

FCC TEST REPORT (WIFI)

for

NEXXT SOLUTIONS

Wireless Dual-band USB Adapter

Model Number: AULUB605U1

FCC ID: X4YLNX60AC

Prepared for : NEXXT SOLUTIONS

Address : 3505 N.W. 107th AVE. MIAMI FLORIDA 33178 U.S.A

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Report No. : 17KWE045423F

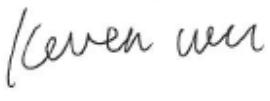
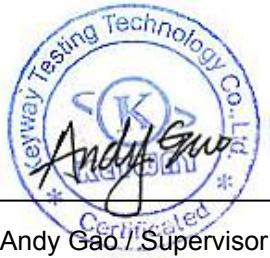
Date of Test : Apr. 25 ~ May. 4, 2017

Date of Report : May. 5, 2017

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Keyway Testing Technology Co., Ltd.

| | | | |
|---|--|---|------------------------|
| Applicant: | NEXXT SOLUTIONS | | |
| Address: | 3505 N.W. 107 th AVE. MIAMI FLORIDA 33178 U.S.A | | |
| Manufacturer: | YICHEN (Shenzhen) Technology Co., Ltd. | | |
| Address: | 6th Building, Yasen Industrial Park, Chengxin Road 8, Baolong Industrial Estate, Longgang District, Shenzhen, China. | | |
| E.U.T: | Wireless Dual-band USB Adapter | | |
| Model Number: | AULUB605U1 | | |
| Trade Name: | NEXXT | | |
| Date of Receipt: | Apr. 24, 2017 | Date of Test: | Apr. 25 ~ May. 4, 2017 |
| Test Specification: | FCC Part 15, Subpart 15.247: Oct. 1, 2016 ANSI C63.10:2013 KDB558074 D01 DTS Meas Guidance v03r05 | | |
| Test Result: | The equipment under test was found to be compliance with the requirements of the standards applied. | | |
| Issue Date: May. 5, 2017 | | | |
| Tested by: | Reviewed by: | Approved by: | |
|  |  |  | |
| Keven Wu / Engineer | Mark Li / Supervisor | Andy Gao / Supervisor | |
| Other Aspects: | None. | | |
| Abbreviations: OK/P=passed fail/F=failed n.a/N=not applicable E.U.T=equipment under tested | | | |
| <i>This test report is based on a single evaluation of one sample of above mentioned products. It is not permitted to be duplicated in extracts without written approval of Keyway Testing Technology Co., Ltd.</i> | | | |

1. TEST SUMMARY

| Test Items | Test Requirement | Result |
|----------------------------|----------------------------|--------|
| Conducted Emissions | 15.207 | PASS |
| Radiated Emissions | 15.205(a)/15.209/15.247(d) | PASS |
| 6dB&99% Bandwidth | 15.247(a)(2) | PASS |
| Power density | 15.247(e) | PASS |
| Maximum Peak Output Power | 15.247(b) | PASS |
| Duty Cycle | KDB558074 e6.0(b) | PASS |
| Emissions from out of band | 15.247(d) | PASS |
| Antenna Requirement | 15.203 | PASS |

2. GENERAL PRODUCT INFORMATION

2.1. Product Function

Refer to Technical Construction Form and User Manual.

2.2. Description of Device (EUT)

| | |
|----------------------------|--|
| Product Name: | Wireless Dual-band USB Adapter |
| Model No.: | AULUB605U1 |
| Operation Frequency: | 2412MHz~2462MHz (802.11b/802.11g/802.11n(HT20)) 2422MHz~2452MHz (802.11n(HT40)) |
| Channel numbers: | 11 for 802.11b/802.11g/802.11n(HT20) , 7 for 802.11n(HT40) |
| Modulation technology: | Direct Sequence Spread Spectrum (DSSS) for (IEEE 802.11b) Orthogonal Frequency Division Multiplexing(OFDM) for (IEEE 802.11g/802.11n) |
| Data speed (IEEE 802.11b): | 1Mbps, 2Mbps, 5.5Mbps, 11Mbps |
| Data speed (IEEE 802.11g): | 6Mbps, 9Mbps, 12Mbps, 18Mbps, 24Mbps, 36Mbps, 48Mbps, 54Mbps |
| Data speed (IEEE 802.11n): | Up to 150Mbps |
| Antenna Type: | PCB antenna |
| Antenna gain: | 1.0 dBi |
| Power supply: | DC 5V from PC |

2.3. Independent Operation Modes

The basic operation modes are:

2.3.1. EUT work WIFI TX mode, and frequency as below:

| | | |
|--------|---------------|-----------|
| Mode 1 | 802.11b | Frequency |
| | | 2412MHz |
| | | 2437MHz |
| | | 2462MHz |
| Mode 2 | 802.11g | 2412MHz |
| | | 2437MHz |
| | | 2462MHz |
| | | 2412MHz |
| Mode 3 | 802.11n(HT20) | 2437MHz |
| | | 2462MHz |
| | | 2422MHz |
| | | 2437MHz |
| Mode 4 | 802.11n(HT40) | 2452MHz |
| | | Link Mode |

Remark: 802.11b data speed:1Mbps, 2Mbps, 5.5Mbps, 11Mbps; 802.11g data speed:6Mbps, 9Mbps, 12Mbps, 18Mbps, 24Mbps, 36Mbps, 48Mbps, 54Mbps; 802.11n(HT20)/n(HT40) data speed:MCS0, MCS1,MCS2, MCS3, MCS4, MCS5, MCS6, MCS7. According to ANSI C63.10 standards, the test results only need to reflect the worst test case. The worst test case:1Mbps for 802.11b, 6Mbps for 802.11g, MCS0 for 802.11n(HT20)/n(HT40) and its data have been recorded in this report.

2.4. Test Supporting System

None.

2.5. Test Sites

2.5.1. Test Facilities

Lab Qualifications : Certificated by Industry Canada
 Registration No.: 9868A
 Date of registration: December 8, 2011

Certificated by FCC, USA
 Registration No.: 370994
 Date of registration: February 21, 2012

Certificated by CNAS China
 Registration No.: CNAS L5783
 Date of registration: August 8, 2012

2.6. List of Test and Measurement Instruments

2.6.1. For conducted emission at the mains terminals test

| Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Next Cal. |
|--------------------------|---------------|-----------|------------|------------|------------|
| EMI Test Receiver | Rohde&Schwarz | ESCI | 101156 | Apr. 08,17 | Apr. 08,18 |
| Artificial Mains Network | Rohde&Schwarz | ENV216 | 101315 | Apr. 08,17 | Apr. 08,18 |
| RF Cable | FUJIKURA | 3D-2W | 944 Cable | Apr. 08,17 | Apr. 08,18 |

2.6.2. For radiated emission test

| Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Next Cal. |
|---------------------------------------|---------------|---------------|--------------|------------|------------|
| EMI Test Receiver | Rohde&Schwarz | ESCI | 101156 | Apr. 08,17 | Apr. 08,18 |
| Bilog Antenna | ETS-LINDGREEN | 3142D | 135452 | Apr. 08,17 | Apr. 08,18 |
| Spectrum Analyzer | Agilent | E4411B | MY4511304 | Apr. 08,17 | Apr. 08,18 |
| 3m Semi-anechoic Chamber | ETS-LINDGREEN | 966 | KW01 | Apr. 08,17 | Apr. 08,18 |
| Signal Amplifier | SONOMA | 310 | 187016 | Apr. 08,17 | Apr. 08,18 |
| Signal Amplifier | Agilent | 8449B | 3008A00251 | Apr. 08,17 | Apr. 08,18 |
| RF Cable | IMRO | IMRO-400 | 966 Cable 1# | N/A | N/A |
| MULTI-DEVICE Controller | ETS-LINDGREEN | 2090 | 126913 | N/A | N/A |
| Horn Antenna | SCHWARZBECK | BBHA9170 | 9170-068 | Apr. 08,17 | Apr. 08,18 |
| Spectrum Analyzer | Agilent | E4408B | MY44211125 | Apr. 08,17 | Apr. 08,18 |
| High Pass filter | Micro | HPM50111 | 324216 | Apr. 08,17 | Apr. 08,18 |
| Constant temperature and humidity box | GF | GTH-800-40-1P | MAA9906-005 | Apr. 08,17 | Apr. 08,18 |
| Attenuation | MCE | 24-10-34 | BN9258 | Apr. 08,17 | Apr. 08,18 |
| Loop Antenna | ARA | PLA-1030/B | 1029 | Apr. 08,17 | Apr. 08,18 |
| Power Meter | Anritsu | ML2495A | 1204003 | Apr. 08,17 | Apr. 08,18 |
| Power Sensor | Anritsu | MA2411B | 1126150 | Apr. 08,17 | Apr. 08,18 |

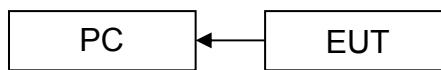
3. TEST SET-UP AND OPERATION MODES

3.1. Principle of Configuration Selection

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the Operating Instructions.

3.2. Block Diagram of Test Set-up

System Diagram of Connections between EUT and Simulators



(*EUT: Wireless Dual-band USB Adapter*)

3.3. Special Accessories and Auxiliary Equipment

Notebook
Manufacturer: Lenovo
M/N: Lenovo G475
S/N: GB14477457

3.4. Countermeasures to Achieve EMC Compliance

None.

4. EMISSION TEST RESULTS

4.1. Conducted Emission at the Mains Terminals Test

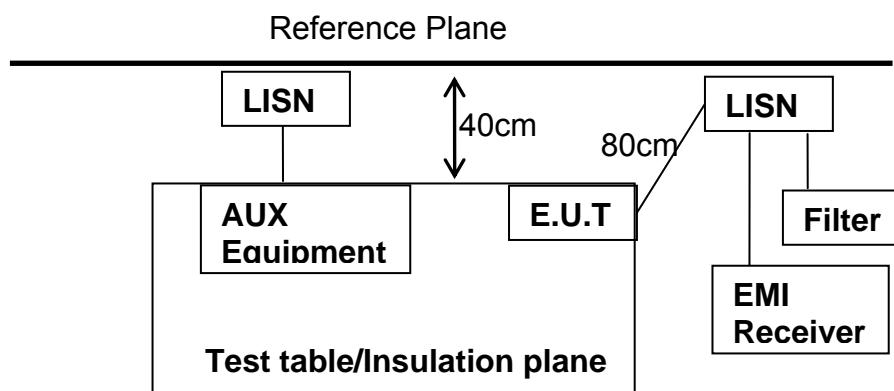
4.1.1. Limit 15.209 limits

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

NOTE: 1.The lower limit shall apply at the transition frequencies.
 2.The limit decreases linearly with the logarithm of the frequency in the range 0,15 MHz to 0,50 MHz.

4.1.2. Test Setup

- 1.The EUT was put on a wooden table which was 0.8 m high above the ground and connected to the AC mains through the Artificial Mains Network (AMN). Where the mains cable supplied by the manufacture was longer than 0.8 m, the excess was folded back and forth parallel to the cable at the center so as to form a bundle no longer than 0.4 m.
- 2.The EUT was kept 0.4 m from any other earthed conducting surface. Both sides of AC line were checked to find out the maximum conducted emission levels according to the test procedure during the conducted emission test.
- 3.The frequency range from 150 kHz to 30 MHz was investigated.
- 4.The bandwidth of the test receiver was set at 9 kHz.
- 5.Pretest for all mode, and the test data of the worst case condition(s) was reported on the following page.

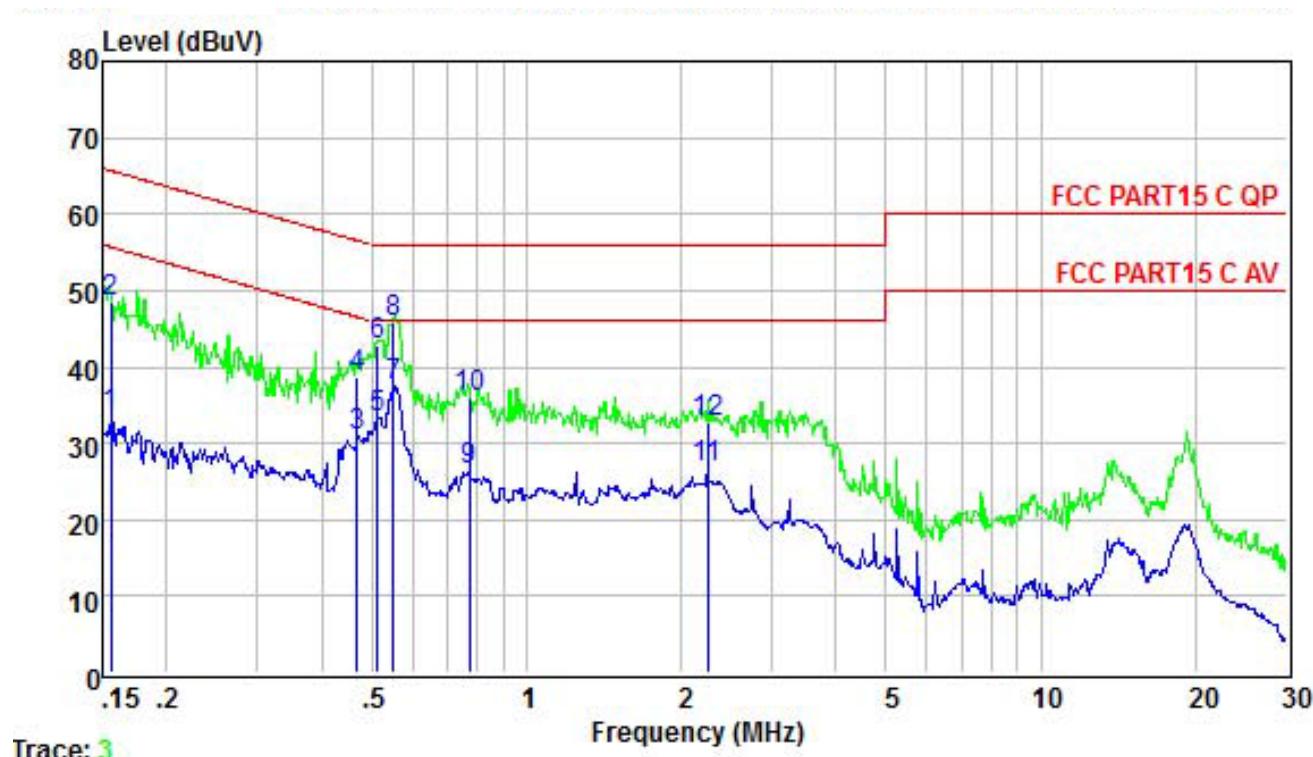


Remark: E.U.T. :Equipment Under Test

LISN: Line Impedance Stabilization Network

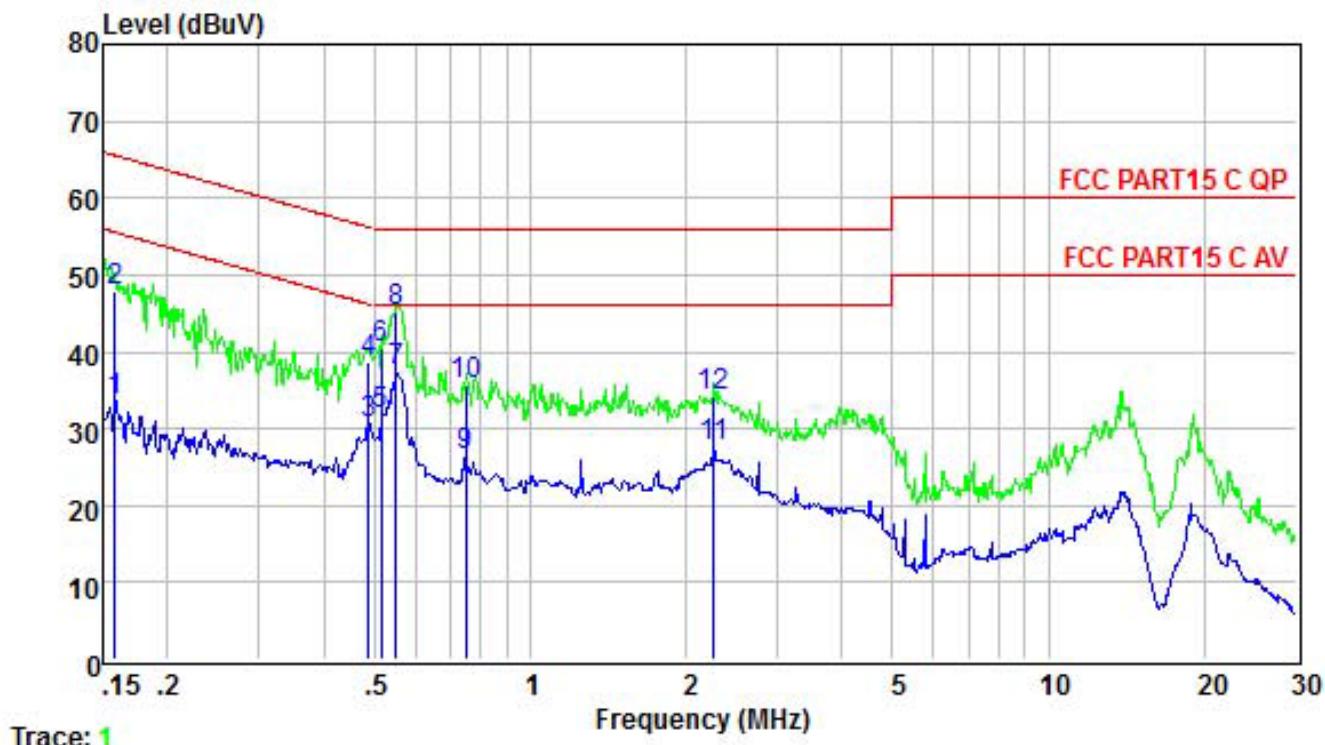
Test table height: 0.8m.

| | | | |
|----------------|--------------------------------|---------------------|------------|
| EUT : | Wireless Dual-band USB Adapter | Model Name : | AULUB605U1 |
| Temperature : | 26 °C | Relative Humidity : | 54% |
| Pressure : | 1010hPa | Phase : | L |
| Test Voltage : | DC 5V from PC AC 120V/60Hz | Test Mode : | Mode 5 |



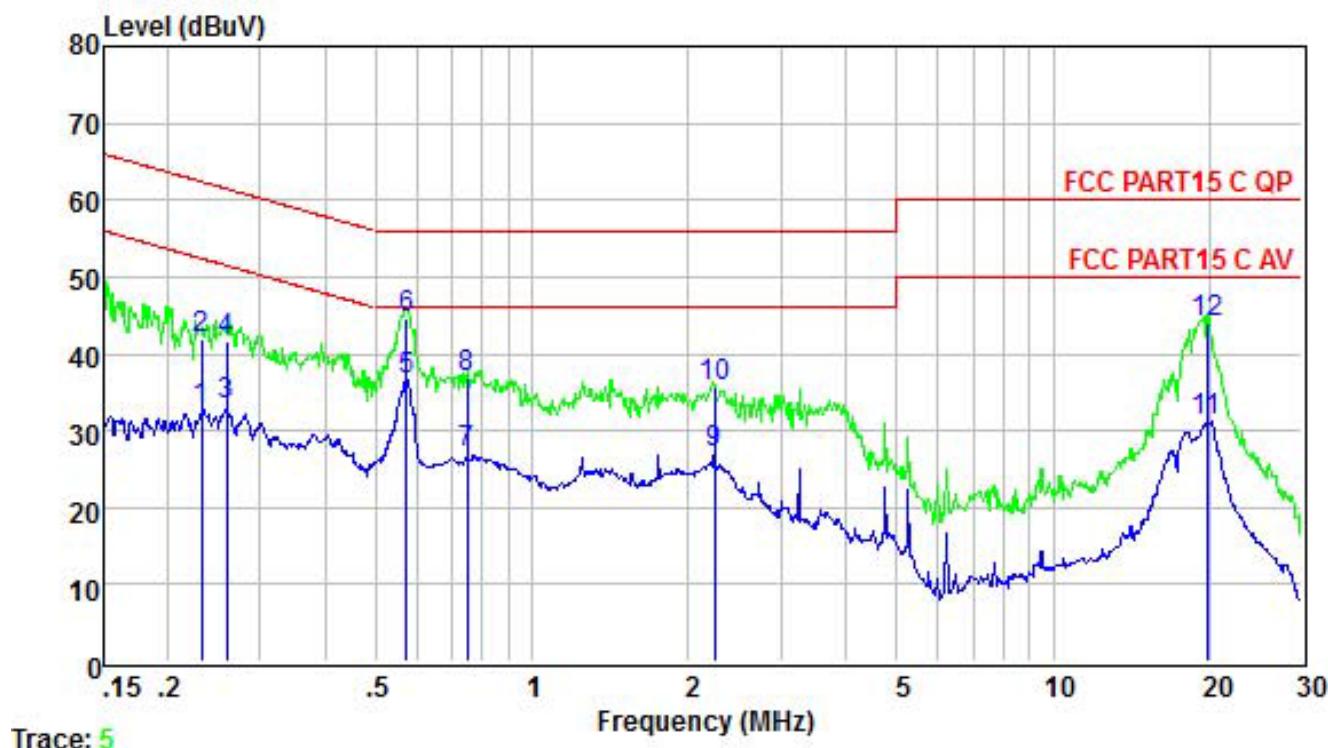
| Freq | Level | Limit | | Over Line Limit | Remark |
|------|-------|-------|-------|-----------------|---------|
| | | MHz | dBuV | dBuV | dB |
| 1 | 0.156 | 33.74 | 55.69 | -21.95 | Average |
| 2 | 0.156 | 48.60 | 65.69 | -17.09 | QP |
| 3 | 0.469 | 30.91 | 46.54 | -15.63 | Average |
| 4 | 0.469 | 38.60 | 56.54 | -17.94 | QP |
| 5 | 0.513 | 33.27 | 46.00 | -12.73 | Average |
| 6 | 0.513 | 42.80 | 56.00 | -13.20 | QP |
| 7 | 0.552 | 37.58 | 46.00 | -8.42 | Average |
| 8 | 0.552 | 45.70 | 56.00 | -10.30 | QP |
| 9 | 0.775 | 26.56 | 46.00 | -19.44 | Average |
| 10 | 0.775 | 35.90 | 56.00 | -20.10 | QP |
| 11 | 2.249 | 26.74 | 46.00 | -19.26 | Average |
| 12 | 2.249 | 32.70 | 56.00 | -23.30 | QP |

| | | | |
|----------------|--------------------------------|---------------------|------------|
| EUT : | Wireless Dual-band USB Adapter | Model Name : | AULUB605U1 |
| Temperature : | 26 °C | Relative Humidity : | 54% |
| Pressure : | 1010hPa | Phase : | N |
| Test Voltage : | DC 5V from PC AC 120V/60Hz | Test Mode : | Mode 5 |



| Freq | Level | Limit | | Over | Remark |
|------|-------|-------|-------|--------|---------|
| | | MHz | dBuV | Line | Limit |
| 1 | 0.158 | 33.60 | 55.56 | -21.96 | Average |
| 2 | 0.158 | 47.80 | 65.56 | -17.76 | QP |
| 3 | 0.489 | 30.72 | 46.19 | -15.47 | Average |
| 4 | 0.489 | 38.70 | 56.19 | -17.49 | QP |
| 5 | 0.516 | 31.96 | 46.00 | -14.04 | Average |
| 6 | 0.516 | 40.30 | 56.00 | -15.70 | QP |
| 7 | 0.552 | 37.37 | 46.00 | -8.63 | Average |
| 8 | 0.552 | 45.20 | 56.00 | -10.80 | QP |
| 9 | 0.751 | 26.48 | 46.00 | -19.52 | Average |
| 10 | 0.751 | 35.80 | 56.00 | -20.20 | QP |
| 11 | 2.261 | 27.65 | 46.00 | -18.35 | Average |
| 12 | 2.261 | 34.10 | 56.00 | -21.90 | QP |

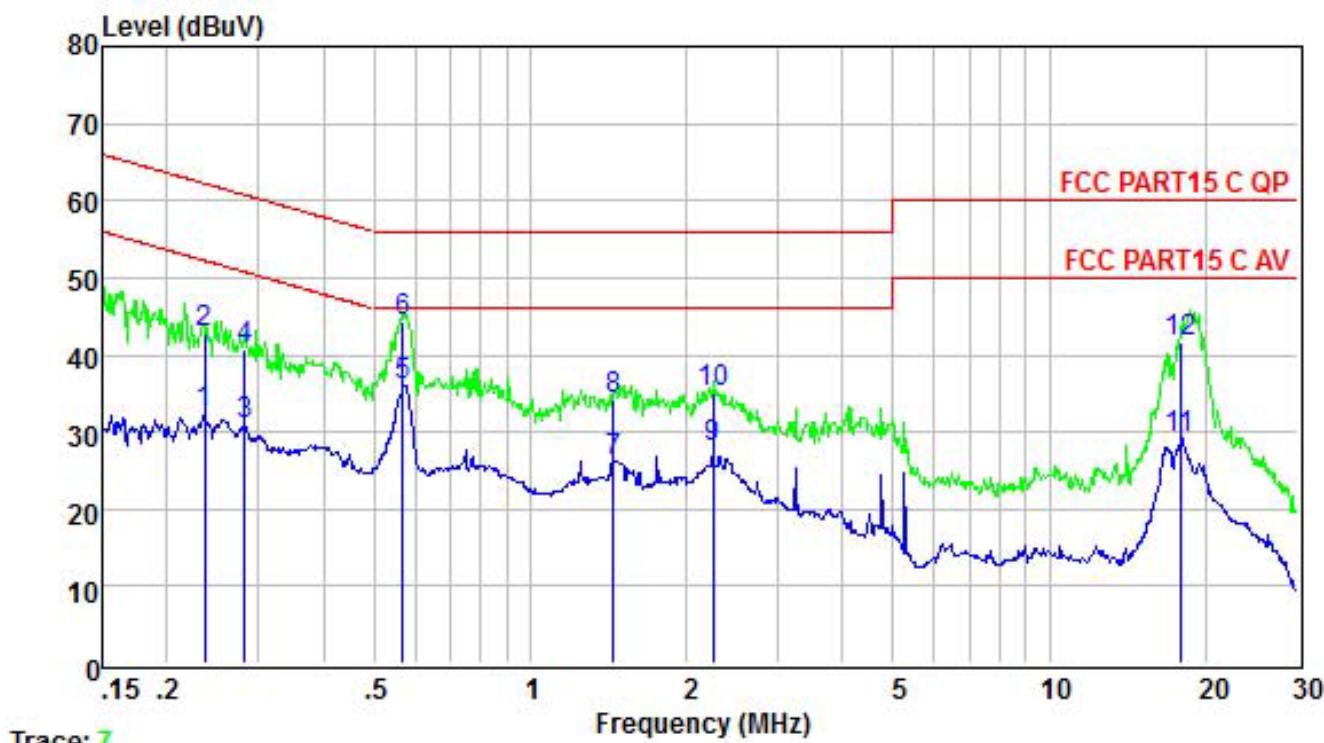
| | | | |
|----------------|--------------------------------|---------------------|------------|
| EUT : | Wireless Dual-band USB Adapter | Model Name : | AULUB605U1 |
| Temperature : | 26 °C | Relative Humidity : | 54% |
| Pressure : | 1010hPa | Phase : | L |
| Test Voltage : | DC 5V from PC AC 240V/60Hz | Test Mode : | Mode 5 |



| Freq | Level | Limit Line | Over Limit | Remark |
|------|-------|------------|------------|--------|
|------|-------|------------|------------|--------|

| | MHz | dBuV | dBuV | dB | |
|----|--------|-------|-------|--------|---------|
| 1 | 0.232 | 32.80 | 52.39 | -19.59 | Average |
| 2 | 0.232 | 41.90 | 62.39 | -20.49 | QP |
| 3 | 0.259 | 33.27 | 51.47 | -18.20 | Average |
| 4 | 0.259 | 41.70 | 61.47 | -19.77 | QP |
| 5 | 0.573 | 36.51 | 46.00 | -9.49 | Average |
| 6 | 0.573 | 44.70 | 56.00 | -11.30 | QP |
| 7 | 0.751 | 27.11 | 46.00 | -18.89 | Average |
| 8 | 0.751 | 36.90 | 56.00 | -19.10 | QP |
| 9 | 2.249 | 27.12 | 46.00 | -18.88 | Average |
| 10 | 2.249 | 35.70 | 56.00 | -20.30 | QP |
| 11 | 19.740 | 31.18 | 50.00 | -18.82 | Average |
| 12 | 19.740 | 43.90 | 60.00 | -16.10 | QP |

| | | | |
|----------------|--------------------------------|---------------------|------------|
| EUT : | Wireless Dual-band USB Adapter | Model Name : | AULUB605U1 |
| Temperature : | 26 °C | Relative Humidity : | 54% |
| Pressure : | 1010hPa | Phase : | N |
| Test Voltage : | DC 5V from PC AC 240V/60Hz | Test Mode : | Mode 5 |



| | Freq | Limit | Over | |
|--|-------|-------|-------|--------|
| | Level | Line | Limit | Remark |

| | Freq | Level | Limit | Over | |
|----|--------|-------|-------|--------|---------|
| | MHz | dBuV | dBuV | dB | |
| 1 | 0.237 | 32.34 | 52.22 | -19.88 | Average |
| 2 | 0.237 | 42.80 | 62.22 | -19.42 | QP |
| 3 | 0.282 | 31.07 | 50.76 | -19.69 | Average |
| 4 | 0.282 | 40.80 | 60.76 | -19.96 | QP |
| 5 | 0.567 | 35.99 | 46.00 | -10.01 | Average |
| 6 | 0.567 | 44.20 | 56.00 | -11.80 | QP |
| 7 | 1.449 | 26.12 | 46.00 | -19.88 | Average |
| 8 | 1.449 | 34.20 | 56.00 | -21.80 | QP |
| 9 | 2.249 | 28.10 | 46.00 | -17.90 | Average |
| 10 | 2.249 | 35.20 | 56.00 | -20.80 | QP |
| 11 | 17.849 | 29.16 | 50.00 | -20.84 | Average |
| 12 | 17.849 | 41.60 | 60.00 | -18.40 | QP |

4.2. Radiated Emission Test

4.2.1. Limit 15.209 limits

| Frequency MHz | Distance Meters | Filed Strengths Limit | |
|------------------|--------------------|---|----------|
| | | μV/m | dB(μV)/m |
| 30~88 | 3 | 100 | 40.0 |
| 88~216 | 3 | 150 | 43.5 |
| 216~960 | 3 | 200 | 46.0 |
| 960~1000 | 3 | 500 | 54.0 |
| Above 1000 | 3 | 74.0dB(μV)/m(Peak) 54.0dB(μV)/m(Average) | |

4.2.2. Restricted bands of operation

| MHz | MHz | MHz | GHz |
|-------------------|---------------------|---------------|-------------|
| 0.009-0.110 | 16.42-16.423 | 399.9-410 | 4.5-5.15 |
| 0.495-0.505 | 16.69475-16.69525 | 608-614 | 5.35-5.46 |
| 2.1735-2.1905 | 16.80425-16.80475 | 960-1240 | 7.25-7.75 |
| 4.125-4.128 | 25.5-25.67 | 1300-1427 | 8.025-8.5 |
| 4.17725-4.17775 | 37.5-38.25 | 1435-1626.5 | 9.0-9.2 |
| 4.20725-4.20775 | 73-74.6 | 1645.5-1646.5 | 9.3-9.5 |
| 6.215-6.218 | 74.8-75.2 | 1660-1710 | 10.6-12.7 |
| 6.26775-6.26825 | 108-121.94 | 1718.8-1722.2 | 13.25-13.4 |
| 6.31175-6.31225 | 123-138 | 2200-2300 | 14.47-14.5 |
| 8.291-8.294 | 149.9-150.05 | 2310-2390 | 15.35-16.2 |
| 8.362-8.366 | 156.52475-156.52525 | 2483.5-2500 | 17.7-21.4 |
| 8.37625-8.38675 | 156.7-156.9 | 2690-2900 | 22.01-23.12 |
| 8.41425-8.41475 | 162.0125-167.17 | 3260-3267 | 23.6-24.0 |
| 12.29-12.293 | 167.72-173.2 | 3332-3339 | 31.2-31.8 |
| 12.51975-12.52025 | 240-285 | 3345.8-3358 | 36.43-36.5 |
| 12.57675-12.57725 | 322-335.4 | 3600-4400 | |

All the emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

4.2.3. Test Setup

The EUT was placed on a turn table which was 0.8 m(above 1GHz, the high was 1.5m) above the ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was set 3 m away from the receiving antenna which was mounted on an antenna tower. The measuring antenna moved up and down to find out the maximum emission level. It moved from 1 m to 4 m for both horizontal and vertical polarizations.

The EUT was tested in the Chamber Site. It was pre-scanned with a Peak detector from the spectrum, and all the final readings from the test receiver were measured with the Quasi-Peak detector.

The bandwidth of the EMI test receiver is set at 120kHz for frequency range from 30MHz to 1000 MHz.

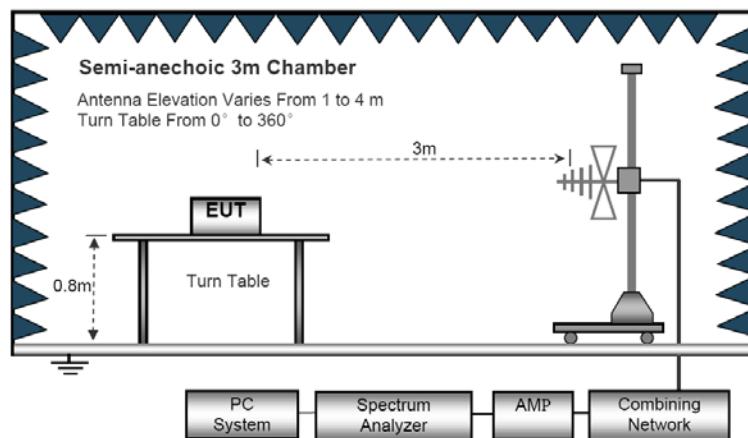
The bandwidth of the Spectrum's VBW is set at 3MHz and RBW is set at 1MHz for peak emissions measurement above 1GHz and 1MHz RBW, 10Hz VBW for average emissions measure above 1GHz, Both PK and AV measure, PK detector is used.

The frequency range from 30MHz to 10th harmonic (25GHz) are checked. And no any emissions were found from 18GHz to 25 GHz, so the radiated emissions from 18GHz to 25GHz were not record.

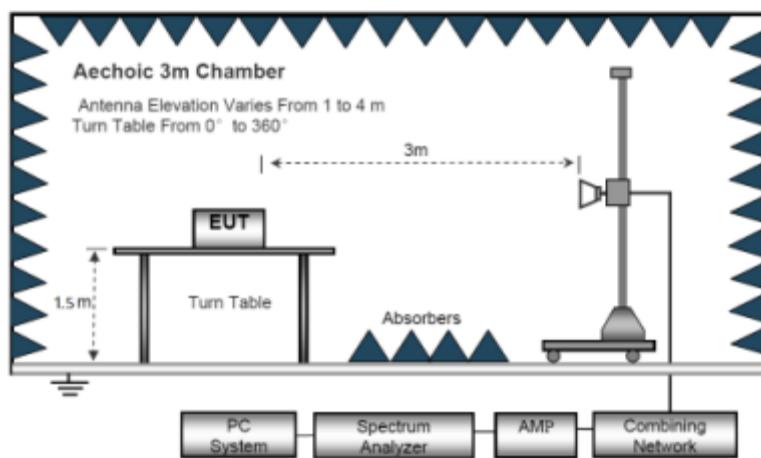
- Notes:
1. Emission Level = Antenna Factor + Cable Loss + Meter Reading+Preamp Factor.
 2. Measurement Uncertainty: ± 3.2 dB at a level of confidence of 95%.
 3. For emissions above 1GHz, if peak level comply with average limit, then the average level is deemed to comply with average limit.
 4. For emissions below 1GHz, pretest for all mode, The test data of the worst case condition(s) was reported on the following pages.
 5. For Both PK and AV value above 1GHz, PK detector is used.
 6. EUT Pre-scan X/Y/Z orientation, only worst case is presented in the report (X orientation).

Radiated Emission Test-Up

Below 1GHz



Above 1GHz



| | | | |
|----------------|--------------------------------|---------------------|------------|
| EUT : | Wireless Dual-band USB Adapter | Model Name : | AULUB605U1 |
| Temperature : | 20 °C | Relative Humidity : | 48% |
| Pressure : | 1010hPa | Test Mode : | Mode 5 |
| Test Voltage : | DC 5V from PC AC 120V/60Hz | | |

Below 30MHz

| Freq. (MHz) | Reading (dBuV/m) | Limit (dBuV/m) | Margin (dB) | State P/F |
|----------------|---------------------|-------------------|----------------|--------------|
| -- | -- | -- | -- | P |
| -- | -- | -- | -- | P |

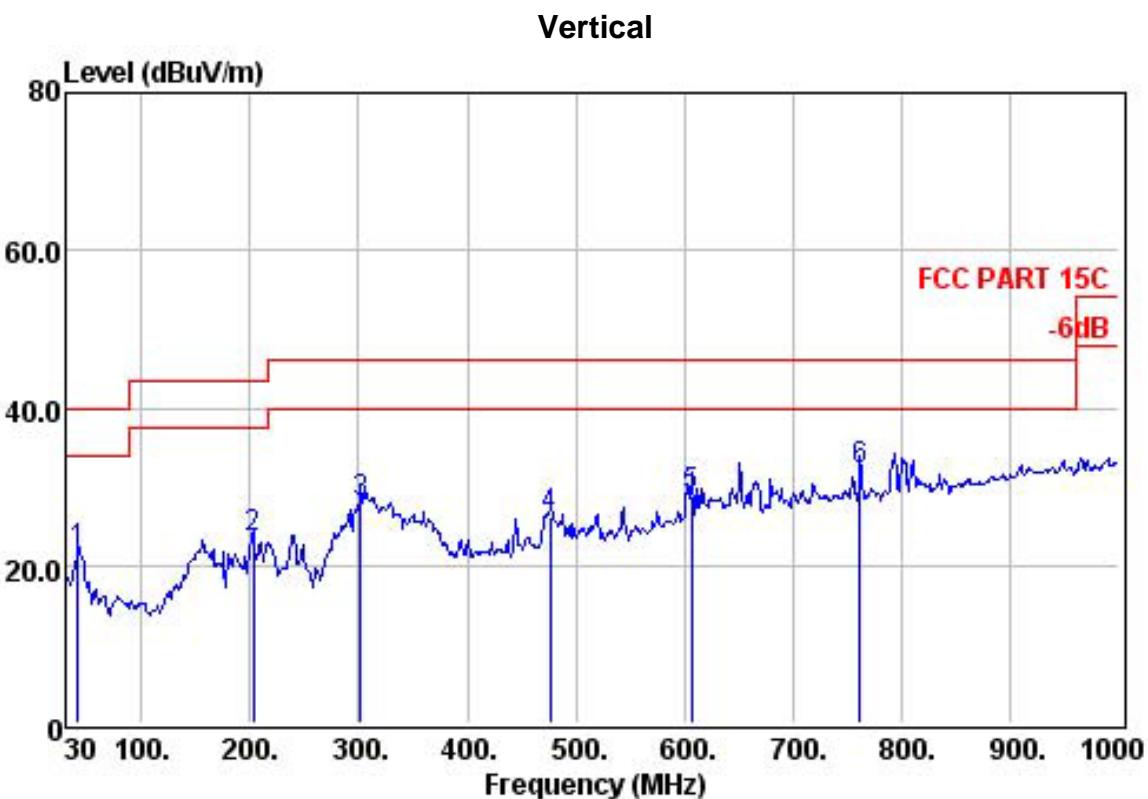
Note:

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

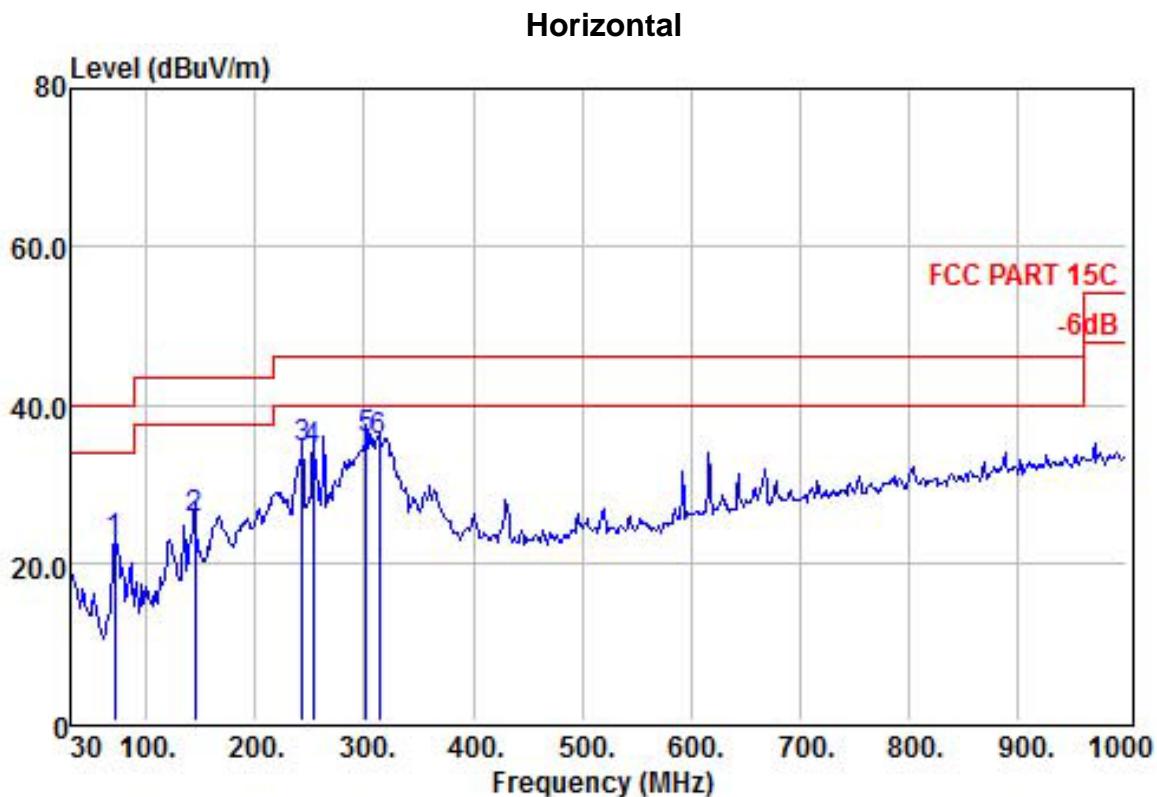
Distance extrapolation factor = $40 \log (\text{specific distance}/\text{test distance})$ (dB);

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

| Below 1GHz | | | |
|-------------------|--------------------------------|---------------------|---------------------|
| EUT : | Wireless Dual-band USB Adapter | Model Name : | AULUB605U1 |
| Temperature : | 20 °C | Relative Humidity : | 48% |
| Pressure : | 1010hPa | Test Mode : | Mode 1 TX Channel 1 |
| Test Voltage : | DC 5V from PC | | |



| Freq | Preamp Factor | ReadAntenna Level | | Cable Loss | | Limit Level | Line Limit | Over Remark |
|------|---------------|-------------------|-------|------------|------|-------------|------------|-------------|
| | | MHz | dB | dBuV | dB/m | | | |
| 1 | 41.64 | 31.38 | 40.26 | 12.23 | 0.56 | 21.67 | 40.00 | -18.33 QP |
| 2 | 202.66 | 31.09 | 42.08 | 11.13 | 1.46 | 23.58 | 43.50 | -19.92 QP |
| 3 | 301.60 | 30.92 | 43.19 | 13.84 | 1.94 | 28.05 | 46.00 | -17.95 QP |
| 4 | 476.20 | 30.60 | 35.68 | 18.32 | 2.69 | 26.09 | 46.00 | -19.91 QP |
| 5 | 607.15 | 30.59 | 35.18 | 20.80 | 3.38 | 28.77 | 46.00 | -17.23 QP |
| 6 | 762.35 | 30.65 | 35.81 | 22.75 | 4.12 | 32.03 | 46.00 | -13.97 QP |



| Freq | Preamp | Read | Antenna | Cable | Limit | Over | Line | Limit | Remark |
|------|--------|--------|---------|--------|-------|--------|--------|--------|--------|
| | Freq | Factor | Level | Factor | | | | | |
| | MHz | dB | dBuV | dB/m | dB | dBuV/m | dBuV/m | dB | |
| 1 | 30.00 | 31.41 | 29.00 | 18.80 | 0.56 | 16.95 | 40.00 | -23.05 | QP |
| 2 | 185.20 | 31.14 | 44.72 | 10.24 | 1.39 | 25.21 | 43.50 | -18.29 | QP |
| 3 | 209.45 | 31.08 | 43.34 | 11.45 | 1.53 | 25.24 | 43.50 | -18.26 | QP |
| 4 | 238.55 | 30.94 | 43.78 | 12.58 | 1.61 | 27.03 | 46.00 | -18.97 | QP |
| 5 | 284.14 | 30.94 | 46.94 | 13.29 | 1.87 | 31.16 | 46.00 | -14.84 | QP |
| 6 | 301.60 | 30.92 | 47.76 | 13.84 | 1.94 | 32.62 | 46.00 | -13.38 | QP |

Note: 1. Absolute Level= Reading Level + Antenna Factor + Cable Loss - Preamp Factor,
 2. Over Limit= Absolute Level – Limit;
 3. "802.11b" mode is the worst mode, only the worst case is presented in the report .

| Above 1GHz | | | | |
|-------------------|--------------------------------|--|---------------------|------------|
| EUT : | Wireless Dual-band USB Adapter | | Model Name : | AULUB605U1 |
| Temperature : | 20 °C | | Relative Humidity : | 48% |
| Pressure : | 1010hPa | | Test Mode : | Mode 1 |
| Test Voltage : | DC 5V from PC | | | |

| Polar (H/V) | Frequency | Meter Reading | Antenna Factor | Cable loss | Preamplifier factor | Emission Level | Limits | Margin | Remark |
|----------------|-----------|------------------|-------------------|---------------|------------------------|-------------------|----------|--------|---------|
| | (MHz) | (dBuV) | (dB) | (dB) | (dB) | (dBuV/m) | (dBuV/m) | (dB) | |
| TX-2412 | | | | | | | | | |
| V | 4824 | 30.68 | 31.99 | 12.01 | 27.50 | 47.18 | 54 | -6.82 | Average |
| V | 4824 | 43.12 | 31.99 | 12.01 | 27.50 | 59.62 | 74 | -14.38 | Peak |
| V | 7236 | 35.37 | 25.31 | 16.61 | 27.95 | 49.34 | 74 | -24.66 | Peak |
| H | 4824 | 30.45 | 31.99 | 12.01 | 27.50 | 46.95 | 54 | -7.05 | Average |
| H | 4824 | 42.53 | 31.99 | 12.01 | 27.50 | 59.03 | 74 | -14.97 | Peak |
| H | 7236 | 36.68 | 25.31 | 16.61 | 27.95 | 50.65 | 74 | -23.35 | Peak |
| TX-2437 | | | | | | | | | |
| V | 4874 | 31.48 | 32.11 | 12.14 | 27.53 | 48.2 | 54 | -5.8 | Average |
| V | 4874 | 42.79 | 32.11 | 12.14 | 27.53 | 59.51 | 74 | -14.49 | Peak |
| V | 7311 | 36.35 | 24.32 | 16.62 | 27.96 | 49.33 | 74 | -24.67 | Peak |
| H | 4874 | 31.37 | 32.11 | 12.14 | 27.53 | 48.09 | 54 | -5.91 | Average |
| H | 4874 | 41.23 | 32.11 | 12.14 | 27.53 | 57.95 | 74 | -16.05 | Peak |
| H | 7311 | 36.25 | 24.32 | 16.62 | 27.96 | 49.23 | 74 | -24.77 | Peak |
| TX-2462 | | | | | | | | | |
| V | 4924 | 30.12 | 32.23 | 12.28 | 27.56 | 47.07 | 54 | -6.93 | Average |
| V | 4924 | 42.46 | 32.23 | 12.28 | 27.56 | 59.41 | 74 | -14.59 | Peak |
| V | 7386 | 35.23 | 24.36 | 16.62 | 27.98 | 48.23 | 74 | -25.77 | Peak |
| H | 4924 | 29.77 | 32.23 | 12.28 | 27.56 | 46.72 | 54 | -7.28 | Average |
| H | 4924 | 41.53 | 32.23 | 12.28 | 27.56 | 58.48 | 74 | -15.52 | Peak |
| H | 7386 | 36.51 | 24.36 | 16.62 | 27.98 | 49.51 | 74 | -24.49 | Peak |

Note: 1.“802.11b” mode is the worst mode.

2.When PK value is lower than the Average value limit, average didn't record.

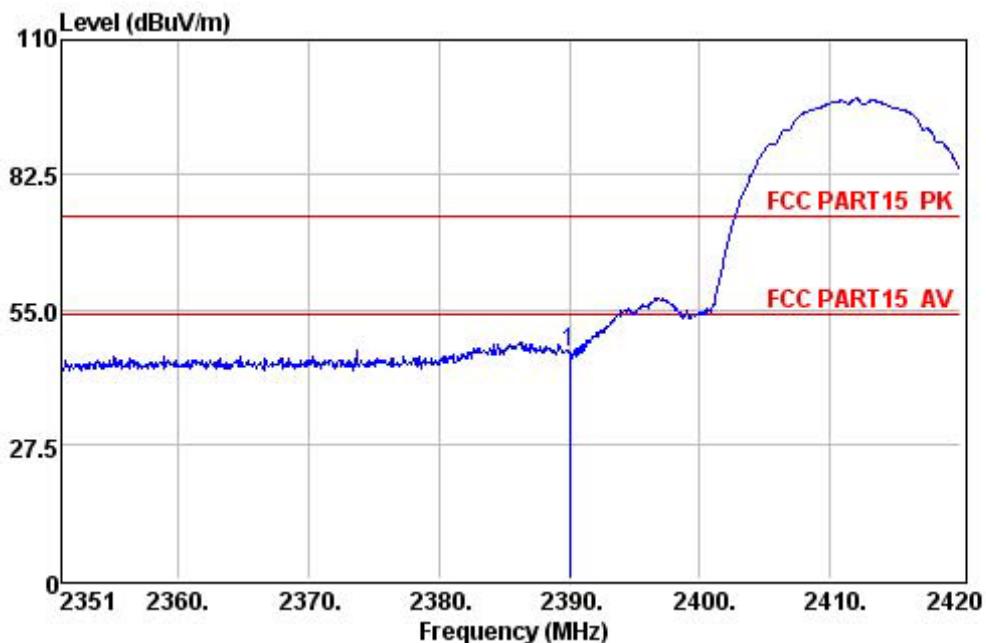
3.The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has not to be reported.

Spurious Emission in Restricted Band (1-25G) :

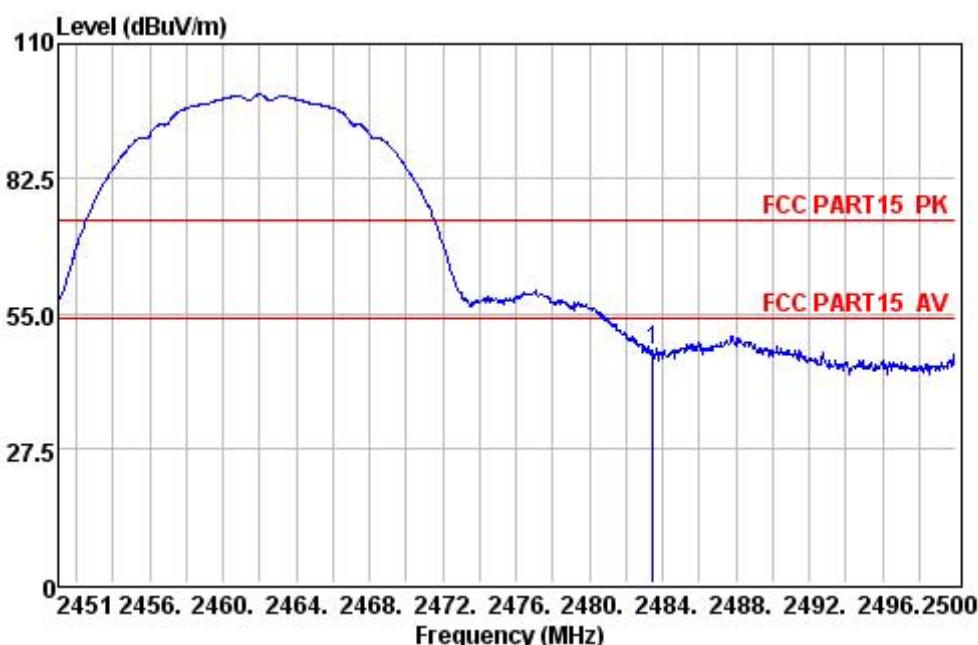
All the modulation modes have been tested and all other emissions more than 20dB below the limit, the worst result was report as below:

| Polar (H/V) | Frequency (MHz) | Meter Reading | Antenna Factor | Cable loss | Preamp factor | Emission Level | Limits | Margin | Detector Type |
|----------------------|--------------------|------------------|-------------------|---------------|------------------|-------------------|----------|--------|------------------|
| | | (dBuV) | (dB) | (dB) | (dB) | (dBuV/m) | (dBuV/m) | (dB) | |
| 802.11b | | | | | | | | | |
| V | 3264 | 30.56 | 30.26 | 9.96 | 26.63 | 44.15 | 74 | -29.85 | Pk |
| H | 3264 | 31.36 | 30.26 | 9.96 | 26.63 | 44.95 | 74 | -29.05 | PK |
| V | 3336 | 31.13 | 30.33 | 9.96 | 26.66 | 44.76 | 74 | -29.24 | Pk |
| H | 3336 | 30.45 | 30.33 | 9.96 | 26.66 | 44.08 | 74 | -29.92 | PK |
| V | 4100 | 33.72 | 31.64 | 10.61 | 27.06 | 48.91 | 74 | -25.09 | Pk |
| H | 4100 | 32.48 | 31.64 | 10.61 | 27.06 | 47.67 | 74 | -26.33 | PK |
| V | 11764 | 32.68 | 26.64 | 17.32 | 28.98 | 47.66 | 74 | -26.34 | Pk |
| H | 11764 | 32.21 | 26.64 | 17.32 | 28.98 | 47.19 | 74 | -26.81 | PK |
| V | 17732 | 31.53 | 26.27 | 22.01 | 30.39 | 49.42 | 74 | -24.58 | Pk |
| H | 17732 | 31.56 | 26.27 | 22.01 | 30.39 | 49.45 | 74 | -24.55 | PK |
| 802.11g | | | | | | | | | |
| V | 3264 | 32.23 | 30.26 | 9.96 | 26.63 | 45.82 | 74 | -28.18 | Pk |
| H | 3264 | 31.58 | 30.26 | 9.96 | 26.63 | 45.17 | 74 | -28.83 | PK |
| V | 3336 | 31.48 | 30.33 | 9.96 | 26.66 | 45.11 | 74 | -28.89 | Pk |
| H | 3336 | 30.63 | 30.33 | 9.96 | 26.66 | 44.26 | 74 | -29.74 | PK |
| V | 4100 | 32.86 | 31.64 | 10.61 | 27.06 | 48.05 | 74 | -25.95 | Pk |
| H | 4100 | 31.53 | 31.64 | 10.61 | 27.06 | 46.72 | 74 | -27.28 | PK |
| V | 11764 | 30.23 | 26.64 | 17.32 | 28.98 | 45.21 | 74 | -28.79 | Pk |
| H | 11764 | 31.65 | 26.64 | 17.32 | 28.98 | 46.63 | 74 | -27.37 | PK |
| V | 17732 | 31.53 | 26.27 | 22.01 | 30.39 | 49.42 | 74 | -24.58 | Pk |
| H | 17732 | 31.78 | 26.27 | 22.01 | 30.39 | 49.67 | 74 | -24.33 | PK |
| 802.11n(HT20) | | | | | | | | | |
| V | 3264 | 30.53 | 30.26 | 9.96 | 26.63 | 44.12 | 74 | -29.88 | Pk |
| H | 3264 | 30.66 | 30.26 | 9.96 | 26.63 | 44.25 | 74 | -29.75 | PK |
| V | 3336 | 32.85 | 30.33 | 9.96 | 26.66 | 46.48 | 74 | -27.52 | Pk |
| H | 3336 | 32.56 | 30.33 | 9.96 | 26.66 | 46.19 | 74 | -27.81 | PK |
| V | 4100 | 33.83 | 31.64 | 10.61 | 27.06 | 49.02 | 74 | -24.98 | Pk |
| H | 4100 | 31.42 | 31.64 | 10.61 | 27.06 | 46.61 | 74 | -27.39 | PK |
| V | 11764 | 32.85 | 26.64 | 17.32 | 28.98 | 47.83 | 74 | -26.17 | Pk |
| H | 11764 | 32.76 | 26.64 | 17.32 | 28.98 | 47.74 | 74 | -26.26 | PK |
| V | 17732 | 30.36 | 26.27 | 22.01 | 30.39 | 48.25 | 74 | -25.75 | Pk |
| H | 17732 | 30.62 | 26.27 | 22.01 | 30.39 | 48.51 | 74 | -25.49 | PK |
| 802.11n(HT40) | | | | | | | | | |
| V | 3264 | 31.34 | 30.26 | 9.96 | 26.63 | 44.93 | 74 | -29.07 | Pk |
| H | 3264 | 31.85 | 30.26 | 9.96 | 26.63 | 45.44 | 74 | -28.56 | PK |
| V | 3336 | 31.28 | 30.33 | 9.96 | 26.66 | 44.91 | 74 | -29.09 | Pk |
| H | 3336 | 32.25 | 30.33 | 9.96 | 26.66 | 45.88 | 74 | -28.12 | PK |
| V | 4100 | 32.45 | 31.64 | 10.61 | 27.06 | 47.64 | 74 | -26.36 | Pk |
| H | 4100 | 31.45 | 31.64 | 10.61 | 27.06 | 46.64 | 74 | -27.36 | PK |
| V | 11764 | 31.56 | 26.64 | 17.32 | 28.98 | 46.54 | 74 | -27.46 | Pk |
| H | 11764 | 31.42 | 26.64 | 17.32 | 28.98 | 46.4 | 74 | -27.6 | PK |
| V | 17732 | 30.57 | 26.27 | 22.01 | 30.39 | 48.46 | 74 | -25.54 | Pk |
| H | 17732 | 29.78 | 26.27 | 22.01 | 30.39 | 47.67 | 74 | -26.33 | PK |

If the PK measured levels comply with average limit, then the average level were deemed to comply with average limit.

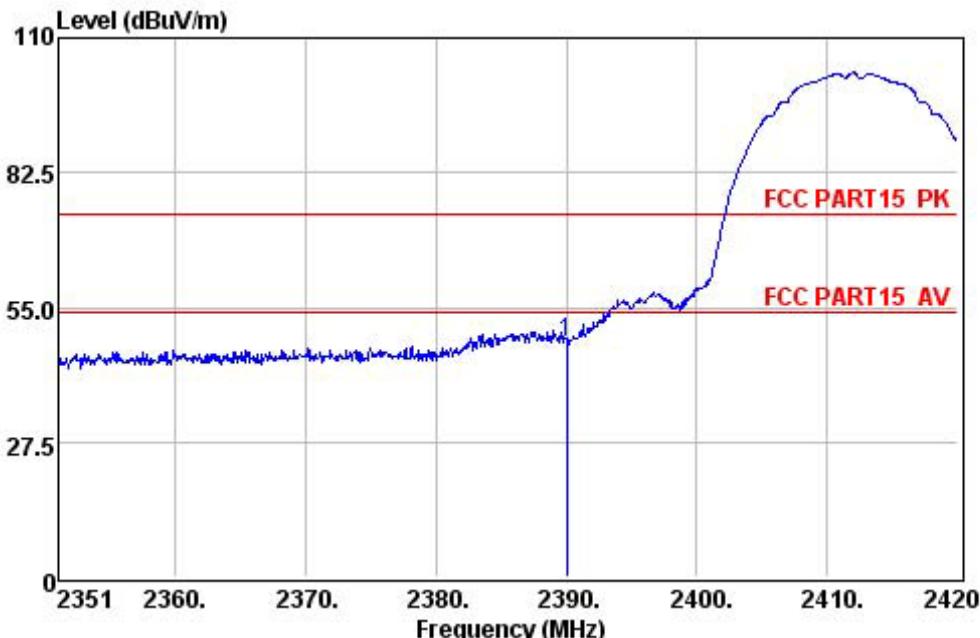
Spurious Emission in Band Edge:**802.11b - Vertical**

| | Preamp Freq Factor | ReadAntenna Level Factor | Cable Loss | Limit Level | Over Line | Over Limit | Remark |
|---|-----------------------|-----------------------------|---------------|----------------|--------------|---------------|-------------------|
| | MHz | dB | dBuV | dB/m | dB | dBuV/m | dB |
| 1 | 2390.00 | 26.32 | 43.67 | 28.72 | 0.00 | 46.07 | 74.00 -27.93 Peak |

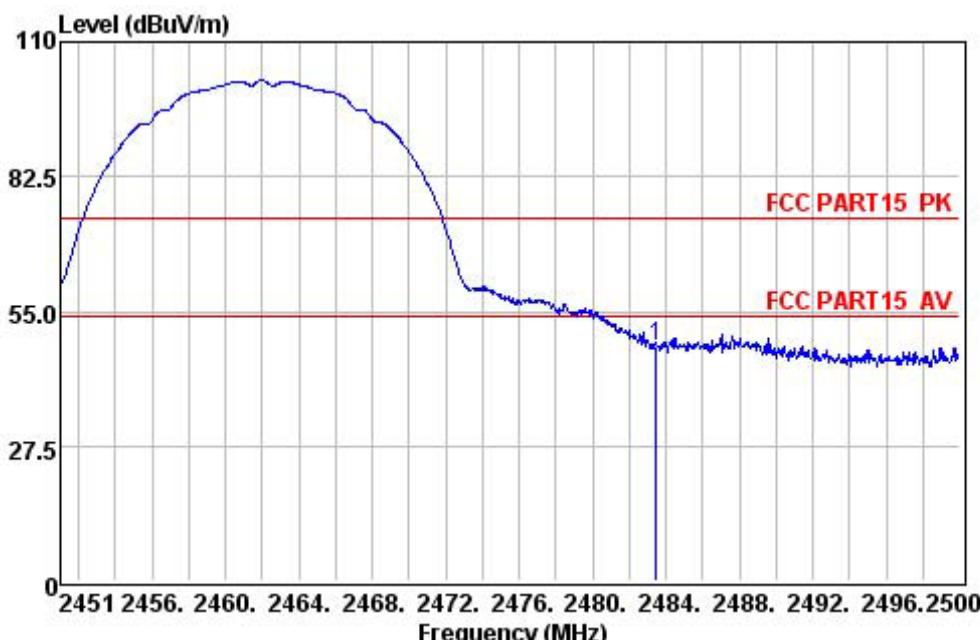


| | Preamp Freq Factor | ReadAntenna Level Factor | Cable Loss | Limit Level | Over Line | Over Limit | Remark |
|---|-----------------------|-----------------------------|---------------|----------------|--------------|---------------|-------------------|
| | MHz | dB | dBuV | dB/m | dB | dBuV/m | dB |
| 1 | 2483.50 | 26.34 | 44.97 | 28.79 | 0.00 | 47.42 | 74.00 -26.58 Peak |

802.11b - Horizontal

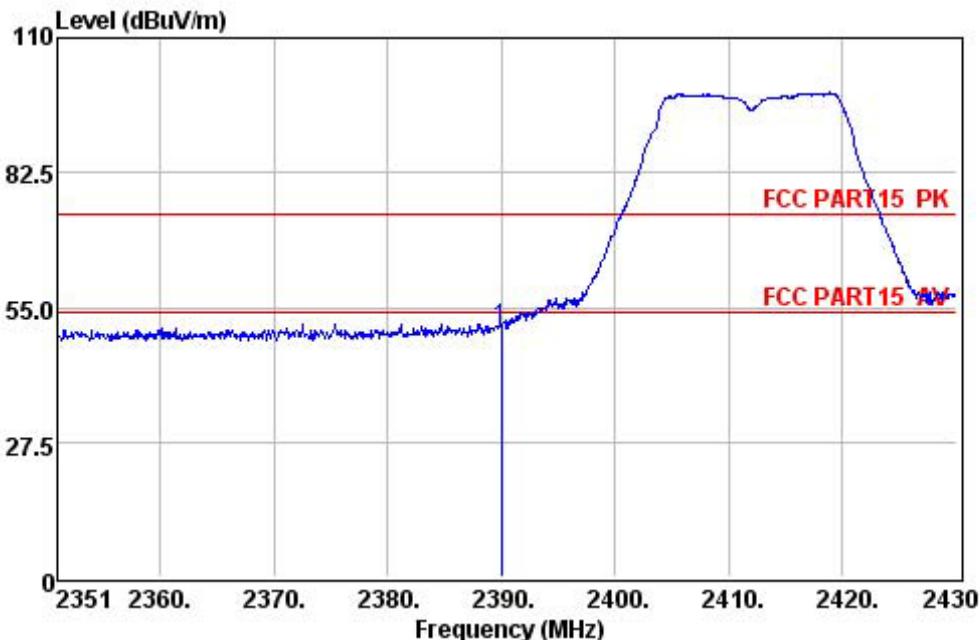


| | Preamp Freq | ReadAntenna Level Factor | Cable Loss | Limit Level | Over Line | Over Limit | Remark | |
|---|----------------|-----------------------------|------------------|----------------|--------------|---------------------|---------------------|-------------|
| | MHz | dB | dB _{UV} | dB/m | dB | dB _{UV} /m | dB _{UV} /m | dB |
| 1 | 2390.00 | 26.32 | 45.57 | 28.72 | 0.00 | 47.97 | 74.00 | -26.03 Peak |

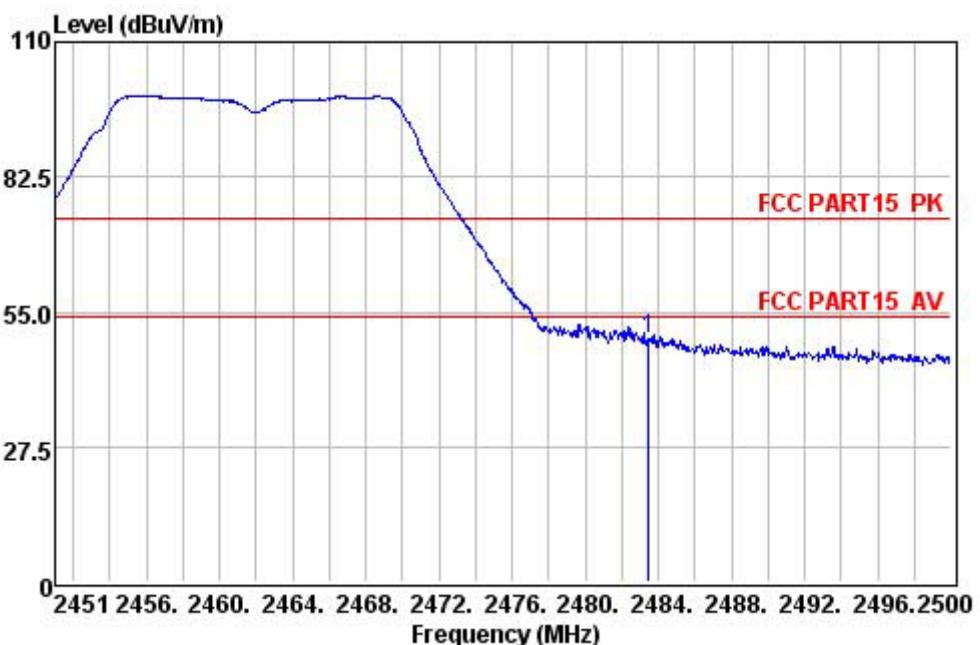


| | Preamp Freq | ReadAntenna Level Factor | Cable Loss | Limit Level | Over Line | Over Limit | Remark | |
|---|----------------|-----------------------------|------------------|----------------|--------------|---------------------|---------------------|-------------|
| | MHz | dB | dB _{UV} | dB/m | dB | dB _{UV} /m | dB _{UV} /m | dB |
| 1 | 2483.50 | 26.34 | 45.35 | 28.79 | 0.00 | 47.80 | 74.00 | -26.20 Peak |

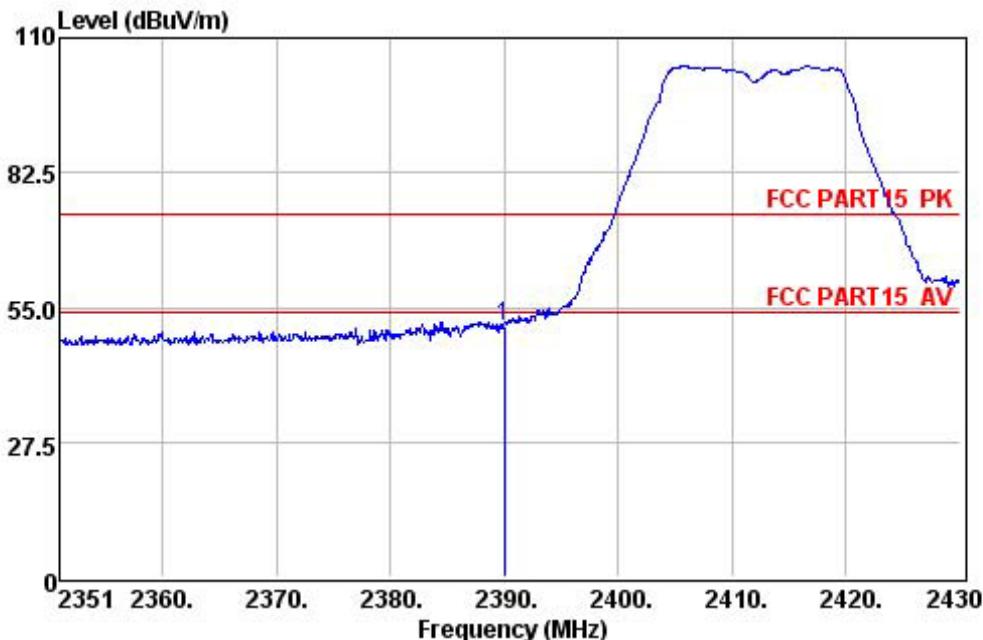
802.11g - Vertical



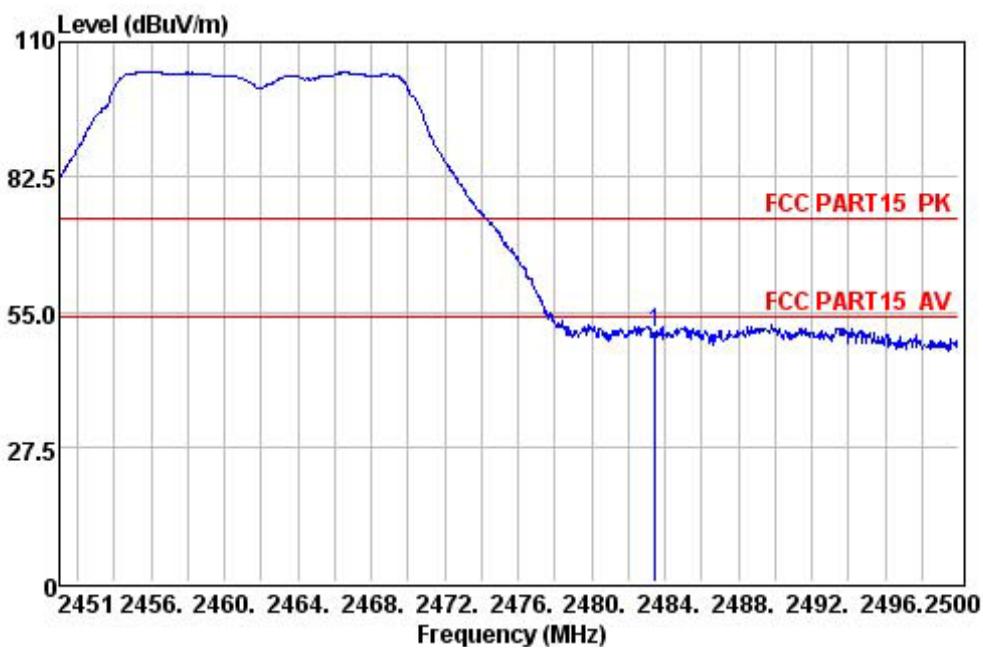
| | Preamp Freq Factor | ReadAntenna Level Factor | Cable Loss | Limit Level | Line Level | Over Limit | Remark | |
|---|-----------------------|-----------------------------|---------------|----------------|---------------|---------------|--------|-------------|
| | MHz | dB | dBuV | dB/m | dB | dBuV/m | dBuV/m | dB |
| 1 | 2390.00 | 26.32 | 48.23 | 28.72 | 0.00 | 50.63 | 74.00 | -23.37 Peak |



| | Preamp Freq Factor | ReadAntenna Level Factor | Cable Loss | Limit Level | Line Level | Over Limit | Remark | |
|---|-----------------------|-----------------------------|---------------|----------------|---------------|---------------|--------|-------------|
| | MHz | dB | dBuV | dB/m | dB | dBuV/m | dBuV/m | dB |
| 1 | 2483.50 | 26.34 | 46.85 | 28.79 | 0.00 | 49.30 | 74.00 | -24.70 Peak |

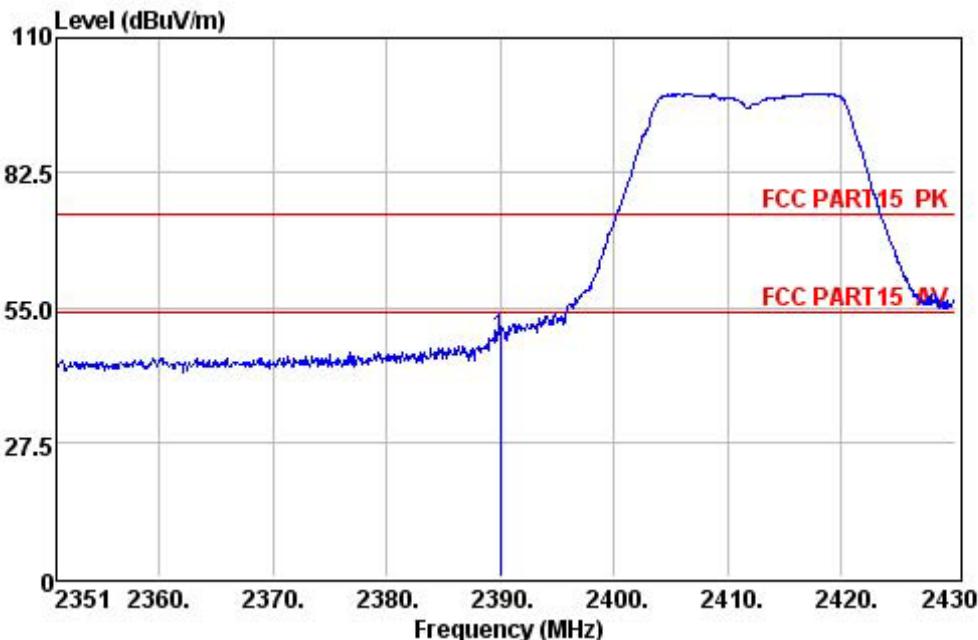
802.11g - Horizontal

| | Preamp Freq | Read Level | Antenna Factor | Cable Loss | Limit Level | Line Limit | Over Limit | Remark |
|---|----------------|---------------|-------------------|---------------|----------------|---------------|---------------|-------------|
| | MHz | dB | dBuV | dB/m | dB | dBuV/m | dBuV/m | dB |
| 1 | 2390.00 | 26.32 | 48.52 | 28.72 | 0.00 | 50.92 | 74.00 | -23.08 Peak |

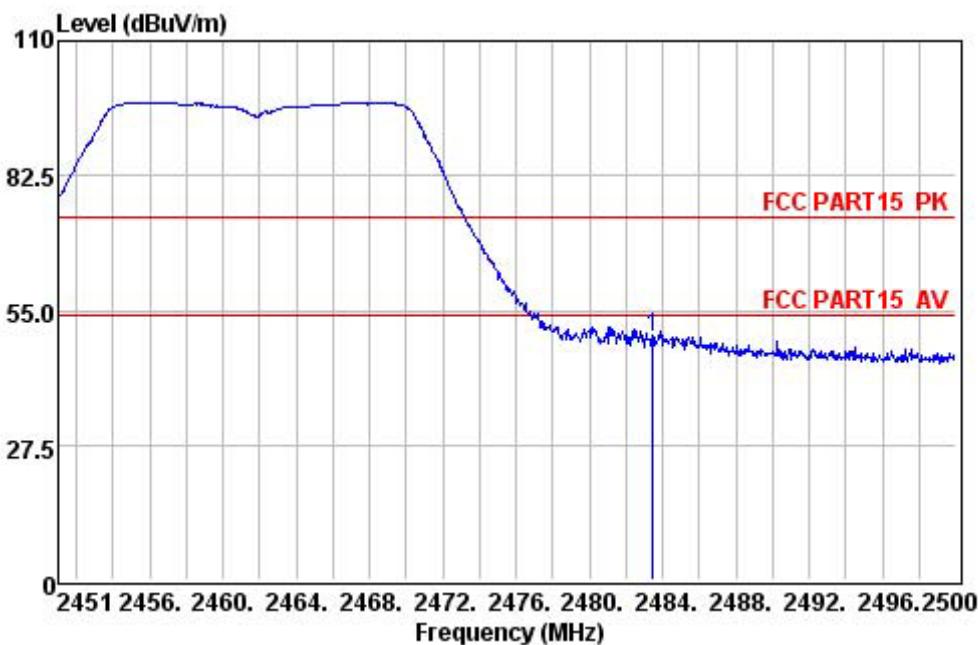


| | Preamp Freq | Read Level | Antenna Factor | Cable Loss | Limit Level | Line Limit | Over Limit | Remark |
|---|----------------|---------------|-------------------|---------------|----------------|---------------|---------------|-------------|
| | MHz | dB | dBuV | dB/m | dB | dBuV/m | dBuV/m | dB |
| 1 | 2483.50 | 26.34 | 48.43 | 28.79 | 0.00 | 50.88 | 74.00 | -23.12 Peak |

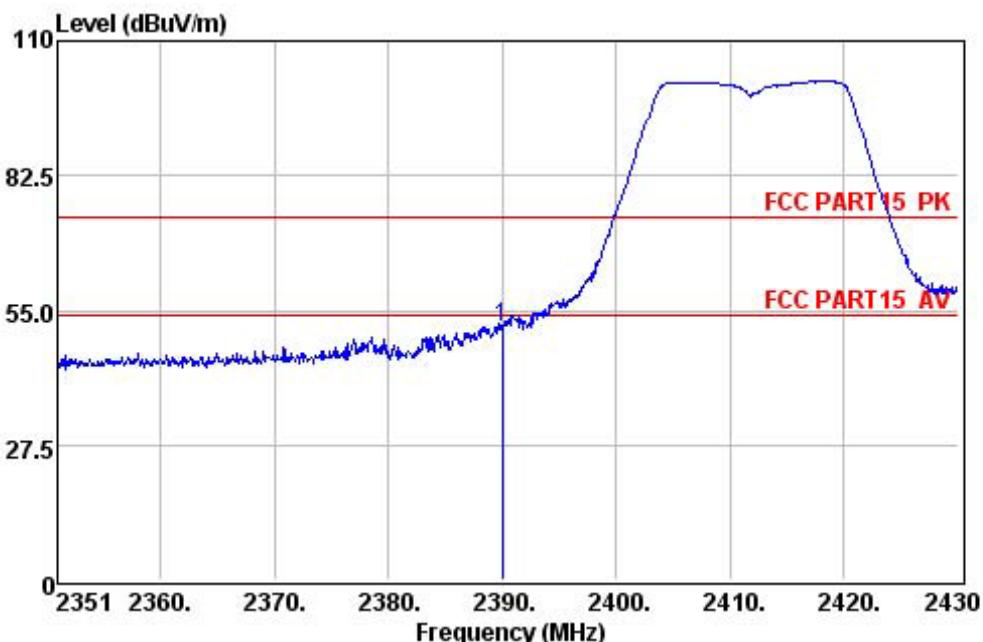
802.11n(HT20) - Vertical



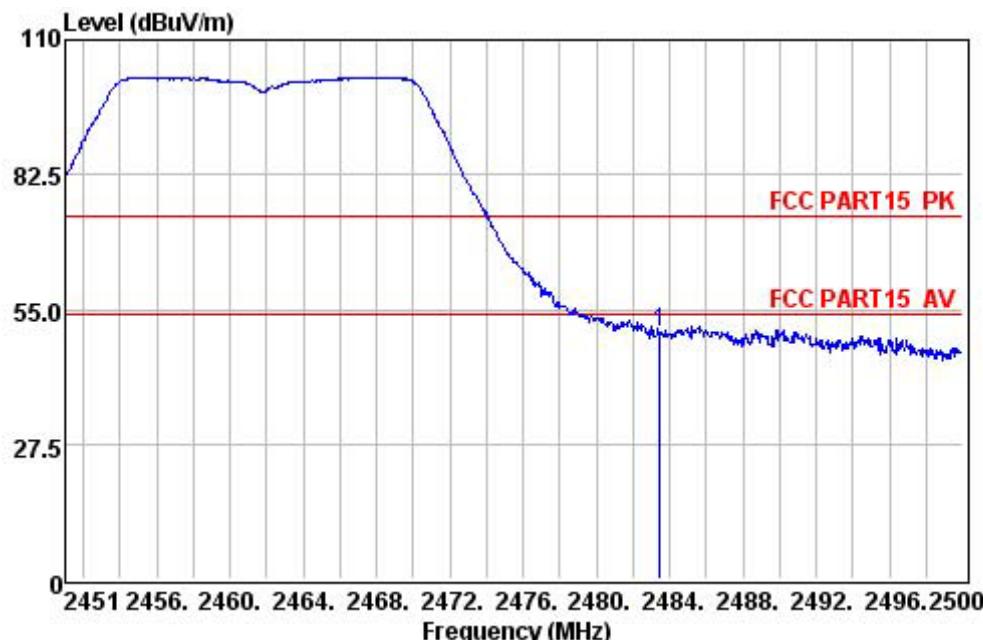
| | Preamp Freq | ReadAntenna Level | Cable Loss | Limit Level | Over Line | Over Limit | Remark |
|---|----------------|----------------------|---------------|----------------|--------------|---------------|-------------------|
| | MHz | dB | dBuV | dB/m | dB | dBuV/m | dB |
| 1 | 2390.00 | 26.32 | 46.23 | 28.72 | 0.00 | 48.63 | 74.00 -25.37 Peak |



| | Preamp Freq | ReadAntenna Level | Cable Loss | Limit Level | Over Line | Over Limit | Remark |
|---|----------------|----------------------|---------------|----------------|--------------|---------------|-------------------|
| | MHz | dB | dBuV | dB/m | dB | dBuV/m | dB |
| 1 | 2483.50 | 26.34 | 47.12 | 28.79 | 0.00 | 49.57 | 74.00 -24.43 Peak |

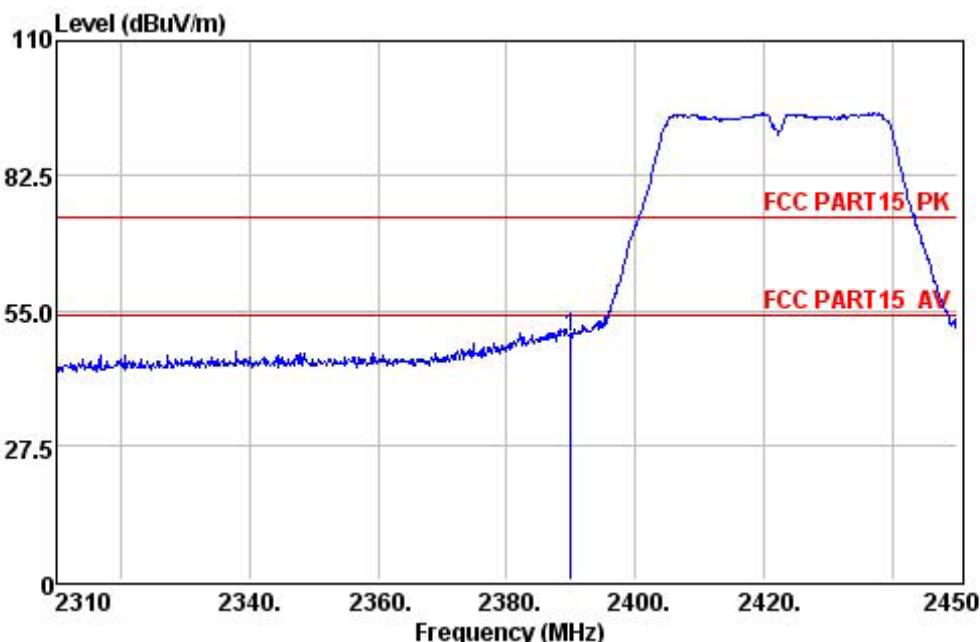
802.11n(HT20) - Horizontal

| | Preamp Freq | ReadAntenna Factor | Cable Loss | Limit Level | Over Line Limit | Remark | |
|---|-------------|--------------------|------------|-------------|-----------------|--------|-------------------|
| | MHz | dB | dBuV | dB/m | dB | dBuV/m | |
| 1 | 2390.00 | 26.32 | 49.02 | 28.72 | 0.00 | 51.42 | 74.00 -22.58 Peak |

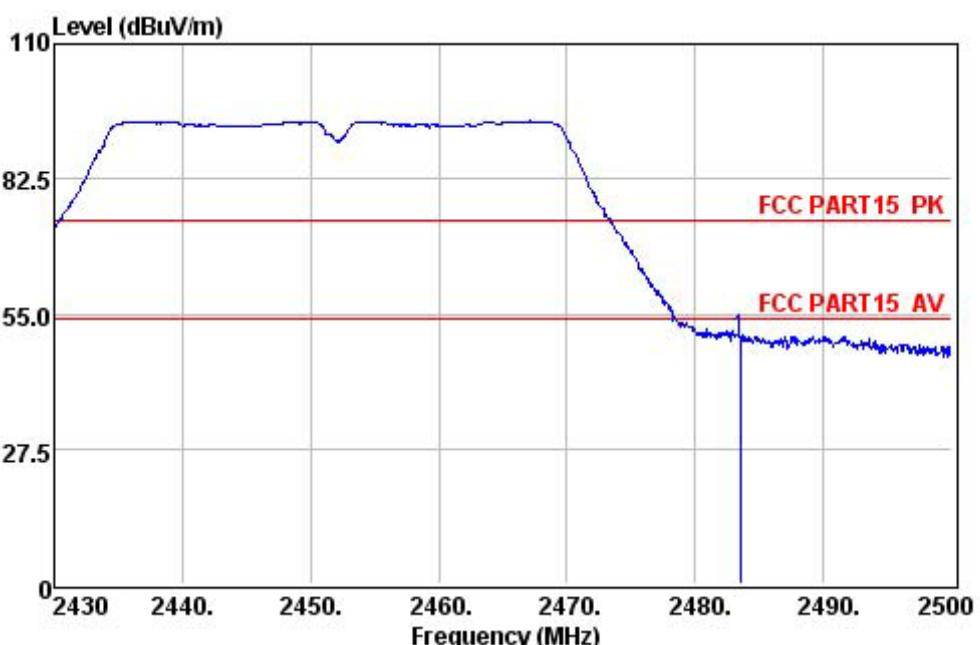


| | Preamp Freq | ReadAntenna Factor | Cable Loss | Limit Level | Over Line Limit | Remark | |
|---|-------------|--------------------|------------|-------------|-----------------|--------|-------------------|
| | MHz | dB | dBuV | dB/m | dB | dBuV/m | |
| 1 | 2483.50 | 26.34 | 47.81 | 28.79 | 0.00 | 50.26 | 74.00 -23.74 Peak |

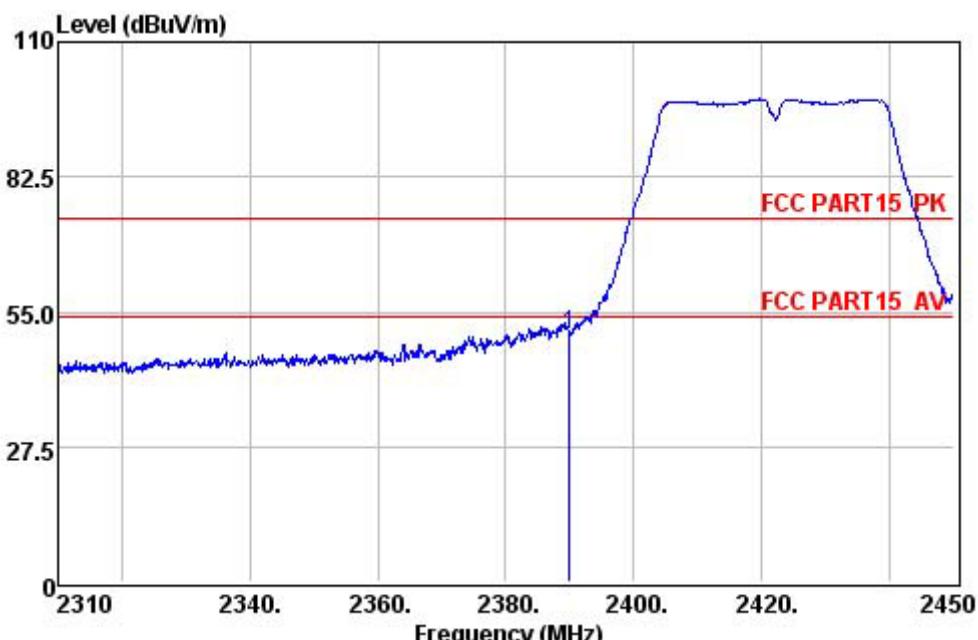
802.11n(HT40) - Vertical



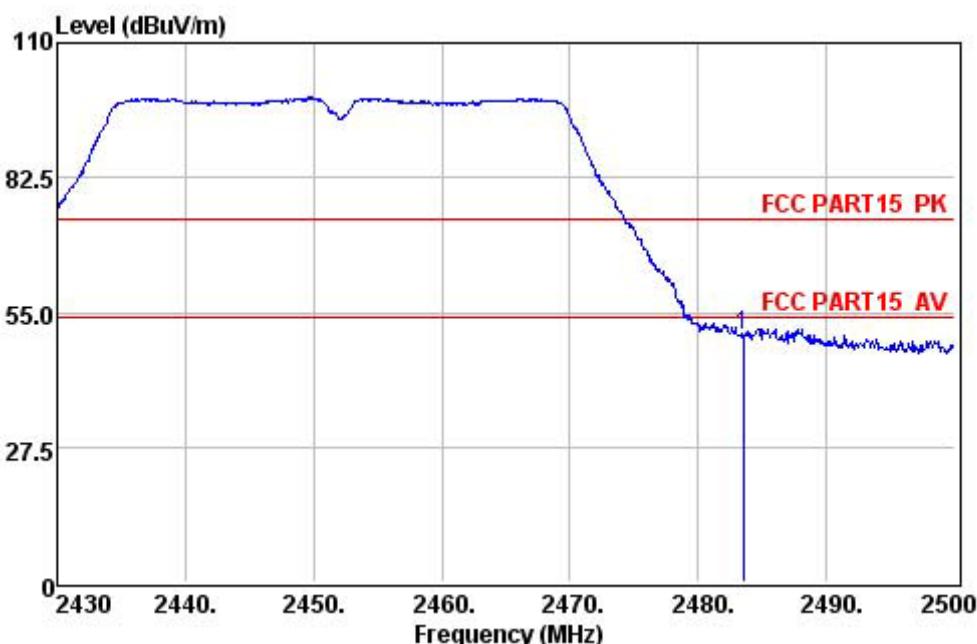
| | Preamp Freq | Read Factor | Antenna Level | Cable Loss | Limit Level | Line Limit | Over Limit | Remark |
|---|----------------|----------------|------------------|---------------|----------------|---------------|---------------|-------------|
| | MHz | dB | dBuV | dB/m | dB | dBuV/m | dBuV/m | dB |
| 1 | 2390.00 | 26.32 | 47.10 | 28.72 | 0.00 | 49.50 | 74.00 | -24.50 Peak |



| | Preamp Freq | Read Factor | Antenna Level | Cable Loss | Limit Level | Line Limit | Over Limit | Remark |
|---|----------------|----------------|------------------|---------------|----------------|---------------|---------------|-------------|
| | MHz | dB | dBuV | dB/m | dB | dBuV/m | dBuV/m | dB |
| 1 | 2483.50 | 26.34 | 47.26 | 28.79 | 0.00 | 49.71 | 74.00 | -24.29 Peak |

802.11n(HT40) - Horizontal

| | Preamp Freq | ReadAntenna Level Factor | Cable Loss | Limit Level | Line Level | Over Line Limit | Remark |
|---|----------------|-----------------------------|---------------|----------------|---------------|--------------------|-------------------|
| | MHz | dB | dBuV | dB/m | dB | dBuV/m | dB |
| 1 | 2390.00 | 26.32 | 47.92 | 28.72 | 0.00 | 50.32 | 74.00 -23.68 Peak |



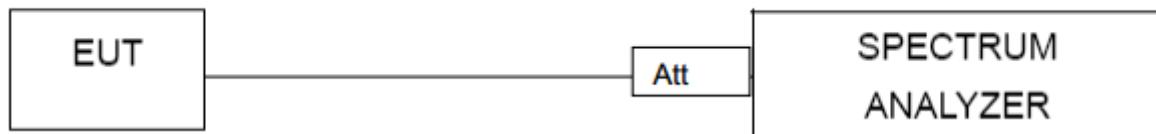
| | Preamp Freq | ReadAntenna Level Factor | Cable Loss | Limit Level | Line Level | Over Line Limit | Remark |
|---|----------------|-----------------------------|---------------|----------------|---------------|--------------------|-------------------|
| | MHz | dB | dBuV | dB/m | dB | dBuV/m | dB |
| 1 | 2483.50 | 26.34 | 47.68 | 28.79 | 0.00 | 50.13 | 74.00 -23.87 Peak |

5. BAND EDGE COMPLIANCE TEST

5.1. Limits

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in § 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see §15.205(c)).

5.2. Test Setup



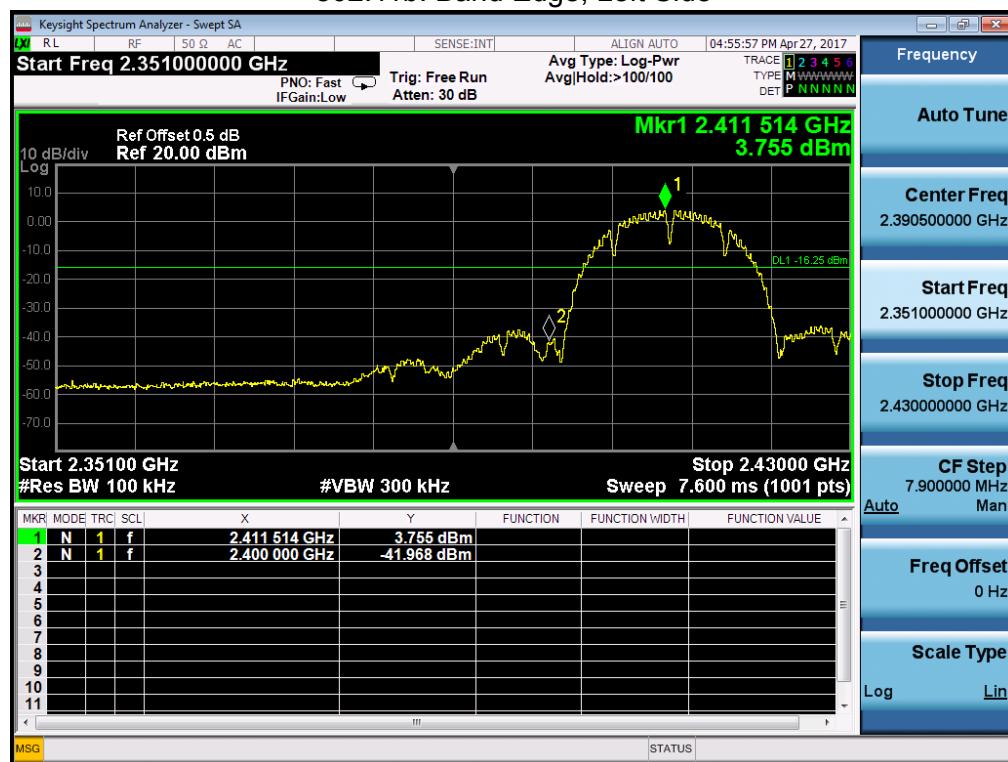
5.3. Test Procedure

- a) Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
- b) Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
- c) Set RBW to 100 kHz and VBW of spectrum analyzer to 300 kHz with a convenient frequency span including 100 kHz bandwidth from band edge.
- d) Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
- e) Repeat above procedures until all measured frequencies were complete.

Conduction band-edge

| Frequency Band MHz | Delta Peak to band emission (dBc) | > Limit (dBc) | Result |
|-----------------------|--------------------------------------|------------------|--------|
| 802.11b mode | | | |
| 2400 | 45.723 | 20 | Pass |
| 2483.5 | 56.624 | 20 | Pass |
| 802.11g mode | | | |
| 2400 | 33.671 | 20 | Pass |
| 2483.5 | 39.503 | 20 | Pass |
| 802.11n-HT20 mode | | | |
| 2400 | 33.621 | 20 | Pass |
| 2483.5 | 39.098 | 20 | Pass |
| 802.11n-HT40 mode | | | |
| 2400 | 29.972 | 20 | Pass |
| 2483.5 | 33.987 | 20 | Pass |

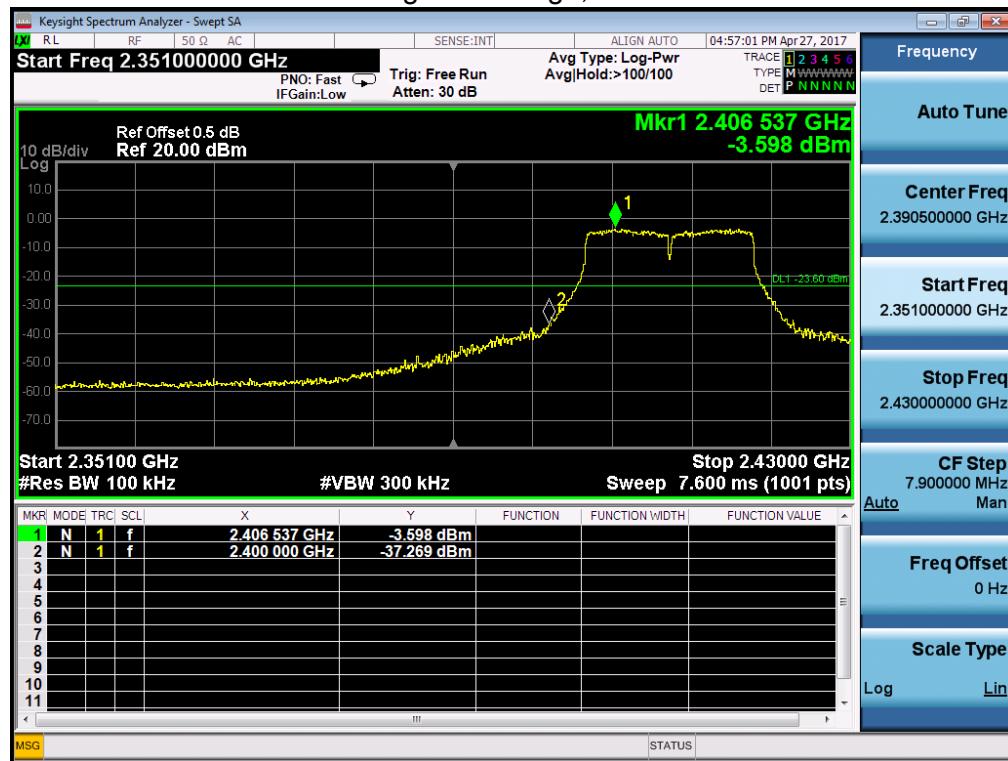
802.11b: Band Edge, Left Side



802.11b: Band Edge, Right Side



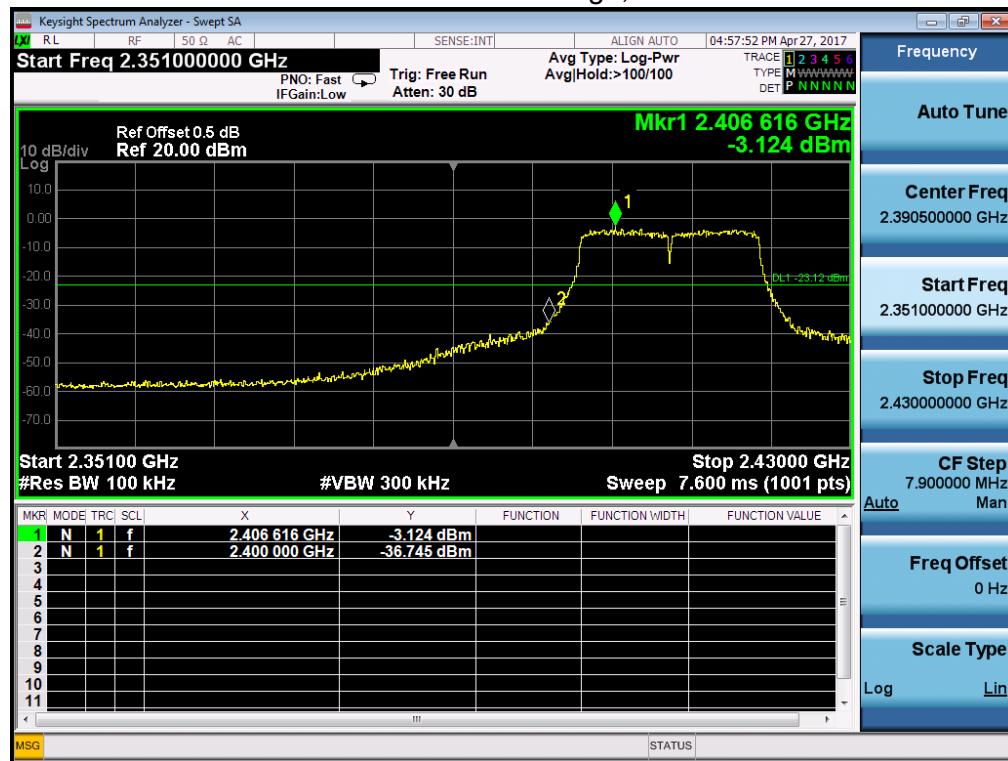
802.11g: Band Edge, Left Side



802.11g: Band Edge, Right Side



802.11n-HT20: Band Edge, Left Side



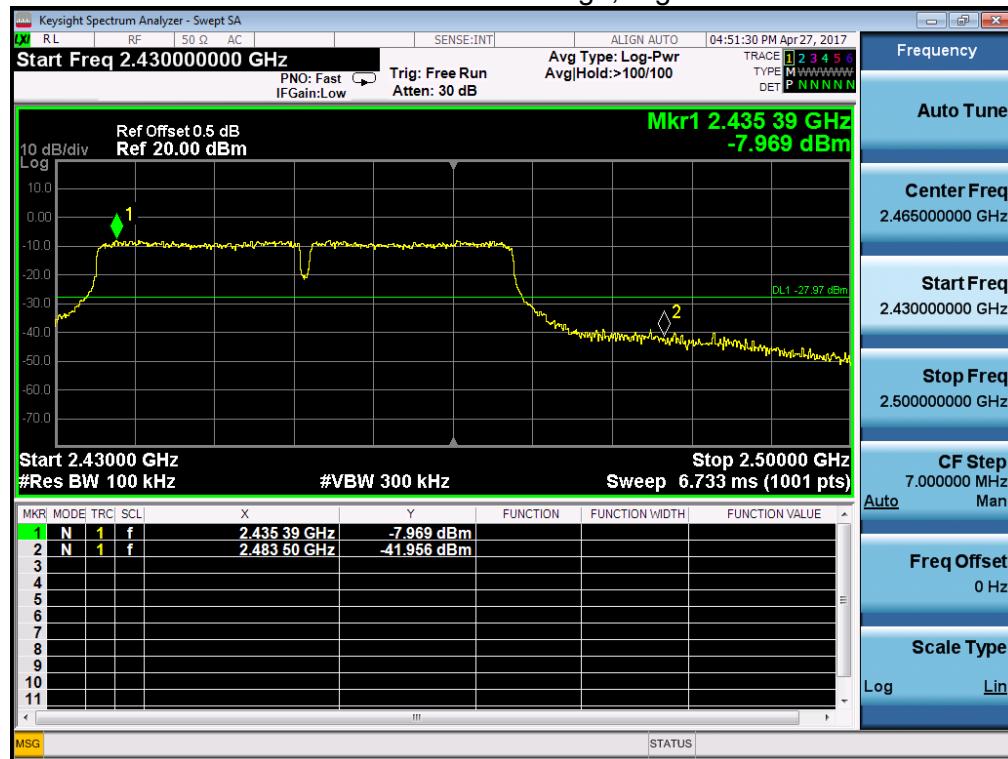
802.11n-HT20: Band Edge, Right Side



802.11n-HT40: Band Edge, Left Side



802.11n-HT40: Band Edge, Right Side



6. BANDWIDTH TEST

6.1. Limits

For direct sequence systems, the minimum 6dB bandwidth shall be at least 500kHz

6.2. Test Procedure

1. Set RBW = 100 kHz.
2. Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies Associated with the two outermost amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

Test data:

| | Frequency (MHz) | 6dB Bandwidth (MHz) | Limit (MHz) | Result |
|-------------------|--------------------|---------------------------|----------------|--------|
| 802.11b | 2412 | 10.13 | >0.5 | Pass |
| | 2437 | 10.13 | >0.5 | Pass |
| | 2462 | 10.13 | >0.5 | Pass |
| 802.11g | 2412 | 16.55 | >0.5 | Pass |
| | 2437 | 16.57 | >0.5 | Pass |
| | 2462 | 16.56 | >0.5 | Pass |
| 802.11n (HT20) | 2412 | 17.75 | >0.5 | Pass |
| | 2437 | 17.73 | >0.5 | Pass |
| | 2462 | 17.72 | >0.5 | Pass |
| 802.11n (HT40) | 2422 | 36.52 | >0.5 | Pass |
| | 2437 | 36.54 | >0.5 | Pass |
| | 2452 | 36.52 | >0.5 | Pass |

Test plot as follows:
6dB bandwidth

802.11b 2412MHz



802.11g 2412MHz



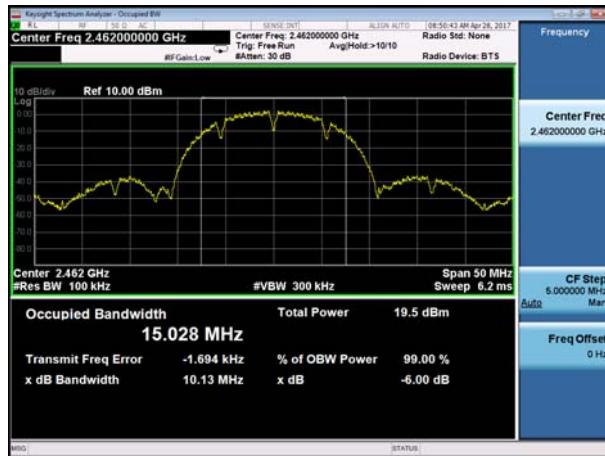
802.11b 2437MHz



802.11g 2437MHz



802.11b 2462MHz



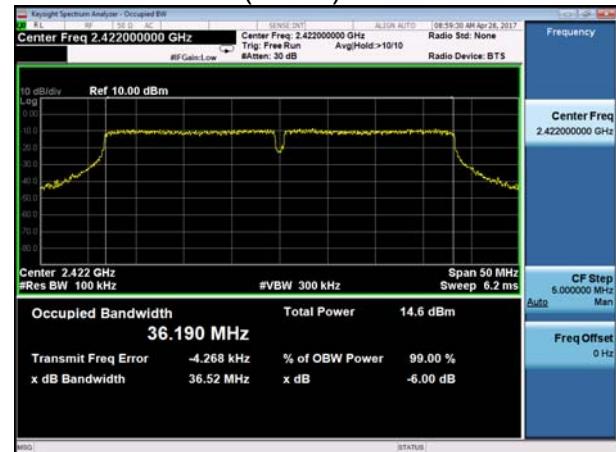
802.11g 2462MHz



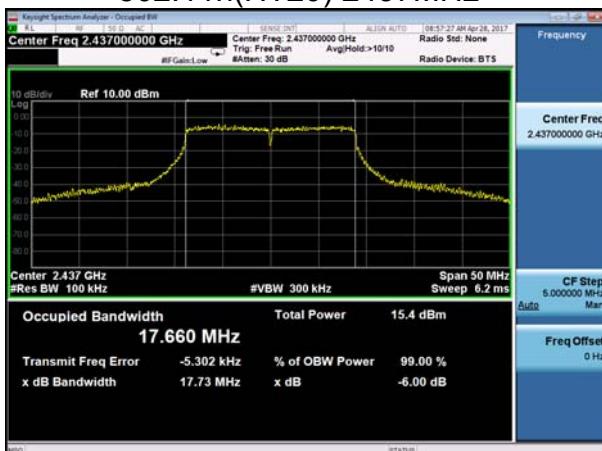
802.11n(HT20) 2412MHz



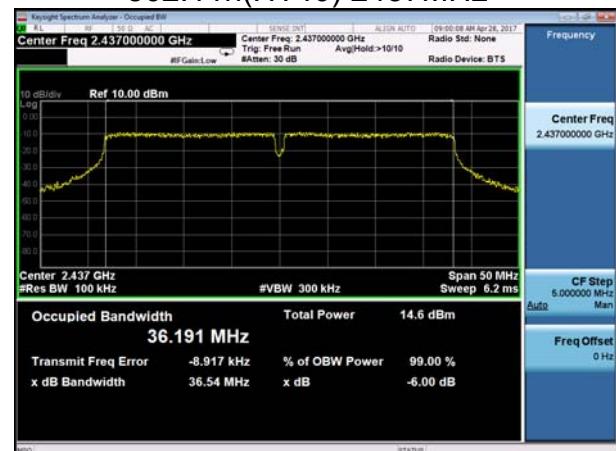
802.11n(HT40) 2422MHz



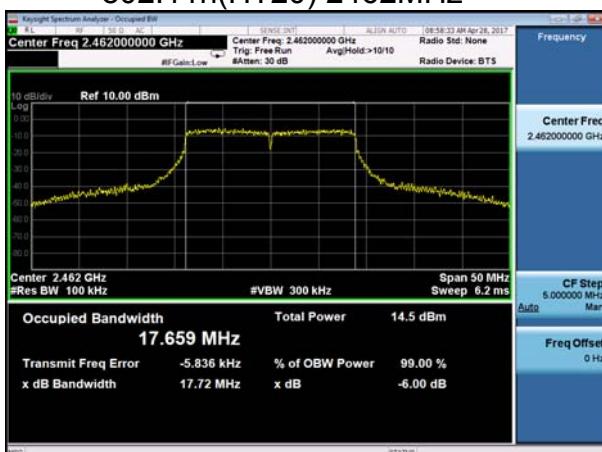
802.11n(HT20) 2437MHz



802.11n(HT40) 2437MHz



802.11n(HT20) 2462MHz



802.11n(HT40) 2452MHz



7. OUTPUT POWER TEST

7.1. Limits

For systems using digital modulation in the 2400~2483.5MHz, The output power shall not exceed 1W (30dBm)

7.2. Test Setup

1. The Transmitter output (antenna port) was connected to the power meter.
2. Turn on the EUT and power meter and then record the power value.
3. Repeat above procedures on all channels needed to be tested.

Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.



7.3. Test Result

| Test Channel | Frequency | Maximum Conducted Output Power | LIMIT |
|------------------------------|-----------|--------------------------------|-------|
| | (MHz) | (dBm) | dBm |
| TX 802.11b Mode | | | |
| CH01 | 2412 | 9.68 | 30 |
| CH06 | 2437 | 9.59 | 30 |
| CH11 | 2462 | 9.53 | 30 |
| TX 802.11g Mode | | | |
| CH01 | 2412 | 9.24 | 30 |
| CH06 | 2437 | 9.33 | 30 |
| CH11 | 2462 | 9.31 | 30 |
| TX 802.11n(HT20) Mode | | | |
| CH01 | 2412 | 8.37 | 30 |
| CH06 | 2437 | 8.25 | 30 |
| CH11 | 2462 | 8.38 | 30 |
| TX 802.11n(HT40) Mode | | | |
| CH03 | 2422 | 7.58 | 30 |
| CH06 | 2437 | 7.47 | 30 |
| CH09 | 2452 | 7.52 | 30 |

Note: For power test the duty cycle is 100% in continuous transmitting mode.

8. DUTY CYCLE

8.1. Test Procedure

The zero-span mode on a spectrum analyzer or EMI receiver if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the on and off times of the transmitted signal. Set the center frequency of the instrument to the center frequency of the transmission. Set RBW \geq OBW if possible; otherwise, set RBW to the largest available value. Set VBW \geq RBW. Set detector = peak or average. The zero-span measurement method shall not be used unless both RBW and VBW are $> 50/T$ and the number of sweep points across duration T exceeds 100. (For example, if VBW and/or RBW are limited to 3 MHz, then the zero-span method of measuring duty cycle shall not be used if $T \leq 16.7$ microseconds.)

The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator.

The path loss was compensated to the results for each measurement.

Set to the maximum power setting and enable the EUT transmit continuously.

The EUT was operating in controlled its channel.

Use the following spectrum analyzer settings:

Span = Zero Span

RBW = 8MHz

VBW = 50MHz

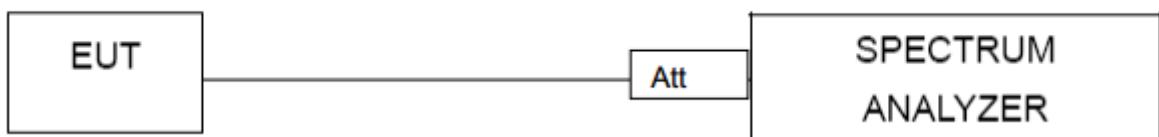
Number of points in Sweep >100

Detector function = peak

Trace = Clear write Measure Ttotal and Ton

Calculate Duty Cycle = Ton / Ttotal and Duty Cycle Factor=10*log(1/Duty Cycle)

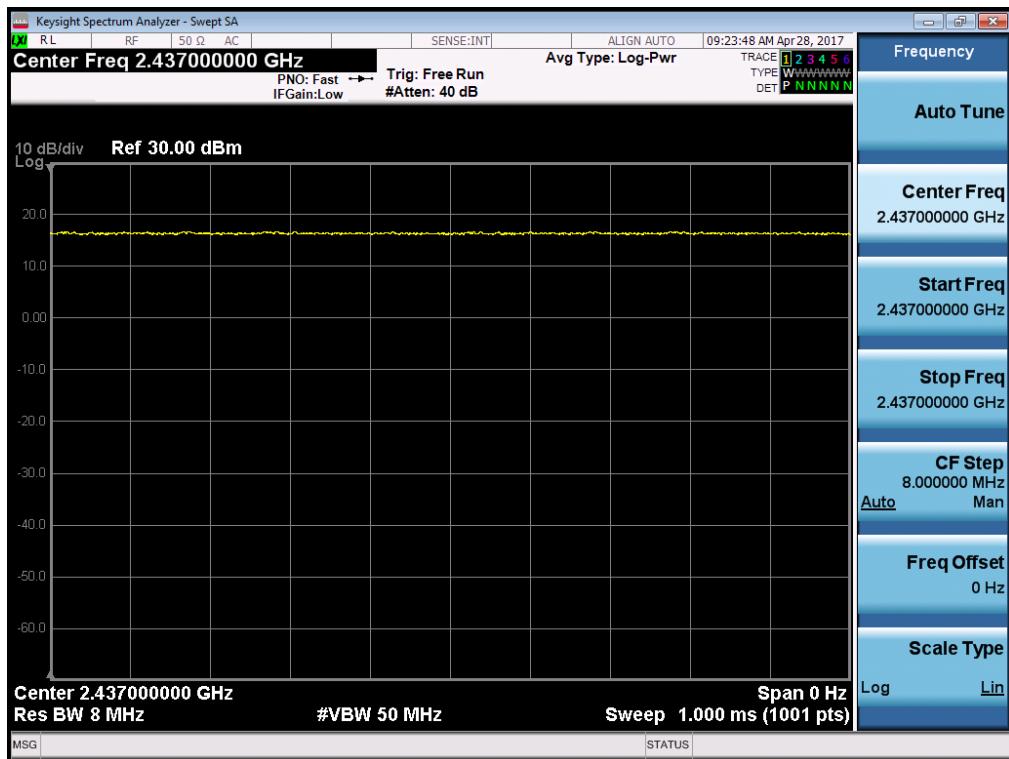
8.2. Test Setup



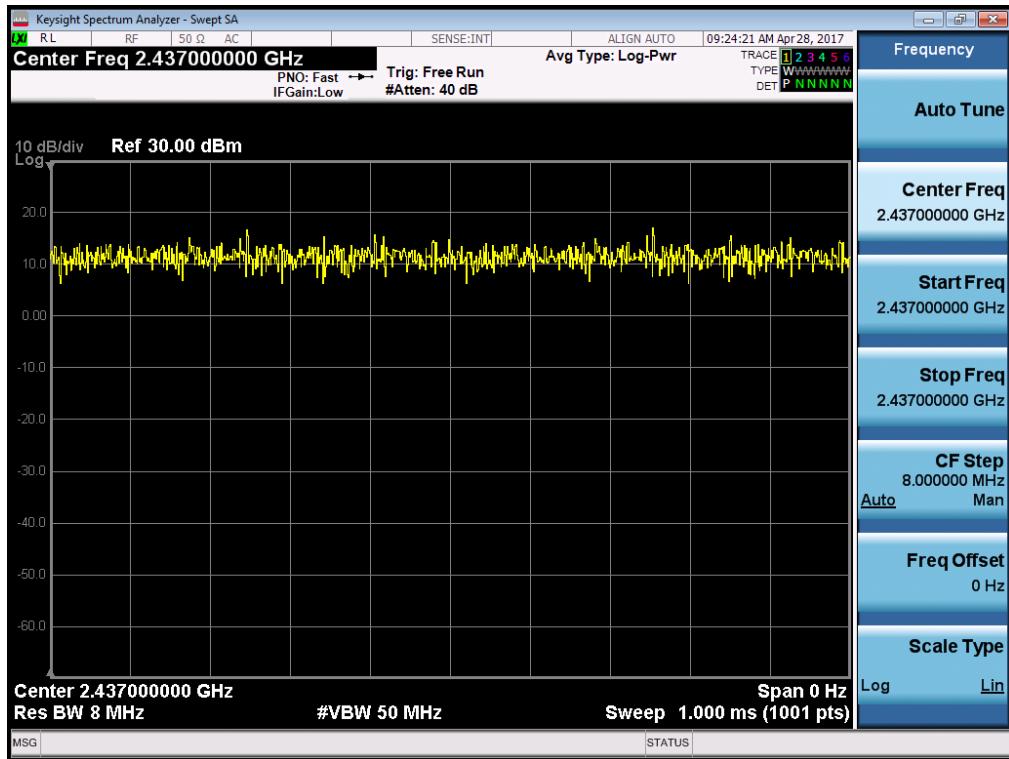
8.3. Test Result

Duty cycle $\geq 98\%$, it conforms with the standard requirements.

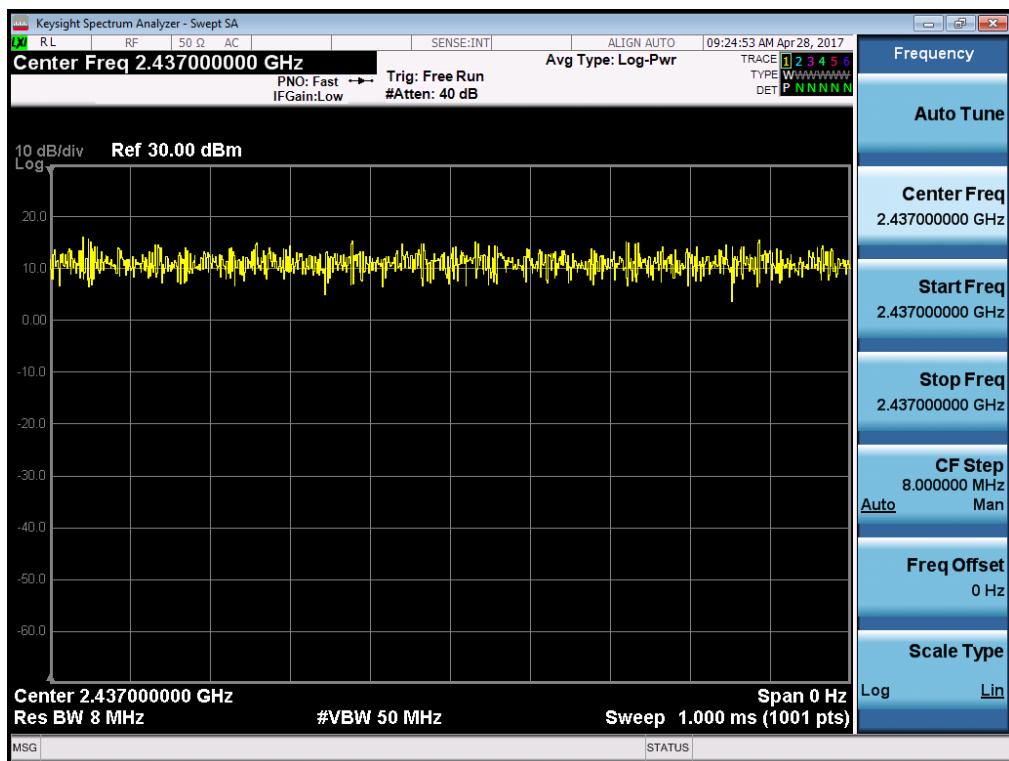
Test plot of Duty Cycle for 802.11b



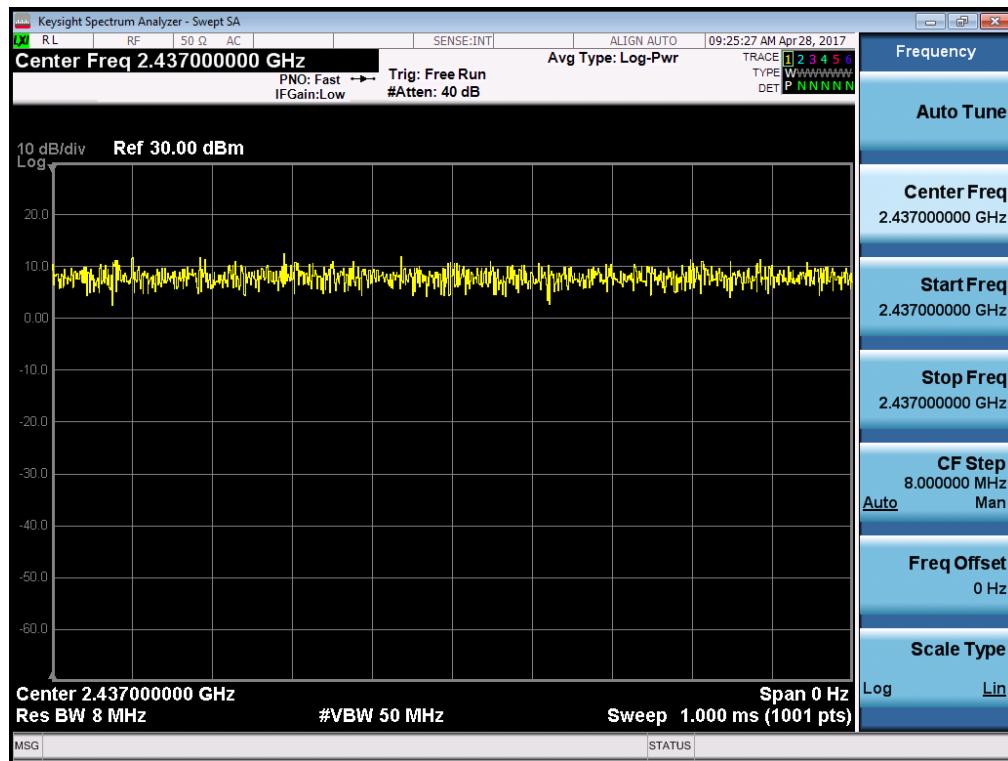
Test plot of Duty Cycle for 802.11g



Test plot of Duty Cycle for 802.11n(HT20)



Test plot of Duty Cycle for 802.11n(HT40)



9. POWER SPECTRAL DENSITY TEST

9.1. Limits

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band during any time interval of continuous transmission.

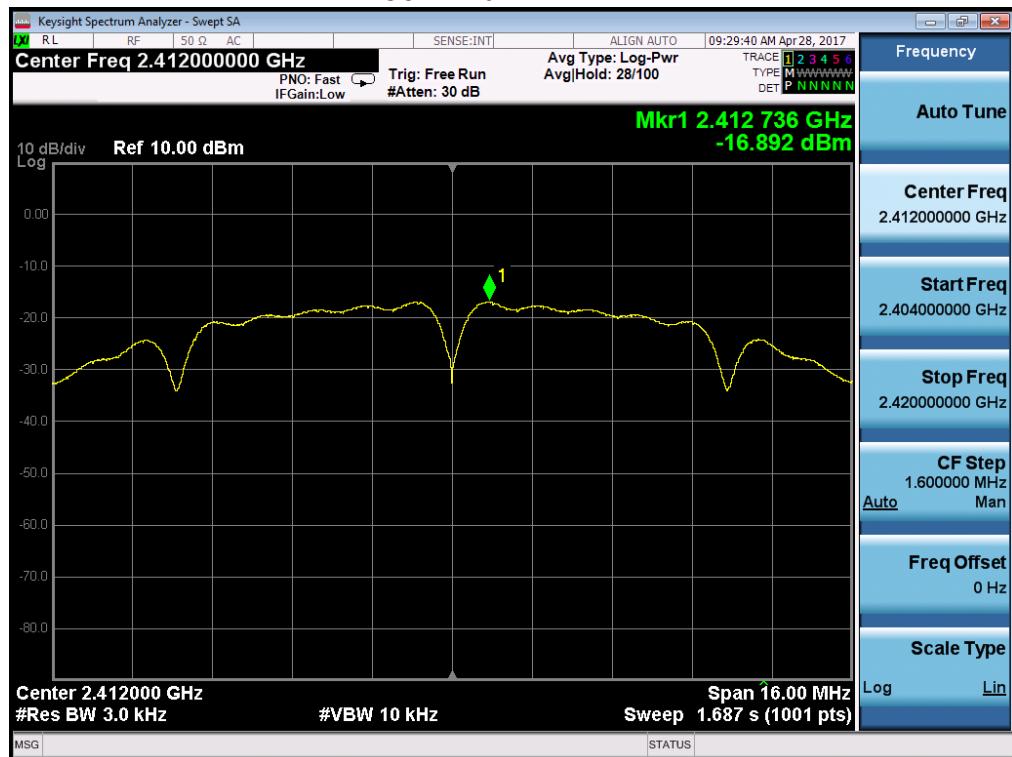
9.2. Test Setup

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS bandwidth.
3. Set the RBW to: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
4. Set the VBW $\geq 3 \text{ RBW}$.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level within the RBW.
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

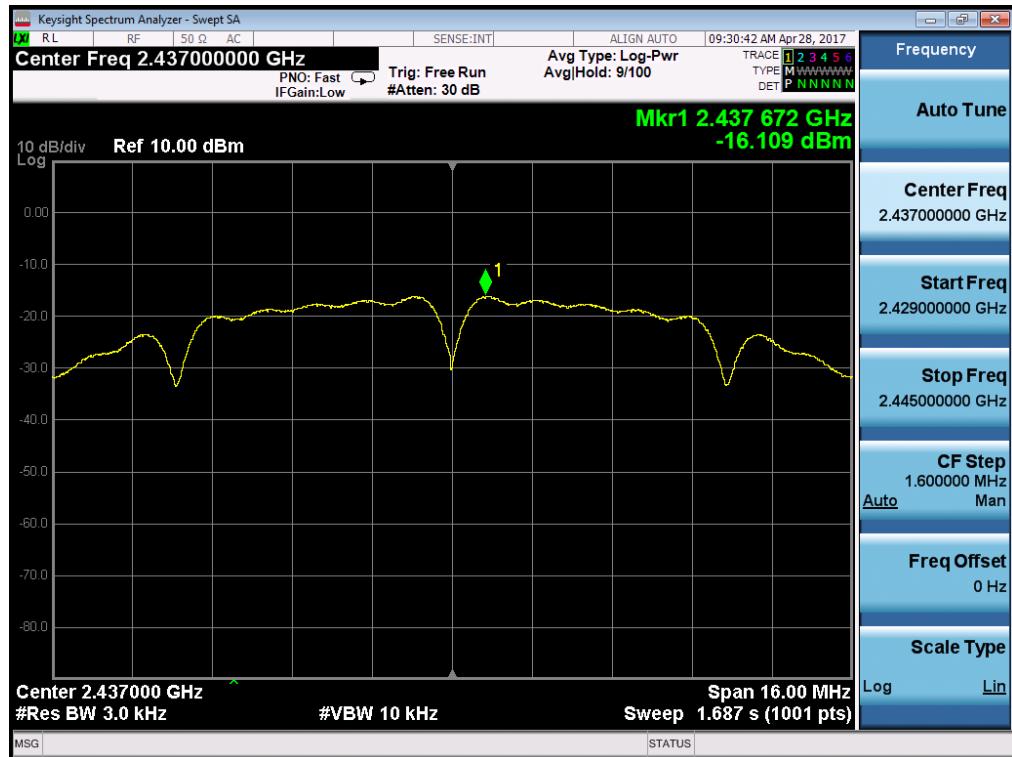
9.3. Test Result

| | Channel Frequency (MHz) | Power density (dBm/3kHz) | Limit (dBm/3kHz) | Result |
|----------------|-------------------------|--------------------------|------------------|--------|
| 802.11b | 2412 | -16.892 | 8 | Pass |
| | 2437 | -16.109 | 8 | Pass |
| | 2462 | -16.489 | 8 | Pass |
| 802.11g | 2412 | -18.430 | 8 | Pass |
| | 2437 | -17.266 | 8 | Pass |
| | 2462 | -19.293 | 8 | Pass |
| 802.11n (HT20) | 2412 | -17.088 | 8 | Pass |
| | 2437 | -16.854 | 8 | Pass |
| | 2462 | -17.956 | 8 | Pass |
| 802.11n (HT40) | 2422 | -20.119 | 8 | Pass |
| | 2437 | -20.105 | 8 | Pass |
| | 2452 | -20.744 | 8 | Pass |

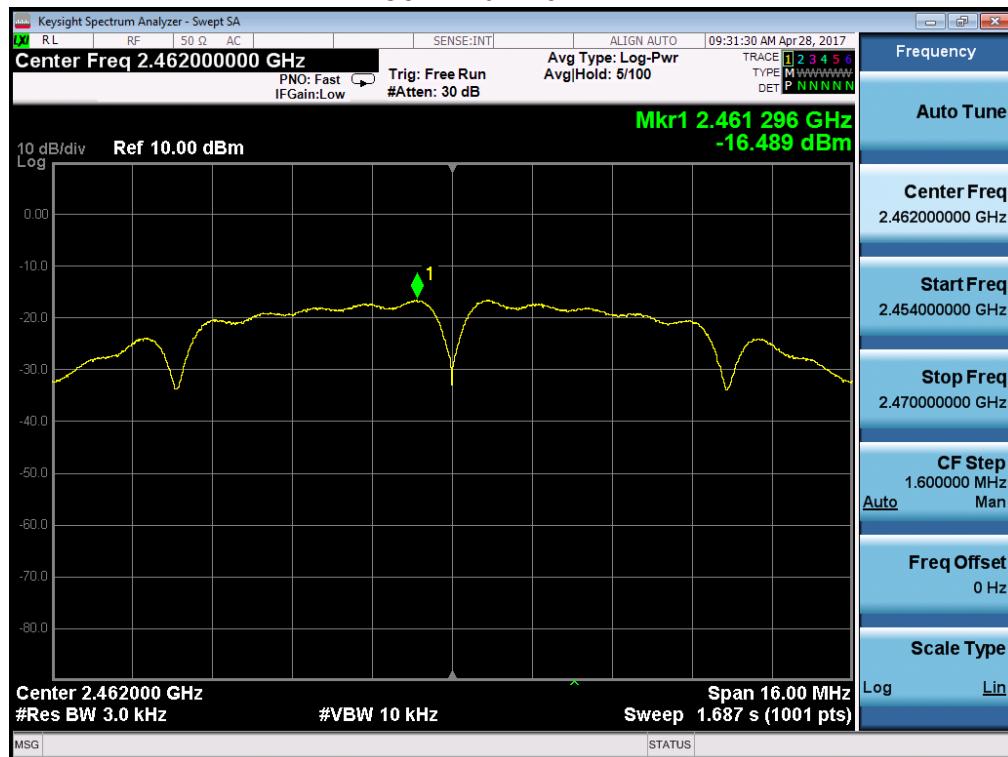
802.11b 2412MHz



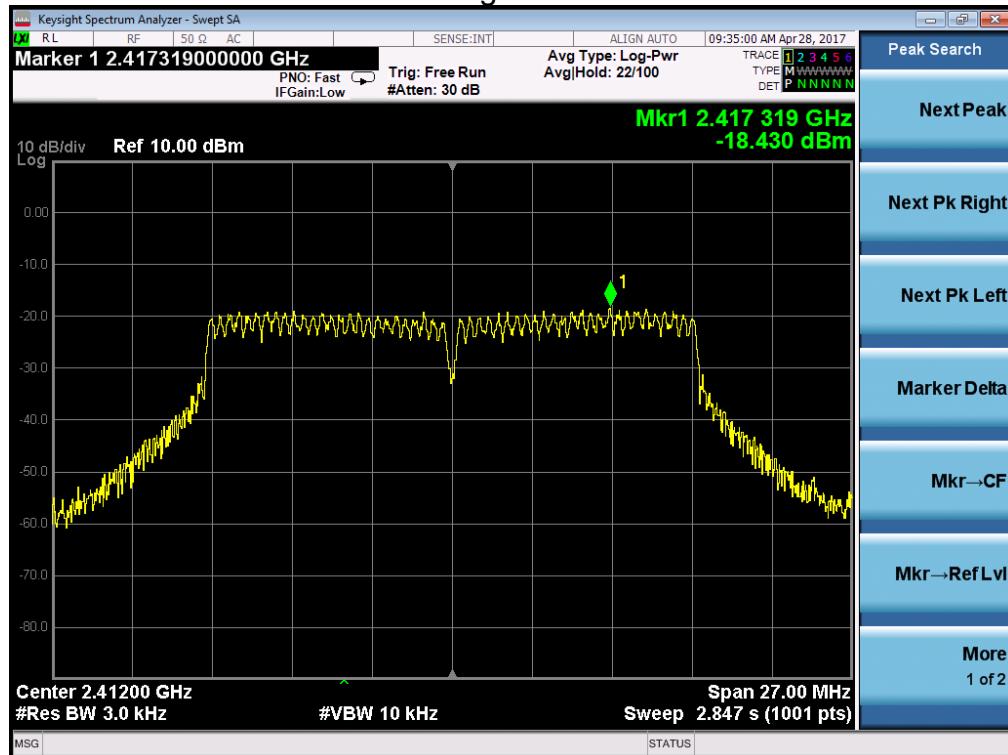
802.11b 2437MHz



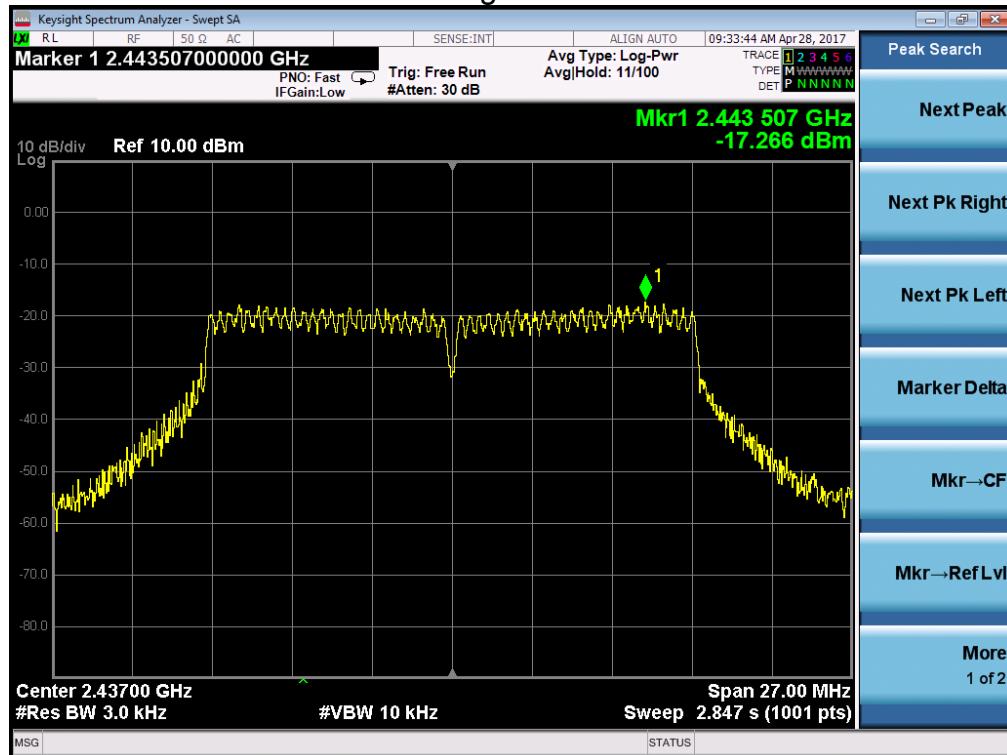
802.11b 2462MHz



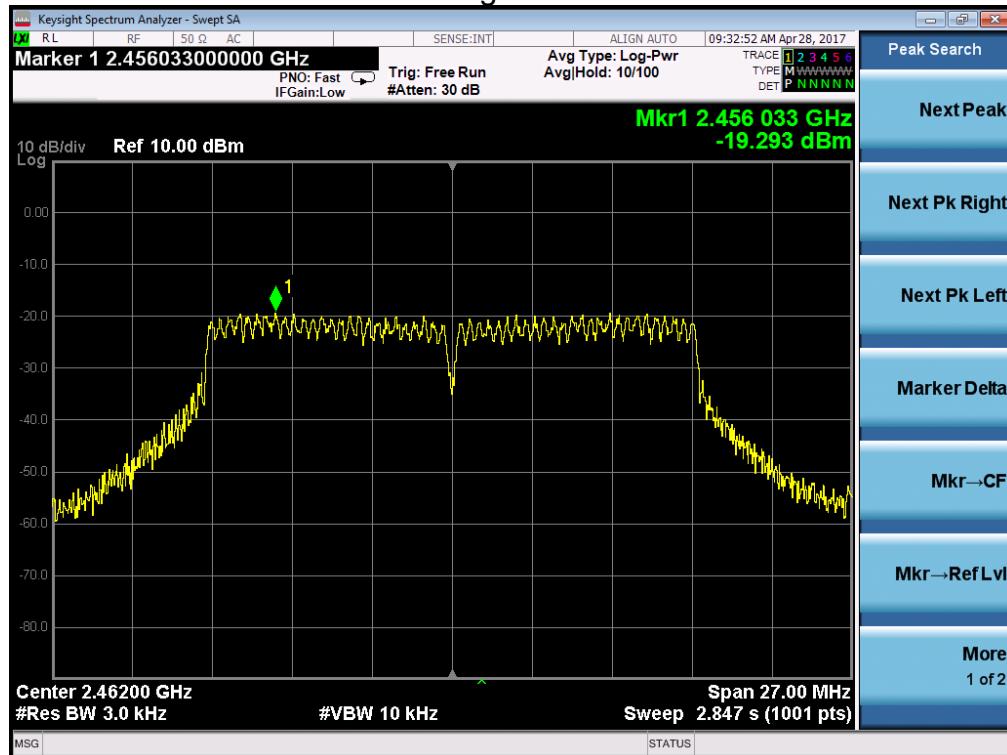
802.11g 2412MHz



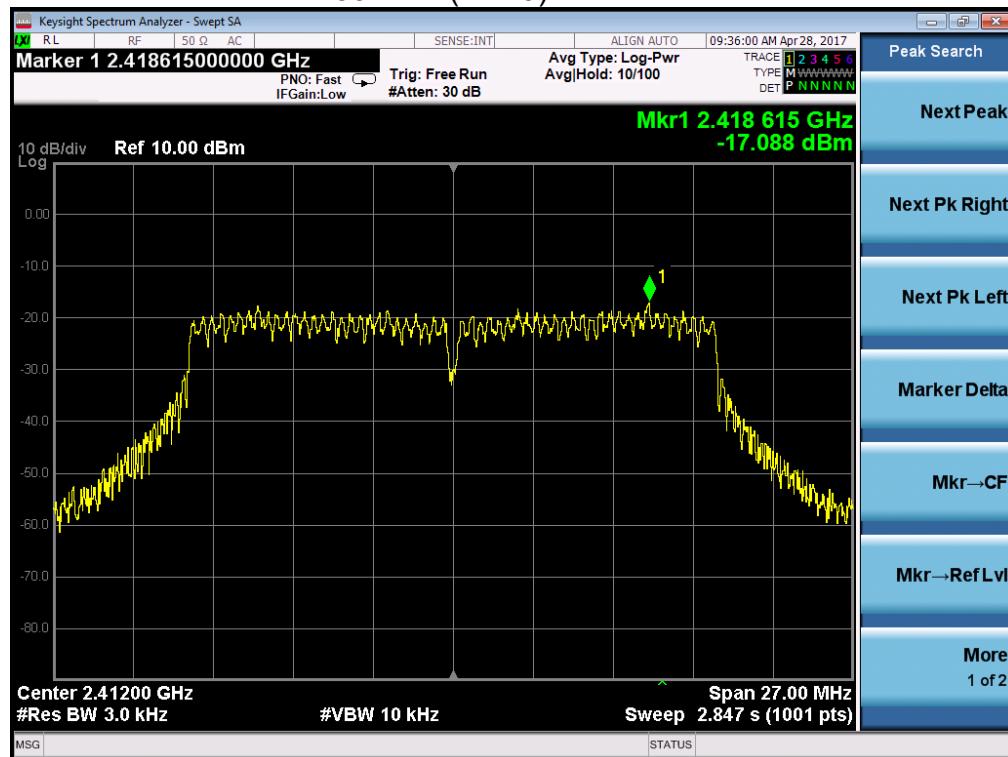
802.11g 2437MHz



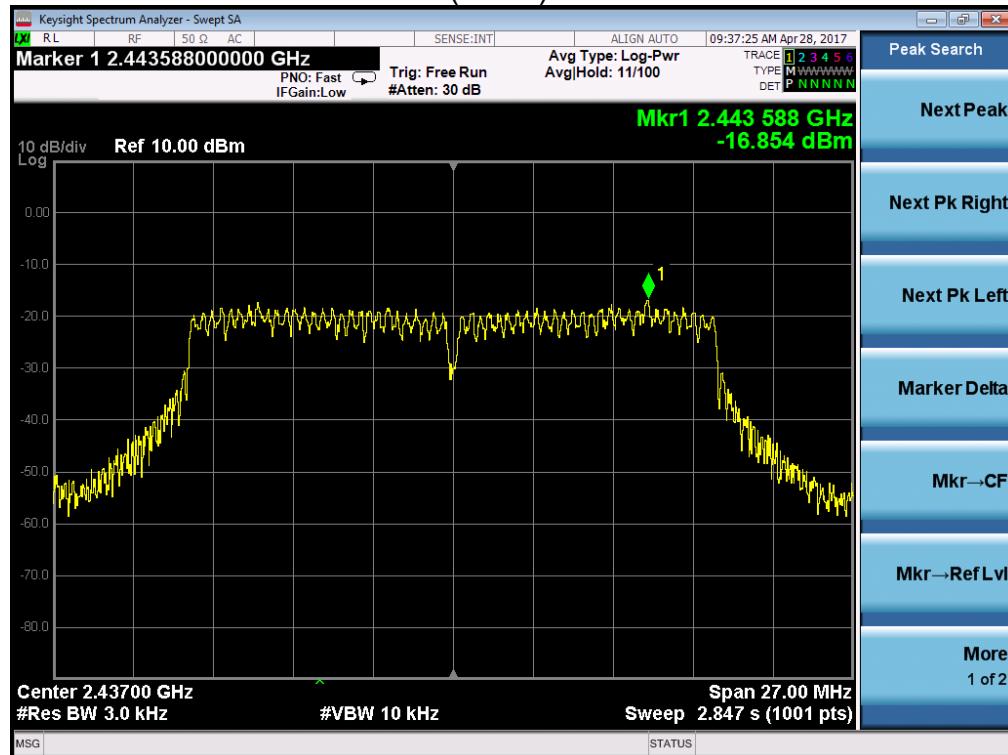
802.11g 2462MHz



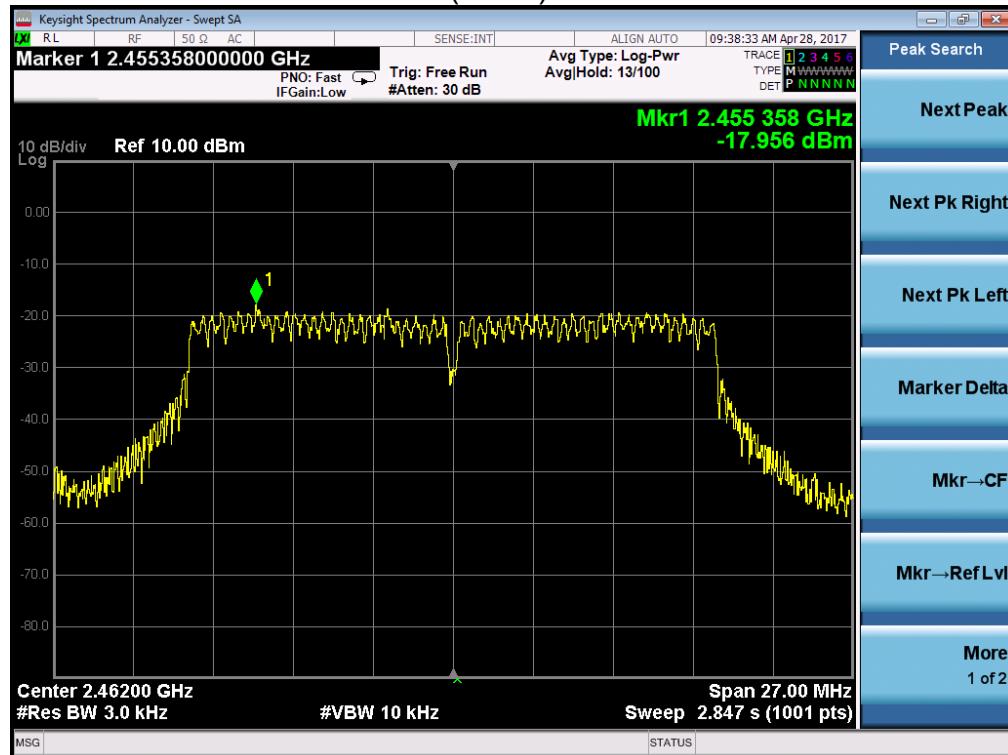
802.11n(HT20) 2412MHz



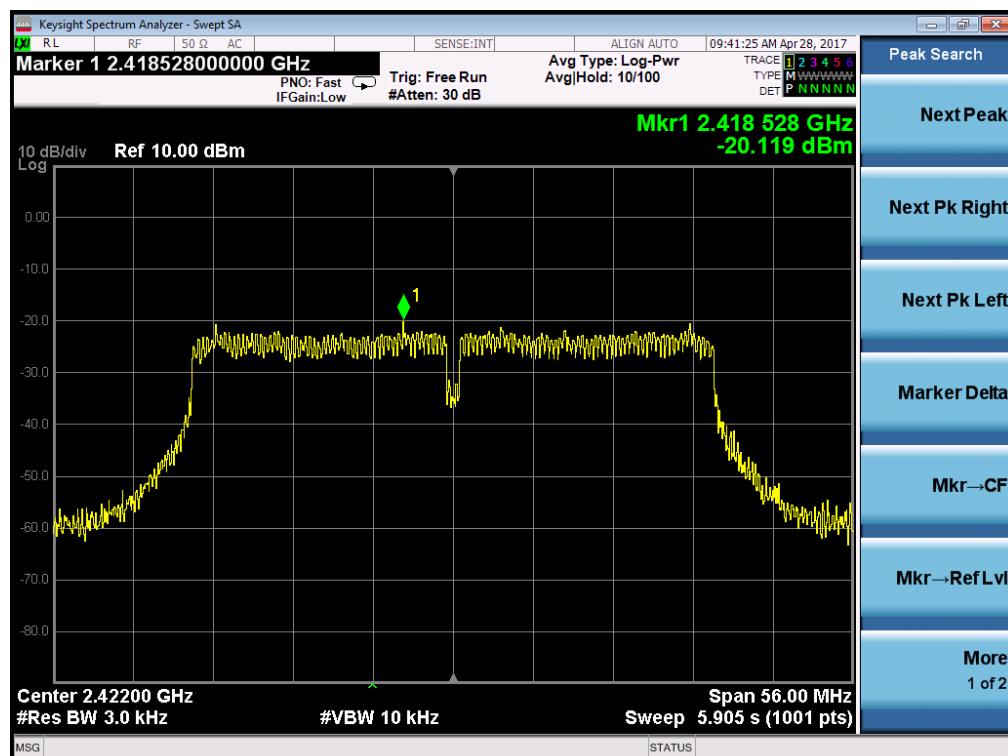
802.11n(HT20) 2437MHz



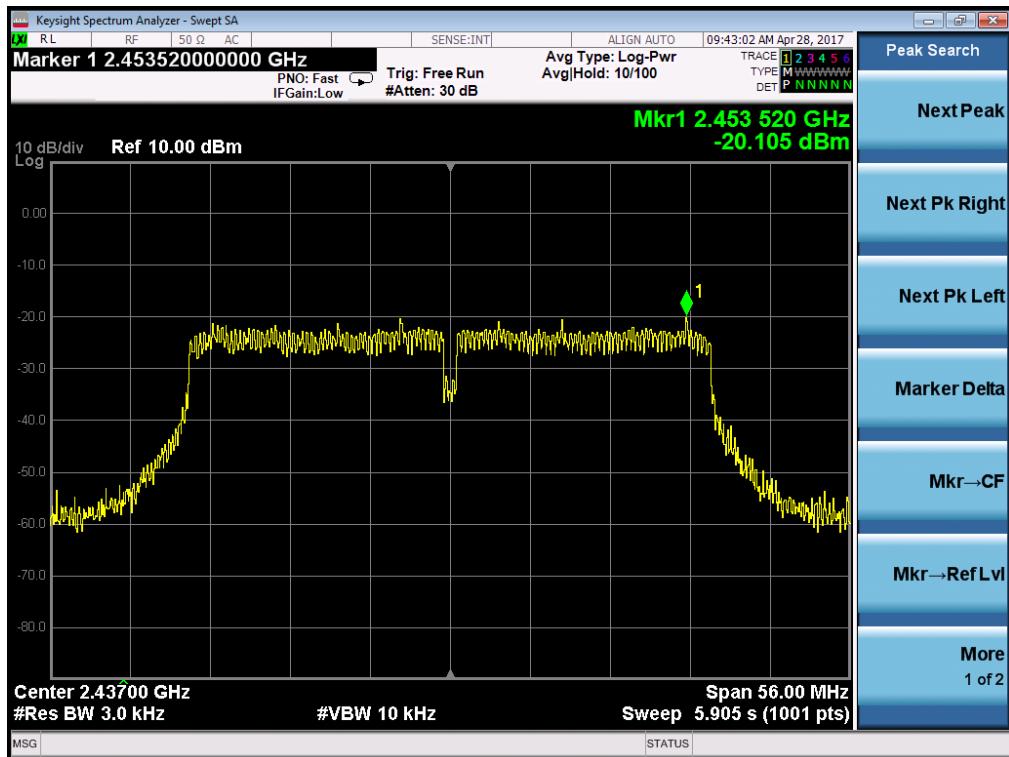
802.11n(HT20) 2462MHz



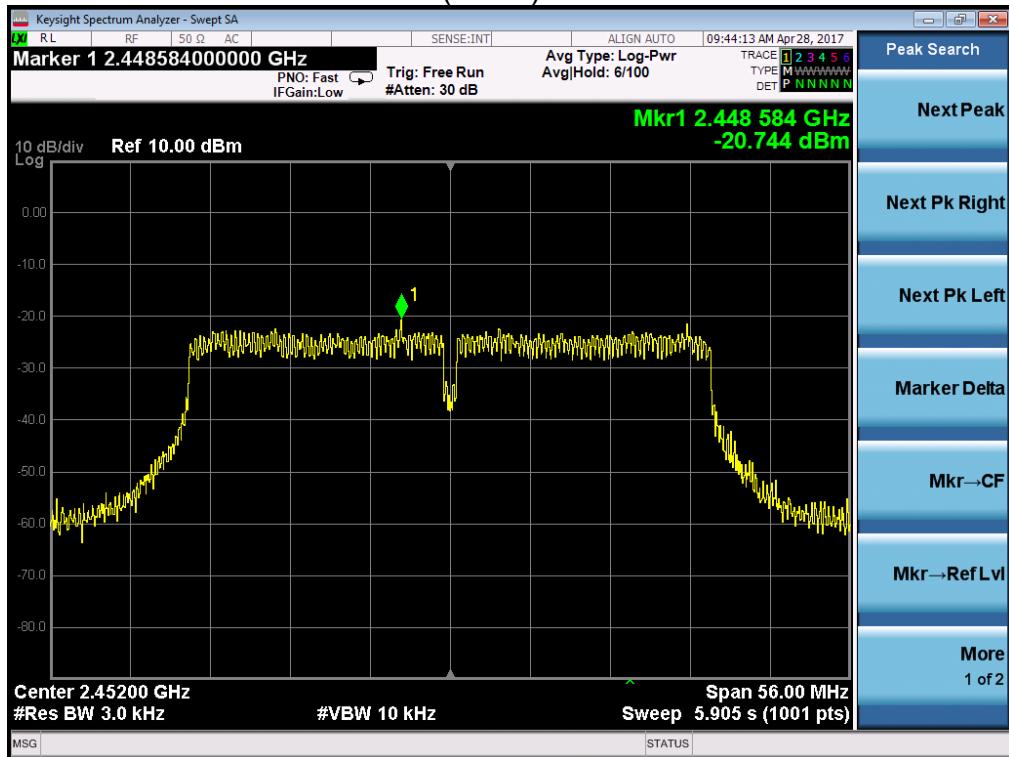
802.11n(HT40) 2422MHz



802.11n(HT40) 2437MHz



802.11n(HT40)2452MHz



10. ANTENNA REQUIREMENTS

10.1. Limits

For intentional device, according to FCC 47 CFR Section 15.203, 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. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

10.2. Result

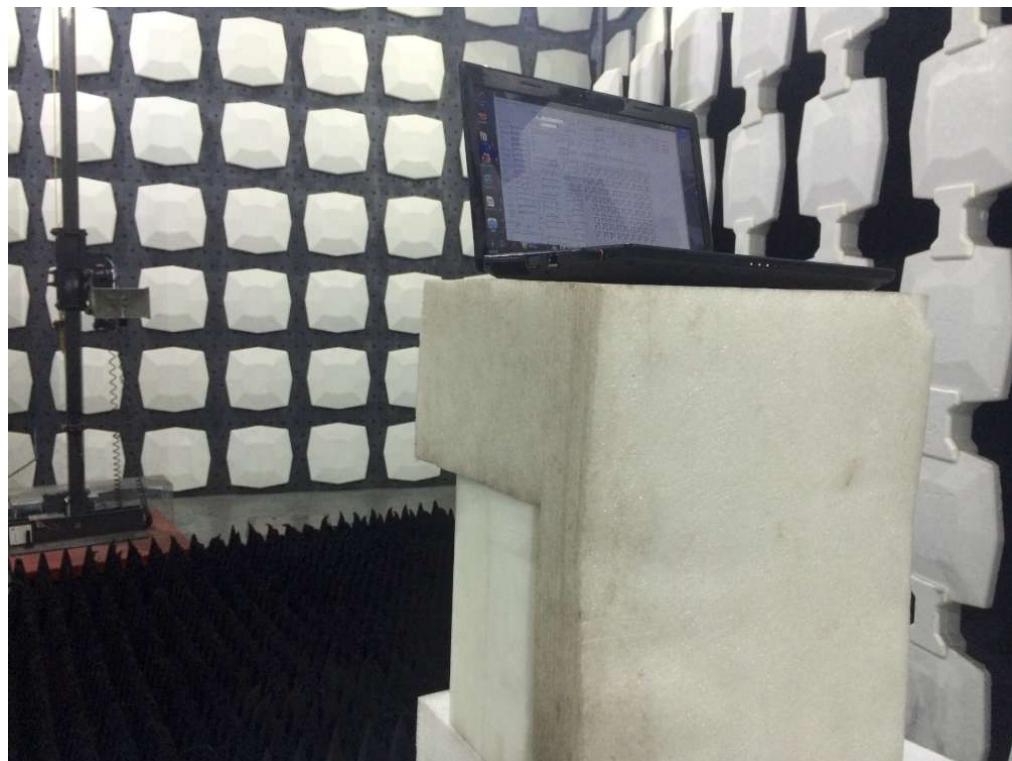
The antennas used for this product is PCB antenna and that no antenna other than that furnished by the responsible party shall be used with the device, the maximum peak gain of the transmit antenna is 1.0 dBi.

11. PHOTOGRAPHS OF TEST SET-UP

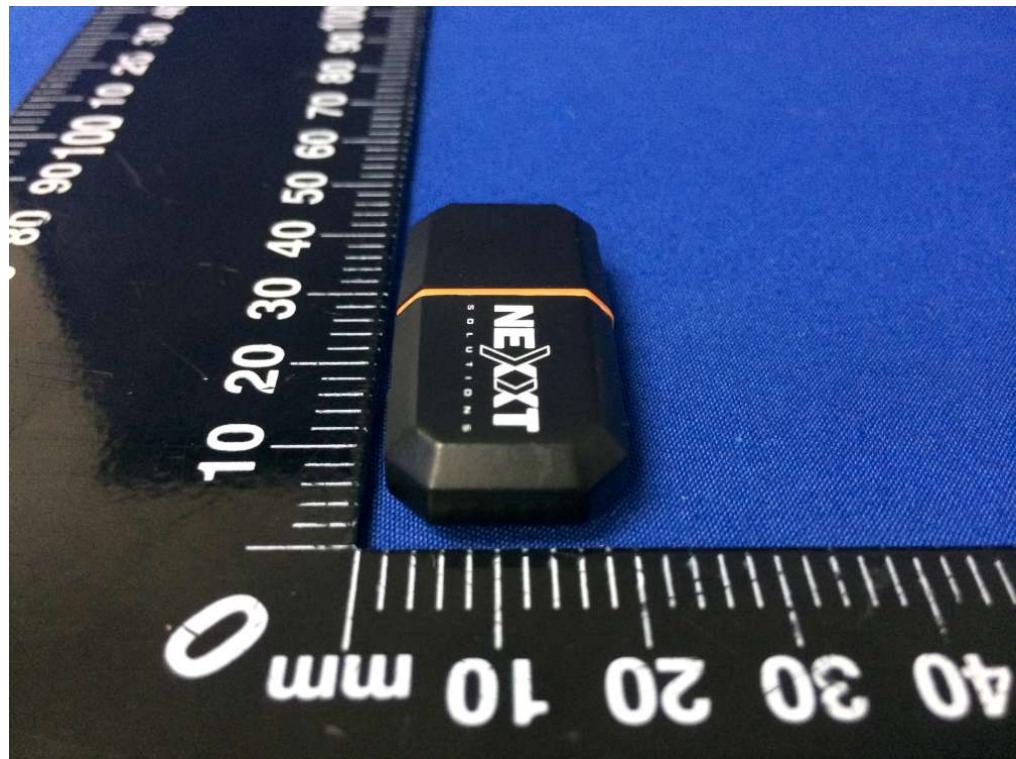
Conducted Emission

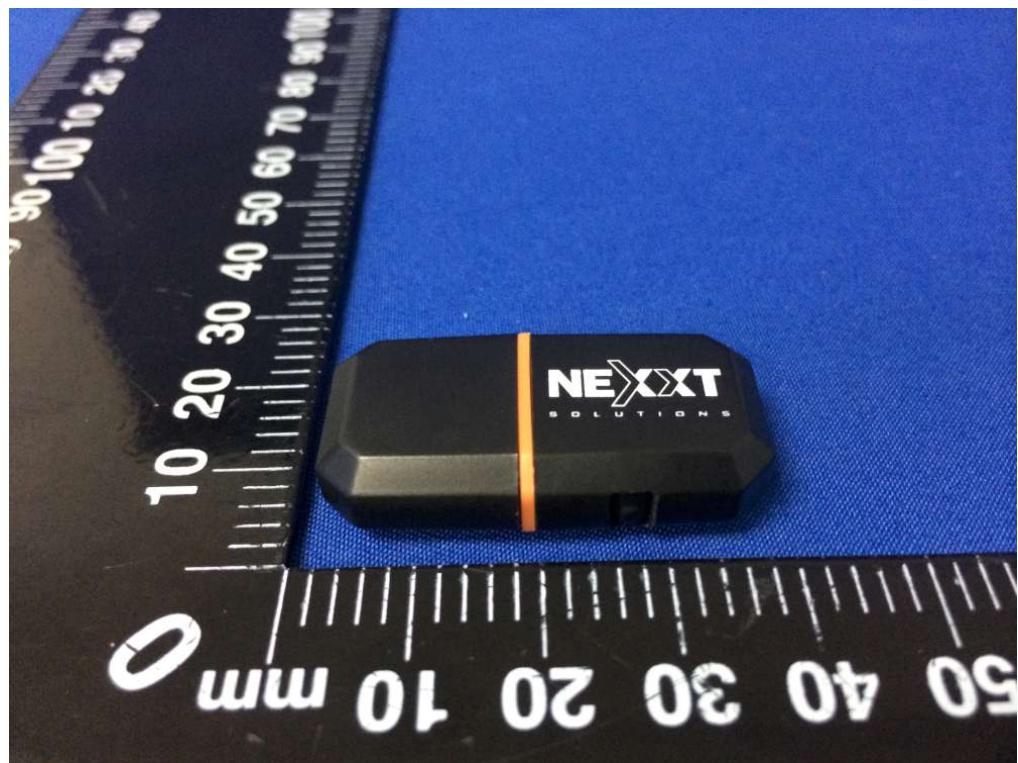


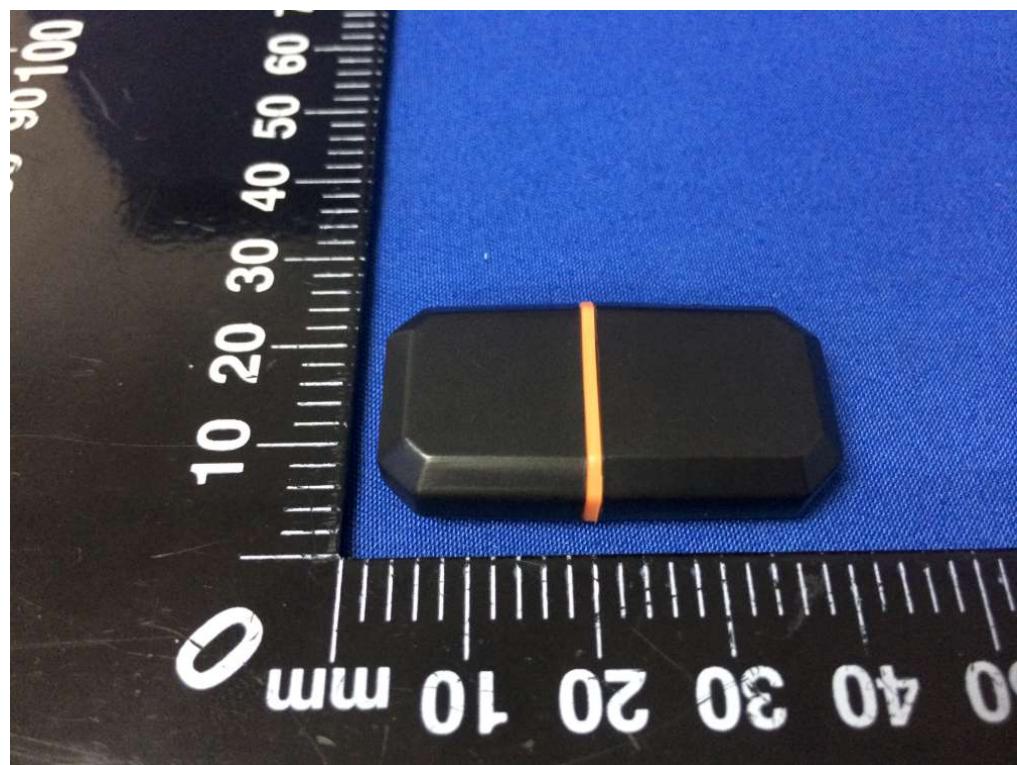
Radiated Emission Test

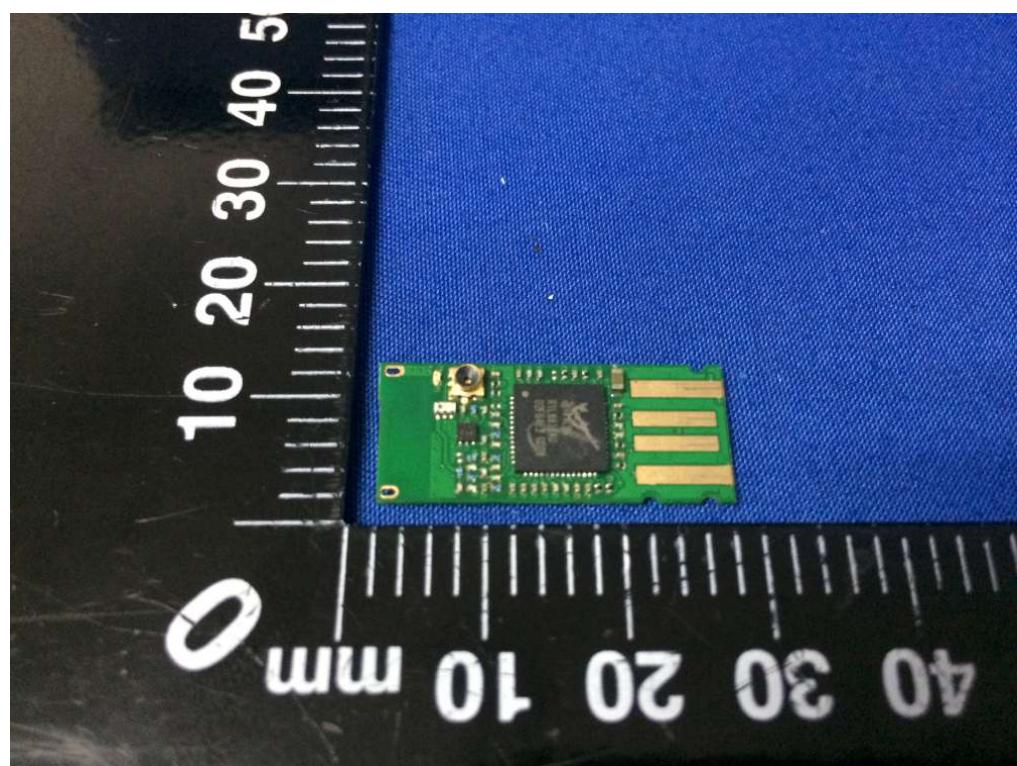
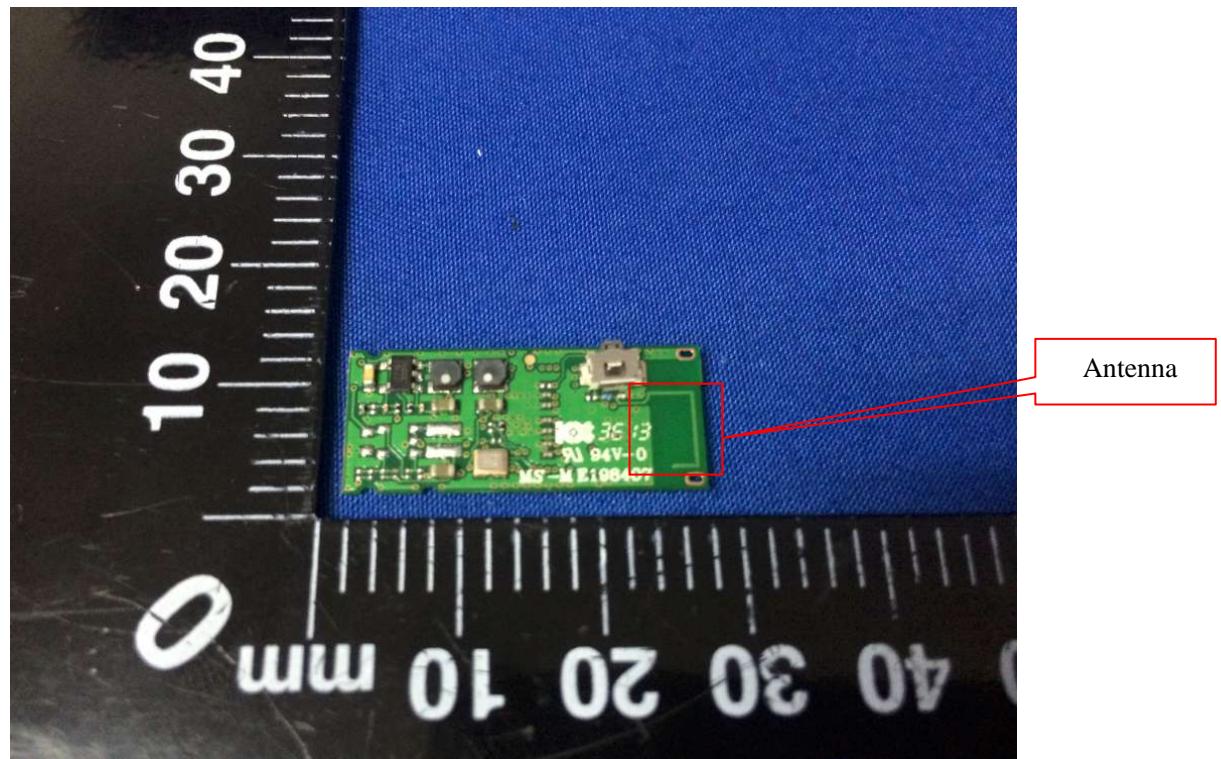


12. PHOTOGRAPHS OF THE EUT









*** the end of report ***