.00 | 157 | 289 | VERTICAL | Average |
| 5 | 5501.59 | 115.03 | | | 75.57 | 31.80 | 7.66 | 0.00 | 157 | 289 | VERTICAL | Average |
| 6 | 5504.05 | 124.58 | | | 85.12 | 31.80 | 7.66 | 0.00 | 157 | 289 | VERTICAL | Peak |

Item 5, 6 are the fundamental frequency at 5500 MHz.

Channel 140

| | Freq | Level | Limit Line | Over Limit | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | A/Pos | T/Pos | Pol/Phase | Remark |
|---|---------|--------|------------|------------|-------------------|----------------|------------|---------------|-------|-------|-----------|---------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB/m | dB | dB | cm | deg | | |
| 1 | 5697.54 | 123.78 | | | 83.96 | 32.04 | 7.78 | 0.00 | 162 | 276 | VERTICAL | Peak |
| 2 | 5698.55 | 114.03 | | | 74.21 | 32.04 | 7.78 | 0.00 | 162 | 276 | VERTICAL | Average |
| 3 | 5725.00 | 80.14 | 83.54 | -3.40 | 40.27 | 32.08 | 7.79 | 0.00 | 162 | 276 | VERTICAL | Peak |
| 4 | 5725.00 | 63.43 | 63.54 | -0.11 | 23.56 | 32.08 | 7.79 | 0.00 | 162 | 276 | VERTICAL | Average |

Item 1, 2 are the fundamental frequency at 5700 MHz.

| | | | |
|----------------------|-------------------------------|-----------------------|---|
| Temperature | 25°C | Humidity | 54% |
| Test Engineer | Kenneth Huang | Configurations | IEEE 802.11ac MCS0/Nss1 VHT20 CH 52, 60, 64 / Chain 3 |
| Test Date | Mar. 19, 2015 / Mar. 20, 2015 | | |

Channel 52

| | Freq | Level | Limit Line | Over Limit | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | A/Pos | T/Pos | Pol/Phase | Remark |
|---|---------|--------|------------|------------|-------------------|----------------|------------|---------------|-------|-------|-----------|---------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB/m | dB | dB | cm | deg | | |
| 1 | 5150.00 | 70.00 | 83.54 | -13.54 | 31.15 | 31.52 | 7.33 | 0.00 | 162 | 284 | VERTICAL | Peak |
| 2 | 5150.00 | 57.18 | 63.54 | -6.36 | 18.33 | 31.52 | 7.33 | 0.00 | 162 | 284 | VERTICAL | Average |
| 3 | 5261.30 | 128.24 | | | 89.19 | 31.61 | 7.44 | 0.00 | 162 | 284 | VERTICAL | Peak |
| 4 | 5263.04 | 117.55 | | | 78.49 | 31.62 | 7.44 | 0.00 | 162 | 284 | VERTICAL | Average |
| 5 | 5350.00 | 71.01 | 83.54 | -12.53 | 31.81 | 31.68 | 7.52 | 0.00 | 162 | 284 | VERTICAL | Peak |
| 6 | 5350.00 | 59.45 | 63.54 | -4.09 | 20.25 | 31.68 | 7.52 | 0.00 | 162 | 284 | VERTICAL | Average |

Item 3, 4 are the fundamental frequency at 5260 MHz.

Channel 60

| | Freq | Level | Limit Line | Over Limit | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | A/Pos | T/Pos | Pol/Phase | Remark |
|---|---------|--------|------------|------------|-------------------|----------------|------------|---------------|-------|-------|-----------|---------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB/m | dB | dB | cm | deg | | |
| 1 | 5299.42 | 118.33 | | | 79.22 | 31.64 | 7.47 | 0.00 | 161 | 284 | VERTICAL | Average |
| 2 | 5300.58 | 128.77 | | | 89.66 | 31.64 | 7.47 | 0.00 | 161 | 284 | VERTICAL | Peak |
| 3 | 5351.16 | 63.04 | 63.54 | -0.50 | 23.84 | 31.68 | 7.52 | 0.00 | 161 | 284 | VERTICAL | Average |
| 4 | 5351.45 | 80.51 | 83.54 | -3.03 | 41.31 | 31.68 | 7.52 | 0.00 | 161 | 284 | VERTICAL | Peak |

Item 1, 2 are the fundamental frequency at 5300 MHz.

Channel 64

| | Freq | Level | Limit Line | Over Limit | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | A/Pos | T/Pos | Pol/Phase | Remark |
|---|---------|--------|------------|------------|-------------------|----------------|------------|---------------|-------|-------|-----------|---------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB/m | dB | dB | cm | deg | | |
| 1 | 5321.59 | 114.89 | | | 75.75 | 31.65 | 7.49 | 0.00 | 160 | 278 | VERTICAL | Average |
| 2 | 5323.33 | 124.86 | | | 85.69 | 31.67 | 7.50 | 0.00 | 160 | 278 | VERTICAL | Peak |
| 3 | 5350.00 | 63.35 | 63.54 | -0.19 | 24.15 | 31.68 | 7.52 | 0.00 | 160 | 278 | VERTICAL | Average |
| 4 | 5352.60 | 80.01 | 83.54 | -3.53 | 40.81 | 31.68 | 7.52 | 0.00 | 160 | 278 | VERTICAL | Peak |

Item 1, 2 are the fundamental frequency at 5320 MHz.

| | | | |
|----------------------|---------------|-----------------------|---|
| Temperature | 25°C | Humidity | 54% |
| Test Engineer | Kenneth Huang | Configurations | IEEE 802.11ac MCS0/Nss1 VHT20 CH 100, 140 / Chain 3 |
| Test Date | Mar. 19, 2015 | | |

Channel 100

| | Freq | Level | Limit Line | Over Limit | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | A/Pos | T/Pos | Pol/Phase | Remark |
|---|---------|--------|------------|------------|-------------------|----------------|------------|---------------|-------|-------|-----------|---------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB/m | dB | dB | cm | deg | | |
| 1 | 5460.00 | 76.03 | 83.54 | -7.51 | 36.65 | 31.76 | 7.62 | 0.00 | 164 | 280 | VERTICAL | Peak |
| 2 | 5460.00 | 60.31 | 63.54 | -3.23 | 20.93 | 31.76 | 7.62 | 0.00 | 164 | 280 | VERTICAL | Average |
| 3 | 5470.00 | 79.00 | 83.54 | -4.54 | 39.59 | 31.78 | 7.63 | 0.00 | 164 | 280 | VERTICAL | Peak |
| 4 | 5470.00 | 63.18 | 63.54 | -0.36 | 23.77 | 31.78 | 7.63 | 0.00 | 164 | 280 | VERTICAL | Average |
| 5 | 5496.96 | 124.45 | | | 84.99 | 31.80 | 7.66 | 0.00 | 164 | 280 | VERTICAL | Peak |
| 6 | 5497.25 | 114.31 | | | 74.85 | 31.80 | 7.66 | 0.00 | 164 | 280 | VERTICAL | Average |

Item 5, 6 are the fundamental frequency at 5500 MHz.

Channel 140

| | Freq | Level | Limit Line | Over Limit | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | A/Pos | T/Pos | Pol/Phase | Remark |
|---|---------|--------|------------|------------|-------------------|----------------|------------|---------------|-------|-------|-----------|---------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB/m | dB | dB | cm | deg | | |
| 1 | 5696.96 | 123.06 | | | 83.24 | 32.04 | 7.78 | 0.00 | 160 | 276 | VERTICAL | Peak |
| 2 | 5700.43 | 113.07 | | | 73.25 | 32.04 | 7.78 | 0.00 | 160 | 276 | VERTICAL | Average |
| 3 | 5725.00 | 63.45 | 63.54 | -0.09 | 23.58 | 32.08 | 7.79 | 0.00 | 160 | 276 | VERTICAL | Average |
| 4 | 5725.72 | 77.85 | 83.54 | -5.69 | 37.98 | 32.08 | 7.79 | 0.00 | 160 | 276 | VERTICAL | Peak |

Item 1, 2 are the fundamental frequency at 5700 MHz.



| | | | |
|----------------------|---------------|-----------------------|---|
| Temperature | 25°C | Humidity | 54% |
| Test Engineer | Kenneth Huang | Configurations | IEEE 802.11ac MCS0/Nss1 VHT40 CH 54, 62 / Chain 3 |
| Test Date | Mar. 19, 2015 | | |

Channel 54

| | Freq | Level | Limit Line | Over Limit | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | A/Pos | T/Pos | Pol/Phase | Remark |
|---|---------|--------|------------|------------|-------------------|----------------|------------|---------------|-------|-------|-----------|---------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB/m | dB | dB | cm | deg | | |
| 1 | 5267.97 | 124.58 | | | 85.52 | 31.62 | 7.44 | 0.00 | 163 | 285 | VERTICAL | Peak |
| 2 | 5271.45 | 114.28 | | | 75.21 | 31.62 | 7.45 | 0.00 | 163 | 285 | VERTICAL | Average |
| 3 | 5350.00 | 76.40 | 83.54 | -7.14 | 37.20 | 31.68 | 7.52 | 0.00 | 163 | 285 | VERTICAL | Peak |
| 4 | 5350.00 | 63.47 | 63.54 | -0.07 | 24.27 | 31.68 | 7.52 | 0.00 | 163 | 285 | VERTICAL | Average |

Item 1, 2 are the fundamental frequency at 5270 MHz.

Channel 62

| | Freq | Level | Limit Line | Over Limit | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | A/Pos | T/Pos | Pol/Phase | Remark |
|---|---------|--------|------------|------------|-------------------|----------------|------------|---------------|-------|-------|-----------|---------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB/m | dB | dB | cm | deg | | |
| 1 | 5307.68 | 118.83 | | | 79.71 | 31.64 | 7.48 | 0.00 | 162 | 283 | VERTICAL | Peak |
| 2 | 5308.26 | 108.53 | | | 69.40 | 31.65 | 7.48 | 0.00 | 162 | 283 | VERTICAL | Average |
| 3 | 5350.00 | 75.24 | 83.54 | -8.30 | 36.04 | 31.68 | 7.52 | 0.00 | 162 | 283 | VERTICAL | Peak |
| 4 | 5350.00 | 63.18 | 63.54 | -0.36 | 23.98 | 31.68 | 7.52 | 0.00 | 162 | 283 | VERTICAL | Average |

Item 1, 2 are the fundamental frequency at 5310 MHz.

| | | | |
|----------------------|---------------|-----------------------|--|
| Temperature | 25°C | Humidity | 54% |
| Test Engineer | Kenneth Huang | Configurations | IEEE 802.11ac MCS0/Nss1 VHT40 CH 102, 110, 134 / Chain 3 |
| Test Date | Mar. 19, 2015 | | |

Channel 102

| | Freq | Level | Limit Line | Over Limit | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | A/Pos | T/Pos | Pol/Phase | Remark |
|---|---------|--------|------------|------------|-------------------|----------------|------------|---------------|-------|-------|-----------|---------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB/m | dB | dB | cm | deg | | |
| 1 | 5460.00 | 72.18 | 83.54 | -11.36 | 32.80 | 31.76 | 7.62 | 0.00 | 158 | 290 | VERTICAL | Peak |
| 2 | 5460.00 | 59.76 | 63.54 | -3.78 | 20.38 | 31.76 | 7.62 | 0.00 | 158 | 290 | VERTICAL | Average |
| 3 | 5470.00 | 78.80 | 83.54 | -4.74 | 39.39 | 31.78 | 7.63 | 0.00 | 158 | 290 | VERTICAL | Peak |
| 4 | 5470.00 | 63.44 | 63.54 | -0.10 | 24.03 | 31.78 | 7.63 | 0.00 | 158 | 290 | VERTICAL | Average |
| 5 | 5507.97 | 116.96 | | | 77.50 | 31.80 | 7.66 | 0.00 | 158 | 290 | VERTICAL | Peak |
| 6 | 5508.26 | 106.38 | | | 66.91 | 31.80 | 7.67 | 0.00 | 158 | 290 | VERTICAL | Average |

Item 5, 6 are the fundamental frequency at 5510 MHz.

Channel 110

| | Freq | Level | Limit Line | Over Limit | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | A/Pos | T/Pos | Pol/Phase | Remark |
|---|---------|--------|------------|------------|-------------------|----------------|------------|---------------|-------|-------|-----------|---------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB/m | dB | dB | cm | deg | | |
| 1 | 5460.00 | 75.95 | 83.54 | -7.59 | 36.57 | 31.76 | 7.62 | 0.00 | 160 | 290 | VERTICAL | Peak |
| 2 | 5460.00 | 63.00 | 63.54 | -0.54 | 23.62 | 31.76 | 7.62 | 0.00 | 160 | 290 | VERTICAL | Average |
| 3 | 5468.55 | 77.40 | 77.74 | -0.34 | 37.99 | 31.78 | 7.63 | 0.00 | 160 | 290 | VERTICAL | Peak |
| 4 | 5547.68 | 125.14 | | | 85.59 | 31.86 | 7.69 | 0.00 | 160 | 290 | VERTICAL | Peak |
| 5 | 5548.26 | 114.59 | | | 75.04 | 31.86 | 7.69 | 0.00 | 160 | 290 | VERTICAL | Average |

Item 4, 5 are the fundamental frequency at 5550 MHz.

Channel 134

| | Freq | Level | Limit Line | Over Limit | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | A/Pos | T/Pos | Pol/Phase | Remark |
|---|---------|--------|------------|------------|-------------------|----------------|------------|---------------|-------|-------|-----------|---------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB/m | dB | dB | cm | deg | | |
| 1 | 5667.97 | 122.53 | | | 82.77 | 32.00 | 7.76 | 0.00 | 156 | 282 | VERTICAL | Peak |
| 2 | 5671.45 | 111.90 | | | 72.14 | 32.00 | 7.76 | 0.00 | 156 | 282 | VERTICAL | Average |
| 3 | 5725.00 | 63.37 | 63.54 | -0.17 | 23.50 | 32.08 | 7.79 | 0.00 | 156 | 282 | VERTICAL | Average |
| 4 | 5725.29 | 78.39 | 83.54 | -5.15 | 38.52 | 32.08 | 7.79 | 0.00 | 156 | 282 | VERTICAL | Peak |

Item 1, 2 are the fundamental frequency at 5670 MHz.



| | | | |
|----------------------|---------------|-----------------------|--|
| Temperature | 25°C | Humidity | 54% |
| Test Engineer | Kenneth Huang | Configurations | IEEE 802.11ac MCS0/Nss1 VHT80 CH 58, 106 / Chain 3 |
| Test Date | Mar. 19, 2015 | | |

Channel 58

| | Freq | Level | Limit Line | Over Limit | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | A/Pos | T/Pos | Pol/Phase | Remark |
|---|---------|--------|------------|------------|-------------------|----------------|------------|---------------|-------|-------|-----------|---------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB/m | dB | dB | cm | deg | | |
| 1 | 5295.21 | 111.93 | | | 72.82 | 31.64 | 7.47 | 0.00 | 161 | 291 | VERTICAL | Peak |
| 2 | 5325.31 | 101.55 | | | 62.38 | 31.67 | 7.50 | 0.00 | 161 | 291 | VERTICAL | Average |
| 3 | 5350.00 | 73.02 | 83.54 | -10.52 | 33.82 | 31.68 | 7.52 | 0.00 | 161 | 291 | VERTICAL | Peak |
| 4 | 5350.00 | 61.53 | 63.54 | -2.01 | 22.33 | 31.68 | 7.52 | 0.00 | 161 | 291 | VERTICAL | Average |

Item 1, 2 are the fundamental frequency at 5290 MHz.

Channel 106

| | Freq | Level | Limit Line | Over Limit | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | A/Pos | T/Pos | Pol/Phase | Remark |
|---|---------|--------|------------|------------|-------------------|----------------|------------|---------------|-------|-------|-----------|---------|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB/m | dB | dB | cm | deg | | |
| 1 | 5460.00 | 75.73 | 83.54 | -7.81 | 36.35 | 31.76 | 7.62 | 0.00 | 159 | 284 | VERTICAL | Peak |
| 2 | 5460.00 | 63.47 | 63.54 | -0.07 | 24.09 | 31.76 | 7.62 | 0.00 | 159 | 284 | VERTICAL | Average |
| 3 | 5461.32 | 77.65 | 77.74 | -0.09 | 38.27 | 31.76 | 7.62 | 0.00 | 159 | 284 | VERTICAL | Peak |
| 4 | 5494.54 | 102.42 | | | 62.98 | 31.79 | 7.65 | 0.00 | 159 | 284 | VERTICAL | Average |
| 5 | 5516.25 | 112.51 | | | 73.02 | 31.82 | 7.67 | 0.00 | 159 | 284 | VERTICAL | Peak |

Item 4, 5 are the fundamental frequency at 5530 MHz.

Note:

Emission level (dBuV/m) = 20 log Emission level (uV/m)

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level

4.7. Frequency Stability Measurement

4.7.1. Limit

In-band emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

The transmitter center frequency tolerance shall be ± 20 ppm maximum for the 5 GHz band (IEEE 802.11n specification).

4.7.2. Measuring Instruments and Setting

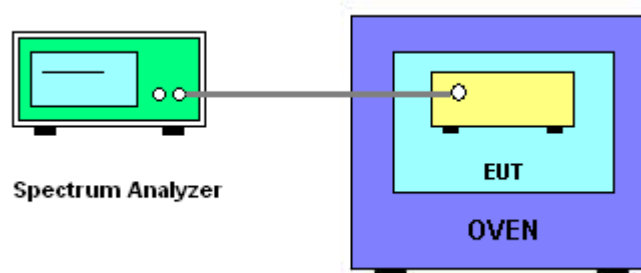
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

| Spectrum Parameter | Setting |
|--------------------|--|
| Attenuation | Auto |
| Span Frequency | Entire absence of modulation emissions bandwidth |
| RBW | 10 kHz |
| VBW | 10 kHz |
| Sweep Time | Auto |

4.7.3. Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyzer.
2. EUT have transmitted absence of modulation signal and fixed channelize.
3. Set the spectrum analyzer span to view the entire absence of modulation emissions bandwidth.
4. Set RBW = 10 kHz, VBW = 10 kHz with peak detector and maxhold settings.
5. f_c is declaring of channel frequency. Then the frequency error formula is $(f_c - f) / f_c \times 10^6$ ppm and the limit is less than ± 20 ppm (IEEE 802.11n specification).
6. The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value
7. Extreme temperature is $0^\circ\text{C} \sim 40^\circ\text{C}$.

4.7.4. Test Setup Layout



4.7.5. Test Deviation

There is no deviation with the original standard.

4.7.6. EUT Operation during Test

The EUT was programmed to be in continuously un-modulation transmitting mode.

4.7.7. Test Result of Frequency Stability

| | | | |
|----------------------|-------------|------------------|---------------|
| Temperature | 20°C | Humidity | 60% |
| Test Engineer | Lucas Huang | Test Date | Mar. 27, 2015 |

Mode: 20 MHz

Voltage vs. Frequency Stability

| Voltage | Measurement Frequency (MHz) | |
|----------------------|-----------------------------|-----------|
| | 5300 MHz | 5580 MHz |
| (V) | | |
| 126.50 | 5299.9600 | 5579.9600 |
| 110.00 | 5299.9500 | 5579.9600 |
| 93.50 | 5299.9600 | 5579.9500 |
| Max. Deviation (MHz) | 0.0500 | 0.0500 |
| Max. Deviation (ppm) | 9.43 | 8.96 |

Temperature vs. Frequency Stability

| Temperature | Measurement Frequency (MHz) | |
|----------------------|-----------------------------|-----------|
| | 5300 MHz | 5580 MHz |
| (°C) | | |
| 0 | 5300.0000 | 5580.0100 |
| 10 | 5300.0000 | 5580.0000 |
| 20 | 5299.9600 | 5579.9600 |
| 30 | 5299.9600 | 5579.9400 |
| 40 | 5299.9500 | 5579.9600 |
| Max. Deviation (MHz) | 0.0500 | 0.0600 |
| Max. Deviation (ppm) | 9.43 | 10.75 |

Mode: 40 MHz

Voltage vs. Frequency Stability

| Voltage | Measurement Frequency (MHz) | |
|----------------------|-----------------------------|-----------|
| | 5310 MHz | 5550 MHz |
| (V) | | |
| 126.50 | 5309.9600 | 5549.9600 |
| 110.00 | 5309.9600 | 5549.9400 |
| 93.50 | 5309.9700 | 5549.9600 |
| Max. Deviation (MHz) | 0.0400 | 0.0600 |
| Max. Deviation (ppm) | 7.53 | 10.81 |

Temperature vs. Frequency Stability

| Temperature | Measurement Frequency (MHz) | |
|----------------------|-----------------------------|-----------|
| | 5310 MHz | 5550 MHz |
| (°C) | | |
| 0 | 5310.0100 | 5550.0100 |
| 10 | 5310.0200 | 5550.0200 |
| 20 | 5309.9600 | 5549.9600 |
| 30 | 5309.9400 | 5549.9500 |
| 40 | 5309.9600 | 5549.9600 |
| Max. Deviation (MHz) | 0.060 | 0.050 |
| Max. Deviation (ppm) | 11.30 | 9.01 |

Mode: 80 MHz

Voltage vs. Frequency Stability

| Voltage | Measurement Frequency (MHz) | |
|----------------------|-----------------------------|-----------|
| | 5290 MHz | 5530 MHz |
| (V) | | |
| 126.50 | 5289.9600 | 5529.9100 |
| 110.00 | 5289.9700 | 5529.9600 |
| 93.50 | 5289.9600 | 5529.9700 |
| Max. Deviation (MHz) | 0.0400 | 0.0900 |
| Max. Deviation (ppm) | 7.56 | 16.27 |

Temperature vs. Frequency Stability

| Temperature | Measurement Frequency (MHz) | |
|----------------------|-----------------------------|-----------|
| | 5290 MHz | 5530 MHz |
| (°C) | | |
| 0 | 5290.0100 | 5530.0200 |
| 10 | 5290.0300 | 5530.0100 |
| 20 | 5289.9600 | 5529.9600 |
| 30 | 5289.9400 | 5529.9500 |
| 40 | 5289.9600 | 5529.9600 |
| Max. Deviation (MHz) | 0.0600 | 0.0500 |
| Max. Deviation (ppm) | 11.34 | 9.04 |

4.8. Antenna Requirements

4.8.1. Limit

Except for special regulations, the Low-power Radio-frequency Devices must not be equipped with any jacket for installing an antenna with extension cable. 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 the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed.

4.8.2. Antenna Connector Construction

Please refer to section 3.3 in this test report; antenna connector complied with the requirements.

5. LIST OF MEASURING EQUIPMENTS

| Instrument | Manufacturer | Model No. | Serial No. | Characteristics | Calibration Date | Remark |
|----------------------------------|---------------|------------------|---------------|------------------|------------------|-----------------------|
| EMI Test Receiver | R&S | ESCS 30 | 100355 | 9kHz ~ 2.75GHz | Apr. 12, 2013 | Conduction (CO01-CB) |
| LISN | F.C.C. | FCC-LISN-50-16-2 | 04083 | 150kHz ~ 100MHz | Nov. 26, 2012 | Conduction (CO01-CB) |
| V- LISN | Schwarzbeck | NSLK 8127 | 8127478 | 9kHz ~ 30MHz | Jul. 17, 2013 | Conduction (CO01-CB) |
| Impulsbegrenzer Pulse Limiter | Rohde&Schwarz | ESH3-Z2 | 100430 | 9kHz~30MHz | Feb. 21, 2013 | Conduction (CO01-CB) |
| COND Cable | Woken | Cable | 01 | 0.15MHz~30MHz | Dec. 04, 2012 | Conduction (CO01-CB) |
| Software | Audix | E3 | 5.410e | - | - | Conduction (CO01-CB) |
| BILOG ANTENNA | Schaffner | CBL6112D | 22021 | 20MHz ~ 2GHz | Apr. 16, 2013 | Radiation (O3CH01-CB) |
| Loop Antenna | Teseq | HLA 6120 | 24155 | 9 kHz - 30 MHz | Nov. 05, 2012* | Radiation (O3CH01-CB) |
| Horn Antenna | EMCO | 3115 | 00075790 | 750MHz ~ 18GHz | Oct. 28, 2014 | Radiation (O3CH01-CB) |
| Horn Antenna | Schwarzbeck | BBHA 9170 | BBHA9170252 | 15GHz ~ 40GHz | Aug. 22, 2014 | Radiation (O3CH01-CB) |
| Pre-Amplifier | Agilent | 8447D | 2944A10991 | 0.1MHz ~ 1.3GHz | Nov. 27, 2012 | Radiation (O3CH01-CB) |
| Pre-Amplifier | Agilent | 8449B | 3008A02310 | 1GHz ~ 26.5GHz | Jan. 12, 2015 | Radiation (O3CH01-CB) |
| Pre-Amplifier | WM | TF-130N-R1 | 923365 | 26GHz ~ 40GHz | Nov. 25, 2014 | Radiation (O3CH01-CB) |
| Spectrum Analyzer | R&S | FSP40 | 100056 | 9kHz ~ 40GHz | Nov. 06, 2014 | Radiation (O3CH01-CB) |
| EMI Test Receiver | R&S | ESCS 30 | 100355 | 9kHz ~ 2.75GHz | Apr. 12, 2013 | Radiation (O3CH01-CB) |
| Turn Table | INN CO | CO 2000 | N/A | 0 ~ 360 degree | N.C.R. | Radiation (O3CH01-CB) |
| Antenna Mast | INN CO | CO 2000 | N/A | 1 m ~ 4 m | N.C.R. | Radiation (O3CH01-CB) |
| RF Cable-low | Woken | Low Cable-1 | N/A | 30 MHz - 1 GHz | Nov. 18, 2012 | Radiation (O3CH01-CB) |
| RF Cable-high | Woken | High Cable-16 | N/A | 1 GHz ~ 18 GHz | Nov. 15, 2014 | Radiation (O3CH01-CB) |
| RF Cable-high | Woken | High Cable-17 | N/A | 1 GHz ~ 18 GHz | Nov. 15, 2014 | Radiation (O3CH01-CB) |
| RF Cable-high | Woken | High Cable-40G-1 | N/A | 1 GHz ~ 40 GHz | Nov. 15, 2014 | Radiation (O3CH01-CB) |
| RF Cable-high | Woken | High Cable-40G-2 | N/A | 1 GHz ~ 40 GHz | Nov. 15, 2014 | Radiation (O3CH01-CB) |
| Thermometer | HTC-1 | HTC-1 | TP-1 | -50°C~70°C | Mar. 11, 2015 | Radiation (O3CH01-CB) |
| Spectrum analyzer | R&S | FSV40 | 100979 | 9kHz~40GHz | Dec.12, 2014 | Conducted (TH01-CB) |
| Temp. and Humidity Chamber | Ten Billion | TTH-D3SP | TBN-931011 | -30~100 degree | Jun. 03, 2014 | Conducted (TH01-CB) |
| RF Cable-high | Woken | RG402 | High Cable-7 | 1 GHz – 26.5 GHz | Nov. 15, 2014 | Conducted (TH01-CB) |
| RF Cable-high | Woken | RG402 | High Cable-8 | 1 GHz – 26.5 GHz | Nov. 15, 2014 | Conducted (TH01-CB) |
| RF Cable-high | Woken | RG402 | High Cable-9 | 1 GHz – 26.5 GHz | Nov. 15, 2014 | Conducted (TH01-CB) |
| RF Cable-high | Woken | RG402 | High Cable-10 | 1 GHz – 26.5 GHz | Nov. 15, 2014 | Conducted (TH01-CB) |
| RF Cable-high | Woken | RG402 | High Cable-6 | 1 GHz – 26.5 GHz | Nov. 15, 2014 | Conducted (TH01-CB) |
| Power Sensor | Agilent | U2021XA | MY53410001 | 50MHz~18GHz | Nov. 03, 2014 | Conducted (TH01-CB) |

| Instrument | Manufacturer | Model No. | Serial No. | Characteristics | Calibration Date | Remark |
|-------------|--------------|-----------|------------|-----------------|------------------|---------------------|
| Thermometer | HTC-1 | HTC-1 | TP-8 | -50°C~70°C | Mar. 05, 2015 | Conducted (TH01-CB) |

Note: Calibration Interval of instruments listed above is one year.

N.C.R. means Non-Calibration required.

6. MEASUREMENT UNCERTAINTY

| Test Items | Uncertainty | Remark |
|--------------------------------------|-------------|--------------------------|
| Conducted Emission (150kHz ~ 30MHz) | 2.4 dB | Confidence levels of 95% |
| Radiated Emission (30MHz ~ 1,000MHz) | 3.6 dB | Confidence levels of 95% |
| Radiated Emission (1GHz ~ 18GHz) | 3.7 dB | Confidence levels of 95% |
| Radiated Emission (18GHz ~ 40GHz) | 3.5 dB | Confidence levels of 95% |
| Conducted Emission | 1.7 dB | Confidence levels of 95% |