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## FCC RADIO TEST REPORT

|                        |                                                             |
|------------------------|-------------------------------------------------------------|
| Applicant's company    | ZEBRA TECHNOLOGIES CORPORATION                              |
| Applicant Address      | One Motorola Plaza Holtsville, NY 11742 USA                 |
| FCC ID                 | H9PAP7562                                                   |
| Manufacturer's company | Wistron NeWeb Corporation                                   |
| Manufacturer Address   | 20 Park Avenue II, Hsinchu Science Park, Hsinchu 308 Taiwan |

|                   |                                       |
|-------------------|---------------------------------------|
| Product Name      | 802.11 abgn/ac Access Point           |
| Brand Name        | ZEBRA                                 |
| Model No.         | AP-7562                               |
| Test Rule Part(s) | 47 CFR FCC Part 15 Subpart E § 15.407 |
| Test Freq. Range  | 5150 ~ 5250 MHz / 5725 ~ 5850 MHz     |
| Received Date     | Dec. 04, 2014                         |
| Final Test Date   | Mar. 02, 2015                         |
| Submission Type   | Original Equipment                    |

### 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.

Without written approval of SPORTON International Inc., the test report shall not be reproduced except in full.

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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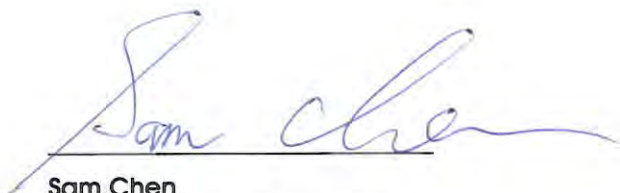
## History of This Test Report

| REPORT NO. | VERSION | DESCRIPTION             | ISSUED DATE   |
|------------|---------|-------------------------|---------------|
| FR4D0448AB | Rev. 01 | Initial issue of report | Mar. 26, 2015 |
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## 1. VERIFICATION OF COMPLIANCE

Product Name : 802.11 abgn/ac Access Point  
Brand Name : ZEBRA  
Model No. : AP-7562  
Applicant : ZEBRA TECHNOLOGIES CORPORATION  
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 Dec. 04, 2014 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.



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 | 4.14 dB     |
| 4.2                                            | 15.407(a)    | 26dB Spectrum Bandwidth and 99% Occupied Bandwidth | Complies | -           |
| 4.3                                            | 15.407(e)    | 6dB Spectrum Bandwidth                             | Complies | -           |
| 4.4                                            | 15.407(a)    | Maximum Conducted Output Power                     | Complies | 0.10 dB     |
| 4.5                                            | 15.407(a)    | Power Spectral Density                             | Complies | -           |
| 4.6                                            | 15.407(b)    | Radiated Emissions                                 | Complies | 1.17 dB     |
| 4.7                                            | 15.407(b)    | Band Edge Emissions                                | Complies | 1.00 dB     |
| 4.8                                            | 15.407(g)    | Frequency Stability                                | Complies | -           |
| 4.9                                            | 15.203       | Antenna Requirements                               | Complies | -           |

### 3. GENERAL INFORMATION

#### 3.1. Product Details

| Items                    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Type             | WLAN (1TX,2TX,3TX/1RX,2RX,3RX)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Radio Type               | Intentional Transceiver                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Power Type               | From PoE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Modulation               | IEEE 802.11a: OFDM<br>IEEE 802.11n/ac: see the below table                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Data Modulation          | IEEE 802.11a/n: OFDM (BPSK / QPSK / 16QAM / 64QAM)<br>IEEE 802.11ac: OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Data Rate (Mbps)         | IEEE 802.11a: OFDM (6/9/12/18/24/36/48/54)<br>IEEE 802.11n/ac: see the below table                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Frequency Range          | 5150 ~ 5250 MHz / 5725 ~ 5850 MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Channel Number           | 9 for 20MHz bandwidth ; 4 for 40MHz bandwidth<br>2 for 80MHz bandwidth                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Channel Band Width (99%) | <p><b>For Band 1 and Band 4 (Master and client without radar detection):</b></p> <p><b>&lt;For Non-Beamforming Mode&gt;</b></p> <p>Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 1TX)<br/>For outdoor use</p> <p>Band 1:<br/>IEEE 802.11ac MCS0/Nss1 (VHT20): 18.12 MHz<br/>IEEE 802.11ac MCS0/Nss1 (VHT40): 37.00 MHz<br/>IEEE 802.11ac MCS0/Nss1 (VHT80): 76.00 MHz</p> <p>Band 4:<br/>IEEE 802.11ac MCS0/Nss1 (VHT20): 21.24 MHz<br/>IEEE 802.11ac MCS0/Nss1 (VHT40): 37.20 MHz<br/>IEEE 802.11ac MCS0/Nss1 (VHT80): 76.00 MHz</p> <p>Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 1TX)<br/>For indoor use</p> <p>Band 1:<br/>IEEE 802.11ac MCS0/Nss1 (VHT20): 22.08 MHz<br/>IEEE 802.11ac MCS0/Nss1 (VHT40): 47.80 MHz<br/>IEEE 802.11ac MCS0/Nss1 (VHT80): 76.00 MHz</p> <p>Mode 2: (Ant.8 Panel antenna / 5.1dBi / 1TX)<br/>Band 1:<br/>IEEE 802.11ac MCS0/Nss1 (VHT20): 27.00 MHz</p> |

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|  | <p>IEEE 802.11ac MCS0/Nss1 (VHT40): 41.00 MHz<br/>IEEE 802.11ac MCS0/Nss1 (VHT80): 76.00 MHz</p> <p>Band 4:</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT20): 26.04 MHz<br/>IEEE 802.11ac MCS0/Nss1 (VHT40): 37.00 MHz<br/>IEEE 802.11ac MCS0/Nss1 (VHT80): 76.00 MHz</p> <p>Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 4: 8.3, Chain 5: 5.9, Chain 6: 8.2dBi / 1TX)</p> <p>Band 1:</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT20): 22.32 MHz<br/>IEEE 802.11ac MCS0/Nss1 (VHT40): 38.20 MHz<br/>IEEE 802.11ac MCS0/Nss1 (VHT80): 76.40 MHz</p> <p>Band 4:</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT20): 20.28 MHz<br/>IEEE 802.11ac MCS0/Nss1 (VHT40): 37.00 MHz<br/>IEEE 802.11ac MCS0/Nss1 (VHT80): 76.00 MHz</p> <p><b>&lt;For STBC Mode&gt;</b></p> <p>Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 2TX)</p> <p>For outdoor use</p> <p>Band 1:</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT20): 18.00 MHz<br/>IEEE 802.11ac MCS0/Nss1 (VHT40): 36.80 MHz<br/>IEEE 802.11ac MCS0/Nss1 (VHT80): 76.00 MHz</p> <p>Band 4:</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT20): 22.92 MHz<br/>IEEE 802.11ac MCS0/Nss1 (VHT40): 37.00 MHz<br/>IEEE 802.11ac MCS0/Nss1 (VHT80): 76.00 MHz</p> <p>Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 3TX)</p> <p>For outdoor use</p> <p>Band 1:</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT20): 17.88 MHz<br/>IEEE 802.11ac MCS0/Nss1 (VHT40): 36.80 MHz<br/>IEEE 802.11ac MCS0/Nss1 (VHT80): 76.00 MHz</p> <p>Band 4:</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT20): 22.08 MHz<br/>IEEE 802.11ac MCS0/Nss1 (VHT40): 37.00 MHz<br/>IEEE 802.11ac MCS0/Nss1 (VHT80): 76.00 MHz</p> |
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|  | <p>Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 2TX)</p> <p>For indoor use</p> <p>Band 1:</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT20): 22.80 MHz</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT40): 41.40 MHz</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT80): 76.00 MHz</p> <p>Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 3TX)</p> <p>For indoor use</p> <p>Band 1:</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT20): 18.84 MHz</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT40): 38.80 MHz</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT80): 76.00 MHz</p> <p>Mode 2: (Ant.8 Panel antenna / 5.1dBi / 2TX)</p> <p>Band 1:</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT20): 18.84 MHz</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT40): 37.40 MHz</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT80): 76.00 MHz</p> <p>Band 4:</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT20): 19.68 MHz</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT40): 36.80 MHz</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT80): 76.00 MHz</p> <p>Mode 2: (Ant.8 Panel antenna / 5.1dBi / 3TX)</p> <p>Band 1:</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT20): 18.84 MHz</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT40): 37.20 MHz</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT80): 76.00 MHz</p> <p>Band 4:</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT20): 18.60 MHz</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT40): 37.00 MHz</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT80): 76.00 MHz</p> <p>Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 4: 8.3, Chain 5: 5.9, Chain 6: 8.2dBi / 2TX)</p> <p>Band 1:</p> <p>IEEE 802.11ac MCS0/Nss2 (VHT20): 20.40 MHz</p> <p>IEEE 802.11ac MCS0/Nss2 (VHT40): 37.40 MHz</p> <p>IEEE 802.11ac MCS0/Nss2 (VHT80): 76.00 MHz</p> <p>Band 4:</p> <p>IEEE 802.11ac MCS0/Nss2 (VHT20): 20.76 MHz</p> |
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|                                | <p>IEEE 802.11ac MCS0/Nss2 (VHT40): 36.80 MHz</p> <p>IEEE 802.11ac MCS0/Nss2 (VHT80): 76.00 MHz</p> <p>Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 4: 8.3, Chain 5: 5.9, Chain 6: 8.2dBi / 3TX)</p> <p>Band 1:</p> <p>IEEE 802.11ac MCS0/Nss2 (VHT20): 17.88 MHz</p> <p>IEEE 802.11ac MCS0/Nss2 (VHT40): 37.00 MHz</p> <p>IEEE 802.11ac MCS0/Nss2 (VHT80): 76.00 MHz</p> <p>Band 4:</p> <p>IEEE 802.11ac MCS0/Nss2 (VHT20): 18.12 MHz</p> <p>IEEE 802.11ac MCS0/Nss2 (VHT40): 37.00 MHz</p> <p>IEEE 802.11ac MCS0/Nss2 (VHT80): 76.00 MHz</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Maximum Conducted Output Power | <p><b>For Band 1 and Band 4 (Master and client without radar detection):</b></p> <p><b>&lt;For Non-Beamforming Mode&gt;</b></p> <p>Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 1TX)</p> <p>For outdoor use</p> <p>Band 1:</p> <p>IEEE 802.11a: 15.25 dBm</p> <p>IEEE 802.11n MCS0 (HT20): 15.26 dBm</p> <p>IEEE 802.11n MCS0 (HT40): 15.30 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT20): 15.29 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT40): 15.28 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT80): 15.27 dBm</p> <p>Band 4:</p> <p>IEEE 802.11a: 21.97 dBm</p> <p>IEEE 802.11n MCS0 (HT20): 21.95 dBm</p> <p>IEEE 802.11n MCS0 (HT40): 17.94 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT20): 21.98 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT40): 17.91 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT80): 16.60 dBm</p> <p>Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 2TX)</p> <p>For outdoor use</p> <p>Band 1:</p> <p>IEEE 802.11a: 15.29 dBm</p> <p>IEEE 802.11n MCS0 (HT20): 15.30 dBm</p> <p>IEEE 802.11n MCS0 (HT40): 15.22 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT20): 15.30 dBm</p> |

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|  | <p>IEEE 802.11ac MCS0/Nss1 (VHT40): 15.31 dBm<br/> IEEE 802.11ac MCS0/Nss1 (VHT80): 15.28 dBm<br/> Band 4:<br/> IEEE 802.11a: 24.86 dBm<br/> IEEE 802.11n MCS0 (HT20): 24.91 dBm<br/> IEEE 802.11n MCS0 (HT40): 19.90 dBm<br/> IEEE 802.11ac MCS0/Nss1 (VHT20): 24.86 dBm<br/> IEEE 802.11ac MCS0/Nss1 (VHT40): 19.93 dBm<br/> IEEE 802.11ac MCS0/Nss1 (VHT80): 17.89 dBm<br/> Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 3TX)<br/> For outdoor use<br/> Band 1:<br/> IEEE 802.11a: 15.21 dBm<br/> IEEE 802.11n MCS0 (HT20): 15.20 dBm<br/> IEEE 802.11n MCS0 (HT40): 15.28 dBm<br/> IEEE 802.11ac MCS0/Nss1 (VHT20): 15.19 dBm<br/> IEEE 802.11ac MCS0/Nss1 (VHT40): 15.26 dBm<br/> IEEE 802.11ac MCS0/Nss1 (VHT80): 15.28 dBm<br/> Band 4:<br/> IEEE 802.11a: 24.02 dBm<br/> IEEE 802.11n MCS0 (HT20): 23.88 dBm<br/> IEEE 802.11n MCS0 (HT40): 21.87 dBm<br/> IEEE 802.11ac MCS0/Nss1 (VHT20): 24.03 dBm<br/> IEEE 802.11ac MCS0/Nss1 (VHT40): 21.96 dBm<br/> IEEE 802.11ac MCS0/Nss1 (VHT80): 19.26 dBm<br/> Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 1TX)<br/> For indoor use<br/> Band 1:<br/> IEEE 802.11a: 21.98 dBm<br/> IEEE 802.11n MCS0 (HT20): 21.96 dBm<br/> IEEE 802.11n MCS0 (HT40): 21.96 dBm<br/> IEEE 802.11ac MCS0/Nss1 (VHT20): 21.96 dBm<br/> IEEE 802.11ac MCS0/Nss1 (VHT40): 21.94 dBm<br/> IEEE 802.11ac MCS0/Nss1 (VHT80): 17.26 dBm<br/> Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 2TX)<br/> For indoor use<br/> Band 1:<br/> IEEE 802.11a: 24.84 dBm</p> |
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|  | <p>IEEE 802.11n MCSO (HT20): 24.92 dBm</p> <p>IEEE 802.11n MCSO (HT40): 23.48 dBm</p> <p>IEEE 802.11ac MCSO/Nss1 (VHT20): 24.83 dBm</p> <p>IEEE 802.11ac MCSO/Nss1 (VHT40): 23.46 dBm</p> <p>IEEE 802.11ac MCSO/Nss1 (VHT80): 19.72 dBm</p> <p>Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 3TX)</p> <p>For indoor use</p> <p>Band 1:</p> <p>IEEE 802.11a: 23.83 dBm</p> <p>IEEE 802.11n MCSO (HT20): 23.84 dBm</p> <p>IEEE 802.11n MCSO (HT40): 24.66 dBm</p> <p>IEEE 802.11ac MCSO/Nss1 (VHT20): 23.81 dBm</p> <p>IEEE 802.11ac MCSO/Nss1 (VHT40): 24.59 dBm</p> <p>IEEE 802.11ac MCSO/Nss1 (VHT80): 20.61 dBm</p> <p>Mode 2: (Ant.8 Panel antenna / 5.1dBi / 1TX)</p> <p>Band 1:</p> <p>IEEE 802.11a: 21.91 dBm</p> <p>IEEE 802.11n MCSO (HT20): 21.89 dBm</p> <p>IEEE 802.11n MCSO (HT40): 21.85 dBm</p> <p>IEEE 802.11ac MCSO/Nss1 (VHT20): 21.88 dBm</p> <p>IEEE 802.11ac MCSO/Nss1 (VHT40): 21.84 dBm</p> <p>IEEE 802.11ac MCSO/Nss1 (VHT80): 17.03 dBm</p> <p>Band 4:</p> <p>IEEE 802.11a: 21.96 dBm</p> <p>IEEE 802.11n MCSO (HT20): 21.97 dBm</p> <p>IEEE 802.11n MCSO (HT40): 18.51 dBm</p> <p>IEEE 802.11ac MCSO/Nss1 (VHT20): 21.92 dBm</p> <p>IEEE 802.11ac MCSO/Nss1 (VHT40): 18.34 dBm</p> <p>IEEE 802.11ac MCSO/Nss1 (VHT80): 16.15 dBm</p> <p>Mode 2: (Ant.8 Panel antenna / 5.1dBi / 2TX)</p> <p>Band 1:</p> <p>IEEE 802.11a: 24.93 dBm</p> <p>IEEE 802.11n MCSO (HT20): 24.94 dBm</p> <p>IEEE 802.11n MCSO (HT40): 23.84 dBm</p> <p>IEEE 802.11ac MCSO/Nss1 (VHT20): 24.99 dBm</p> <p>IEEE 802.11ac MCSO/Nss1 (VHT40): 23.78 dBm</p> <p>IEEE 802.11ac MCSO/Nss1 (VHT80): 17.73 dBm</p> |
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|  | <p>Band 4:</p> <p>IEEE 802.11a: 24.67 dBm</p> <p>IEEE 802.11n MCS0 (HT20): 24.68 dBm</p> <p>IEEE 802.11n MCS0 (HT40): 18.70 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT20): 24.66 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT40): 18.99 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT80): 18.29 dBm</p> <p>Mode 2: (Ant.8 Panel antenna / 5.1dBi / 3TX)</p> <p>Band 1:</p> <p>IEEE 802.11a: 26.41 dBm</p> <p>IEEE 802.11n MCS0 (HT20): 26.42 dBm</p> <p>IEEE 802.11n MCS0 (HT40): 23.88 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT20): 26.33 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT40): 24.09 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT80): 18.11 dBm</p> <p>Band 4:</p> <p>IEEE 802.11a: 24.44 dBm</p> <p>IEEE 802.11n MCS0 (HT20): 24.44 dBm</p> <p>IEEE 802.11n MCS0 (HT40): 20.32 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT20): 24.46 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT40): 20.36 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT80): 19.84 dBm</p> <p>Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 4: 8.3, Chain 5: 5.9, Chain 6: 8.2dBi / 1TX)</p> <p>Band 1:</p> <p>IEEE 802.11a: 21.52 dBm</p> <p>IEEE 802.11n MCS0 (HT20): 21.43 dBm</p> <p>IEEE 802.11n MCS0 (HT40): 19.65 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT20): 21.49 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT40): 19.53 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT80): 14.16 dBm</p> <p>Band 4:</p> <p>IEEE 802.11a: 20.78 dBm</p> <p>IEEE 802.11n MCS0 (HT20): 20.78 dBm</p> <p>IEEE 802.11n MCS0 (HT40): 16.59 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT20): 20.84 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT40): 16.58 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT80): 13.73 dBm</p> |
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|  | <p>Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 4: 8.3, Chain 5: 5.9, Chain 6: 8.2dBi / 2TX)</p> <p>Band 1:</p> <p>IEEE 802.11a: 24.72 dBm</p> <p>IEEE 802.11n MCS0 (HT20): 24.62 dBm</p> <p>IEEE 802.11n MCS0 (HT40): 21.99 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT20): 24.67 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT40): 22.00 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT80): 14.83 dBm</p> <p>Band 4:</p> <p>IEEE 802.11a: 23.65 dBm</p> <p>IEEE 802.11n MCS0 (HT20): 23.54 dBm</p> <p>IEEE 802.11n MCS0 (HT40): 17.47 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT20): 23.55 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT40): 17.48 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT80): 16.30 dBm</p> <p>Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 4: 8.3, Chain 5: 5.9, Chain 6: 8.2dBi / 3TX)</p> <p>Band 1:</p> <p>IEEE 802.11a: 23.40 dBm</p> <p>IEEE 802.11n MCS0 (HT20): 23.43 dBm</p> <p>IEEE 802.11n MCS0 (HT40): 22.23 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT20): 23.39 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT40): 22.16 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT80): 14.17 dBm</p> <p>Band 4:</p> <p>IEEE 802.11a: 23.57 dBm</p> <p>IEEE 802.11n MCS0 (HT20): 23.42 dBm</p> <p>IEEE 802.11n MCS0 (HT40): 18.93 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT20): 23.54 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT40): 19.06 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT80): 14.66 dBm</p> <p><b>&lt;For Beamforming Mode&gt;</b></p> <p>Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 2TX)</p> <p>For outdoor use</p> <p>Band 1:</p> <p>IEEE 802.11a: 12.28 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT20): 12.29 dBm</p> |
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|  | <p>IEEE 802.11ac MCS0/Nss1 (VHT40): 12.30 dBm<br/> IEEE 802.11ac MCS0/Nss1 (VHT80): 12.09 dBm<br/> Band 4:<br/> IEEE 802.11a: 24.62 dBm<br/> IEEE 802.11ac MCS0/Nss1 (VHT20): 24.70 dBm<br/> IEEE 802.11ac MCS0/Nss1 (VHT40): 19.60 dBm<br/> IEEE 802.11ac MCS0/Nss1 (VHT80): 17.89 dBm<br/> Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 3TX)<br/> For outdoor use<br/> Band 1:<br/> IEEE 802.11a: 10.34 dBm<br/> IEEE 802.11ac MCS0/Nss1 (VHT20): 10.34 dBm<br/> IEEE 802.11ac MCS0/Nss1 (VHT40): 10.26 dBm<br/> IEEE 802.11ac MCS0/Nss1 (VHT80): 9.99 dBm<br/> Band 4:<br/> IEEE 802.11a: 23.77 dBm<br/> IEEE 802.11ac MCS0/Nss1 (VHT20): 23.78 dBm<br/> IEEE 802.11ac MCS0/Nss1 (VHT40): 20.48 dBm<br/> IEEE 802.11ac MCS0/Nss1 (VHT80): 18.60 dBm<br/> Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 2TX)<br/> For indoor use<br/> Band 1:<br/> IEEE 802.11a: 24.84 dBm<br/> IEEE 802.11ac MCS0/Nss1 (VHT20): 24.67 dBm<br/> IEEE 802.11ac MCS0/Nss1 (VHT40): 24.85 dBm<br/> IEEE 802.11ac MCS0/Nss1 (VHT80): 20.23 dBm<br/> Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 3TX)<br/> For indoor use<br/> Band 1:<br/> IEEE 802.11a: 23.83 dBm<br/> IEEE 802.11ac MCS0/Nss1 (VHT20): 23.78 dBm<br/> IEEE 802.11ac MCS0/Nss1 (VHT40): 23.59 dBm<br/> IEEE 802.11ac MCS0/Nss1 (VHT80): 20.85 dBm<br/> Mode 2: (Ant.8 Panel antenna / 5.1dBi / 2TX)<br/> Band 1:<br/> IEEE 802.11a: 24.97 dBm<br/> IEEE 802.11ac MCS0/Nss1 (VHT20): 24.97 dBm<br/> IEEE 802.11ac MCS0/Nss1 (VHT40): 23.42 dBm</p> |
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|  | <p>IEEE 802.11ac MCS0/Nss1 (VHT80): 19.27 dBm</p> <p>Band 4:</p> <p>IEEE 802.11a: 24.43 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT20): 24.63 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT40): 20.66 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT80): 17.46 dBm</p> <p>Mode 2: (Ant.8 Panel antenna / 5.1dBi / 3TX)</p> <p>Band 1:</p> <p>IEEE 802.11a: 24.70 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT20): 24.71 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT40): 24.19 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT80): 17.99 dBm</p> <p>Band 4:</p> <p>IEEE 802.11a: 23.39 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT20): 23.35 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT40): 20.69 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT80): 18.52 dBm</p> <p>Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 4: 8.3, Chain 5: 5.9, Chain 6: 8.2dBi / 2TX)</p> <p>Band 1:</p> <p>IEEE 802.11a: 22.84 dBm</p> <p>IEEE 802.11ac MCS0/Nss2 (VHT20): 22.77 dBm</p> <p>IEEE 802.11ac MCS0/Nss2 (VHT40): 21.71 dBm</p> <p>IEEE 802.11ac MCS0/Nss2 (VHT80): 14.42 dBm</p> <p>Band 4:</p> <p>IEEE 802.11a: 23.00 dBm</p> <p>IEEE 802.11ac MCS0/Nss2 (VHT20): 23.05 dBm</p> <p>IEEE 802.11ac MCS0/Nss2 (VHT40): 16.68 dBm</p> <p>IEEE 802.11ac MCS0/Nss2 (VHT80): 16.03 dBm</p> <p>Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 4: 8.3, Chain 5: 5.9, Chain 6: 8.2dBi / 3TX)</p> <p>Band 1:</p> <p>IEEE 802.11a: 22.65 dBm</p> <p>IEEE 802.11ac MCS0/Nss2 (VHT20): 22.54 dBm</p> <p>IEEE 802.11ac MCS0/Nss2 (VHT40): 21.86 dBm</p> <p>IEEE 802.11ac MCS0/Nss2 (VHT80): 14.17 dBm</p> <p>Band 4:</p> <p>IEEE 802.11a: 21.56 dBm</p> |
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|  | <p>IEEE 802.11ac MCS0/Nss2 (VHT20): 21.49 dBm<br/> IEEE 802.11ac MCS0/Nss2 (VHT40): 18.74 dBm<br/> IEEE 802.11ac MCS0/Nss2 (VHT80): 14.54 dBm<br/> <b>&lt;For STBC Mode&gt;</b><br/> Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 2TX)<br/> For outdoor use<br/> Band 1:<br/> IEEE 802.11ac MCS0/Nss1 (VHT20): 15.24 dBm<br/> IEEE 802.11ac MCS0/Nss1 (VHT40): 15.23 dBm<br/> IEEE 802.11ac MCS0/Nss1 (VHT80): 15.25 dBm<br/> Band 4:<br/> IEEE 802.11ac MCS0/Nss1 (VHT20): 24.82 dBm<br/> IEEE 802.11ac MCS0/Nss1 (VHT40): 20.11 dBm<br/> IEEE 802.11ac MCS0/Nss1 (VHT80): 18.01 dBm<br/> Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 3TX)<br/> For outdoor use<br/> Band 1:<br/> IEEE 802.11ac MCS0/Nss1 (VHT20): 15.25 dBm<br/> IEEE 802.11ac MCS0/Nss1 (VHT40): 15.29 dBm<br/> IEEE 802.11ac MCS0/Nss1 (VHT80): 15.21 dBm<br/> Band 4:<br/> IEEE 802.11ac MCS0/Nss1 (VHT20): 26.63 dBm<br/> IEEE 802.11ac MCS0/Nss1 (VHT40): 20.57 dBm<br/> IEEE 802.11ac MCS0/Nss1 (VHT80): 19.76 dBm<br/> Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 2TX)<br/> For indoor use<br/> Band 1:<br/> IEEE 802.11ac MCS0/Nss1 (VHT20): 24.86 dBm<br/> IEEE 802.11ac MCS0/Nss1 (VHT40): 24.71 dBm<br/> IEEE 802.11ac MCS0/Nss1 (VHT80): 20.22 dBm<br/> Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 3TX)<br/> For indoor use<br/> Band 1:<br/> IEEE 802.11ac MCS0/Nss1 (VHT20): 26.16 dBm<br/> IEEE 802.11ac MCS0/Nss1 (VHT40): 26.23 dBm<br/> IEEE 802.11ac MCS0/Nss1 (VHT80): 20.55 dBm</p> |
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|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
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|  | <p>Mode 2: (Ant.8 Panel antenna / 5.1dBi / 2TX)</p> <p>Band 1:</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT20): 24.94 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT40): 24.02 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT80): 19.02 dBm</p> <p>Band 4:</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT20): 24.89 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT40): 20.60 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT80): 18.75 dBm</p> <p>Mode 2: (Ant.8 Panel antenna / 5.1dBi / 3TX)</p> <p>Band 1:</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT20): 26.54 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT40): 25.12 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT80): 19.01 dBm</p> <p>Band 4:</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT20): 26.26 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT40): 20.98 dBm</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT80): 19.38 dBm</p> <p>Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 4: 8.3, Chain 5: 5.9, Chain 6: 8.2dBi / 2TX)</p> <p>Band 1:</p> <p>IEEE 802.11ac MCS0/Nss2 (VHT20): 24.62 dBm</p> <p>IEEE 802.11ac MCS0/Nss2 (VHT40): 22.61 dBm</p> <p>IEEE 802.11ac MCS0/Nss2 (VHT80): 16.70 dBm</p> <p>Band 4:</p> <p>IEEE 802.11ac MCS0/Nss2 (VHT20): 24.13 dBm</p> <p>IEEE 802.11ac MCS0/Nss2 (VHT40): 18.44 dBm</p> <p>IEEE 802.11ac MCS0/Nss2 (VHT80): 16.88 dBm</p> <p>Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 4: 8.3, Chain 5: 5.9, Chain 6: 8.2dBi / 3TX)</p> <p>Band 1:</p> <p>IEEE 802.11ac MCS0/Nss2 (VHT20): 22.20 dBm</p> <p>IEEE 802.11ac MCS0/Nss2 (VHT40): 23.42 dBm</p> <p>IEEE 802.11ac MCS0/Nss2 (VHT80): 17.01 dBm</p> <p>Band 4:</p> <p>IEEE 802.11ac MCS0/Nss2 (VHT20): 23.98 dBm</p> <p>IEEE 802.11ac MCS0/Nss2 (VHT40): 19.92 dBm</p> <p>IEEE 802.11ac MCS0/Nss2 (VHT80): 17.53 dBm</p> |
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|                     |                             |
|---------------------|-----------------------------|
| 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         |
| Beamforming Function | <input checked="" type="checkbox"/> With beamforming                                         | <input type="checkbox"/> Without beamforming |
| STBC Function        | <input checked="" type="checkbox"/> With STBC                                                | <input type="checkbox"/> Without STBC        |
| LDPC Function        | <input checked="" type="checkbox"/> With LDPC                                                | <input type="checkbox"/> Without LDPC        |
| Operating Mode       | <input checked="" type="checkbox"/> Outdoor access point with client without radar detection |                                              |
|                      | <input checked="" type="checkbox"/> Indoor access point with client without radar detection  |                                              |
|                      | <input checked="" type="checkbox"/> Fixed point-to-point access points                       |                                              |
|                      | <input type="checkbox"/> Mobile and portable client devices                                  |                                              |

Note1: The product has beamforming function for 802.11g/n/ac in 2.4GHz and 802.11a/n/ac in 5GHz.

Note2: The product has STBC and LDPC in 2TX/3TX function for 802.11n/ac in 2.4GHz and 802.11n/ac in 5GHz.

#### Antenna and Band width

| Antenna         | Single (TX) |        |        | Two (TX) |        |        | Three (TX) |        |        |
|-----------------|-------------|--------|--------|----------|--------|--------|------------|--------|--------|
| Band width Mode | 20 MHz      | 40 MHz | 80 MHz | 20 MHz   | 40 MHz | 80 MHz | 20 MHz     | 40 MHz | 80 MHz |
| IEEE 802.11a    | V           | X      | X      | V        | X      | X      | V          | X      | X      |
| IEEE 802.11n    | V           | V      | X      | V        | V      | X      | V          | V      | X      |
| IEEE 802.11ac   | V           | V      | V      | V        | V      | V      | V          | V      | V      |

#### IEEE 11n/ac Spec.

| Protocol         | Number of Transmit Chains (NTX) | Data Rate / MCS |
|------------------|---------------------------------|-----------------|
| 802.11n (HT20)   | 1,2,3                           | MCS 0-23        |
| 802.11n (HT40)   | 1,2,3                           | MCS 0-23        |
| 802.11ac (VHT40) | 1,2,3                           | MCS 0-9/Nss1-3  |
| 802.11ac (VHT80) | 1,2,3                           | MCS 0-9/Nss1-3  |

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

Then EUT support 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 in 2.4GHz and supports VHT20, VHT40, VHT80 in 5GHz.

Note 3: Modulation modes consist of below configuration:

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

### 3.2. Accessories

N/A

### 3.3. Table for Filed Antenna

| Ant. | Brand | Zebra P/N          | Antenna Type                   | Connector | Indoor/<br>Outdoor | Antenna Gain (dBi) |     | Cable Loss (dB) |     | True Gain (dBi) |     |
|------|-------|--------------------|--------------------------------|-----------|--------------------|--------------------|-----|-----------------|-----|-----------------|-----|
|      |       |                    |                                |           |                    | 2.4G               | 5G  | 2.4G            | 5G  | 2.4G            | 5G  |
| 1    | Zebra | ML-5299-HPA5-01    | Dipole                         | N Male    | Indoor/<br>Outdoor | -                  | 5.6 | -               | 0.9 | -               | 4.7 |
| 2    | Zebra | ML-2452-HPAG4A6-01 | Dipole                         | N Male    | Indoor/<br>Outdoor | 4                  | 7.3 | -               | -   | 4               | 7.3 |
| 3    | Laird | ML-2499-FHPA5-01R  | Dipole                         | N Male    | Indoor/<br>Outdoor | 5.3                | -   | 0.7             | -   | 4.6             | -   |
| 4    | Zebra | ML-2499-HPA4-01    | Dipole                         | N Male    | Indoor/<br>Outdoor | 4.5                | -   | 0.7             | -   | 3.8             | -   |
| 5    | Zebra | ML-2452-HPA6X6-036 | Dipole                         | N Male    | Indoor/<br>Outdoor | 4                  | 6   | 0.7             | 0.9 | 3.3             | 5.1 |
| 6    | Zebra | ML-2452-HPA6-01    | Dipole                         | N Male    | Indoor/<br>Outdoor | 5.3                | 6.1 | -               | -   | 5.3             | 6.1 |
| 7    | Zebra | ML-2499-5PNL-72-N  | Panel                          | N Male    | Indoor/<br>Outdoor | 6.5                | -   | -               | -   | 6.5             | -   |
| 8    | Zebra | ML-2452-PNA5-01R   | Panel                          | N Male    | Indoor/<br>Outdoor | 5.5                | 6   | 0.7             | 0.9 | 4.8             | 5.1 |
| 9    | Zebra | ML-2452-PNL3M3-1   | CROSS-POLARIZED PANEL ANTENNA* | N Female  | Indoor/<br>Outdoor | Note 1             |     |                 |     |                 |     |

Note 1:

| Antenna | Antenna Gain (dBi) |      | Cable loss (dB) |      | True Gain (dBi) |      |
|---------|--------------------|------|-----------------|------|-----------------|------|
|         | 2.4GHz             | 5GHz | 2.4GHz          | 5GHz | 2.4GHz          | 5GHz |
| A       | 9.5                | 9.2  | 0.7             | 0.9  | 8.8             | 8.3  |
| B       | 6.6                | 6.8  | 0.7             | 0.9  | 5.9             | 5.9  |
| C       | 9.7                | 9.1  | 0.7             | 0.9  | 9               | 8.2  |

Note 2: Ant. 1~9 are the different antenna type in the antenna list. Only the highest gain antenna was selected from each different type of antenna to test and record in this report. Ant. 6, Ant. 7 and Ant. 9 for 2.4GHz and Ant. 2, Ant. 8 and Ant. 9 for 5GHz were selected to perform the test and recorded in this report.

Note 3: \*This Antenna has 3 of the same CROSS-POLARIZED PANEL ANTENNA in a single housing.

**<For 2.4GHz Band>**

For IEEE 802.11b/g/n/ac mode (1TX,2TX,3TX/1RX,2RX,3RX):

The EUT can support 1TX, 2TX, 3TX and 1RX, 2RX, 3RX functions.

For 1TX (Ant. 6 and Ant. 7)

Both Chain 4 and Chain 5 support transmit and receive functions, but only one of them will be used at one time.

After evaluating, Chain 5 has been evaluated to be the worst case, so it's selected to record in this test report.

For 1TX (Ant. 9)

Both Chain 4 and Chain 5 support transmit and receive functions, but only one of them will be used at one time.

After evaluating, Chain 4 has been evaluated to be the worst case, so it's selected to record in this test report.

For 2TX

Chain 4 and Chain 5 could transmit/receive simultaneously.

For 3TX

Chain 4, Chain 5 and Chain 6 could transmit/receive simultaneously.

**<For 5GHz Band>**

For IEEE 802.11a/n/ac mode (1TX,2TX,3TX/1RX,2RX,3RX):

The EUT can support 1TX, 2TX, 3TX and 1RX, 2RX, 3RX functions.

For 1TX (Ant. 2)

Both Chain 4 and Chain 5 support transmit and receive functions, but only one of them will be used at one time.

After evaluating, Chain 5 has been evaluated to be the worst case, so it's selected to record in this test report.

For 1TX (Ant. 8 and Ant. 9)

Both Chain 4 and Chain 5 support transmit and receive functions, but only one of them will be used at one time.

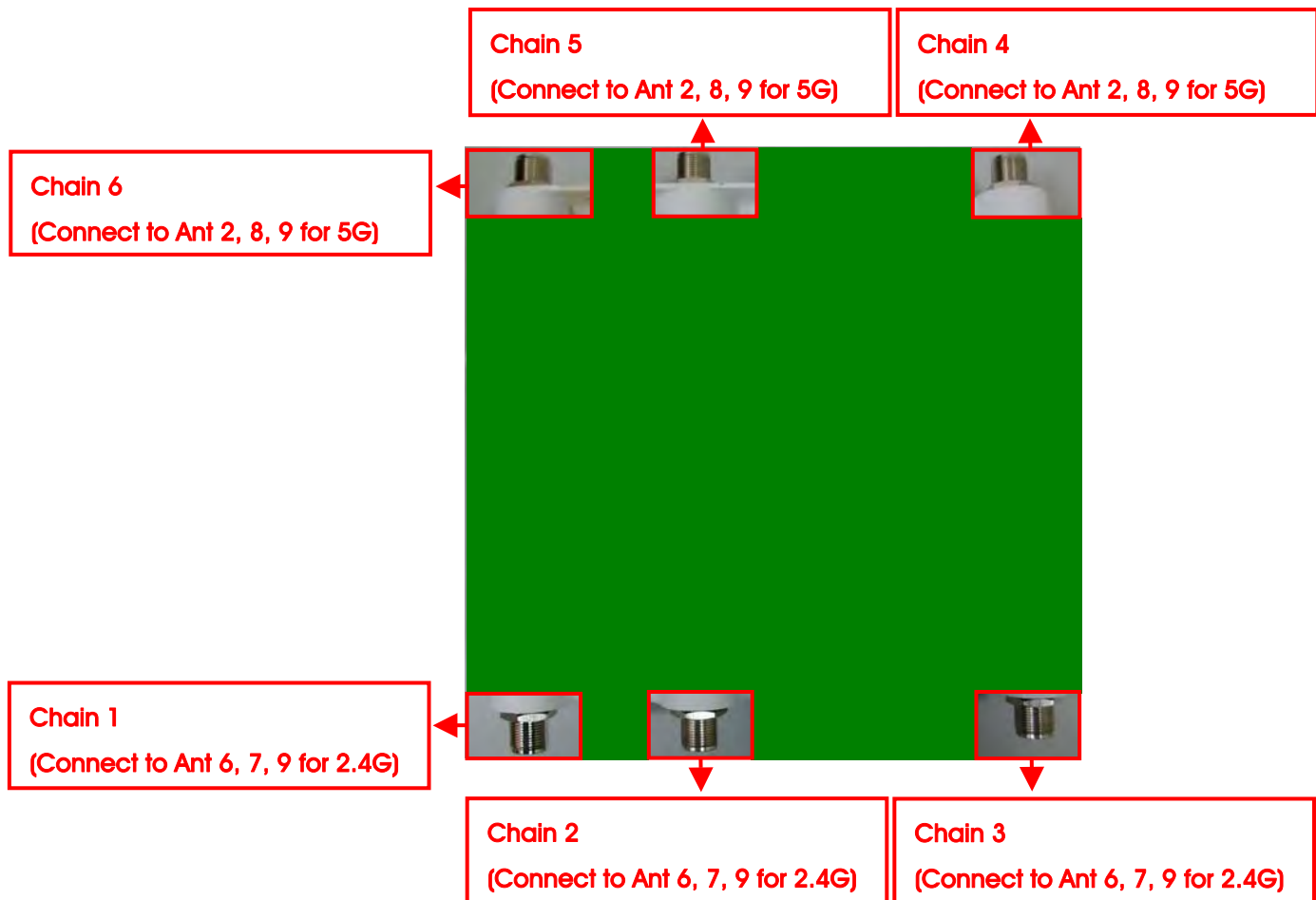
After evaluating, Chain 4 has been evaluated to be the worst case, so it's selected to record in this test report.

For 2TX

Chain 4 and Chain 5 could transmit/receive simultaneously.

For 3TX

Chain 4, Chain 5 and Chain 6 could transmit/receive simultaneously.



### 3.4. Table for Carrier Frequencies

There are three bandwidth systems.

For 20MHz bandwidth systems, use Channel 36, 40, 44, 48, 149, 153, 157, 161, 165.

For 40MHz bandwidth systems, use Channel 38, 46, 151, 159.

For 80MHz bandwidth systems, use Channel 42, 155.

| Frequency Band          | Channel No. | Frequency | Channel No. | Frequency |
|-------------------------|-------------|-----------|-------------|-----------|
| 5150~5250 MHz<br>Band 1 | 36          | 5180 MHz  | 44          | 5220 MHz  |
|                         | 38          | 5190 MHz  | 46          | 5230 MHz  |
|                         | 40          | 5200 MHz  | 48          | 5240 MHz  |
|                         | 42          | 5210 MHz  | -           | -         |
| 5725~5850 MHz<br>Band 4 | 149         | 5745 MHz  | 157         | 5785 MHz  |
|                         | 151         | 5755 MHz  | 159         | 5795 MHz  |
|                         | 153         | 5765 MHz  | 161         | 5805 MHz  |
|                         | 155         | 5775 MHz  | 165         | 5825 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 | For Non-Beamforming Mode |          |           |                      |                                                                         |
|                             | 11a/BPSK                 | Band 1&4 | 6Mbps     | 36/40/48/149/157/165 | 4 (Ant. 8, 9)<br>5 (Ant. 2)<br>4+5 (Ant.2, 8. 9)<br>4+5+6 (Ant.2, 8. 9) |
|                             | 11n HT20                 | Band 1&4 | MCS0      | 36/40/48/149/157/165 | 4 (Ant. 8, 9)<br>5 (Ant. 2)<br>4+5 (Ant.2, 8. 9)<br>4+5+6 (Ant.2, 8. 9) |
|                             | 11n HT40                 | Band 1&4 | MCS0      | 38/46/151/159        | 4 (Ant. 8, 9)<br>5 (Ant. 2)<br>4+5 (Ant.2, 8. 9)<br>4+5+6 (Ant.2, 8. 9) |
|                             | 11ac VHT20               | Band 1&4 | MCS0/Nss1 | 36/40/48/149/157/165 | 4 (Ant. 8, 9)<br>5 (Ant. 2)<br>4+5 (Ant.2, 8. 9)<br>4+5+6 (Ant.2, 8. 9) |
|                             | 11ac VHT40               | Band 1&4 | MCS0/Nss1 | 38/46/151/159        | 4 (Ant. 8, 9)<br>5 (Ant. 2)<br>4+5 (Ant.2, 8. 9)<br>4+5+6 (Ant.2, 8. 9) |
|                             | 11ac VHT80               | Band 1&4 | MCS0/Nss1 | 42/155               | 4 (Ant. 8, 9)<br>5 (Ant. 2)<br>4+5 (Ant.2, 8. 9)<br>4+5+6 (Ant.2, 8. 9) |

|                        |                          |          |           |                          |                                                                         |
|------------------------|--------------------------|----------|-----------|--------------------------|-------------------------------------------------------------------------|
|                        | For Beamforming Mode     |          |           |                          |                                                                         |
|                        | 11a/BPSK                 | Band 1&4 | 6Mbps     | 36/40/48/149/<br>157/165 | 4+5 (Ant.2, 8. 9)<br>4+5+6 (Ant.2, 8. 9)                                |
|                        | 11ac VHT20               | Band 1&4 | MCS0/Nss1 | 36/40/48/149/            | 4+5 (Ant.2, 8. 9)                                                       |
|                        |                          |          | MCS0/Nss2 | 157/165                  | 4+5+6 (Ant.2, 8. 9)                                                     |
|                        | 11ac VHT40               | Band 1&4 | MCS0/Nss1 | 38/46/151/159            | 4+5 (Ant.2, 8. 9)                                                       |
|                        |                          |          | MCS0/Nss2 |                          | 4+5+6 (Ant.2, 8. 9)                                                     |
|                        | 11ac VHT80               | Band 1&4 | MCS0/Nss1 | 42/155                   | 4+5 (Ant.2, 8. 9)                                                       |
|                        |                          |          | MCS0/Nss2 |                          | 4+5+6 (Ant.2, 8. 9)                                                     |
|                        | For STBC Mode            |          |           |                          |                                                                         |
|                        | 11ac VHT20               | Band 1&4 | MCS0/Nss1 | 36/40/48/149/            | 4+5 (Ant.2, 8. 9)                                                       |
|                        |                          |          | MCS0/Nss2 | 157/165                  | 4+5+6 (Ant.2, 8. 9)                                                     |
|                        | 11ac VHT40               | Band 1&4 | MCS0/Nss1 | 38/46/151/159            | 4+5 (Ant.2, 8. 9)                                                       |
|                        |                          |          | MCS0/Nss2 |                          | 4+5+6 (Ant.2, 8. 9)                                                     |
|                        | 11ac VHT80               | Band 1&4 | MCS0/Nss1 | 42/155                   | 4+5 (Ant.2, 8. 9)                                                       |
|                        |                          |          | MCS0/Nss2 |                          | 4+5+6 (Ant.2, 8. 9)                                                     |
| Power Spectral Density | For Non-Beamforming Mode |          |           |                          |                                                                         |
|                        | 11ac VHT20               | Band 1&4 | MCS0/Nss1 | 36/40/48/149/<br>157/165 | 4 (Ant. 8, 9)<br>5 (Ant. 2)<br>4+5 (Ant.2, 8. 9)<br>4+5+6 (Ant.2, 8. 9) |
|                        | 11ac VHT40               | Band 1&4 | MCS0/Nss1 | 38/46/151/159            | 4 (Ant. 8, 9)<br>5 (Ant. 2)<br>4+5 (Ant.2, 8. 9)<br>4+5+6 (Ant.2, 8. 9) |
|                        | 11ac VHT80               | Band 1&4 | MCS0/Nss1 | 42/155                   | 4 (Ant. 8, 9)<br>5 (Ant. 2)<br>4+5 (Ant.2, 8. 9)<br>4+5+6 (Ant.2, 8. 9) |



|                      |          |           |                          |                                                                         |  |
|----------------------|----------|-----------|--------------------------|-------------------------------------------------------------------------|--|
| For Beamforming Mode |          |           |                          |                                                                         |  |
| 11ac VHT20           | Band 1&4 | MCS0/Nss1 | 36/40/48/149/<br>157/165 | 4 (Ant. 8, 9)<br>5 (Ant. 2)<br>4+5 (Ant.2, 8. 9)<br>4+5+6 (Ant.2, 8. 9) |  |
|                      |          | MCS0/Nss2 |                          |                                                                         |  |
| 11ac VHT40           | Band 1&4 | MCS0/Nss1 | 38/46/151/159            | 4 (Ant. 8, 9)<br>5 (Ant. 2)<br>4+5 (Ant.2, 8. 9)<br>4+5+6 (Ant.2, 8. 9) |  |
|                      |          | MCS0/Nss2 |                          |                                                                         |  |
| 11ac VHT80           | Band 1&4 | MCS0/Nss1 | 42/155                   | 4 (Ant. 8, 9)<br>5 (Ant. 2)<br>4+5 (Ant.2, 8. 9)<br>4+5+6 (Ant.2, 8. 9) |  |
|                      |          | MCS0/Nss2 |                          |                                                                         |  |
| For STBC Mode        |          |           |                          |                                                                         |  |
| 11ac VHT20           | Band 1&4 | MCS0/Nss1 | 36/40/48/149/<br>157/165 | 4 (Ant. 8, 9)<br>5 (Ant. 2)<br>4+5 (Ant.2, 8. 9)<br>4+5+6 (Ant.2, 8. 9) |  |
|                      |          | MCS0/Nss2 |                          |                                                                         |  |
| 11ac VHT40           | Band 1&4 | MCS0/Nss1 | 38/46/151/159            | 4 (Ant. 8, 9)<br>5 (Ant. 2)<br>4+5 (Ant.2, 8. 9)<br>4+5+6 (Ant.2, 8. 9) |  |
|                      |          | MCS0/Nss2 |                          |                                                                         |  |
| 11ac VHT80           | Band 1&4 | MCS0/Nss1 | 42/155                   | 4 (Ant. 8, 9)<br>5 (Ant. 2)<br>4+5 (Ant.2, 8. 9)<br>4+5+6 (Ant.2, 8. 9) |  |
|                      |          | MCS0/Nss2 |                          |                                                                         |  |

|                                                                       |                          |          |           |                          |                             |
|-----------------------------------------------------------------------|--------------------------|----------|-----------|--------------------------|-----------------------------|
| 26dB Spectrum<br>Bandwidth & 99%<br>Occupied Bandwidth<br>Measurement | For Non-Beamforming Mode |          |           |                          |                             |
|                                                                       | 11ac VHT20               | Band 1&4 | MCS0/Nss1 | 36/40/48/149/<br>157/165 | 4 (Ant. 8, 9)<br>5 (Ant. 2) |
|                                                                       | 11ac VHT40               | Band 1&4 | MCS0/Nss1 | 38/46/151/159            | 4 (Ant. 8, 9)<br>5 (Ant. 2) |
|                                                                       | 11ac VHT80               | Band 1&4 | MCS0/Nss1 | 42/155                   | 4 (Ant. 8, 9)<br>5 (Ant. 2) |
|                                                                       | For STBC Mode            |          |           |                          |                             |
|                                                                       | 11ac VHT20               | Band 1&4 | MCS0/Nss1 | 36/40/48/149/<br>157/165 | 4+5 (Ant.2, 8. 9)           |
|                                                                       |                          |          | MCS0/Nss2 |                          | 4+5+6 (Ant.2, 8. 9)         |
|                                                                       | 11ac VHT40               | Band 1&4 | MCS0/Nss1 | 38/46/151/159            | 4+5 (Ant.2, 8. 9)           |
|                                                                       |                          |          | MCS0/Nss2 |                          | 4+5+6 (Ant.2, 8. 9)         |
|                                                                       | 11ac VHT80               | Band 1&4 | MCS0/Nss1 | 42/155                   | 4+5 (Ant.2, 8. 9)           |
|                                                                       |                          |          | MCS0/Nss2 |                          | 4+5+6 (Ant.2, 8. 9)         |
| 6dB Spectrum<br>Bandwidth<br>Measurement                              | For Non-Beamforming Mode |          |           |                          |                             |
|                                                                       | 11ac VHT20               | Band 4   | MCS0/Nss1 | 149/157/165              | 4 (Ant. 8, 9)<br>5 (Ant. 2) |
|                                                                       | 11ac VHT40               | Band 4   | MCS0/Nss1 | 151/159                  | 4 (Ant. 8, 9)<br>5 (Ant. 2) |
|                                                                       | 11ac VHT80               | Band 4   | MCS0/Nss1 | 155                      | 4 (Ant. 8, 9)<br>5 (Ant. 2) |
|                                                                       | For STBC Mode            |          |           |                          |                             |
|                                                                       | 11ac VHT20               | Band 4   | MCS0/Nss1 | 149/157/165              | 4+5 (Ant.2, 8. 9)           |
|                                                                       |                          |          | MCS0/Nss2 |                          | 4+5+6 (Ant.2, 8. 9)         |
|                                                                       | 11ac VHT40               | Band 4   | MCS0/Nss1 | 151/159                  | 4+5 (Ant.2, 8. 9)           |
|                                                                       |                          |          | MCS0/Nss2 |                          | 4+5+6 (Ant.2, 8. 9)         |
|                                                                       | 11ac VHT80               | Band 4   | MCS0/Nss1 | 155                      | 4+5 (Ant.2, 8. 9)           |
|                                                                       |                          |          | MCS0/Nss2 |                          | 4+5+6 (Ant.2, 8. 9)         |
| Radiated Emission<br>Below 1GHz                                       | Normal Link              |          | -         | -                        | -                           |

|                                 |                          |          |           |                          |                                                                         |
|---------------------------------|--------------------------|----------|-----------|--------------------------|-------------------------------------------------------------------------|
| Radiated Emission<br>Above 1GHz | For Non-Beamforming Mode |          |           |                          |                                                                         |
|                                 | 11ac VHT20               | Band 1&4 | MCS0/Nss1 | 36/40/48/149/<br>157/165 | 4 (Ant. 8, 9)<br>5 (Ant. 2)<br>4+5 (Ant.2, 8. 9)<br>4+5+6 (Ant.2, 8. 9) |
|                                 | 11ac VHT40               | Band 1&4 | MCS0/Nss1 | 38/46/151/159            | 4 (Ant. 8, 9)<br>5 (Ant. 2)<br>4+5 (Ant.2, 8. 9)<br>4+5+6 (Ant.2, 8. 9) |
|                                 | 11ac VHT80               | Band 1&4 | MCS0/Nss1 | 42/155                   | 4 (Ant. 8, 9)<br>5 (Ant. 2)<br>4+5 (Ant.2, 8. 9)<br>4+5+6 (Ant.2, 8. 9) |
|                                 | For Beamforming Mode     |          |           |                          |                                                                         |
|                                 | 11ac VHT20               | Band 1&4 | MCS0/Nss1 | 36/40/48/149/<br>157/165 | 4+5 (Ant.2, 8. 9)                                                       |
|                                 |                          |          | MCS0/Nss2 |                          | 4+5+6 (Ant.2, 8. 9)                                                     |
|                                 | 11ac VHT40               | Band 1&4 | MCS0/Nss1 | 38/46/151/159            | 4+5 (Ant.2, 8. 9)                                                       |
|                                 |                          |          | MCS0/Nss2 |                          | 4+5+6 (Ant.2, 8. 9)                                                     |
|                                 | 11ac VHT80               | Band 1&4 | MCS0/Nss1 | 42/155                   | 4+5 (Ant.2, 8. 9)                                                       |
|                                 |                          |          | MCS0/Nss2 |                          | 4+5+6 (Ant.2, 8. 9)                                                     |
|                                 | For STBC Mode            |          |           |                          |                                                                         |
|                                 | 11ac VHT20               | Band 1&4 | MCS0/Nss1 | 36/40/48/149/<br>157/165 | 4+5 (Ant.2, 8. 9)                                                       |
|                                 |                          |          | MCS0/Nss2 |                          | 4+5+6 (Ant.2, 8. 9)                                                     |
|                                 | 11ac VHT40               | Band 1&4 | MCS0/Nss1 | 38/46/151/159            | 4+5 (Ant.2, 8. 9)                                                       |
|                                 |                          |          | MCS0/Nss2 |                          | 4+5+6 (Ant.2, 8. 9)                                                     |
|                                 | 11ac VHT80               | Band 1&4 | MCS0/Nss1 | 42/155                   | 4+5 (Ant.2, 8. 9)                                                       |
|                                 |                          |          | MCS0/Nss2 |                          | 4+5+6 (Ant.2, 8. 9)                                                     |
| Band Edge Emission              | For Non-Beamforming Mode |          |           |                          |                                                                         |
|                                 | 11ac VHT20               | Band 1&4 | MCS0/Nss1 | 36/40/48/149/<br>157/165 | 4 (Ant. 8, 9)<br>5 (Ant. 2)<br>4+5 (Ant.2, 8. 9)<br>4+5+6 (Ant.2, 8. 9) |
|                                 | 11ac VHT40               | Band 1&4 | MCS0/Nss1 | 38/46/151/159            | 4 (Ant. 8, 9)<br>5 (Ant. 2)<br>4+5 (Ant.2, 8. 9)<br>4+5+6 (Ant.2, 8. 9) |

|                     |                      |          |           |               |                                                                         |
|---------------------|----------------------|----------|-----------|---------------|-------------------------------------------------------------------------|
|                     | 11ac VHT80           | Band 1&4 | MCS0/Nss1 | 42/155        | 4 (Ant. 8, 9)<br>5 (Ant. 2)<br>4+5 (Ant.2, 8. 9)<br>4+5+6 (Ant.2, 8. 9) |
|                     | For Beamforming Mode |          |           |               |                                                                         |
|                     | 11ac VHT20           | Band 1&4 | MCS0/Nss1 | 36/40/48/149/ | 4+5 (Ant.2, 8. 9)                                                       |
|                     |                      |          | MCS0/Nss2 | 157/165       | 4+5+6 (Ant.2, 8. 9)                                                     |
|                     | 11ac VHT40           | Band 1&4 | MCS0/Nss1 | 38/46/151/159 | 4+5 (Ant.2, 8. 9)                                                       |
|                     |                      |          | MCS0/Nss2 |               | 4+5+6 (Ant.2, 8. 9)                                                     |
|                     | 11ac VHT80           | Band 1&4 | MCS0/Nss1 | 42/155        | 4+5 (Ant.2, 8. 9)                                                       |
|                     |                      |          | MCS0/Nss2 |               | 4+5+6 (Ant.2, 8. 9)                                                     |
|                     | For STBC Mode        |          |           |               |                                                                         |
|                     | 11ac VHT20           | Band 1&4 | MCS0/Nss1 | 36/40/48/149/ | 4+5 (Ant.2, 8. 9)                                                       |
|                     |                      |          | MCS0/Nss2 | 157/165       | 4+5+6 (Ant.2, 8. 9)                                                     |
|                     | 11ac VHT40           | Band 1&4 | MCS0/Nss1 | 38/46/151/159 | 4+5 (Ant.2, 8. 9)                                                       |
|                     |                      |          | MCS0/Nss2 |               | 4+5+6 (Ant.2, 8. 9)                                                     |
|                     | 11ac VHT80           | Band 1&4 | MCS0/Nss1 | 42/155        | 4+5 (Ant.2, 8. 9)                                                       |
|                     |                      |          | MCS0/Nss2 |               | 4+5+6 (Ant.2, 8. 9)                                                     |
| Frequency Stability | 20 MHz               | Band 1&4 | -         | 40/157        | 4+5+6                                                                   |
|                     | 40 MHz               | Band 1&4 | -         | 38/151        | 4+5+6                                                                   |
|                     | 80 MHz               | Band 1&4 | -         | 42/155        | 4+5+6                                                                   |

Note 1: VHT20/VHT40 covers HT20/HT40, due to same modulation.

Note 2: The EUT only can standing use.

Note 3: The PoE is for measurement only, would not be marketed.

The PoE information as below:

| Power | Brand    | Model          | Rating                                            |
|-------|----------|----------------|---------------------------------------------------|
| PoE   | MOTOROLA | AP-PSBIAS-7161 | Input: 100-240Vac, 50/60Hz, 1.0A<br>Output: 55Vdc |

Note 4: Point-to-Multiple covers point-to-point.

The following test modes were performed for all tests:

Ant. 9 is the higher gain antenna, so it was selected to perform Conducted Emission test and Radiated Emission below 1GHz test:

**For Conducted Emission test:**

Test Mode 1: Normal Link - EUT standing + PoE + Ant.9

**For Radiated Emission below 1GHz test:**

Test Mode 1: Normal Link - EUT standing + PoE + Ant.9

**For Radiated Emission above 1GHz test:**

Test Mode 1: CTX - EUT standing + Ant. 2

Test Mode 2: CTX - EUT standing + Ant. 8

Test Mode 3: CTX - EUT standing + Ant. 9

**For Co-location MPE and Radiated Emission Co-location Test:**

The EUT could be applied with 2.4GHz WLAN function and 5GHz WLAN function; therefore Co-location Maximum Permissible Exposure (Please refer to FA4D0488) and Radiated Emission Co-location (please refer to Appendix B) tests are added for simultaneously transmit between 2.4GHz WLAN function and 5GHz WLAN function.

### 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 Supporting Units

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

| Support Unit | Brand    | Model          | FCC ID      |
|--------------|----------|----------------|-------------|
| Notebook     | DELL     | M1330          | E2K4965AGNM |
| Notebook     | DELL     | M1340          | E2K4965AGNM |
| Notebook     | DELL     | E6430          | DoC         |
| Notebook     | DELL     | E6430          | DoC         |
| PoE          | MOTOROLA | AP-PSBIAS-7161 | DoC         |

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

For Non-beamforming and STBC Mode

| Support Unit | Brand    | Model          | FCC ID      |
|--------------|----------|----------------|-------------|
| Notebook     | DELL     | M1330          | E2K4965AGNM |
| PoE          | MOTOROLA | AP-PSBIAS-7161 | DoC         |

For beamforming Mode

| Support Unit   | Brand    | Model          | FCC ID      |
|----------------|----------|----------------|-------------|
| Notebook       | DELL     | M1330          | E2K4965AGNM |
| Notebook       | DELL     | M1340          | E2K4965AGNM |
| WLAN ac Dongle | Netgear  | A6200          | PY312200200 |
| PoE            | MOTOROLA | AP-PSBIAS-7161 | DoC         |

For Test Site No: CO01-CB

| Support Unit | Brand    | Model          | FCC ID |
|--------------|----------|----------------|--------|
| Notebook     | DELL     | E6430          | DoC    |
| Notebook     | DELL     | E6430          | DoC    |
| Notebook     | DELL     | E6430          | DoC    |
| Notebook     | DELL     | E6430          | DoC    |
| PoE          | MOTOROLA | AP-PSBIAS-7161 | DoC    |

For Test Site No: TH01-CB

| Support Unit | Brand    | Model          | FCC ID |
|--------------|----------|----------------|--------|
| Notebook     | DELL     | E6220          | DoC    |
| PoE          | MOTOROLA | AP-PSBIAS-7161 | DoC    |

### 3.8. 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.

**For Band 1 and Band 4 (Master and client without radar detection):**

**<For Non-Beamforming Mode>**

Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 1TX) / For outdoor use

| Test Software Version    | Mtool_2.0.1.0        |          |          |          |          |          |
|--------------------------|----------------------|----------|----------|----------|----------|----------|
| Mode                     | Test Frequency (MHz) |          |          |          |          |          |
|                          | NCB: 20MHz           |          |          |          |          |          |
|                          | 5180 MHz             | 5200 MHz | 5240 MHz | 5745 MHz | 5785 MHz | 5825 MHz |
| 802.11a                  | 64                   | 64       | 64       | 67       | 92       | 91       |
| 802.11n MCS0 HT20        | 64                   | 64       | 64       | 67       | 92       | 71       |
| 802.11ac MCS0/Nss1 VHT20 | 64                   | 64       | 64       | 67       | 92       | 71       |
| Mode                     | NCB: 40MHz           |          |          |          |          |          |
|                          | 5190 MHz             |          | 5230 MHz |          | 5755 MHz |          |
| 802.11n MCS0 HT40        | 64                   |          | 63       |          | 61       |          |
| 802.11ac MCS0/Nss1 VHT40 | 64                   |          | 63       |          | 61       |          |
| Mode                     | NCB: 80MHz           |          |          |          |          |          |
| 802.11ac MCS0/Nss1 VHT80 | 5210 MHz             |          |          | 5775 MHz |          |          |
|                          | 65                   |          |          | 66       |          |          |

Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 2TX) / For outdoor use

| Test Software Version    | Mtool_2.0.1.0        |          |          |          |          |          |          |  |
|--------------------------|----------------------|----------|----------|----------|----------|----------|----------|--|
| Mode                     | Test Frequency (MHz) |          |          |          |          |          |          |  |
|                          | NCB: 20MHz           |          |          |          |          |          |          |  |
|                          | 5180 MHz             | 5200 MHz | 5240 MHz | 5745 MHz | 5785 MHz | 5825 MHz |          |  |
| 802.11a                  | 52                   | 52       | 52       | 68       | 90       | 92       |          |  |
| 802.11n MCS0 HT20        | 52                   | 52       | 52       | 68       | 90       | 92       |          |  |
| 802.11ac MCS0/Nss1 VHT20 | 52                   | 52       | 52       | 68       | 90       | 92       |          |  |
| Mode                     | NCB: 40MHz           |          |          |          |          |          |          |  |
|                          | 5190 MHz             |          | 5230 MHz |          | 5755 MHz |          | 5795 MHz |  |
| 802.11n MCS0 HT40        | 51                   |          | 51       |          | 66       |          | 70       |  |
| 802.11ac MCS0/Nss1 VHT40 | 51                   |          | 51       |          | 66       |          | 70       |  |
| Mode                     | NCB: 80MHz           |          |          |          |          |          |          |  |
| 802.11ac MCS0/Nss1 VHT80 | 5210 MHz             |          |          | 5775 MHz |          |          |          |  |
|                          | 52                   |          |          | 62       |          |          |          |  |

Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 3TX) / For outdoor use

| Test Software Version    | Mtool_2.0.1.0        |          |          |          |          |          |          |
|--------------------------|----------------------|----------|----------|----------|----------|----------|----------|
| Mode                     | Test Frequency (MHz) |          |          |          |          |          |          |
|                          | NCB: 20MHz           |          |          |          |          |          |          |
|                          | 5180 MHz             | 5200 MHz | 5240 MHz | 5745 MHz | 5785 MHz | 5825 MHz |          |
| 802.11a                  | 46                   | 46       | 46       | 66       | 80       | 67       |          |
| 802.11n MCS0 HT20        | 46                   | 46       | 46       | 66       | 80       | 67       |          |
| 802.11ac MCS0/Nss1 VHT20 | 46                   | 46       | 46       | 66       | 80       | 67       |          |
| Mode                     | NCB: 40MHz           |          |          |          |          |          |          |
|                          | 5190 MHz             |          | 5230 MHz |          | 5755 MHz |          | 5795 MHz |
| 802.11n MCS0 HT40        | 46                   |          | 45       |          | 59       |          | 71       |
| 802.11ac MCS0/Nss1 VHT40 | 46                   |          | 46       |          | 59       |          | 71       |
| Mode                     | NCB: 80MHz           |          |          |          |          |          |          |
| 802.11ac MCS0/Nss1 VHT80 | 5210 MHz             |          |          | 5775 MHz |          |          |          |
|                          | 46                   |          |          | 60       |          |          |          |



Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 1TX) / For indoor use

| Test Software Version    | Mtool_2.0.1.0        |          |          |
|--------------------------|----------------------|----------|----------|
| Mode                     | Test Frequency (MHz) |          |          |
|                          | NCB: 20MHz           |          |          |
|                          | 5180 MHz             | 5200 MHz | 5240 MHz |
| 802.11a                  | 83                   | 92       | 92       |
| 802.11n MCS0 HT20        | 83                   | 92       | 92       |
| 802.11ac MCS0/Nss1 VHT20 | 83                   | 92       | 92       |
| Mode                     | NCB: 40MHz           |          |          |
|                          | 5190 MHz             | 5230 MHz |          |
| 802.11n MCS0 HT40        | 76                   | 92       |          |
| 802.11ac MCS0/Nss1 VHT40 | 76                   | 92       |          |
| Mode                     | NCB: 80MHz           |          |          |
| 802.11ac MCS0/Nss1 VHT80 | 5210 MHz             |          |          |
|                          | 72                   |          |          |

Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 2TX) / For indoor use

| Test Software Version    | Mtool_2.0.1.0        |          |          |
|--------------------------|----------------------|----------|----------|
| Mode                     | Test Frequency (MHz) |          |          |
|                          | NCB: 20MHz           |          |          |
|                          | 5180 MHz             | 5200 MHz | 5240 MHz |
| 802.11a                  | 82                   | 92       | 85       |
| 802.11n MCS0 HT20        | 82                   | 92       | 85       |
| 802.11ac MCS0/Nss1 VHT20 | 82                   | 92       | 85       |
| Mode                     | NCB: 40MHz           |          |          |
|                          | 5190 MHz             | 5230 MHz |          |
| 802.11n MCS0 HT40        | 71                   | 86       |          |
| 802.11ac MCS0/Nss1 VHT40 | 71                   | 86       |          |
| Mode                     | NCB: 80MHz           |          |          |
| 802.11ac MCS0/Nss1 VHT80 | 5210 MHz             |          |          |
|                          | 71                   |          |          |

Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 3TX) / For indoor use

| Test Software Version    | Mtool_2.0.1.0        |          |          |
|--------------------------|----------------------|----------|----------|
| Mode                     | Test Frequency (MHz) |          |          |
|                          | NCB: 20MHz           |          |          |
|                          | 5180 MHz             | 5200 MHz | 5240 MHz |
| 802.11a                  | 77                   | 80       | 80       |
| 802.11n MCS0 HT20        | 77                   | 80       | 80       |
| 802.11ac MCS0/Nss1 VHT20 | 77                   | 80       | 80       |
| Mode                     | NCB: 40MHz           |          |          |
|                          | 5190 MHz             |          | 5230 MHz |
| 802.11n MCS0 HT40        | 65                   |          | 83       |
| 802.11ac MCS0/Nss1 VHT40 | 65                   |          | 83       |
| Mode                     | NCB: 80MHz           |          |          |
| 802.11ac MCS0/Nss1 VHT80 | 5210 MHz             |          |          |
|                          | 67                   |          |          |

Mode 2: (Ant.8 Panel antenna / 5.1dBi / 1TX)

| Test Software Version    | Mtool_2.0.1.0        |          |          |          |          |          |          |
|--------------------------|----------------------|----------|----------|----------|----------|----------|----------|
| Mode                     | Test Frequency (MHz) |          |          |          |          |          |          |
|                          | NCB: 20MHz           |          |          |          |          |          |          |
|                          | 5180 MHz             | 5200 MHz | 5240 MHz | 5745 MHz | 5785 MHz | 5825 MHz |          |
| 802.11a                  | 81                   | 91       | 90       | 69       | 92       | 70       |          |
| 802.11n MCS0 HT20        | 81                   | 91       | 90       | 69       | 92       | 70       |          |
| 802.11ac MCS0/Nss1 VHT20 | 81                   | 91       | 90       | 69       | 92       | 70       |          |
| Mode                     | NCB: 40MHz           |          |          |          |          |          |          |
|                          | 5190 MHz             |          | 5230 MHz |          | 5755 MHz |          | 5795 MHz |
| 802.11n MCS0 HT40        | 73                   |          | 88       |          | 62       |          | 73       |
| 802.11ac MCS0/Nss1 VHT40 | 73                   |          | 88       |          | 62       |          | 73       |
| Mode                     | NCB: 80MHz           |          |          |          |          |          |          |
| 802.11ac MCS0/Nss1 VHT80 | 5210 MHz             |          |          | 5775 MHz |          |          |          |
|                          | 71                   |          |          | 65       |          |          |          |

Mode 2: (Ant.8 Panel antenna / 5.1dBi / 2TX)

| Test Software Version    | Mtool_2.0.1.0        |          |          |          |          |          |          |
|--------------------------|----------------------|----------|----------|----------|----------|----------|----------|
| Mode                     | Test Frequency (MHz) |          |          |          |          |          |          |
|                          | NCB: 20MHz           |          |          |          |          |          |          |
|                          | 5180 MHz             | 5200 MHz | 5240 MHz | 5745 MHz | 5785 MHz | 5825 MHz |          |
| 802.11a                  | 79                   | 89       | 89       | 62       | 88       | 66       |          |
| 802.11n MCS0 HT20        | 79                   | 89       | 89       | 62       | 88       | 66       |          |
| 802.11ac MCS0/Nss1 VHT20 | 79                   | 89       | 89       | 62       | 88       | 66       |          |
| Mode                     | NCB: 40MHz           |          |          |          |          |          |          |
|                          | 5190 MHz             |          | 5230 MHz |          | 5755 MHz |          | 5795 MHz |
| 802.11n MCS0 HT40        | 68                   |          | 85       |          | 59       |          | 62       |
| 802.11ac MCS0/Nss1 VHT40 | 68                   |          | 85       |          | 59       |          | 62       |
| Mode                     | NCB: 80MHz           |          |          |          |          |          |          |
| 802.11ac MCS0/Nss1 VHT80 | 5210 MHz             |          |          | 5775 MHz |          |          |          |
|                          | 60                   |          |          | 60       |          |          |          |

Mode 2: (Ant.8 Panel antenna / 5.1dBi / 3TX)

| Test Software Version    | Mtool_2.0.1.0        |          |          |          |          |          |          |  |
|--------------------------|----------------------|----------|----------|----------|----------|----------|----------|--|
| Mode                     | Test Frequency (MHz) |          |          |          |          |          |          |  |
|                          | NCB: 20MHz           |          |          |          |          |          |          |  |
|                          | 5180 MHz             | 5200 MHz | 5240 MHz | 5745 MHz | 5785 MHz | 5825 MHz |          |  |
| 802.11a                  | 75                   | 82       | 87       | 60       | 80       | 65       |          |  |
| 802.11n MCS0 HT20        | 75                   | 82       | 87       | 60       | 80       | 65       |          |  |
| 802.11ac MCS0/Nss1 VHT20 | 75                   | 82       | 87       | 60       | 80       | 65       |          |  |
| Mode                     | NCB: 40MHz           |          |          |          |          |          |          |  |
|                          | 5190 MHz             |          | 5230 MHz |          | 5755 MHz |          | 5795 MHz |  |
| 802.11n MCS0 HT40        | 63                   |          | 79       |          | 57       |          | 62       |  |
| 802.11ac MCS0/Nss1 VHT40 | 63                   |          | 79       |          | 57       |          | 62       |  |
| Mode                     | NCB: 80MHz           |          |          |          |          |          |          |  |
| 802.11ac MCS0/Nss1 VHT80 | 5210 MHz             |          |          | 5775 MHz |          |          |          |  |
|                          | 55                   |          |          | 60       |          |          |          |  |

Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 4: 8.3, Chain 5: 5.9, Chain 6: 8.2dBi / 1TX)

| Test Software Version    | Mtool_2.0.1.0        |          |          |          |          |          |          |
|--------------------------|----------------------|----------|----------|----------|----------|----------|----------|
| Mode                     | Test Frequency (MHz) |          |          |          |          |          |          |
|                          | NCB: 20MHz           |          |          |          |          |          |          |
|                          | 5180 MHz             | 5200 MHz | 5240 MHz | 5745 MHz | 5785 MHz | 5825 MHz |          |
| 802.11a                  | 77                   | 91       | 89       | 64       | 90       | 69       |          |
| 802.11n MCS0 HT20        | 77                   | 91       | 89       | 64       | 90       | 69       |          |
| 802.11ac MCS0/Nss1 VHT20 | 77                   | 91       | 89       | 64       | 90       | 69       |          |
| Mode                     | NCB: 40MHz           |          |          |          |          |          |          |
|                          | 5190 MHz             |          | 5230 MHz |          | 5755 MHz |          | 5795 MHz |
| 802.11n MCS0 HT40        | 70                   |          | 85       |          | 61       |          | 70       |
| 802.11ac MCS0/Nss1 VHT40 | 70                   |          | 85       |          | 61       |          | 70       |
| Mode                     | NCB: 80MHz           |          |          |          |          |          |          |
| 802.11ac MCS0/Nss1 VHT80 | 5210 MHz             |          |          | 5775 MHz |          |          |          |
|                          | 65                   |          |          | 63       |          |          |          |

Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 4: 8.3, Chain 5: 5.9, Chain 6: 8.2dBi / 2TX)

| Test Software Version    | Mtool_2.0.1.0        |          |          |          |          |          |          |  |
|--------------------------|----------------------|----------|----------|----------|----------|----------|----------|--|
| Mode                     | Test Frequency (MHz) |          |          |          |          |          |          |  |
|                          | NCB: 20MHz           |          |          |          |          |          |          |  |
|                          | 5180 MHz             | 5200 MHz | 5240 MHz | 5745 MHz | 5785 MHz | 5825 MHz |          |  |
| 802.11a                  | 77                   | 88       | 91       | 62       | 87       | 65       |          |  |
| 802.11n MCS0 HT20        | 77                   | 88       | 91       | 62       | 87       | 65       |          |  |
| 802.11ac MCS0/Nss1 VHT20 | 77                   | 88       | 91       | 62       | 87       | 65       |          |  |
| Mode                     | NCB: 40MHz           |          |          |          |          |          |          |  |
|                          | 5190 MHz             |          | 5230 MHz |          | 5755 MHz |          | 5795 MHz |  |
| 802.11n MCS0 HT40        | 71                   |          | 82       |          | 58       |          | 61       |  |
| 802.11ac MCS0/Nss1 VHT40 | 71                   |          | 82       |          | 58       |          | 61       |  |
| Mode                     | NCB: 80MHz           |          |          |          |          |          |          |  |
| 802.11ac MCS0/Nss1 VHT80 | 5210 MHz             |          |          | 5775 MHz |          |          |          |  |
|                          | 54                   |          |          | 59       |          |          |          |  |

Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 4: 8.3, Chain 5: 5.9, Chain 6: 8.2dBi / 3TX)

| Test Software Version    | Mtool_2.0.1.0        |          |          |          |          |          |          |  |
|--------------------------|----------------------|----------|----------|----------|----------|----------|----------|--|
| Mode                     | Test Frequency (MHz) |          |          |          |          |          |          |  |
|                          | NCB: 20MHz           |          |          |          |          |          |          |  |
|                          | 5180 MHz             | 5200 MHz | 5240 MHz | 5745 MHz | 5785 MHz | 5825 MHz |          |  |
| 802.11a                  | 71                   | 78       | 80       | 60       | 80       | 63       |          |  |
| 802.11n MCS0 HT20        | 71                   | 78       | 80       | 60       | 80       | 63       |          |  |
| 802.11ac MCS0/Nss1 VHT20 | 71                   | 78       | 80       | 60       | 80       | 63       |          |  |
| Mode                     | NCB: 40MHz           |          |          |          |          |          |          |  |
|                          | 5190 MHz             |          | 5230 MHz |          | 5755 MHz |          | 5795 MHz |  |
| 802.11n MCS0 HT40        | 59                   |          | 76       |          | 53       |          | 61       |  |
| 802.11ac MCS0/Nss1 VHT40 | 59                   |          | 76       |          | 53       |          | 61       |  |
| Mode                     | NCB: 80MHz           |          |          |          |          |          |          |  |
| 802.11ac MCS0/Nss1 VHT80 | 5210 MHz             |          |          | 5775 MHz |          |          |          |  |
|                          | 43                   |          |          | 46       |          |          |          |  |

### <For Beamforming Mode>

Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 2TX) / For outdoor use

| Test Software Version    | Mtool_2.0.1.0        |          |          |          |          |          |
|--------------------------|----------------------|----------|----------|----------|----------|----------|
| Mode                     | Test Frequency (MHz) |          |          |          |          |          |
|                          | NCB: 20MHz           |          |          |          |          |          |
|                          | 5180 MHz             | 5200 MHz | 5240 MHz | 5745 MHz | 5785 MHz | 5825 MHz |
| 802.11a                  | 39                   | 38       | 39       | 66       | 91       | 70       |
| 802.11ac MCS0/Nss1 VHT20 | 39                   | 38       | 39       | 66       | 91       | 70       |
| Mode                     | NCB: 40MHz           |          |          |          |          |          |
| 802.11ac MCS0/Nss1 VHT40 | 5190 MHz             |          | 5230 MHz |          | 5755 MHz |          |
|                          | 39                   |          | 38       |          | 64       |          |
| 802.11ac MCS0/Nss1 VHT40 | 5795 MHz             |          | 5775 MHz |          | 5755 MHz |          |
|                          | 69                   |          | 68       |          | 67       |          |
| Mode                     | NCB: 80MHz           |          |          |          |          |          |
| 802.11ac MCS0/Nss1 VHT80 | 5210 MHz             |          |          | 5775 MHz |          |          |
|                          | 40                   |          |          | 62       |          |          |

Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 3TX) / For outdoor use

| Test Software Version    | Mtool_2.0.1.0        |          |          |          |          |          |
|--------------------------|----------------------|----------|----------|----------|----------|----------|
| Mode                     | Test Frequency (MHz) |          |          |          |          |          |
|                          | NCB: 20MHz           |          |          |          |          |          |
|                          | 5180 MHz             | 5200 MHz | 5240 MHz | 5745 MHz | 5785 MHz | 5825 MHz |
| 802.11a                  | 26                   | 26       | 26       | 62       | 79       | 66       |
| 802.11ac MCS0/Nss1 VHT20 | 26                   | 26       | 26       | 62       | 79       | 66       |
| Mode                     | NCB: 40MHz           |          |          |          |          |          |
| 802.11ac MCS0/Nss1 VHT40 | 5190 MHz             |          | 5230 MHz |          | 5755 MHz |          |
|                          | 26                   |          | 26       |          | 59       |          |
| 5795 MHz                 | 65                   |          |          |          |          |          |
| Mode                     | NCB: 80MHz           |          |          |          |          |          |
| 802.11ac MCS0/Nss1 VHT80 | 5210 MHz             |          |          | 5775 MHz |          |          |
|                          | 26                   |          |          | 58       |          |          |

Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 2TX) / For indoor use

| Test Software Version    | Mtool_2.0.1.0        |          |          |
|--------------------------|----------------------|----------|----------|
| Mode                     | Test Frequency (MHz) |          |          |
|                          | NCB: 20MHz           |          |          |
|                          | 5180 MHz             | 5200 MHz | 5240 MHz |
| 802.11a                  | 82                   | 92       | 77       |
| 802.11ac MCS0/Nss1 VHT20 | 82                   | 91       | 77       |
| Mode                     | NCB: 40MHz           |          |          |
| 802.11ac MCS0/Nss1 VHT40 | 5190 MHz             | 5230 MHz |          |
|                          | 71                   | 92       |          |
| Mode                     | NCB: 80MHz           |          |          |
| 802.11ac MCS0/Nss1 VHT80 | 5210 MHz             |          |          |
|                          | 73                   |          |          |

Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 3TX) / For indoor use

| Test Software Version    | Mtool_2.0.1.0        |          |          |
|--------------------------|----------------------|----------|----------|
| Mode                     | Test Frequency (MHz) |          |          |
|                          | NCB: 20MHz           |          |          |
|                          | 5180 MHz             | 5200 MHz | 5240 MHz |
| 802.11a                  | 77                   | 79       | 80       |
| 802.11ac MCS0/Nss1 VHT20 | 77                   | 79       | 80       |
| Mode                     | NCB: 40MHz           |          |          |
| 802.11ac MCS0/Nss1 VHT40 | 5190 MHz             | 5230 MHz |          |
|                          | 68                   | 79       |          |
| Mode                     | NCB: 80MHz           |          |          |
| 802.11ac MCS0/Nss1 VHT80 | 5210 MHz             |          |          |
|                          | 68                   |          |          |

Mode 2: (Ant.8 Panel antenna / 5.1dBi / 2TX)

| Test Software Version    | Mtool_2.0.1.0        |          |          |          |          |          |
|--------------------------|----------------------|----------|----------|----------|----------|----------|
| Mode                     | Test Frequency (MHz) |          |          |          |          |          |
|                          | NCB: 20MHz           |          |          |          |          |          |
|                          | 5180 MHz             | 5200 MHz | 5240 MHz | 5745 MHz | 5785 MHz | 5825 MHz |
| 802.11a                  | 79                   | 89       | 89       | 62       | 87       | 68       |
| 802.11ac MCS0/Nss1 VHT20 | 79                   | 89       | 89       | 62       | 87       | 68       |
| Mode                     | NCB: 40MHz           |          |          |          |          |          |
| 802.11ac MCS0/Nss1 VHT40 | 5190 MHz             |          | 5230 MHz |          | 5755 MHz |          |
|                          | 64                   |          | 83       |          | 58       |          |
| 802.11ac MCS0/Nss1 VHT80 | 5210 MHz             |          |          | 5775 MHz |          |          |
|                          | 66                   |          |          | 57       |          |          |

Mode 2: (Ant.8 Panel antenna / 5.1dBi / 3TX)

| Test Software Version    | Mtool_2.0.1.0        |          |          |          |          |          |
|--------------------------|----------------------|----------|----------|----------|----------|----------|
| Mode                     | Test Frequency (MHz) |          |          |          |          |          |
|                          | NCB: 20MHz           |          |          |          |          |          |
|                          | 5180 MHz             | 5200 MHz | 5240 MHz | 5745 MHz | 5785 MHz | 5825 MHz |
| 802.11a                  | 69                   | 75       | 81       | 60       | 75       | 65       |
| 802.11ac MCS0/Nss1 VHT20 | 69                   | 75       | 81       | 60       | 75       | 65       |
| Mode                     | NCB: 40MHz           |          |          |          |          |          |
| 802.11ac MCS0/Nss1 VHT40 | 5190 MHz             |          | 5230 MHz |          | 5755 MHz |          |
|                          | 63                   |          | 79       |          | 55       |          |
| 62                       |                      |          |          |          |          |          |
| Mode                     | NCB: 80MHz           |          |          |          |          |          |
| 802.11ac MCS0/Nss1 VHT80 | 5210 MHz             |          |          | 5775 MHz |          |          |
|                          | 54                   |          |          | 54       |          |          |



Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 4: 8.3, Chain 5: 5.9, Chain 6: 8.2dBi / 2TX)

| Test Software Version    | Mtool_2.0.1.0        |          |          |          |          |          |
|--------------------------|----------------------|----------|----------|----------|----------|----------|
| Mode                     | Test Frequency (MHz) |          |          |          |          |          |
|                          | NCB: 20MHz           |          |          |          |          |          |
|                          | 5180 MHz             | 5200 MHz | 5240 MHz | 5745 MHz | 5785 MHz | 5825 MHz |
| 802.11a                  | 73                   | 84       | 85       | 60       | 85       | 65       |
| 802.11ac MCS0/Nss2 VHT20 | 73                   | 84       | 85       | 60       | 85       | 65       |
| Mode                     | NCB: 40MHz           |          |          |          |          |          |
| 802.11ac MCS0/Nss2 VHT40 | 5190 MHz             |          | 5230 MHz |          | 5755 MHz |          |
|                          | 68                   |          | 81       |          | 56       |          |
| 5795 MHz                 | 59                   |          |          |          |          |          |
| Mode                     | NCB: 80MHz           |          |          |          |          |          |
| 802.11ac MCS0/Nss2 VHT80 | 5210 MHz             |          |          | 5775 MHz |          |          |
|                          | 52                   |          |          | 58       |          |          |

Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 4: 8.3, Chain 5: 5.9, Chain 6: 8.2dBi / 3TX)

| Test Software Version    | Mtool_2.0.1.0        |            |          |          |          |          |
|--------------------------|----------------------|------------|----------|----------|----------|----------|
| Mode                     | Test Frequency (MHz) |            |          |          |          |          |
|                          | NCB: 20MHz           |            |          |          |          |          |
|                          | 5180 MHz             | 5200 MHz   | 5240 MHz | 5745 MHz | 5785 MHz | 5825 MHz |
| 802.11a                  | 70                   | 75         | 77       | 60       | 72       | 62       |
| 802.11ac MCS0/Nss2 VHT20 | 70                   | 75         | 77       | 60       | 72       | 62       |
| Mode                     | NCB: 40MHz           |            |          |          |          |          |
| 802.11ac MCS0/Nss2 VHT40 | 5190 MHz             |            | 5230 MHz |          | 5755 MHz |          |
|                          | 58                   |            | 75       |          | 51       |          |
| 802.11ac MCS0/Nss2 VHT40 | 5795 MHz             |            | 60       |          |          |          |
|                          | Mode                 | NCB: 80MHz |          |          |          |          |
| 802.11ac MCS0/Nss2 VHT80 | 5210 MHz             |            |          | 5775 MHz |          |          |
|                          | 43                   |            |          | 45       |          |          |

### <For STBC Mode>

Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 2TX) / For outdoor use

| Test Software Version    | Mtool_2.0.1.0        |          |          |          |          |          |
|--------------------------|----------------------|----------|----------|----------|----------|----------|
| Mode                     | Test Frequency (MHz) |          |          |          |          |          |
|                          | NCB: 20MHz           |          |          |          |          |          |
|                          | 5180 MHz             | 5200 MHz | 5240 MHz | 5745 MHz | 5785 MHz | 5825 MHz |
| 802.11ac MCS0/Nss1 VHT20 | 52                   | 52       | 52       | 71       | 92       | 72       |
| Mode                     | NCB: 40MHz           |          |          |          |          |          |
| 802.11ac MCS0/Nss1 VHT40 | 5190 MHz             |          | 5230 MHz |          | 5755 MHz |          |
|                          | 51                   |          | 52       |          | 64       |          |
| 70                       |                      |          |          |          |          |          |
| Mode                     | NCB: 80MHz           |          |          |          |          |          |
| 802.11ac MCS0/Nss1 VHT80 | 5210 MHz             |          |          | 5775 MHz |          |          |
|                          | 52                   |          |          | 62       |          |          |

Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 3TX) / For outdoor use

| Test Software Version    | Mtool_2.0.1.0        |          |          |          |          |          |
|--------------------------|----------------------|----------|----------|----------|----------|----------|
| Mode                     | Test Frequency (MHz) |          |          |          |          |          |
|                          | NCB: 20MHz           |          |          |          |          |          |
|                          | 5180 MHz             | 5200 MHz | 5240 MHz | 5745 MHz | 5785 MHz | 5825 MHz |
| 802.11ac MCS0/Nss1 VHT20 | 47                   | 46       | 47       | 69       | 92       | 73       |
| Mode                     | NCB: 40MHz           |          |          |          |          |          |
| 802.11ac MCS0/Nss1 VHT40 | 5190 MHz             |          | 5230 MHz |          | 5755 MHz |          |
|                          | 46                   |          | 46       |          | 62       |          |
| 802.11ac MCS0/Nss1 VHT40 | 5795 MHz             |          |          |          |          |          |
|                          | 65                   |          |          |          |          |          |
| Mode                     | NCB: 80MHz           |          |          |          |          |          |
| 802.11ac MCS0/Nss1 VHT80 | 5210 MHz             |          |          | 5775 MHz |          |          |
|                          | 46                   |          |          | 62       |          |          |

Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 2TX) / For indoor use

| Test Software Version    | Mtool_2.0.1.0        |          |          |
|--------------------------|----------------------|----------|----------|
| Mode                     | Test Frequency (MHz) |          |          |
|                          | NCB: 20MHz           |          |          |
|                          | 5180 MHz             | 5200 MHz | 5240 MHz |
| 802.11ac MCS0/Nss1 VHT20 | 82                   | 92       | 92       |
| Mode                     | NCB: 40MHz           |          |          |
| 802.11ac MCS0/Nss1 VHT40 | 5190 MHz             | 5230 MHz |          |
|                          | 74                   | 91       |          |
| Mode                     | NCB: 80MHz           |          |          |
| 802.11ac MCS0/Nss1 VHT80 | 5210 MHz             |          |          |
|                          | 73                   |          |          |

Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 3TX) / For indoor use

| Test Software Version    | Mtool_2.0.1.0        |          |          |
|--------------------------|----------------------|----------|----------|
| Mode                     | Test Frequency (MHz) |          |          |
|                          | NCB: 20MHz           |          |          |
|                          | 5180 MHz             | 5200 MHz | 5240 MHz |
| 802.11ac MCS0/Nss1 VHT20 | 79                   | 89       | 89       |
| Mode                     | NCB: 40MHz           |          |          |
| 802.11ac MCS0/Nss1 VHT40 | 5190 MHz             | 5230 MHz |          |
|                          | 72                   | 90       |          |
| Mode                     | NCB: 80MHz           |          |          |
| 802.11ac MCS0/Nss1 VHT80 | 5210 MHz             |          |          |
|                          | 68                   |          |          |

## Mode 2: (Ant.8 Panel antenna / 5.1dBi / 2TX)

| Test Software Version    | Mtool_2.0.1.0        |          |          |          |          |          |
|--------------------------|----------------------|----------|----------|----------|----------|----------|
| Mode                     | Test Frequency (MHz) |          |          |          |          |          |
|                          | NCB: 20MHz           |          |          |          |          |          |
|                          | 5180 MHz             | 5200 MHz | 5240 MHz | 5745 MHz | 5785 MHz | 5825 MHz |
| 802.11ac MCS0/Nss1 VHT20 | 79                   | 89       | 89       | 66       | 89       | 74       |
| Mode                     | NCB: 40MHz           |          |          |          |          |          |
| 802.11ac MCS0/Nss1 VHT40 | 5190 MHz             |          | 5230 MHz |          | 5755 MHz |          |
|                          | 69                   |          | 85       |          | 63       |          |
| 69                       | 63                   |          |          |          |          |          |
| Mode                     | NCB: 80MHz           |          |          |          |          |          |
| 802.11ac MCS0/Nss1 VHT80 | 5210 MHz             |          |          | 5775 MHz |          |          |
|                          | 65                   |          |          | 62       |          |          |

## Mode 2: (Ant.8 Panel antenna / 5.1dBi / 3TX)

| Test Software Version    | Mtool_2.0.1.0        |          |          |          |          |          |
|--------------------------|----------------------|----------|----------|----------|----------|----------|
| Mode                     | Test Frequency (MHz) |          |          |          |          |          |
|                          | NCB: 20MHz           |          |          |          |          |          |
|                          | 5180 MHz             | 5200 MHz | 5240 MHz | 5745 MHz | 5785 MHz | 5825 MHz |
| 802.11ac MCS0/Nss1 VHT20 | 76                   | 85       | 89       | 66       | 87       | 69       |
| Mode                     | NCB: 40MHz           |          |          |          |          |          |
| 802.11ac MCS0/Nss1 VHT40 | 5190 MHz             |          | 5230 MHz |          | 5755 MHz |          |
|                          | 68                   |          | 83       |          | 60       |          |
| 63                       | NCB: 80MHz           |          |          |          |          |          |
| 802.11ac MCS0/Nss1 VHT80 | 5210 MHz             |          |          | 5775 MHz |          |          |
|                          | 59                   |          |          | 58       |          |          |

Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 4: 8.3, Chain 5: 5.9, Chain 6: 8.2dBi / 2TX)

| Test Software Version    | Mtool_2.0.1.0        |          |          |          |          |          |
|--------------------------|----------------------|----------|----------|----------|----------|----------|
| Mode                     | Test Frequency (MHz) |          |          |          |          |          |
|                          | NCB: 20MHz           |          |          |          |          |          |
|                          | 5180 MHz             | 5200 MHz | 5240 MHz | 5745 MHz | 5785 MHz | 5825 MHz |
| 802.11ac MCS0/Nss2 VHT20 | 78                   | 89       | 91       | 64       | 90       | 70       |
| Mode                     | NCB: 40MHz           |          |          |          |          |          |
| 802.11ac MCS0/Nss2 VHT40 | 5190 MHz             |          | 5230 MHz |          | 5755 MHz |          |
|                          | 66                   |          | 84       |          | 59       |          |
| 66                       | 84                   |          |          |          |          |          |
| Mode                     | NCB: 80MHz           |          |          |          |          |          |
| 802.11ac MCS0/Nss2 VHT80 | 5210 MHz             |          |          | 5775 MHz |          |          |
|                          | 62                   |          |          | 61       |          |          |

Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 4: 8.3, Chain 5: 5.9, Chain 6: 8.2dBi / 3TX)

| Test Software Version    | Mtool_2.0.1.0        |          |          |          |          |          |
|--------------------------|----------------------|----------|----------|----------|----------|----------|
| Mode                     | Test Frequency (MHz) |          |          |          |          |          |
|                          | NCB: 20MHz           |          |          |          |          |          |
|                          | 5180 MHz             | 5200 MHz | 5240 MHz | 5745 MHz | 5785 MHz | 5825 MHz |
| 802.11ac MCS0/Nss2 VHT20 | 72                   | 76       | 76       | 64       | 81       | 68       |
| Mode                     | NCB: 40MHz           |          |          |          |          |          |
| 802.11ac MCS0/Nss2 VHT40 | 5190 MHz             |          | 5230 MHz |          | 5755 MHz |          |
|                          | 65                   |          | 81       |          | 58       |          |
| 5795 MHz                 | 65                   |          |          |          |          |          |
| Mode                     | NCB: 80MHz           |          |          |          |          |          |
| 802.11ac MCS0/Nss2 VHT80 | 5210 MHz             |          |          | 5775 MHz |          |          |
|                          | 57                   |          |          | 57       |          |          |

### 3.9. EUT Operation during Test

For non-beamforming mode:

The EUT was programmed to be in continuously transmitting mode.

For beamforming mode:

For Conducted Mode:

The EUT was programmed to be in continuously transmitting mode.

For Radiated Mode:

During the test, the following programs under WIN XP were executed.

The program was executed as follows:

1. During the test, the EUT operation to normal function.
2. Executed command fixed test channel under DOS.
3. Executed "Lantest.exe " to link with the remote workstation to receive and transmit packet by WLAN ac dongle and transmit duty cycle no less 98%.

For STBC mode:

The EUT was programmed to be in continuously transmitting mode.

### 3.10. Duty Cycle

<For Non-Beamforming Mode>

For 1TX

| Mode                     | On Time<br>(ms) | On+Off Time<br>(ms) | Duty Cycle<br>(%) | Duty Factor<br>(dB) | 1/T Minimum VBW<br>(kHz) |
|--------------------------|-----------------|---------------------|-------------------|---------------------|--------------------------|
| 802.11ac MCS0/Nss1 VHT20 | 1.900           | 1.950               | 97.44%            | 0.11                | 0.53                     |
| 802.11ac MCS0/Nss1 VHT40 | 0.940           | 0.984               | 95.53%            | 0.20                | 1.06                     |
| 802.11ac MCS0/Nss1 VHT80 | 0.442           | 0.482               | 91.70%            | 0.38                | 2.26                     |

For 2TX

| Mode                     | On Time<br>(ms) | On+Off Time<br>(ms) | Duty Cycle<br>(%) | Duty Factor<br>(dB) | 1/T Minimum VBW<br>(kHz) |
|--------------------------|-----------------|---------------------|-------------------|---------------------|--------------------------|
| 802.11ac MCS0/Nss1 VHT20 | 1.930           | 1.950               | 98.97%            | 0.04                | 0.01                     |
| 802.11ac MCS0/Nss1 VHT40 | 0.920           | 0.970               | 94.85%            | 0.23                | 1.09                     |
| 802.11ac MCS0/Nss1 VHT80 | 0.432           | 0.484               | 89.26%            | 0.49                | 2.31                     |

## For 3TX

| Mode                     | On Time<br>(ms) | On+Off Time<br>(ms) | Duty Cycle<br>(%) | Duty Factor<br>(dB) | 1/T Minimum VBW<br>(kHz) |
|--------------------------|-----------------|---------------------|-------------------|---------------------|--------------------------|
| 802.11ac MCS0/Nss1 VHT20 | 1.930           | 1.950               | 98.97%            | 0.04                | 0.01                     |
| 802.11ac MCS0/Nss1 VHT40 | 0.920           | 0.970               | 94.85%            | 0.23                | 1.09                     |
| 802.11ac MCS0/Nss1 VHT80 | 0.432           | 0.488               | 88.52%            | 0.53                | 2.31                     |

## &lt;For Beamforming Mode&gt;

## For 2TX

| Mode                     | On Time<br>(ms) | On+Off Time<br>(ms) | Duty Cycle<br>(%) | Duty Factor<br>(dB) | 1/T Minimum VBW<br>(kHz) |
|--------------------------|-----------------|---------------------|-------------------|---------------------|--------------------------|
| 802.11ac MCS0/Nss1 VHT20 | 3.700           | 3.800               | 97.37%            | 0.12                | 0.27                     |
| 802.11ac MCS0/Nss1 VHT40 | 4.600           | 4.720               | 97.46%            | 0.11                | 0.22                     |
| 802.11ac MCS0/Nss1 VHT80 | 5.020           | 5.160               | 97.29%            | 0.12                | 0.20                     |

## For 3TX

| Mode                     | On Time<br>(ms) | On+Off Time<br>(ms) | Duty Cycle<br>(%) | Duty Factor<br>(dB) | 1/T Minimum VBW<br>(kHz) |
|--------------------------|-----------------|---------------------|-------------------|---------------------|--------------------------|
| 802.11ac MCS0/Nss1 VHT20 | 3.820           | 3.940               | 96.95%            | 0.13                | 0.26                     |
| 802.11ac MCS0/Nss1 VHT40 | 4.520           | 4.660               | 97.00%            | 0.13                | 0.22                     |
| 802.11ac MCS0/Nss1 VHT80 | 4.960           | 5.100               | 97.25%            | 0.12                | 0.20                     |

## &lt;For STBC Mode&gt;

## For 2TX

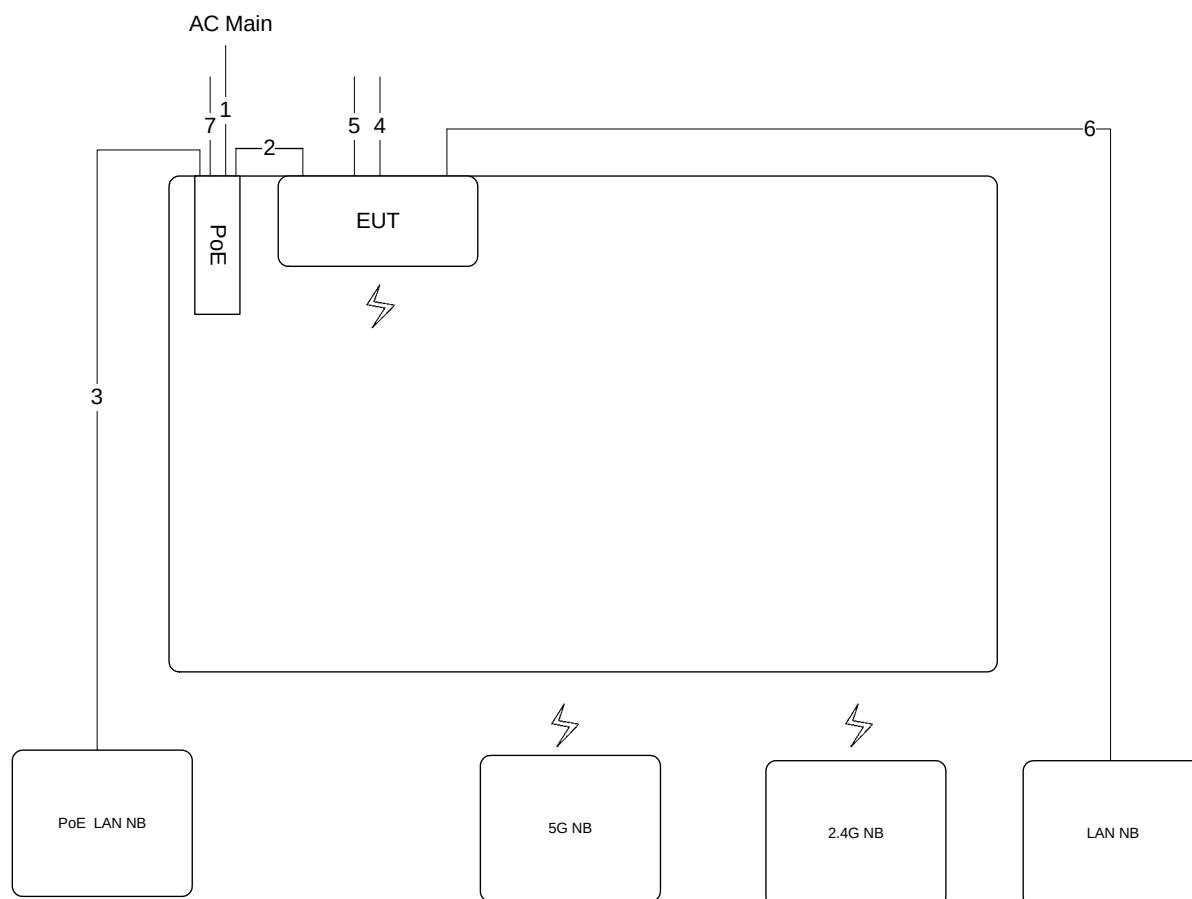
| Mode                     | On Time<br>(ms) | On+Off Time<br>(ms) | Duty Cycle<br>(%) | Duty Factor<br>(dB) | 1/T Minimum VBW<br>(kHz) |
|--------------------------|-----------------|---------------------|-------------------|---------------------|--------------------------|
| 802.11ac MCS0/Nss1 VHT20 | 1.940           | 1.960               | 98.98%            | 0.04                | 0.01                     |
| 802.11ac MCS0/Nss1 VHT40 | 0.920           | 0.970               | 94.85%            | 0.23                | 1.09                     |
| 802.11ac MCS0/Nss1 VHT80 | 0.440           | 0.492               | 89.43%            | 0.49                | 2.27                     |

## For 3TX

| Mode                     | On Time<br>(ms) | On+Off Time<br>(ms) | Duty Cycle<br>(%) | Duty Factor<br>(dB) | 1/T Minimum VBW<br>(kHz) |
|--------------------------|-----------------|---------------------|-------------------|---------------------|--------------------------|
| 802.11ac MCS0/Nss1 VHT20 | 1.920           | 1.960               | 97.96%            | 0.09                | 0.52                     |
| 802.11ac MCS0/Nss1 VHT40 | 0.928           | 0.984               | 94.31%            | 0.25                | 1.08                     |
| 802.11ac MCS0/Nss1 VHT80 | 0.434           | 0.484               | 89.67%            | 0.47                | 2.30                     |

### 3.11. Test Configurations

#### 3.11.1. AC Power Line Conduction Emissions Test Configuration

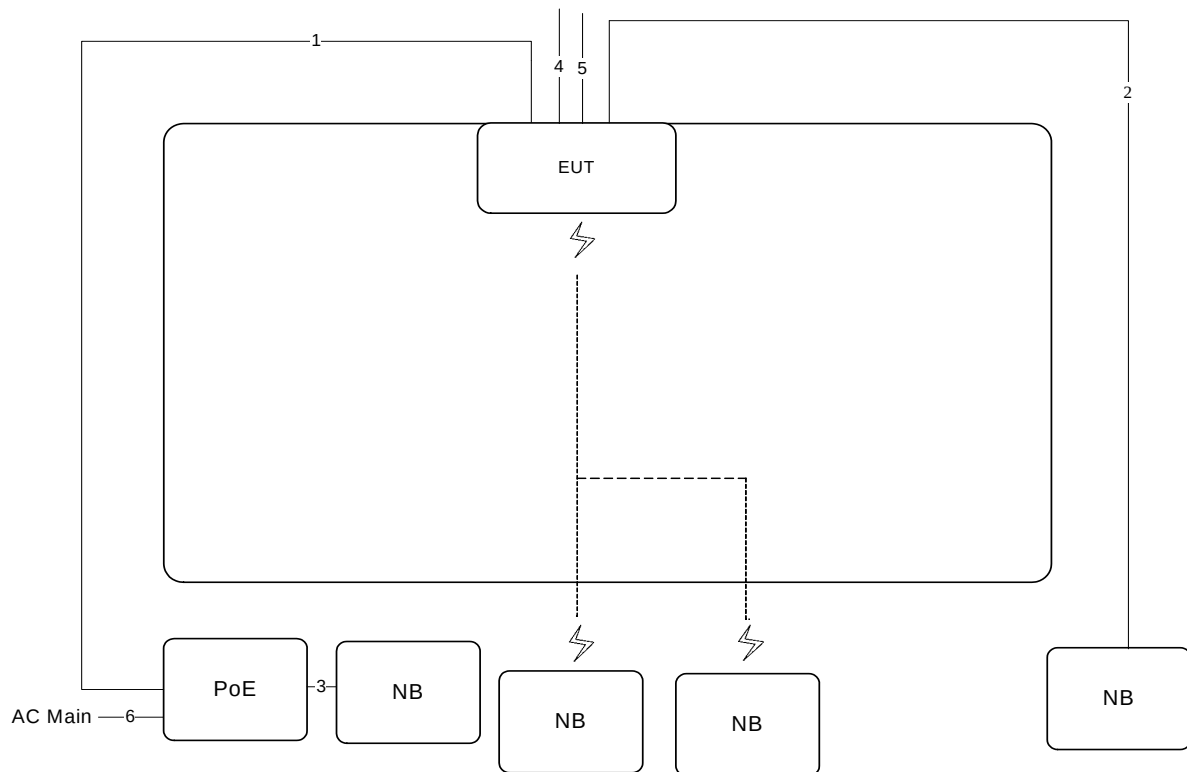


| Item | Connection    | Shielded | Length(m) |
|------|---------------|----------|-----------|
| 1    | Power cable   | No       | 3         |
| 2    | RJ-45 cable   | No       | 1.5       |
| 3    | RJ-45 cable   | No       | 10        |
| 4    | Ground cable  | No       | 1.8       |
| 5    | Console cable | No       | 1.5       |
| 6    | RJ-45 cable   | No       | 10        |
| 7    | Ground cable  | No       | 2         |



### 3.11.2. Radiation Emissions Test Configuration

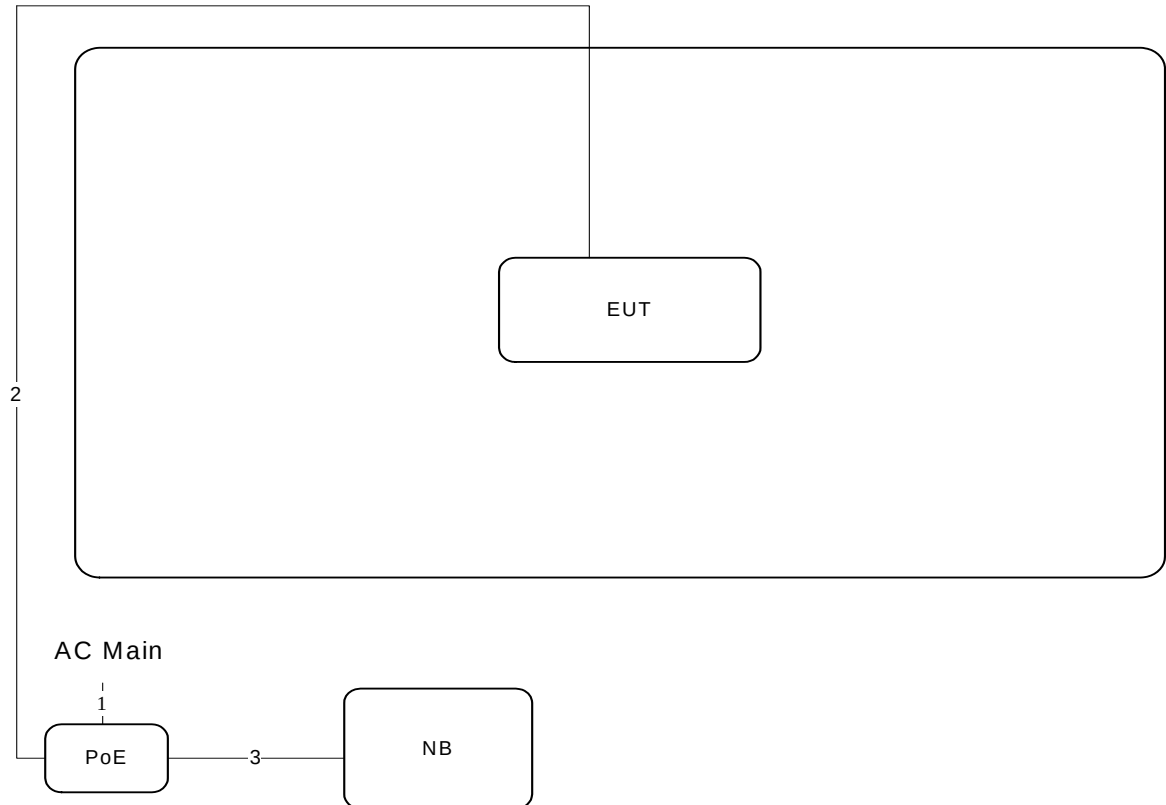
Test Configuration: 30MHz ~1GHz



| Item | Connection    | Shielded | Length(m) |
|------|---------------|----------|-----------|
| 1    | RJ-45 cable   | No       | 50        |
| 2    | RJ-45 cable   | No       | 10        |
| 3    | RJ-45 cable   | No       | 1.5       |
| 4    | Ground cable  | No       | 1.8       |
| 5    | Console cable | No       | 1.5       |
| 6    | Power cable   | No       | 1.5       |

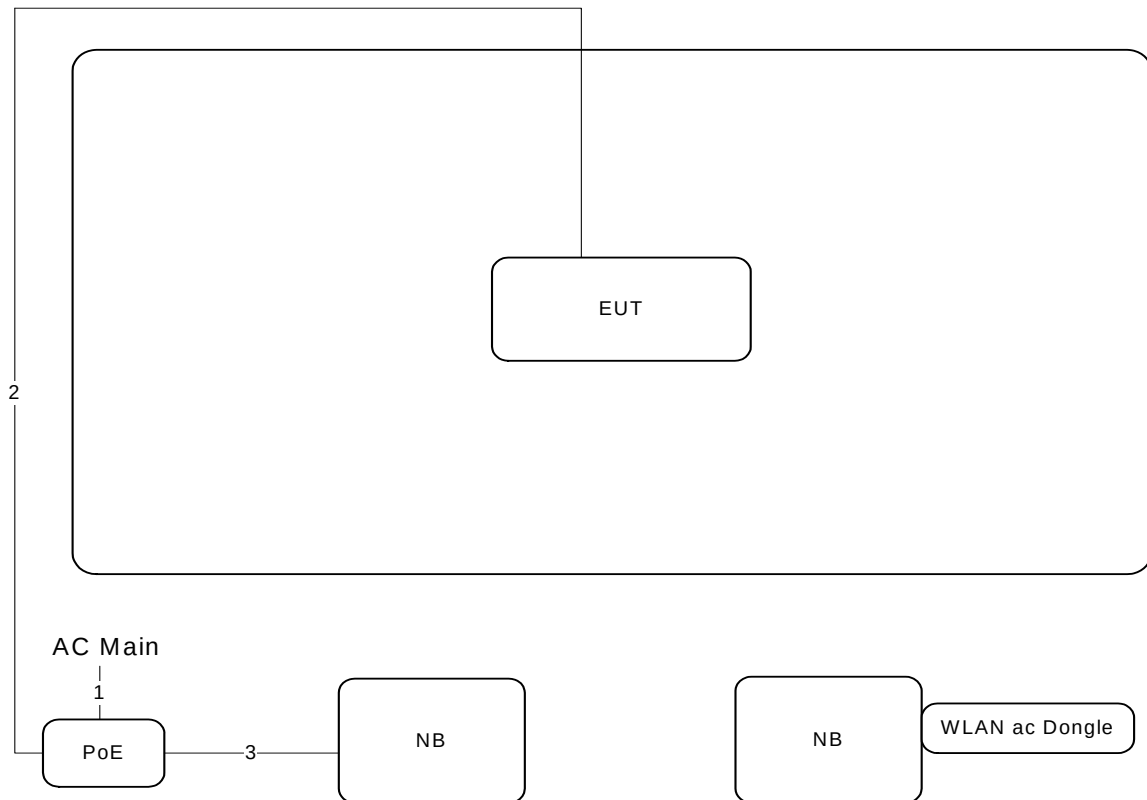
Test Configuration: above 1GHz:

For Non-Beamforming Mode



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

### For Beamforming Mode



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

## 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

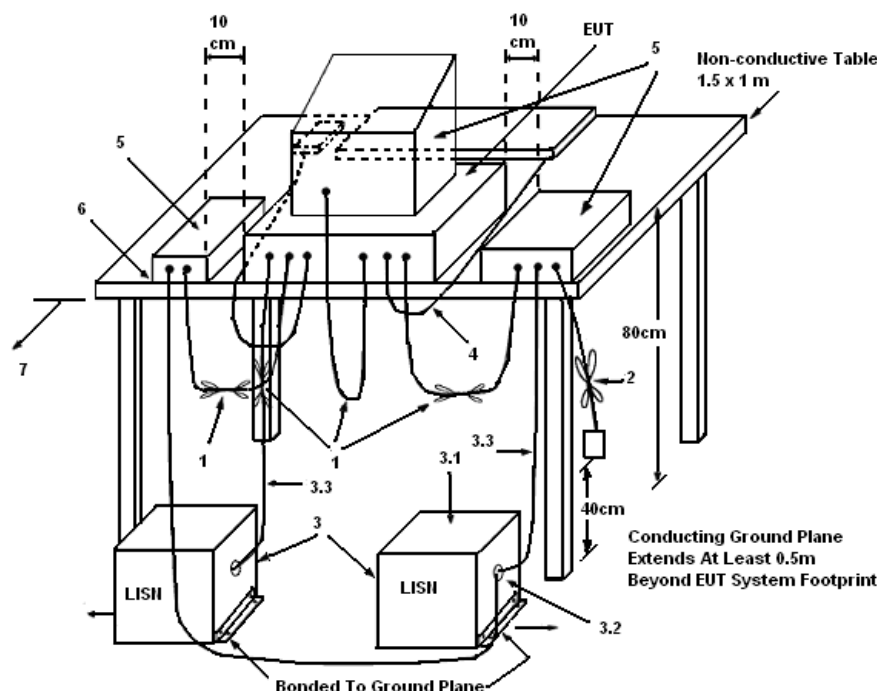
Please refer to section 5 of equipments list in this report. The following table is the setting of the receiver.

| 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  $\Omega$ . 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

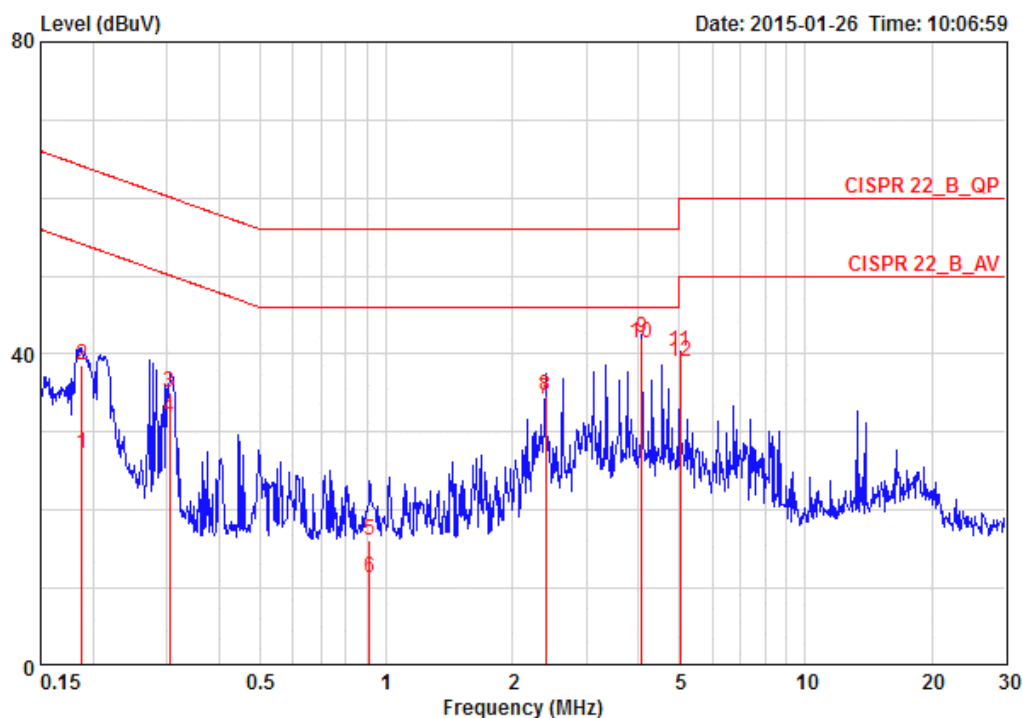
There is no deviation with the original standard.

#### 4.1.6. EUT Operation during Test

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

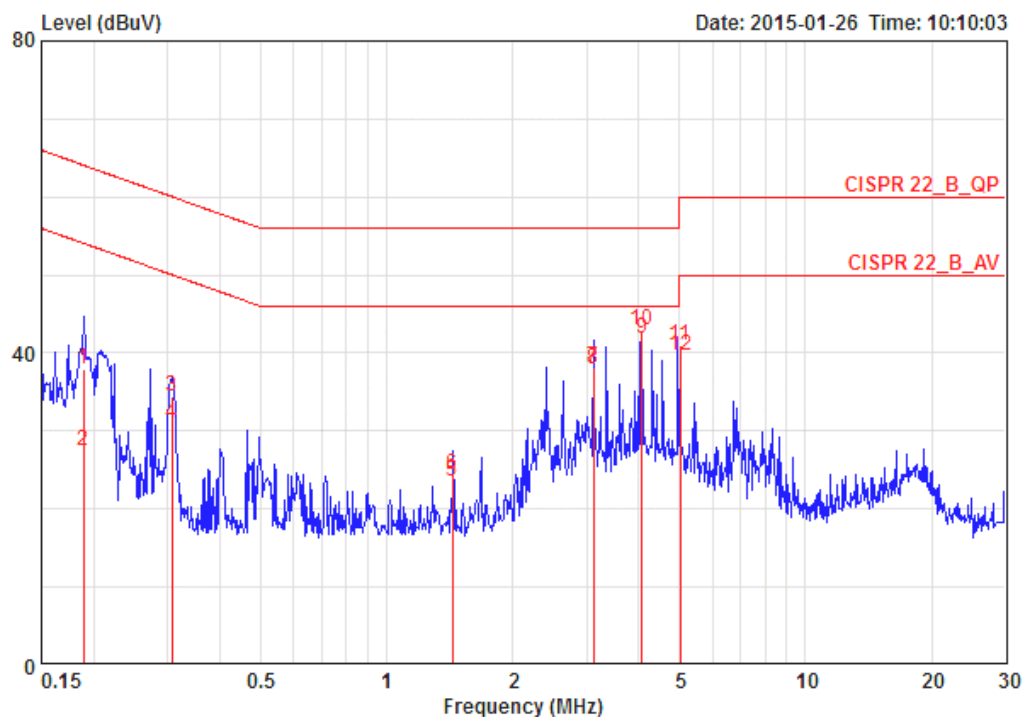
#### 4.1.7. Results of AC Power Line Conducted Emissions Measurement

|               |             |          |      |
|---------------|-------------|----------|------|
| Temperature   | 23°C        | Humidity | 56%  |
| Test Engineer | Parody Lin  | Phase    | Line |
| Configuration | Normal Link |          |      |



|    | Freq    | Level | Over Limit | Limit Line | Read Level | LISN Factor | Cable Loss | Remark  | Pol/Phase |
|----|---------|-------|------------|------------|------------|-------------|------------|---------|-----------|
|    | MHz     | dBuV  | dB         | dBuV       | dBuV       | dB          | dB         |         |           |
| 1  | 0.18814 | 27.24 | -26.88     | 54.12      | 17.22      | 9.78        | 0.24       | AVERAGE | LINE      |
| 2  | 0.18814 | 38.55 | -25.57     | 64.12      | 28.53      | 9.78        | 0.24       | QP      | LINE      |
| 3  | 0.30509 | 35.01 | -25.09     | 60.10      | 24.96      | 9.77        | 0.28       | QP      | LINE      |
| 4  | 0.30509 | 31.73 | -18.37     | 50.10      | 21.68      | 9.77        | 0.28       | AVERAGE | LINE      |
| 5  | 0.91357 | 16.18 | -39.82     | 56.00      | 6.08       | 9.77        | 0.33       | QP      | LINE      |
| 6  | 0.91357 | 11.38 | -34.62     | 46.00      | 1.28       | 9.77        | 0.33       | AVERAGE | LINE      |
| 7  | 2.396   | 34.16 | -11.84     | 46.00      | 24.07      | 9.74        | 0.36       | AVERAGE | LINE      |
| 8  | 2.396   | 34.55 | -21.45     | 56.00      | 24.46      | 9.74        | 0.36       | QP      | LINE      |
| 9  | 4.073   | 42.14 | -13.86     | 56.00      | 32.06      | 9.71        | 0.37       | QP      | LINE      |
| 10 | 4.073   | 41.43 | -4.57      | 46.00      | 31.35      | 9.71        | 0.37       | AVERAGE | LINE      |
| 11 | 5.031   | 40.30 | -19.70     | 60.00      | 30.24      | 9.68        | 0.38       | QP      | LINE      |
| 12 | 5.031   | 39.03 | -10.97     | 50.00      | 28.97      | 9.68        | 0.38       | AVERAGE | LINE      |

|               |             |          |         |
|---------------|-------------|----------|---------|
| Temperature   | 23°C        | Humidity | 56%     |
| Test Engineer | Parody Lin  | Phase    | Neutral |
| Configuration | Normal Link |          |         |



|     | Freq    | Level | Over   | Limit | Read  | LISN   | Cable |         |           |
|-----|---------|-------|--------|-------|-------|--------|-------|---------|-----------|
|     | MHz     | dBuV  | Limit  | Line  | Level | Factor | Loss  | Remark  | Pol/Phase |
|     |         |       | dB     | dBuV  | dBuV  | dB     | dB    |         |           |
| 1   | 0.18938 | 38.02 | -26.04 | 64.06 | 27.86 | 9.92   | 0.24  | QP      | NEUTRAL   |
| 2   | 0.18938 | 27.46 | -26.60 | 54.06 | 17.30 | 9.92   | 0.24  | AVERAGE | NEUTRAL   |
| 3   | 0.30671 | 34.50 | -25.55 | 60.06 | 24.31 | 9.91   | 0.28  | QP      | NEUTRAL   |
| 4   | 0.30671 | 30.95 | -19.10 | 50.06 | 20.76 | 9.91   | 0.28  | AVERAGE | NEUTRAL   |
| 5   | 1.437   | 23.54 | -22.46 | 46.00 | 13.29 | 9.91   | 0.34  | AVERAGE | NEUTRAL   |
| 6   | 1.437   | 24.48 | -31.52 | 56.00 | 14.23 | 9.91   | 0.34  | QP      | NEUTRAL   |
| 7   | 3.114   | 38.12 | -17.88 | 56.00 | 27.88 | 9.87   | 0.36  | QP      | NEUTRAL   |
| 8   | 3.114   | 37.86 | -8.14  | 46.00 | 27.62 | 9.87   | 0.36  | AVERAGE | NEUTRAL   |
| 9 @ | 4.072   | 41.86 | -4.14  | 46.00 | 31.63 | 9.86   | 0.37  | AVERAGE | NEUTRAL   |
| 10  | 4.072   | 42.99 | -13.01 | 56.00 | 32.76 | 9.86   | 0.37  | QP      | NEUTRAL   |
| 11  | 5.029   | 40.92 | -19.08 | 60.00 | 30.70 | 9.84   | 0.38  | QP      | NEUTRAL   |
| 12  | 5.029   | 39.58 | -10.42 | 50.00 | 29.36 | 9.84   | 0.38  | AVERAGE | NEUTRAL   |

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 4.6.4.

### 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

For Band 1 and Band 4 (Master and client without radar detection):

<For Non-Beamforming Mode>

|               |                                               |          |     |
|---------------|-----------------------------------------------|----------|-----|
| Temperature   | 22°C                                          | Humidity | 63% |
| Test Engineer | Nick Peng                                     |          |     |
| Test Mode     | Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 1TX) |          |     |

For outdoor use

For Chain 5

| Mode                        | Frequency | 26dB Bandwidth (MHz) | 99% Occupied Bandwidth (MHz) |
|-----------------------------|-----------|----------------------|------------------------------|
| 802.11ac<br>MCS0/Nss1 VHT20 | 5180 MHz  | 20.88                | 18.12                        |
|                             | 5200 MHz  | 21.00                | 18.12                        |
|                             | 5240 MHz  | 20.76                | 18.12                        |
|                             | 5745 MHz  | 21.00                | 18.12                        |
|                             | 5785 MHz  | 41.04                | 21.24                        |
|                             | 5825 MHz  | 20.88                | 18.12                        |
| 802.11ac<br>MCS0/Nss1 VHT40 | 5190 MHz  | 41.20                | 37.00                        |
|                             | 5230 MHz  | 41.00                | 36.80                        |
|                             | 5755 MHz  | 41.40                | 37.00                        |
|                             | 5795 MHz  | 50.80                | 37.20                        |
| 802.11ac<br>MCS0/Nss1 VHT80 | 5210 MHz  | 83.20                | 76.00                        |
|                             | 5775 MHz  | 83.20                | 76.00                        |

|               |                                               |          |     |
|---------------|-----------------------------------------------|----------|-----|
| Temperature   | 22°C                                          | Humidity | 63% |
| Test Engineer | Nick Peng                                     |          |     |
| Test Mode     | Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 1TX) |          |     |

For indoor use

For Chain 5

| Mode                        | Frequency | 26dB Bandwidth (MHz) | 99% Occupied Bandwidth (MHz) |
|-----------------------------|-----------|----------------------|------------------------------|
| 802.11ac<br>MCS0/Nss1 VHT20 | 5180 MHz  | 28.92                | 17.40                        |
|                             | 5200 MHz  | 38.40                | 22.08                        |
|                             | 5240 MHz  | 39.48                | 21.96                        |
| 802.11ac<br>MCS0/Nss1 VHT40 | 5190 MHz  | 48.20                | 36.80                        |
|                             | 5230 MHz  | 90.40                | 47.80                        |
| 802.11ac<br>MCS0/Nss1 VHT80 | 5210 MHz  | 82.40                | 76.00                        |

|               |                                              |          |     |
|---------------|----------------------------------------------|----------|-----|
| Temperature   | 22°C                                         | Humidity | 63% |
| Test Engineer | Nick Peng                                    |          |     |
| Test Mode     | Mode 2: (Ant.8 Panel antenna / 5.1dBi / 1TX) |          |     |

#### For Chain 4

| Mode                        | Frequency | 26dB Bandwidth (MHz) | 99% Occupied Bandwidth (MHz) |
|-----------------------------|-----------|----------------------|------------------------------|
| 802.11ac<br>MCS0/Nss1 VHT20 | 5180 MHz  | 24.00                | 18.36                        |
|                             | 5200 MHz  | 45.36                | 27.00                        |
|                             | 5240 MHz  | 39.00                | 20.04                        |
|                             | 5745 MHz  | 20.64                | 18.24                        |
|                             | 5785 MHz  | 45.00                | 26.04                        |
|                             | 5825 MHz  | 21.00                | 18.12                        |
| 802.11ac<br>MCS0/Nss1 VHT40 | 5190 MHz  | 42.20                | 37.00                        |
|                             | 5230 MHz  | 87.00                | 41.00                        |
|                             | 5755 MHz  | 41.40                | 36.80                        |
|                             | 5795 MHz  | 41.20                | 37.00                        |
| 802.11ac<br>MCS0/Nss1 VHT80 | 5210 MHz  | 82.80                | 76.00                        |
|                             | 5775 MHz  | 82.80                | 76.00                        |

|               |                                                                                                   |          |     |
|---------------|---------------------------------------------------------------------------------------------------|----------|-----|
| Temperature   | 22°C                                                                                              | Humidity | 63% |
| Test Engineer | Nick Peng, Lucas Huang                                                                            |          |     |
| Test Mode     | Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 4: 8.3, Chain 5: 5.9, Chain 6: 8.2dBi / 1TX) |          |     |

#### For Chain 4

| Mode                        | Frequency | 26dB Bandwidth (MHz) | 99% Occupied Bandwidth (MHz) |
|-----------------------------|-----------|----------------------|------------------------------|
| 802.11ac<br>MCS0/Nss1 VHT20 | 5180 MHz  | 22.68                | 18.12                        |
|                             | 5200 MHz  | 41.88                | 22.32                        |
|                             | 5240 MHz  | 39.96                | 19.56                        |
|                             | 5745 MHz  | 20.76                | 18.12                        |
|                             | 5785 MHz  | 40.80                | 20.28                        |
|                             | 5825 MHz  | 20.88                | 18.12                        |
| 802.11ac<br>MCS0/Nss1 VHT40 | 5190 MHz  | 41.40                | 36.80                        |
|                             | 5230 MHz  | 83.20                | 38.20                        |
|                             | 5755 MHz  | 41.40                | 37.00                        |
|                             | 5795 MHz  | 41.40                | 37.00                        |
| 802.11ac<br>MCS0/Nss1 VHT80 | 5210 MHz  | 82.40                | 76.40                        |
|                             | 5775 MHz  | 82.80                | 76.00                        |

## &lt;For STBC Mode&gt;

|               |                                               |          |     |
|---------------|-----------------------------------------------|----------|-----|
| Temperature   | 22°C                                          | Humidity | 63% |
| Test Engineer | Nick Peng                                     |          |     |
| Test Mode     | Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 2TX) |          |     |

For outdoor use

For Chain 4 + Chain 5

| Mode                        | Frequency | 26dB Bandwidth (MHz) | 99% Occupied Bandwidth (MHz) |
|-----------------------------|-----------|----------------------|------------------------------|
| 802.11ac<br>MCS0/Nss1 VHT20 | 5180 MHz  | 20.52                | 18.00                        |
|                             | 5200 MHz  | 20.52                | 17.88                        |
|                             | 5240 MHz  | 20.64                | 17.88                        |
|                             | 5745 MHz  | 20.64                | 17.88                        |
|                             | 5785 MHz  | 42.60                | 22.92                        |
|                             | 5825 MHz  | 20.76                | 18.00                        |
| 802.11ac<br>MCS0/Nss1 VHT40 | 5190 MHz  | 40.80                | 36.80                        |
|                             | 5230 MHz  | 41.00                | 36.60                        |
|                             | 5755 MHz  | 41.00                | 36.80                        |
|                             | 5795 MHz  | 41.00                | 37.00                        |
| 802.11ac<br>MCS0/Nss1 VHT80 | 5210 MHz  | 82.80                | 76.00                        |
|                             | 5775 MHz  | 82.40                | 76.00                        |

|               |                                               |          |     |
|---------------|-----------------------------------------------|----------|-----|
| Temperature   | 22°C                                          | Humidity | 63% |
| Test Engineer | Nick Peng                                     |          |     |
| Test Mode     | Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 3TX) |          |     |

For outdoor use

For Chain 4 + Chain 5 + Chain 6

| Mode                        | Frequency | 26dB Bandwidth (MHz) | 99% Occupied Bandwidth (MHz) |
|-----------------------------|-----------|----------------------|------------------------------|
| 802.11ac<br>MCS0/Nss1 VHT20 | 5180 MHz  | 20.52                | 17.88                        |
|                             | 5200 MHz  | 20.52                | 17.88                        |
|                             | 5240 MHz  | 20.40                | 17.88                        |
|                             | 5745 MHz  | 20.64                | 18.00                        |
|                             | 5785 MHz  | 41.88                | 22.08                        |
|                             | 5825 MHz  | 20.64                | 18.00                        |
| 802.11ac<br>MCS0/Nss1 VHT40 | 5190 MHz  | 41.20                | 36.80                        |
|                             | 5230 MHz  | 41.00                | 36.80                        |
|                             | 5755 MHz  | 41.20                | 37.00                        |
|                             | 5795 MHz  | 41.00                | 37.00                        |
| 802.11ac<br>MCS0/Nss1 VHT80 | 5210 MHz  | 82.40                | 76.00                        |
|                             | 5775 MHz  | 82.00                | 76.00                        |

|               |                                               |          |     |
|---------------|-----------------------------------------------|----------|-----|
| Temperature   | 22°C                                          | Humidity | 63% |
| Test Engineer | Nick Peng                                     |          |     |
| Test Mode     | Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 2TX) |          |     |

For indoor use

For Chain 4 + Chain 5

| Mode                        | Frequency | 26dB Bandwidth (MHz) | 99% Occupied Bandwidth (MHz) |
|-----------------------------|-----------|----------------------|------------------------------|
| 802.11ac<br>MCS0/Nss1 VHT20 | 5180 MHz  | 22.92                | 17.88                        |
|                             | 5200 MHz  | 41.04                | 22.80                        |
|                             | 5240 MHz  | 37.44                | 21.24                        |
| 802.11ac<br>MCS0/Nss1 VHT40 | 5190 MHz  | 45.20                | 36.80                        |
|                             | 5230 MHz  | 79.60                | 41.40                        |
| 802.11ac<br>MCS0/Nss1 VHT80 | 5210 MHz  | 81.60                | 76.00                        |

|               |                                               |          |     |
|---------------|-----------------------------------------------|----------|-----|
| Temperature   | 22°C                                          | Humidity | 63% |
| Test Engineer | Nick Peng                                     |          |     |
| Test Mode     | Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 3TX) |          |     |

For indoor use

For Chain 4 + Chain 5 + Chain 6

| Mode                        | Frequency | 26dB Bandwidth (MHz) | 99% Occupied Bandwidth (MHz) |
|-----------------------------|-----------|----------------------|------------------------------|
| 802.11ac<br>MCS0/Nss1 VHT20 | 5180 MHz  | 21.00                | 18.00                        |
|                             | 5200 MHz  | 36.72                | 18.84                        |
|                             | 5240 MHz  | 34.20                | 18.60                        |
| 802.11ac<br>MCS0/Nss1 VHT40 | 5190 MHz  | 41.20                | 36.80                        |
|                             | 5230 MHz  | 80.40                | 38.80                        |
| 802.11ac<br>MCS0/Nss1 VHT80 | 5210 MHz  | 82.00                | 76.00                        |



|               |                                               |          |     |
|---------------|-----------------------------------------------|----------|-----|
| Temperature   | 22°C                                          | Humidity | 63% |
| Test Engineer | Nick Peng                                     |          |     |
| Test Mode     | Mode 2: (Ant.8 Panel antenna / 5.1 dBi / 2TX) |          |     |

#### For Chain 4 + Chain 5

| Mode                        | Frequency | 26dB Bandwidth (MHz) | 99% Occupied Bandwidth (MHz) |
|-----------------------------|-----------|----------------------|------------------------------|
| 802.11ac<br>MCS0/Nss1 VHT20 | 5180 MHz  | 21.12                | 18.00                        |
|                             | 5200 MHz  | 36.12                | 18.84                        |
|                             | 5240 MHz  | 35.16                | 18.84                        |
|                             | 5745 MHz  | 20.64                | 17.88                        |
|                             | 5785 MHz  | 39.60                | 19.68                        |
|                             | 5825 MHz  | 21.24                | 18.00                        |
| 802.11ac<br>MCS0/Nss1 VHT40 | 5190 MHz  | 41.20                | 36.80                        |
|                             | 5230 MHz  | 72.80                | 37.40                        |
|                             | 5755 MHz  | 40.80                | 36.80                        |
|                             | 5795 MHz  | 40.60                | 36.60                        |
| 802.11ac<br>MCS0/Nss1 VHT80 | 5210 MHz  | 81.60                | 76.00                        |
|                             | 5775 MHz  | 82.40                | 76.00                        |

|               |                                               |          |     |
|---------------|-----------------------------------------------|----------|-----|
| Temperature   | 22°C                                          | Humidity | 63% |
| Test Engineer | Nick Peng                                     |          |     |
| Test Mode     | Mode 2: (Ant.8 Panel antenna / 5.1 dBi / 3TX) |          |     |

#### For Chain 4 + Chain 5 + Chain 6

| Mode                        | Frequency | 26dB Bandwidth (MHz) | 99% Occupied Bandwidth (MHz) |
|-----------------------------|-----------|----------------------|------------------------------|
| 802.11ac<br>MCS0/Nss1 VHT20 | 5180 MHz  | 20.40                | 18.00                        |
|                             | 5200 MHz  | 29.52                | 18.24                        |
|                             | 5240 MHz  | 34.92                | 18.84                        |
|                             | 5745 MHz  | 20.28                | 18.00                        |
|                             | 5785 MHz  | 33.36                | 18.60                        |
|                             | 5825 MHz  | 20.52                | 18.00                        |
| 802.11ac<br>MCS0/Nss1 VHT40 | 5190 MHz  | 40.60                | 36.80                        |
|                             | 5230 MHz  | 70.60                | 37.20                        |
|                             | 5755 MHz  | 41.00                | 36.80                        |
|                             | 5795 MHz  | 40.80                | 37.00                        |
| 802.11ac<br>MCS0/Nss1 VHT80 | 5210 MHz  | 82.00                | 76.00                        |
|                             | 5775 MHz  | 82.00                | 76.00                        |

|               |                                                                                                   |          |     |
|---------------|---------------------------------------------------------------------------------------------------|----------|-----|
| Temperature   | 22°C                                                                                              | Humidity | 63% |
| Test Engineer | Nick Peng, Lucas Huang                                                                            |          |     |
| Test Mode     | Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 4: 8.3, Chain 5: 5.9, Chain 6: 8.2dBi / 2TX) |          |     |

#### For Chain 4 + Chain 5

| Mode                        | Frequency | 26dB Bandwidth (MHz) | 99% Occupied Bandwidth (MHz) |
|-----------------------------|-----------|----------------------|------------------------------|
| 802.11ac<br>MCS0/Nss2 VHT20 | 5180 MHz  | 20.64                | 17.88                        |
|                             | 5200 MHz  | 36.00                | 18.72                        |
|                             | 5240 MHz  | 38.04                | 20.40                        |
|                             | 5745 MHz  | 20.52                | 17.88                        |
|                             | 5785 MHz  | 38.88                | 20.76                        |
|                             | 5825 MHz  | 20.52                | 18.00                        |
| 802.11ac<br>MCS0/Nss2 VHT40 | 5190 MHz  | 41.00                | 36.80                        |
|                             | 5230 MHz  | 72.80                | 37.40                        |
|                             | 5755 MHz  | 40.80                | 36.80                        |
|                             | 5795 MHz  | 41.00                | 36.60                        |
| 802.11ac<br>MCS0/Nss2 VHT80 | 5210 MHz  | 82.00                | 76.00                        |
|                             | 5775 MHz  | 81.60                | 76.00                        |

|               |                                                                                                   |          |     |
|---------------|---------------------------------------------------------------------------------------------------|----------|-----|
| Temperature   | 22°C                                                                                              | Humidity | 63% |
| Test Engineer | Nick Peng, Lucas Huang                                                                            |          |     |
| Test Mode     | Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 4: 8.3, Chain 5: 5.9, Chain 6: 8.2dBi / 3TX) |          |     |

#### For Chain 4 + Chain 5 + Chain 6

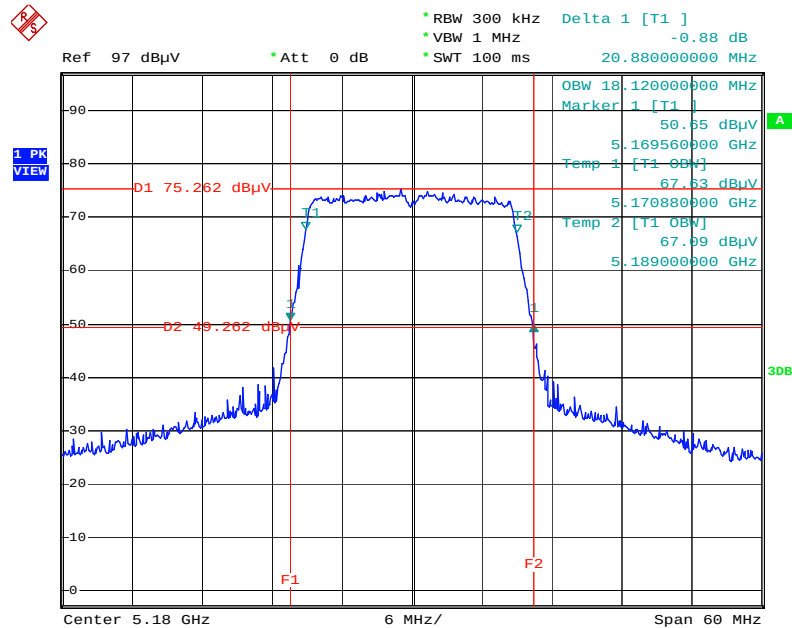
| Mode                        | Frequency | 26dB Bandwidth (MHz) | 99% Occupied Bandwidth (MHz) |
|-----------------------------|-----------|----------------------|------------------------------|
| 802.11ac<br>MCS0/Nss2 VHT20 | 5180 MHz  | 20.64                | 17.88                        |
|                             | 5200 MHz  | 20.76                | 17.88                        |
|                             | 5240 MHz  | 20.52                | 17.88                        |
|                             | 5745 MHz  | 20.52                | 17.88                        |
|                             | 5785 MHz  | 23.28                | 18.12                        |
|                             | 5825 MHz  | 20.64                | 18.00                        |
| 802.11ac<br>MCS0/Nss2 VHT40 | 5190 MHz  | 41.00                | 36.80                        |
|                             | 5230 MHz  | 51.00                | 37.00                        |
|                             | 5755 MHz  | 41.20                | 37.00                        |
|                             | 5795 MHz  | 41.00                | 36.80                        |
| 802.11ac<br>MCS0/Nss2 VHT80 | 5210 MHz  | 82.00                | 76.00                        |
|                             | 5775 MHz  | 82.80                | 76.00                        |

For Band 1 and Band 4 (Master and client without radar detection):

<For Non-Beamforming Mode>

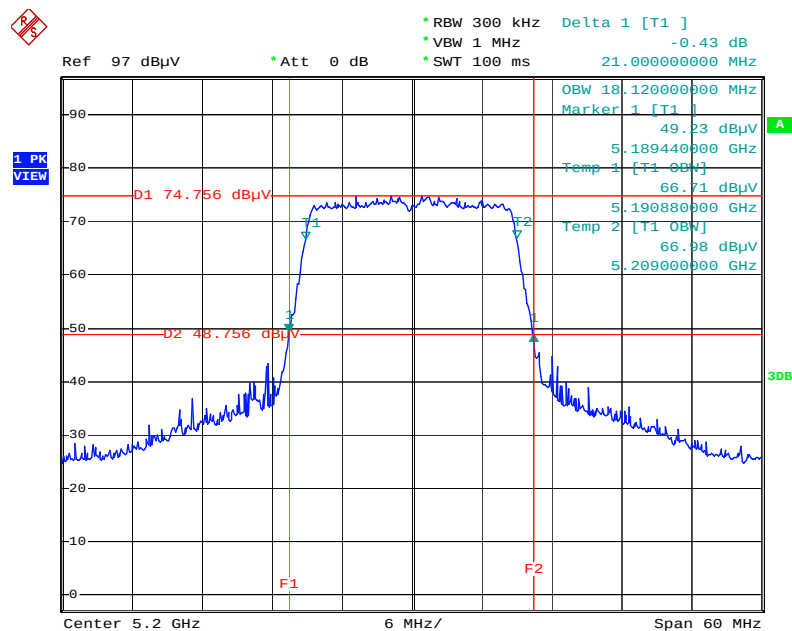
Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 1TX) / For outdoor use

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 / 5180 MHz



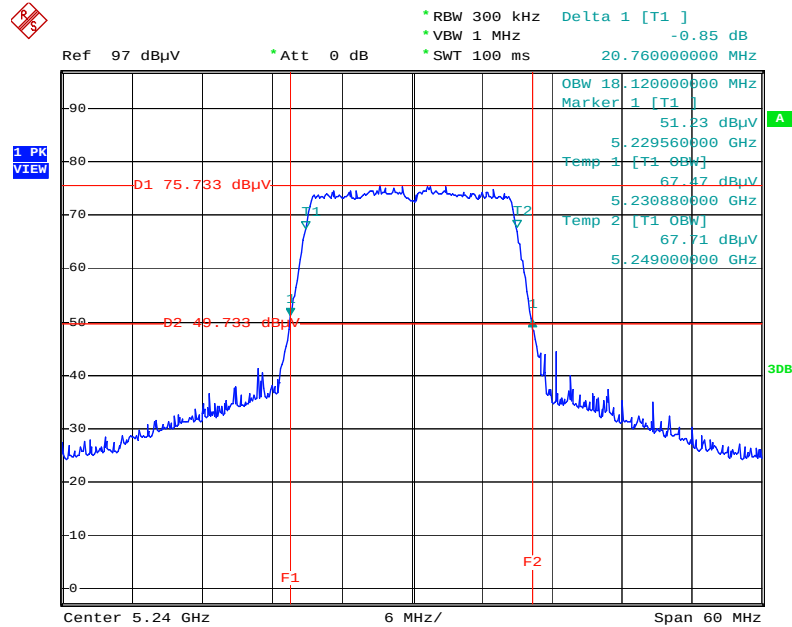
Date: 14.JAN.2015 19:15:03

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 / 5200 MHz



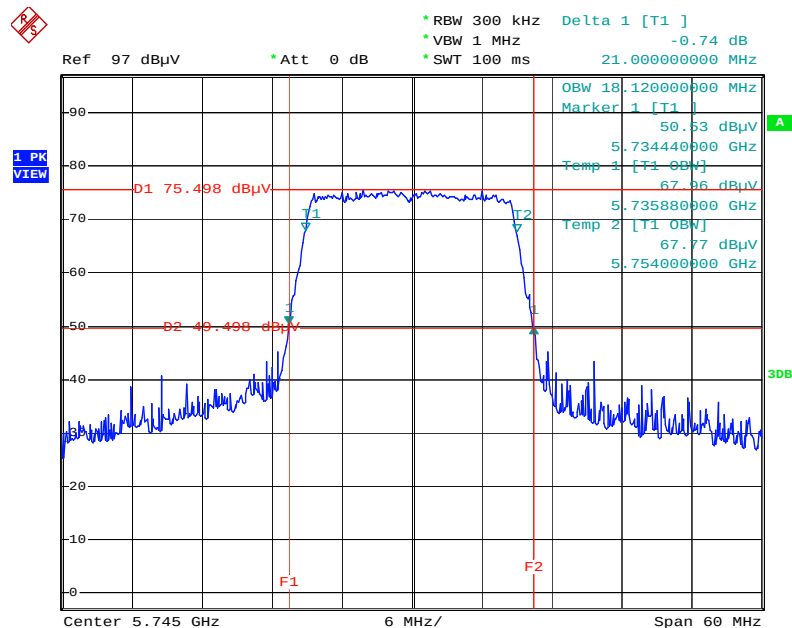
Date: 14.JAN.2015 19:15:57

# 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 / 5240 MHz



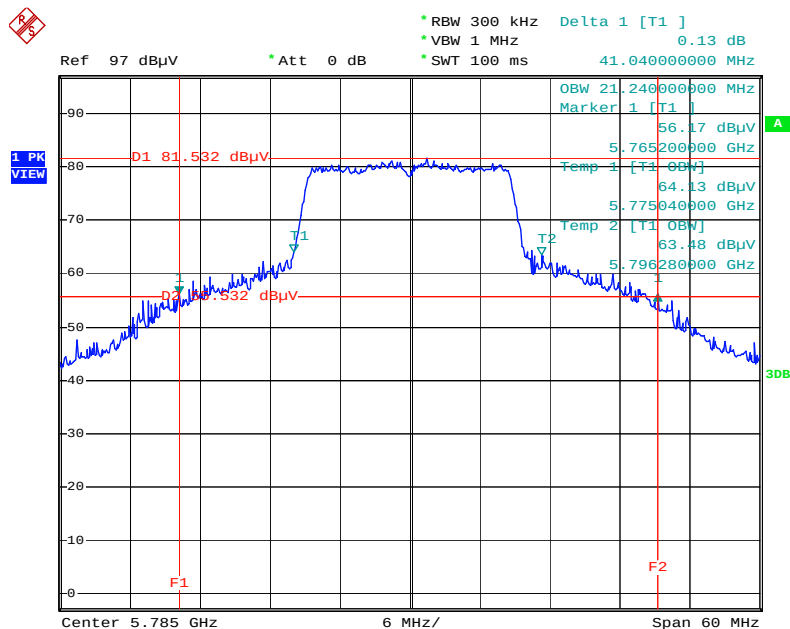
Date: 14.JAN.2015 19:16:44

# 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 / 5745 MHz



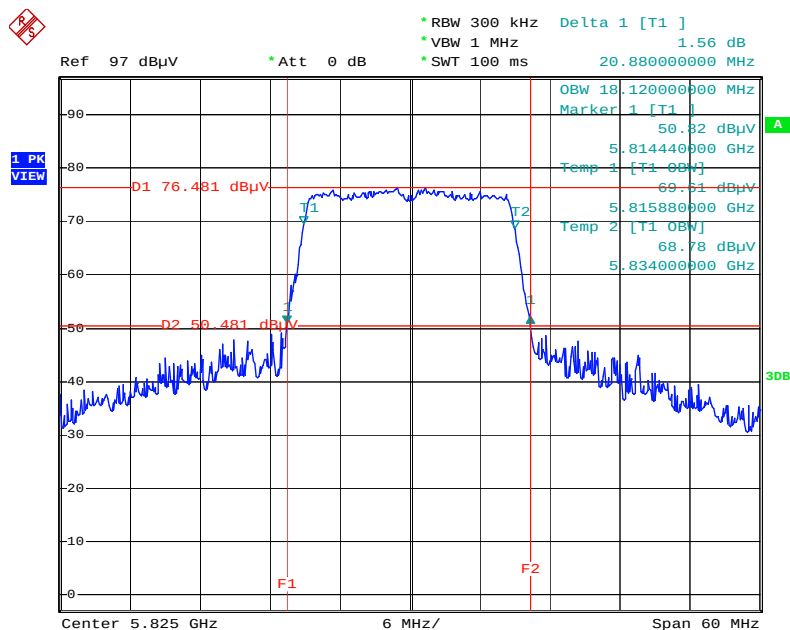
Date: 14.JAN.2015 19:18:03

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 / 5785 MHz



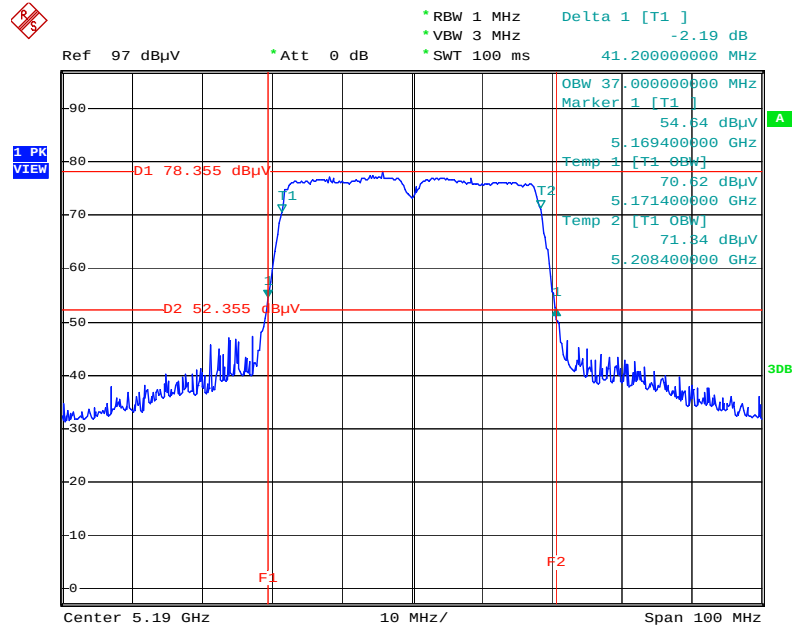
Date: 14.JAN.2015 19:19:58

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 / 5825 MHz



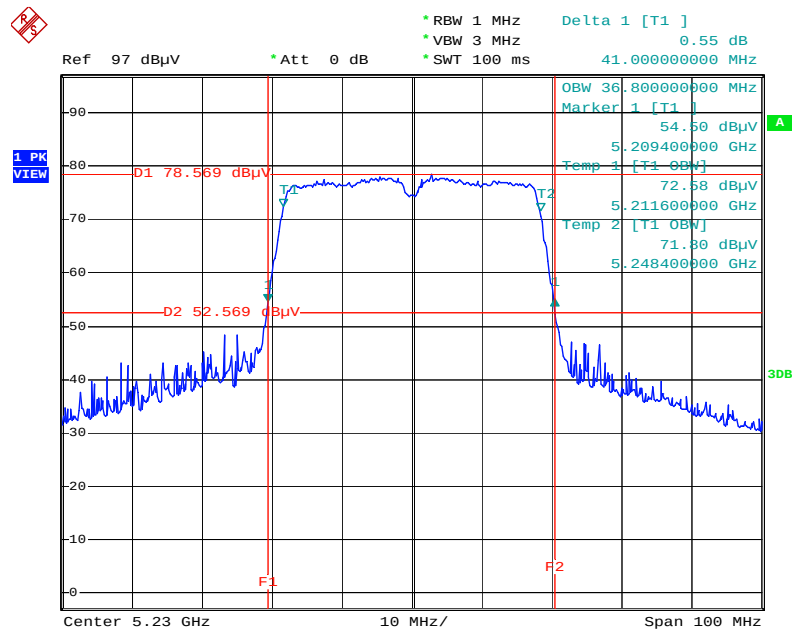
Date: 14.JAN.2015 19:21:07

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 / 5190 MHz



Date: 14.JAN.2015 19:23:17

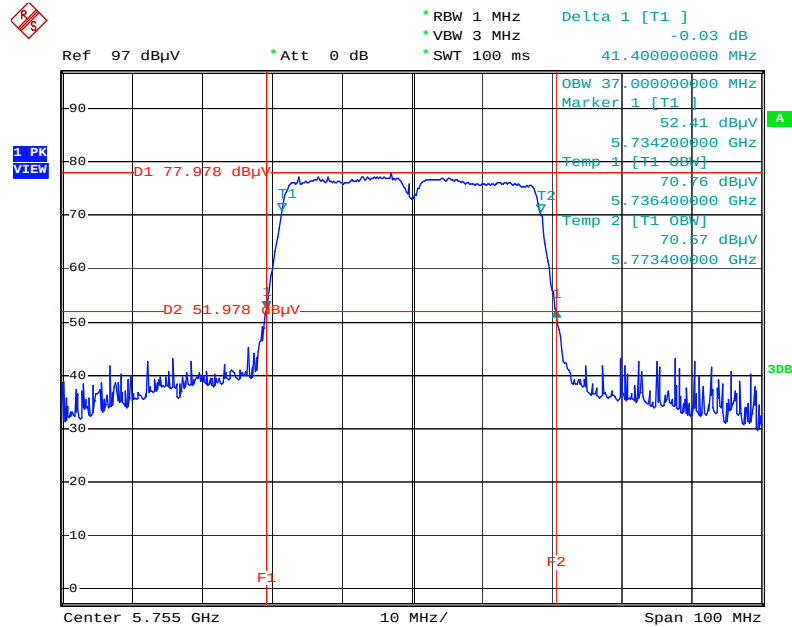
## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 / 5230 MHz



Date: 14.JAN.2015 19:24:02

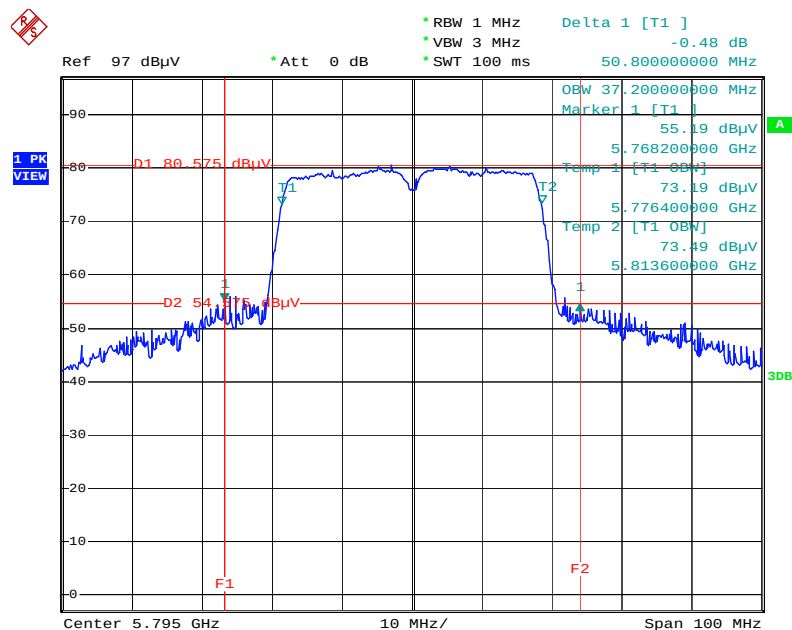


## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 / 5755 MHz



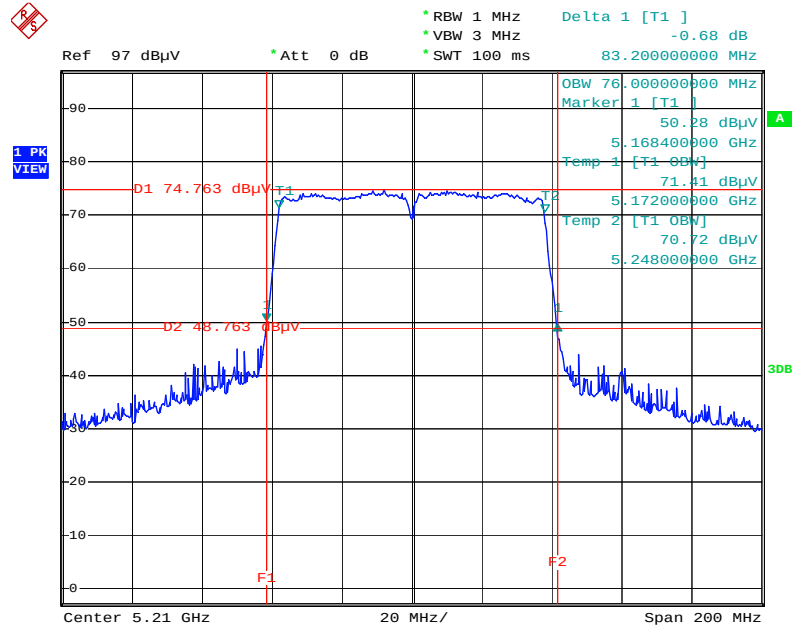
Date: 14.JAN.2015 19:24:41

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 / 5795 MHz



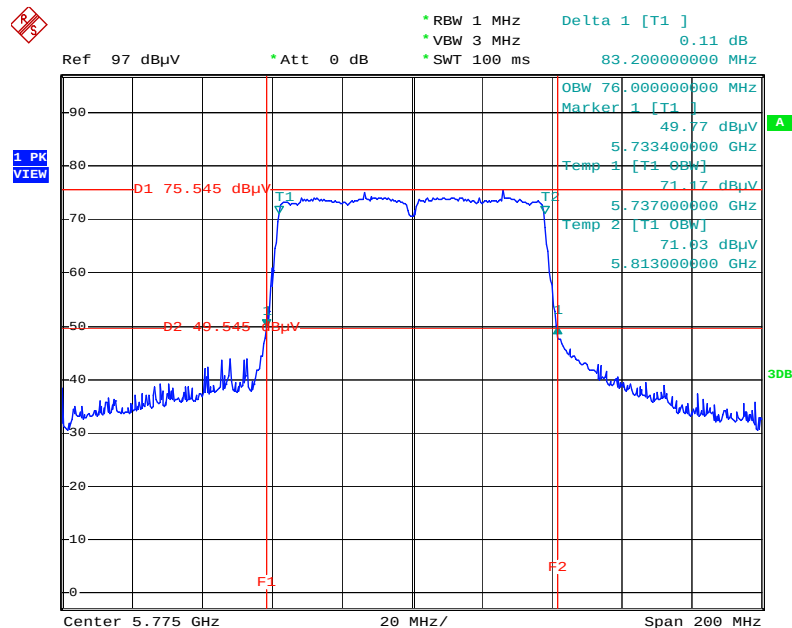
Date: 14.JAN.2015 19:26:07

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 5 / 5210 MHz



Date: 14.JAN.2015 19:27:54

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 5 / 5775 MHz

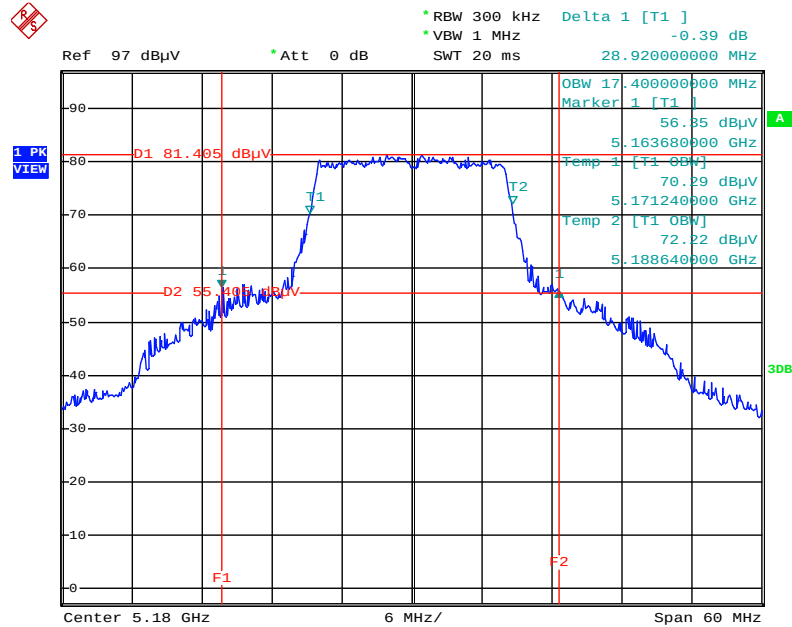


Date: 14.JAN.2015 19:28:46

Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 1TX) / For indoor use

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

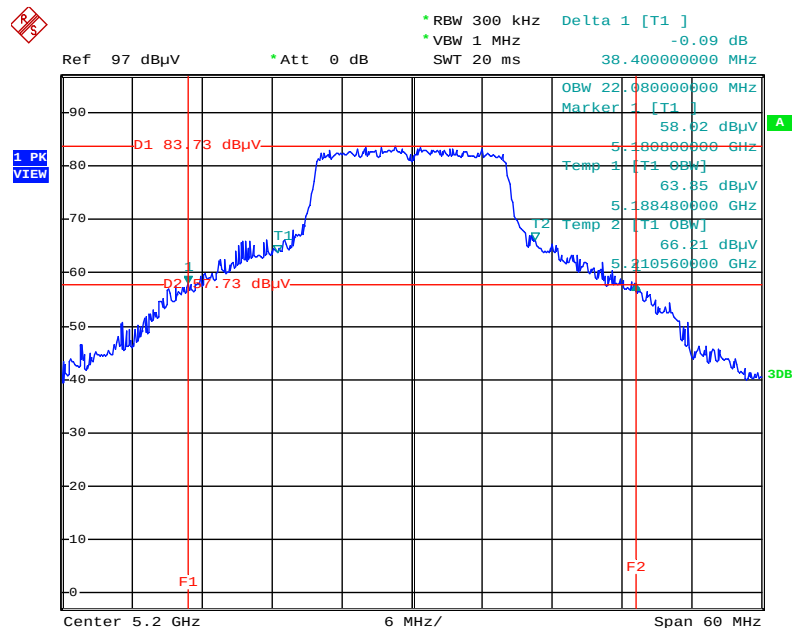
Chain 5 / 5180 MHz



Date: 2.MAR.2015 15:12:45

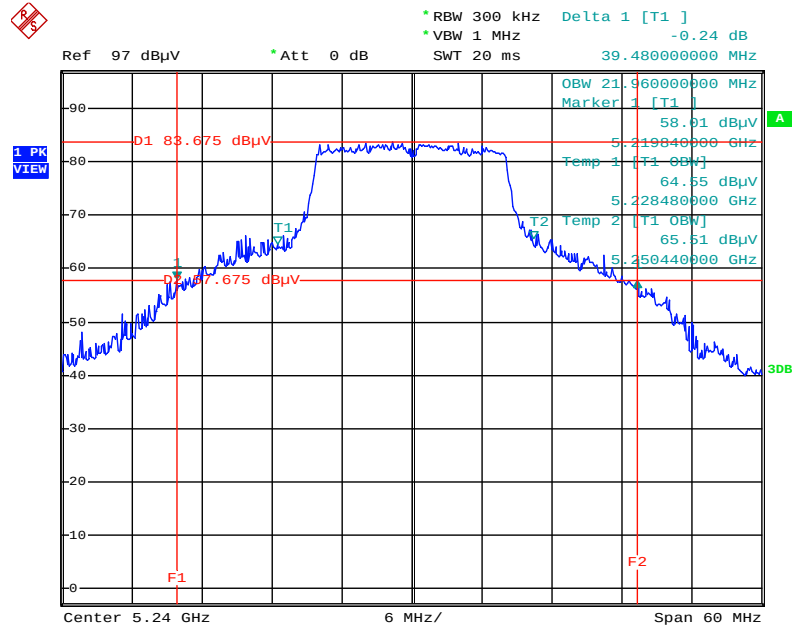
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 /

Chain 5 / 5200 MHz



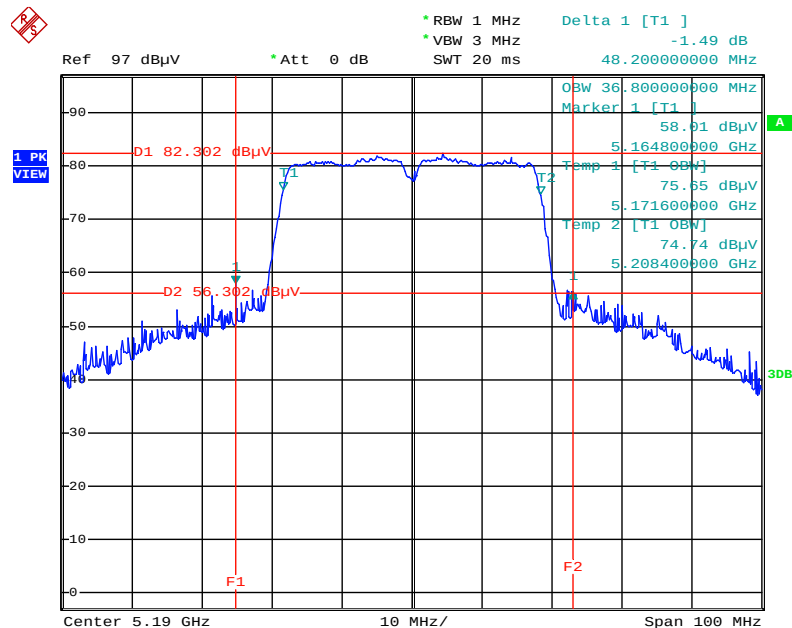
Date: 2.MAR.2015 15:15:21

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 / 5240 MHz



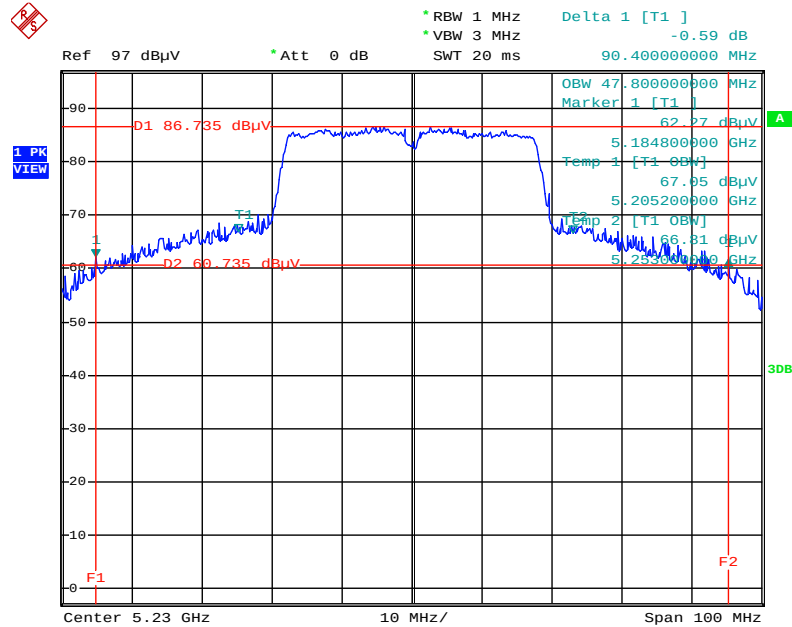
Date: 2.MAR.2015 15:16:03

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 / 5190 MHz



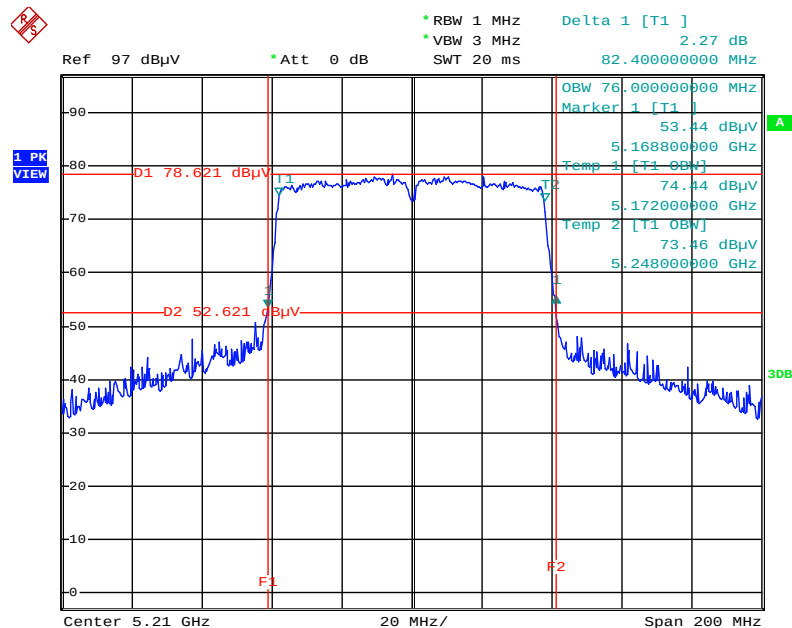
Date: 2.MAR.2015 15:20:49

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 / 5230 MHz



Date: 2.MAR.2015 15:22:10

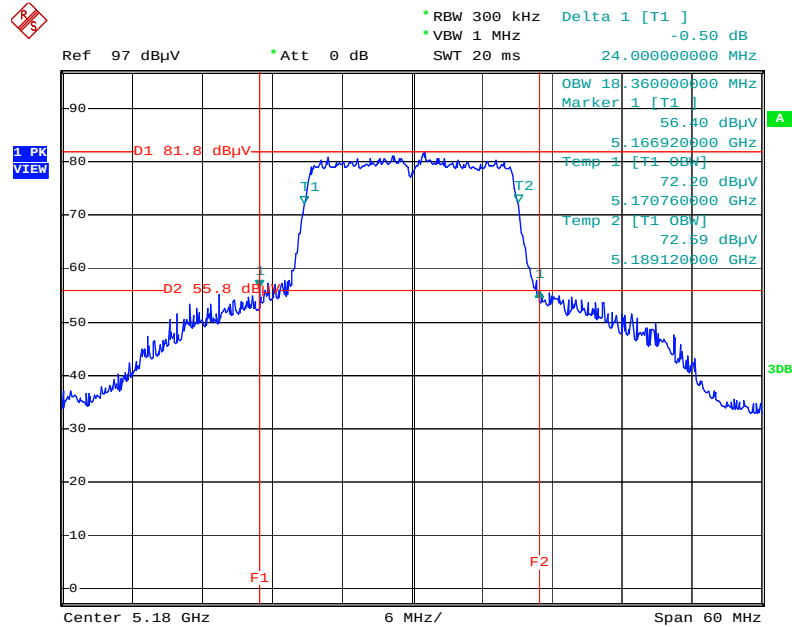
## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 5 / 5210 MHz



Date: 2.MAR.2015 15:23:47

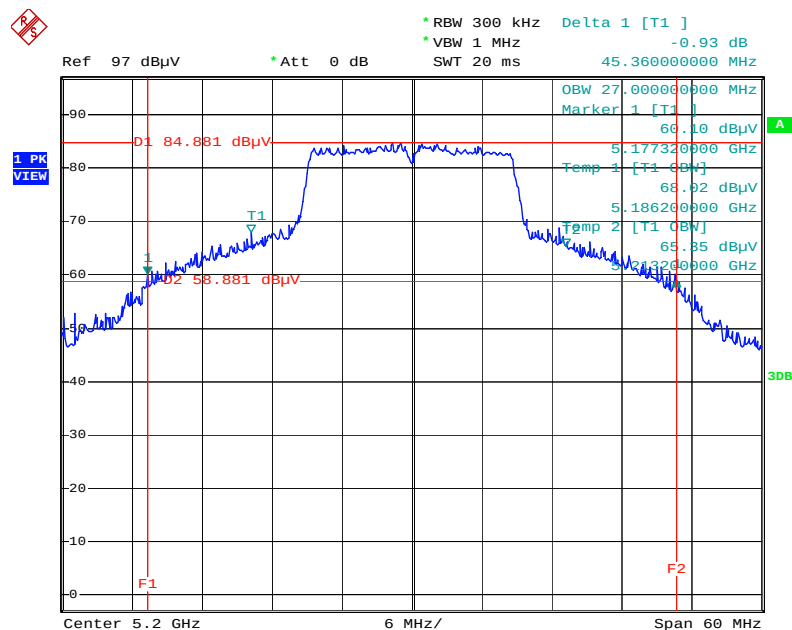
Mode 2: (Ant.8 Panel antenna / 5.1 dBi / 1TX)

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 / 5180 MHz



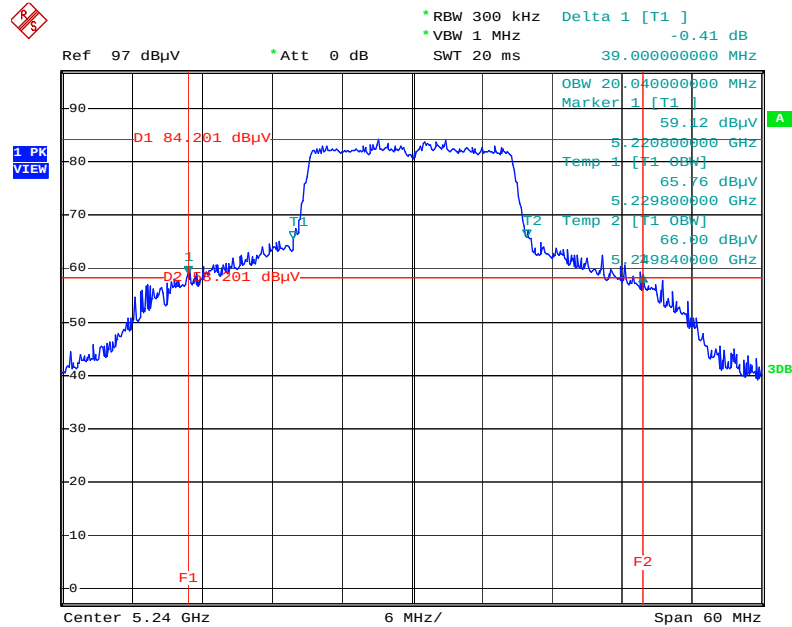
Date: 12.JAN.2015 10:30:19

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 / 5200 MHz



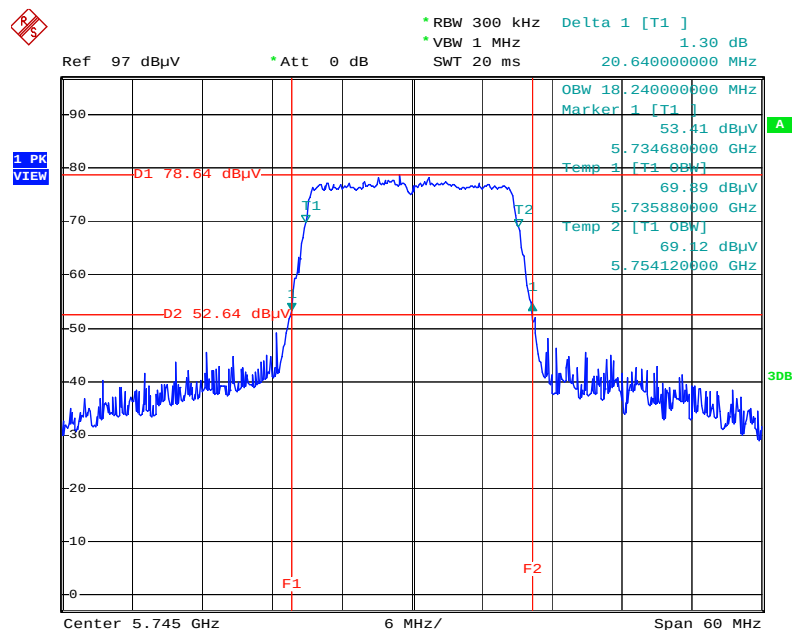
Date: 12.JAN.2015 10:32:59

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 / 5240 MHz



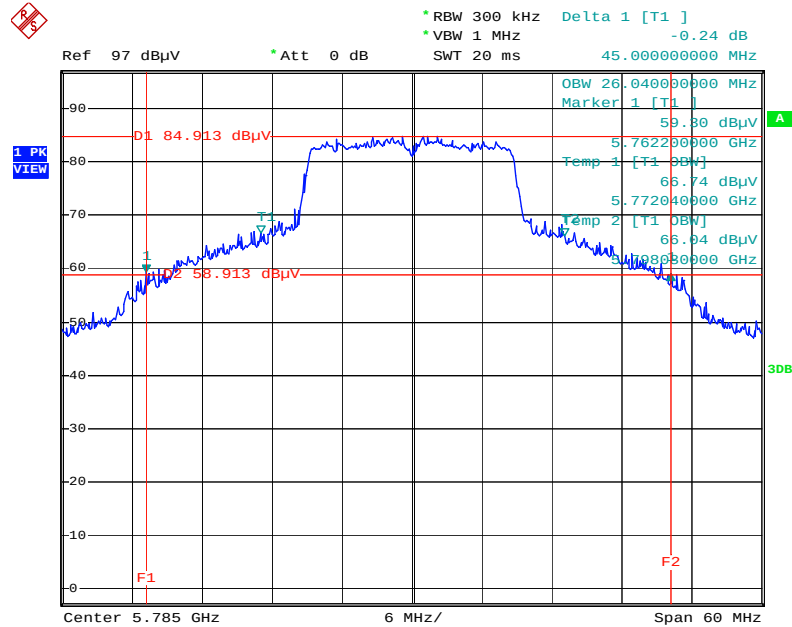
Date: 12.JAN.2015 10:37:44

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 / 5745 MHz



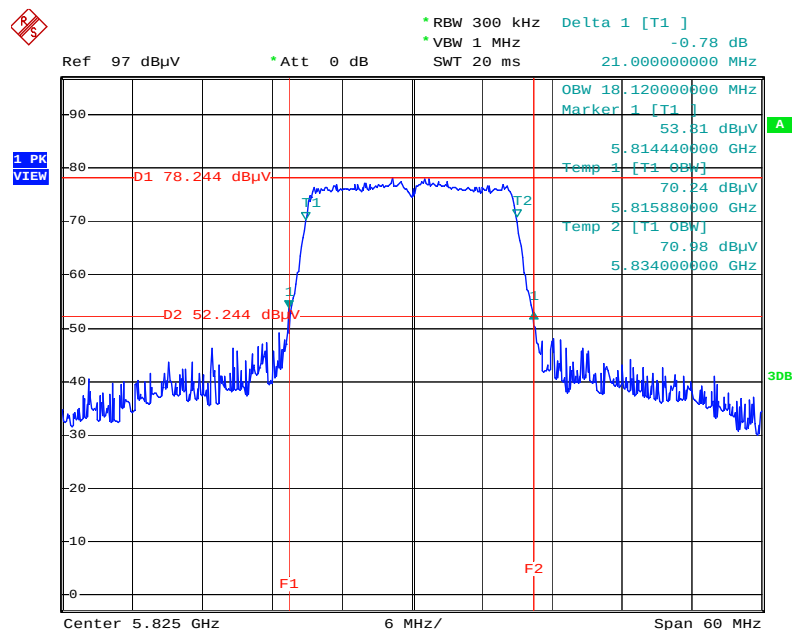
Date: 12.JAN.2015 10:40:47

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 / 5785 MHz



Date: 12.JAN.2015 10:42:05

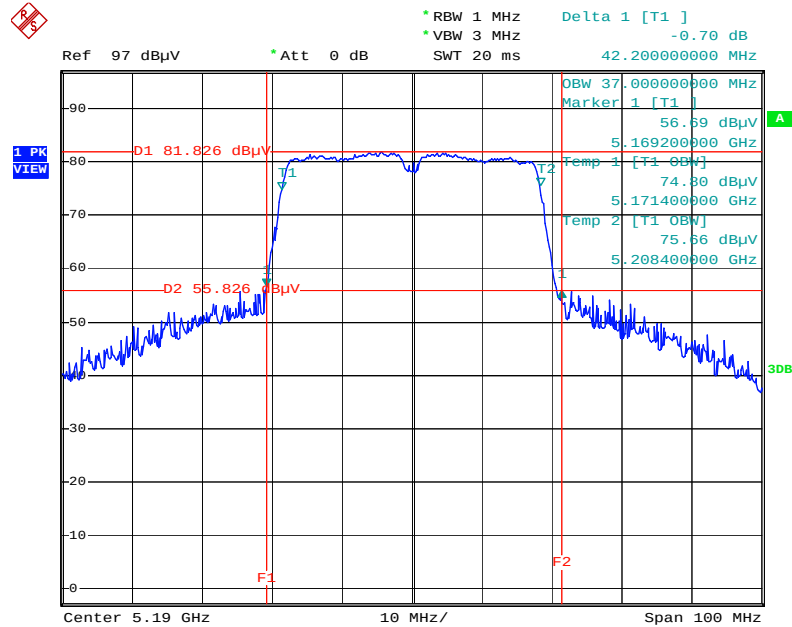
## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 / 5825 MHz



Date: 12.JAN.2015 10:43:12

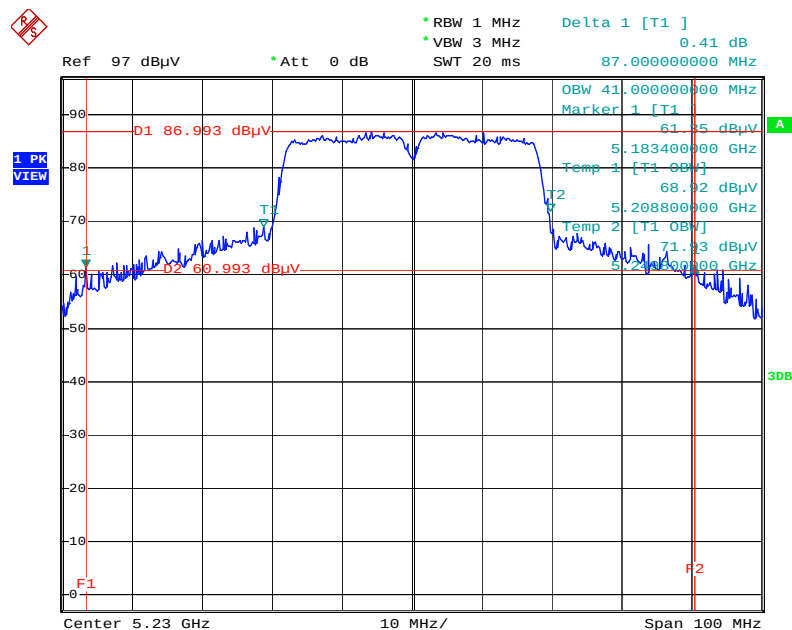


## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 4 / 5190 MHz



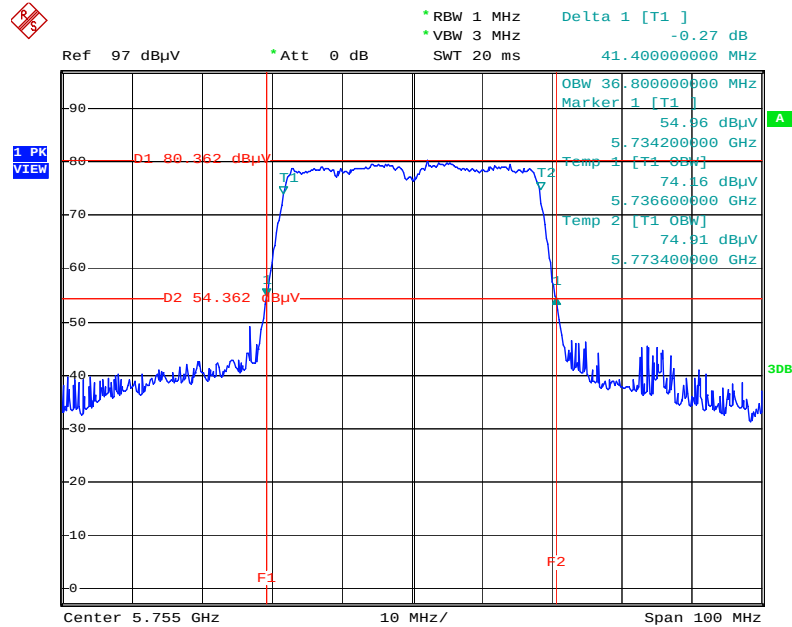
Date: 12.JAN.2015 10:47:14

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 4 / 5230 MHz



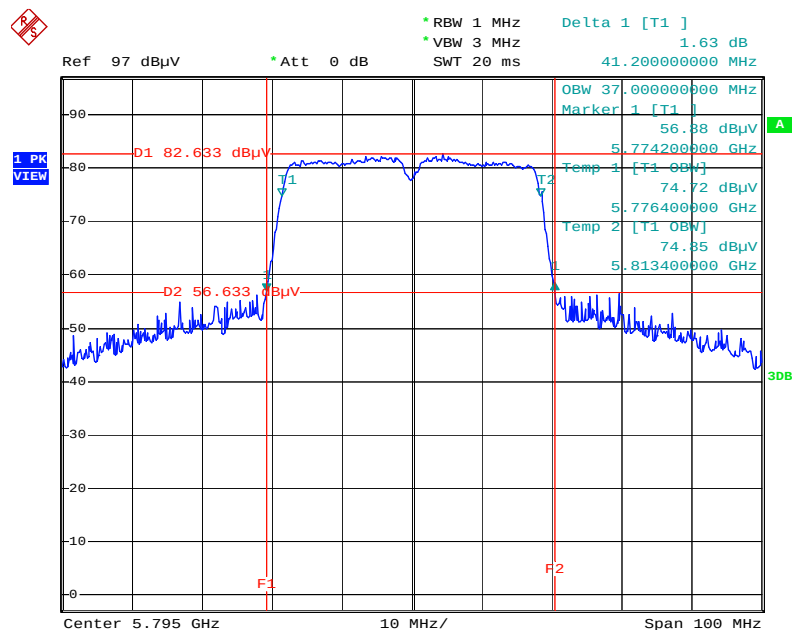
Date: 12.JAN.2015 10:48:49

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 4 / 5755 MHz



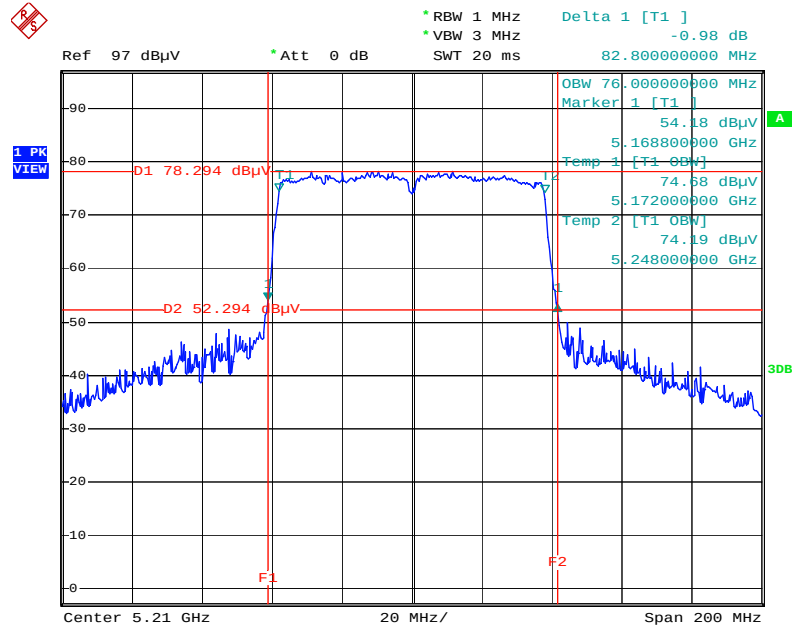
Date: 12.JAN.2015 10:50:17

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 4 / 5795 MHz



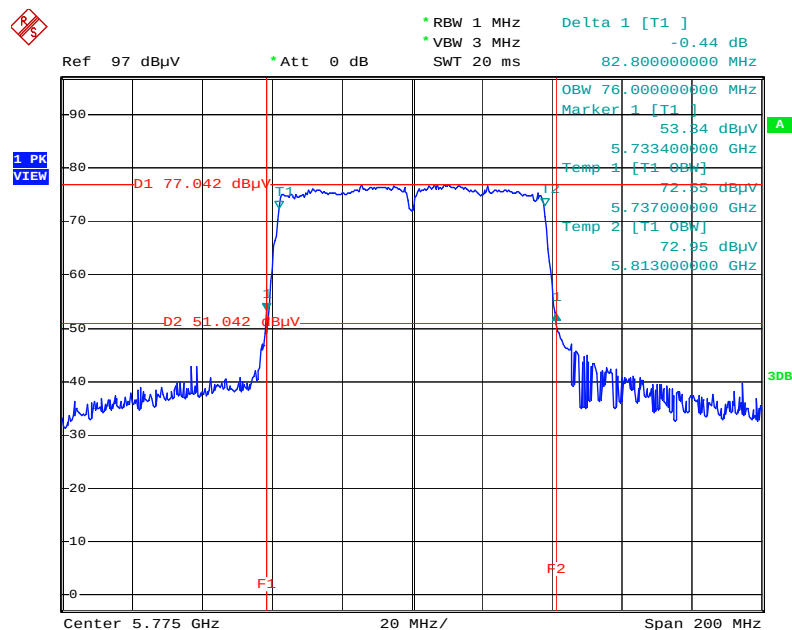
Date: 12.JAN.2015 10:51:31

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 4 / 5210 MHz



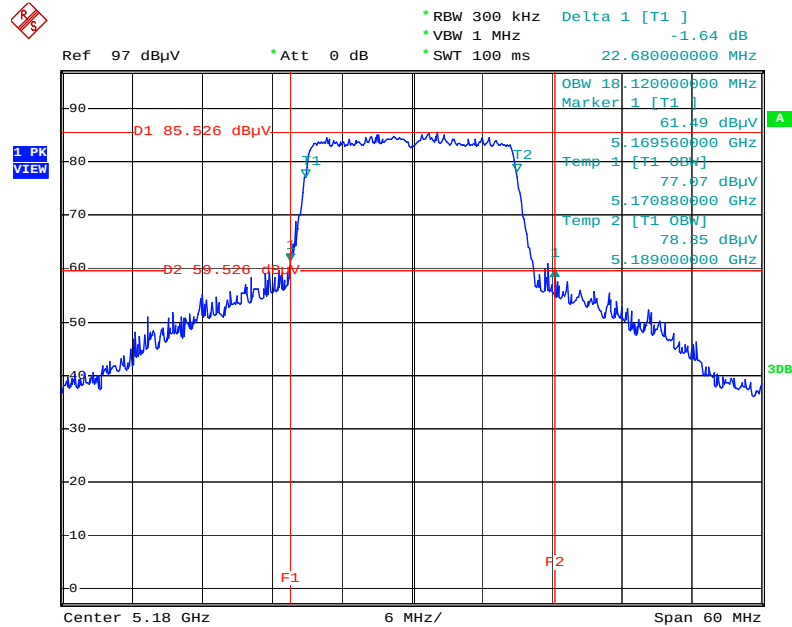
Date: 12.JAN.2015 10:54:04

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 4 / 5775 MHz



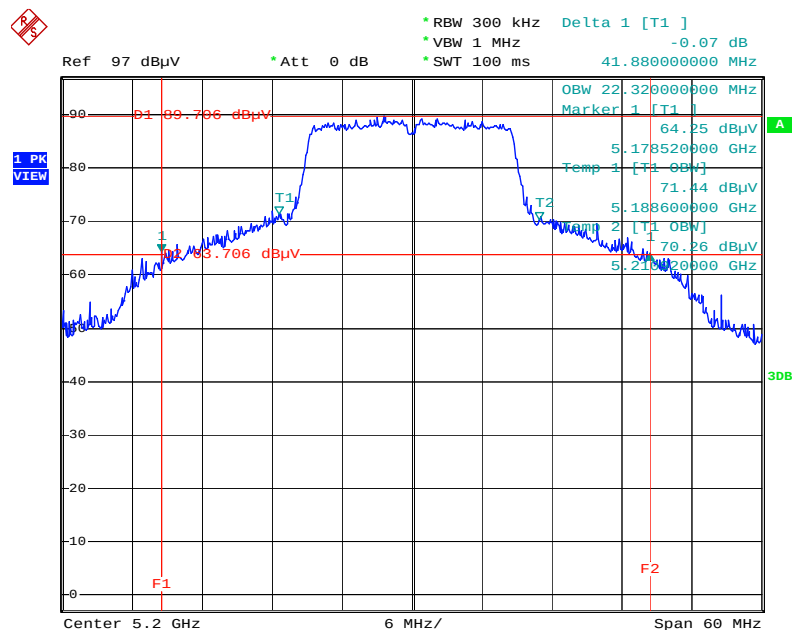
Date: 12.JAN.2015 10:55:55

Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 4: 8.3, Chain 5: 5.9, Chain 6: 8.2dBi / 1TX)  
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 /  
Chain 4 / 5180 MHz



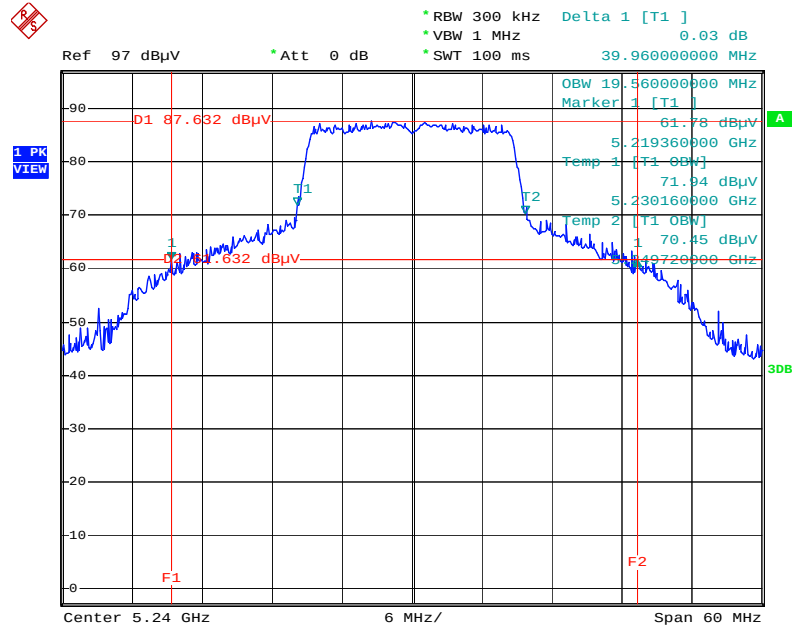
Date: 8.JAN.2015 22:01:32

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 /  
Chain 4 / 5200 MHz



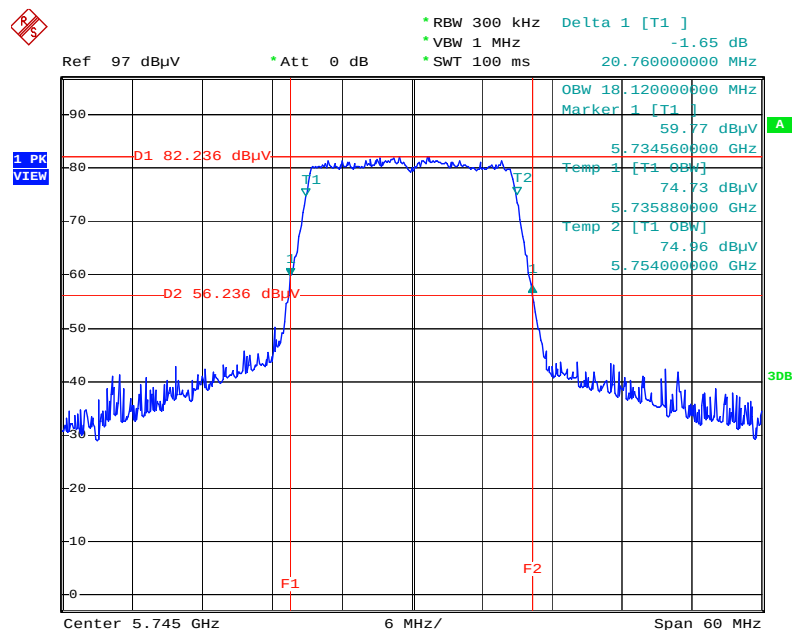
Date: 8.JAN.2015 22:02:42

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 / 5240 MHz



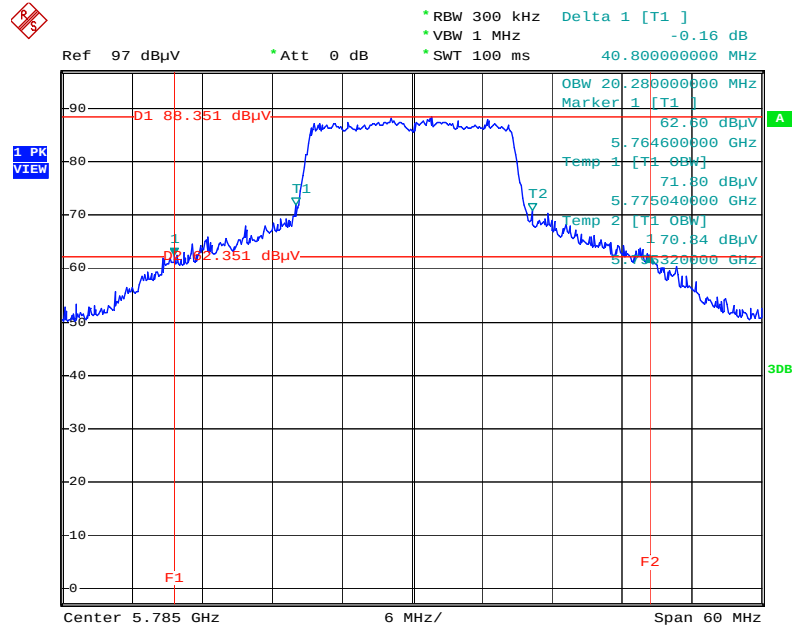
Date: 9.JAN.2015 23:58:26

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 / 5745 MHz



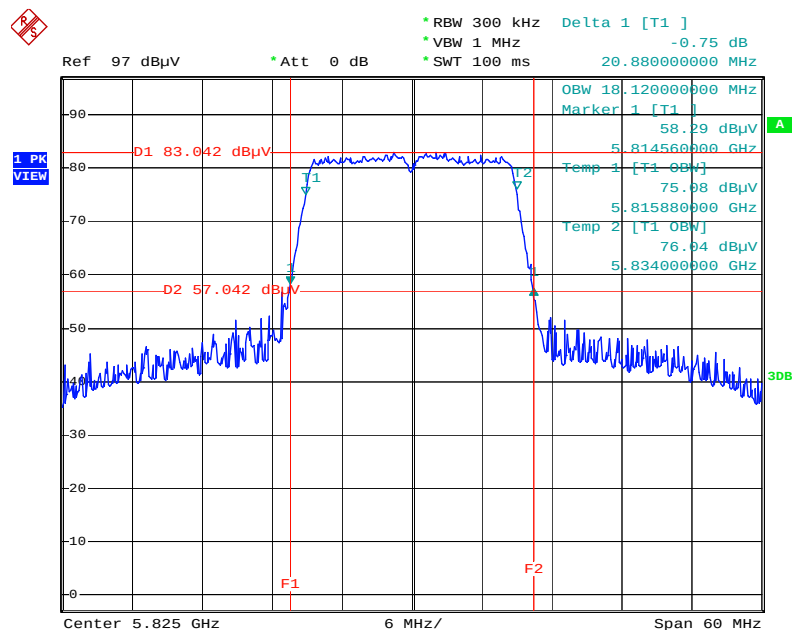
Date: 8.JAN.2015 22:04:31

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 / 5785 MHz



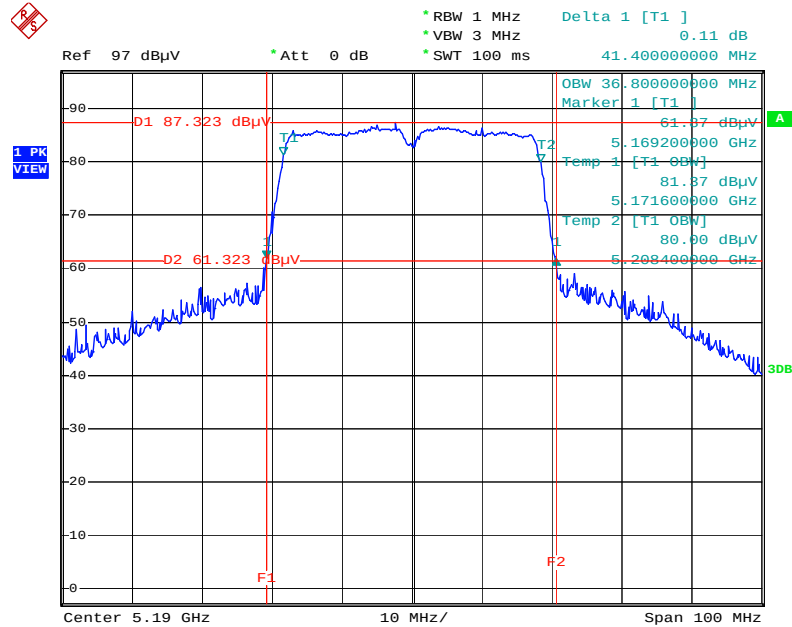
Date: 8.JAN.2015 22:06:02

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 / 5825 MHz



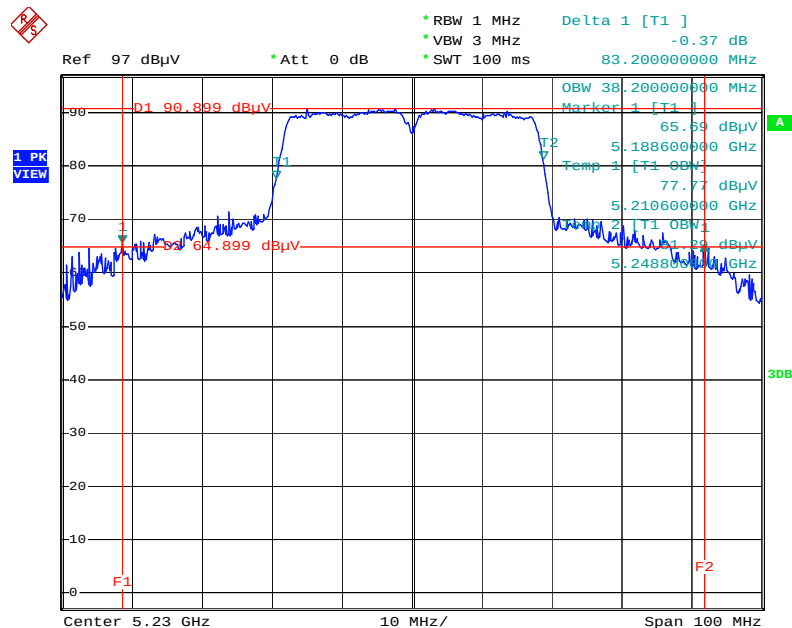
Date: 8.JAN.2015 22:06:49

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 4 / 5190 MHz



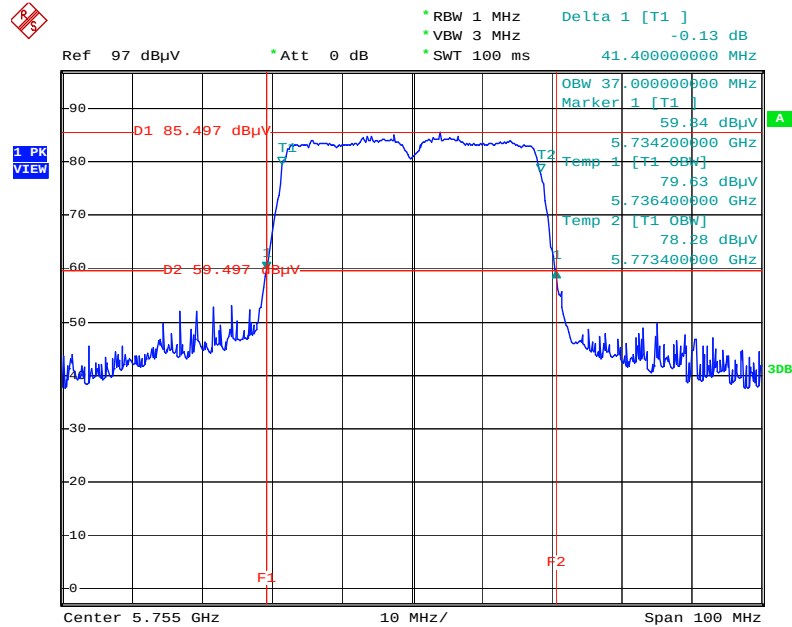
Date: 8.JAN.2015 22:08:49

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 4 / 5230 MHz



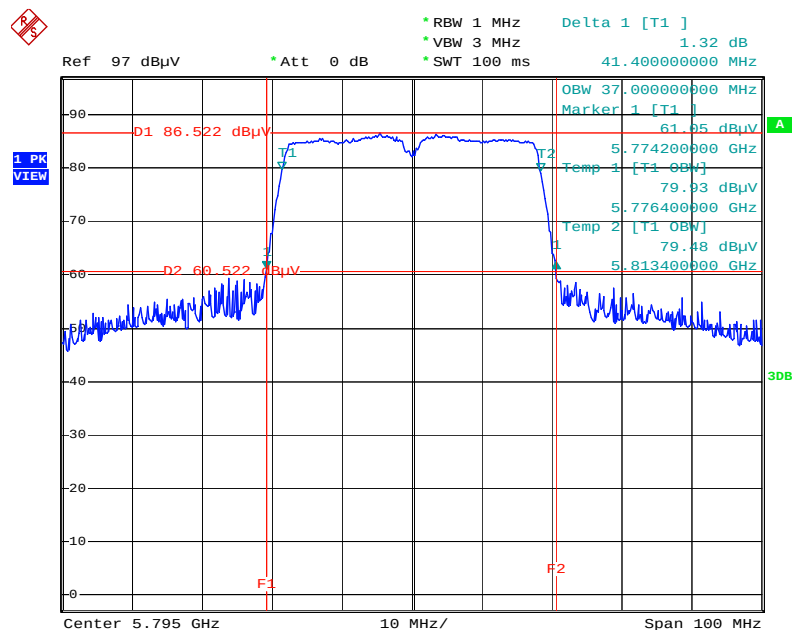
Date: 8.JAN.2015 22:15:04

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 4 / 5755 MHz



Date: 8.JAN.2015 22:16:45

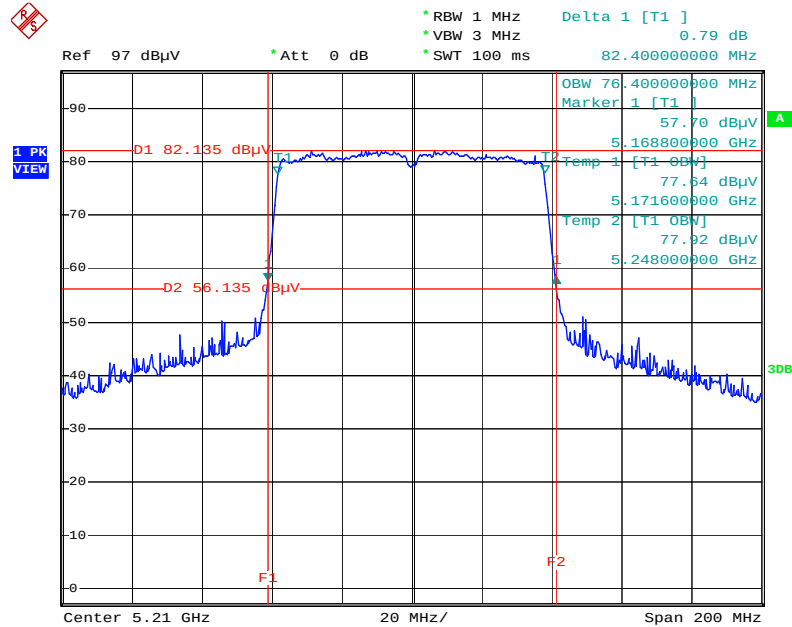
## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 4 / 5795 MHz



Date: 8.JAN.2015 22:17:28

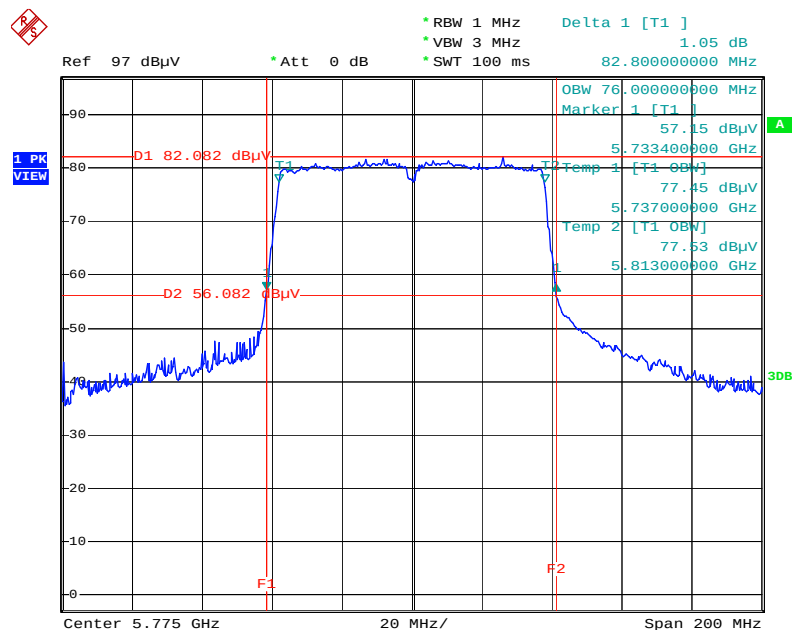


## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 4 / 5210 MHz



Date: 8.JAN.2015 22:18:39

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 4 / 5775 MHz



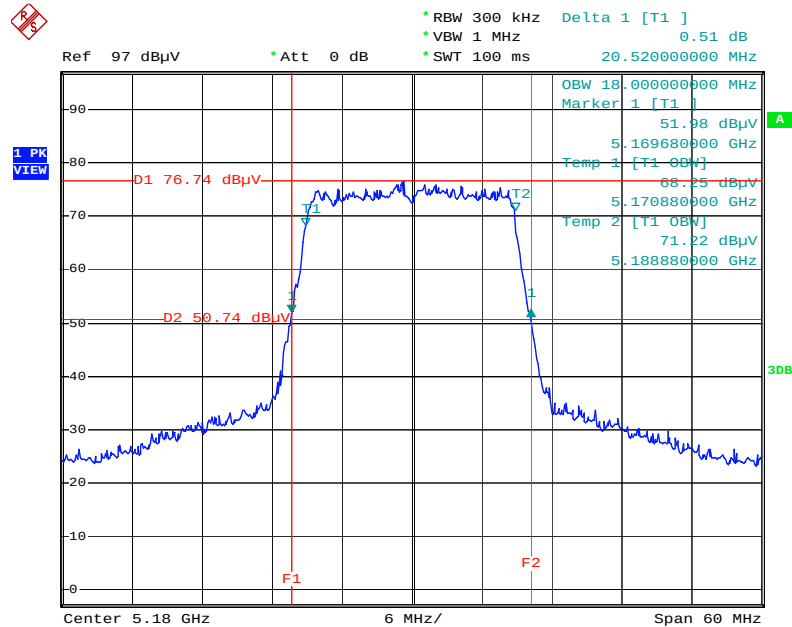
Date: 8.JAN.2015 22:19:33

<For STBC Mode>

Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 2TX) / For outdoor use

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

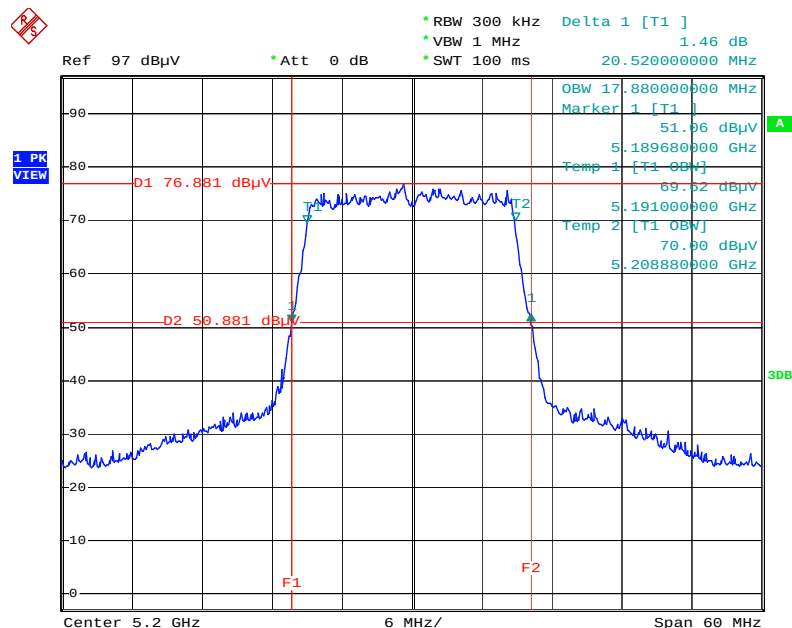
Chain 4 + Chain 5 / 5180 MHz



Date: 14.JAN.2015 19:32:55

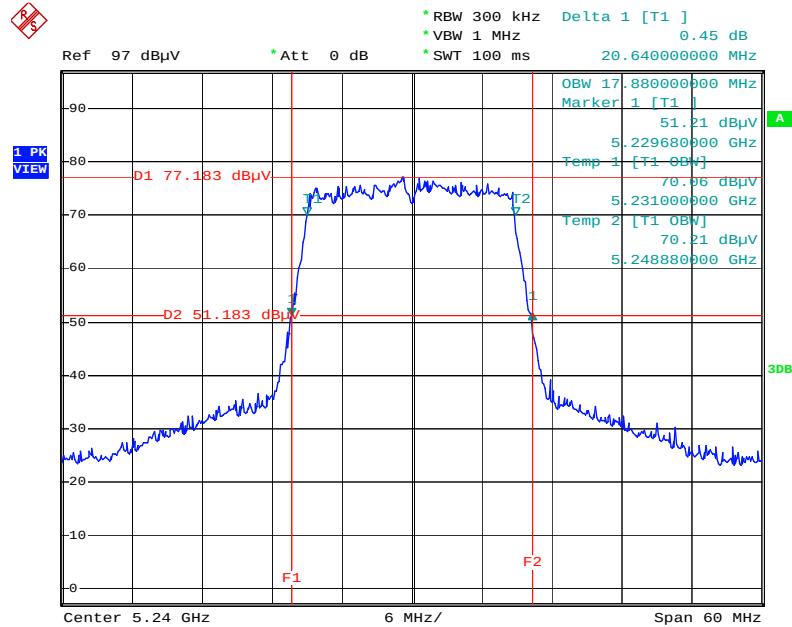
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 /

Chain 4 + Chain 5 / 5200 MHz



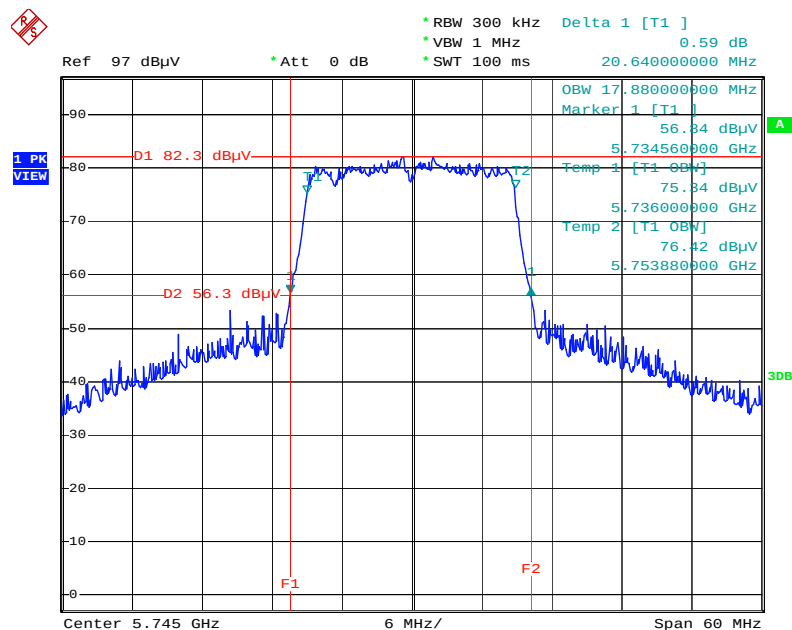
Date: 14.JAN.2015 19:33:49

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 + Chain 5 / 5240 MHz



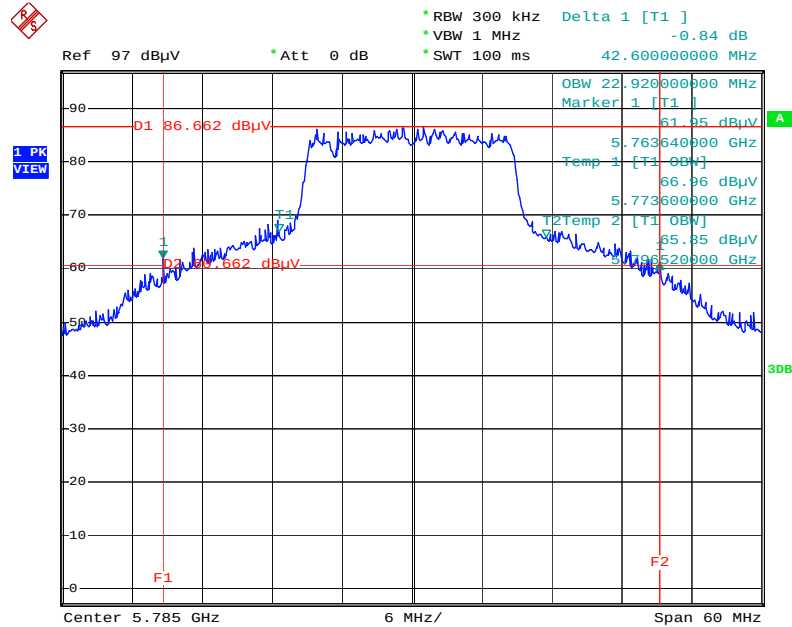
Date: 14.JAN.2015 19:34:25

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 + Chain 5 / 5745 MHz



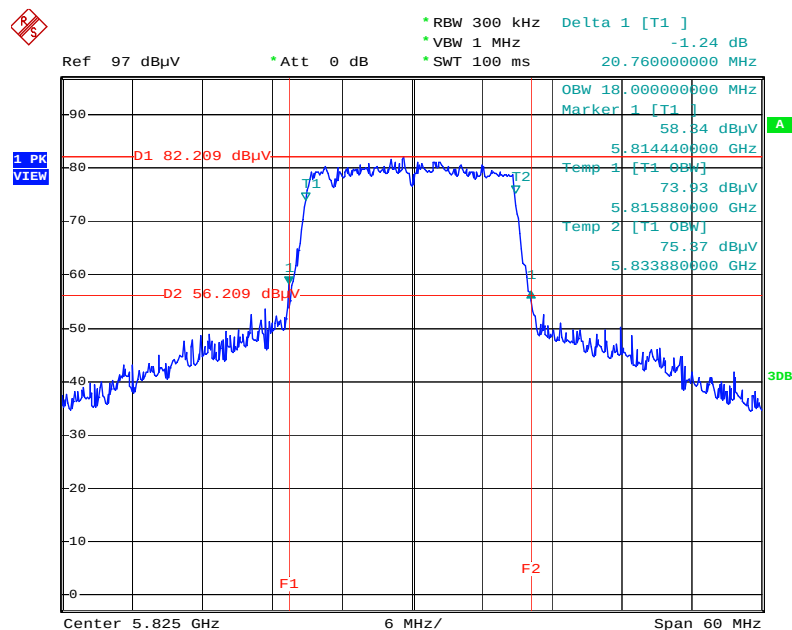
Date: 14.JAN.2015 19:35:18

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 + Chain 5 / 5785 MHz



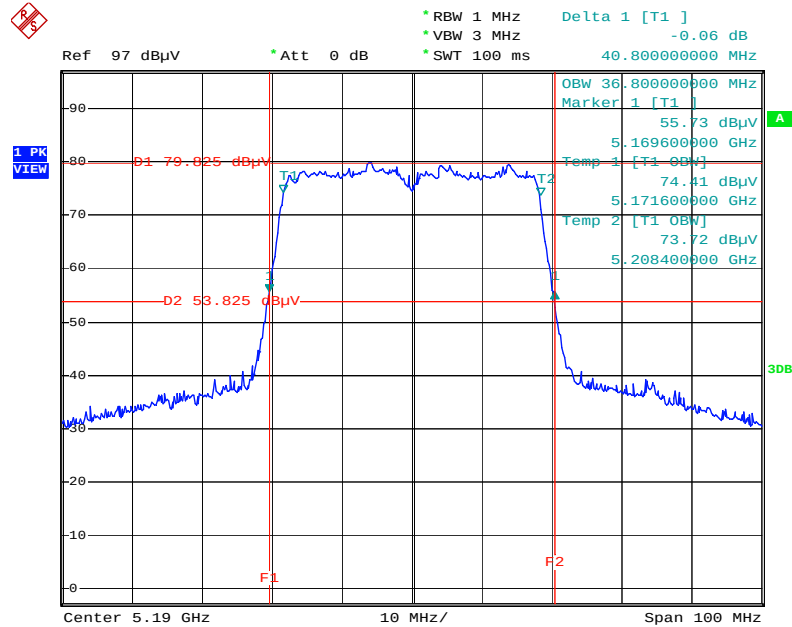
Date: 14.JAN.2015 19:36:09

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 + Chain 5 / 5825 MHz



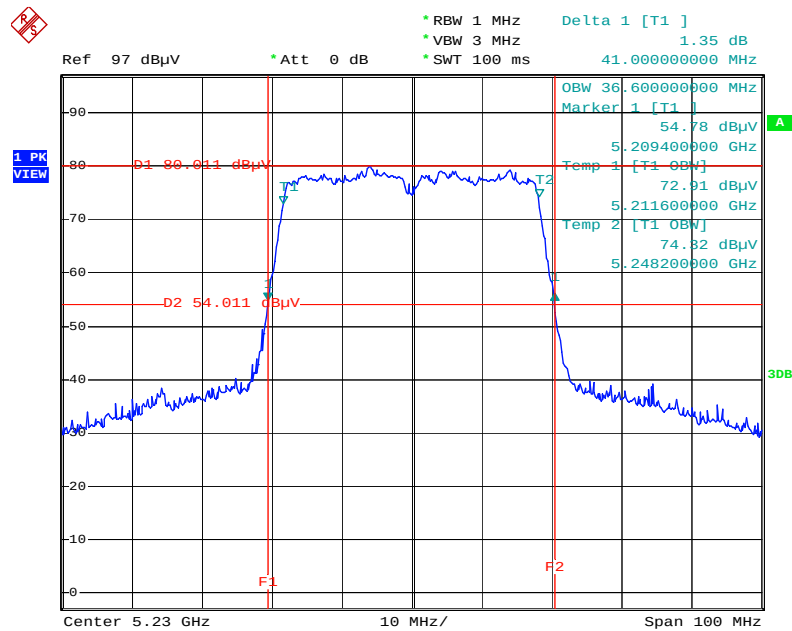
Date: 14.JAN.2015 19:40:37

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 4 + Chain 5 / 5190 MHz



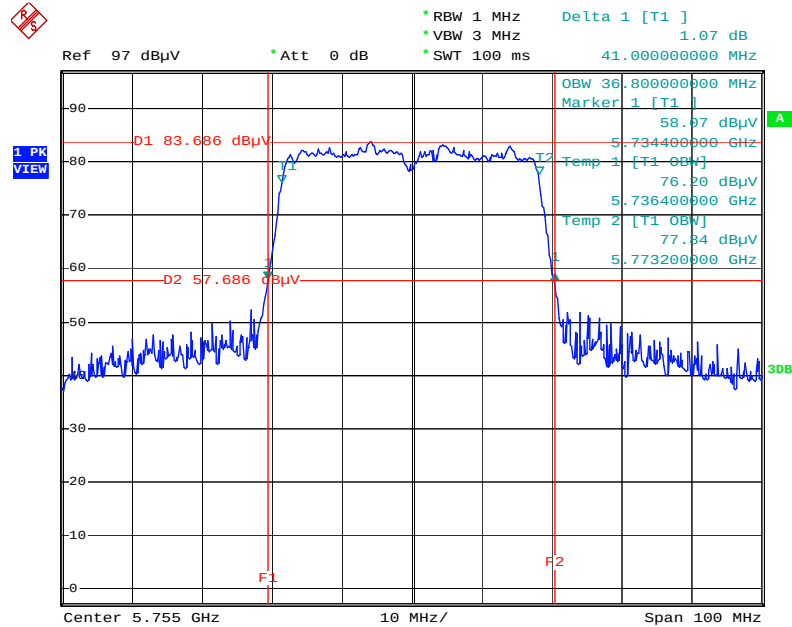
Date: 14.JAN.2015 19:56:28

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 4 + Chain 5 / 5230 MHz



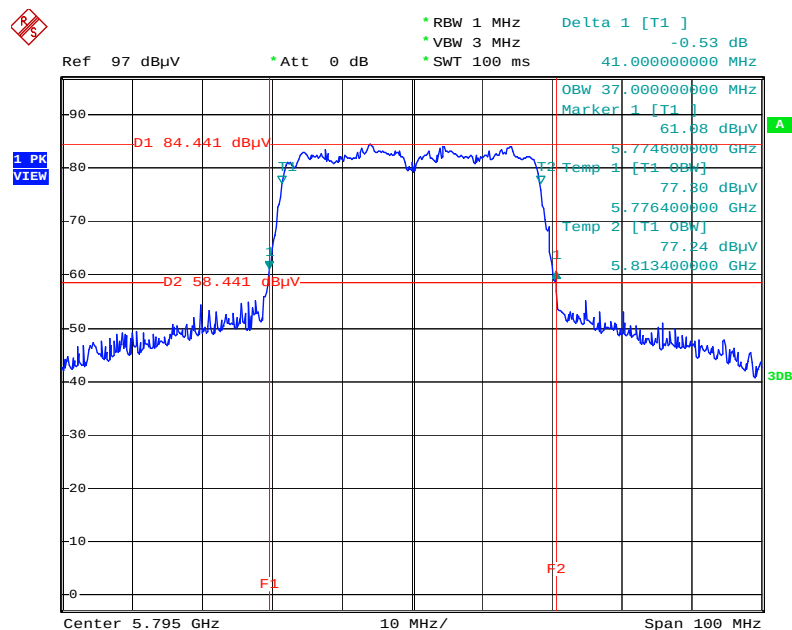
Date: 14.JAN.2015 19:58:04

# 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 4 + Chain 5 / 5755 MHz



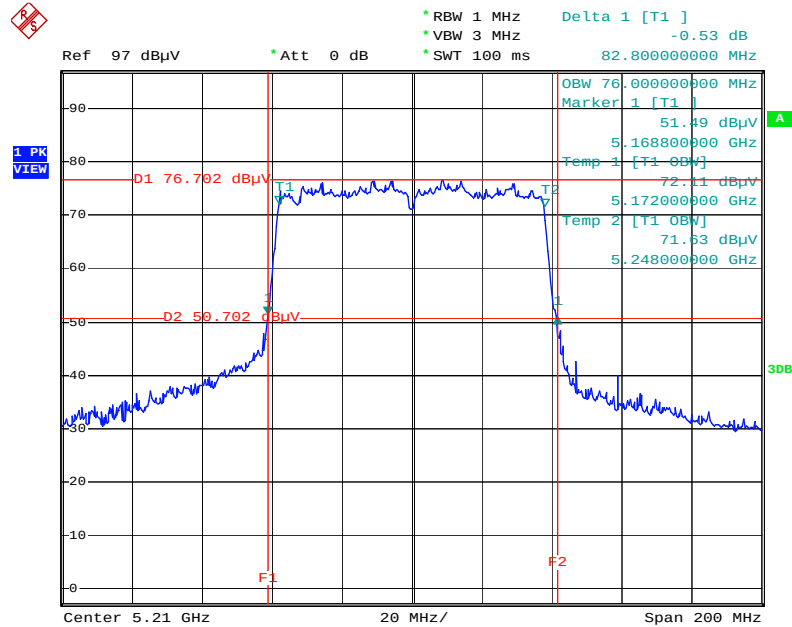
Date: 14.JAN.2015 19:59:24

# 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 4 + Chain 5 / 5795 MHz



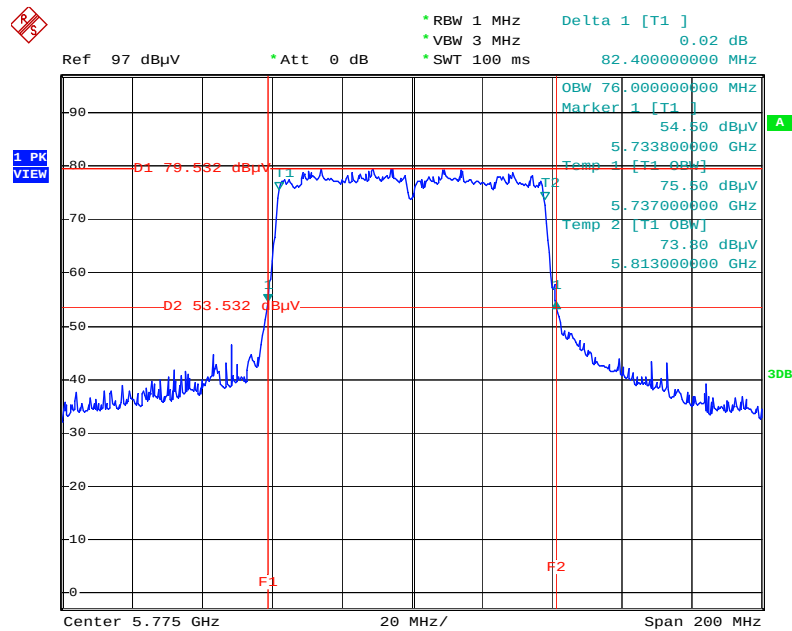
Date: 14.JAN.2015 20:02:18

# 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 4 + Chain 5 / 5210 MHz



Date: 14.JAN.2015 20:03:55

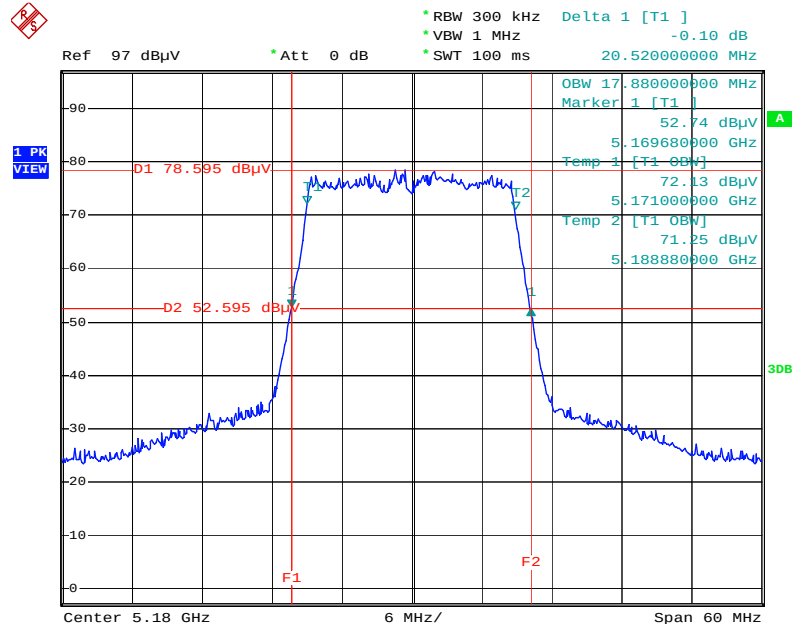
# 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 4 + Chain 5 / 5775 MHz



Date: 14.JAN.2015 20:05:01

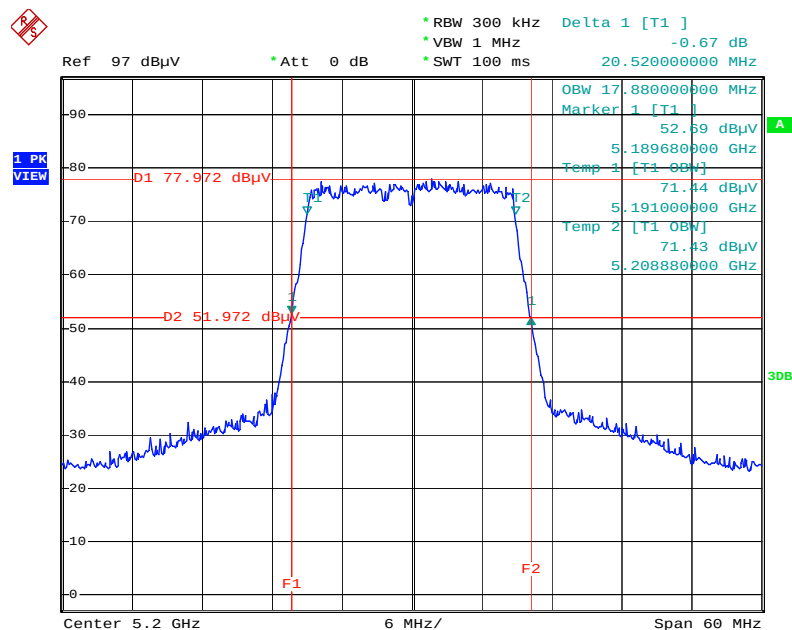
Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 3TX) / For outdoor use

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 + Chain 5 + Chain 6 / 5180 MHz



Date: 14.JAN.2015 20:08:05

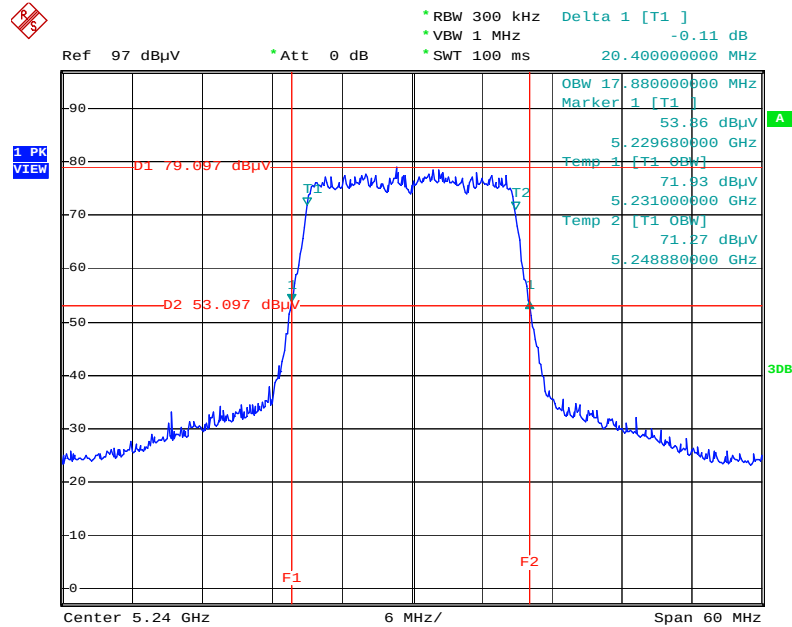
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 + Chain 5 + Chain 6 / 5200 MHz



Date: 14.JAN.2015 20:08:40

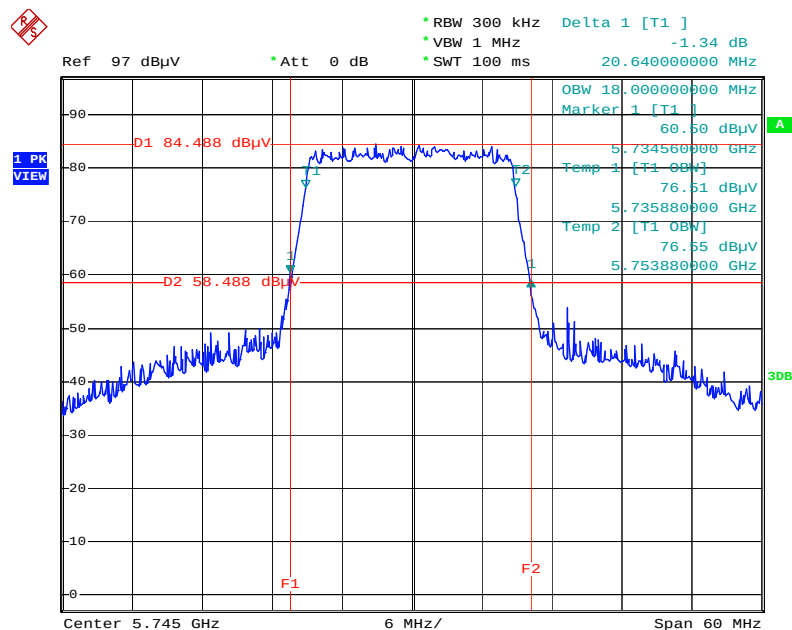


# 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 + Chain 5 + Chain 6 / 5240 MHz



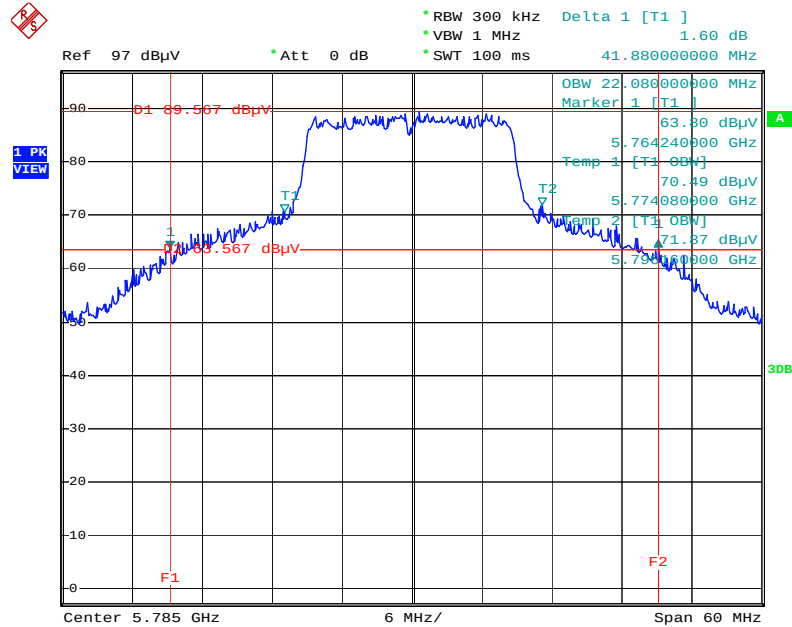
Date: 14.JAN.2015 20:09:24

# 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 + Chain 5 + Chain 6 / 5745 MHz



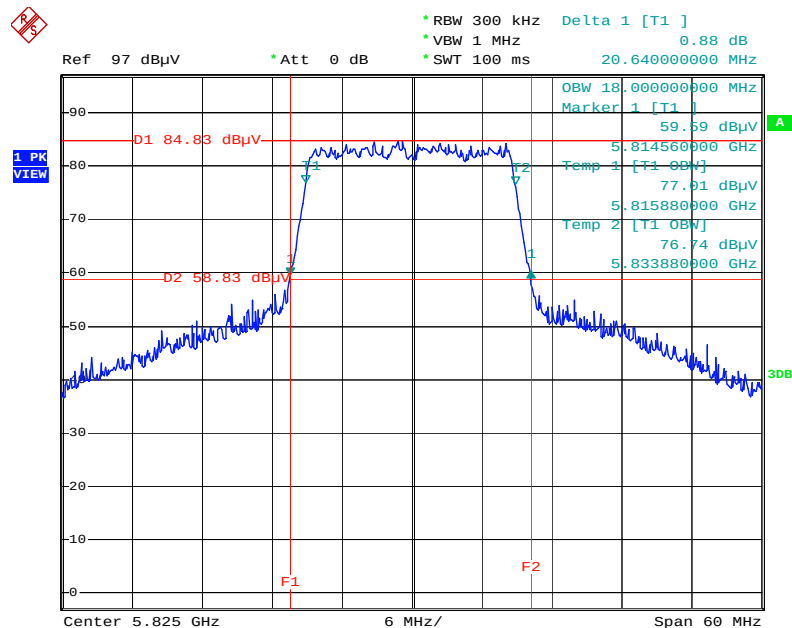
Date: 14.JAN.2015 20:10:17

# 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 + Chain 5 + Chain 6 / 5785 MHz



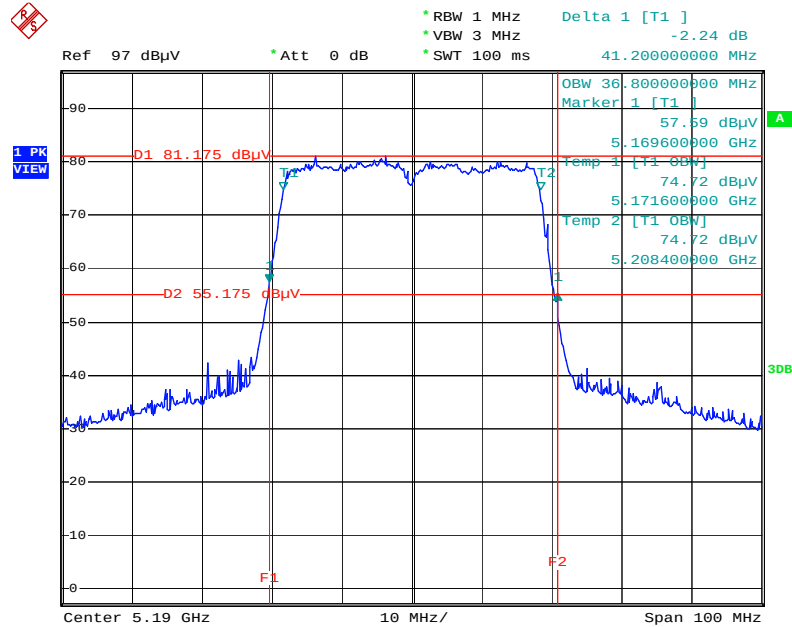
Date: 14.JAN.2015 20:12:00

# 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 + Chain 5 + Chain 6 / 5825 MHz



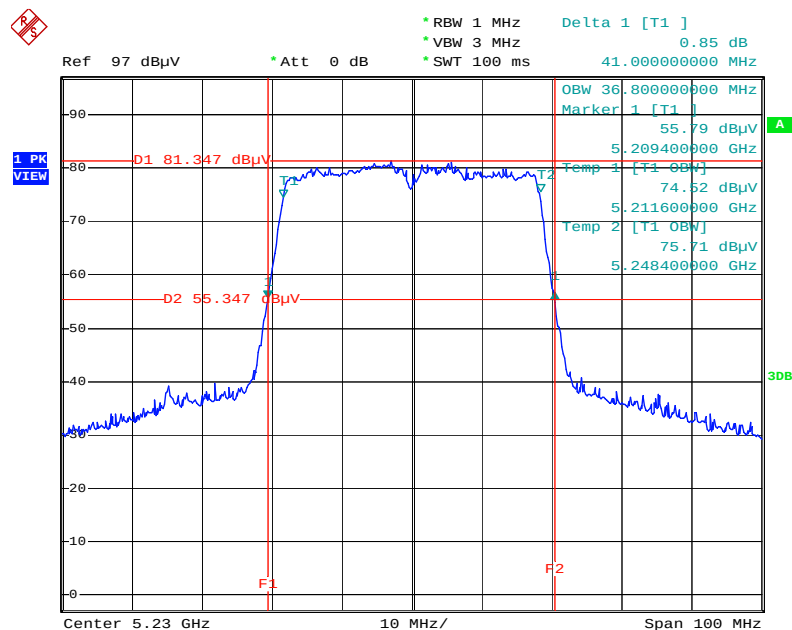
Date: 14.JAN.2015 20:13:20

# 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 4 + Chain 5 + Chain 6 / 5190 MHz



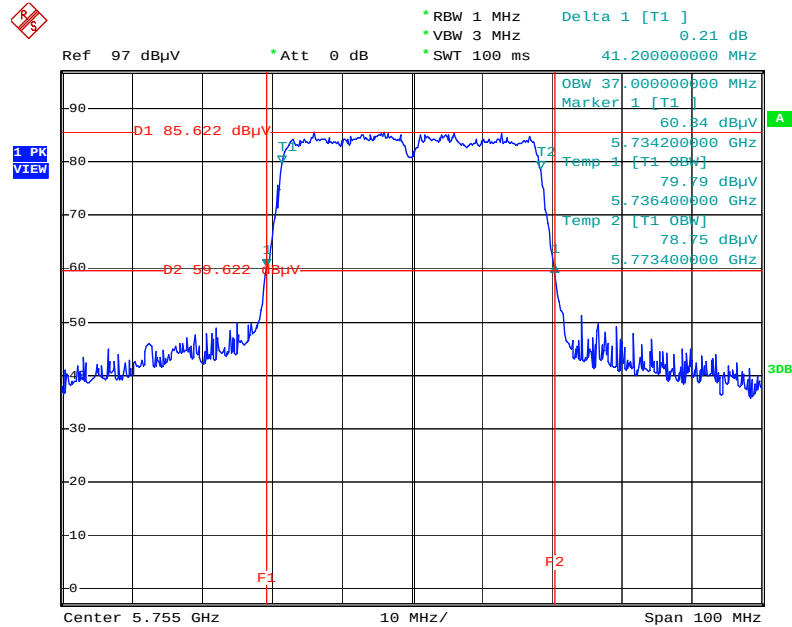
Date: 14.JAN.2015 20:14:48

# 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 4 + Chain 5 + Chain 6 / 5230 MHz



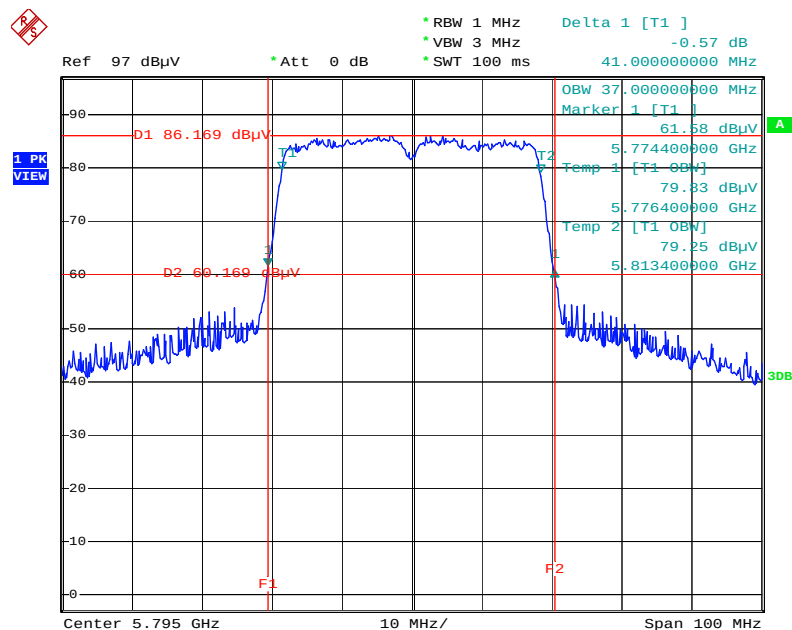
Date: 14.JAN.2015 20:15:23

# 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 4 + Chain 5 + Chain 6 / 5755 MHz



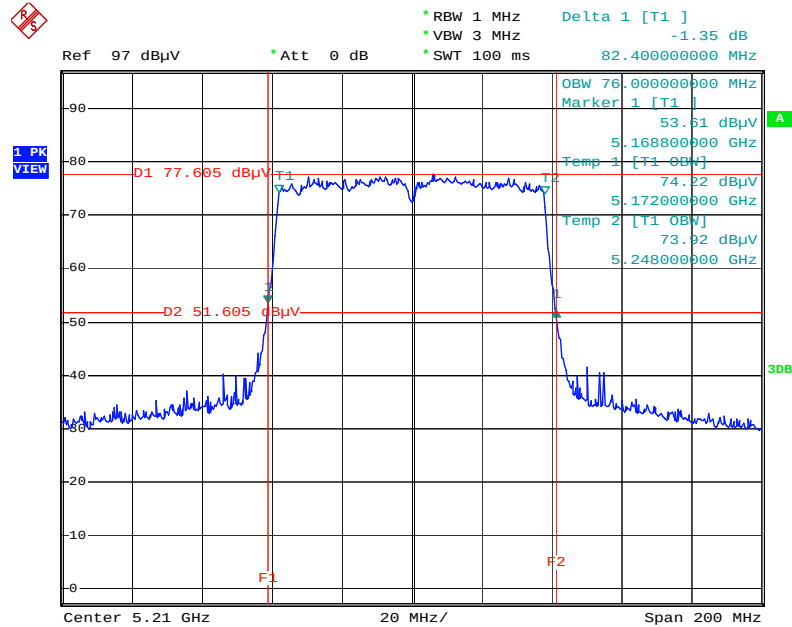
Date: 14.JAN.2015 20:16:17

# 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 4 + Chain 5 + Chain 6 / 5795 MHz



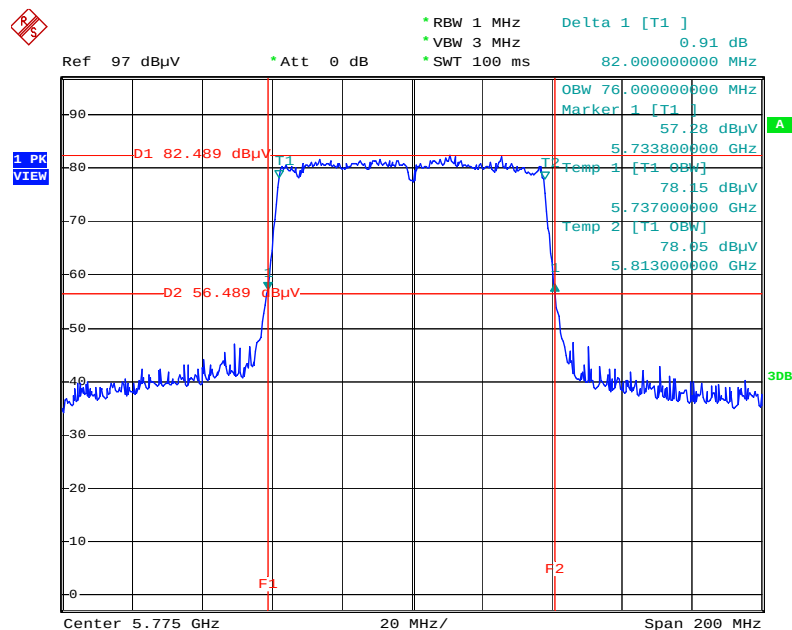
Date: 14.JAN.2015 20:17:23

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 4 + Chain 5 + Chain 6 / 5210 MHz



Date: 14.JAN.2015 20:19:23

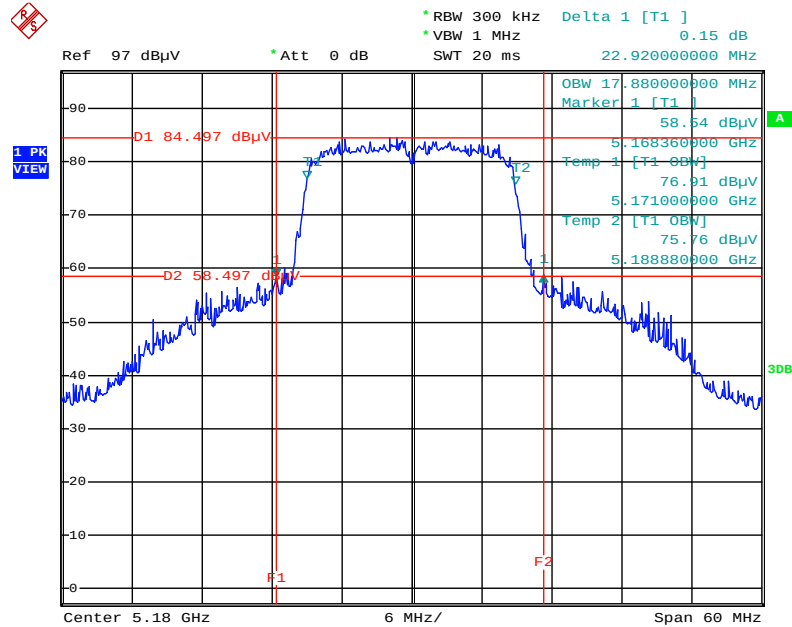
## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 4 + Chain 5 + Chain 6 / 5775 MHz



Date: 14.JAN.2015 20:20:17

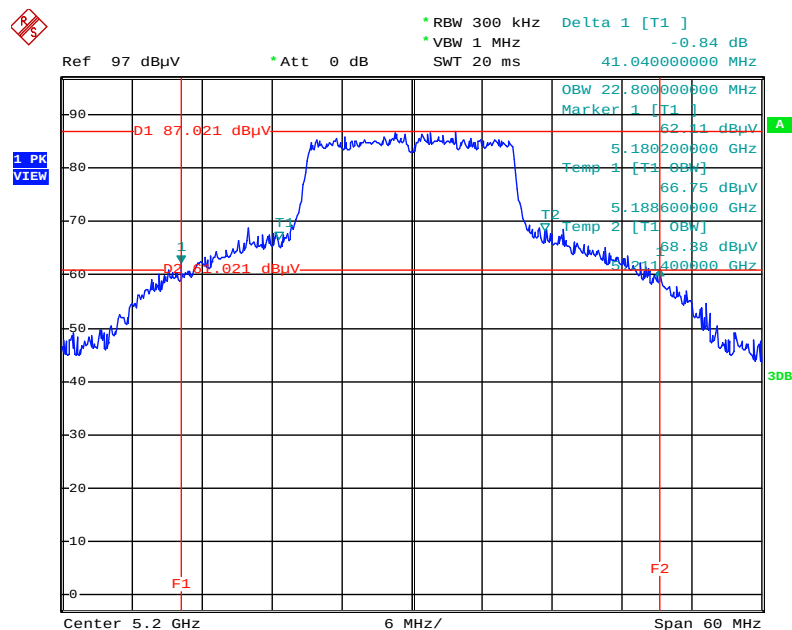
Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 2TX) / For indoor use

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 + Chain 5 / 5180 MHz



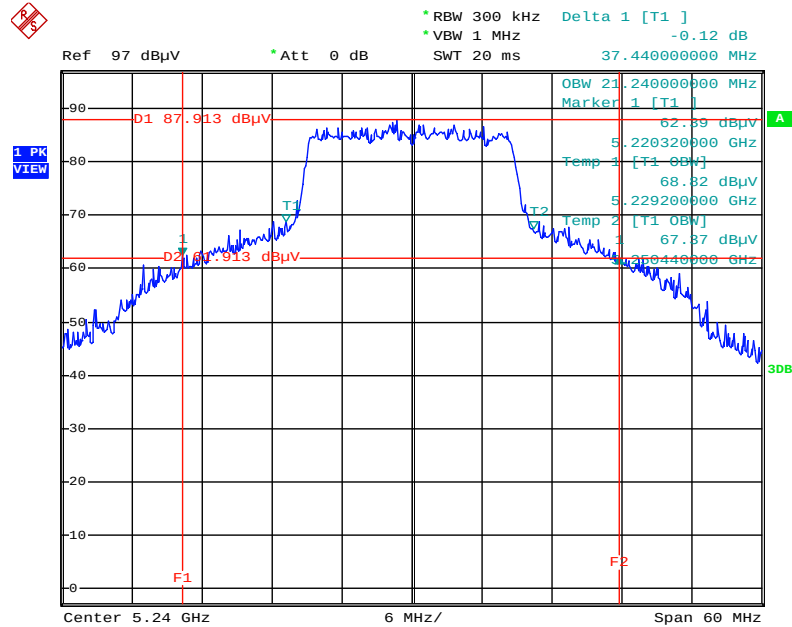
Date: 2.MAR.2015 17:00:32

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 + Chain 5 / 5200 MHz



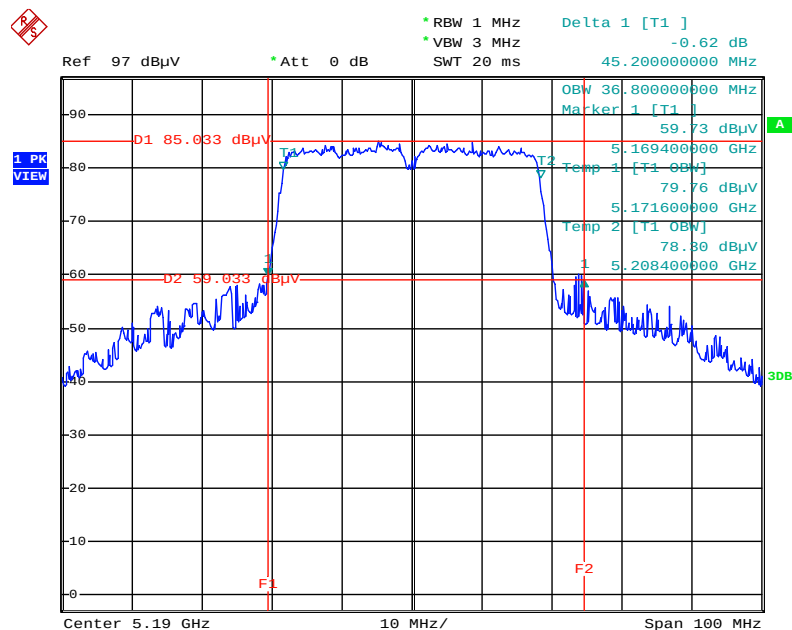
Date: 2.MAR.2015 17:01:31

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 + Chain 5 / 5240 MHz



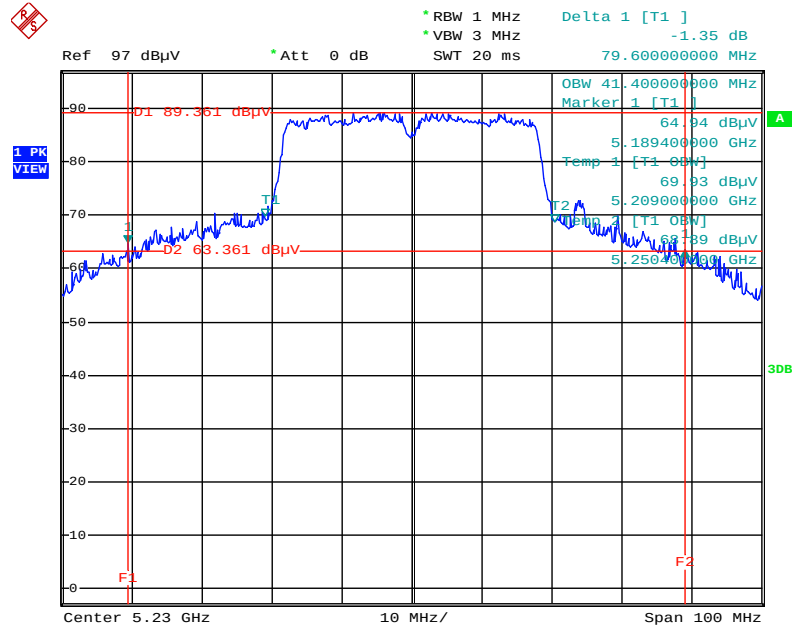
Date: 2.MAR.2015 17:02:27

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 4 + Chain 5 / 5190 MHz



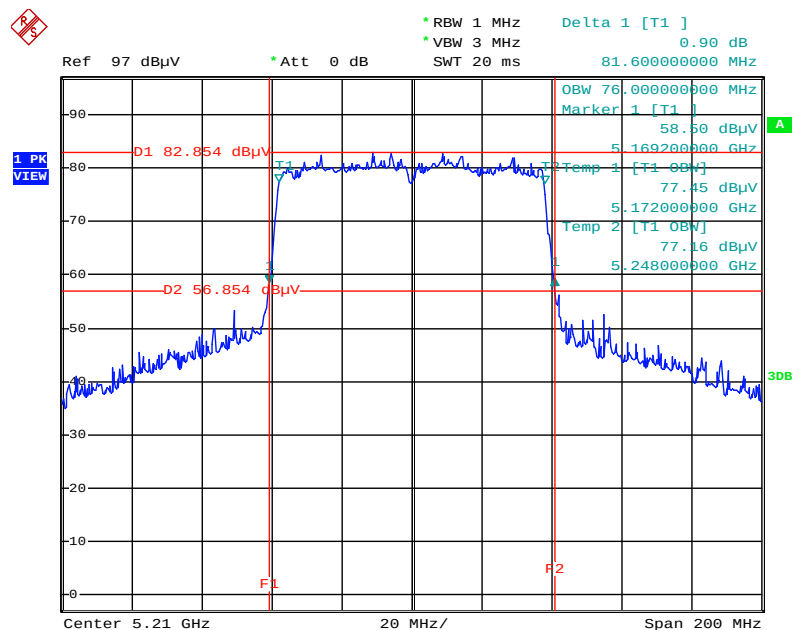
Date: 2.MAR.2015 17:04:16

# 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 4 + Chain 5 / 5230 MHz



Date: 2.MAR.2015 17:05:49

# 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 4 + Chain 5 / 5210 MHz

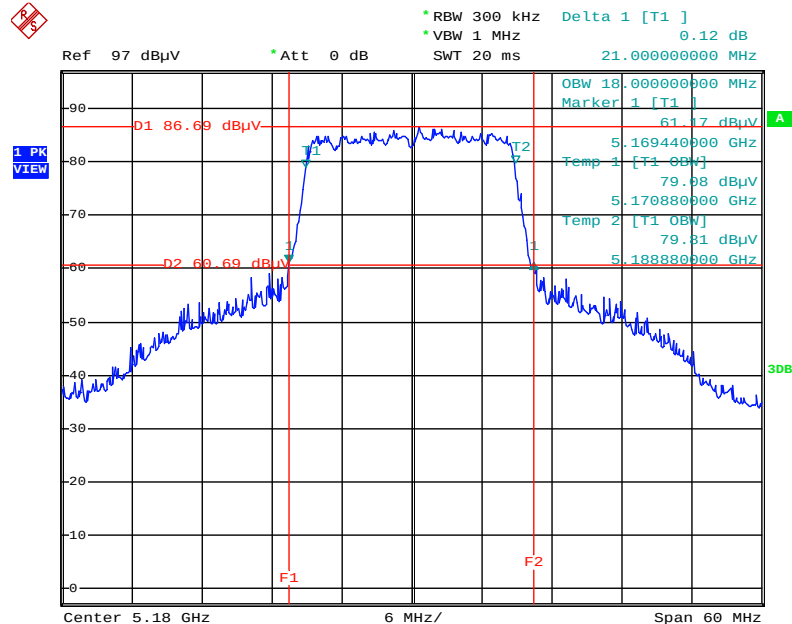


Date: 2.MAR.2015 18:19:10



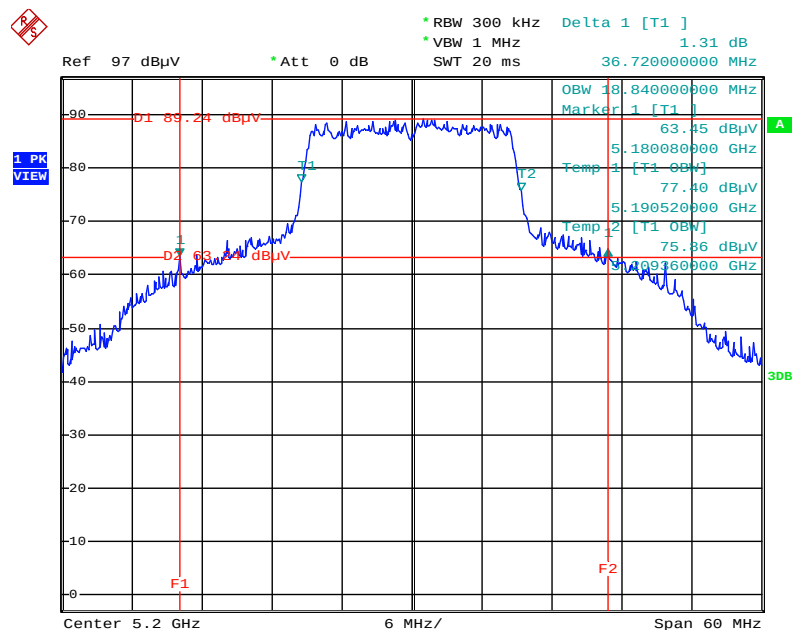
Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 3TX) / For indoor use

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 + Chain 5 + Chain 6 / 5180 MHz



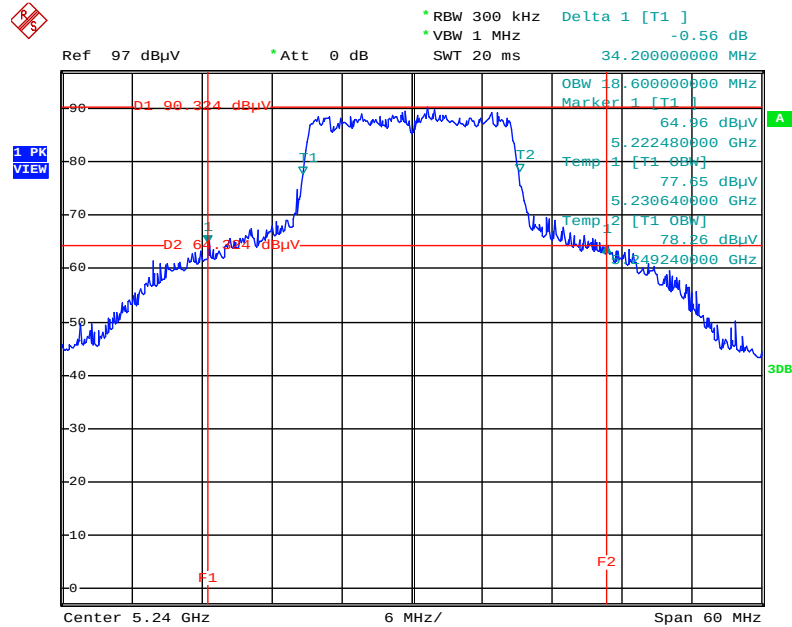
Date: 2.MAR.2015 18:21:58

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 + Chain 5 + Chain 6 / 5200 MHz



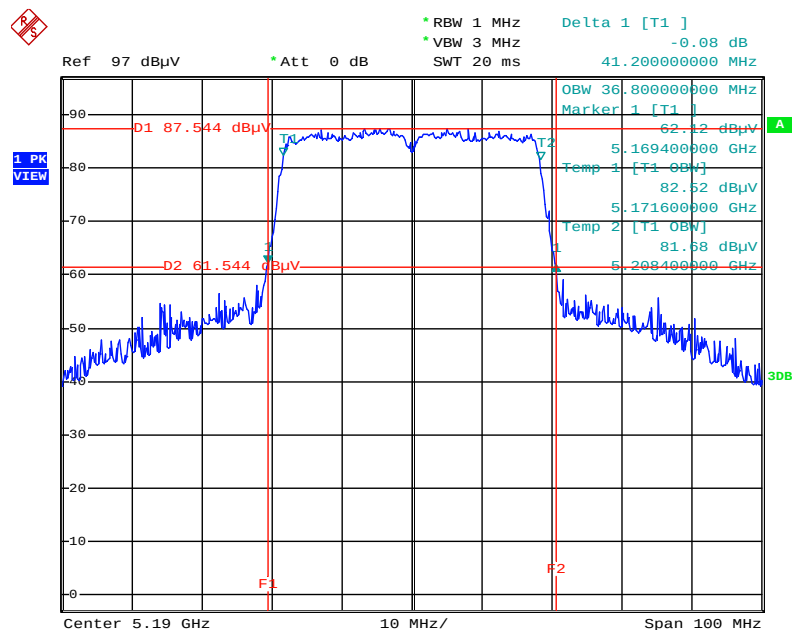
Date: 2.MAR.2015 18:22:39

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 + Chain 5 + Chain 6 / 5240 MHz



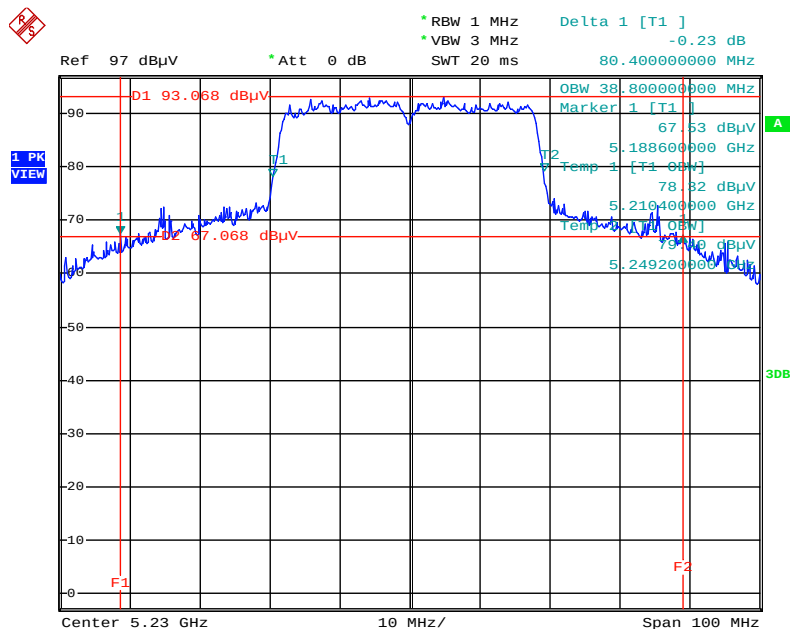
Date: 2.MAR.2015 18:23:24

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 4 + Chain 5 + Chain 6 / 5190 MHz



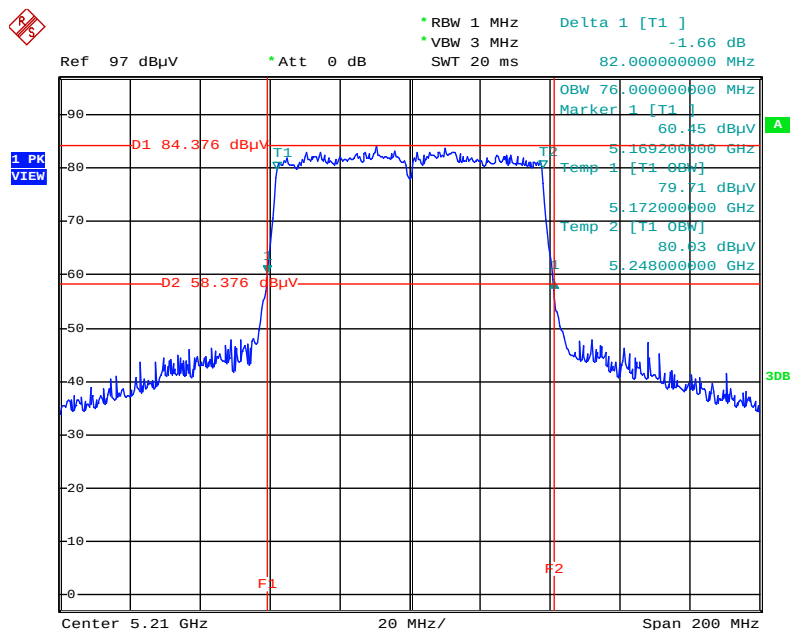
Date: 2.MAR.2015 18:24:23

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 4 + Chain 5 + Chain 6 / 5230 MHz



Date: 2.MAR.2015 18:25:31

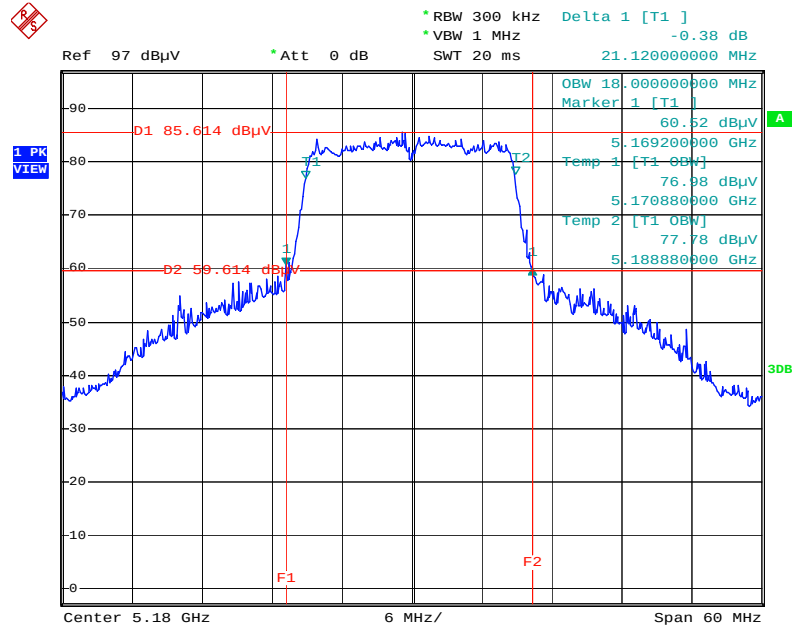
## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 4 + Chain 5 + Chain 6 / 5210 MHz



Date: 2.MAR.2015 18:26:23

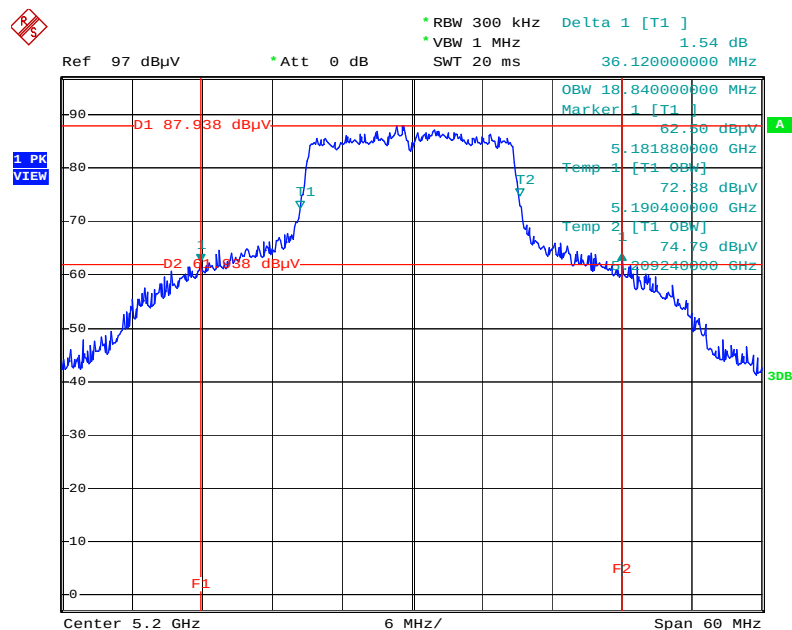
Mode 2: (Ant.8 Panel antenna / 5.1 dBi / 2TX)

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 + Chain 5 / 5180 MHz



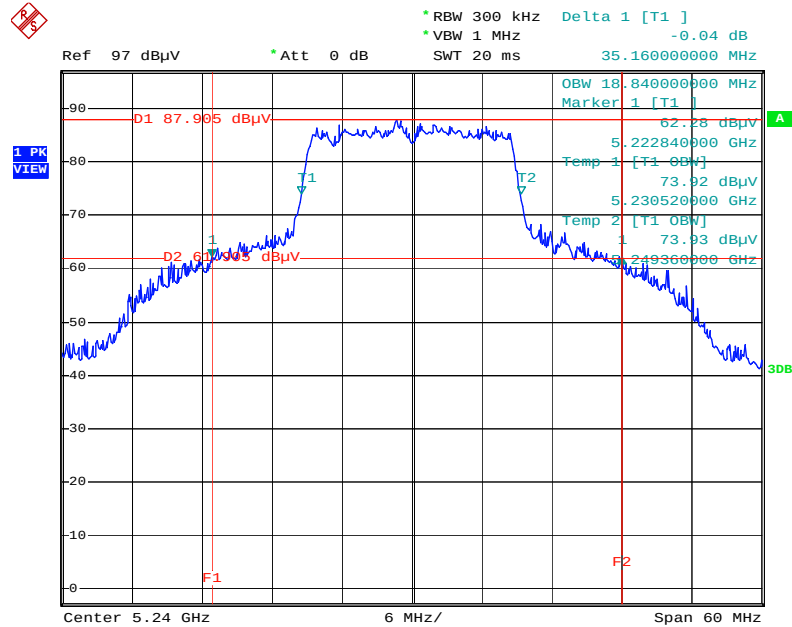
Date: 12.JAN.2015 17:25:24

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 + Chain 5 / 5200 MHz



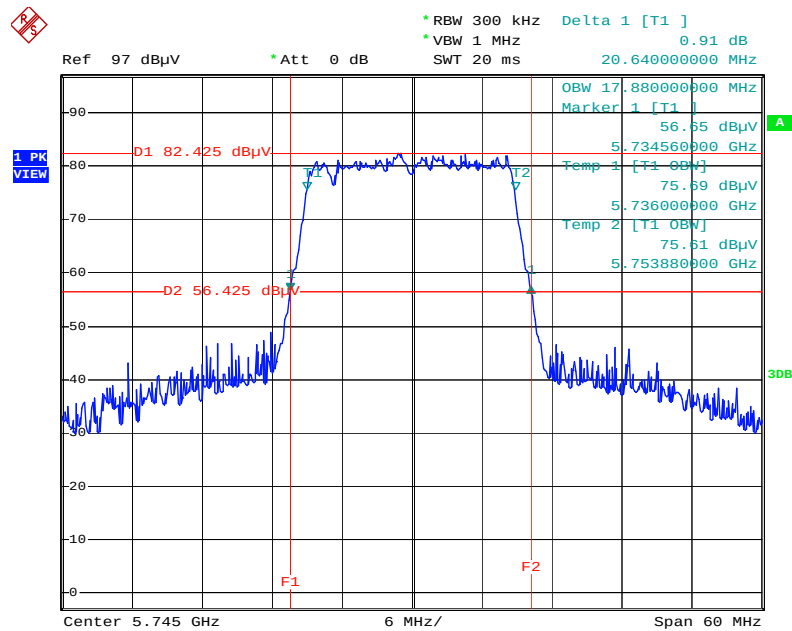
Date: 12.JAN.2015 17:27:12

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 + Chain 5 / 5240 MHz



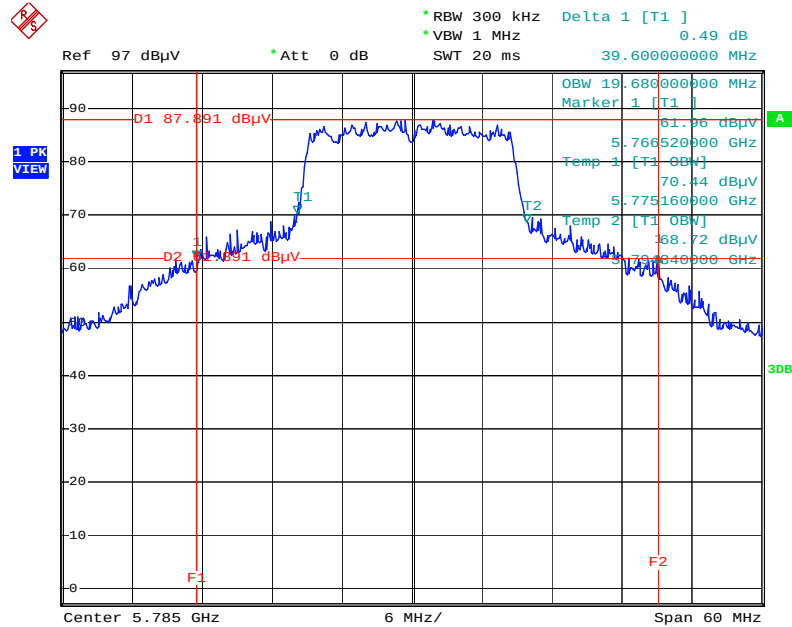
Date: 12.JAN.2015 17:27:56

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 + Chain 5 / 5745 MHz



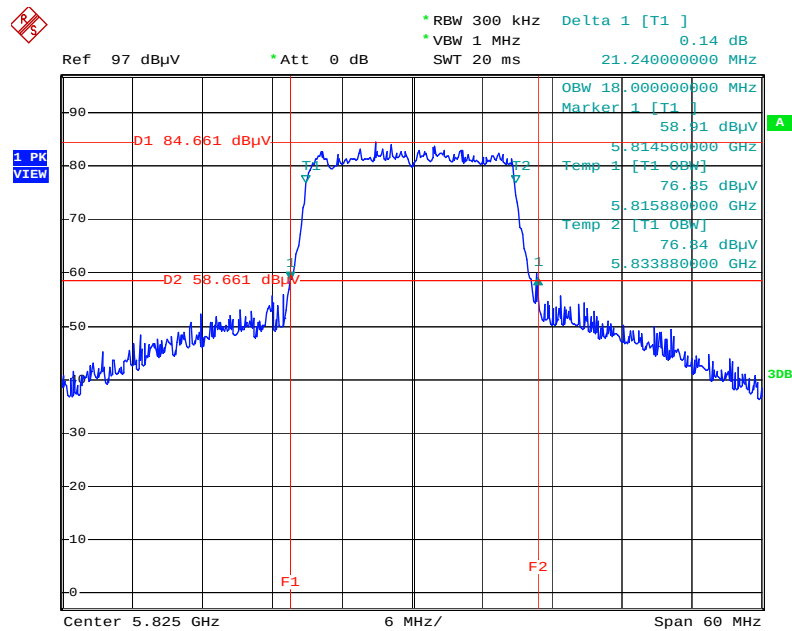
Date: 12.JAN.2015 17:29:02

# 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 + Chain 5 / 5785 MHz



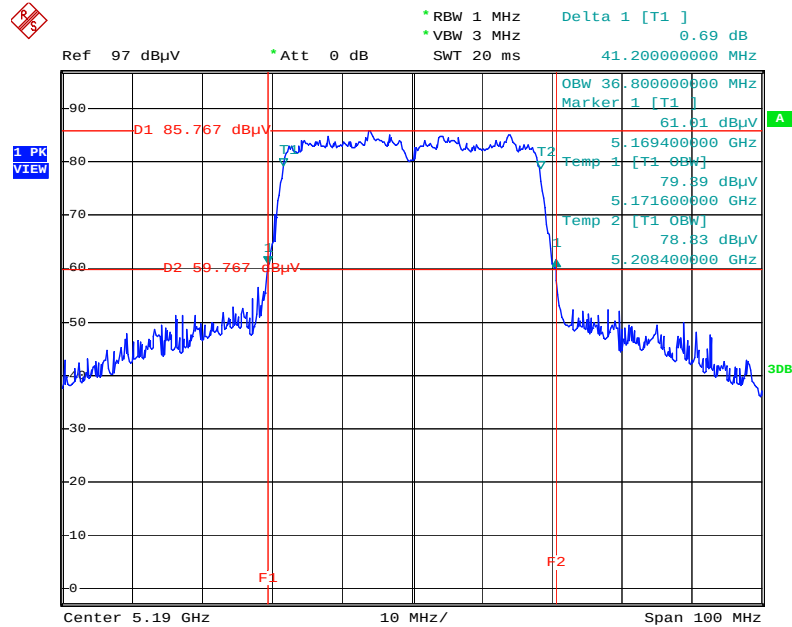
Date: 12.JAN.2015 17:31:21

# 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 + Chain 5 / 5825 MHz



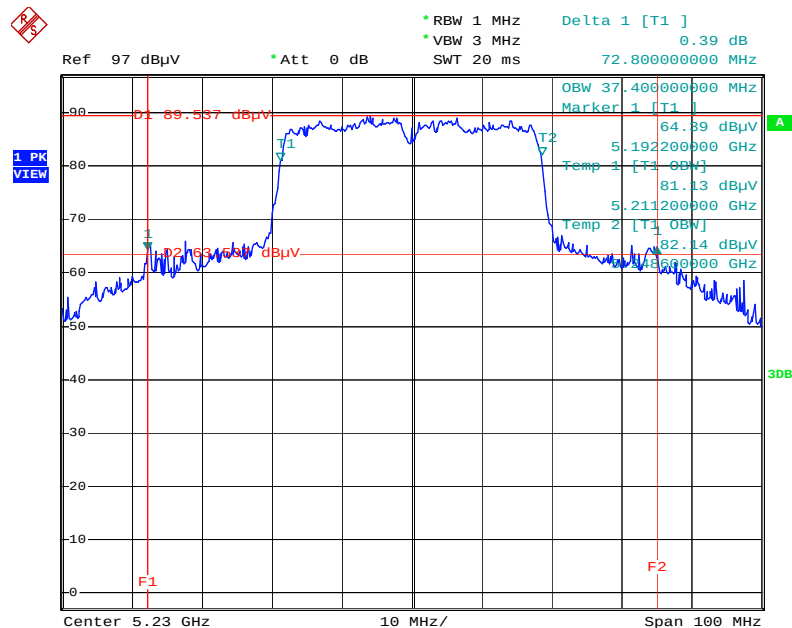
Date: 12.JAN.2015 17:33:26

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 4 + Chain 5 / 5190 MHz



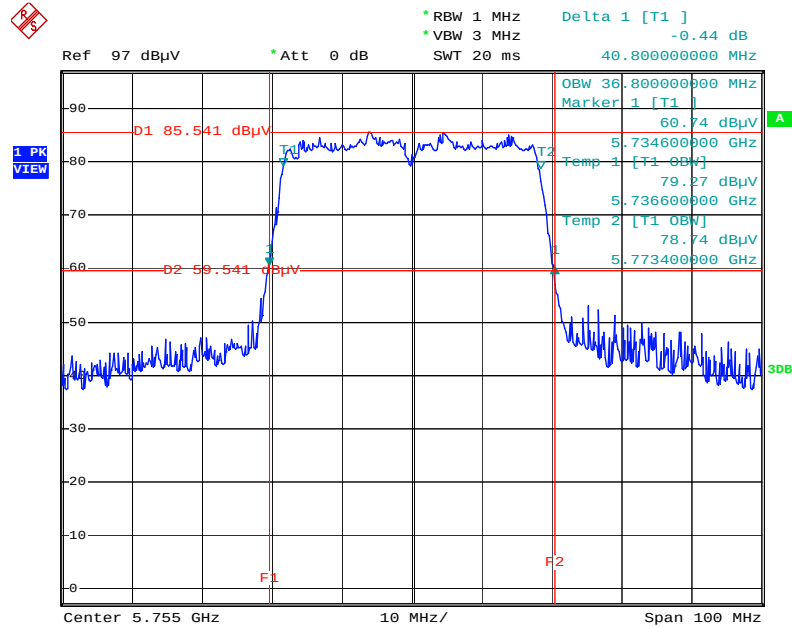
Date: 12.JAN.2015 17:34:37

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 4 + Chain 5 / 5230 MHz



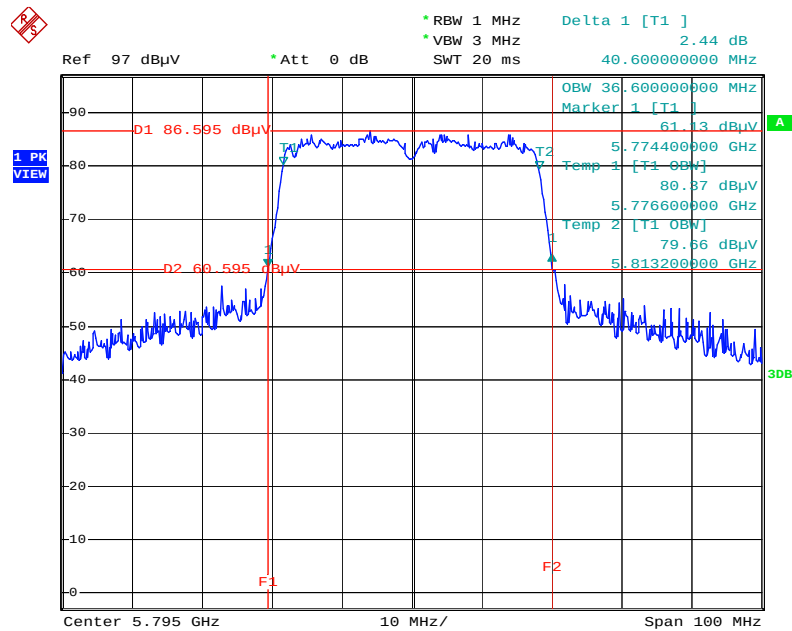
Date: 12.JAN.2015 17:35:27

# 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 4 + Chain 5 / 5755 MHz



Date: 12.JAN.2015 17:36:01

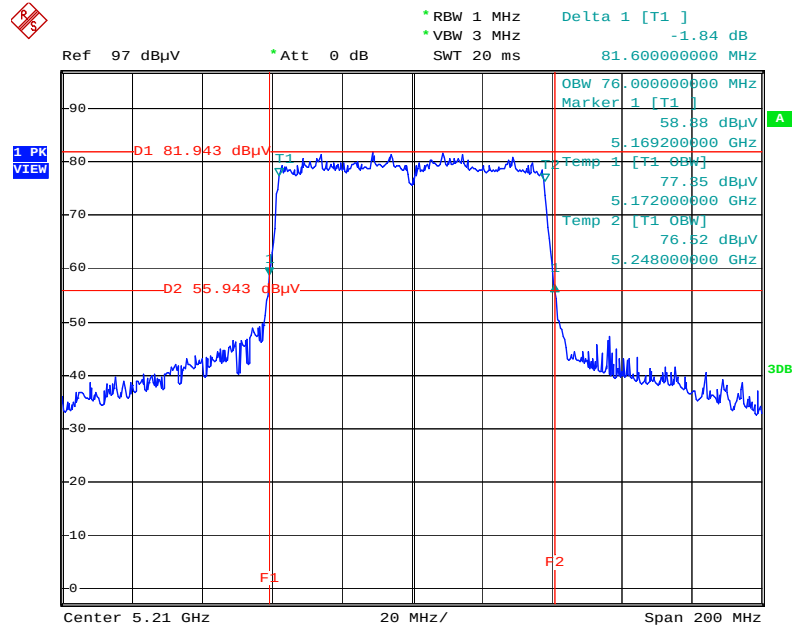
# 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 4 + Chain 5 / 5795 MHz



Date: 12.JAN.2015 17:37:12

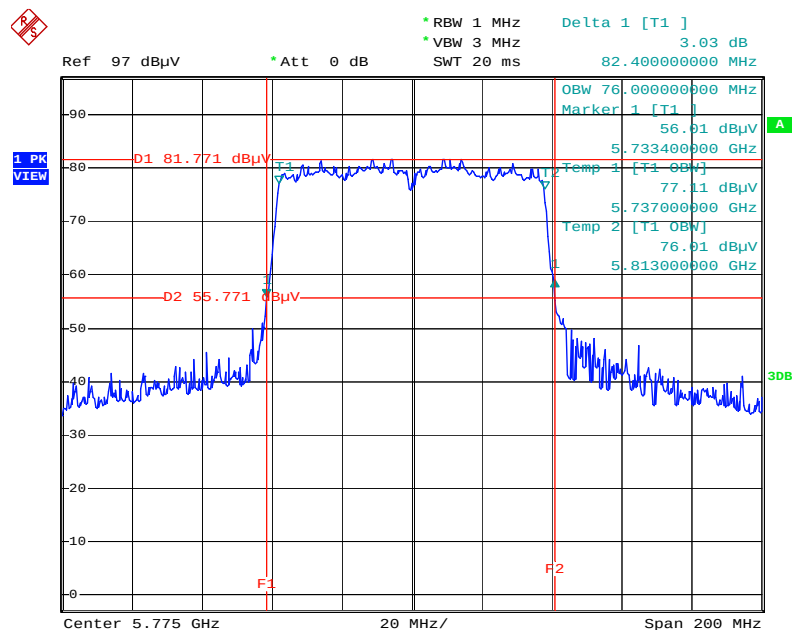


## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 4 + Chain 5 / 5210 MHz



Date: 12.JAN.2015 17:39:13

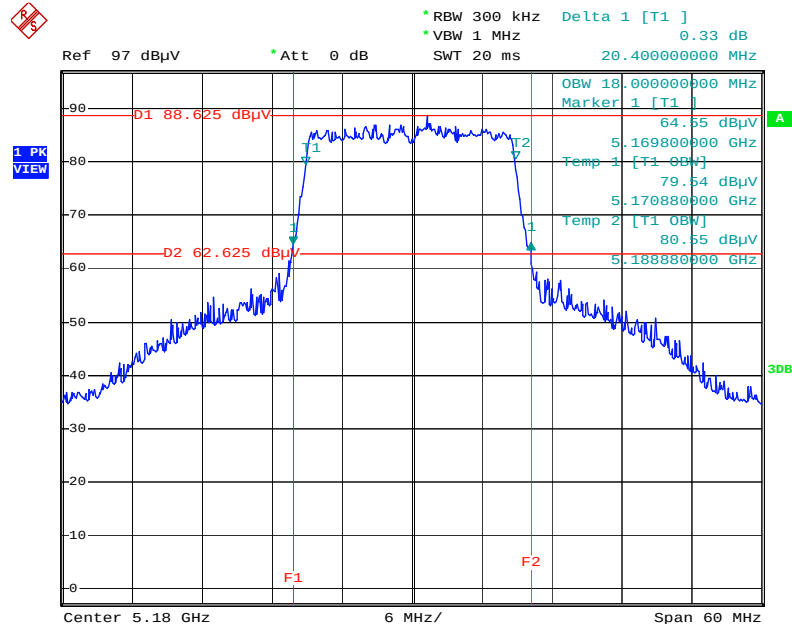
## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 4 + Chain 5 / 5775 MHz



Date: 12.JAN.2015 17:40:39

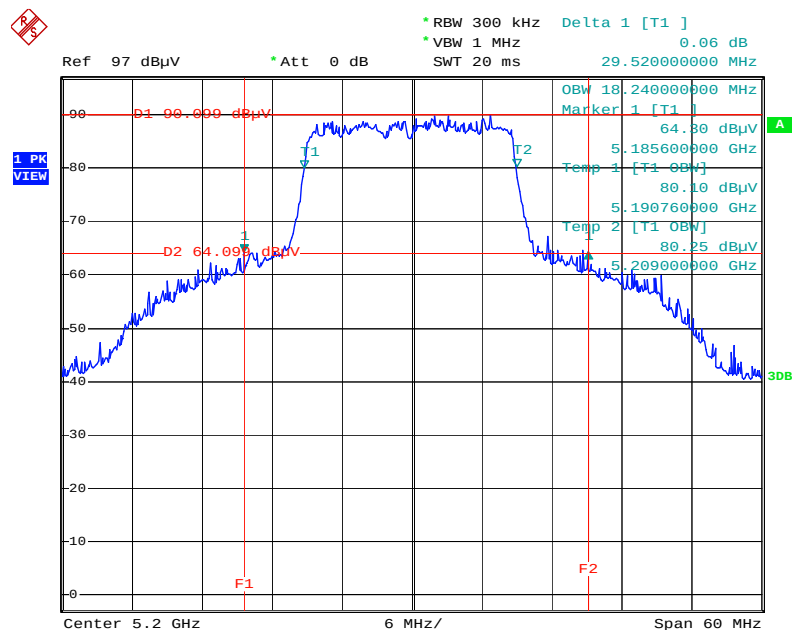
Mode 2: (Ant.8 Panel antenna / 5.1 dBi / 3TX)

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 + Chain 5 + Chain 6 / 5180 MHz



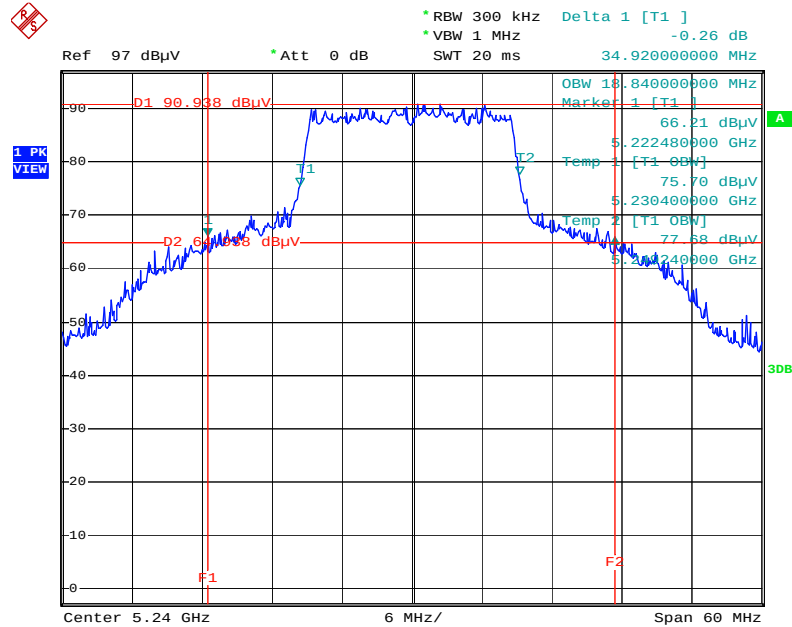
Date: 12.JAN.2015 16:22:41

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 + Chain 5 + Chain 6 / 5200 MHz



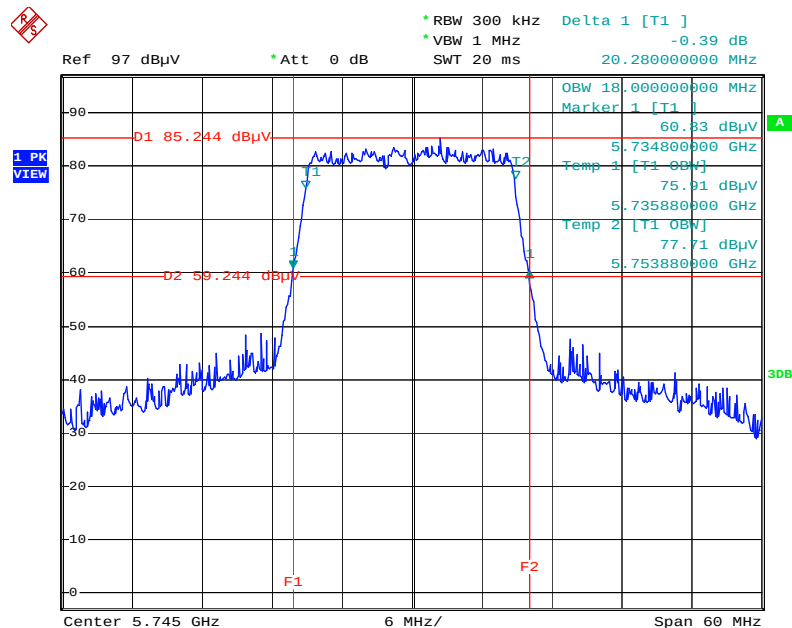
Date: 12.JAN.2015 16:24:23

# 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 + Chain 5 + Chain 6 / 5240 MHz



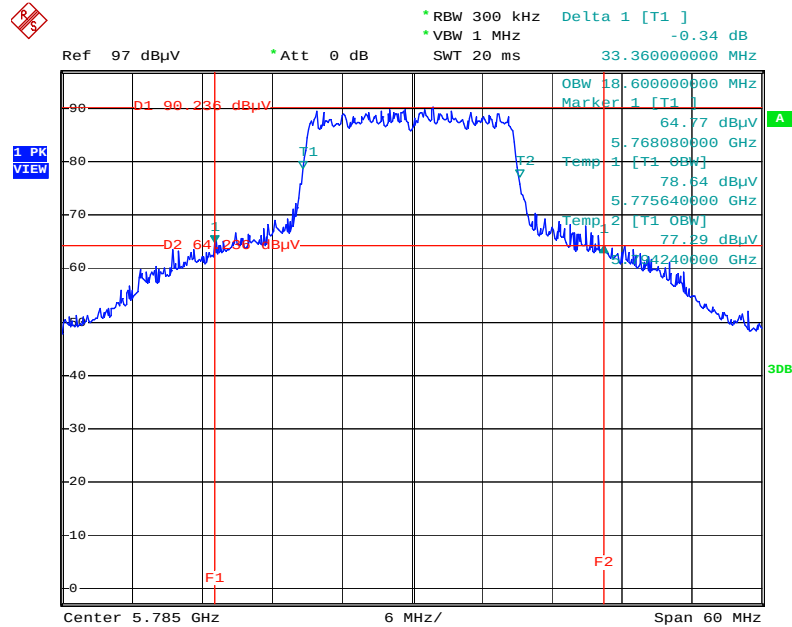
Date: 12.JAN.2015 16:25:43

# 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 + Chain 5 + Chain 6 / 5745 MHz



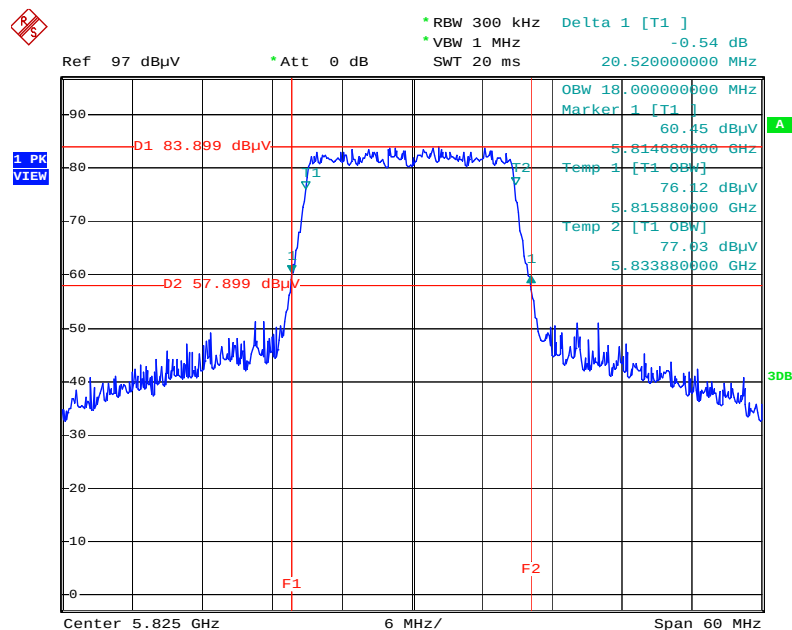
Date: 13.JAN.2015 00:14:15

# 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 + Chain 5 + Chain 6 / 5785 MHz



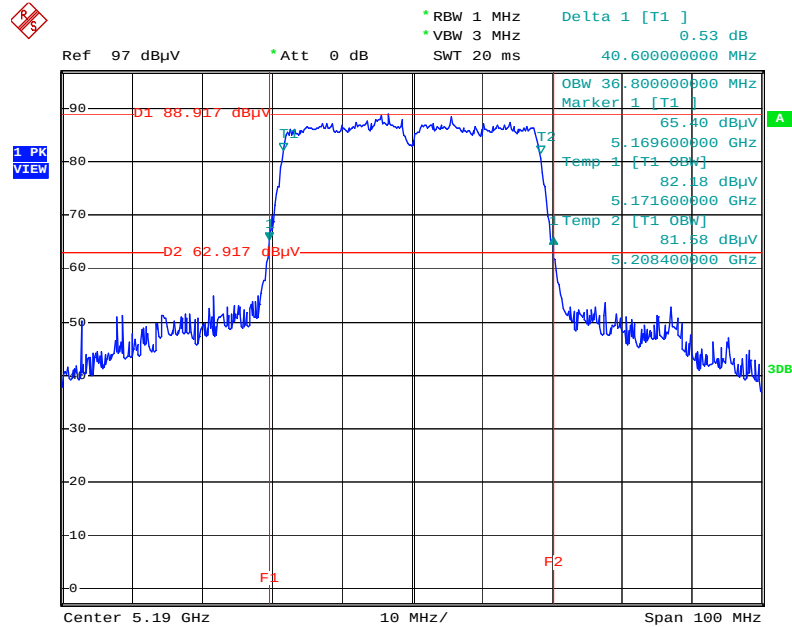
Date: 12.JAN.2015 16:58:24

# 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 + Chain 5 + Chain 6 / 5825 MHz



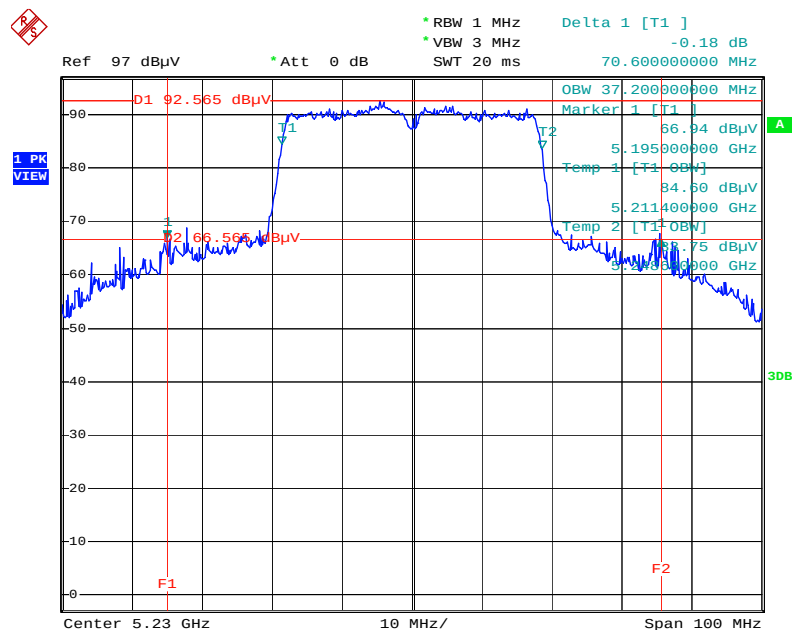
Date: 13.JAN.2015 00:13:03

# 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 4 + Chain 5 + Chain 6 / 5190 MHz



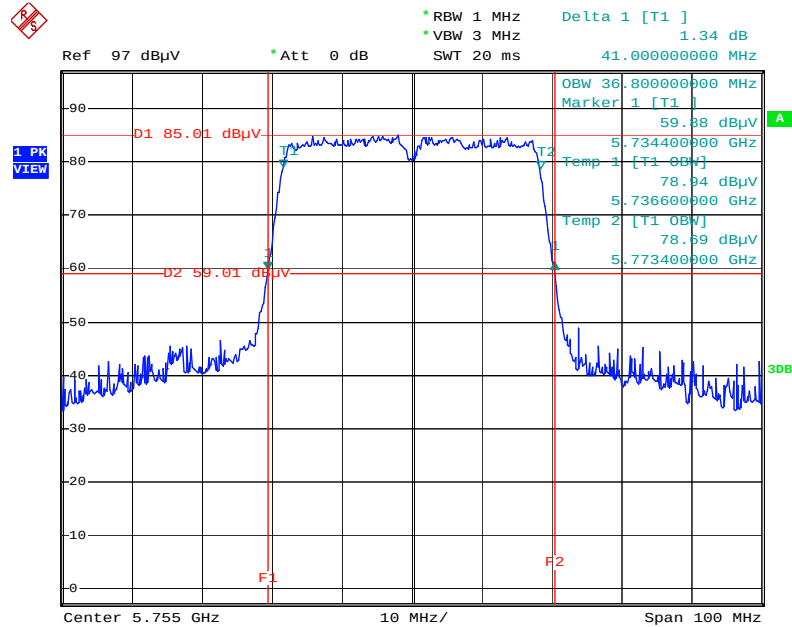
Date: 12.JAN.2015 17:15:39

# 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 4 + Chain 5 + Chain 6 / 5230 MHz



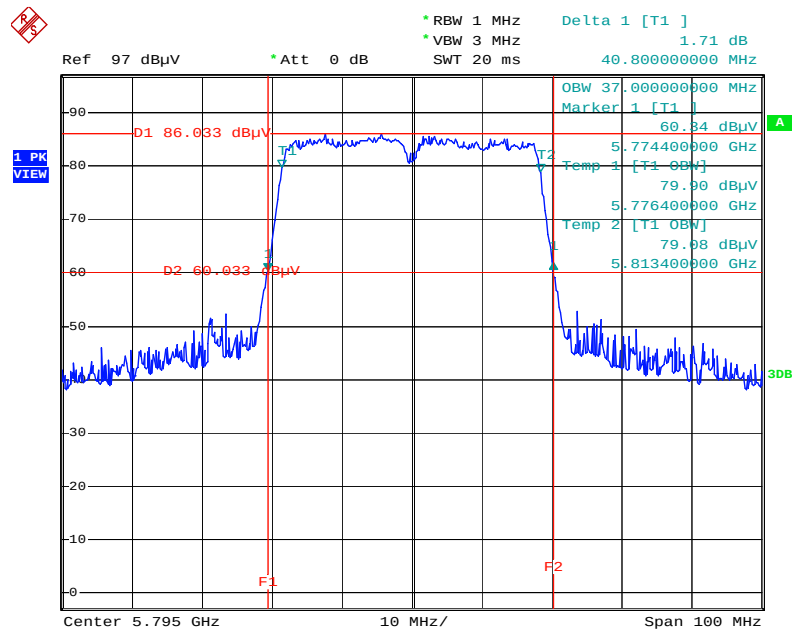
Date: 12.JAN.2015 17:16:10

# 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 4 + Chain 5 + Chain 6 / 5755 MHz



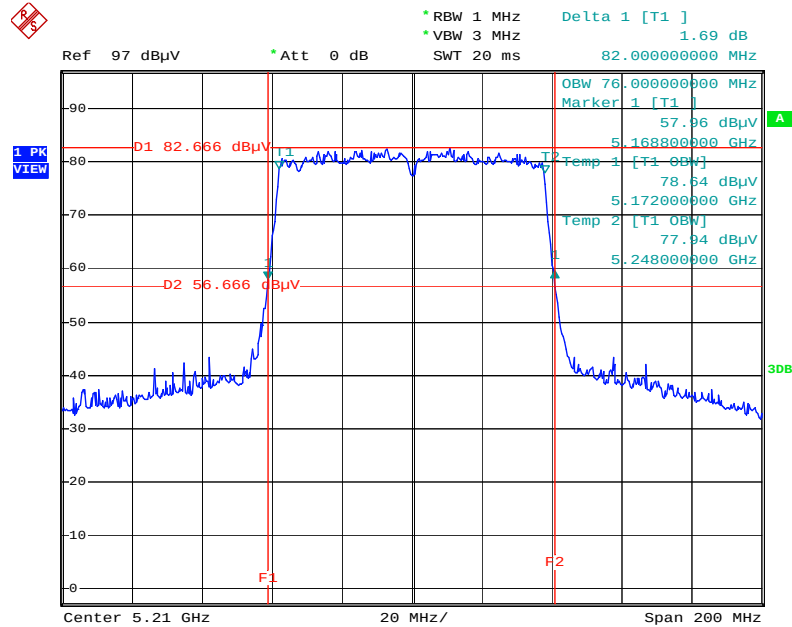
Date: 13.JAN.2015 00:28:19

# 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 4 + Chain 5 + Chain 6 / 5795 MHz



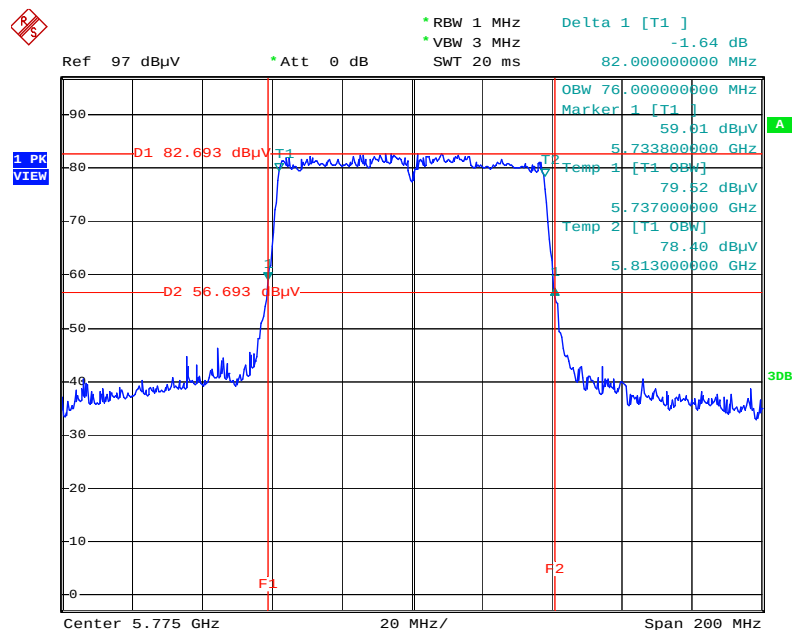
Date: 13.JAN.2015 00:27:30

# 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 4 + Chain 5 + Chain 6 / 5210 MHz



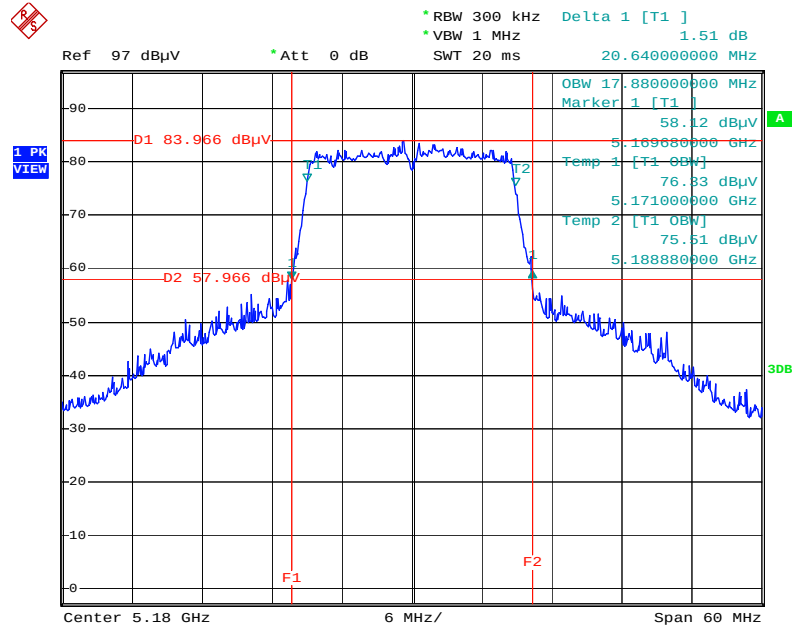
Date: 12.JAN.2015 17:18:00

# 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 4 + Chain 5 + Chain 6 / 5775 MHz



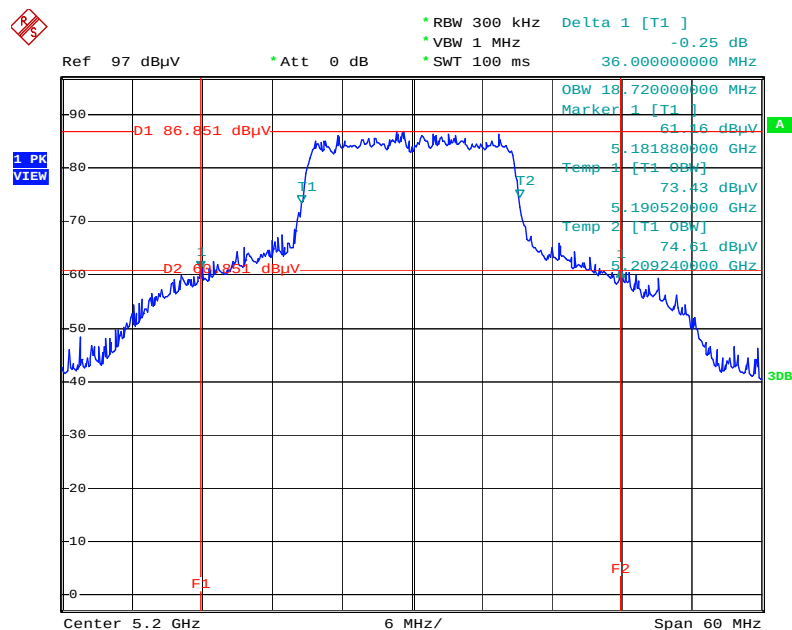
Date: 12.JAN.2015 17:21:28

Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 4: 8.3, Chain 5: 5.9, Chain 6: 8.2dBi / 2TX)  
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT20 /  
Chain 4 + Chain 5 / 5180 MHz



Date: 9.JAN.2015 22:17:39

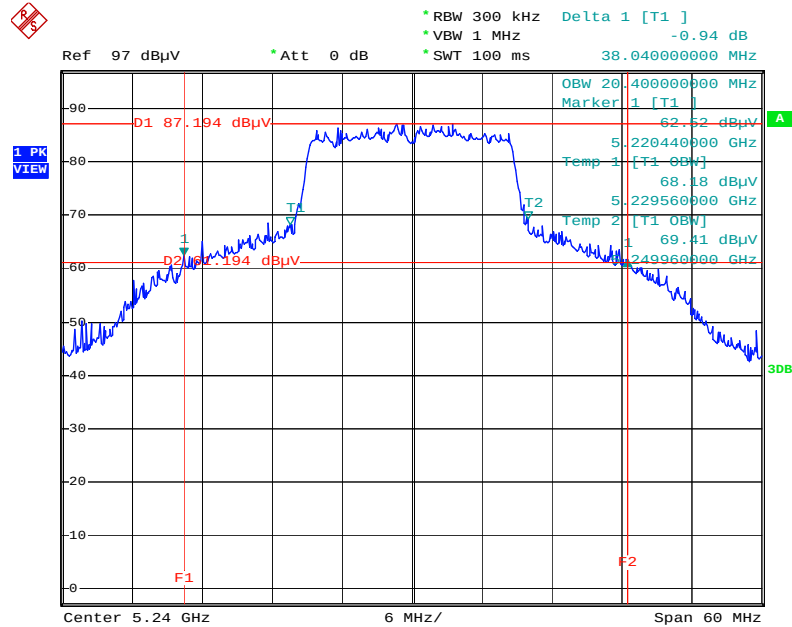
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT20 /  
Chain 4 + Chain 5 / 5200 MHz



Date: 9.JAN.2015 22:20:09

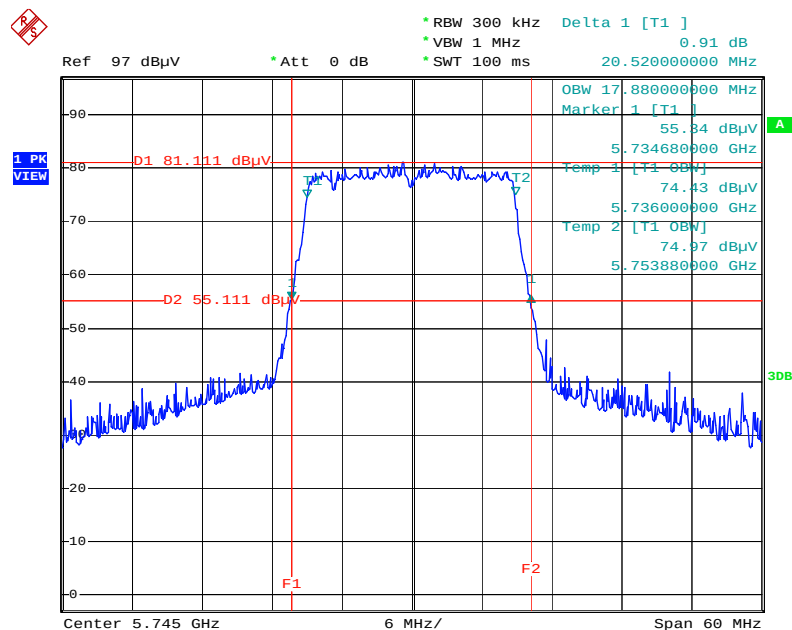


## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT20 / Chain 4 + Chain 5 / 5240 MHz



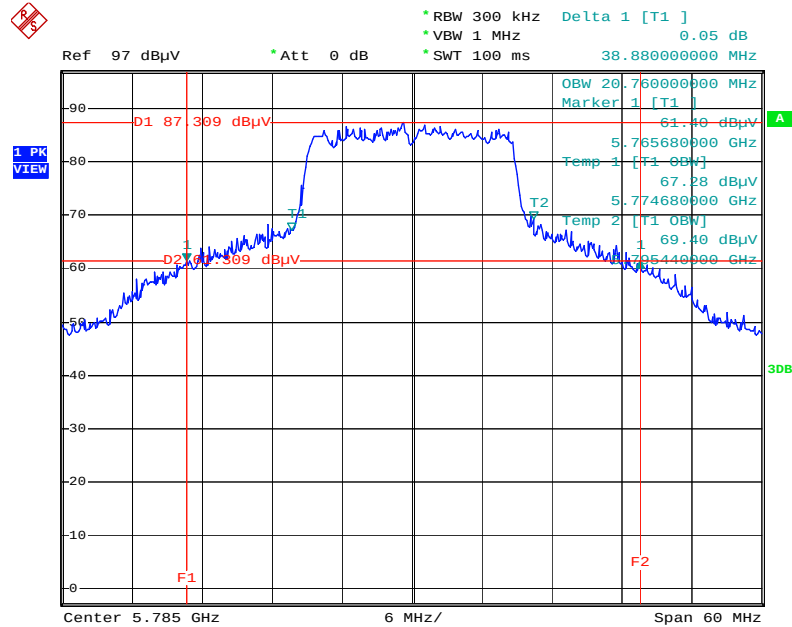
Date: 10.JAN.2015 00:08:33

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT20 / Chain 4 + Chain 5 / 5745 MHz



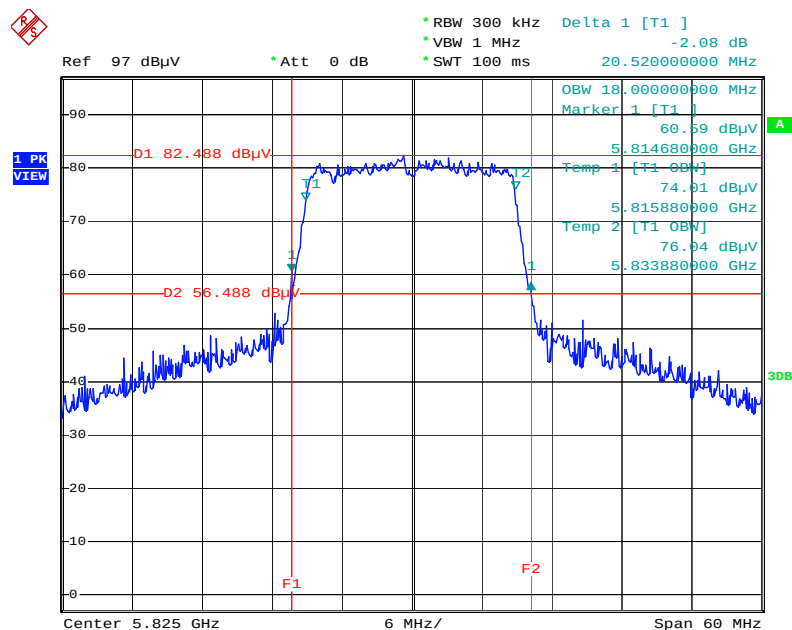
Date: 9.JAN.2015 22:38:34

# 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT20 / Chain 4 + Chain 5 / 5785 MHz



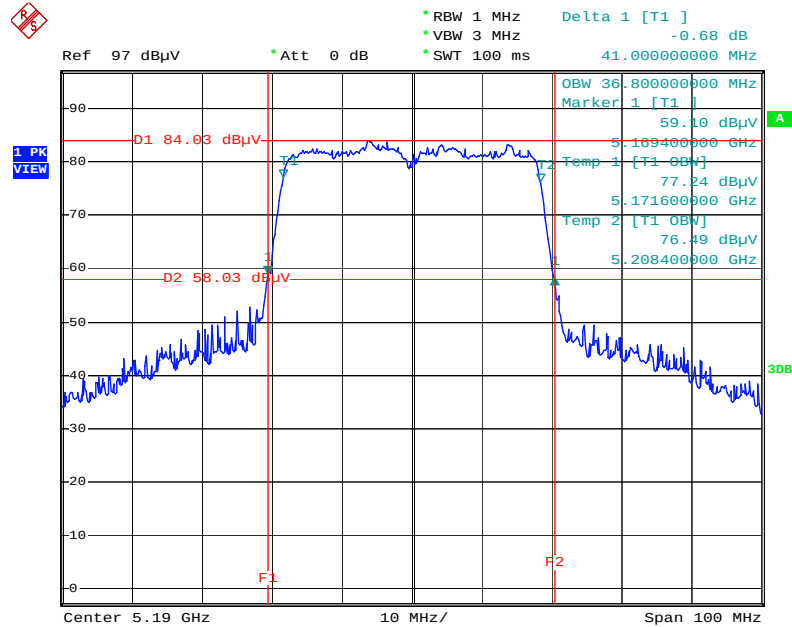
Date: 9.JAN.2015 22:41:14

# 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT20 / Chain 4 + Chain 5 / 5825 MHz



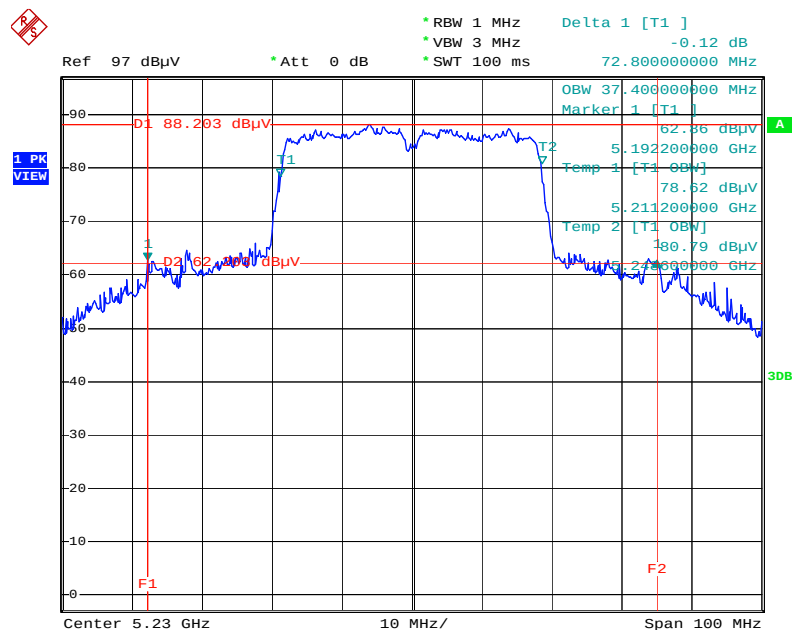
Date: 9.JAN.2015 22:44:09

# 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT40 / Chain 4 + Chain 5 / 5190 MHz



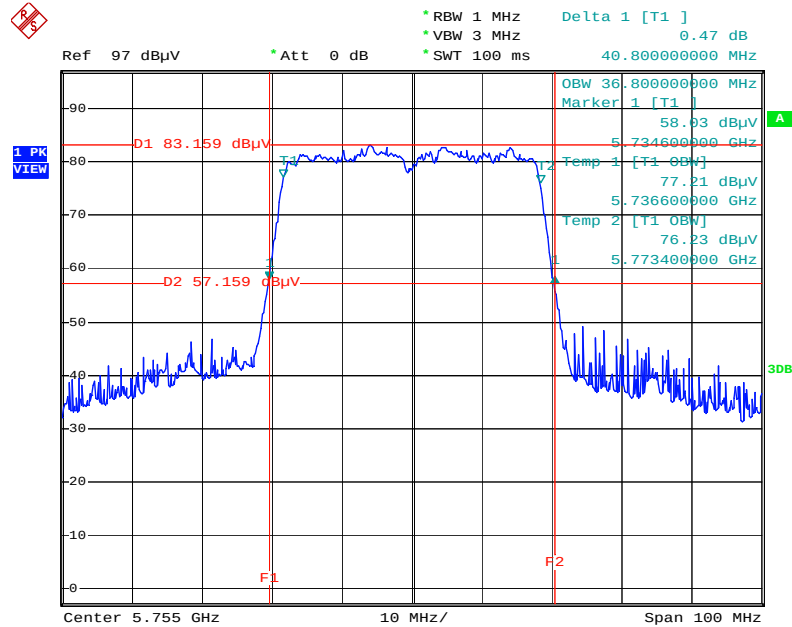
Date: 9.JAN.2015 22:47:36

# 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT40 / Chain 4 + Chain 5 / 5230 MHz



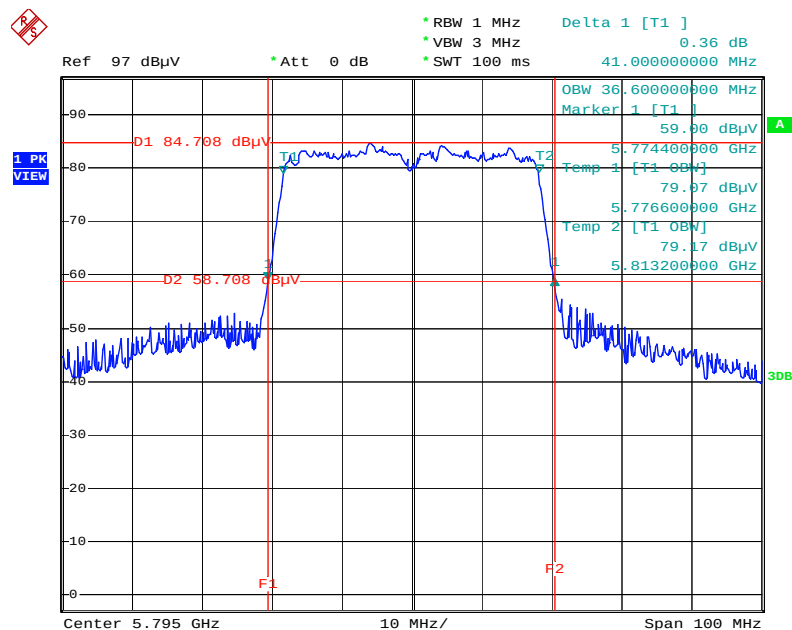
Date: 9.JAN.2015 22:49:34

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT40 / Chain 4 + Chain 5 / 5755 MHz



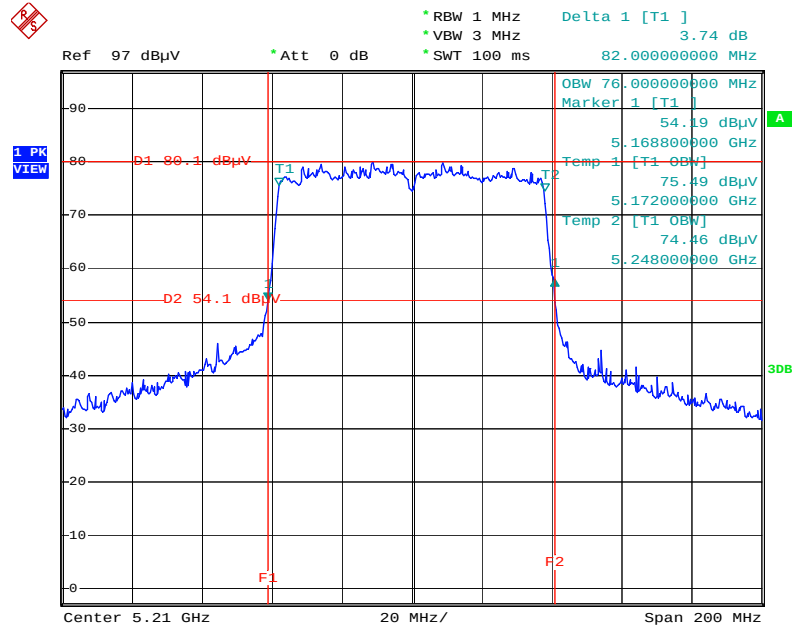
Date: 9.JAN.2015 22:51:14

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT40 / Chain 4 + Chain 5 / 5795 MHz



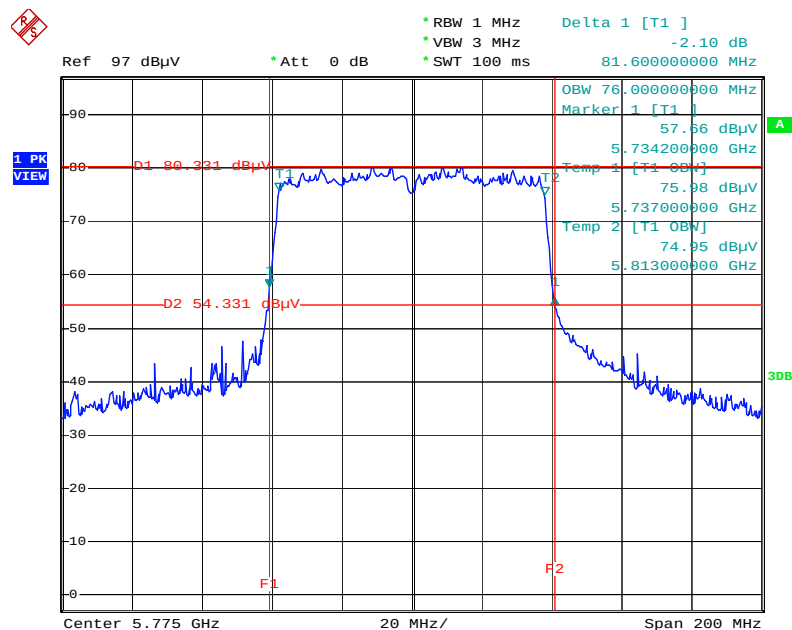
Date: 9.JAN.2015 22:53:57

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT80 / Chain 4 + Chain 5 / 5210 MHz



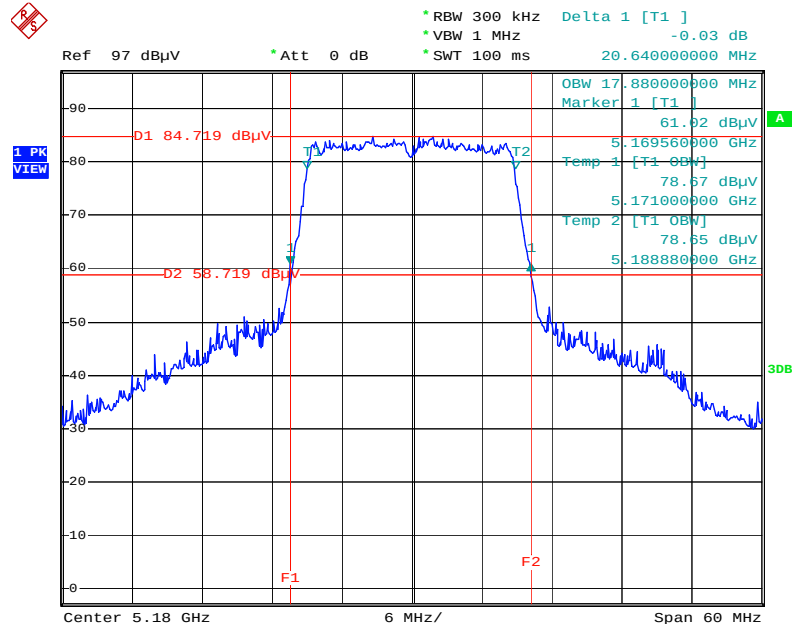
Date: 9.JAN.2015 22:56:26

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT80 / Chain 4 + Chain 5 / 5775 MHz



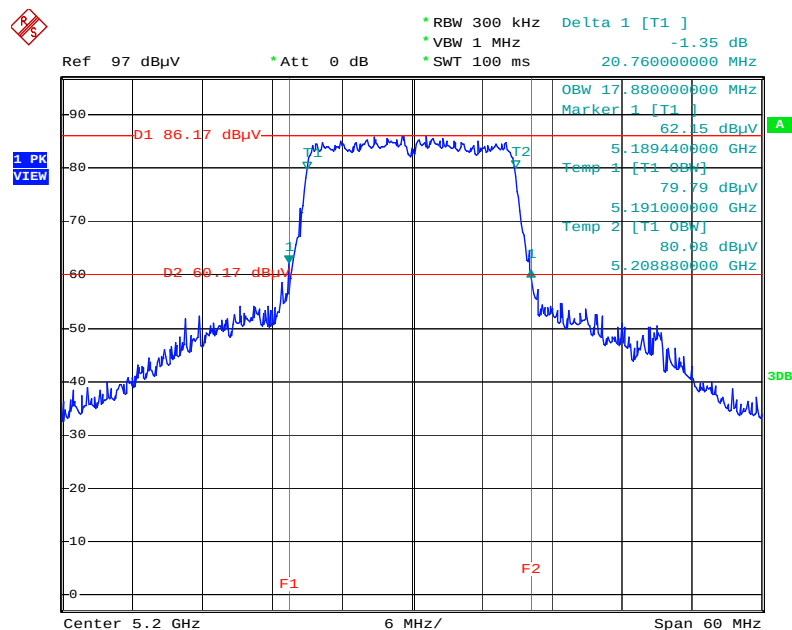
Date: 9.JAN.2015 22:58:43

Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 4: 8.3, Chain 5: 5.9, Chain 6: 8.2dBi / 3TX)  
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT20 /  
Chain 4 + Chain 5 + Chain 6 / 5180 MHz



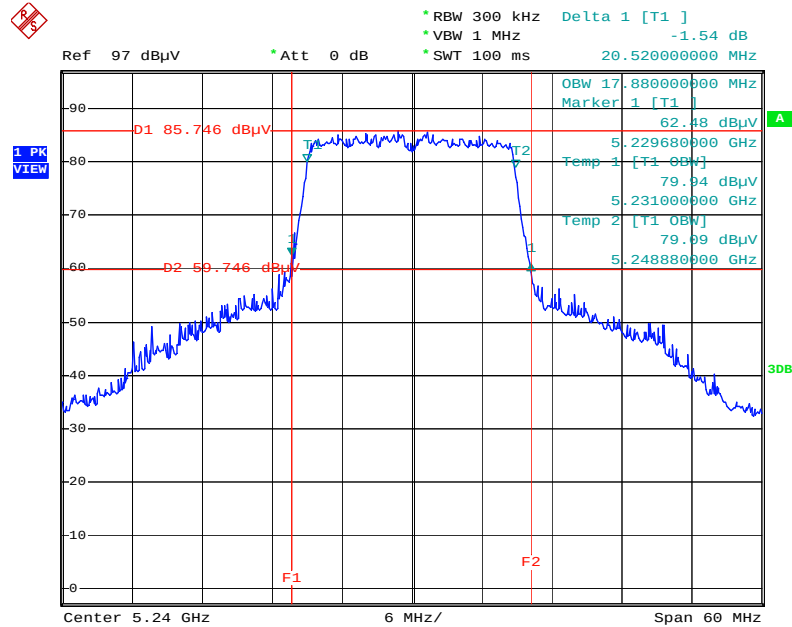
Date: 9.JAN.2015 22:18:25

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT20 /  
Chain 4 + Chain 5 + Chain 6 / 5200 MHz



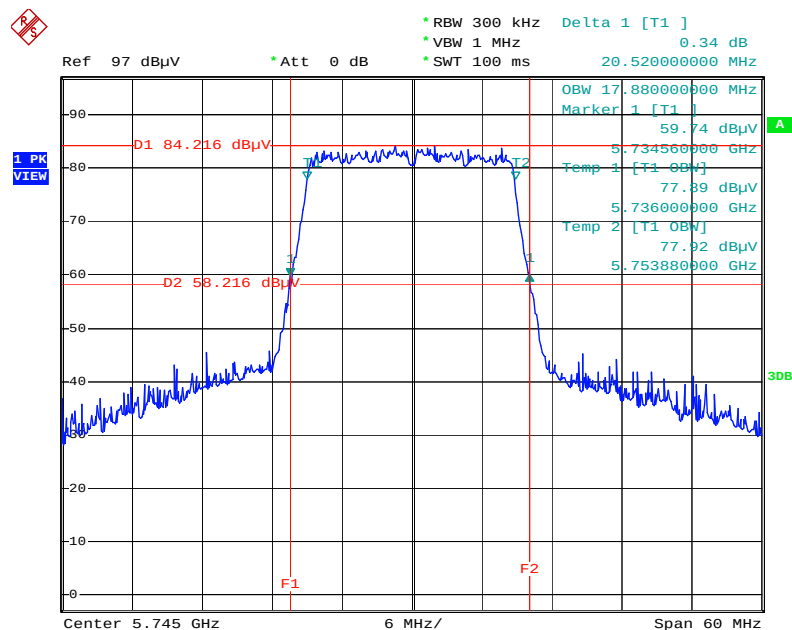
Date: 9.JAN.2015 22:20:42

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT20 / Chain 4 + Chain 5 + Chain 6 / 5240 MHz



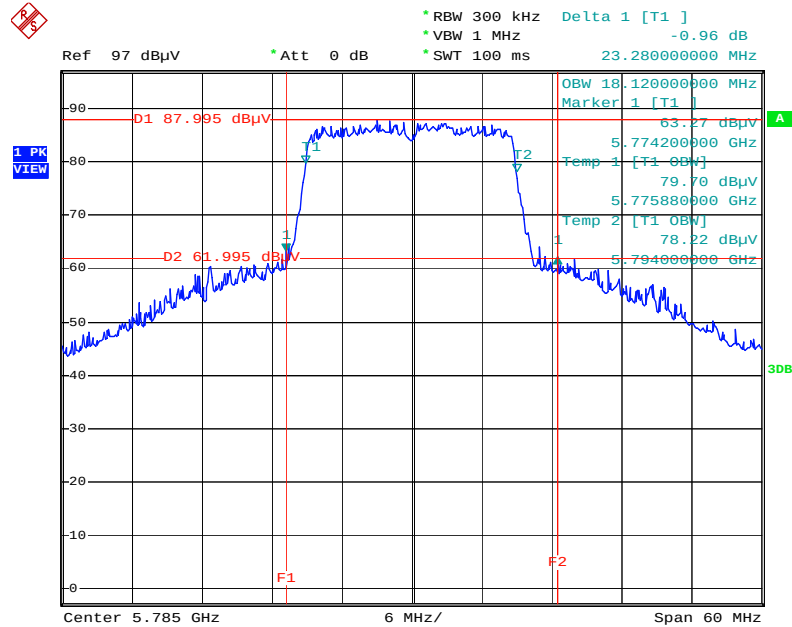
Date: 9.JAN.2015 22:22:28

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT20 / Chain 4 + Chain 5 + Chain 6 / 5745 MHz



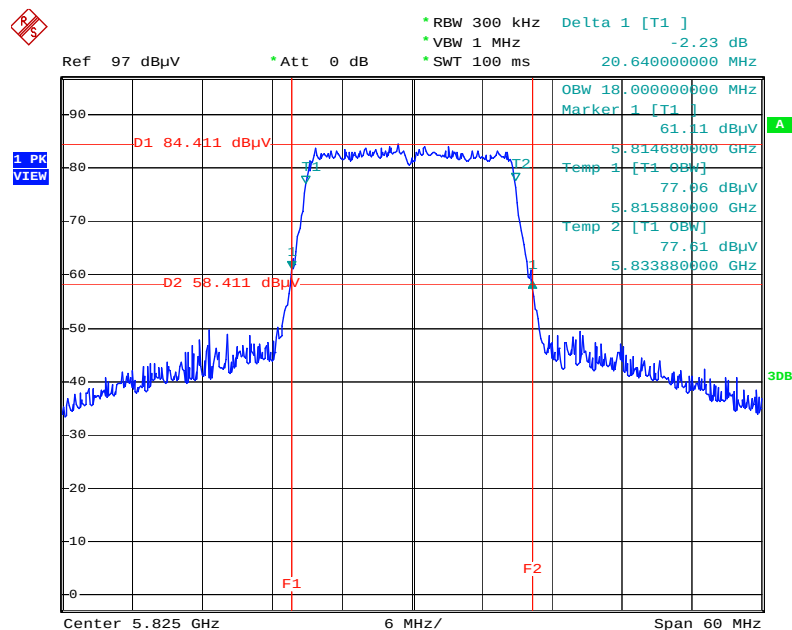
Date: 9.JAN.2015 22:39:40

# 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT20 / Chain 4 + Chain 5 + Chain 6 / 5785 MHz



Date: 9.JAN.2015 22:42:20

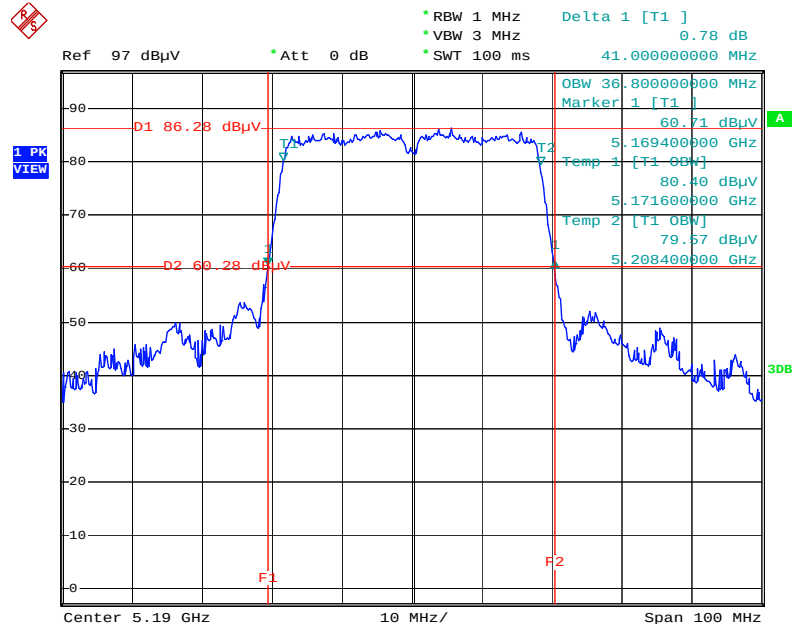
# 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT20 / Chain 4 + Chain 5 + Chain 6 / 5825 MHz



Date: 9.JAN.2015 22:45:15

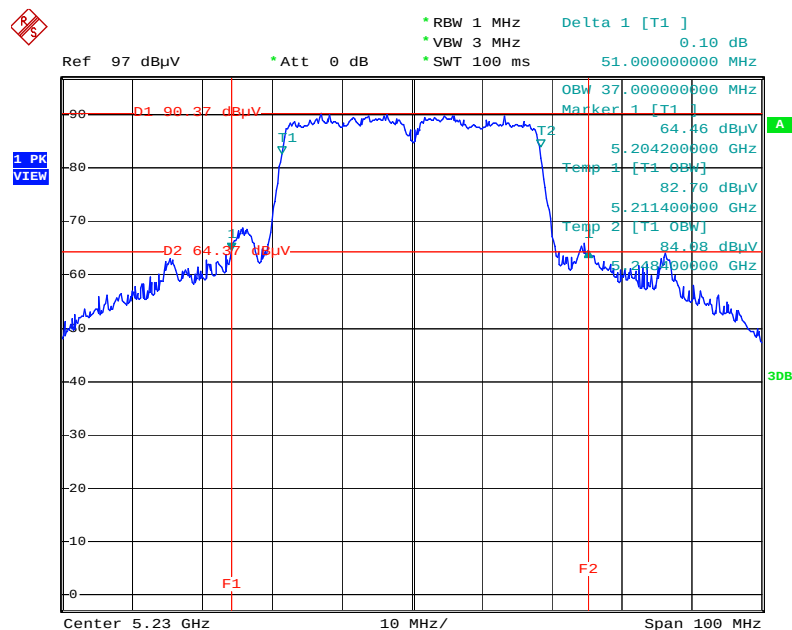


# 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT40 / Chain 4 + Chain 5 + Chain 6 / 5190 MHz



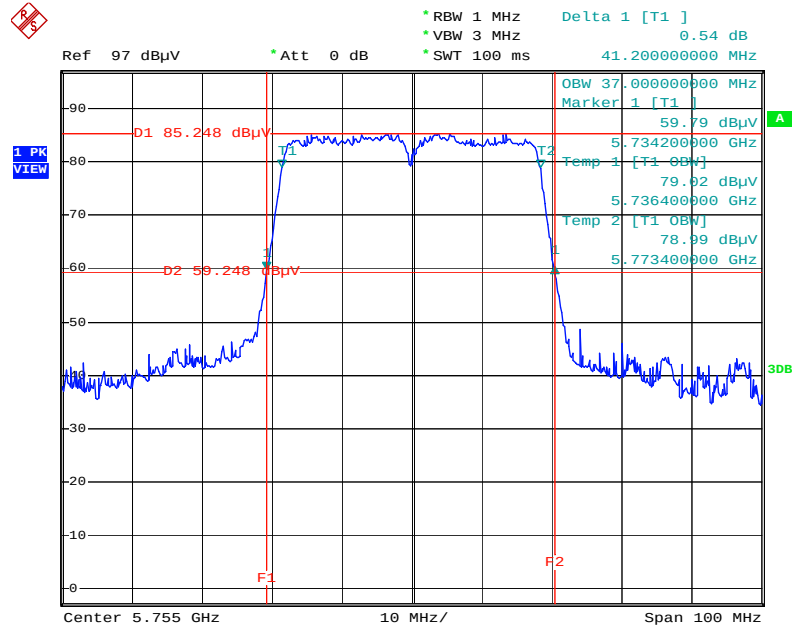
Date: 9.JAN.2015 22:48:00

# 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT40 / Chain 4 + Chain 5 + Chain 6 / 5230 MHz



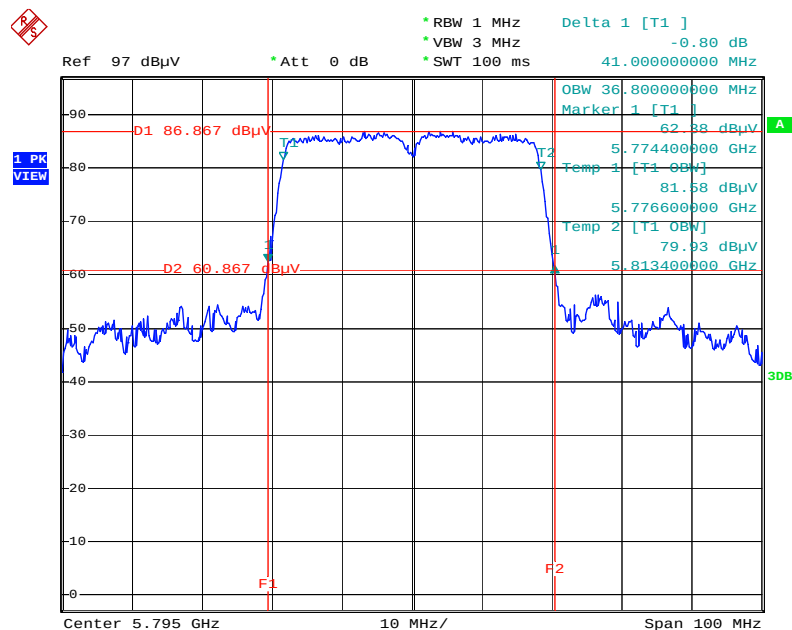
Date: 9.JAN.2015 22:50:05

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT40 / Chain 4 + Chain 5 + Chain 6 / 5755 MHz



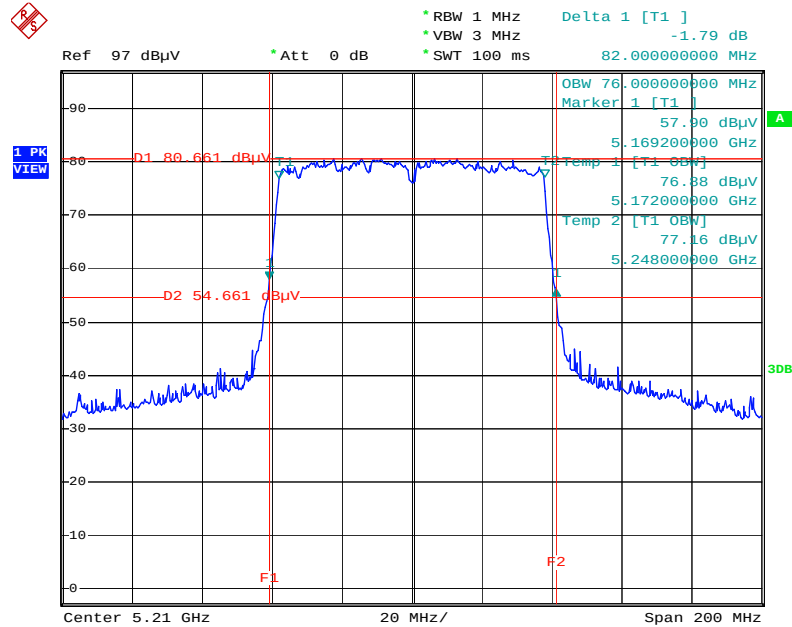
Date: 9.JAN.2015 22:52:09

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT40 / Chain 4 + Chain 5 + Chain 6 / 5795 MHz



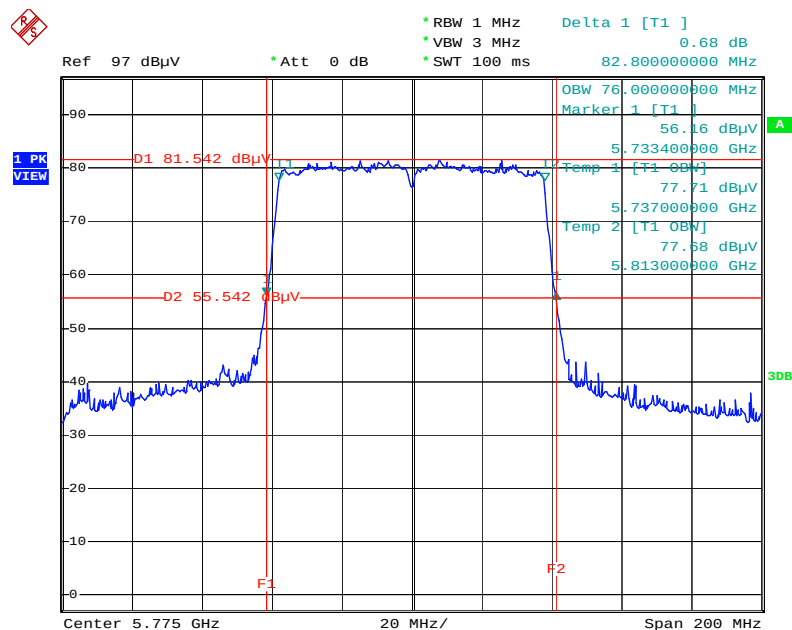
Date: 9.JAN.2015 22:55:00

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT80 / Chain 4 + Chain 5 + Chain 6 / 5210 MHz



Date: 9.JAN.2015 22:57:40

## 26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT80 / Chain 4 + Chain 5 + Chain 6 / 5775 MHz



Date: 9.JAN.2015 22:59:57

### 4.3. 6dB Spectrum Bandwidth Measurement

#### 4.3.1. Limit

For digital modulation systems, the minimum 6dB bandwidth shall be at least 500 kHz.

#### 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 spectrum analyzer.

| 6dB Spectrum Bandwidth |                                            |
|------------------------|--------------------------------------------|
| Spectrum Parameters    | Setting                                    |
| Attenuation            | Auto                                       |
| Span Frequency         | > 6dB Bandwidth                            |
| RBW                    | approximately 1% of the emission bandwidth |
| VBW                    | VBW > RBW                                  |
| Detector               | Peak                                       |
| Trace                  | Max Hold                                   |
| Sweep Time             | Auto                                       |

#### 4.3.3. Test Procedures

For Radiated 6dB Bandwidth Measurement:

1. The transmitter was radiated to the spectrum analyzer in peak hold mode.
2. Test was performed in accordance with KDB789033 D02 v01 for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - section (C) Emission Bandwidth.
3. Multiple antenna system was performed in accordance with KDB662911 D01 v02r01 Emissions Testing of Transmitters with Multiple Outputs in the Same Band.
4. Measured the spectrum width with power higher than 6dB below carrier.

#### 4.3.4. Test Setup Layout

For Radiated 6dB Bandwidth Measurement:

This test setup layout is the same as that shown in section 4.6.4.

#### 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 6dB Spectrum Bandwidth

For Band 4 (Master and client without radar detection):

<For Non-Beamforming Mode>

|               |                                               |          |     |
|---------------|-----------------------------------------------|----------|-----|
| Temperature   | 22°C                                          | Humidity | 63% |
| Test Engineer | Nick Peng                                     |          |     |
| Test Mode     | Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 1TX) |          |     |

For Chain 5

| Mode                        | Frequency | 6dB Bandwidth (MHz) | Min. Limit (kHz) | Test Result |
|-----------------------------|-----------|---------------------|------------------|-------------|
| 802.11ac<br>MCS0/Nss1 VHT20 | 5745 MHz  | 17.68               | 500              | Complies    |
|                             | 5785 MHz  | 17.60               | 500              | Complies    |
|                             | 5825 MHz  | 17.60               | 500              | Complies    |
| 802.11ac<br>MCS0/Nss1 VHT40 | 5755 MHz  | 36.32               | 500              | Complies    |
|                             | 5795 MHz  | 36.32               | 500              | Complies    |
| 802.11ac<br>MCS0/Nss1 VHT80 | 5775 MHz  | 76.80               | 500              | Complies    |

|               |                                               |          |     |
|---------------|-----------------------------------------------|----------|-----|
| Temperature   | 22°C                                          | Humidity | 63% |
| Test Engineer | Nick Peng                                     |          |     |
| Test Mode     | Mode 2: (Ant.8 Panel antenna / 5.1 dBi / 1TX) |          |     |

#### For Chain 4

| Mode                        | Frequency | 6dB Bandwidth (MHz) | Min. Limit (kHz) | Test Result |
|-----------------------------|-----------|---------------------|------------------|-------------|
| 802.11ac<br>MCS0/Nss1 VHT20 | 5745 MHz  | 17.68               | 500              | Complies    |
|                             | 5785 MHz  | 17.60               | 500              | Complies    |
|                             | 5825 MHz  | 17.68               | 500              | Complies    |
| 802.11ac<br>MCS0/Nss1 VHT40 | 5755 MHz  | 36.48               | 500              | Complies    |
|                             | 5795 MHz  | 36.32               | 500              | Complies    |
| 802.11ac<br>MCS0/Nss1 VHT80 | 5775 MHz  | 75.20               | 500              | Complies    |

|               |                                                                                                   |          |     |
|---------------|---------------------------------------------------------------------------------------------------|----------|-----|
| Temperature   | 22°C                                                                                              | Humidity | 63% |
| Test Engineer | Nick Peng, Lucas Huang                                                                            |          |     |
| Test Mode     | Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 4: 8.3, Chain 5: 5.9, Chain 6: 8.2dBi / 1TX) |          |     |

#### For Chain 4

| Mode                        | Frequency | 6dB Bandwidth (MHz) | Min. Limit (kHz) | Test Result |
|-----------------------------|-----------|---------------------|------------------|-------------|
| 802.11ac<br>MCS0/Nss1 VHT20 | 5745 MHz  | 17.68               | 500              | Complies    |
|                             | 5785 MHz  | 17.60               | 500              | Complies    |
|                             | 5825 MHz  | 17.60               | 500              | Complies    |
| 802.11ac<br>MCS0/Nss1 VHT40 | 5755 MHz  | 36.32               | 500              | Complies    |
|                             | 5795 MHz  | 36.32               | 500              | Complies    |
| 802.11ac<br>MCS0/Nss1 VHT80 | 5775 MHz  | 76.40               | 500              | Complies    |

<For STBC Mode>

|               |                                               |          |     |
|---------------|-----------------------------------------------|----------|-----|
| Temperature   | 22°C                                          | Humidity | 63% |
| Test Engineer | Nick Peng                                     |          |     |
| Test Mode     | Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 2TX) |          |     |

For Chain 4 + Chain 5

| Mode                        | Frequency | 6dB Bandwidth (MHz) | Min. Limit (kHz) | Test Result |
|-----------------------------|-----------|---------------------|------------------|-------------|
| 802.11ac<br>MCS0/Nss1 VHT20 | 5745 MHz  | 17.60               | 500              | Complies    |
|                             | 5785 MHz  | 15.36               | 500              | Complies    |
|                             | 5825 MHz  | 17.28               | 500              | Complies    |
| 802.11ac<br>MCS0/Nss1 VHT40 | 5755 MHz  | 35.36               | 500              | Complies    |
|                             | 5795 MHz  | 36.00               | 500              | Complies    |
| 802.11ac<br>MCS0/Nss1 VHT80 | 5775 MHz  | 73.60               | 500              | Complies    |



|               |                                               |          |     |
|---------------|-----------------------------------------------|----------|-----|
| Temperature   | 22°C                                          | Humidity | 63% |
| Test Engineer | Nick Peng                                     |          |     |
| Test Mode     | Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 3TX) |          |     |

For Chain 4 + Chain 5 + Chain 6

| Mode                        | Frequency | 6dB Bandwidth (MHz) | Min. Limit (kHz) | Test Result |
|-----------------------------|-----------|---------------------|------------------|-------------|
| 802.11ac<br>MCS0/Nss1 VHT20 | 5745 MHz  | 17.68               | 500              | Complies    |
|                             | 5785 MHz  | 17.60               | 500              | Complies    |
|                             | 5825 MHz  | 17.68               | 500              | Complies    |
| 802.11ac<br>MCS0/Nss1 VHT40 | 5755 MHz  | 36.32               | 500              | Complies    |
|                             | 5795 MHz  | 36.32               | 500              | Complies    |
| 802.11ac<br>MCS0/Nss1 VHT80 | 5775 MHz  | 76.40               | 500              | Complies    |

|               |                                               |          |     |
|---------------|-----------------------------------------------|----------|-----|
| Temperature   | 22°C                                          | Humidity | 63% |
| Test Engineer | Nick Peng                                     |          |     |
| Test Mode     | Mode 2: (Ant.8 Panel antenna / 5.1 dBi / 2TX) |          |     |

#### For Chain 4 + Chain 5

| Mode                        | Frequency | 6dB Bandwidth (MHz) | Min. Limit (kHz) | Test Result |
|-----------------------------|-----------|---------------------|------------------|-------------|
| 802.11ac<br>MCS0/Nss1 VHT20 | 5745 MHz  | 17.52               | 500              | Complies    |
|                             | 5785 MHz  | 15.76               | 500              | Complies    |
|                             | 5825 MHz  | 16.96               | 500              | Complies    |
| 802.11ac<br>MCS0/Nss1 VHT40 | 5755 MHz  | 35.36               | 500              | Complies    |
|                             | 5795 MHz  | 35.68               | 500              | Complies    |
| 802.11ac<br>MCS0/Nss1 VHT80 | 5775 MHz  | 72.00               | 500              | Complies    |

|                      |                                               |                 |     |
|----------------------|-----------------------------------------------|-----------------|-----|
| <b>Temperature</b>   | 22°C                                          | <b>Humidity</b> | 63% |
| <b>Test Engineer</b> | Nick Peng                                     |                 |     |
| <b>Test Mode</b>     | Mode 2: (Ant.8 Panel antenna / 5.1 dBi / 3TX) |                 |     |

**For Chain 4 + Chain 5 + Chain 6**

| Mode                        | Frequency | 6dB Bandwidth (MHz) | Min. Limit (kHz) | Test Result |
|-----------------------------|-----------|---------------------|------------------|-------------|
| 802.11ac<br>MCS0/Nss1 VHT20 | 5745 MHz  | 15.04               | 500              | Complies    |
|                             | 5785 MHz  | 17.60               | 500              | Complies    |
|                             | 5825 MHz  | 17.60               | 500              | Complies    |
| 802.11ac<br>MCS0/Nss1 VHT40 | 5755 MHz  | 36.32               | 500              | Complies    |
|                             | 5795 MHz  | 36.32               | 500              | Complies    |
| 802.11ac<br>MCS0/Nss1 VHT80 | 5775 MHz  | 75.20               | 500              | Complies    |

|                      |                                                                                                   |                 |     |
|----------------------|---------------------------------------------------------------------------------------------------|-----------------|-----|
| <b>Temperature</b>   | 22°C                                                                                              | <b>Humidity</b> | 63% |
| <b>Test Engineer</b> | Nick Peng, Lucas Huang                                                                            |                 |     |
| <b>Test Mode</b>     | Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 4: 8.3, Chain 5: 5.9, Chain 6: 8.2dBi / 2TX) |                 |     |

#### For Chain 4 + Chain 5

| Mode                        | Frequency | 6dB Bandwidth (MHz) | Min. Limit (kHz) | Test Result |
|-----------------------------|-----------|---------------------|------------------|-------------|
| 802.11ac<br>MCS0/Nss2 VHT20 | 5745 MHz  | 17.60               | 500              | Complies    |
|                             | 5785 MHz  | 15.60               | 500              | Complies    |
|                             | 5825 MHz  | 17.60               | 500              | Complies    |
| 802.11ac<br>MCS0/Nss2 VHT40 | 5755 MHz  | 35.36               | 500              | Complies    |
|                             | 5795 MHz  | 36.32               | 500              | Complies    |
| 802.11ac<br>MCS0/Nss2 VHT80 | 5775 MHz  | 75.20               | 500              | Complies    |

|               |                                                                                                   |          |     |
|---------------|---------------------------------------------------------------------------------------------------|----------|-----|
| Temperature   | 22°C                                                                                              | Humidity | 63% |
| Test Engineer | Nick Peng, Lucas Huang                                                                            |          |     |
| Test Mode     | Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 4: 8.3, Chain 5: 5.9, Chain 6: 8.2dBi / 3TX) |          |     |

#### For Chain 4 + Chain 5 + Chain 6

| Mode                        | Frequency | 6dB Bandwidth (MHz) | Min. Limit (kHz) | Test Result |
|-----------------------------|-----------|---------------------|------------------|-------------|
| 802.11ac<br>MCS0/Nss2 VHT20 | 5745 MHz  | 17.76               | 500              | Complies    |
|                             | 5785 MHz  | 17.60               | 500              | Complies    |
|                             | 5825 MHz  | 17.60               | 500              | Complies    |
| 802.11ac<br>MCS0/Nss2 VHT40 | 5755 MHz  | 36.32               | 500              | Complies    |
|                             | 5795 MHz  | 36.32               | 500              | Complies    |
| 802.11ac<br>MCS0/Nss2 VHT80 | 5775 MHz  | 76.40               | 500              | Complies    |

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

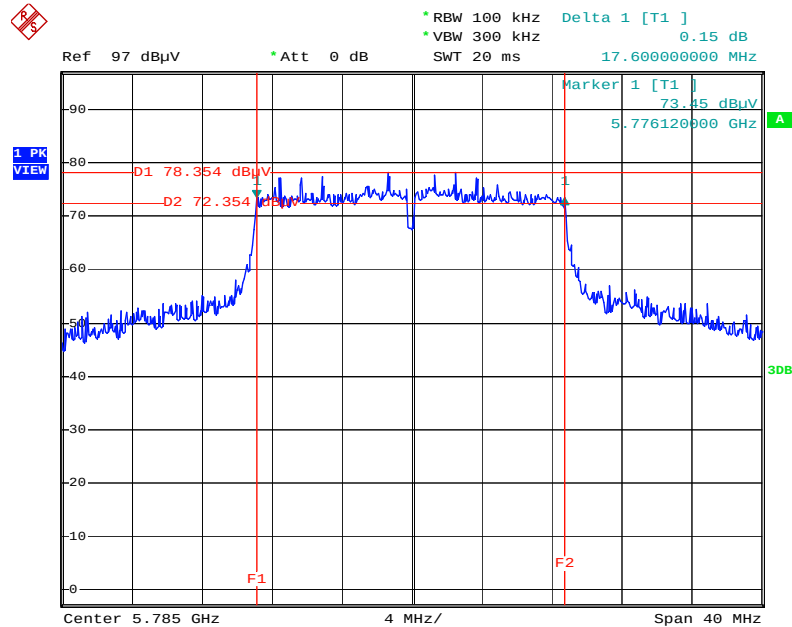
For plots, only the channel with worse result was shown.

For Band 4 (Master and client without radar detection):

<For Non-Beamforming Mode>

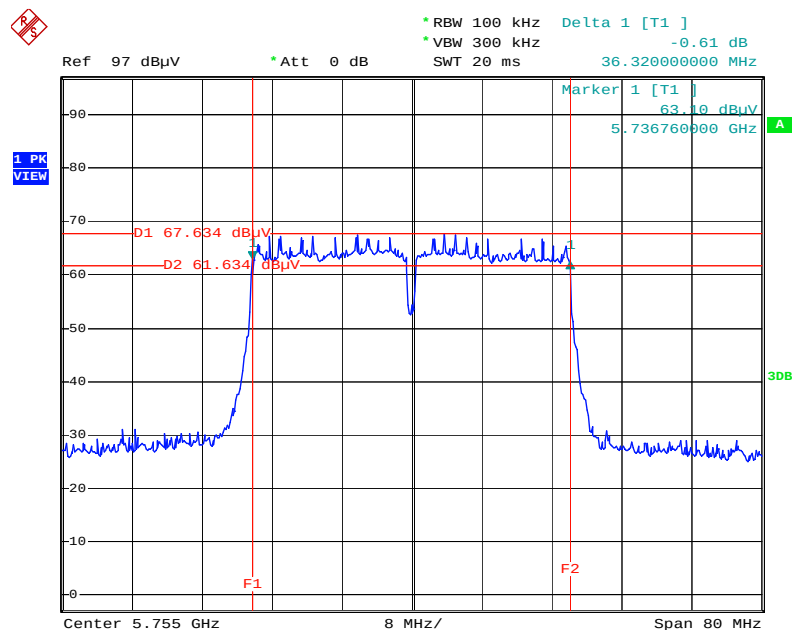
Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 1TX)

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 / 5785 MHz



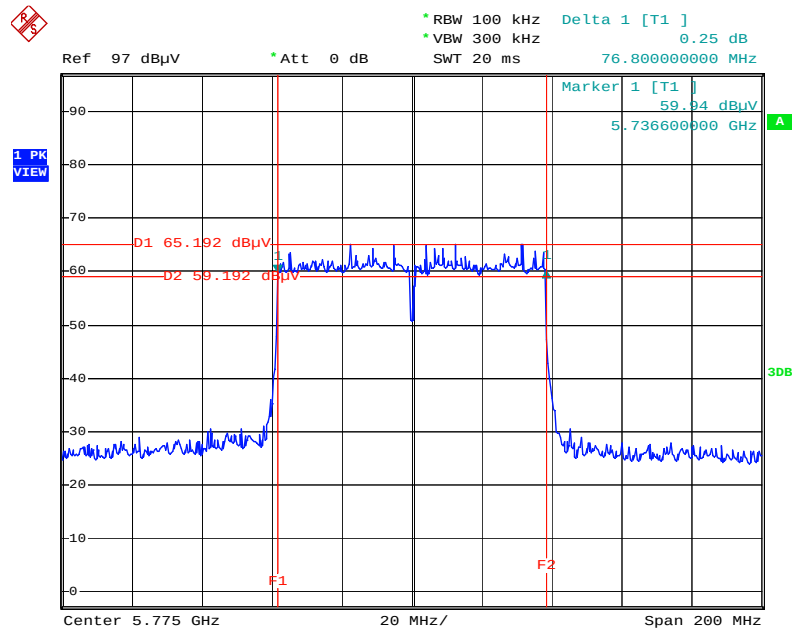
Date: 14.JAN.2015 19:20:30

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 / 5755MHz



Date: 14.JAN.2015 19:25:31

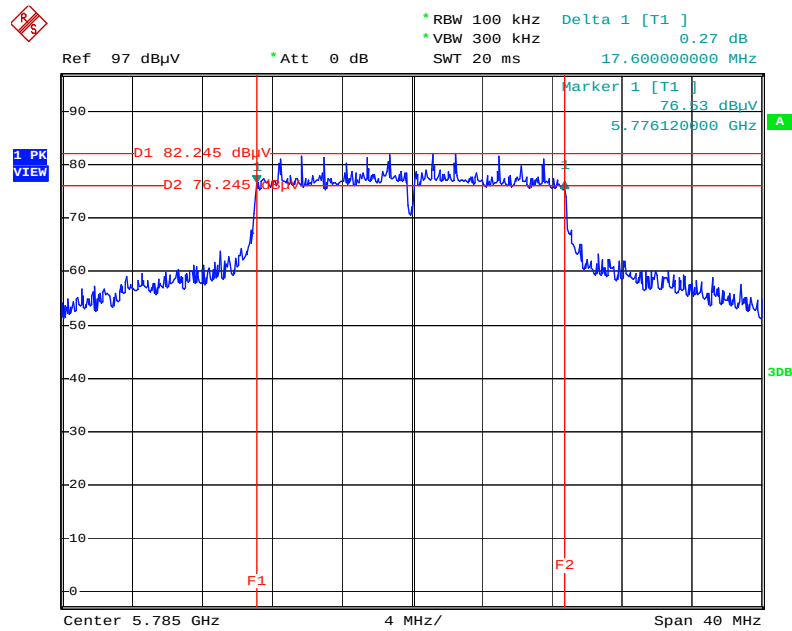
# 6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 5 / 5775 MHz



Date: 14.JAN.2015 19:29:22

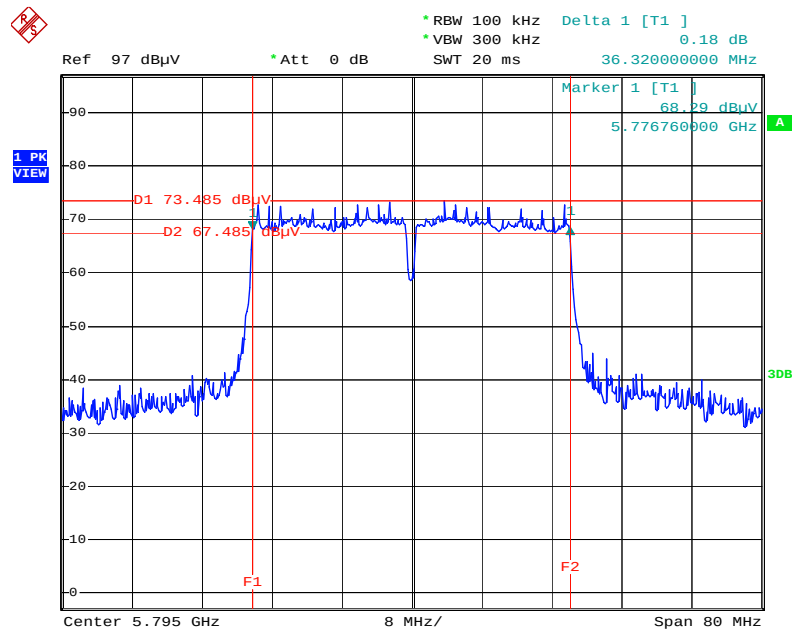
Mode 2: (Ant.8 Panel antenna / 5.1dBi / 1TX)

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 / 5785 MHz



Date: 12.JAN.2015 11:14:37

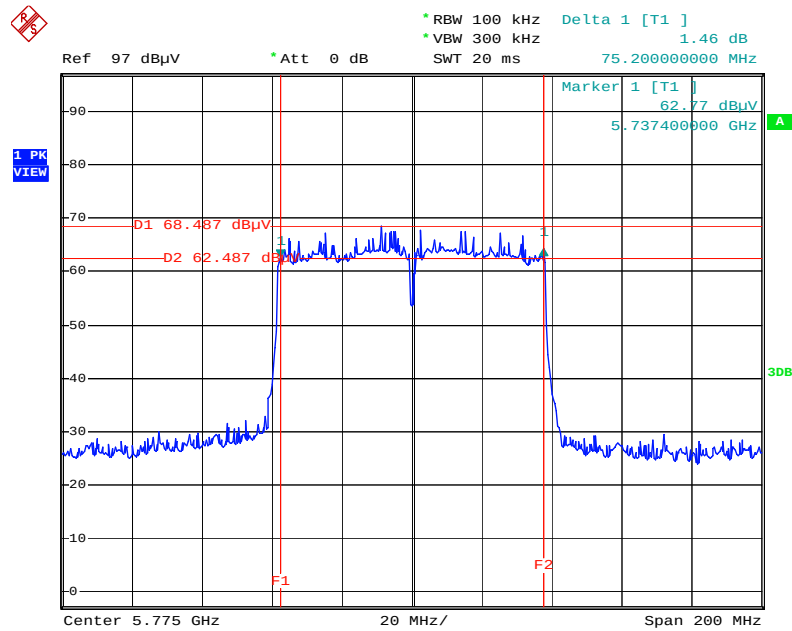
6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 4 / 5795MHz



Date: 12.JAN.2015 12:48:03

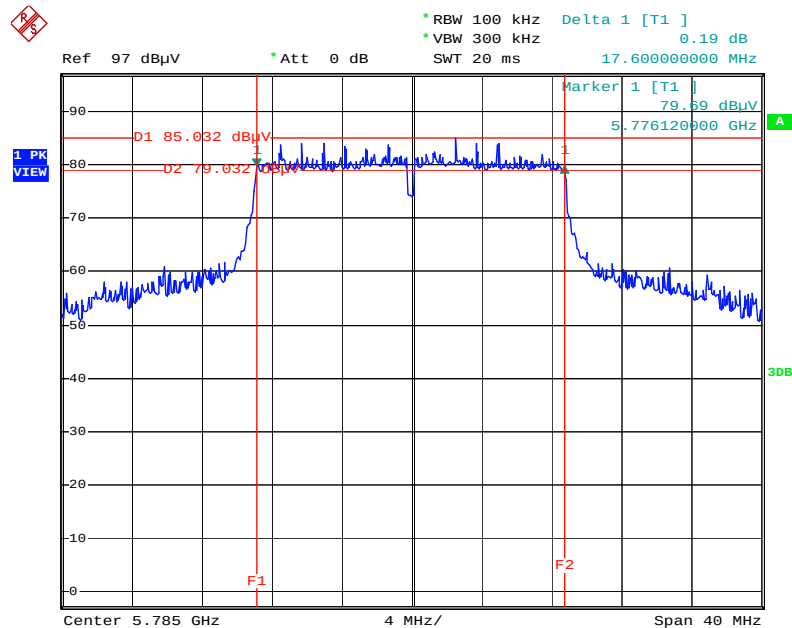


# 6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 4 / 5775 MHz



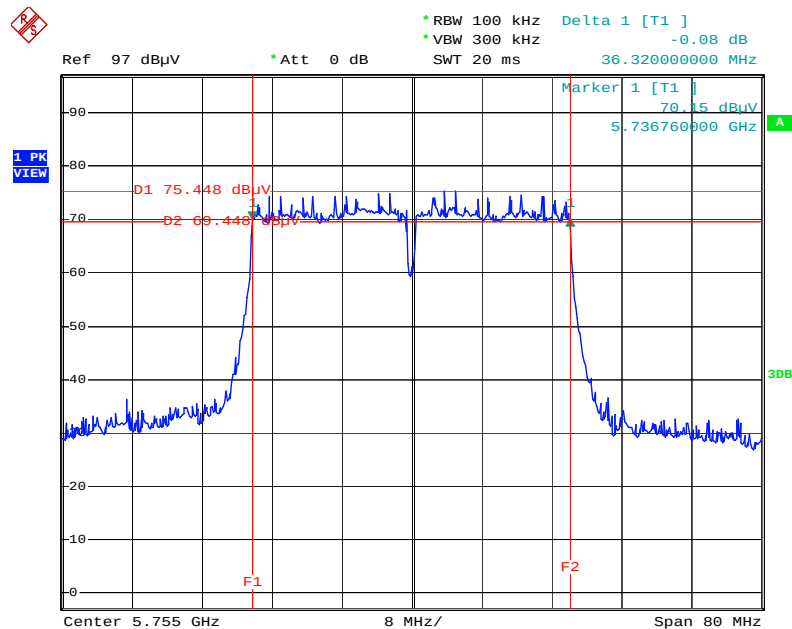
Date: 12.JAN.2015 12:51:05

Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 4: 8.3, Chain 5: 5.9, Chain 6: 8.2dBi / 1TX)  
6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 / 5785 MHz



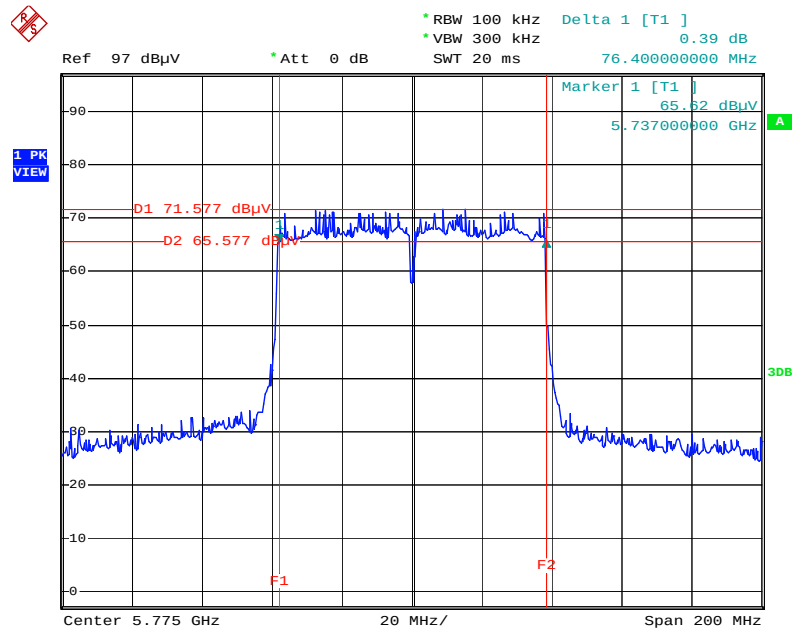
Date: 8.JAN.2015 22:25:26

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 4 / 5755MHz



Date: 8.JAN.2015 22:48:57

# 6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 4 / 5775 MHz

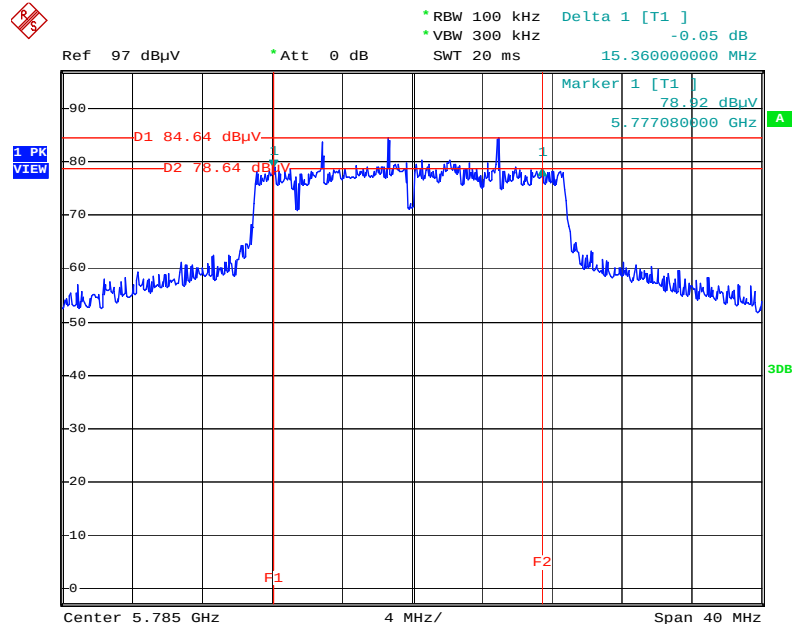


Date: 8.JAN.2015 22:52:36

<For STBC Mode>

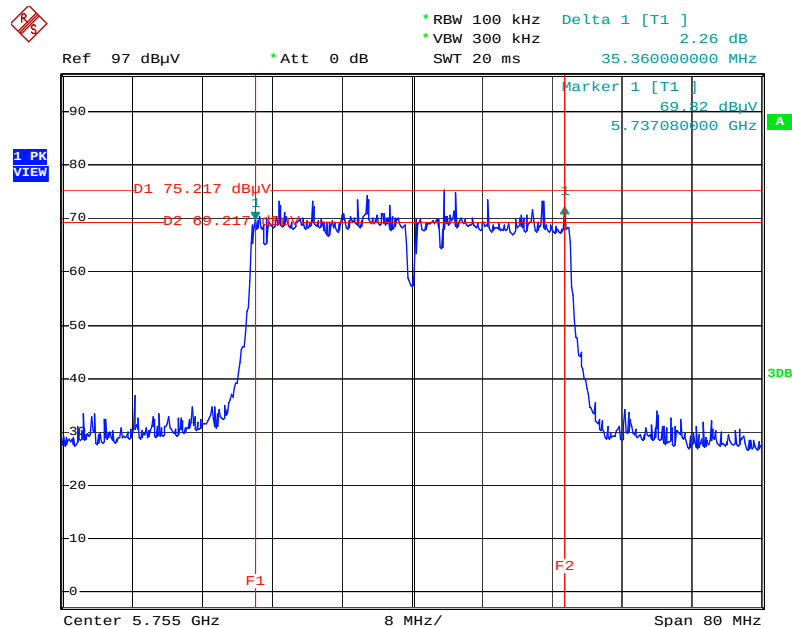
Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 2TX)

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 + Chain 5 / 5785 MHz



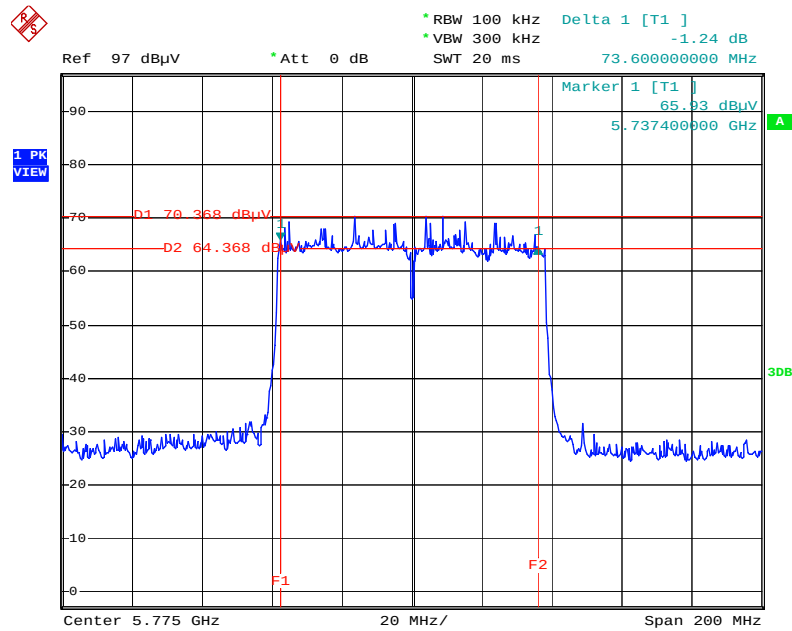
Date: 14.JAN.2015 19:37:08

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 4 + Chain 5 / 5755MHz



Date: 14.JAN.2015 20:01:27

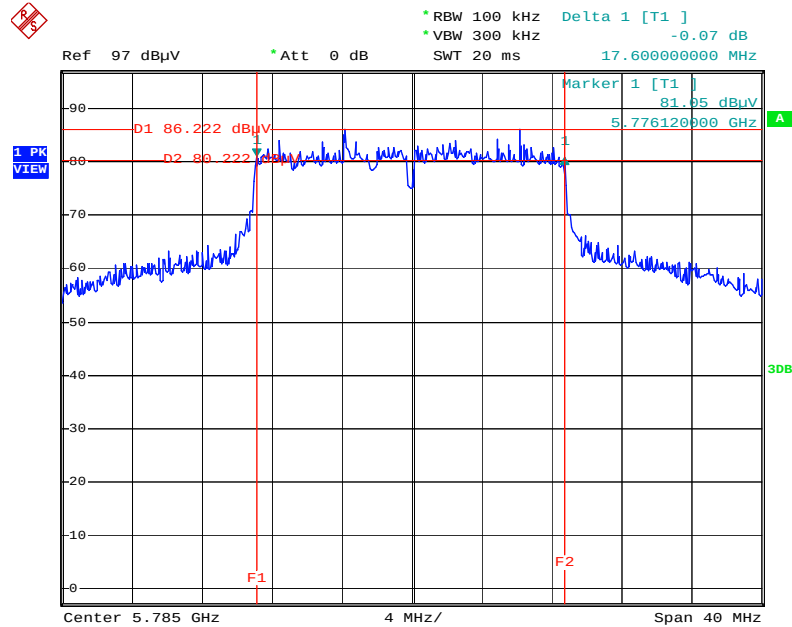
# 6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 4 + Chain 5 / 5775 MHz



Date: 14.JAN.2015 20:05:47

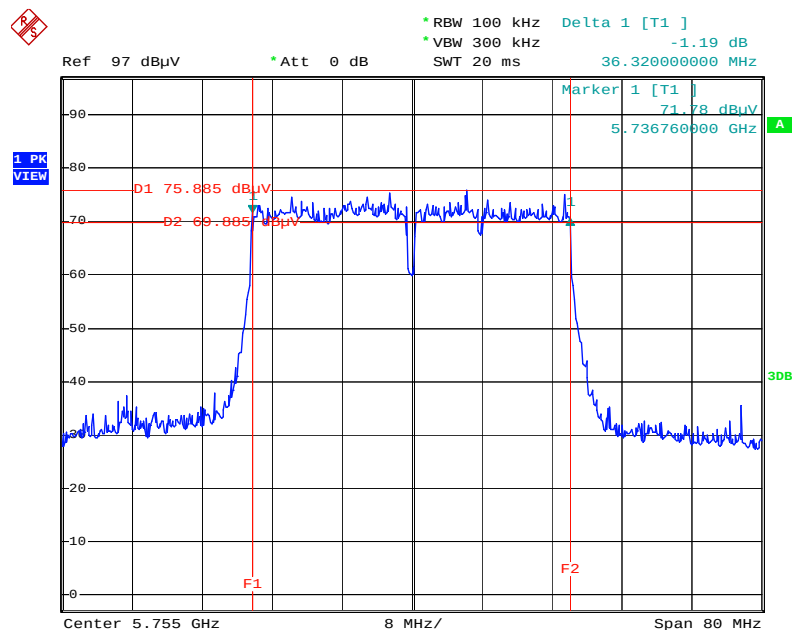
Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 3TX)

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 + Chain 5 + Chain 6 / 5785 MHz



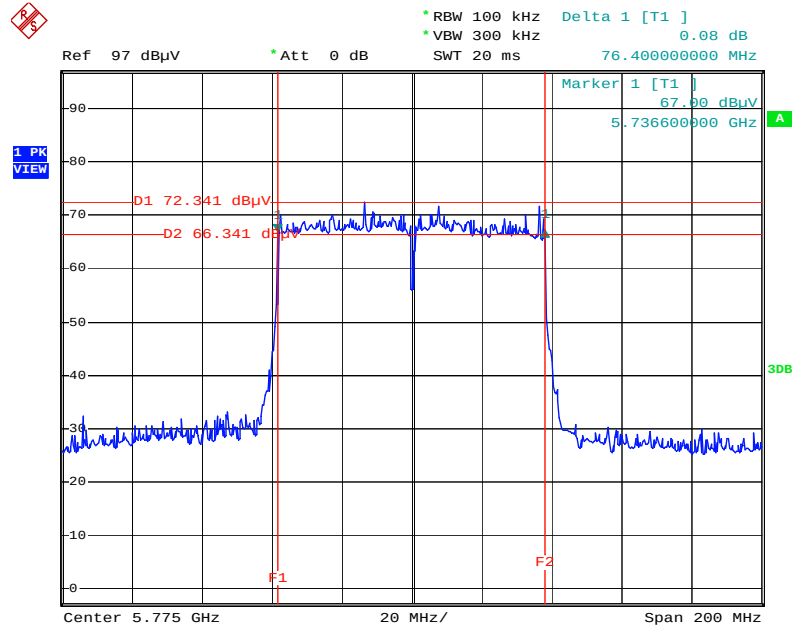
Date: 14.JAN.2015 20:12:36

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 4 + Chain 5 + Chain 6 / 5755MHz



Date: 14.JAN.2015 20:16:34

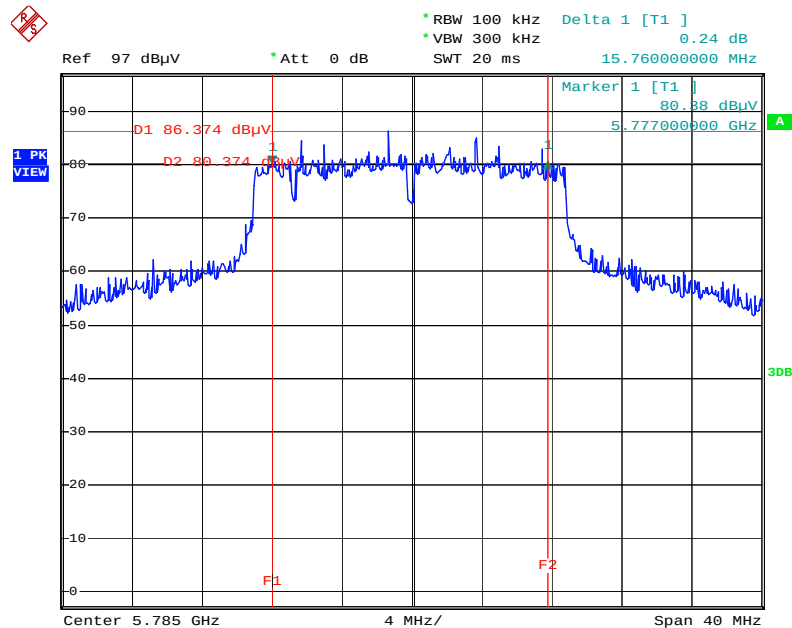
# 6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 4 + Chain 5 + Chain 6 / 5775 MHz



Date: 14.JAN.2015 20:20:34

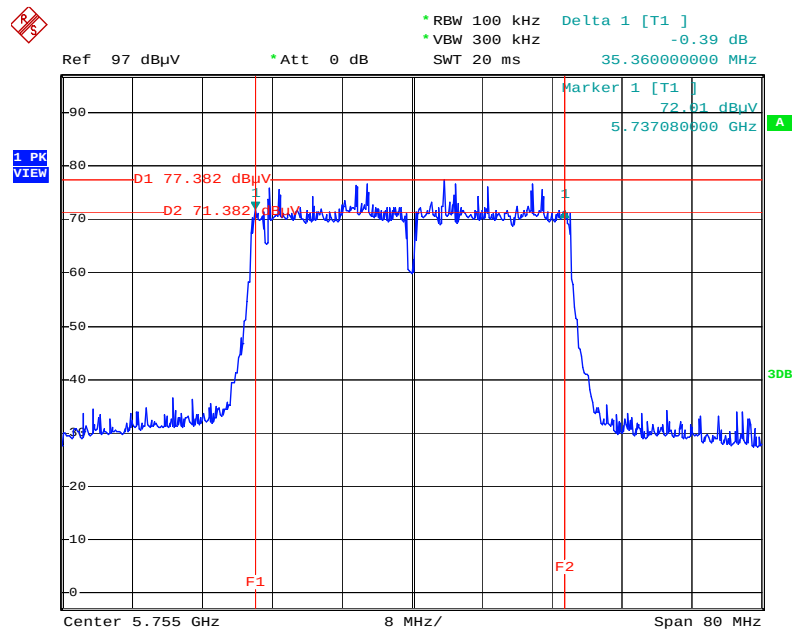
Mode 2: (Ant.8 Panel antenna / 5.1 dBi / 2TX)

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 + Chain 5 / 5785 MHz



Date: 12.JAN.2015 17:32:46

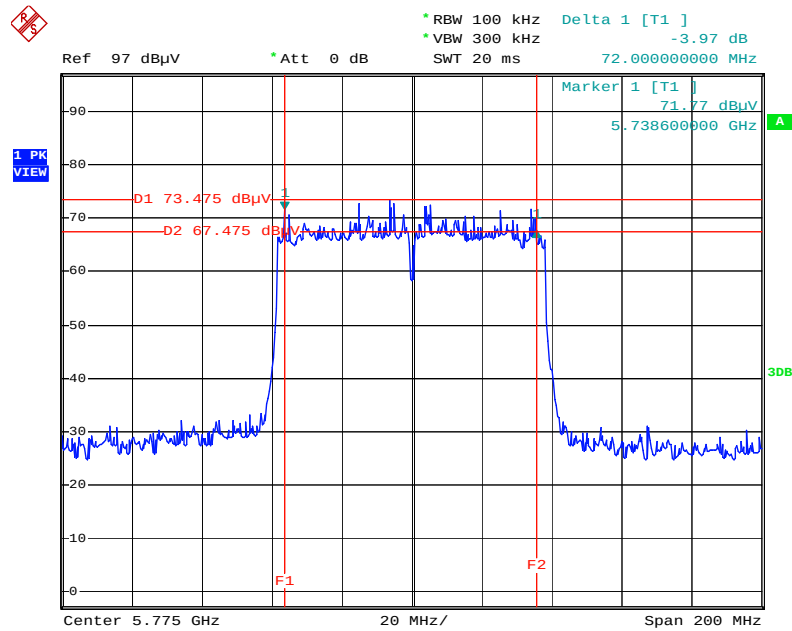
6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 4 + Chain 5 / 5755MHz



Date: 12.JAN.2015 17:36:20



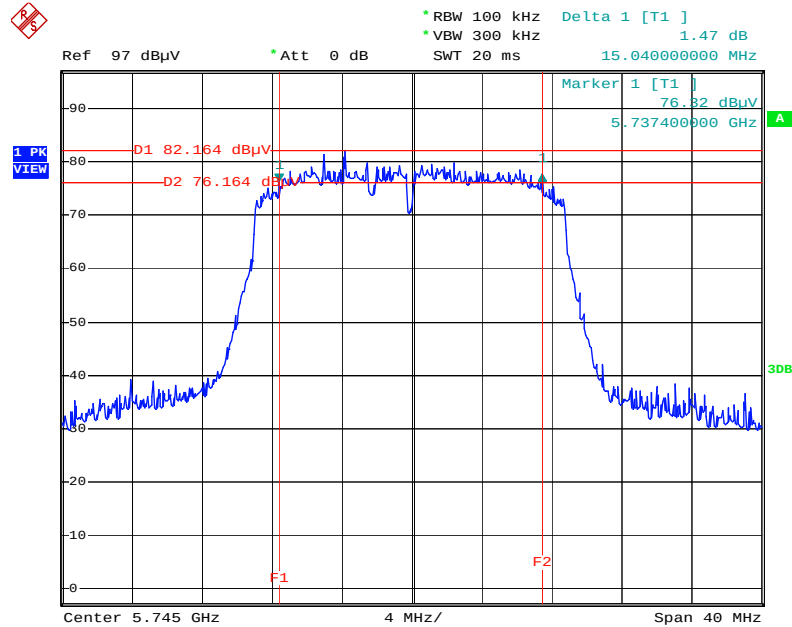
# 6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 4 + Chain 5 / 5775 MHz



Date: 12.JAN.2015 17:41:10

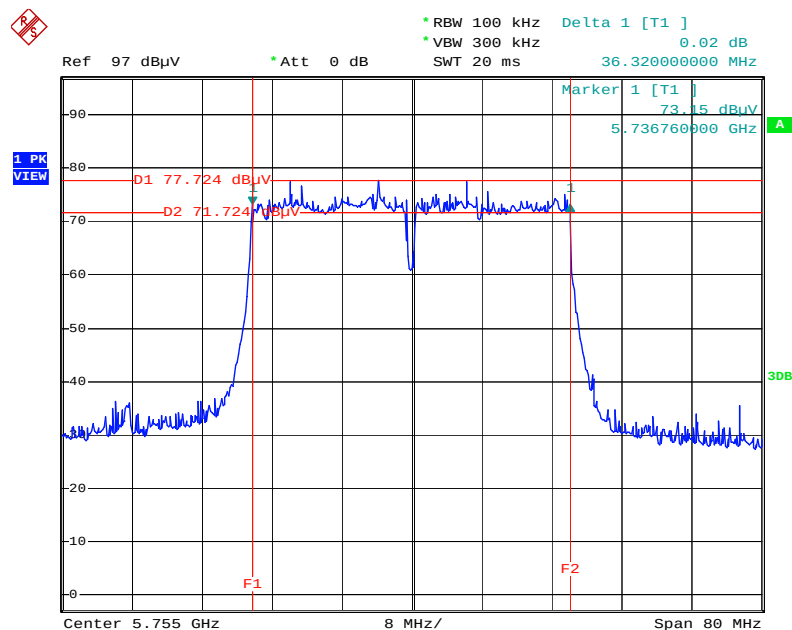
Mode 2: (Ant.8 Panel antenna / 5.1dBi / 3TX)

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 + Chain 5 + Chain 6 / 5745 MHz



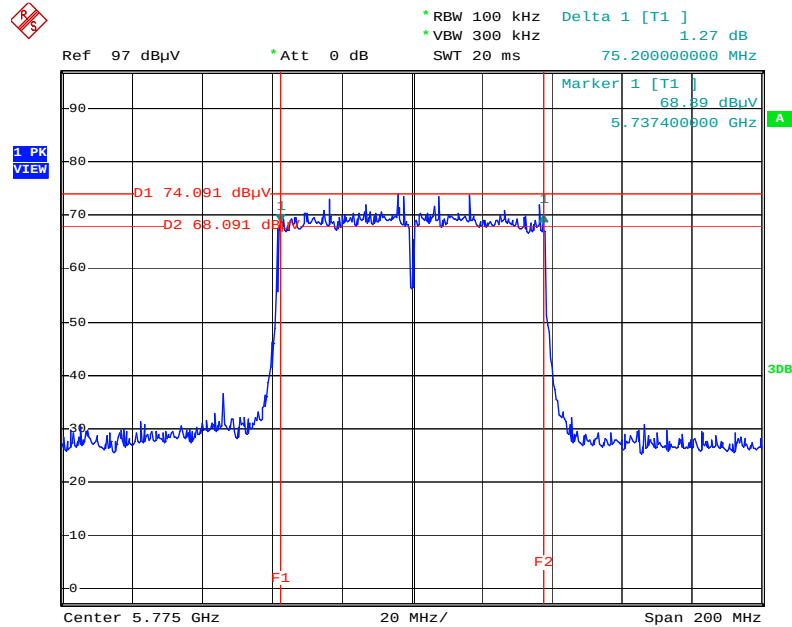
Date: 12.JAN.2015 16:57:32

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 4 + Chain 5 + Chain 6 / 5755MHz



Date: 12.JAN.2015 17:11:24

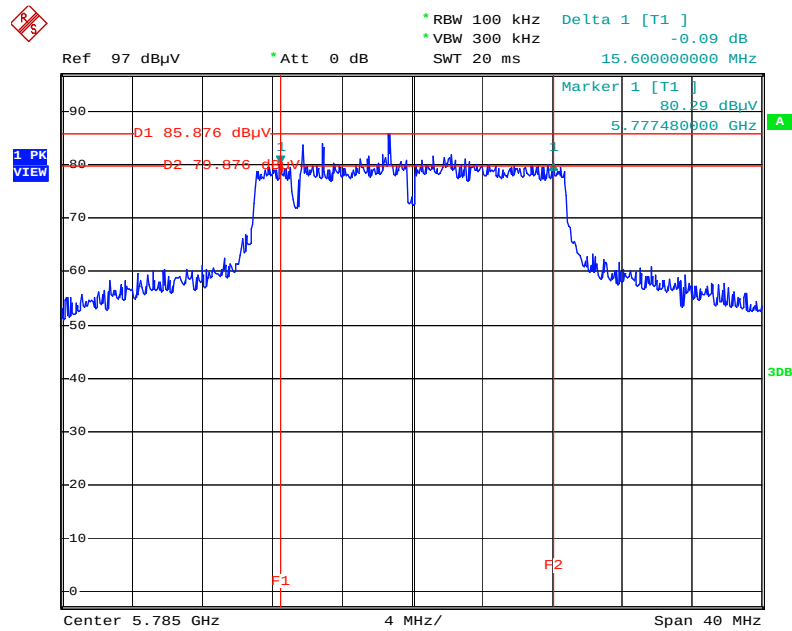
# 6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 4 + Chain 5 + Chain 6 / 5775 MHz



Date: 12.JAN.2015 17:21:59

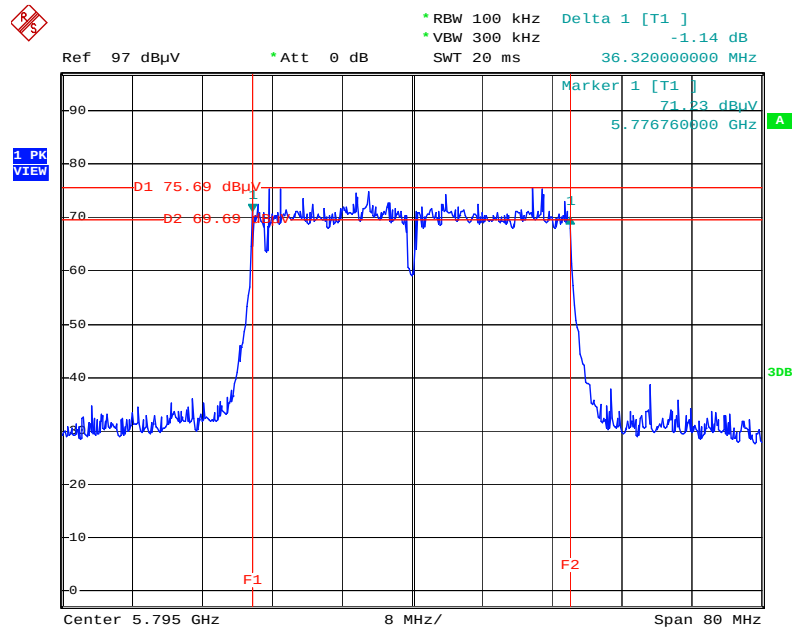
Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 4: 8.3, Chain 5: 5.9, Chain 6: 8.2dBi / 2TX)

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT20 / Chain 4 + Chain 5 / 5785 MHz



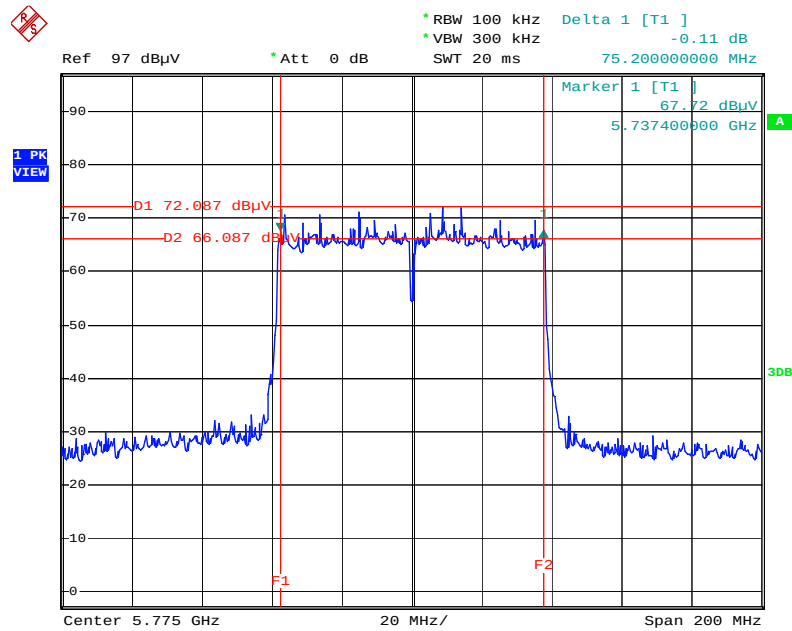
Date: 9.JAN.2015 22:41:46

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT40 / Chain 4 + Chain 5 / 5795MHz



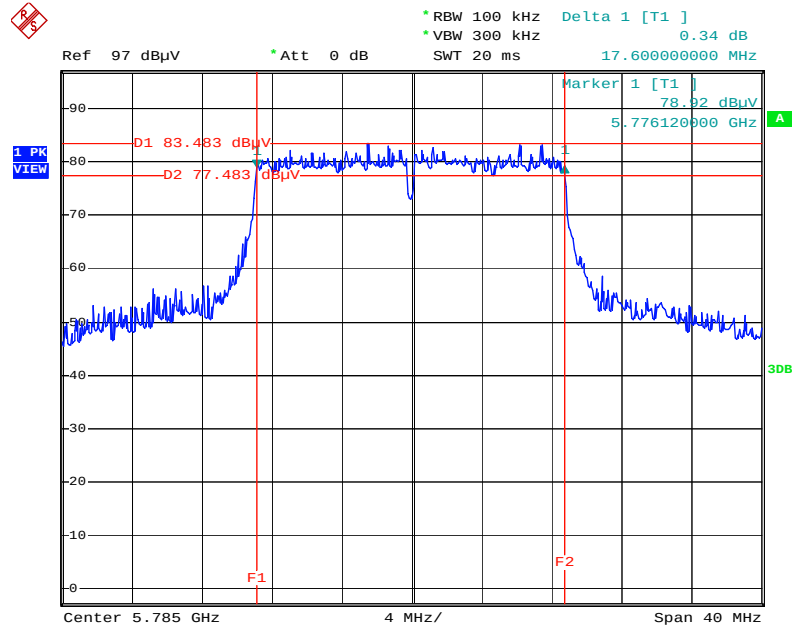
Date: 9.JAN.2015 22:54:23

# 6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT80 / Chain 4 + Chain 5 / 5775 MHz



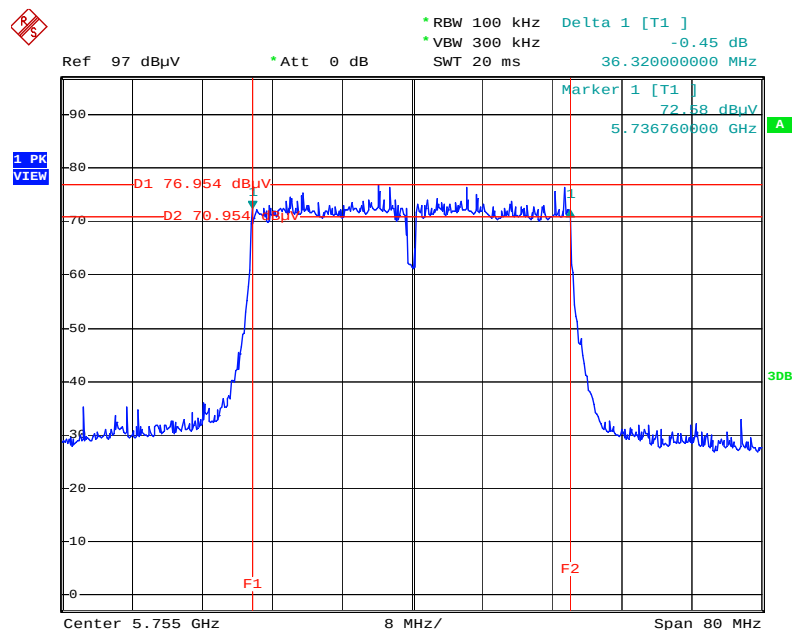
Date: 9.JAN.2015 22:59:21

Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 4: 8.3, Chain 5: 5.9, Chain 6: 8.2dBi / 3TX)  
6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT20 / Chain 4 + Chain 5 + Chain 6 /  
5785 MHz



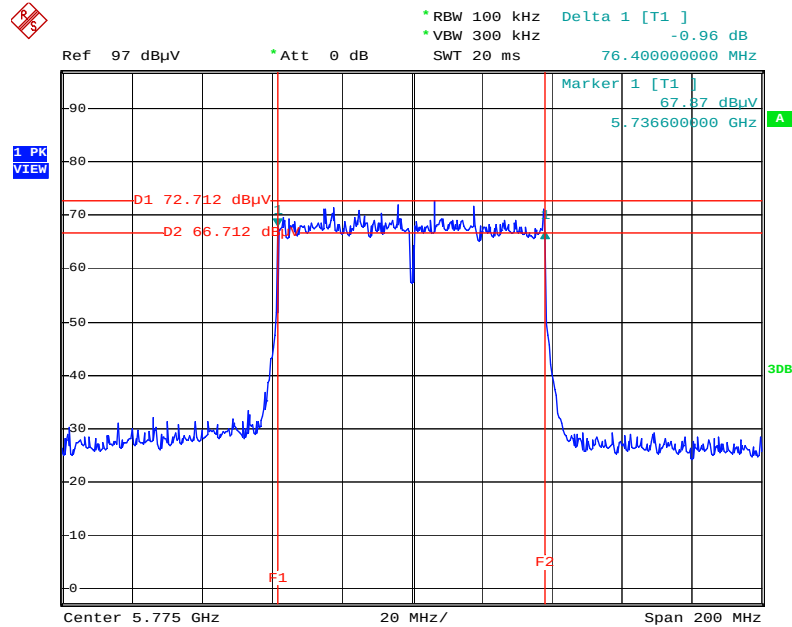
Date: 9.JAN.2015 22:42:56

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT40 / Chain 4 + Chain 5 + Chain 6 /  
5755MHz



Date: 9.JAN.2015 22:52:58

# 6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT80 / Chain 4 + Chain 5 + Chain 6 / 5775 MHz



Date: 9.JAN.2015 23:00:19

#### 4.4. Maximum Conducted Output Power Measurement

##### 4.4.1. Limit

| Frequency Band                      |                                                                        | Limit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------------------------------|------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> | 5.15~5.25 GHz                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                                     | Operating Mode                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                                     | <input checked="" type="checkbox"/> Outdoor access point               | The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm) provided the maximum antenna gain does not exceed 6 dBi. 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. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).                      |
|                                     | <input checked="" type="checkbox"/> Indoor access point                | The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm) provided the maximum antenna gain does not exceed 6 dBi. 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"/> Fixed point-to-point access points | The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm). Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. |
|                                     | <input type="checkbox"/> Mobile and portable client devices            | The maximum conducted output power over the frequency band of operation shall not exceed 250 mW (24dBm) provided the maximum antenna gain does not exceed 6 dBi. 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"/> | 5.725~5.85 GHz | The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm). 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. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. |
|-------------------------------------|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

#### 4.4.2. Measuring Instruments and Setting

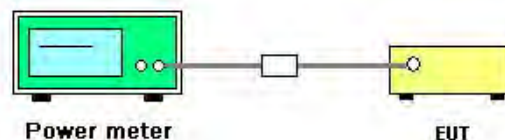
Please refer to section 5 of equipments list in this report. The following table is the setting of the power meter.

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

#### 4.4.3. 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.

#### 4.4.4. 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 Maximum Conducted Output Power

For Band 1 and Band 4 (Master and client without radar detection):

<For Non-Beamforming Mode>

|               |                                               |           |               |
|---------------|-----------------------------------------------|-----------|---------------|
| Temperature   | 22°C                                          | Humidity  | 63%           |
| Test Engineer | Nick Peng                                     | Test Date | Jan. 14, 2015 |
| Test Mode     | Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 1TX) |           |               |

For outdoor use

| Mode                     | Frequency | Conducted Power (dBm) | Max. Limit (dBm) | Result   |
|--------------------------|-----------|-----------------------|------------------|----------|
|                          |           | Chain 5               |                  |          |
| 802.11a                  | 5180 MHz  | 15.20                 | 28.70            | Complies |
|                          | 5200 MHz  | 15.25                 | 28.70            | Complies |
|                          | 5240 MHz  | 15.16                 | 28.70            | Complies |
|                          | 5745 MHz  | 16.38                 | 28.70            | Complies |
|                          | 5785 MHz  | 21.97                 | 28.70            | Complies |
|                          | 5825 MHz  | 17.19                 | 28.70            | Complies |
| 802.11n MCS0 HT20        | 5180 MHz  | 15.22                 | 28.70            | Complies |
|                          | 5200 MHz  | 15.26                 | 28.70            | Complies |
|                          | 5240 MHz  | 15.17                 | 28.70            | Complies |
|                          | 5745 MHz  | 16.29                 | 28.70            | Complies |
|                          | 5785 MHz  | 21.95                 | 28.70            | Complies |
|                          | 5825 MHz  | 17.21                 | 28.70            | Complies |
| 802.11n MCS0 HT40        | 5190 MHz  | 15.29                 | 28.70            | Complies |
|                          | 5230 MHz  | 15.30                 | 28.70            | Complies |
|                          | 5755 MHz  | 14.91                 | 28.70            | Complies |
|                          | 5795 MHz  | 17.94                 | 28.70            | Complies |
| 802.11ac MCS0/Nss1 VHT20 | 5180 MHz  | 15.19                 | 28.70            | Complies |
|                          | 5200 MHz  | 15.29                 | 28.70            | Complies |
|                          | 5240 MHz  | 15.16                 | 28.70            | Complies |
|                          | 5745 MHz  | 16.24                 | 28.70            | Complies |
|                          | 5785 MHz  | 21.98                 | 28.70            | Complies |
|                          | 5825 MHz  | 17.10                 | 28.70            | Complies |

|                             |          |       |       |          |
|-----------------------------|----------|-------|-------|----------|
| 802.11ac MCS0/Nss1<br>VHT40 | 5190 MHz | 15.28 | 28.70 | Complies |
|                             | 5230 MHz | 15.25 | 28.70 | Complies |
|                             | 5755 MHz | 14.91 | 28.70 | Complies |
|                             | 5795 MHz | 17.91 | 28.70 | Complies |
| 802.11ac MCS0/Nss1<br>VHT80 | 5210 MHz | 15.27 | 28.70 | Complies |
|                             | 5775 MHz | 16.60 | 28.70 | Complies |

Note: Antenna gain = 7.30dBi > 6dBi, So Band1, 4 Limit =  $30 - (7.30 - 6) = 28.70 \text{ dBm/MHz}$

|               |                                               |           |               |
|---------------|-----------------------------------------------|-----------|---------------|
| Temperature   | 22°C                                          | Humidity  | 63%           |
| Test Engineer | Nick Peng                                     | Test Date | Jan. 14, 2015 |
| Test Mode     | Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 2TX) |           |               |

For outdoor use

| Mode                           | Frequency | Conducted Power (dBm) |         |       | Max. Limit (dBm) | Result   |
|--------------------------------|-----------|-----------------------|---------|-------|------------------|----------|
|                                |           | Chain 4               | Chain 5 | Total |                  |          |
| 802.11a                        | 5180 MHz  | 12.00                 | 12.43   | 15.23 | 28.70            | Complies |
|                                | 5200 MHz  | 12.11                 | 12.45   | 15.29 | 28.70            | Complies |
|                                | 5240 MHz  | 12.13                 | 12.40   | 15.28 | 28.70            | Complies |
|                                | 5745 MHz  | 16.01                 | 16.49   | 19.27 | 28.70            | Complies |
|                                | 5785 MHz  | 21.26                 | 21.64   | 24.46 | 28.70            | Complies |
|                                | 5825 MHz  | 21.77                 | 21.93   | 24.86 | 28.70            | Complies |
| 802.11n<br>MCS0 HT20           | 5180 MHz  | 12.01                 | 12.44   | 15.24 | 28.70            | Complies |
|                                | 5200 MHz  | 12.12                 | 12.46   | 15.30 | 28.70            | Complies |
|                                | 5240 MHz  | 12.13                 | 12.41   | 15.28 | 28.70            | Complies |
|                                | 5745 MHz  | 15.93                 | 16.49   | 19.23 | 28.70            | Complies |
|                                | 5785 MHz  | 21.16                 | 21.55   | 24.37 | 28.70            | Complies |
|                                | 5825 MHz  | 21.82                 | 21.97   | 24.91 | 28.70            | Complies |
| 802.11n<br>MCS0 HT40           | 5190 MHz  | 11.99                 | 12.26   | 15.14 | 28.70            | Complies |
|                                | 5230 MHz  | 12.07                 | 12.35   | 15.22 | 28.70            | Complies |
|                                | 5755 MHz  | 15.77                 | 16.24   | 19.02 | 28.70            | Complies |
|                                | 5795 MHz  | 16.88                 | 16.89   | 19.90 | 28.70            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT20 | 5180 MHz  | 12.01                 | 12.44   | 15.24 | 28.70            | Complies |
|                                | 5200 MHz  | 12.12                 | 12.46   | 15.30 | 28.70            | Complies |
|                                | 5240 MHz  | 12.13                 | 12.41   | 15.28 | 28.70            | Complies |
|                                | 5745 MHz  | 15.98                 | 16.43   | 19.22 | 28.70            | Complies |
|                                | 5785 MHz  | 21.22                 | 21.48   | 24.36 | 28.70            | Complies |
|                                | 5825 MHz  | 21.76                 | 21.94   | 24.86 | 28.70            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT40 | 5190 MHz  | 12.06                 | 12.26   | 15.17 | 28.70            | Complies |
|                                | 5230 MHz  | 12.23                 | 12.36   | 15.31 | 28.70            | Complies |
|                                | 5755 MHz  | 15.62                 | 16.08   | 18.87 | 28.70            | Complies |
|                                | 5795 MHz  | 16.84                 | 16.99   | 19.93 | 28.70            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT80 | 5210 MHz  | 11.99                 | 12.54   | 15.28 | 28.70            | Complies |
|                                | 5775 MHz  | 14.62                 | 15.12   | 17.89 | 28.70            | Complies |

Note: Antenna gain = 7.30dBi > 6dBi, So Band1, 4 Limit = 30-(7.30-6)=28.70dBm/MHz

|               |                                               |           |               |
|---------------|-----------------------------------------------|-----------|---------------|
| Temperature   | 22°C                                          | Humidity  | 63%           |
| Test Engineer | Nick Peng                                     | Test Date | Jan. 14, 2015 |
| Test Mode     | Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 3TX) |           |               |

For outdoor use

| Mode                           | Frequency | Conducted Power (dBm) |         |         |       | Max. Limit (dBm) | Result   |
|--------------------------------|-----------|-----------------------|---------|---------|-------|------------------|----------|
|                                |           | Chain 4               | Chain 5 | Chain 6 | Total |                  |          |
| 802.11a                        | 5180 MHz  | 10.05                 | 10.61   | 10.34   | 15.11 | 28.70            | Complies |
|                                | 5200 MHz  | 10.28                 | 10.61   | 10.43   | 15.21 | 28.70            | Complies |
|                                | 5240 MHz  | 10.22                 | 10.80   | 10.13   | 15.16 | 28.70            | Complies |
|                                | 5745 MHz  | 15.37                 | 16.04   | 15.79   | 20.51 | 28.70            | Complies |
|                                | 5785 MHz  | 19.02                 | 19.33   | 19.38   | 24.02 | 28.70            | Complies |
|                                | 5825 MHz  | 15.81                 | 16.13   | 15.98   | 20.75 | 28.70            | Complies |
| 802.11n<br>MCS0 HT20           | 5180 MHz  | 10.06                 | 10.66   | 10.38   | 15.14 | 28.70            | Complies |
|                                | 5200 MHz  | 10.33                 | 10.60   | 10.22   | 15.16 | 28.70            | Complies |
|                                | 5240 MHz  | 10.25                 | 10.82   | 10.20   | 15.20 | 28.70            | Complies |
|                                | 5745 MHz  | 15.53                 | 16.05   | 15.93   | 20.61 | 28.70            | Complies |
|                                | 5785 MHz  | 18.79                 | 19.18   | 19.34   | 23.88 | 28.70            | Complies |
|                                | 5825 MHz  | 15.73                 | 16.11   | 16.15   | 20.77 | 28.70            | Complies |
| 802.11n<br>MCS0 HT40           | 5190 MHz  | 10.12                 | 10.83   | 10.55   | 15.28 | 28.70            | Complies |
|                                | 5230 MHz  | 10.07                 | 10.94   | 10.11   | 15.16 | 28.70            | Complies |
|                                | 5755 MHz  | 14.42                 | 14.43   | 14.24   | 19.14 | 28.70            | Complies |
|                                | 5795 MHz  | 16.93                 | 17.13   | 17.24   | 21.87 | 28.70            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT20 | 5180 MHz  | 10.04                 | 10.63   | 10.43   | 15.14 | 28.70            | Complies |
|                                | 5200 MHz  | 10.26                 | 10.60   | 10.25   | 15.14 | 28.70            | Complies |
|                                | 5240 MHz  | 10.23                 | 10.81   | 10.20   | 15.19 | 28.70            | Complies |
|                                | 5745 MHz  | 15.75                 | 16.03   | 15.67   | 20.59 | 28.70            | Complies |
|                                | 5785 MHz  | 18.97                 | 19.36   | 19.42   | 24.03 | 28.70            | Complies |
|                                | 5825 MHz  | 15.81                 | 16.17   | 16.16   | 20.82 | 28.70            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT40 | 5190 MHz  | 10.05                 | 10.85   | 10.44   | 15.23 | 28.70            | Complies |
|                                | 5230 MHz  | 10.08                 | 11.01   | 10.31   | 15.26 | 28.70            | Complies |
|                                | 5755 MHz  | 14.09                 | 14.50   | 14.28   | 19.06 | 28.70            | Complies |
|                                | 5795 MHz  | 17.04                 | 17.28   | 17.23   | 21.96 | 28.70            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT80 | 5210 MHz  | 10.33                 | 10.67   | 10.53   | 15.28 | 28.70            | Complies |
|                                | 5775 MHz  | 14.06                 | 14.66   | 14.71   | 19.26 | 28.70            | Complies |

Note: Antenna gain = 7.30dBi > 6dBi, So Band1, 4 Limit = 30 - (7.30 - 6) = 28.70dBm/MHz

|               |                                               |           |               |
|---------------|-----------------------------------------------|-----------|---------------|
| Temperature   | 22°C                                          | Humidity  | 63%           |
| Test Engineer | Nick Peng                                     | Test Date | Mar. 02, 2015 |
| Test Mode     | Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 1TX) |           |               |

#### For indoor use

| Mode                     | Frequency | Conducted Power (dBm) | Max. Limit (dBm) | Result   |
|--------------------------|-----------|-----------------------|------------------|----------|
|                          |           | Chain 5               |                  |          |
| 802.11a                  | 5180 MHz  | 19.94                 | 28.70            | Complies |
|                          | 5200 MHz  | 21.98                 | 28.70            | Complies |
|                          | 5240 MHz  | 21.97                 | 28.70            | Complies |
| 802.11n MCS0 HT20        | 5180 MHz  | 19.92                 | 28.70            | Complies |
|                          | 5200 MHz  | 21.96                 | 28.70            | Complies |
|                          | 5240 MHz  | 21.96                 | 28.70            | Complies |
| 802.11n MCS0 HT40        | 5190 MHz  | 18.12                 | 28.70            | Complies |
|                          | 5230 MHz  | 21.96                 | 28.70            | Complies |
| 802.11ac MCS0/Nss1 VHT20 | 5180 MHz  | 19.72                 | 28.70            | Complies |
|                          | 5200 MHz  | 21.91                 | 28.70            | Complies |
|                          | 5240 MHz  | 21.96                 | 28.70            | Complies |
| 802.11ac MCS0/Nss1 VHT40 | 5190 MHz  | 18.21                 | 28.70            | Complies |
|                          | 5230 MHz  | 21.94                 | 28.70            | Complies |
| 802.11ac MCS0/Nss1 VHT80 | 5210 MHz  | 17.26                 | 28.70            | Complies |

Note: Antenna gain=7.30dBi >6dBi, So Band1 Limit =30-(7.30-6)=28.70dBm/MHz

|               |                                               |           |               |
|---------------|-----------------------------------------------|-----------|---------------|
| Temperature   | 22°C                                          | Humidity  | 63%           |
| Test Engineer | Nick Peng                                     | Test Date | Mar. 02, 2015 |
| Test Mode     | Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 2TX) |           |               |

## For indoor use

| Mode                           | Frequency | Conducted Power (dBm) |         |       | Max. Limit (dBm) | Result   |
|--------------------------------|-----------|-----------------------|---------|-------|------------------|----------|
|                                |           | Chain 4               | Chain 5 | Total |                  |          |
| 802.11a                        | 5180 MHz  | 19.34                 | 19.58   | 22.47 | 28.70            | Complies |
|                                | 5200 MHz  | 21.67                 | 21.98   | 24.84 | 28.70            | Complies |
|                                | 5240 MHz  | 20.02                 | 20.45   | 23.25 | 28.70            | Complies |
| 802.11n<br>MCS0 HT20           | 5180 MHz  | 19.17                 | 19.68   | 22.44 | 28.70            | Complies |
|                                | 5200 MHz  | 21.85                 | 21.96   | 24.92 | 28.70            | Complies |
|                                | 5240 MHz  | 19.94                 | 20.46   | 23.22 | 28.70            | Complies |
| 802.11n<br>MCS0 HT40           | 5190 MHz  | 16.55                 | 16.96   | 19.77 | 28.70            | Complies |
|                                | 5230 MHz  | 20.33                 | 20.61   | 23.48 | 28.70            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT20 | 5180 MHz  | 19.40                 | 19.64   | 22.53 | 28.70            | Complies |
|                                | 5200 MHz  | 21.73                 | 21.91   | 24.83 | 28.70            | Complies |
|                                | 5240 MHz  | 19.88                 | 20.46   | 23.19 | 28.70            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT40 | 5190 MHz  | 16.67                 | 16.92   | 19.81 | 28.70            | Complies |
|                                | 5230 MHz  | 20.31                 | 20.58   | 23.46 | 28.70            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT80 | 5210 MHz  | 16.48                 | 16.92   | 19.72 | 28.70            | Complies |

Note: Antenna gain = 7.30dBi > 6dBi, So Band1 Limit = 30 - (7.30 - 6) = 28.70dBm/MHz

|               |                                               |           |               |
|---------------|-----------------------------------------------|-----------|---------------|
| Temperature   | 22°C                                          | Humidity  | 63%           |
| Test Engineer | Nick Peng                                     | Test Date | Mar. 02, 2015 |
| Test Mode     | Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 3TX) |           |               |

## For indoor use

| Mode                           | Frequency | Conducted Power (dBm) |         |         |       | Max. Limit (dBm) | Result   |
|--------------------------------|-----------|-----------------------|---------|---------|-------|------------------|----------|
|                                |           | Chain 4               | Chain 5 | Chain 6 | Total |                  |          |
| 802.11a                        | 5180 MHz  | 18.01                 | 18.32   | 18.46   | 23.04 | 28.70            | Complies |
|                                | 5200 MHz  | 18.85                 | 19.14   | 19.18   | 23.83 | 28.70            | Complies |
|                                | 5240 MHz  | 18.81                 | 19.19   | 19.17   | 23.83 | 28.70            | Complies |
| 802.11n<br>MCS0 HT20           | 5180 MHz  | 17.86                 | 18.37   | 18.42   | 23.00 | 28.70            | Complies |
|                                | 5200 MHz  | 18.88                 | 19.11   | 19.21   | 23.84 | 28.70            | Complies |
|                                | 5240 MHz  | 18.81                 | 19.16   | 19.19   | 23.83 | 28.70            | Complies |
| 802.11n<br>MCS0 HT40           | 5190 MHz  | 15.58                 | 15.58   | 15.21   | 20.23 | 28.70            | Complies |
|                                | 5230 MHz  | 19.80                 | 19.74   | 20.13   | 24.66 | 28.70            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT20 | 5180 MHz  | 17.78                 | 18.32   | 18.38   | 22.94 | 28.70            | Complies |
|                                | 5200 MHz  | 18.81                 | 19.11   | 19.19   | 23.81 | 28.70            | Complies |
|                                | 5240 MHz  | 18.63                 | 19.17   | 19.20   | 23.78 | 28.70            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT40 | 5190 MHz  | 15.32                 | 15.55   | 15.05   | 20.08 | 28.70            | Complies |
|                                | 5230 MHz  | 19.46                 | 19.83   | 20.14   | 24.59 | 28.70            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT80 | 5210 MHz  | 15.62                 | 16.21   | 15.67   | 20.61 | 28.70            | Complies |

Note: Antenna gain = 7.30dBi > 6dBi, So Band1 Limit =  $30 - (7.30 - 6) = 28.70 \text{ dBm/MHz}$



|               |                                               |           |               |
|---------------|-----------------------------------------------|-----------|---------------|
| Temperature   | 22°C                                          | Humidity  | 63%           |
| Test Engineer | Nick Peng                                     | Test Date | Jan. 12, 2015 |
| Test Mode     | Mode 2: (Ant.8 Panel antenna / 5.1 dBi / 1TX) |           |               |

| Mode                     | Frequency | Conducted Power (dBm) | Max. Limit (dBm) | Result   |
|--------------------------|-----------|-----------------------|------------------|----------|
|                          |           | Chain 4               |                  |          |
| 802.11a                  | 5180 MHz  | 20.22                 | 30.00            | Complies |
|                          | 5200 MHz  | 21.91                 | 30.00            | Complies |
|                          | 5240 MHz  | 21.56                 | 30.00            | Complies |
|                          | 5745 MHz  | 17.68                 | 30.00            | Complies |
|                          | 5785 MHz  | 21.96                 | 30.00            | Complies |
|                          | 5825 MHz  | 17.76                 | 30.00            | Complies |
| 802.11n MCS0 HT20        | 5180 MHz  | 20.12                 | 30.00            | Complies |
|                          | 5200 MHz  | 21.89                 | 30.00            | Complies |
|                          | 5240 MHz  | 21.55                 | 30.00            | Complies |
|                          | 5745 MHz  | 17.58                 | 30.00            | Complies |
|                          | 5785 MHz  | 21.97                 | 30.00            | Complies |
|                          | 5825 MHz  | 17.53                 | 30.00            | Complies |
| 802.11n MCS0 HT40        | 5190 MHz  | 17.85                 | 30.00            | Complies |
|                          | 5230 MHz  | 21.85                 | 30.00            | Complies |
|                          | 5755 MHz  | 15.81                 | 30.00            | Complies |
|                          | 5795 MHz  | 18.51                 | 30.00            | Complies |
| 802.11ac MCS0/Nss1 VHT20 | 5180 MHz  | 20.23                 | 30.00            | Complies |
|                          | 5200 MHz  | 21.88                 | 30.00            | Complies |
|                          | 5240 MHz  | 21.58                 | 30.00            | Complies |
|                          | 5745 MHz  | 17.47                 | 30.00            | Complies |
|                          | 5785 MHz  | 21.92                 | 30.00            | Complies |
|                          | 5825 MHz  | 17.67                 | 30.00            | Complies |
| 802.11ac MCS0/Nss1 VHT40 | 5190 MHz  | 18.01                 | 30.00            | Complies |
|                          | 5230 MHz  | 21.84                 | 30.00            | Complies |
|                          | 5755 MHz  | 16.01                 | 30.00            | Complies |
|                          | 5795 MHz  | 18.34                 | 30.00            | Complies |
| 802.11ac MCS0/Nss1 VHT80 | 5210 MHz  | 17.03                 | 30.00            | Complies |
|                          | 5775 MHz  | 16.15                 | 30.00            | Complies |

|               |                                               |           |               |
|---------------|-----------------------------------------------|-----------|---------------|
| Temperature   | 22°C                                          | Humidity  | 63%           |
| Test Engineer | Nick Peng                                     | Test Date | Jan. 12, 2015 |
| Test Mode     | Mode 2: (Ant.8 Panel antenna / 5.1 dBi / 2TX) |           |               |

| Mode                           | Frequency | Conducted Power (dBm) |         |       | Max. Limit (dBm) | Result   |
|--------------------------------|-----------|-----------------------|---------|-------|------------------|----------|
|                                |           | Chain 4               | Chain 5 | Total |                  |          |
| 802.11a                        | 5180 MHz  | 19.22                 | 19.61   | 22.43 | 30.00            | Complies |
|                                | 5200 MHz  | 21.89                 | 21.94   | 24.93 | 30.00            | Complies |
|                                | 5240 MHz  | 21.91                 | 21.92   | 24.93 | 30.00            | Complies |
|                                | 5745 MHz  | 15.11                 | 15.89   | 18.53 | 30.00            | Complies |
|                                | 5785 MHz  | 21.04                 | 22.21   | 24.67 | 30.00            | Complies |
|                                | 5825 MHz  | 15.65                 | 16.79   | 19.27 | 30.00            | Complies |
| 802.11n<br>MCS0 HT20           | 5180 MHz  | 19.23                 | 19.63   | 22.44 | 30.00            | Complies |
|                                | 5200 MHz  | 21.87                 | 21.95   | 24.92 | 30.00            | Complies |
|                                | 5240 MHz  | 21.92                 | 21.94   | 24.94 | 30.00            | Complies |
|                                | 5745 MHz  | 14.88                 | 15.84   | 18.40 | 30.00            | Complies |
|                                | 5785 MHz  | 21.12                 | 22.16   | 24.68 | 30.00            | Complies |
|                                | 5825 MHz  | 15.44                 | 16.72   | 19.14 | 30.00            | Complies |
| 802.11n<br>MCS0 HT40           | 5190 MHz  | 16.17                 | 16.85   | 19.53 | 30.00            | Complies |
|                                | 5230 MHz  | 20.74                 | 20.92   | 23.84 | 30.00            | Complies |
|                                | 5755 MHz  | 14.38                 | 15.15   | 17.79 | 30.00            | Complies |
|                                | 5795 MHz  | 15.51                 | 15.87   | 18.70 | 30.00            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT20 | 5180 MHz  | 19.35                 | 19.42   | 22.40 | 30.00            | Complies |
|                                | 5200 MHz  | 21.88                 | 21.95   | 24.93 | 30.00            | Complies |
|                                | 5240 MHz  | 21.97                 | 21.98   | 24.99 | 30.00            | Complies |
|                                | 5745 MHz  | 15.48                 | 15.97   | 18.74 | 30.00            | Complies |
|                                | 5785 MHz  | 21.41                 | 21.88   | 24.66 | 30.00            | Complies |
|                                | 5825 MHz  | 15.83                 | 16.71   | 19.30 | 30.00            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT40 | 5190 MHz  | 16.17                 | 16.99   | 19.61 | 30.00            | Complies |
|                                | 5230 MHz  | 20.55                 | 20.97   | 23.78 | 30.00            | Complies |
|                                | 5755 MHz  | 14.91                 | 15.24   | 18.09 | 30.00            | Complies |
|                                | 5795 MHz  | 15.99                 | 15.96   | 18.99 | 30.00            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT80 | 5210 MHz  | 14.51                 | 14.92   | 17.73 | 30.00            | Complies |
|                                | 5775 MHz  | 15.02                 | 15.52   | 18.29 | 30.00            | Complies |

|               |                                               |           |                               |
|---------------|-----------------------------------------------|-----------|-------------------------------|
| Temperature   | 22°C                                          | Humidity  | 63%                           |
| Test Engineer | Nick Peng, Lucas Huang                        | Test Date | Jan. 08, 2015 ~ Jan. 12, 2015 |
| Test Mode     | Mode 2: (Ant.8 Panel antenna / 5.1 dBi / 3TX) |           |                               |

| Mode                           | Frequency | Conducted Power (dBm) |         |         |       | Max. Limit (dBm) | Result   |
|--------------------------------|-----------|-----------------------|---------|---------|-------|------------------|----------|
|                                |           | Chain 4               | Chain 5 | Chain 6 | Total |                  |          |
| 802.11a                        | 5180 MHz  | 17.75                 | 18.65   | 18.05   | 22.94 | 30.00            | Complies |
|                                | 5200 MHz  | 19.58                 | 20.32   | 20.31   | 24.85 | 30.00            | Complies |
|                                | 5240 MHz  | 21.00                 | 21.89   | 21.96   | 26.41 | 30.00            | Complies |
|                                | 5745 MHz  | 14.35                 | 15.38   | 14.78   | 19.63 | 30.00            | Complies |
|                                | 5785 MHz  | 19.04                 | 20.24   | 19.65   | 24.44 | 30.00            | Complies |
|                                | 5825 MHz  | 15.28                 | 16.47   | 15.86   | 20.67 | 30.00            | Complies |
| 802.11n<br>MCS0 HT20           | 5180 MHz  | 17.81                 | 18.52   | 17.99   | 22.89 | 30.00            | Complies |
|                                | 5200 MHz  | 19.52                 | 20.38   | 20.19   | 24.82 | 30.00            | Complies |
|                                | 5240 MHz  | 21.12                 | 21.88   | 21.89   | 26.42 | 30.00            | Complies |
|                                | 5745 MHz  | 14.32                 | 15.22   | 14.58   | 19.49 | 30.00            | Complies |
|                                | 5785 MHz  | 19.16                 | 20.05   | 19.76   | 24.44 | 30.00            | Complies |
|                                | 5825 MHz  | 15.32                 | 16.41   | 15.74   | 20.62 | 30.00            | Complies |
| 802.11n<br>MCS0 HT40           | 5190 MHz  | 15.02                 | 15.51   | 14.87   | 19.91 | 30.00            | Complies |
|                                | 5230 MHz  | 18.68                 | 19.59   | 19.02   | 23.88 | 30.00            | Complies |
|                                | 5755 MHz  | 13.88                 | 14.46   | 14.08   | 18.92 | 30.00            | Complies |
|                                | 5795 MHz  | 15.42                 | 15.81   | 15.39   | 20.32 | 30.00            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT20 | 5180 MHz  | 18.01                 | 18.43   | 18.36   | 23.04 | 30.00            | Complies |
|                                | 5200 MHz  | 19.76                 | 20.47   | 20.38   | 24.99 | 30.00            | Complies |
|                                | 5240 MHz  | 21.13                 | 21.53   | 21.98   | 26.33 | 30.00            | Complies |
|                                | 5745 MHz  | 14.65                 | 15.24   | 14.78   | 19.67 | 30.00            | Complies |
|                                | 5785 MHz  | 19.41                 | 19.87   | 19.77   | 24.46 | 30.00            | Complies |
|                                | 5825 MHz  | 15.57                 | 16.23   | 16.08   | 20.74 | 30.00            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT40 | 5190 MHz  | 15.24                 | 15.67   | 15.25   | 20.16 | 30.00            | Complies |
|                                | 5230 MHz  | 19.23                 | 19.40   | 19.32   | 24.09 | 30.00            | Complies |
|                                | 5755 MHz  | 14.33                 | 14.62   | 14.46   | 19.24 | 30.00            | Complies |
|                                | 5795 MHz  | 15.41                 | 15.65   | 15.70   | 20.36 | 30.00            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT80 | 5210 MHz  | 13.02                 | 13.54   | 13.45   | 18.11 | 30.00            | Complies |
|                                | 5775 MHz  | 14.63                 | 15.33   | 15.21   | 19.84 | 30.00            | Complies |

|               |                                                                                                   |           |                               |
|---------------|---------------------------------------------------------------------------------------------------|-----------|-------------------------------|
| Temperature   | 22°C                                                                                              | Humidity  | 63%                           |
| Test Engineer | Nick Peng, Lucas Huang                                                                            | Test Date | Jan. 08, 2015 ~ Jan. 13, 2015 |
| Test Mode     | Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 4: 8.3, Chain 5: 5.9, Chain 6: 8.2dBi / 1TX) |           |                               |

| Mode                     | Frequency | Conducted Power (dBm) | Max. Limit (dBm) | Result   |
|--------------------------|-----------|-----------------------|------------------|----------|
|                          |           | Chain 4               |                  |          |
| 802.11a                  | 5180 MHz  | 17.74                 | 27.70            | Complies |
|                          | 5200 MHz  | 21.52                 | 27.70            | Complies |
|                          | 5240 MHz  | 21.11                 | 27.70            | Complies |
|                          | 5745 MHz  | 14.55                 | 27.70            | Complies |
|                          | 5785 MHz  | 20.78                 | 27.70            | Complies |
|                          | 5825 MHz  | 15.41                 | 27.70            | Complies |
| 802.11n MCS0 HT20        | 5180 MHz  | 17.62                 | 27.70            | Complies |
|                          | 5200 MHz  | 21.43                 | 27.70            | Complies |
|                          | 5240 MHz  | 21.11                 | 27.70            | Complies |
|                          | 5745 MHz  | 14.56                 | 27.70            | Complies |
|                          | 5785 MHz  | 20.78                 | 27.70            | Complies |
|                          | 5825 MHz  | 15.34                 | 27.70            | Complies |
| 802.11n MCS0 HT40        | 5190 MHz  | 15.86                 | 27.70            | Complies |
|                          | 5230 MHz  | 19.65                 | 27.70            | Complies |
|                          | 5755 MHz  | 14.09                 | 27.70            | Complies |
|                          | 5795 MHz  | 16.59                 | 27.70            | Complies |
| 802.11ac MCS0/Nss1 VHT20 | 5180 MHz  | 17.64                 | 27.70            | Complies |
|                          | 5200 MHz  | 21.49                 | 27.70            | Complies |
|                          | 5240 MHz  | 21.11                 | 27.70            | Complies |
|                          | 5745 MHz  | 14.43                 | 27.70            | Complies |
|                          | 5785 MHz  | 20.84                 | 27.70            | Complies |
|                          | 5825 MHz  | 15.48                 | 27.70            | Complies |
| 802.11ac MCS0/Nss1 VHT40 | 5190 MHz  | 15.84                 | 27.70            | Complies |
|                          | 5230 MHz  | 19.53                 | 27.70            | Complies |
|                          | 5755 MHz  | 14.11                 | 27.70            | Complies |
|                          | 5795 MHz  | 16.58                 | 27.70            | Complies |
| 802.11ac MCS0/Nss1 VHT80 | 5210 MHz  | 14.16                 | 27.70            | Complies |
|                          | 5775 MHz  | 13.73                 | 27.70            | Complies |

Note: Antenna gain = 8.30dBi > 6dBi, So Band 1, 4 Limit = 30 - (8.30 - 6) = 27.70dBm/MHz

|               |                                                                                                   |           |               |
|---------------|---------------------------------------------------------------------------------------------------|-----------|---------------|
| Temperature   | 22°C                                                                                              | Humidity  | 63%           |
| Test Engineer | Nick Peng                                                                                         | Test Date | Jan. 08, 2015 |
| Test Mode     | Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 4: 8.3, Chain 5: 5.9, Chain 6: 8.2dBi / 2TX) |           |               |

| Mode                           | Frequency | Conducted Power (dBm) |         |       | Max. Limit (dBm) | Result   |
|--------------------------------|-----------|-----------------------|---------|-------|------------------|----------|
|                                |           | Chain 4               | Chain 5 | Total |                  |          |
| 802.11a                        | 5180 MHz  | 17.68                 | 18.03   | 20.87 | 27.70            | Complies |
|                                | 5200 MHz  | 20.72                 | 20.78   | 23.76 | 27.70            | Complies |
|                                | 5240 MHz  | 21.68                 | 21.74   | 24.72 | 27.70            | Complies |
|                                | 5745 MHz  | 13.87                 | 14.79   | 17.36 | 27.70            | Complies |
|                                | 5785 MHz  | 20.14                 | 21.08   | 23.65 | 27.70            | Complies |
|                                | 5825 MHz  | 14.61                 | 15.32   | 17.99 | 27.70            | Complies |
| 802.11n<br>MCS0 HT20           | 5180 MHz  | 17.77                 | 18.12   | 20.96 | 27.70            | Complies |
|                                | 5200 MHz  | 20.63                 | 20.88   | 23.77 | 27.70            | Complies |
|                                | 5240 MHz  | 21.57                 | 21.65   | 24.62 | 27.70            | Complies |
|                                | 5745 MHz  | 14.07                 | 14.83   | 17.48 | 27.70            | Complies |
|                                | 5785 MHz  | 20.04                 | 20.97   | 23.54 | 27.70            | Complies |
|                                | 5825 MHz  | 14.55                 | 15.41   | 18.01 | 27.70            | Complies |
| 802.11n<br>MCS0 HT40           | 5190 MHz  | 15.72                 | 16.38   | 19.07 | 27.70            | Complies |
|                                | 5230 MHz  | 18.92                 | 19.04   | 21.99 | 27.70            | Complies |
|                                | 5755 MHz  | 13.38                 | 13.63   | 16.52 | 27.70            | Complies |
|                                | 5795 MHz  | 14.34                 | 14.58   | 17.47 | 27.70            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT20 | 5180 MHz  | 17.73                 | 18.05   | 20.90 | 27.70            | Complies |
|                                | 5200 MHz  | 20.65                 | 20.82   | 23.75 | 27.70            | Complies |
|                                | 5240 MHz  | 21.53                 | 21.78   | 24.67 | 27.70            | Complies |
|                                | 5745 MHz  | 14.08                 | 14.85   | 17.49 | 27.70            | Complies |
|                                | 5785 MHz  | 20.05                 | 20.98   | 23.55 | 27.70            | Complies |
|                                | 5825 MHz  | 14.53                 | 15.42   | 18.01 | 27.70            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT40 | 5190 MHz  | 15.81                 | 16.38   | 19.11 | 27.70            | Complies |
|                                | 5230 MHz  | 18.63                 | 19.33   | 22.00 | 27.70            | Complies |
|                                | 5755 MHz  | 13.48                 | 13.81   | 16.66 | 27.70            | Complies |
|                                | 5795 MHz  | 14.36                 | 14.57   | 17.48 | 27.70            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT80 | 5210 MHz  | 11.46                 | 12.16   | 14.83 | 27.70            | Complies |
|                                | 5775 MHz  | 12.85                 | 13.68   | 16.30 | 27.70            | Complies |

Note: Antenna gain=8.30dBi > 6dBi, So Band1, 4 Limit = 30-(8.30-6)=27.70dBm/MHz

|               |                                                                                                   |           |                               |
|---------------|---------------------------------------------------------------------------------------------------|-----------|-------------------------------|
| Temperature   | 22°C                                                                                              | Humidity  | 63%                           |
| Test Engineer | Nick Peng, Lucas Huang                                                                            | Test Date | Jan. 08, 2015 ~ Jan. 13, 2015 |
| Test Mode     | Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 4: 8.3, Chain 5: 5.9, Chain 6: 8.2dBi / 3TX) |           |                               |

| Mode                           | Frequency | Conducted Power (dBm) |         |         |       | Max. Limit (dBm) | Result   |
|--------------------------------|-----------|-----------------------|---------|---------|-------|------------------|----------|
|                                |           | Chain 4               | Chain 5 | Chain 6 | Total |                  |          |
| 802.11a                        | 5180 MHz  | 15.91                 | 16.42   | 15.99   | 20.88 | 27.70            | Complies |
|                                | 5200 MHz  | 17.75                 | 18.21   | 18.29   | 22.86 | 27.70            | Complies |
|                                | 5240 MHz  | 18.39                 | 18.94   | 18.54   | 23.40 | 27.70            | Complies |
|                                | 5745 MHz  | 13.61                 | 14.36   | 13.67   | 18.66 | 27.70            | Complies |
|                                | 5785 MHz  | 18.40                 | 19.08   | 18.88   | 23.57 | 27.70            | Complies |
|                                | 5825 MHz  | 14.03                 | 14.93   | 14.43   | 19.25 | 27.70            | Complies |
| 802.11n<br>MCS0 HT20           | 5180 MHz  | 16.07                 | 16.28   | 15.94   | 20.87 | 27.70            | Complies |
|                                | 5200 MHz  | 17.84                 | 18.04   | 18.03   | 22.74 | 27.70            | Complies |
|                                | 5240 MHz  | 18.41                 | 18.99   | 18.56   | 23.43 | 27.70            | Complies |
|                                | 5745 MHz  | 13.68                 | 14.13   | 13.52   | 18.56 | 27.70            | Complies |
|                                | 5785 MHz  | 18.37                 | 18.93   | 18.64   | 23.42 | 27.70            | Complies |
|                                | 5825 MHz  | 14.14                 | 14.78   | 14.38   | 19.21 | 27.70            | Complies |
| 802.11n<br>MCS0 HT40           | 5190 MHz  | 13.08                 | 13.82   | 13.09   | 18.12 | 27.70            | Complies |
|                                | 5230 MHz  | 17.18                 | 17.92   | 17.24   | 22.23 | 27.70            | Complies |
|                                | 5755 MHz  | 11.65                 | 12.56   | 11.82   | 16.80 | 27.70            | Complies |
|                                | 5795 MHz  | 14.31                 | 14.23   | 13.92   | 18.93 | 27.70            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT20 | 5180 MHz  | 16.03                 | 16.44   | 15.85   | 20.88 | 27.70            | Complies |
|                                | 5200 MHz  | 17.76                 | 18.11   | 18.09   | 22.76 | 27.70            | Complies |
|                                | 5240 MHz  | 18.47                 | 18.88   | 18.49   | 23.39 | 27.70            | Complies |
|                                | 5745 MHz  | 13.53                 | 14.12   | 13.61   | 18.53 | 27.70            | Complies |
|                                | 5785 MHz  | 18.36                 | 19.07   | 18.86   | 23.54 | 27.70            | Complies |
|                                | 5825 MHz  | 14.02                 | 14.87   | 14.32   | 19.19 | 27.70            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT40 | 5190 MHz  | 13.15                 | 13.84   | 12.94   | 18.10 | 27.70            | Complies |
|                                | 5230 MHz  | 17.10                 | 17.88   | 17.15   | 22.16 | 27.70            | Complies |
|                                | 5755 MHz  | 11.88                 | 12.62   | 11.76   | 16.87 | 27.70            | Complies |
|                                | 5795 MHz  | 14.48                 | 14.35   | 14.02   | 19.06 | 27.70            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT80 | 5210 MHz  | 9.31                  | 9.62    | 9.25    | 14.17 | 27.70            | Complies |
|                                | 5775 MHz  | 9.42                  | 10.42   | 9.76    | 14.66 | 27.70            | Complies |

Note: Antenna gain = 8.30dBi > 6dBi, So Band 1, 4 Limit = 30 - (8.30 - 6) = 27.70dBm/MHz

## &lt;For Beamforming Mode&gt;

|               |                                               |           |               |
|---------------|-----------------------------------------------|-----------|---------------|
| Temperature   | 22°C                                          | Humidity  | 63%           |
| Test Engineer | Nick Peng                                     | Test Date | Jan. 14, 2015 |
| Test Mode     | Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 2TX) |           |               |

## For outdoor use

| Mode                           | Frequency | Conducted Power (dBm) |         |       | Max. Limit (dBm) | Result   |
|--------------------------------|-----------|-----------------------|---------|-------|------------------|----------|
|                                |           | Chain 4               | Chain 5 | Total |                  |          |
| 802.11a                        | 5180 MHz  | 9.31                  | 9.22    | 12.28 | 25.69            | Complies |
|                                | 5200 MHz  | 8.88                  | 9.13    | 12.02 | 25.69            | Complies |
|                                | 5240 MHz  | 8.95                  | 9.44    | 12.21 | 25.69            | Complies |
|                                | 5745 MHz  | 15.48                 | 16.15   | 18.84 | 25.69            | Complies |
|                                | 5785 MHz  | 21.48                 | 21.74   | 24.62 | 25.69            | Complies |
|                                | 5825 MHz  | 16.58                 | 16.78   | 19.69 | 25.69            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT20 | 5180 MHz  | 9.30                  | 9.25    | 12.29 | 25.69            | Complies |
|                                | 5200 MHz  | 8.89                  | 9.12    | 12.02 | 25.69            | Complies |
|                                | 5240 MHz  | 9.01                  | 9.45    | 12.25 | 25.69            | Complies |
|                                | 5745 MHz  | 15.75                 | 16.03   | 18.90 | 25.69            | Complies |
|                                | 5785 MHz  | 21.54                 | 21.83   | 24.70 | 25.69            | Complies |
|                                | 5825 MHz  | 16.61                 | 16.78   | 19.71 | 25.69            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT40 | 5190 MHz  | 9.13                  | 9.45    | 12.30 | 25.69            | Complies |
|                                | 5230 MHz  | 9.07                  | 8.84    | 11.97 | 25.69            | Complies |
|                                | 5755 MHz  | 15.40                 | 15.70   | 18.56 | 25.69            | Complies |
|                                | 5795 MHz  | 16.48                 | 16.70   | 19.60 | 25.69            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT80 | 5210 MHz  | 8.75                  | 9.39    | 12.09 | 25.69            | Complies |
|                                | 5775 MHz  | 14.62                 | 15.12   | 17.89 | 25.69            | Complies |

Note:  $DirectionalGain = 10 \cdot \log \left[ \frac{\sum_{i=1}^N \left\{ \sum_{j=1}^N g_{i,j} \right\}^2}{N_{ANT}} \right] = 10.31 \text{ dBi} > 6 \text{ dBi}$ , So Band1, 4 Limit = 30-(10.31-6)=25.69dBm/MHz

|               |                                               |           |               |
|---------------|-----------------------------------------------|-----------|---------------|
| Temperature   | 22°C                                          | Humidity  | 63%           |
| Test Engineer | Nick Peng                                     | Test Date | Jan. 14, 2015 |
| Test Mode     | Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 3TX) |           |               |

For outdoor use

| Mode                           | Frequency | Conducted Power (dBm) |         |         |       | Max. Limit (dBm) | Result   |
|--------------------------------|-----------|-----------------------|---------|---------|-------|------------------|----------|
|                                |           | Chain 4               | Chain 5 | Chain 6 | Total |                  |          |
| 802.11a                        | 5180 MHz  | 5.35                  | 6.01    | 5.32    | 10.34 | 23.93            | Complies |
|                                | 5200 MHz  | 5.22                  | 5.98    | 5.44    | 10.33 | 23.93            | Complies |
|                                | 5240 MHz  | 5.26                  | 5.78    | 5.49    | 10.29 | 23.93            | Complies |
|                                | 5745 MHz  | 14.77                 | 15.12   | 14.88   | 19.70 | 23.93            | Complies |
|                                | 5785 MHz  | 18.77                 | 19.08   | 19.13   | 23.77 | 23.93            | Complies |
|                                | 5825 MHz  | 15.45                 | 15.97   | 15.67   | 20.47 | 23.93            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT20 | 5180 MHz  | 5.34                  | 6.00    | 5.33    | 10.34 | 23.93            | Complies |
|                                | 5200 MHz  | 5.26                  | 5.97    | 5.45    | 10.34 | 23.93            | Complies |
|                                | 5240 MHz  | 5.26                  | 5.77    | 5.48    | 10.28 | 23.93            | Complies |
|                                | 5745 MHz  | 14.31                 | 14.84   | 14.82   | 19.43 | 23.93            | Complies |
|                                | 5785 MHz  | 18.72                 | 19.11   | 19.17   | 23.78 | 23.93            | Complies |
|                                | 5825 MHz  | 15.57                 | 15.80   | 15.83   | 20.51 | 23.93            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT40 | 5190 MHz  | 5.02                  | 5.69    | 5.72    | 10.26 | 23.93            | Complies |
|                                | 5230 MHz  | 4.88                  | 5.76    | 5.02    | 10.01 | 23.93            | Complies |
|                                | 5755 MHz  | 14.09                 | 14.50   | 14.28   | 19.06 | 23.93            | Complies |
|                                | 5795 MHz  | 15.58                 | 15.84   | 15.71   | 20.48 | 23.93            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT80 | 5210 MHz  | 5.49                  | 5.15    | 5.01    | 9.99  | 23.93            | Complies |
|                                | 5775 MHz  | 13.44                 | 13.99   | 14.04   | 18.60 | 23.93            | Complies |

Note:  $Directional\ Gain = 10 \cdot \log \left[ \frac{\sum_{i=1}^N \left\{ \sum_{j=1}^N g_{i,j} \right\}^2}{N_{ANT}} \right] = 12.07\text{dBi} > 6\text{dBi}$ , So Band1, 4 Limit =  $30 - (12.07 - 6) = 23.93\text{dBm/MHz}$



|               |                                               |           |               |
|---------------|-----------------------------------------------|-----------|---------------|
| Temperature   | 22°C                                          | Humidity  | 63%           |
| Test Engineer | Nick Peng                                     | Test Date | Mar. 02, 2015 |
| Test Mode     | Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 2TX) |           |               |

For indoor use

| Mode                           | Frequency | Conducted Power (dBm) |         |       | Max. Limit (dBm) | Result   |
|--------------------------------|-----------|-----------------------|---------|-------|------------------|----------|
|                                |           | Chain 4               | Chain 5 | Total |                  |          |
| 802.11a                        | 5180 MHz  | 19.34                 | 19.58   | 22.47 | 25.69            | Complies |
|                                | 5200 MHz  | 21.67                 | 21.98   | 24.84 | 25.69            | Complies |
|                                | 5240 MHz  | 17.99                 | 18.52   | 21.27 | 25.69            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT20 | 5180 MHz  | 19.40                 | 19.64   | 22.53 | 25.69            | Complies |
|                                | 5200 MHz  | 21.54                 | 21.78   | 24.67 | 25.69            | Complies |
|                                | 5240 MHz  | 17.88                 | 18.51   | 21.22 | 25.69            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT40 | 5190 MHz  | 16.67                 | 16.92   | 19.81 | 25.69            | Complies |
|                                | 5230 MHz  | 21.73                 | 21.94   | 24.85 | 25.69            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT80 | 5210 MHz  | 16.89                 | 17.52   | 20.23 | 25.69            | Complies |

Note:  $DirectionalGain = 10 \cdot \log \left[ \frac{\sum_{j=1}^{N_{ANT}} \left\{ \sum_{k=1}^{N_{CH}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 10.31 \text{ dBi} > 6 \text{ dBi}$ , So Band1, 4 Limit = 30-(10.31-6)=25.69dBm/MHz

|               |                                               |           |               |
|---------------|-----------------------------------------------|-----------|---------------|
| Temperature   | 22°C                                          | Humidity  | 63%           |
| Test Engineer | Nick Peng                                     | Test Date | Mar. 02, 2015 |
| Test Mode     | Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 3TX) |           |               |

For indoor use

| Mode                           | Frequency | Conducted Power (dBm) |         |         |       | Max. Limit (dBm) | Result   |
|--------------------------------|-----------|-----------------------|---------|---------|-------|------------------|----------|
|                                |           | Chain 4               | Chain 5 | Chain 6 | Total |                  |          |
| 802.11a                        | 5180 MHz  | 18.01                 | 18.32   | 18.46   | 23.04 | 23.93            | Complies |
|                                | 5200 MHz  | 18.68                 | 18.83   | 19.16   | 23.67 | 23.93            | Complies |
|                                | 5240 MHz  | 18.81                 | 19.19   | 19.17   | 23.83 | 23.93            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT20 | 5180 MHz  | 17.78                 | 18.32   | 18.38   | 22.94 | 23.93            | Complies |
|                                | 5200 MHz  | 18.58                 | 18.76   | 19.13   | 23.60 | 23.93            | Complies |
|                                | 5240 MHz  | 18.63                 | 19.17   | 19.20   | 23.78 | 23.93            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT40 | 5190 MHz  | 15.67                 | 16.32   | 15.88   | 20.74 | 23.93            | Complies |
|                                | 5230 MHz  | 18.46                 | 18.83   | 19.14   | 23.59 | 23.93            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT80 | 5210 MHz  | 15.70                 | 16.40   | 16.11   | 20.85 | 23.93            | Complies |

Note:  $DirectionalGain = 10 \cdot \log \left[ \frac{\sum_{j=1}^{N_{ANT}} \left\{ \sum_{k=1}^{N_{CH}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 12.07 \text{dBi} > 6 \text{dBi}$ , So Band1, 4 Limit =  $30 - (12.07 - 6) = 23.93 \text{dBm/MHz}$

|               |                                               |           |               |
|---------------|-----------------------------------------------|-----------|---------------|
| Temperature   | 22°C                                          | Humidity  | 63%           |
| Test Engineer | Nick Peng                                     | Test Date | Jan. 12, 2015 |
| Test Mode     | Mode 2: (Ant.8 Panel antenna / 5.1 dBi / 2TX) |           |               |

| Mode                           | Frequency | Conducted Power (dBm) |         |       | Max. Limit (dBm) | Result   |
|--------------------------------|-----------|-----------------------|---------|-------|------------------|----------|
|                                |           | Chain 4               | Chain 5 | Total |                  |          |
| 802.11a                        | 5180 MHz  | 19.16                 | 19.64   | 22.42 | 27.89            | Complies |
|                                | 5200 MHz  | 21.93                 | 21.98   | 24.97 | 27.89            | Complies |
|                                | 5240 MHz  | 21.92                 | 21.97   | 24.96 | 27.89            | Complies |
|                                | 5745 MHz  | 15.14                 | 15.81   | 18.50 | 27.89            | Complies |
|                                | 5785 MHz  | 20.82                 | 21.95   | 24.43 | 27.89            | Complies |
|                                | 5825 MHz  | 16.14                 | 17.11   | 19.66 | 27.89            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT20 | 5180 MHz  | 19.35                 | 19.42   | 22.40 | 27.89            | Complies |
|                                | 5200 MHz  | 21.91                 | 21.98   | 24.96 | 27.89            | Complies |
|                                | 5240 MHz  | 21.94                 | 21.98   | 24.97 | 27.89            | Complies |
|                                | 5745 MHz  | 15.48                 | 15.97   | 18.74 | 27.89            | Complies |
|                                | 5785 MHz  | 21.27                 | 21.94   | 24.63 | 27.89            | Complies |
|                                | 5825 MHz  | 16.64                 | 17.13   | 19.90 | 27.89            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT40 | 5190 MHz  | 15.87                 | 16.07   | 18.98 | 27.89            | Complies |
|                                | 5230 MHz  | 20.16                 | 20.65   | 23.42 | 27.89            | Complies |
|                                | 5755 MHz  | 14.81                 | 15.16   | 18.00 | 27.89            | Complies |
|                                | 5795 MHz  | 17.69                 | 17.60   | 20.66 | 27.89            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT80 | 5210 MHz  | 15.95                 | 16.54   | 19.27 | 27.89            | Complies |
|                                | 5775 MHz  | 14.22                 | 14.67   | 17.46 | 27.89            | Complies |

Note:  $DirectionalGain = 10 \cdot \log \left[ \frac{\sum_{i=1}^N \left\{ \sum_{j=1}^N g_{i,j} \right\}^2}{N_{ANT}} \right] = 8.11 \text{ dBi} > 6 \text{ dBi}$ , So Band1, 4 Limit = 30-(8.11-6)=27.89dBm/MHz

|               |                                               |           |               |
|---------------|-----------------------------------------------|-----------|---------------|
| Temperature   | 22°C                                          | Humidity  | 63%           |
| Test Engineer | Nick Peng                                     | Test Date | Jan. 12, 2015 |
| Test Mode     | Mode 2: (Ant.8 Panel antenna / 5.1 dBi / 3TX) |           |               |

| Mode                           | Frequency | Conducted Power (dBm) |         |         |       | Max. Limit (dBm) | Result   |
|--------------------------------|-----------|-----------------------|---------|---------|-------|------------------|----------|
|                                |           | Chain 4               | Chain 5 | Chain 6 | Total |                  |          |
| 802.11a                        | 5180 MHz  | 16.72                 | 16.88   | 16.58   | 21.50 | 26.13            | Complies |
|                                | 5200 MHz  | 18.13                 | 18.61   | 18.21   | 23.09 | 26.13            | Complies |
|                                | 5240 MHz  | 19.54                 | 20.19   | 20.04   | 24.70 | 26.13            | Complies |
|                                | 5745 MHz  | 14.89                 | 15.19   | 14.81   | 19.74 | 26.13            | Complies |
|                                | 5785 MHz  | 18.36                 | 18.79   | 18.69   | 23.39 | 26.13            | Complies |
|                                | 5825 MHz  | 15.76                 | 16.39   | 16.21   | 20.90 | 26.13            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT20 | 5180 MHz  | 16.68                 | 16.92   | 16.59   | 21.50 | 26.13            | Complies |
|                                | 5200 MHz  | 18.12                 | 18.64   | 18.26   | 23.12 | 26.13            | Complies |
|                                | 5240 MHz  | 19.64                 | 20.15   | 20.02   | 24.71 | 26.13            | Complies |
|                                | 5745 MHz  | 14.85                 | 15.15   | 14.86   | 19.73 | 26.13            | Complies |
|                                | 5785 MHz  | 18.31                 | 18.81   | 18.61   | 23.35 | 26.13            | Complies |
|                                | 5825 MHz  | 15.71                 | 16.38   | 16.01   | 20.81 | 26.13            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT40 | 5190 MHz  | 15.07                 | 15.84   | 15.27   | 20.18 | 26.13            | Complies |
|                                | 5230 MHz  | 19.08                 | 19.64   | 19.51   | 24.19 | 26.13            | Complies |
|                                | 5755 MHz  | 14.04                 | 14.33   | 14.02   | 18.90 | 26.13            | Complies |
|                                | 5795 MHz  | 16.12                 | 15.87   | 15.76   | 20.69 | 26.13            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT80 | 5210 MHz  | 13.01                 | 13.43   | 13.20   | 17.99 | 26.13            | Complies |
|                                | 5775 MHz  | 13.21                 | 14.02   | 13.98   | 18.52 | 26.13            | Complies |

Note:  $DirectionalGain = 10 \cdot \log \left[ \frac{\sum_{i=1}^N \left\{ \sum_{j=1}^N g_{i,j} \right\}^2}{N_{ANT}} \right] = 9.87dBi > 6dBi$ , So Band1, 4 Limit =  $30 - (9.87 - 6) = 26.13dBm/MHz$

|               |                                                                                                   |           |               |
|---------------|---------------------------------------------------------------------------------------------------|-----------|---------------|
| Temperature   | 22°C                                                                                              | Humidity  | 63%           |
| Test Engineer | Nick Peng                                                                                         | Test Date | Jan. 08, 2015 |
| Test Mode     | Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 4: 8.3, Chain 5: 5.9, Chain 6: 8.2dBi / 2TX) |           |               |

| Mode                           | Frequency | Conducted Power (dBm) |         |       | Max. Limit (dBm) | Result   |
|--------------------------------|-----------|-----------------------|---------|-------|------------------|----------|
|                                |           | Chain 4               | Chain 5 | Total |                  |          |
| 802.11a                        | 5180 MHz  | 16.67                 | 16.98   | 19.84 | 27.70            | Complies |
|                                | 5200 MHz  | 19.48                 | 19.72   | 22.61 | 27.70            | Complies |
|                                | 5240 MHz  | 19.73                 | 19.92   | 22.84 | 27.70            | Complies |
|                                | 5745 MHz  | 13.49                 | 14.49   | 17.03 | 27.70            | Complies |
|                                | 5785 MHz  | 19.55                 | 20.39   | 23.00 | 27.70            | Complies |
|                                | 5825 MHz  | 14.48                 | 15.52   | 18.04 | 27.70            | Complies |
| 802.11ac<br>MCS0/Nss2<br>VHT20 | 5180 MHz  | 16.59                 | 17.02   | 19.82 | 27.70            | Complies |
|                                | 5200 MHz  | 19.51                 | 19.69   | 22.61 | 27.70            | Complies |
|                                | 5240 MHz  | 19.67                 | 19.85   | 22.77 | 27.70            | Complies |
|                                | 5745 MHz  | 13.48                 | 14.48   | 17.02 | 27.70            | Complies |
|                                | 5785 MHz  | 19.59                 | 20.45   | 23.05 | 27.70            | Complies |
|                                | 5825 MHz  | 14.51                 | 15.48   | 18.03 | 27.70            | Complies |
| 802.11ac<br>MCS0/Nss2<br>VHT40 | 5190 MHz  | 14.86                 | 15.68   | 18.30 | 27.70            | Complies |
|                                | 5230 MHz  | 18.37                 | 19.01   | 21.71 | 27.70            | Complies |
|                                | 5755 MHz  | 12.88                 | 13.38   | 16.15 | 27.70            | Complies |
|                                | 5795 MHz  | 13.34                 | 13.98   | 16.68 | 27.70            | Complies |
| 802.11ac<br>MCS0/Nss2<br>VHT80 | 5210 MHz  | 11.07                 | 11.72   | 14.42 | 27.70            | Complies |
|                                | 5775 MHz  | 12.52                 | 13.46   | 16.03 | 27.70            | Complies |

Note: Antenna gain=8.30dBi >6dBi, So Band1, 4 Limit =30-(8.30-6)=27.70dBm/MHz

|               |                                                                                                   |           |                               |
|---------------|---------------------------------------------------------------------------------------------------|-----------|-------------------------------|
| Temperature   | 22°C                                                                                              | Humidity  | 63%                           |
| Test Engineer | Nick Peng, Lucas Huang                                                                            | Test Date | Jan. 08, 2015 ~ Jan. 13, 2015 |
| Test Mode     | Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 4: 8.3, Chain 5: 5.9, Chain 6: 8.2dBi / 3TX) |           |                               |

| Mode                           | Frequency | Conducted Power (dBm) |         |         |       | Max. Limit (dBm) | Result   |
|--------------------------------|-----------|-----------------------|---------|---------|-------|------------------|----------|
|                                |           | Chain 4               | Chain 5 | Chain 6 | Total |                  |          |
| 802.11a                        | 5180 MHz  | 15.84                 | 16.18   | 15.63   | 20.66 | 26.64            | Complies |
|                                | 5200 MHz  | 17.11                 | 17.58   | 17.26   | 22.09 | 26.64            | Complies |
|                                | 5240 MHz  | 17.53                 | 18.24   | 17.84   | 22.65 | 26.64            | Complies |
|                                | 5745 MHz  | 13.51                 | 14.18   | 13.58   | 18.54 | 26.64            | Complies |
|                                | 5785 MHz  | 16.32                 | 17.16   | 16.85   | 21.56 | 26.64            | Complies |
|                                | 5825 MHz  | 13.89                 | 14.65   | 14.12   | 19.00 | 26.64            | Complies |
| 802.11ac<br>MCS0/Nss2<br>VHT20 | 5180 MHz  | 15.76                 | 16.10   | 15.58   | 20.59 | 26.64            | Complies |
|                                | 5200 MHz  | 17.01                 | 17.57   | 17.03   | 21.98 | 26.64            | Complies |
|                                | 5240 MHz  | 17.53                 | 18.13   | 17.63   | 22.54 | 26.64            | Complies |
|                                | 5745 MHz  | 13.45                 | 14.16   | 13.51   | 18.49 | 26.64            | Complies |
|                                | 5785 MHz  | 16.32                 | 17.03   | 16.78   | 21.49 | 26.64            | Complies |
|                                | 5825 MHz  | 13.78                 | 14.63   | 13.98   | 18.92 | 26.64            | Complies |
| 802.11ac<br>MCS0/Nss2<br>VHT40 | 5190 MHz  | 12.51                 | 13.41   | 12.62   | 17.64 | 26.64            | Complies |
|                                | 5230 MHz  | 16.78                 | 17.44   | 17.02   | 21.86 | 26.64            | Complies |
|                                | 5755 MHz  | 11.61                 | 12.09   | 11.42   | 16.49 | 26.64            | Complies |
|                                | 5795 MHz  | 14.09                 | 14.05   | 13.77   | 18.74 | 26.64            | Complies |
| 802.11ac<br>MCS0/Nss2<br>VHT80 | 5210 MHz  | 9.29                  | 9.67    | 9.23    | 14.17 | 26.64            | Complies |
|                                | 5775 MHz  | 9.18                  | 10.28   | 9.78    | 14.54 | 26.64            | Complies |

Note:  $DirectionalGain = 10 \cdot \log \left[ \frac{\sum_{i=1}^N \left\{ \sum_{j=1}^N g_{i,j} \right\}^2}{N \cdot N_T} \right] = 9.36dBi > 6dBi$ , So Band1, 4 Limit =  $30 - (9.36 - 6) = 26.64dBm/MHz$

## &lt;For STBC Mode&gt;

|               |                                               |           |               |
|---------------|-----------------------------------------------|-----------|---------------|
| Temperature   | 22°C                                          | Humidity  | 63%           |
| Test Engineer | Nick Peng                                     | Test Date | Jan. 14, 2015 |
| Test Mode     | Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 2TX) |           |               |

## For outdoor use

| Mode                           | Frequency | Conducted Power (dBm) |         |       | Max. Limit (dBm) | Result   |
|--------------------------------|-----------|-----------------------|---------|-------|------------------|----------|
|                                |           | Chain 4               | Chain 5 | Total |                  |          |
| 802.11ac<br>MCS0/Nss1<br>VHT20 | 5180 MHz  | 11.94                 | 12.44   | 15.21 | 28.70            | Complies |
|                                | 5200 MHz  | 12.01                 | 12.43   | 15.24 | 28.70            | Complies |
|                                | 5240 MHz  | 12.07                 | 12.23   | 15.16 | 28.70            | Complies |
|                                | 5745 MHz  | 16.97                 | 17.29   | 20.14 | 28.70            | Complies |
|                                | 5785 MHz  | 21.64                 | 21.97   | 24.82 | 28.70            | Complies |
|                                | 5825 MHz  | 17.06                 | 17.38   | 20.23 | 28.70            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT40 | 5190 MHz  | 11.88                 | 12.36   | 15.14 | 28.70            | Complies |
|                                | 5230 MHz  | 11.87                 | 12.54   | 15.23 | 28.70            | Complies |
|                                | 5755 MHz  | 15.57                 | 15.93   | 18.76 | 28.70            | Complies |
|                                | 5795 MHz  | 17.02                 | 17.18   | 20.11 | 28.70            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT80 | 5210 MHz  | 11.93                 | 12.52   | 15.25 | 28.70            | Complies |
|                                | 5775 MHz  | 14.61                 | 15.36   | 18.01 | 28.70            | Complies |

Note: Antenna gain = 7.30dBi > 6dBi, So Band1, 4 Limit = 30-(7.30-6)=28.70dBm/MHz

|               |                                               |           |               |
|---------------|-----------------------------------------------|-----------|---------------|
| Temperature   | 22°C                                          | Humidity  | 63%           |
| Test Engineer | Nick Peng                                     | Test Date | Jan. 14, 2015 |
| Test Mode     | Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 3TX) |           |               |

## For outdoor use

| Mode                           | Frequency | Conducted Power (dBm) |         |         |       | Max. Limit (dBm) | Result   |
|--------------------------------|-----------|-----------------------|---------|---------|-------|------------------|----------|
|                                |           | Chain 4               | Chain 5 | Chain 6 | Total |                  |          |
| 802.11ac<br>MCS0/Nss1<br>VHT20 | 5180 MHz  | 10.13                 | 10.83   | 10.46   | 15.25 | 28.70            | Complies |
|                                | 5200 MHz  | 10.22                 | 10.33   | 10.41   | 15.09 | 28.70            | Complies |
|                                | 5240 MHz  | 10.24                 | 10.78   | 10.34   | 15.23 | 28.70            | Complies |
|                                | 5745 MHz  | 16.24                 | 16.68   | 16.62   | 21.29 | 28.70            | Complies |
|                                | 5785 MHz  | 21.66                 | 21.92   | 21.98   | 26.63 | 28.70            | Complies |
|                                | 5825 MHz  | 17.02                 | 17.62   | 17.58   | 22.19 | 28.70            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT40 | 5190 MHz  | 10.01                 | 10.68   | 10.51   | 15.18 | 28.70            | Complies |
|                                | 5230 MHz  | 10.11                 | 10.98   | 10.41   | 15.29 | 28.70            | Complies |
|                                | 5755 MHz  | 14.86                 | 15.32   | 15.27   | 19.93 | 28.70            | Complies |
|                                | 5795 MHz  | 15.32                 | 16.05   | 16.00   | 20.57 | 28.70            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT80 | 5210 MHz  | 10.17                 | 10.54   | 10.58   | 15.21 | 28.70            | Complies |
|                                | 5775 MHz  | 14.39                 | 15.26   | 15.25   | 19.76 | 28.70            | Complies |

Note: Antenna gain = 7.30dBi > 6dBi, So Band1, 4 Limit = 30-(7.30-6)=28.70dBm/MHz



|               |                                               |           |               |
|---------------|-----------------------------------------------|-----------|---------------|
| Temperature   | 22°C                                          | Humidity  | 63%           |
| Test Engineer | Nick Peng                                     | Test Date | Mar. 02, 2015 |
| Test Mode     | Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 2TX) |           |               |

#### For indoor use

| Mode      | Frequency | Conducted Power (dBm) |         |       | Max. Limit (dBm) | Result   |
|-----------|-----------|-----------------------|---------|-------|------------------|----------|
|           |           | Chain 4               | Chain 5 | Total |                  |          |
| 802.11ac  | 5180 MHz  | 19.31                 | 19.73   | 22.54 | 28.70            | Complies |
| MCS0/Nss1 | 5200 MHz  | 21.63                 | 21.96   | 24.81 | 28.70            | Complies |
| VHT20     | 5240 MHz  | 21.72                 | 21.98   | 24.86 | 28.70            | Complies |
| 802.11ac  | 5190 MHz  | 17.20                 | 17.65   | 20.44 | 28.70            | Complies |
| MCS0/Nss1 | 5230 MHz  | 21.65                 | 21.74   | 24.71 | 28.70            | Complies |
| VHT40     |           |                       |         |       |                  |          |
| 802.11ac  | 5210 MHz  | 16.80                 | 17.58   | 20.22 | 28.70            | Complies |
| MCS0/Nss1 |           |                       |         |       |                  |          |
| VHT80     |           |                       |         |       |                  |          |

Note: Antenna gain = 7.30dBi > 6dBi, So Band1, 4 Limit = 30-(7.30-6)=28.70dBm/MHz

|               |                                               |           |               |
|---------------|-----------------------------------------------|-----------|---------------|
| Temperature   | 22°C                                          | Humidity  | 63%           |
| Test Engineer | Nick Peng                                     | Test Date | Mar. 02, 2015 |
| Test Mode     | Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 3TX) |           |               |

#### For indoor use

| Mode      | Frequency | Conducted Power (dBm) |         |         |       | Max. Limit (dBm) | Result   |
|-----------|-----------|-----------------------|---------|---------|-------|------------------|----------|
|           |           | Chain 4               | Chain 5 | Chain 6 | Total |                  |          |
| 802.11ac  | 5180 MHz  | 18.12                 | 18.63   | 18.74   | 23.28 | 28.70            | Complies |
| MCS0/Nss1 | 5200 MHz  | 20.86                 | 21.17   | 21.96   | 26.13 | 28.70            | Complies |
| VHT20     | 5240 MHz  | 20.94                 | 21.18   | 21.97   | 26.16 | 28.70            | Complies |
| 802.11ac  | 5190 MHz  | 16.56                 | 16.94   | 16.78   | 21.53 | 28.70            | Complies |
| MCS0/Nss1 | 5230 MHz  | 21.07                 | 21.27   | 21.97   | 26.23 | 28.70            | Complies |
| VHT40     |           |                       |         |         |       |                  |          |
| 802.11ac  | 5210 MHz  | 15.29                 | 16.06   | 15.96   | 20.55 | 28.70            | Complies |
| MCS0/Nss1 |           |                       |         |         |       |                  |          |
| VHT80     |           |                       |         |         |       |                  |          |

Note: Antenna gain = 7.30dBi > 6dBi, So Band1, 4 Limit = 30-(7.30-6)=28.70dBm/MHz

|               |                                               |           |               |
|---------------|-----------------------------------------------|-----------|---------------|
| Temperature   | 22°C                                          | Humidity  | 63%           |
| Test Engineer | Nick Peng                                     | Test Date | Jan. 12, 2015 |
| Test Mode     | Mode 2: (Ant.8 Panel antenna / 5.1 dBi / 2TX) |           |               |

| Mode                           | Frequency | Conducted Power (dBm) |         |       | Max. Limit (dBm) | Result   |
|--------------------------------|-----------|-----------------------|---------|-------|------------------|----------|
|                                |           | Chain 4               | Chain 5 | Total |                  |          |
| 802.11ac<br>MCS0/Nss1<br>VHT20 | 5180 MHz  | 19.41                 | 19.57   | 22.50 | 30.00            | Complies |
|                                | 5200 MHz  | 21.89                 | 21.94   | 24.93 | 30.00            | Complies |
|                                | 5240 MHz  | 21.92                 | 21.93   | 24.94 | 30.00            | Complies |
|                                | 5745 MHz  | 16.03                 | 16.79   | 19.44 | 30.00            | Complies |
|                                | 5785 MHz  | 21.79                 | 21.97   | 24.89 | 30.00            | Complies |
|                                | 5825 MHz  | 17.86                 | 18.74   | 21.33 | 30.00            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT40 | 5190 MHz  | 16.78                 | 17.20   | 20.01 | 30.00            | Complies |
|                                | 5230 MHz  | 20.95                 | 21.07   | 24.02 | 30.00            | Complies |
|                                | 5755 MHz  | 16.13                 | 16.42   | 19.29 | 30.00            | Complies |
|                                | 5795 MHz  | 17.57                 | 17.61   | 20.60 | 30.00            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT80 | 5210 MHz  | 15.74                 | 16.26   | 19.02 | 30.00            | Complies |
|                                | 5775 MHz  | 15.42                 | 16.04   | 18.75 | 30.00            | Complies |

|               |                                               |           |               |
|---------------|-----------------------------------------------|-----------|---------------|
| Temperature   | 22°C                                          | Humidity  | 63%           |
| Test Engineer | Nick Peng                                     | Test Date | Jan. 12, 2015 |
| Test Mode     | Mode 2: (Ant.8 Panel antenna / 5.1 dBi / 3TX) |           |               |

| Mode                           | Frequency | Conducted Power (dBm) |         |         |       | Max. Limit (dBm) | Result   |
|--------------------------------|-----------|-----------------------|---------|---------|-------|------------------|----------|
|                                |           | Chain 4               | Chain 5 | Chain 6 | Total |                  |          |
| 802.11ac<br>MCS0/Nss1<br>VHT20 | 5180 MHz  | 18.24                 | 18.56   | 18.45   | 23.19 | 30.00            | Complies |
|                                | 5200 MHz  | 20.72                 | 21.22   | 21.27   | 25.85 | 30.00            | Complies |
|                                | 5240 MHz  | 21.45                 | 21.86   | 21.98   | 26.54 | 30.00            | Complies |
|                                | 5745 MHz  | 16.24                 | 16.83   | 16.35   | 21.25 | 30.00            | Complies |
|                                | 5785 MHz  | 21.16                 | 21.82   | 21.45   | 26.26 | 30.00            | Complies |
|                                | 5825 MHz  | 16.90                 | 17.34   | 17.13   | 21.90 | 30.00            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT40 | 5190 MHz  | 15.94                 | 16.67   | 16.50   | 21.15 | 30.00            | Complies |
|                                | 5230 MHz  | 19.91                 | 20.35   | 20.75   | 25.12 | 30.00            | Complies |
|                                | 5755 MHz  | 15.13                 | 15.59   | 15.25   | 20.10 | 30.00            | Complies |
|                                | 5795 MHz  | 16.31                 | 16.37   | 15.93   | 20.98 | 30.00            | Complies |
| 802.11ac<br>MCS0/Nss1<br>VHT80 | 5210 MHz  | 14.03                 | 14.41   | 14.26   | 19.01 | 30.00            | Complies |
|                                | 5775 MHz  | 14.21                 | 14.82   | 14.78   | 19.38 | 30.00            | Complies |

|               |                                                                                                   |           |                               |
|---------------|---------------------------------------------------------------------------------------------------|-----------|-------------------------------|
| Temperature   | 22°C                                                                                              | Humidity  | 63%                           |
| Test Engineer | Nick Peng, Lucas Huang                                                                            | Test Date | Jan. 08, 2015 ~ Jan. 13, 2015 |
| Test Mode     | Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 4: 8.3, Chain 5: 5.9, Chain 6: 8.2dBi / 2TX) |           |                               |

| Mode                           | Frequency | Conducted Power (dBm) |         |       | Max. Limit (dBm) | Result   |
|--------------------------------|-----------|-----------------------|---------|-------|------------------|----------|
|                                |           | Chain 4               | Chain 5 | Total |                  |          |
| 802.11ac<br>MCS0/Nss2<br>VHT20 | 5180 MHz  | 17.84                 | 18.19   | 21.03 | 27.70            | Complies |
|                                | 5200 MHz  | 20.87                 | 20.97   | 23.93 | 27.70            | Complies |
|                                | 5240 MHz  | 21.49                 | 21.72   | 24.62 | 27.70            | Complies |
|                                | 5745 MHz  | 14.57                 | 15.31   | 17.97 | 27.70            | Complies |
|                                | 5785 MHz  | 20.68                 | 21.51   | 24.13 | 27.70            | Complies |
|                                | 5825 MHz  | 15.72                 | 16.68   | 19.24 | 27.70            | Complies |
| 802.11ac<br>MCS0/Nss2<br>VHT40 | 5190 MHz  | 14.85                 | 15.27   | 18.08 | 27.70            | Complies |
|                                | 5230 MHz  | 19.52                 | 19.68   | 22.61 | 27.70            | Complies |
|                                | 5755 MHz  | 13.72                 | 14.03   | 16.89 | 27.70            | Complies |
|                                | 5795 MHz  | 15.02                 | 15.81   | 18.44 | 27.70            | Complies |
| 802.11ac<br>MCS0/Nss2<br>VHT80 | 5210 MHz  | 13.28                 | 14.07   | 16.70 | 27.70            | Complies |
|                                | 5775 MHz  | 13.38                 | 14.31   | 16.88 | 27.70            | Complies |

Note: Antenna gain = 8.30dBi > 6dBi, So Band1, 4 Limit = 30-(8.30-6)=27.70dBm/MHz

|               |                                                                                                   |           |                               |
|---------------|---------------------------------------------------------------------------------------------------|-----------|-------------------------------|
| Temperature   | 22°C                                                                                              | Humidity  | 63%                           |
| Test Engineer | Nick Peng, Lucas Huang                                                                            | Test Date | Jan. 08, 2015 ~ Jan. 13, 2015 |
| Test Mode     | Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 4: 8.3, Chain 5: 5.9, Chain 6: 8.2dBi / 3TX) |           |                               |

| Mode                           | Frequency | Conducted Power (dBm) |         |         |       | Max. Limit (dBm) | Result   |
|--------------------------------|-----------|-----------------------|---------|---------|-------|------------------|----------|
|                                |           | Chain 4               | Chain 5 | Chain 6 | Total |                  |          |
| 802.11ac<br>MCS0/Nss2<br>VHT20 | 5180 MHz  | 15.97                 | 16.24   | 16.16   | 20.90 | 27.70            | Complies |
|                                | 5200 MHz  | 17.02                 | 17.64   | 17.61   | 22.20 | 27.70            | Complies |
|                                | 5240 MHz  | 17.11                 | 17.56   | 17.37   | 22.12 | 27.70            | Complies |
|                                | 5745 MHz  | 14.58                 | 15.42   | 14.69   | 19.68 | 27.70            | Complies |
|                                | 5785 MHz  | 19.05                 | 19.32   | 19.26   | 23.98 | 27.70            | Complies |
|                                | 5825 MHz  | 15.18                 | 16.01   | 15.78   | 20.44 | 27.70            | Complies |
| 802.11ac<br>MCS0/Nss2<br>VHT40 | 5190 MHz  | 14.34                 | 14.78   | 14.22   | 19.22 | 27.70            | Complies |
|                                | 5230 MHz  | 18.38                 | 18.81   | 18.73   | 23.42 | 27.70            | Complies |
|                                | 5755 MHz  | 12.48                 | 13.68   | 13.05   | 17.87 | 27.70            | Complies |
|                                | 5795 MHz  | 14.78                 | 15.65   | 14.97   | 19.92 | 27.70            | Complies |
| 802.11ac<br>MCS0/Nss2<br>VHT80 | 5210 MHz  | 11.97                 | 12.53   | 12.21   | 17.01 | 27.70            | Complies |
|                                | 5775 MHz  | 12.28                 | 13.09   | 12.87   | 17.53 | 27.70            | Complies |

Note: Antenna gain = 8.30dBi > 6dBi, So Band1, 4 Limit = 30-(8.30-6)=27.70dBm/MHz

## 4.5. Power Spectral Density Measurement

### 4.5.1. Limit

The following table is power spectral density limits and decrease power density limit rule refer to section 4.4.1.

| Frequency Band                      |                                    | Limit         |
|-------------------------------------|------------------------------------|---------------|
| <input checked="" type="checkbox"/> | 5.15~5.25 GHz                      |               |
|                                     | Operating Mode                     |               |
| <input checked="" type="checkbox"/> | Outdoor access point               | 17 dBm/MHz    |
| <input checked="" type="checkbox"/> | Indoor access point                | 17 dBm/MHz    |
| <input checked="" type="checkbox"/> | Fixed point-to-point access points | 17 dBm/MHz    |
| <input type="checkbox"/>            | Mobile and portable client devices | 11 dBm/MHz    |
| <input checked="" type="checkbox"/> | 5.725~5.85 GHz                     | 30 dBm/500kHz |

### 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 the spectrum analyzer.

For 5.15~5.25 GHz

| 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                                                    |

For 5.725~5.85 GHz

| Spectrum Parameter                                                                                                                                                                                                                                    | Setting                                              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|
| Attenuation                                                                                                                                                                                                                                           | Auto                                                 |
| Span Frequency                                                                                                                                                                                                                                        | Set the span to 1.5 times the DTS channel bandwidth. |
| RBW                                                                                                                                                                                                                                                   | $RBW \geq 1/T$                                       |
| VBW                                                                                                                                                                                                                                                   | $VBW \geq 3 RBW$                                     |
| Detector                                                                                                                                                                                                                                              | Peak                                                 |
| Trace                                                                                                                                                                                                                                                 | Max Hold                                             |
| Sweep Time                                                                                                                                                                                                                                            | Auto couple                                          |
| Note: If measurement bandwidth of Maximum PSD is specified in 500 kHz, add $10\log(500\text{kHz}/RBW)$ to the measured result, whereas $RBW (< 500 \text{ kHz})$ is the reduced resolution bandwidth of the spectrum analyzer set during measurement. |                                                      |

#### 4.5.3. Test Procedures

For 5.15~5.25 GHz

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.

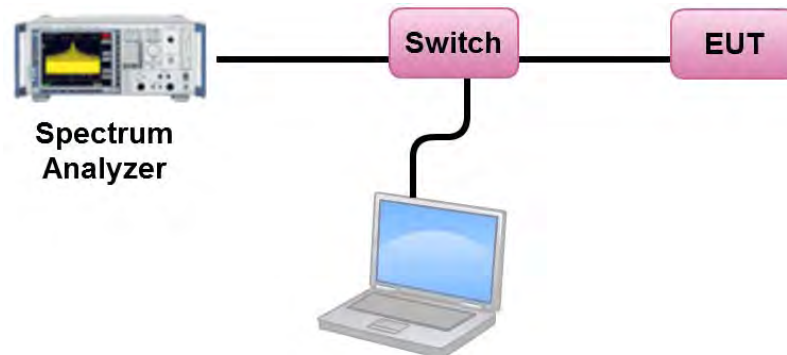
For 5.725~5.85 GHz

1. Test procedures refer KDB662911 D01 v02r01 section In-Band Power Spectral Density (PSD) Measurements option (b) Measure and sum spectral maximal across the outputs.
2. Use this procedure when the maximum conducted output power in the fundamental emission is used to demonstrate compliance. The EUT must be configured to transmit continuously at full power over the measurement duration.
3. Ensure that the number of measurement points in the sweep  $\geq 2 \times \text{span/RBW}$  (use of a greater number of measurement points than this minimum requirement is recommended).
4. Use the peak marker function to determine the maximum level in any 3 kHz band segment within the fundamental EBW.
5. The measured result of PSD level must add  $10\log(500\text{kHz/RBW})$  and the final result should  $\leq 30$  dBm.

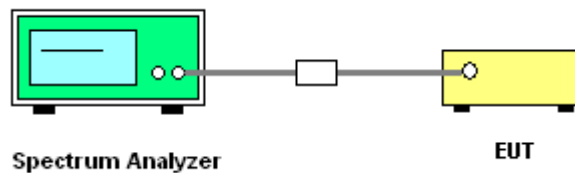


#### 4.5.4. Test Setup Layout

For 5.15~5.25 GHz



For 5.725~5.85 GHz



#### 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. Test Result of Power Spectral Density

For Band 1 and Band 4 (Master and client without radar detection):

<For Non-Beamforming Mode>

|               |                                               |           |               |
|---------------|-----------------------------------------------|-----------|---------------|
| Temperature   | 22°C                                          | Humidity  | 63%           |
| Test Engineer | Nick Peng                                     | Test Date | Jan. 14, 2015 |
| Test Mode     | Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 1TX) |           |               |

For outdoor use

Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5

| Channel | Frequency | Power Density (dBm/MHz) | Max. Limit (dBm/MHz) | Result   |
|---------|-----------|-------------------------|----------------------|----------|
| 36      | 5180 MHz  | 1.26                    | 15.70                | Complies |
| 40      | 5200 MHz  | 1.01                    | 15.70                | Complies |
| 48      | 5240 MHz  | 1.21                    | 15.70                | Complies |

Note: Antenna gain = 7.3dBi > 6dBi, So Band1 Limit = 17-(7.3-6) = 15.70dBm/MHz

| Channel | Frequency | Power Density (dBm/MHz) | 10log(500kHz/RBW) Factor (dB) | Power Density (dBm/500kHz) | Power Density Limit (dBm/500kHz) | Result   |
|---------|-----------|-------------------------|-------------------------------|----------------------------|----------------------------------|----------|
| 149     | 5745 MHz  | 2.60                    | -3.01                         | -0.41                      | 28.70                            | Complies |
| 157     | 5785 MHz  | 8.02                    | -3.01                         | 5.01                       | 28.70                            | Complies |
| 165     | 5825 MHz  | 2.90                    | -3.01                         | -0.11                      | 28.70                            | Complies |

Note: Antenna gain = 7.3dBi > 6dBi, So Band4 Limit = 30-(7.3-6) = 28.70dBm/500kHz

Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5

| Channel | Frequency | Power Density (dBm/MHz) | Max. Limit (dBm/MHz) | Result   |
|---------|-----------|-------------------------|----------------------|----------|
| 38      | 5190 MHz  | -1.44                   | 15.70                | Complies |
| 46      | 5230 MHz  | -1.37                   | 15.70                | Complies |

Note: Antenna gain = 7.3dBi > 6dBi, So Band1 Limit = 17-(7.3-6) = 15.70dBm/MHz

| Channel | Frequency | Power Density (dBm/MHz) | 10log(500kHz/RBW) Factor (dB) | Power Density (dBm/500kHz) | Power Density Limit (dBm/500kHz) | Result   |
|---------|-----------|-------------------------|-------------------------------|----------------------------|----------------------------------|----------|
| 151     | 5755 MHz  | -1.37                   | -3.01                         | -4.38                      | 28.70                            | Complies |
| 159     | 5795 MHz  | 0.84                    | -3.01                         | -2.17                      | 28.70                            | Complies |

Note: Antenna gain = 7.3dBi > 6dBi, So Band4 Limit = 30-(7.3-6) = 28.70dBm/500kHz

**Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 5**

| Channel | Frequency | Power Density (dBm/MHz) | Max. Limit (dBm/MHz) | Result   |
|---------|-----------|-------------------------|----------------------|----------|
| 42      | 5210 MHz  | -4.20                   | 15.70                | Complies |

Note: Antenna gain = 7.3dBi > 6dBi, So Band1 Limit =  $17 - (7.3 - 6) = 15.70$  dBm/MHz

| Channel | Frequency | Power Density (dBm/MHz) | $10\log(500\text{kHz}/\text{RBW})$ Factor (dB) | Power Density (dBm/500kHz) | Power Density Limit (dBm/500kHz) | Result   |
|---------|-----------|-------------------------|------------------------------------------------|----------------------------|----------------------------------|----------|
| 155     | 5775 MHz  | -4.16                   | -3.01                                          | -7.17                      | 28.70                            | Complies |

Note: Antenna gain = 7.3dBi > 6dBi, So Band4 Limit =  $30 - (7.3 - 6) = 28.70$  dBm/500kHz

|               |                                               |           |               |
|---------------|-----------------------------------------------|-----------|---------------|
| Temperature   | 22°C                                          | Humidity  | 63%           |
| Test Engineer | Nick Peng                                     | Test Date | Jan. 14, 2015 |
| Test Mode     | Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 2TX) |           |               |

For outdoor use

Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 + Chain 5

| Channel | Frequency | Power Density (dBm/MHz) | Max. Limit (dBm/MHz) | Result   |
|---------|-----------|-------------------------|----------------------|----------|
| 36      | 5180 MHz  | 2.11                    | 12.69                | Complies |
| 40      | 5200 MHz  | 2.13                    | 12.69                | Complies |
| 48      | 5240 MHz  | 2.09                    | 12.69                | Complies |

Note:  $DirectionalGain = 10 \cdot \log \left[ \frac{\sum_{j=1}^{N_{ANT}} \left\{ \sum_{k=1}^{N_{CH}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 10.31 \text{ dBi} > 6 \text{ dBi}$ , So Band1 Limit = 17-(10.31-6)=12.69dBm/MHz

| Channel | Frequency | Power Density (dBm/MHz) | 10log(500kHz/RBW) Factor (dB) | Power Density (dBm/500kHz) | Power Density Limit (dBm/500kHz) | Result   |
|---------|-----------|-------------------------|-------------------------------|----------------------------|----------------------------------|----------|
| 149     | 5745 MHz  | 5.94                    | -3.01                         | 2.93                       | 25.69                            | Complies |
| 157     | 5785 MHz  | 10.95                   | -3.01                         | 7.94                       | 25.69                            | Complies |
| 165     | 5825 MHz  | 10.90                   | -3.01                         | 7.89                       | 25.69                            | Complies |

Note:  $DirectionalGain = 10 \cdot \log \left[ \frac{\sum_{j=1}^{N_{ANT}} \left\{ \sum_{k=1}^{N_{CH}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 10.31 \text{ dBi} > 6 \text{ dBi}$ , So Band4 Limit = 30-(10.31-6)=25.69dBm/500kHz

Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 4 + Chain 5

| Channel | Frequency | Power Density (dBm/MHz) | Max. Limit (dBm/MHz) | Result   |
|---------|-----------|-------------------------|----------------------|----------|
| 38      | 5190 MHz  | -1.40                   | 12.69                | Complies |
| 46      | 5230 MHz  | -1.11                   | 12.69                | Complies |

Note:  $DirectionalGain = 10 \cdot \log \left[ \frac{\sum_{j=1}^{N_{ANT}} \left\{ \sum_{k=1}^{N_{CH}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 10.31 \text{ dBi} > 6 \text{ dBi}$ , So Band1 Limit = 17-(10.31-6)=12.69dBm/MHz

| Channel | Frequency | Power Density (dBm/MHz) | 10log(500kHz/RBW) Factor (dB) | Power Density (dBm/500kHz) | Power Density Limit (dBm/500kHz) | Result   |
|---------|-----------|-------------------------|-------------------------------|----------------------------|----------------------------------|----------|
| 151     | 5755 MHz  | 3.09                    | -3.01                         | 0.08                       | 25.69                            | Complies |
| 159     | 5795 MHz  | 3.23                    | -3.01                         | 0.22                       | 25.69                            | Complies |

Note:  $DirectionalGain = 10 \cdot \log \left[ \frac{\sum_{j=1}^{N_{ANT}} \left\{ \sum_{k=1}^{N_{CH}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 10.31 \text{ dBi} > 6 \text{ dBi}$ , So Band4 Limit = 30-(10.31-6)=25.69dBm/500kHz

## Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 4 + Chain 5

| Channel | Frequency | Power Density (dBm/MHz) | Max. Limit (dBm/MHz) | Result   |
|---------|-----------|-------------------------|----------------------|----------|
| 42      | 5210 MHz  | -4.32                   | 12.69                | Complies |

Note:  $DirectionalGain = 10 \cdot \log \left[ \frac{\sum_{j=1}^{N_{ch}} \left\{ \sum_{k=1}^{N_{ant}} |g_{j,k}|^2 \right\}}{N_{ant}} \right] = 10.31 \text{ dBi} > 6 \text{ dBi}$ , So Band1 Limit = 17-(10.31-6)=12.69dBm/MHz

| Channel | Frequency | Power Density (dBm/MHz) | 10log(500kHz/RBW) Factor (dB) | Power Density (dBm/500kHz) | Power Density Limit (dBm/500kHz) | Result   |
|---------|-----------|-------------------------|-------------------------------|----------------------------|----------------------------------|----------|
| 155     | 5775 MHz  | -1.60                   | -3.01                         | -4.61                      | 25.69                            | Complies |

Note:  $DirectionalGain = 10 \cdot \log \left[ \frac{\sum_{j=1}^{N_{ch}} \left\{ \sum_{k=1}^{N_{ant}} |g_{j,k}|^2 \right\}}{N_{ant}} \right] = 10.31 \text{ dBi} > 6 \text{ dBi}$ , So Band4 Limit = 30-(10.31-6)=25.69dBm/500kHz

|               |                                               |           |               |
|---------------|-----------------------------------------------|-----------|---------------|
| Temperature   | 22°C                                          | Humidity  | 63%           |
| Test Engineer | Nick Peng                                     | Test Date | Jan. 14, 2015 |
| Test Mode     | Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 3TX) |           |               |

For outdoor use

Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 + Chain 5 + Chain 6

| Channel | Frequency | Power Density (dBm/MHz) | Max. Limit (dBm/MHz) | Result   |
|---------|-----------|-------------------------|----------------------|----------|
| 36      | 5180 MHz  | 2.20                    | 10.93                | Complies |
| 40      | 5200 MHz  | 2.35                    | 10.93                | Complies |
| 48      | 5240 MHz  | 2.36                    | 10.93                | Complies |

Note:  $DirectionalGain = 10 \cdot \log \left[ \frac{\sum_{j=1}^{N_{ANT}} \left\{ \sum_{k=1}^{N_{CH}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 12.07\text{dBi} > 6\text{dBi}$ , So Band1 Limit = 17-(12.07-6)=10.93dBm/MHz

| Channel | Frequency | Power Density (dBm/MHz) | 10log(500kHz/RBW) Factor (dB) | Power Density (dBm/500kHz) | Power Density Limit (dBm/500kHz) | Result   |
|---------|-----------|-------------------------|-------------------------------|----------------------------|----------------------------------|----------|
| 149     | 5745 MHz  | 7.25                    | -3.01                         | 4.24                       | 23.93                            | Complies |
| 157     | 5785 MHz  | 10.48                   | -3.01                         | 7.47                       | 23.93                            | Complies |
| 165     | 5825 MHz  | 6.77                    | -3.01                         | 3.76                       | 23.93                            | Complies |

Note:  $DirectionalGain = 10 \cdot \log \left[ \frac{\sum_{j=1}^{N_{ANT}} \left\{ \sum_{k=1}^{N_{CH}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 12.07\text{dBi} > 6\text{dBi}$ , So Band4 Limit = 30-(12.07-6)=23.93dBm/500kHz

Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 4 + Chain 5 + Chain 6

| Channel | Frequency | Power Density (dBm/MHz) | Max. Limit (dBm/MHz) | Result   |
|---------|-----------|-------------------------|----------------------|----------|
| 38      | 5190 MHz  | -0.74                   | 10.93                | Complies |
| 46      | 5230 MHz  | -0.48                   | 10.93                | Complies |

Note:  $DirectionalGain = 10 \cdot \log \left[ \frac{\sum_{j=1}^{N_{ANT}} \left\{ \sum_{k=1}^{N_{CH}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 12.07\text{dBi} > 6\text{dBi}$ , So Band1 Limit = 17-(12.07-6)=10.93dBm/MHz

| Channel | Frequency | Power Density (dBm/MHz) | 10log(500kHz/RBW) Factor (dB) | Power Density (dBm/500kHz) | Power Density Limit (dBm/500kHz) | Result   |
|---------|-----------|-------------------------|-------------------------------|----------------------------|----------------------------------|----------|
| 151     | 5755 MHz  | 2.88                    | -3.01                         | -0.13                      | 23.93                            | Complies |
| 159     | 5795 MHz  | 5.33                    | -3.01                         | 2.32                       | 23.93                            | Complies |

Note:  $DirectionalGain = 10 \cdot \log \left[ \frac{\sum_{j=1}^{N_{ANT}} \left\{ \sum_{k=1}^{N_{CH}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 12.07\text{dBi} > 6\text{dBi}$ , So Band4 Limit = 30-(12.07-6)=23.93dBm/500kHz

### Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 4 + Chain 5 + Chain 6

| Channel | Frequency | Power Density (dBm/MHz) | Max. Limit (dBm/MHz) | Result   |
|---------|-----------|-------------------------|----------------------|----------|
| 42      | 5210 MHz  | -3.87                   | 10.93                | Complies |

Note:  $DirectionalGain = 10 \cdot \log \left[ \frac{\sum_{j=1}^{N_{ch}} \left\{ \sum_{k=1}^{N_{ant}} |g_{j,k}|^2 \right\}}{N_{ant}} \right] = 12.07 \text{ dBi} > 6 \text{ dBi}$ , So Band1 Limit =  $17 - (12.07 - 6) = 10.93 \text{ dBm/MHz}$

| Channel | Frequency | Power Density (dBm/MHz) | 10log(500kHz/RBW) Factor (dB) | Power Density (dBm/500kHz) | Power Density Limit (dBm/500kHz) | Result   |
|---------|-----------|-------------------------|-------------------------------|----------------------------|----------------------------------|----------|
| 155     | 5775 MHz  | -0.73                   | -3.01                         | -3.74                      | 23.93                            | Complies |

Note:  $DirectionalGain = 10 \cdot \log \left[ \frac{\sum_{j=1}^{N_{ch}} \left\{ \sum_{k=1}^{N_{ant}} |g_{j,k}|^2 \right\}}{N_{ant}} \right] = 12.07 \text{ dBi} > 6 \text{ dBi}$ , So Band4 Limit =  $30 - (12.07 - 6) = 23.93 \text{ dBm/500kHz}$

|               |                                               |           |               |
|---------------|-----------------------------------------------|-----------|---------------|
| Temperature   | 22°C                                          | Humidity  | 63%           |
| Test Engineer | Nick Peng                                     | Test Date | Mar. 02, 2015 |
| Test Mode     | Mode 1: (Ant.2 Dipole antenna / 7.3dBi / 1TX) |           |               |

For indoor use

#### Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5

| Channel | Frequency | Power Density (dBm/MHz) | Max. Limit (dBm/MHz) | Result   |
|---------|-----------|-------------------------|----------------------|----------|
| 36      | 5180 MHz  | 6.77                    | 15.70                | Complies |
| 40      | 5200 MHz  | 9.33                    | 15.70                | Complies |
| 48      | 5240 MHz  | 9.38                    | 15.70                | Complies |

Note: Antenna gain=7.3dBi >6dBi, So Band1 Limit = 17-(7.3-6)=15.70dBm/MHz

#### Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5

| Channel | Frequency | Power Density (dBm/MHz) | Max. Limit (dBm/MHz) | Result   |
|---------|-----------|-------------------------|----------------------|----------|
| 38      | 5190 MHz  | 1.50                    | 15.70                | Complies |
| 46      | 5230 MHz  | 6.37                    | 15.70                | Complies |

Note: Antenna gain=7.3dBi >6dBi, So Band1 Limit = 17-(7.3-6)=15.70dBm/MHz

#### Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 5

| Channel | Frequency | Power Density (dBm/MHz) | Max. Limit (dBm/MHz) | Result   |
|---------|-----------|-------------------------|----------------------|----------|
| 42      | 5210 MHz  | -2.35                   | 15.70                | Complies |

Note: Antenna gain=7.3dBi >6dBi, So Band1 Limit = 17-(7.3-6)=15.70dBm/MHz