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FCC RADIO TEST REPORT

Applicant's company	Extreme Networks, Inc.
Applicant Address	9 Northeastern Blvd. Salem, NH 03079 USA
FCC ID	QXO-4411OAC
Manufacturer's company	Senao Networks, Inc.
Manufacturer Address	3F, No. 529, Chung Cheng Rd., Hsintien, Taipei, Taiwan

Product Name	Wireless 802.11a/AC+ b/g/n Access Point
Brand Name	Extreme Networks
Model No.	31016, 31018, 31017, 31019
Test Rule Part(s)	47 CFR FCC Part 15 Subpart E § 15.407
Test Freq. Range	5150 ~ 5250 MHz / 5725 ~ 5850 MHz
Received Date	Nov. 17, 2015
Final Test Date	Dec. 20, 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.

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

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



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History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR541521-01AB	Rev. 01	Initial issue of report	Jan. 06, 2016
FR541521-01AB	Rev. 02	Adding two model names: 31017, 31019	Jan. 12, 2016

1. VERIFICATION OF COMPLIANCE

Product Name : Wireless 802.11a/AC+ b/g/n Access Point
Brand Name : Extreme Networks
Model No. : 31016, 31018, 31017, 31019
Applicant : Extreme Networks, Inc.
Test Rule Part(s) : 47 CFR FCC Part 15 Subpart E § 15.407

Sporton International as requested by the applicant to evaluate the EMC performance of the product sample received on Nov. 17, 2015 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	16.16 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	0.11 dB
4.5	15.407(a)	Power Spectral Density	Complies	1.62 dB
4.6	15.407(b)	Radiated Emissions	Complies	3.25 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 (4TX, 4RX)
Radio Type	Intentional Transceiver
Power Type	From PoE
Modulation	IEEE 802.11a: OFDM IEEE 802.11n/ac: see the below table
Data Modulation	IEEE 802.11a/n: OFDM (BPSK / QPSK / 16QAM / 64QAM) IEEE 802.11ac: OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)
Data Rate (Mbps)	IEEE 802.11a: OFDM (6/9/12/18/24/36/48/54) IEEE 802.11n/ac: see the below table
Frequency Range	5150 ~ 5250 MHz / 5725 ~ 5850 MHz
Channel Number	9 for 20MHz bandwidth ; 4 for 40MHz bandwidth 2 for 80MHz bandwidth
Channel Band Width (99%)	Mode 1: EUT 1 + Set 1 Sector Antenna / 6.5 dBi Band 1: IEEE 802.11a: 17.45 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 18.49 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 35.31 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 73.23 MHz Band 4: IEEE 802.11a: 25.53 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 27.87 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 35.31 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 74.96 MHz Mode 2: EUT 1 + Set 2 Sector Antenna / 4.5 dBi Band 1: IEEE 802.11a: 17.19 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 18.23 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 35.17 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 73.52 MHz Band 4: IEEE 802.11a: 25.35 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 27.87 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 35.31 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 74.38 MHz

	Mode 3: EUT 1 + Set 3 Sector Antenna / 5.5 dBi Band 1: IEEE 802.11a: 17.02 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 18.06 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 35.31 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 72.23 MHz Band 4: IEEE 802.11a: 25.35 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 27.87 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 35.31 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 74.96 MHz Mode 4: EUT 1 + Set 4 Sector Antenna / 7.5 dBi Band 1: IEEE 802.11a: 17.02 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 17.97 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 35.31 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 73.52 MHz Band 4: IEEE 802.11a: 25.35 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 21.87 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 34.88 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 74.96 MHz Mode 5: EUT 1 + Set 5 Panel Antenna / 6 dBi Band 1: IEEE 802.11a: 17.19 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 18.23 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 35.17 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 73.23 MHz Band 4: IEEE 802.11a: 25.35 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 27.88 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 35.31 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 74.96 MHz Mode 6: EUT 1 + Set 7 Sector Antenna / 11.5 dBi Band 1: IEEE 802.11a: 16.93 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 17.97 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 35.46 MHz
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	IEEE 802.11ac MCS0/Nss1 (VHT80): 73.52 MHz Band 4: IEEE 802.11a: 15.02 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 16.85 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 34.85 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 74.67 MHz Mode 7: EUT 1 + Set 8 Sector Antenna / 12 dBi Band 1: IEEE 802.11a: 16.93 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 18.06 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 35.31 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 73.52 MHz Band 4: IEEE 802.11a: 15.02 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 16.85 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 34.88 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 74.67 MHz Mode 8: EUT 1 + Set 9 Sector Antenna / 4 dBi Band 1: IEEE 802.11a: 24.31 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 20.23 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 36.32 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 73.52 MHz Band 4: IEEE 802.11a: 25.35 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 27.87 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 35.31 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 76.96 MHz Mode 9: EUT 1 + Set 10 Panel Antenna / 23 dBi Band 1: IEEE 802.11a: 17.19 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 18.23 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 32.85 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 72.36 MHz Band 4: IEEE 802.11a: 15.72 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 16.58 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 33.72 MHz
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	IEEE 802.11ac MCS0/Nss1 (VHT80): 71.49 MHz Mode 10: EUT 1 + Set 11 Omni Antenna / 6 dBi Band 1: IEEE 802.11a: 17.19 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 18.23 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 35.17 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 73.52 MHz Band 4: IEEE 802.11a: 25.35 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 27.87 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 34.88 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 74.96 MHz Mode 11: EUT 2 + Set 12 PIFA Antenna / Chain1:5.96 dBi, Chain2:5.97 dBi, Chain3:6.25 dBi, Chain4:6.08 dBi Band 1: IEEE 802.11a: 15.98 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 17.02 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 36.61 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 76.70 MHz Band 4: IEEE 802.11a: 37.08 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 38.90 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 36.76 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 76.41 MHz
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Maximum Conducted Output Power	Mode 1: EUT 1 + Set 1 Sector Antenna / 6.5 dBi Band 1: IEEE 802.11a: 23.02 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 23.14 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 23.02 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 17.42 dBm Band 4: IEEE 802.11a: 27.36 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 27.21 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 25.42 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 16.83 dBm Mode 2: EUT 1 + Set 2 Sector Antenna / 4.5 dBi Band 1: IEEE 802.11a: 20.38 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 20.09 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 20.46 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 18.53 dBm Band 4: IEEE 802.11a: 27.36 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 27.21 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 25.42 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 18.36 dBm Mode 3: EUT 1 + Set 3 Sector Antenna / 5.5 dBi Band 1: IEEE 802.11a: 18.87 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 19.12 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 18.93 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 17.98 dBm Band 4: IEEE 802.11a: 27.36 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 27.21 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 25.42 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 17.32 dBm Mode 4: EUT 1 + Set 4 Sector Antenna / 7.5 dBi Band 1: IEEE 802.11a: 18.87 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 19.04 dBm
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	IEEE 802.11ac MCS0/Nss1 (VHT40): 18.93 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 16.38 dBm Band 4: IEEE 802.11a: 27.36 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 27.21 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 24.30 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 16.00 dBm Mode 5: EUT 1 + Set 5 Panel Antenna / 6 dBi Band 1: IEEE 802.11a: 20.95 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 21.16 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 20.96 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 17.42 dBm Band 4: IEEE 802.11a: 27.36 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 27.21 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 25.42 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 16.83 dBm Mode 6: EUT 1 + Set 7 Sector Antenna / 11.5 dBi Band 1: IEEE 802.11a: 12.84 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 13.07 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 12.94 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 13.00 dBm Band 4: IEEE 802.11a: 24.32 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 24.12 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 23.99 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 13.77 dBm Mode 7: EUT 1 + Set 8 Sector Antenna / 12 dBi Band 1: IEEE 802.11a: 17.32 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 17.10 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 17.42 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 14.49 dBm Band 4: IEEE 802.11a: 23.86 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 23.89 dBm
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	IEEE 802.11ac MCS0/Nss1 (VHT40): 23.44 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 13.77 dBm Mode 8: EUT 1 + Set 9 Sector Antenna / 4 dBi Band 1: IEEE 802.11a: 27.61 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 27.05 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 26.41 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 16.99 dBm Band 4: IEEE 802.11a: 27.36 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 27.21 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 25.42 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 16.83 dBm Mode 9: EUT 1 + Set 10 Panel Antenna / 23 dBi Band 1: IEEE 802.11a: 16.27 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 16.13 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 14.47 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 9.52 dBm Band 4: IEEE 802.11a: 19.96 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 19.71 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 14.96 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 7.33 dBm Mode 10: EUT 1 + Set 11 Omni Antenna / 6 dBi Band 1: IEEE 802.11a: 20.89 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 21.16 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 20.96 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 16.38 dBm Band 4: IEEE 802.11a: 27.96 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 27.75 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 24.30 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 16.83 dBm
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	Mode 11: EUT 2 + Set 12 PIFA Antenna / Chain1:5.96 dBi, Chain2:5.97 dBi, Chain3:6.25 dBi, Chain4:6.08 dBi Band 1: IEEE 802.11a: 21.52 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 21.44 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 21.50 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 17.55 dBm Band 4: IEEE 802.11a: 28.40 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 28.41 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 25.18 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 16.79 dBm
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3

Items	Description
Communication Mode	☒ IP Based (Load Based) ☐ Frame Based
Operating Mode	☒ Outdoor access point ☐ Indoor access point ☒ Fixed point-to-point access points ☐ Mobile and portable client devices

Antenna and Band width

Antenna	Four (TX)		
Band width Mode	20 MHz	40 MHz	80 MHz
IEEE 802.11a	V	X	X
IEEE 802.11n	V	V	X
IEEE 802.11ac	V	V	V

IEEE 11n/ac Spec.

Protocol	Number of Transmit Chains (NTX)	Data Rate / MCS
802.11n (HT20)	4	MCS 0-31
802.11n (HT40)	4	MCS 0-31
802.11ac (VHT20)	4	MCS 0-9/Nss1-4
802.11ac (VHT40)	4	MCS 0-9/Nss1-4
802.11ac (VHT80)	4	MCS 0-9/Nss1-4

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

Then EUT supports HT20 and HT40.

Note 2: IEEE Std. 802.11ac modulation consists of VHT20, VHT40, VHT80 and VHT160 (VHT: Very High Throughput). Then EUT supports VHT20, VHT40 and VHT80 in 5GHz.

Note 3: Modulation modes consist of below configuration:

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

3.2. Accessories

Antenna cable, Non-Shielded, 1.5m

3.3. Table for Filed Antenna

Set.	Brand Holder	Model Number (Part No.)	Extreme Part No. (Short Description)	Antenna Type	Connector	Polarized Antenna	Gain (dBi)	
							2.4GHz	5GHz
1	PCTEL Inc.	908412-10	30714 (WS-AO-DE07025N)	Sector Antenna	N Male	V	7.5	6.5
2	PCTEL Inc.	908414-10	30716 (WS-AO-5Q05025N)	Sector Antenna	N Male	V	-	4.5
3	PCTEL Inc.	908409-10	30711 (WS-AO-DQ05120N)	Sector Antenna	N Male	V	5.5	5.5
4	PCTEL Inc.	908416-10	30718 (WS-AO-DE10055N)	Sector Antenna	N Male	V	10.5	7.5
5	PCTEL Inc.	908418-10	30720 (WS-AO-DE07100N)	Panel Antenna	N Male	X	7	6
6	PCTEL Inc.	908411-10	30713 (WS-AO-2Q05060N)	Sector Antenna	N Male Plug	V	5	-
7	PCTEL Inc.	908415-10	30717 (WS-AO-5Q11025N)	Sector Antenna	N Male	V	-	11.5
8	PCTEL Inc.	908413-10	30715 (WS-AO-DE13025N)	Sector Antenna	N Male	V	13	12
9	PCTEL Inc.	908410-10	30712 (WS-AO-5Q04060N)	Sector Antenna	N Male Plug	V	-	4
10	PCTEL Inc.	-	WS-AO-5D23009N	Panel Antenna	N Type	V	-	23
11	PCTEL Inc.	908550-10	30724 (WS-AO-DQ04360N)	Omni Antenna	N Male	X	5.5	6
12	Senao Networks, Inc.	AP3965i	-	PIFA Antenna	MMCX	X	Note 1	

Note1:

Set.	Antenna Gain (dBi)							
	2.4GHz				5GHz			
	Chain 1	Chain 2	Chain 3	Chain 4	Chain 1	Chain 2	Chain 3	Chain 4
12	6.25	5.77	6.45	5.60	5.96	5.97	6.25	6.08

Note2:

The EUT has twelve sets of antennas.

Note3:

Antenna cable only for Set 5 and Set 10 use.

Note4:

Set 1~Set 5, Set 7~Set 9, Set 11~Set 12 use for P to M function, only Set 10 use for P to P function.

<For 2.4GHz Function>

For IEEE 802.11b/g/n/ac mode (4TX, 4RX):

Chain 1, Chain 2, Chain 3 and Chain 4 could transmit/receive simultaneously.

<For 5GHz Function>

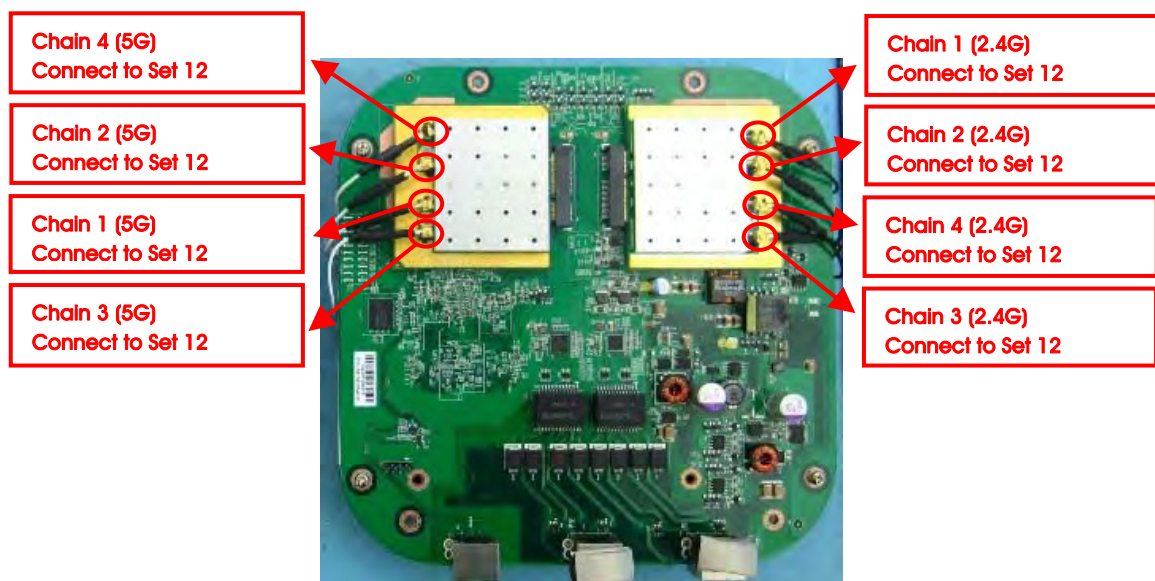
For IEEE 802.11a/n/ac mode (4TX, 4RX):

Chain 1, Chain 2, Chain 3 and Chain 4 could transmit/receive simultaneously.

For EUT 1:



For EUT 2:



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 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 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	11a/BPSK	Band 1&4	6Mbps	36/40/48/149/ 157/165	1+2+3+4
	11ac VHT20	Band 1&4	MCS0/Nss1	36/40/48/149/ 157/165	1+2+3+4
	11ac VHT40	Band 1&4	MCS0/Nss1	38/46/151/159	1+2+3+4
	11ac VHT80	Band 1&4	MCS0/Nss1	42/155	1+2+3+4
Power Spectral Density	11a/BPSK	Band 1&4	6Mbps	36/40/48/149/ 157/165	1+2+3+4
	11ac VHT20	Band 1&4	MCS0/Nss1	36/40/48/149/ 157/165	1+2+3+4
	11ac VHT40	Band 1&4	MCS0/Nss1	38/46/151/159	1+2+3+4
	11ac VHT80	Band 1&4	MCS0/Nss1	42/155	1+2+3+4
26dB Spectrum Bandwidth & 99% Occupied Bandwidth Measurement	11a/BPSK	Band 1&4	6Mbps	36/40/48/149/ 157/165	1+2+3+4
	11ac VHT20	Band 1&4	MCS0/Nss1	36/40/48/149/ 157/165	1+2+3+4
	11ac VHT40	Band 1&4	MCS0/Nss1	38/46/151/159	1+2+3+4
	11ac VHT80	Band 1&4	MCS0/Nss1	42/155	1+2+3+4
6dB Spectrum Bandwidth Measurement	11a/BPSK	Band 4	6Mbps	149/157/165	1+2+3+4
	11ac VHT20	Band 4	MCS0/Nss1	149/157/165	1+2+3+4
	11ac VHT40	Band 4	MCS0/Nss1	151/159	1+2+3+4
	11ac VHT80	Band 4	MCS0/Nss1	155	1+2+3+4
Radiated Emission Below 1GHz	Normal Link		-	-	-
Radiated Emission Above 1GHz	11a/BPSK	Band 1&4	6Mbps	36/40/48/149/ 157/165	1+2+3+4
	11ac VHT20	Band 1&4	MCS0/Nss1	36/40/48/149/ 157/165	1+2+3+4
	11ac VHT40	Band 1&4	MCS0/Nss1	38/46/151/159	1+2+3+4
	11ac VHT80	Band 1&4	MCS0/Nss1	42/155	1+2+3+4

Band Edge Emission	11a/BPSK	Band 1&4	6Mbps	36/40/48/149/ 157/165	1+2+3+4
	11ac VHT20	Band 1&4	MCS0/Nss1	36/40/48/149/ 157/165	1+2+3+4
	11ac VHT40	Band 1&4	MCS0/Nss1	38/46/151/159	1+2+3+4
	11ac VHT80	Band 1&4	MCS0/Nss1	42/155	1+2+3+4
Frequency Stability	20 MHz	Band 1&4	-	40/157	3, 4
	40 MHz	Band 1&4	-	38/151	3, 4
	80 MHz	Band 1&4	-	42/155	3, 4

Note1: VHT20/VHT40 covers HT20/HT40, due to same modulation. The power setting for 802.11n HT20 and HT40 are the same or lower than 802.11ac VHT20 and VHT40.

Note2:

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

The PoE information as below:

Power	Brand	Model
PoE	Microsemi	PD-9001GR

Note3: All the specification of test configurations and test modes were based on customer's request.

Note4: The console port can not be used by end user. It is generally used for updating FW by professional installer.

The following test modes were performed for all tests:

For Conducted Emission test:

Mode 1. Normal Link - EUT 1 + Set 8 + Set 10

Mode 2. Normal Link - EUT 2 + Set 12

Mode 2 is the worst case, so it was selected to record in this test report.

For Radiated Emission Below 1GHz test:

Mode 1. Place EUT 1 in Y axis + Set 8 + Set 10

Mode 2. Place EUT 1 in Z axis + Set 8 + Set 10

Mode 3. Place EUT 2 in Y axis + Set 12

Mode 4. Place EUT 2 in Z axis + Set 12

Mode 2 is the worst case, so it was selected to record in this test report.

For Radiated Emission Above 1GHz test:

The EUT 1 was performed at Y axis and Z axis position. Z axis has been evaluated to be the worst case, thus measurement will follow this same test mode.

The EUT 2 was performed at Y axis and Z axis position. Y axis has been evaluated to be the worst case, thus measurement will follow this same test mode.

Mode 1. Place EUT 1 in Z axis + Set 1

Mode 2. Place EUT 1 in Z axis + Set 2

Mode 3. Place EUT 1 in Z axis + Set 3

Mode 4. Place EUT 1 in Z axis + Set 4

Mode 5. Place EUT 1 in Z axis + Set 5

Mode 6. Place EUT 1 in Z axis + Set 7

Mode 7. Place EUT 1 in Z axis + Set 8

Mode 8. Place EUT 1 in Z axis + Set 9

Mode 9. Place EUT 1 in Z axis + Set 10

Mode 10. Place EUT 1 in Z axis + Set 11

Mode 11. Place EUT 2 in Y axis + Set 12

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 FA541521-01) 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 Multiple Listing

The model names are identical to each other in all aspects except for the following table:

Equipment	EUT	Product Name	Model Name	Internal Antenna	External Antenna	Equipped Antenna
Wireless 802.11a/AC + b/g/n Access Point	1	WS-AP3965e-FCC	31018	X	V	Set 1~11
		WS-AP3965e-ROW	31019			
	2	WS-AP3965i-FCC	31016	V	X	Set 12
		WS-AP3965i-ROW	31017			

Note: Different model names for EUT 1 (31018 and 31019) and EUT 2 (31016 and 31017) served as marketing strategy.

3.8. Table for Supporting Units

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

Support Unit	Brand	Model	FCC ID
NB*4	DELL	E4300	DoC
PoE Load	Senao	LT4321UF	N/A
PoE	Microsemi	PD-9001GR	N/A

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

Support Unit	Brand	Model	FCC ID
NB	DELL	E4300	DoC
PoE	Microsemi	PD-9001GR	N/A

For Test Site No: CO01-CB

Support Unit	Brand	Model	FCC ID
NB*4	DELL	E6430	DoC
PoE Load	Senao	LT4321UF	N/A
PoE	Microsemi	PD-9001GR	N/A

For Test Site No: TH01-CB

Support Unit	Brand	Model	FCC ID
NB	DELL	E4300	DoC
PoE	Microsemi	PD-9001GR	N/A

3.9. 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.

Mode 1: EUT 1 + Set 1 Sector Antenna / 6.5 dBi

Test Software Version	QCA VER3.0.144.0					
Mode	Test Frequency (MHz)					
	NCB: 20MHz					
	5180 MHz	5200 MHz	5240 MHz	5745 MHz	5785 MHz	5825 MHz
802.11a	18	18	18	19	23	20.5
802.11ac MCS0/Nss1 VHT20	18.5	18.5	18.5	19	23	20.5
Mode	NCB: 40MHz					
802.11ac MCS0/Nss1 VHT40	5190 MHz		5230 MHz		5755 MHz	
	16		17.5		16.5	
802.11ac MCS0/Nss1 VHT40	5795 MHz		20			
Mode	NCB: 80MHz					
802.11ac MCS0/Nss1 VHT80	5210 MHz			5775 MHz		
	12.5			12		

Mode 2: EUT 1 + Set 2 Sector Antenna / 4.5 dBi

Test Software Version	QCA VER3.0.144.0					
Mode	Test Frequency (MHz)					
	NCB: 20MHz					
	5180 MHz	5200 MHz	5240 MHz	5745 MHz	5785 MHz	5825 MHz
802.11a	15.5	15.5	15.5	19.5	23	20.5
802.11ac MCS0/Nss1 VHT20	15.5	15.5	15.5	19.5	23	21
Mode	NCB: 40MHz					
802.11ac MCS0/Nss1 VHT40	5190 MHz		5230 MHz		5755 MHz	
	15		15		17.5	
802.11ac MCS0/Nss1 VHT40	5190 MHz		5230 MHz		5755 MHz	
	15		15		17.5	
Mode	NCB: 80MHz					
802.11ac MCS0/Nss1 VHT80	5210 MHz			5775 MHz		
	13.5			13.5		

Mode 3: EUT 1 + Set 3 Sector Antenna / 5.5 dBi

Test Software Version	QCA VER3.0.144.0					
Mode	Test Frequency (MHz)					
	NCB: 20MHz					
	5180 MHz	5200 MHz	5240 MHz	5745 MHz	5785 MHz	5825 MHz
802.11a	14	14	14	19	23	21
802.11ac MCS0/Nss1 VHT20	14.5	14.5	14.5	18.5	23	20.5
Mode	NCB: 40MHz					
802.11ac MCS0/Nss1 VHT40	5190 MHz		5230 MHz		5755 MHz	
	13.5		13.5		16.5	
802.11ac MCS0/Nss1 VHT80	5210 MHz			5775 MHz		
	13			12.5		
802.11ac MCS0/Nss1 VHT20		14.5		18.5		20.5
802.11ac MCS0/Nss1 VHT40		13.5		16.5		20
802.11ac MCS0/Nss1 VHT80		13		12.5		

Mode 4: EUT 1 + Set 4 Sector Antenna / 7.5 dBi

Test Software Version	QCA VER3.0.144.0					
Mode	Test Frequency (MHz)					
	NCB: 20MHz					
	5180 MHz	5200 MHz	5240 MHz	5745 MHz	5785 MHz	5825 MHz
802.11a	14	14	14	18.5	23	20.5
802.11ac MCS0/Nss1 VHT20	14	14.5	14.5	18.5	23	20
Mode	NCB: 40MHz					
802.11ac MCS0/Nss1 VHT40	5190 MHz		5230 MHz		5755 MHz	
	13.5		13.5		15	
802.11ac MCS0/Nss1 VHT80	5210 MHz			5775 MHz		
	11.5			11.5		

Mode 5: EUT 1 + Set 5 Panel Antenna / 6 dBi

Test Software Version	QCA VER3.0.144.0					
Mode	Test Frequency (MHz)					
	NCB: 20MHz					
	5180 MHz	5200 MHz	5240 MHz	5745 MHz	5785 MHz	5825 MHz
802.11a	16	16	16	19	23	21
802.11ac MCS0/Nss1 VHT20	16.5	16.5	16.5	20	23	20
Mode	NCB: 40MHz					
802.11ac MCS0/Nss1 VHT40	5190 MHz		5230 MHz		5755 MHz	
	15.5		15.5		18	
802.11ac MCS0/Nss1 VHT80	5210 MHz			5775 MHz		
	12.5			12		

Mode 6: EUT 1 + Set 7 Sector Antenna / 11.5 dBi

Test Software Version	QCA VER3.0.144.0					
Mode	Test Frequency (MHz)					
	NCB: 20MHz					
	5180 MHz	5200 MHz	5240 MHz	5745 MHz	5785 MHz	5825 MHz
802.11a	8	8	8	16	19.5	18.5
802.11ac MCS0/Nss1 VHT20	8	8.5	8	17	19.5	19
Mode	NCB: 40MHz					
802.11ac MCS0/Nss1 VHT40	5190 MHz		5230 MHz		5755 MHz	
	7.5		7.5		14.5	
18.5	7.5		14.5		18.5	
Mode	NCB: 80MHz					
802.11ac MCS0/Nss1 VHT80	5210 MHz			5775 MHz		
	8			9		

Mode 7: EUT 1 + Set 8 Sector Antenna / 12 dBi

Test Software Version	QCA VER3.0.144.0					
Mode	Test Frequency (MHz)					
	NCB: 20MHz					
	5180 MHz	5200 MHz	5240 MHz	5745 MHz	5785 MHz	5825 MHz
802.11a	12.5	12.5	12.5	17.5	19	18.5
802.11ac MCS0/Nss1 VHT20	12.5	12.5	12.5	17	19	19
Mode	NCB: 40MHz					
802.11ac MCS0/Nss1 VHT40	5190 MHz		5230 MHz		5755 MHz	
	12		12		13.5	
802.11ac MCS0/Nss1 VHT80	5210 MHz			5775 MHz		
	9.5			9		

Mode 8: EUT 1 + Set 9 Sector Antenna / 4 dBi

Test Software Version	QCA VER3.0.144.0					
Mode	Test Frequency (MHz)					
	NCB: 20MHz					
	5180 MHz	5200 MHz	5240 MHz	5745 MHz	5785 MHz	5825 MHz
802.11a	19.5	22.5	23	19.5	23	19.5
802.11ac MCS0/Nss1 VHT20	19	22.5	22.5	19.5	23	19.5
Mode	NCB: 40MHz					
802.11ac MCS0/Nss1 VHT40	5190 MHz		5230 MHz		5755 MHz	
	18		21		16	
802.11ac MCS0/Nss1 VHT40	5795 MHz					
	20					
Mode	NCB: 80MHz					
802.11ac MCS0/Nss1 VHT80	5210 MHz			5775 MHz		
	12			12		

Mode 9: EUT 1 + Set 10 Panel Antenna / 23 dBi

Test Software Version	QCA VER3.0.144.0					
Mode	Test Frequency (MHz)					
	NCB: 20MHz					
	5180 MHz	5200 MHz	5240 MHz	5745 MHz	5785 MHz	5825 MHz
802.11a	10.5	12	13	13	16.5	13.5
802.11ac MCS0/Nss1 VHT20	10.5	12	13	13	16.5	13.5
Mode	NCB: 40MHz					
802.11ac MCS0/Nss1 VHT40	5190 MHz		5230 MHz		5755 MHz	
	7.5		10.5		8	
802.11ac MCS0/Nss1 VHT40	5795 MHz					
	11					
Mode	NCB: 80MHz					
802.11ac MCS0/Nss1 VHT80	5210 MHz			5775 MHz		
	6			4		

Mode 10: EUT 1 + Set 11 Omni Antenna / 6 dBi

Test Software Version	QCA VER3.0.144.0					
Mode	Test Frequency (MHz)					
	NCB: 20MHz					
	5180 MHz	5200 MHz	5240 MHz	5745 MHz	5785 MHz	5825 MHz
802.11a	16	16	16	19.5	23	20
802.11ac MCS0/Nss1 VHT20	16.5	16.5	16.5	19.5	23	19.5
Mode	NCB: 40MHz					
802.11ac MCS0/Nss1 VHT40	5190 MHz		5230 MHz		5755 MHz	
	15.5		15.5		15.5	
802.11ac MCS0/Nss1 VHT40	5795 MHz		19			
Mode	NCB: 80MHz					
802.11ac MCS0/Nss1 VHT80	5210 MHz			5775 MHz		
	11.5			12		

Mode 11: EUT 2 + Set 12 PIFA Antenna / Chain1:5.96 dBi, Chain2:5.97 dBi, Chain3:6.25 dBi, Chain4:6.08 dBi

Test Software Version	QCA VER3.0.144.0					
Mode	Test Frequency (MHz)					
	NCB: 20MHz					
	5180 MHz	5200 MHz	5240 MHz	5745 MHz	5785 MHz	5825 MHz
802.11a	15.5	15.5	15	16.5	25	19.5
802.11ac MCS0/Nss1 VHT20	15.5	15.5	15.5	16.5	25	19.5
Mode	NCB: 40MHz					
802.11ac MCS0/Nss1 VHT40	5190 MHz		5230 MHz		5755 MHz	
	15		14.5		14	
802.11ac MCS0/Nss1 VHT40	5795 MHz		19			
Mode	NCB: 80MHz					
802.11ac MCS0/Nss1 VHT80	5210 MHz			5775 MHz		
	11.5			11		

3.10. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

3.11. Duty Cycle

Mode 1 ~ Mode 10

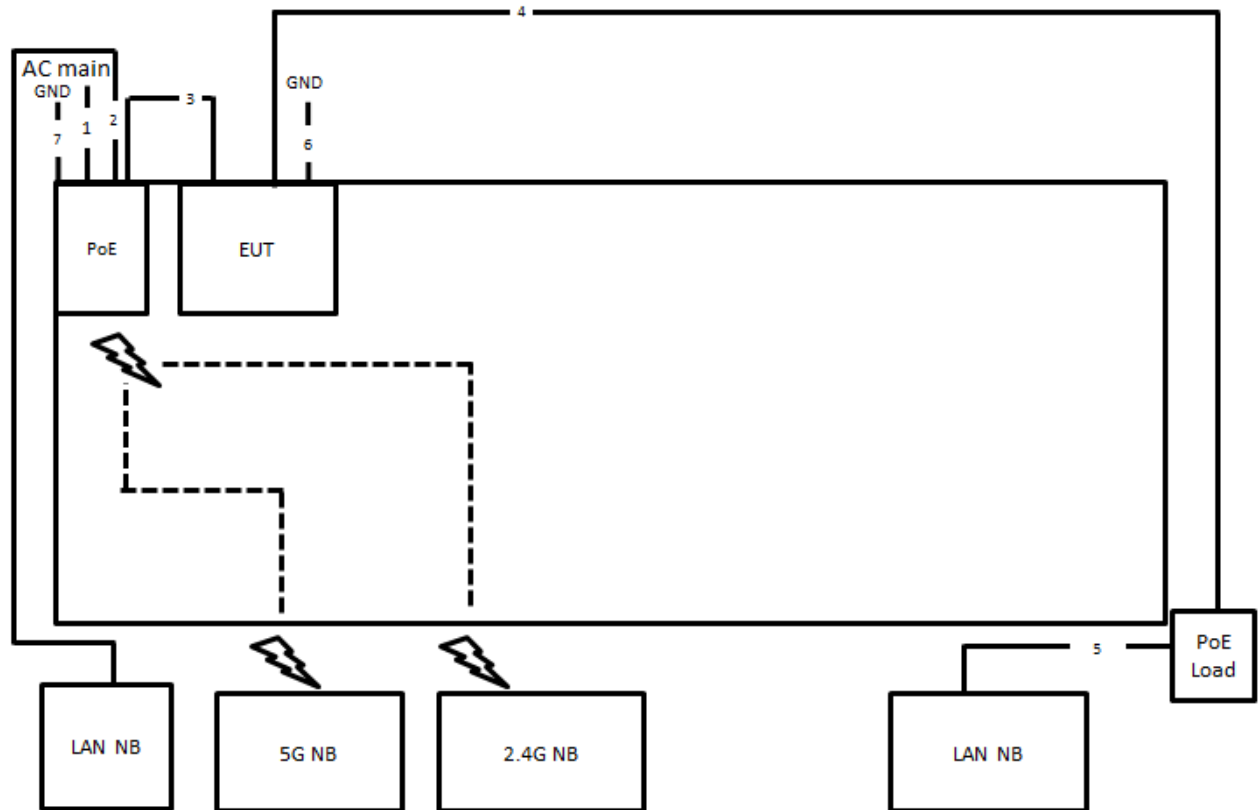
Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11a	2.060	2.120	97.17	0.12	0.49
802.11ac MCS0/Nss1 VHT20	5.000	5.064	98.73	0.06	0.01
802.11ac MCS0/Nss1 VHT40	2.440	2.500	97.60	0.11	0.41
802.11ac MCS0/Nss1 VHT80	1.140	1.210	94.21	0.26	0.88

Mode 11

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11a	2.051	2.123	96.60	0.15	0.49
802.11ac MCS0/Nss1 VHT20	5.016	5.088	98.58	0.06	0.01
802.11ac MCS0/Nss1 VHT40	2.392	2.493	95.95	0.18	0.42
802.11ac MCS0/Nss1 VHT80	1.145	1.211	94.51	0.25	0.87

3.12. Test Configurations

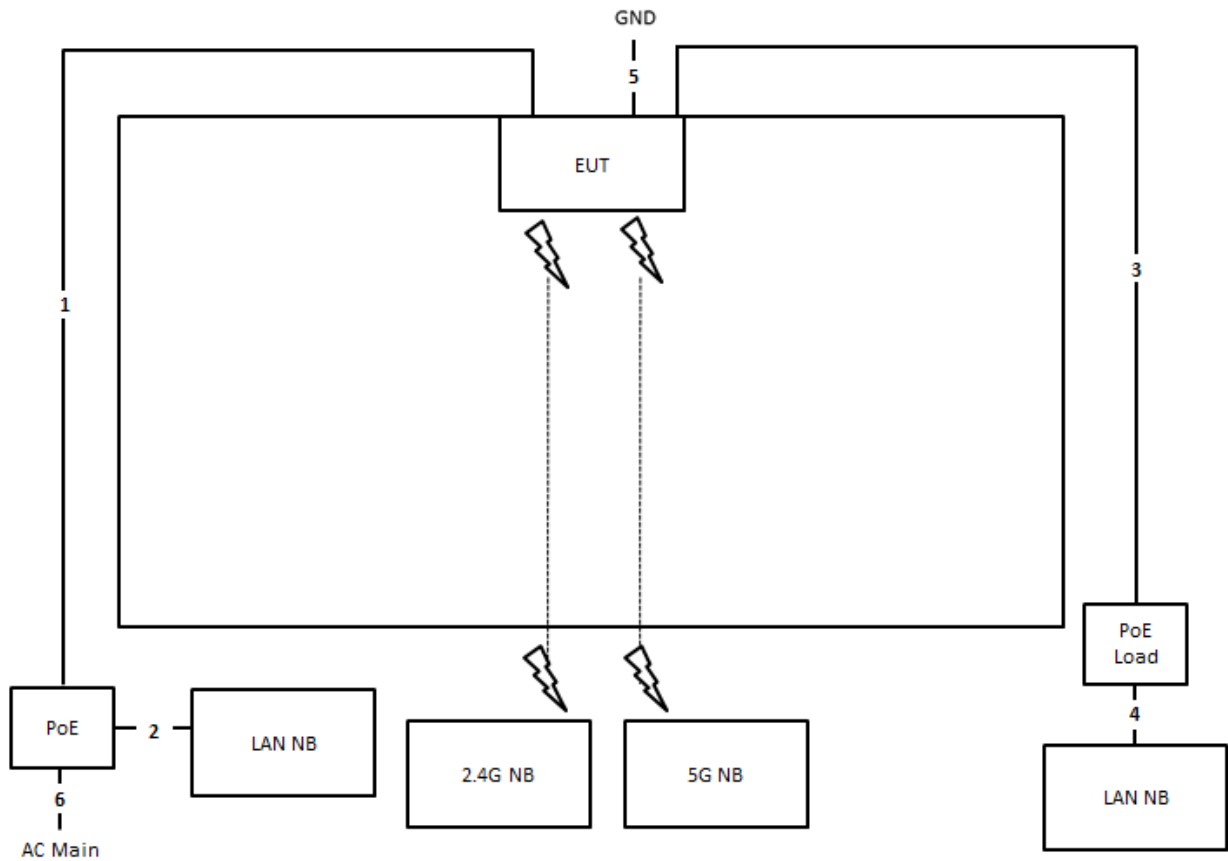
3.12.1. AC Power Line Conduction Emissions Test Configuration



Item	Connection	Shielded	Length(m)
1	Power cable	No	4.6m
2	RJ-45 cable	No	10m
3	RJ-45 cable	No	1.5m
4	RJ-45 cable	No	10m
5	RJ-45 cable	No	1.5m
6	Ground cable	No	1.5m
7	Ground cable	No	1.5m

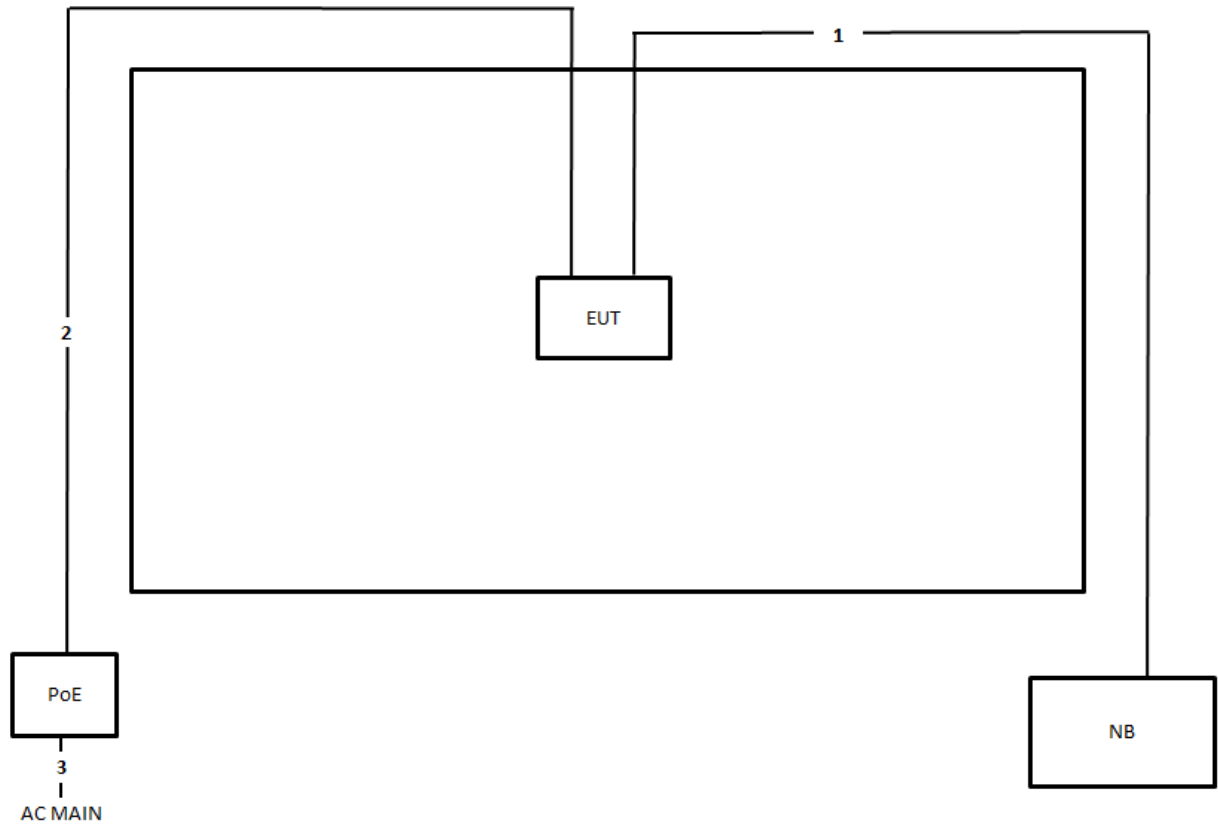
3.12.2. Radiation Emissions Test Configuration

Test Configuration: 30MHz ~1GHz



Item	Connection	Shielded	Length(m)
1	RJ-45 cable	No	10m
2	RJ-45 cable	No	1.5m
3	RJ-45 cable	No	10m
4	RJ-45 cable	No	1.5m
5	Ground cable	No	1.5m
6	Power cable	No	4.6m

Test Configuration: above 1GHz



Item	Connection	Shielded	Length(m)
1	RJ-45 cable	No	10m
2	RJ-45 cable	No	10m
3	Power cable	No	4.6m

4. TEST RESULT

4.1. AC Power Line Conducted Emissions Measurement

4.1.1. Limit

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

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

4.1.2. Measuring Instruments and Setting

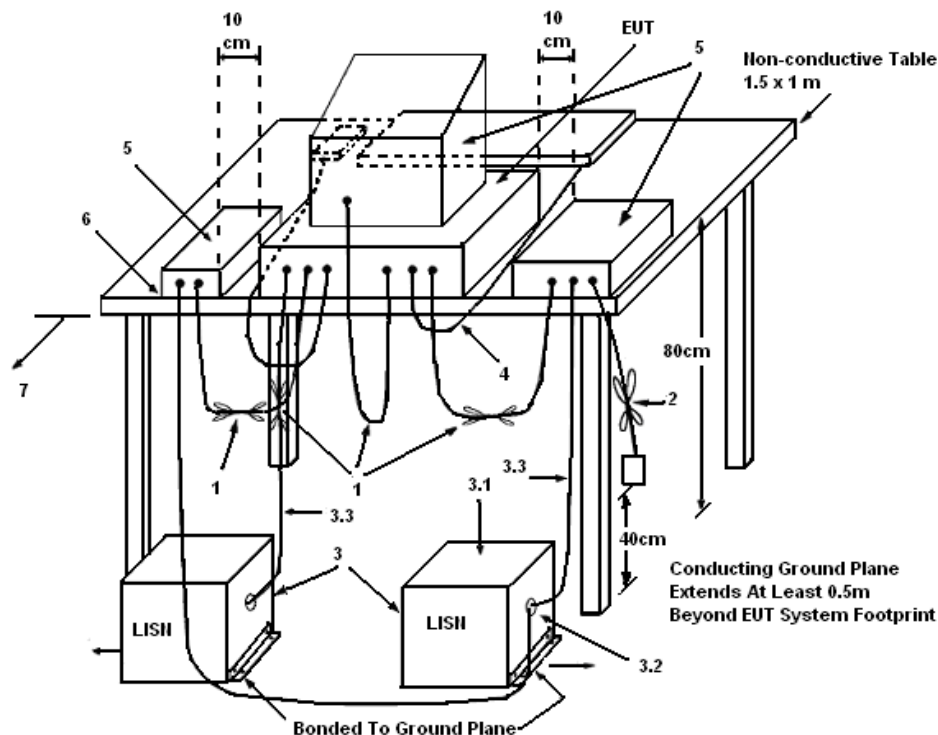
Please refer to section 5 of equipments list in this report. The following table is the setting of the receiver.

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

4.1.3. Test Procedures

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

4.1.4. Test Setup Layout



LEGEND:

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

4.1.5. Test Deviation

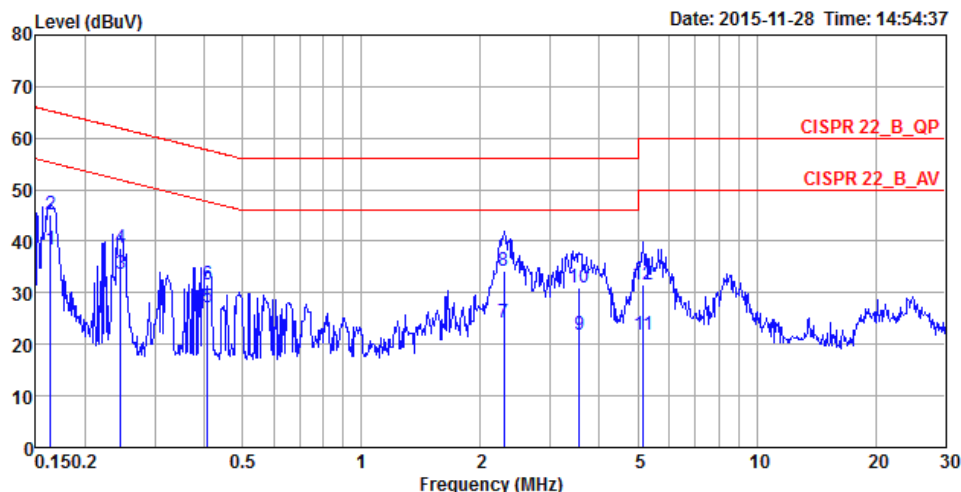
There is no deviation with the original standard.

4.1.6. EUT Operation during Test

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

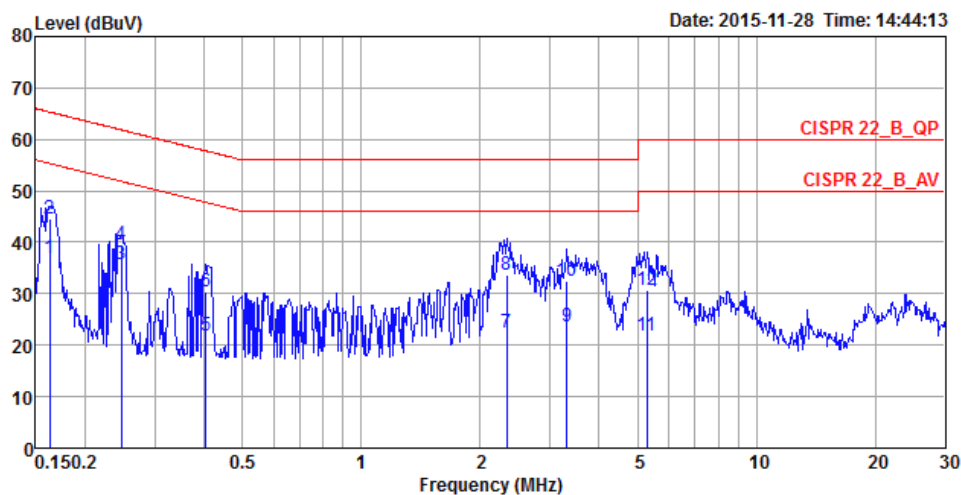
4.1.7. Results of AC Power Line Conducted Emissions Measurement

Temperature	23°C	Humidity	58%
Test Engineer	Edison Lin	Phase	Line
Configuration	Normal Link	Test Mode	Mode 2



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Pol/Phase	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.1633	38.32	-16.98	55.30	28.37	9.93	0.02	LINE	Average
2	0.1633	45.02	-20.28	65.30	35.07	9.93	0.02	LINE	QP
3	0.2455	33.58	-18.33	51.91	23.62	9.93	0.03	LINE	Average
4	0.2455	38.68	-23.23	61.91	28.72	9.93	0.03	LINE	QP
5	0.4083	27.03	-20.65	47.68	17.06	9.93	0.04	LINE	Average
6	0.4083	31.63	-26.05	57.68	21.66	9.93	0.04	LINE	QP
7	2.2968	24.19	-21.81	46.00	14.13	10.00	0.06	LINE	Average
8	2.2968	34.32	-21.68	56.00	24.26	10.00	0.06	LINE	QP
9	3.5654	21.82	-24.18	46.00	11.75	10.01	0.06	LINE	Average
10	3.5654	30.85	-25.15	56.00	20.78	10.01	0.06	LINE	QP
11	5.1663	21.83	-28.17	50.00	11.67	10.06	0.10	LINE	Average
12	5.1663	31.49	-28.51	60.00	21.33	10.06	0.10	LINE	QP

Temperature	23°C	Humidity	58%
Test Engineer	Edison Lin	Phase	Neutral
Configuration	Normal Link	Test Mode	Mode 2



	Freq	Level	Over	Limit	Read	LISN	Cable		
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Pol/Phase	Remark
			dB	dBuV	dBuV	dB	dB		
1	0.1624	36.93	-18.41	55.34	27.13	9.78	0.02	NEUTRAL	Average
2	0.1624	44.62	-20.72	65.34	34.82	9.78	0.02	NEUTRAL	QP
3	0.2468	35.70	-16.16	51.86	25.88	9.79	0.03	NEUTRAL	Average
4	0.2468	39.56	-22.30	61.86	29.74	9.79	0.03	NEUTRAL	QP
5	0.4040	21.74	-26.03	47.77	11.91	9.79	0.04	NEUTRAL	Average
6	0.4040	30.52	-27.25	57.77	20.69	9.79	0.04	NEUTRAL	QP
7	2.3336	22.34	-23.66	46.00	12.43	9.85	0.06	NEUTRAL	Average
8	2.3336	33.76	-22.24	56.00	23.85	9.85	0.06	NEUTRAL	QP
9	3.3105	23.57	-22.43	46.00	13.65	9.86	0.06	NEUTRAL	Average
10	3.3105	32.50	-23.50	56.00	22.58	9.86	0.06	NEUTRAL	QP
11	5.2770	21.74	-28.26	50.00	11.73	9.91	0.10	NEUTRAL	Average
12	5.2770	30.79	-29.21	60.00	20.78	9.91	0.10	NEUTRAL	QP

Note:

Level = Read Level + LISN Factor + Cable Loss.

4.2. 26dB Bandwidth and 99% Occupied Bandwidth Measurement

4.2.1. Limit

No restriction limits.

4.2.2. Measuring Instruments and Setting

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

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

4.2.3. Test Procedures

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

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

4.2.4. Test Setup Layout

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

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

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

Temperature	25°C	Humidity	45%
Test Engineer	Roki Liu		
Test Mode	Mode 1: EUT 1 + Set 1 Sector Antenna / 6.5 dBi		

Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11a	5180 MHz	20.70	17.45
	5200 MHz	20.96	17.37
	5240 MHz	20.26	16.76
	5745 MHz	16.96	13.81
	5785 MHz	40.00	25.35
	5825 MHz	16.96	15.28
802.11ac MCS0/Nss1 VHT20	5180 MHz	22.96	18.49
	5200 MHz	22.09	18.32
	5240 MHz	20.70	17.89
	5745 MHz	18.61	17.02
	5785 MHz	42.43	27.87
	5825 MHz	18.35	16.24
802.11ac MCS0/Nss1 VHT40	5190 MHz	38.99	35.31
	5230 MHz	39.13	34.88
	5755 MHz	37.68	33.57
	5795 MHz	43.62	35.31
802.11ac MCS0/Nss1 VHT80	5210 MHz	82.32	73.23
	5775 MHz	83.48	74.96

Temperature	25°C	Humidity	45%
Test Engineer	Roki Liu		
Test Mode	Mode 2: EUT 1 + Set 2 Sector Antenna / 4.5 dBi		

Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11a	5180 MHz	20.09	17.19
	5200 MHz	20.87	17.11
	5240 MHz	19.83	16.76
	5745 MHz	17.13	14.41
	5785 MHz	40.00	25.35
	5825 MHz	16.96	15.28
802.11ac MCS0/Nss1 VHT20	5180 MHz	20.78	18.23
	5200 MHz	21.22	18.15
	5240 MHz	20.87	17.89
	5745 MHz	18.61	17.11
	5785 MHz	42.43	27.87
	5825 MHz	18.35	16.32
802.11ac MCS0/Nss1 VHT40	5190 MHz	38.84	35.17
	5230 MHz	38.41	34.44
	5755 MHz	37.68	34.01
	5795 MHz	43.62	35.31
802.11ac MCS0/Nss1 VHT80	5210 MHz	83.77	73.52
	5775 MHz	84.06	74.38

Temperature	25°C	Humidity	45%
Test Engineer	Roki Liu		
Test Mode	Mode 3: EUT 1 + Set 3 Sector Antenna / 5.5 dBi		

Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11a	5180 MHz	19.83	16.93
	5200 MHz	20.70	17.02
	5240 MHz	19.74	16.76
	5745 MHz	16.96	13.81
	5785 MHz	40.00	25.35
	5825 MHz	17.04	15.46
802.11ac MCS0/Nss1 VHT20	5180 MHz	20.70	18.06
	5200 MHz	21.22	17.97
	5240 MHz	20.61	17.89
	5745 MHz	18.52	16.93
	5785 MHz	42.43	27.87
	5825 MHz	18.35	16.24
802.11ac MCS0/Nss1 VHT40	5190 MHz	38.99	35.31
	5230 MHz	38.70	34.44
	5755 MHz	37.68	33.57
	5795 MHz	43.62	35.31
802.11ac MCS0/Nss1 VHT80	5210 MHz	82.32	72.23
	5775 MHz	80.87	74.96

Temperature	25°C	Humidity	45%
Test Engineer	Roki Liu		
Test Mode	Mode 4: EUT 1 + Set 4 Sector Antenna / 7.5 dBi		

Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11a	5180 MHz	19.83	16.93
	5200 MHz	20.70	17.02
	5240 MHz	19.74	16.76
	5745 MHz	17.04	13.89
	5785 MHz	40.00	25.35
	5825 MHz	16.96	15.28
802.11ac MCS0/Nss1 VHT20	5180 MHz	20.35	18.06
	5200 MHz	21.22	17.97
	5240 MHz	20.61	17.89
	5745 MHz	18.52	16.93
	5785 MHz	42.43	21.87
	5825 MHz	18.35	16.15
802.11ac MCS0/Nss1 VHT40	5190 MHz	38.99	35.31
	5230 MHz	38.70	34.44
	5755 MHz	37.97	34.59
	5795 MHz	38.12	34.88
802.11ac MCS0/Nss1 VHT80	5210 MHz	82.61	73.52
	5775 MHz	84.06	74.96

Temperature	25°C	Humidity	45%
Test Engineer	Roki Liu		
Test Mode	Mode 5: EUT 1 + Set 5 Panel Antenna / 6 dBi		

Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11a	5180 MHz	20.70	17.19
	5200 MHz	20.87	17.11
	5240 MHz	20.26	16.76
	5745 MHz	16.96	13.81
	5785 MHz	40.00	25.35
	5825 MHz	17.04	15.46
802.11ac MCS0/Nss1 VHT20	5180 MHz	21.22	18.23
	5200 MHz	21.22	18.15
	5240 MHz	20.61	17.89
	5745 MHz	18.61	17.11
	5785 MHz	42.43	27.88
	5825 MHz	18.35	16.15
802.11ac MCS0/Nss1 VHT40	5190 MHz	38.55	35.17
	5230 MHz	38.70	34.73
	5755 MHz	37.54	34.01
	5795 MHz	43.62	35.31
802.11ac MCS0/Nss1 VHT80	5210 MHz	82.32	73.23
	5775 MHz	83.48	74.96

Temperature	25°C	Humidity	45%
Test Engineer	Roki Liu		
Test Mode	Mode 6: EUT 1 + Set 7 Sector Antenna / 11.5 dBi		

Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11a	5180 MHz	19.48	16.85
	5200 MHz	20.43	16.93
	5240 MHz	18.96	16.76
	5745 MHz	16.87	14.24
	5785 MHz	16.96	14.15
	5825 MHz	16.96	15.02
802.11ac MCS0/Nss1 VHT20	5180 MHz	20.43	17.97
	5200 MHz	20.61	17.97
	5240 MHz	20.43	17.89
	5745 MHz	18.52	16.85
	5785 MHz	18.52	16.76
	5825 MHz	18.35	16.06
802.11ac MCS0/Nss1 VHT40	5190 MHz	38.84	35.46
	5230 MHz	38.55	34.44
	5755 MHz	38.12	34.44
	5795 MHz	38.12	34.88
802.11ac MCS0/Nss1 VHT80	5210 MHz	82.32	73.52
	5775 MHz	83.48	74.67

Temperature	25°C	Humidity	45%
Test Engineer	Roki Liu		
Test Mode	Mode 7: EUT 1 + Set 8 Sector Antenna / 12 dBi		

Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11a	5180 MHz	19.57	16.85
	5200 MHz	20.61	16.93
	5240 MHz	19.83	16.76
	5745 MHz	17.04	14.50
	5785 MHz	16.96	14.15
	5825 MHz	16.96	15.02
802.11ac MCS0/Nss1 VHT20	5180 MHz	20.52	17.97
	5200 MHz	20.96	18.06
	5240 MHz	20.52	17.89
	5745 MHz	18.52	16.85
	5785 MHz	18.61	16.41
	5825 MHz	18.35	16.06
802.11ac MCS0/Nss1 VHT40	5190 MHz	38.70	35.31
	5230 MHz	38.41	34.44
	5755 MHz	38.12	34.44
	5795 MHz	38.26	34.88
802.11ac MCS0/Nss1 VHT80	5210 MHz	82.61	73.52
	5775 MHz	83.48	74.67

Temperature	25°C	Humidity	45%
Test Engineer	Roki Liu		
Test Mode	Mode 8: EUT 1 + Set 9 Sector Antenna / 4 dBi		

Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11a	5180 MHz	22.70	17.63
	5200 MHz	29.30	20.32
	5240 MHz	35.57	24.31
	5745 MHz	17.13	14.41
	5785 MHz	40.00	25.35
	5825 MHz	16.96	15.11
802.11ac MCS0/Nss1 VHT20	5180 MHz	26.26	18.58
	5200 MHz	29.39	19.97
	5240 MHz	26.70	20.23
	5745 MHz	18.61	17.11
	5785 MHz	42.43	27.87
	5825 MHz	18.17	16.15
802.11ac MCS0/Nss1 VHT40	5190 MHz	43.19	35.31
	5230 MHz	60.00	36.32
	5755 MHz	37.54	33.57
	5795 MHz	43.62	35.31
802.11ac MCS0/Nss1 VHT80	5210 MHz	82.61	73.52
	5775 MHz	83.48	76.96

Temperature	25°C	Humidity	45%
Test Engineer	Roki Liu		
Test Mode	Mode 9: EUT 1 + Set 10 Panel Antenna / 23 dBi		

Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11a	5180 MHz	21.04	17.19
	5200 MHz	20.78	17.02
	5240 MHz	20.78	17.02
	5745 MHz	17.30	15.20
	5785 MHz	17.13	15.20
	5825 MHz	17.39	15.72
802.11ac MCS0/Nss1 VHT20	5180 MHz	21.13	18.23
	5200 MHz	21.30	18.23
	5240 MHz	20.17	17.89
	5745 MHz	18.70	16.58
	5785 MHz	18.52	16.32
	5825 MHz	18.17	16.50
802.11ac MCS0/Nss1 VHT40	5190 MHz	37.10	32.42
	5230 MHz	37.97	32.85
	5755 MHz	37.97	32.56
	5795 MHz	37.97	33.72
802.11ac MCS0/Nss1 VHT80	5210 MHz	80.29	72.36
	5775 MHz	79.42	71.49

Temperature	25°C	Humidity	45%
Test Engineer	Roki Liu		
Test Mode	Mode 10: EUT 1 + Set 11 Omni Antenna / 6 dBi		

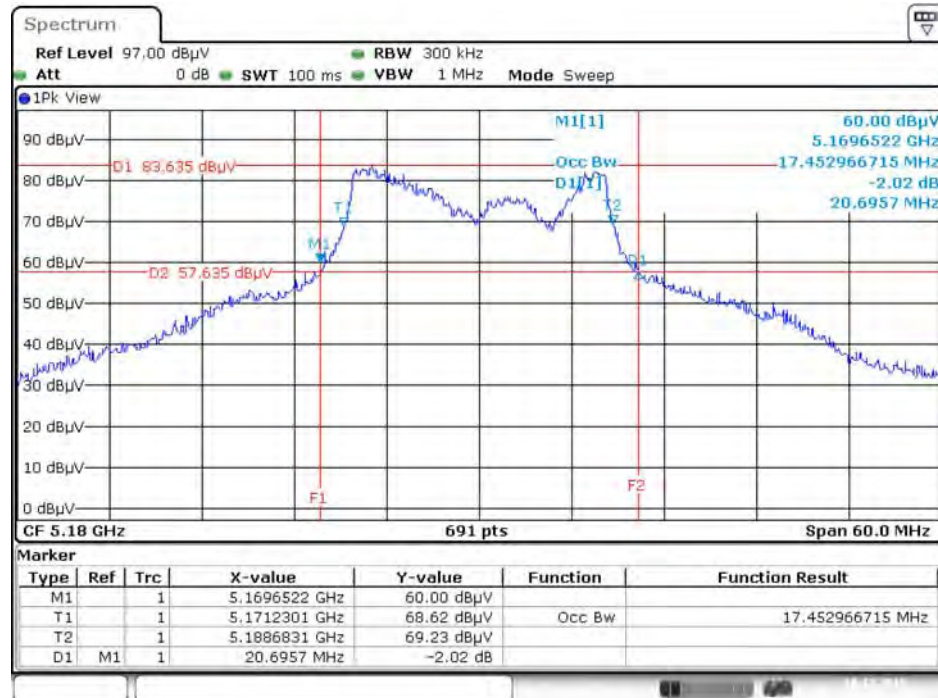
Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11a	5180 MHz	20.70	17.19
	5200 MHz	20.87	17.11
	5240 MHz	20.26	16.76
	5745 MHz	17.13	14.41
	5785 MHz	40.00	25.35
	5825 MHz	17.13	15.11
802.11ac MCS0/Nss1 VHT20	5180 MHz	21.22	18.23
	5200 MHz	21.22	18.15
	5240 MHz	20.61	17.89
	5745 MHz	18.61	17.11
	5785 MHz	42.43	27.87
	5825 MHz	18.17	16.15
802.11ac MCS0/Nss1 VHT40	5190 MHz	38.55	35.17
	5230 MHz	38.70	34.73
	5755 MHz	38.26	34.30
	5795 MHz	38.12	34.88
802.11ac MCS0/Nss1 VHT80	5210 MHz	82.61	73.52
	5775 MHz	83.48	74.96

Temperature	25°C	Humidity	45%
Test Engineer	Roki Liu		
Test Mode	Mode 11: EUT 2 + Set 12 PIFA Antenna / Chain1:5.96 dBi, Chain2:5.97 dBi, Chain3:6.25 dBi, Chain4:6.08 dBi		

Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11a	5180 MHz	17.57	15.80
	5200 MHz	17.65	15.89
	5240 MHz	17.74	15.98
	5745 MHz	17.83	16.15
	5785 MHz	44.78	37.08
	5825 MHz	18.87	16.41
802.11ac MCS0/Nss1 VHT20	5180 MHz	18.70	16.67
	5200 MHz	18.52	16.67
	5240 MHz	18.70	17.02
	5745 MHz	18.87	17.19
	5785 MHz	45.30	38.90
	5825 MHz	19.22	17.45
802.11ac MCS0/Nss1 VHT40	5190 MHz	39.57	36.47
	5230 MHz	40.29	36.61
	5755 MHz	40.00	36.61
	5795 MHz	41.01	36.76
802.11ac MCS0/Nss1 VHT80	5210 MHz	83.77	76.70
	5775 MHz	84.06	76.41

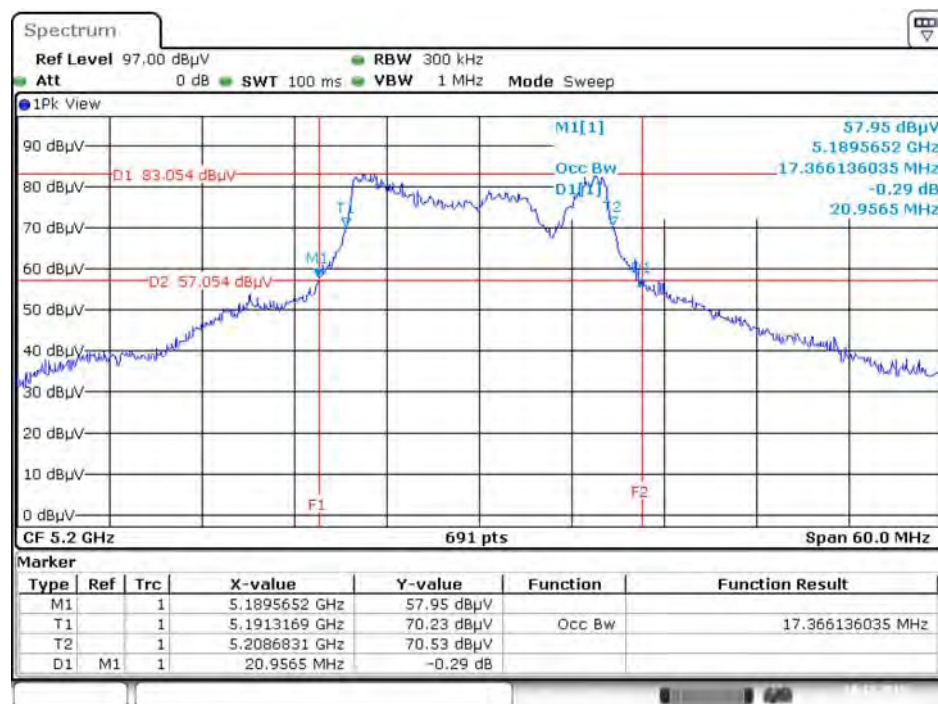
Mode 1: EUT 1 + Set 1 Sector Antenna / 6.5 dBi

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2
+ Chain 3 + Chain 4 / 5180 MHz



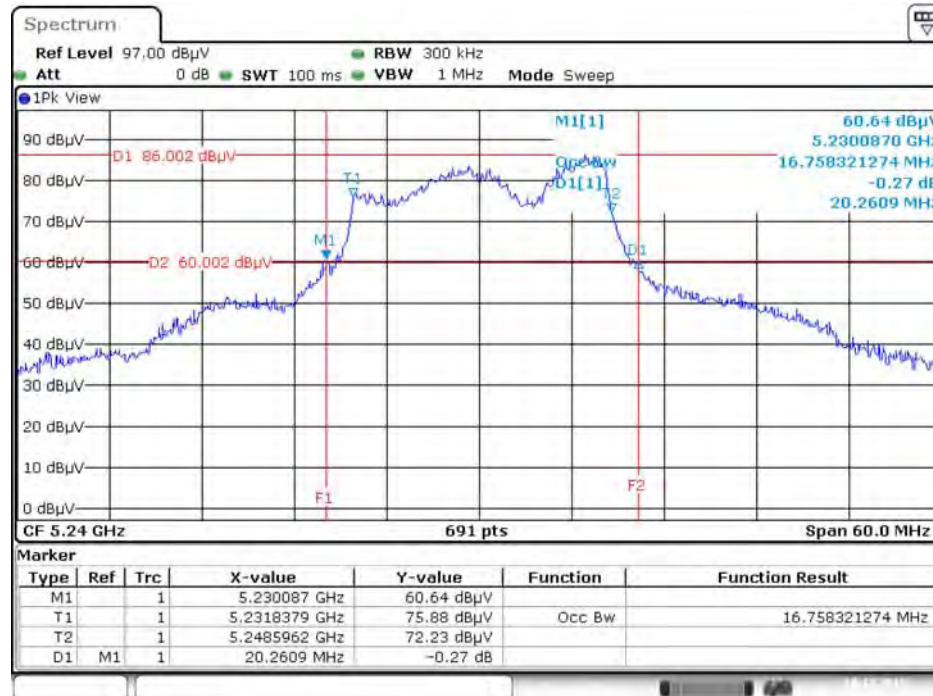
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26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2
+ Chain 3 + Chain 4 / 5200 MHz



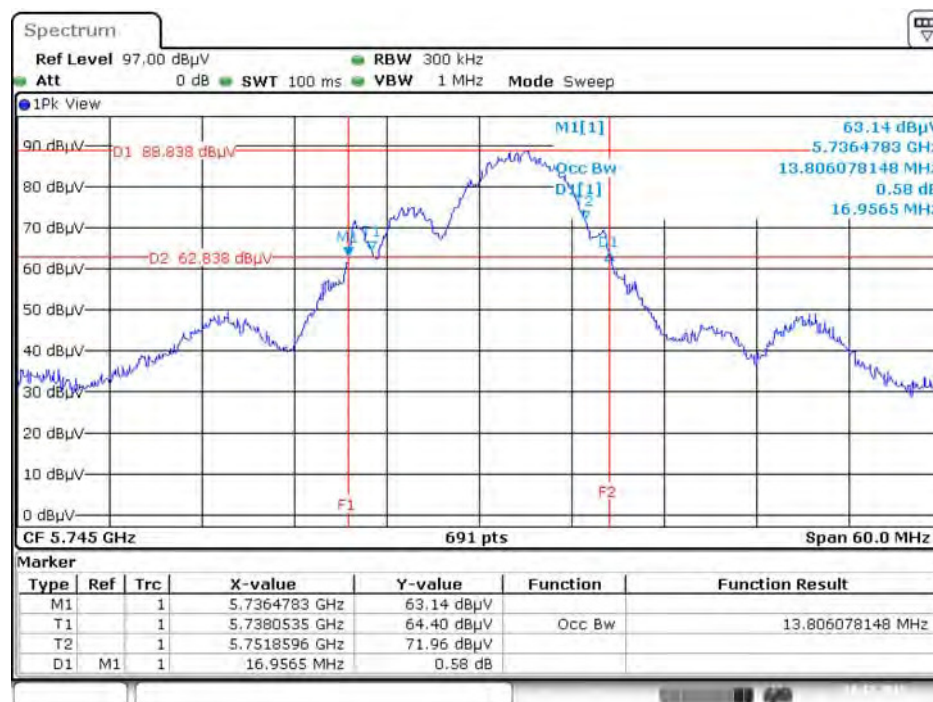
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26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2
+ Chain 3 + Chain 4 / 5240 MHz



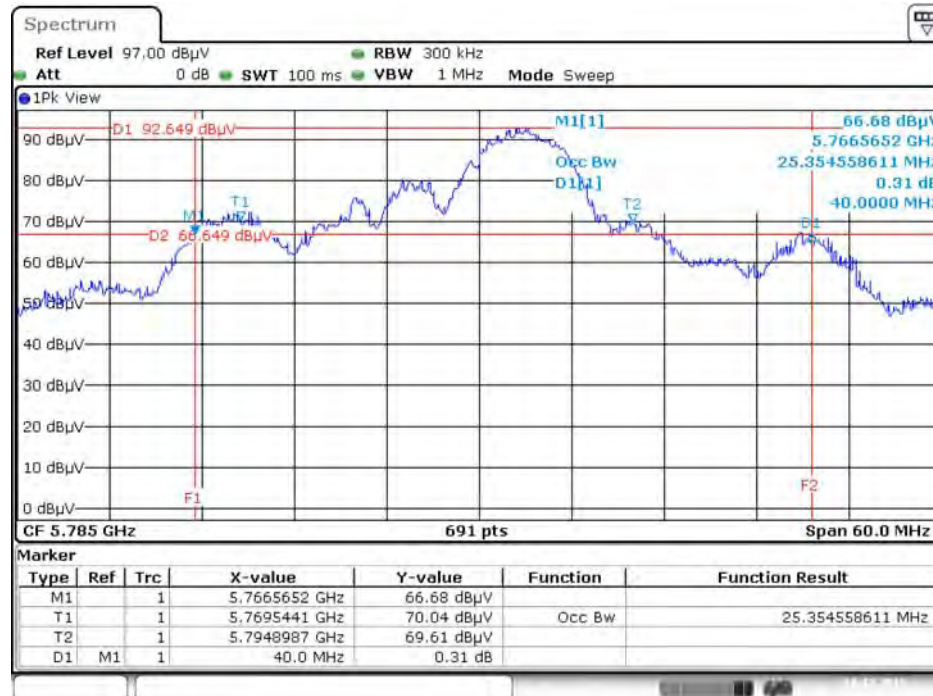
Date: 10.DEC.2015 20:19:43

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2
+ Chain 3 + Chain 4 / 5745 MHz



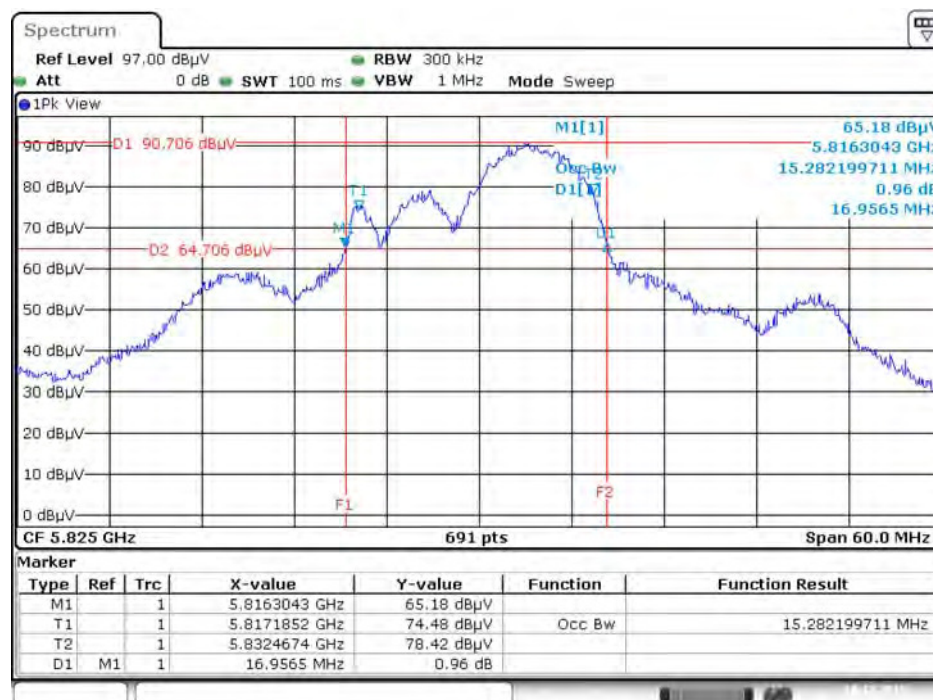
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26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2
+ Chain 3 + Chain 4 / 5785 MHz



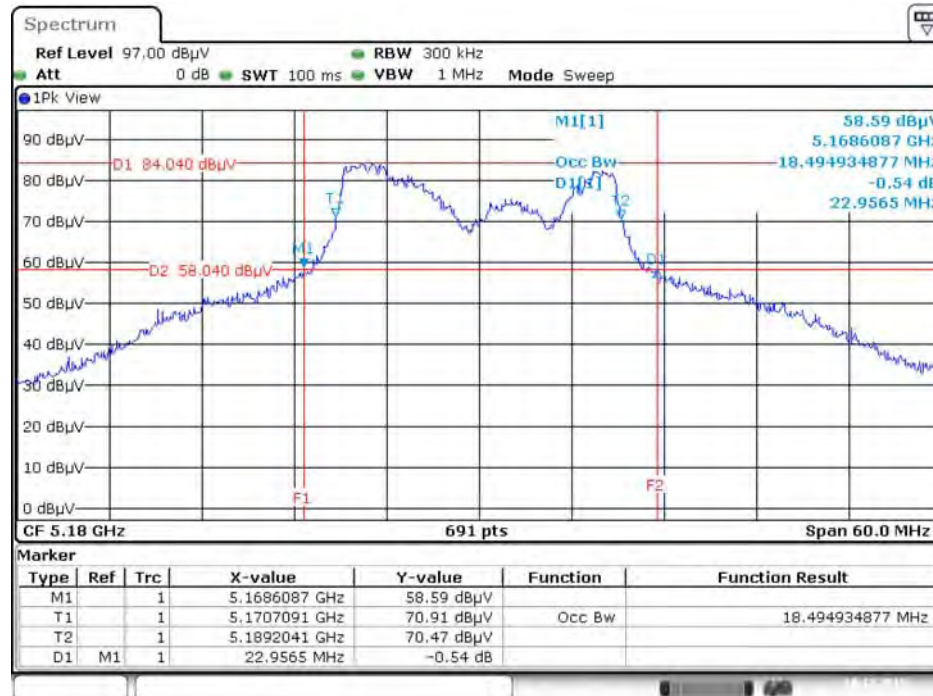
Date: 10.DEC.2015 21:02:09

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2
+ Chain 3 + Chain 4 / 5825 MHz



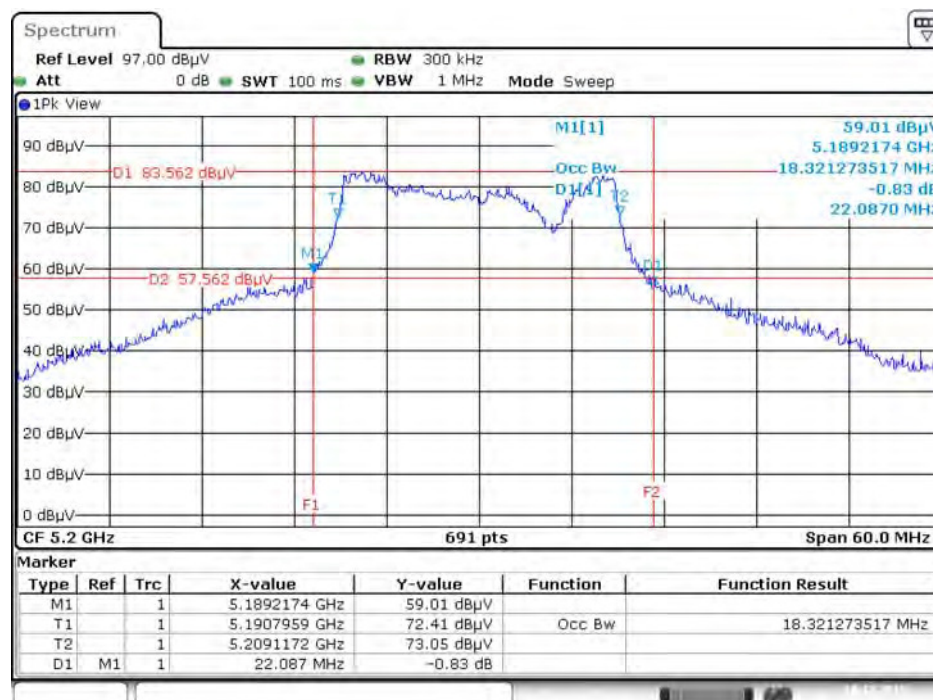
Date: 10.DEC.2015 21:04:54

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5180 MHz



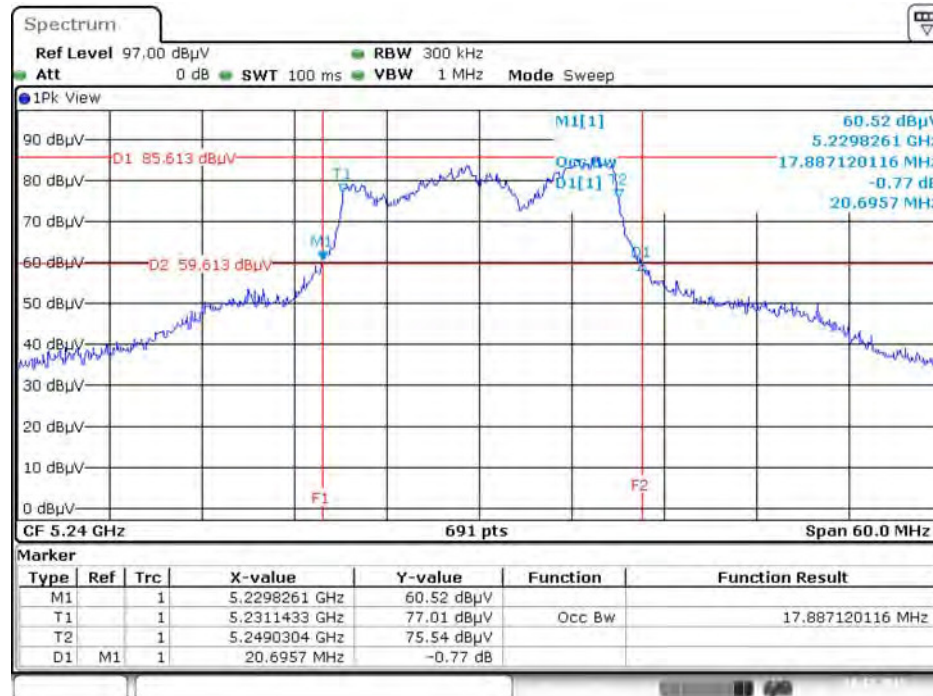
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26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5200 MHz



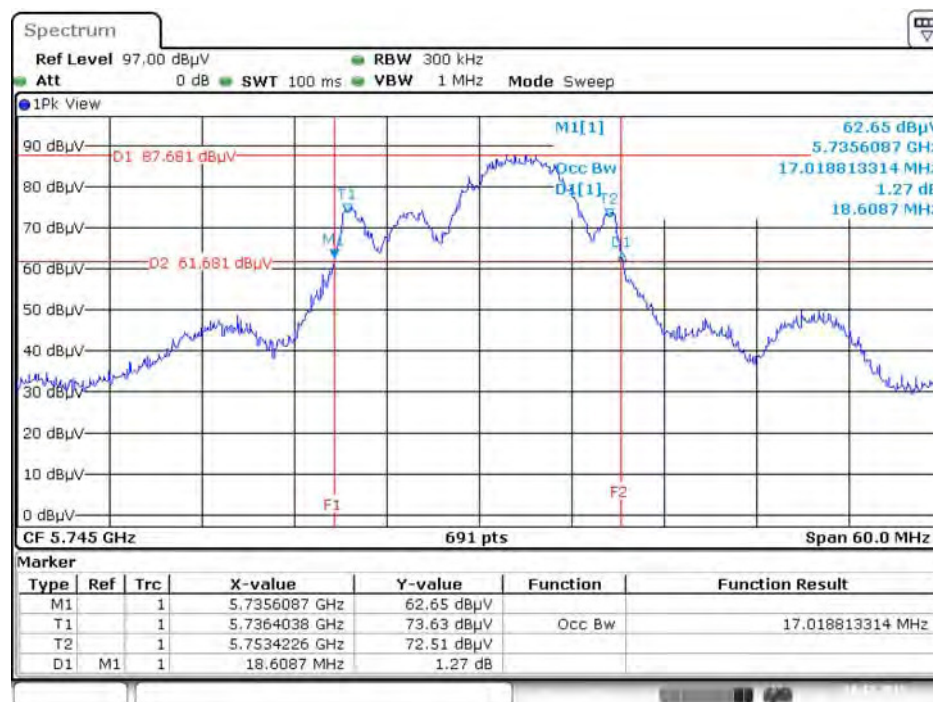
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26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5240 MHz



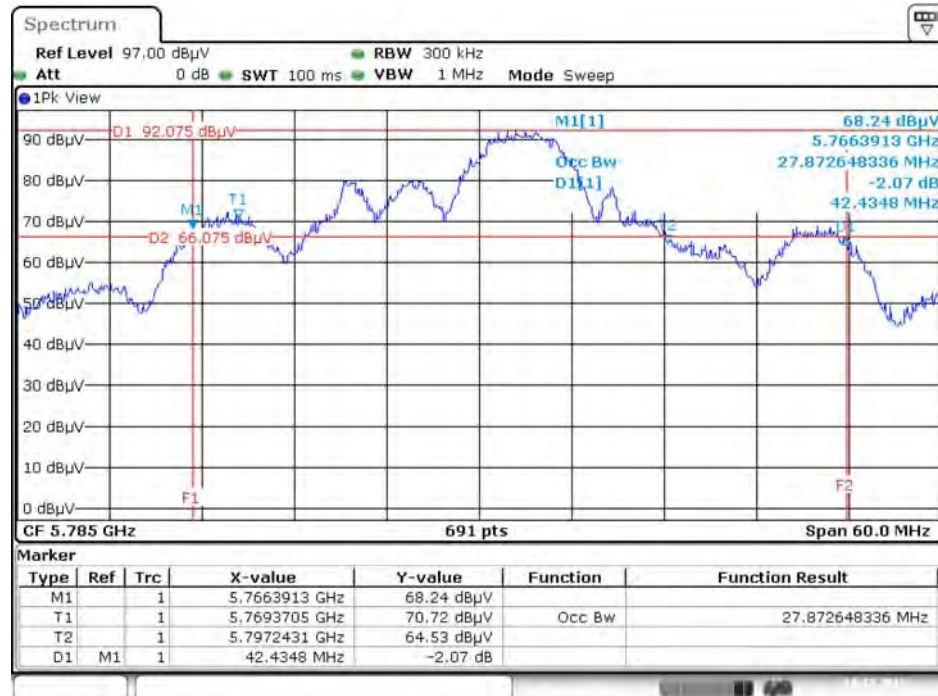
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26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5745 MHz



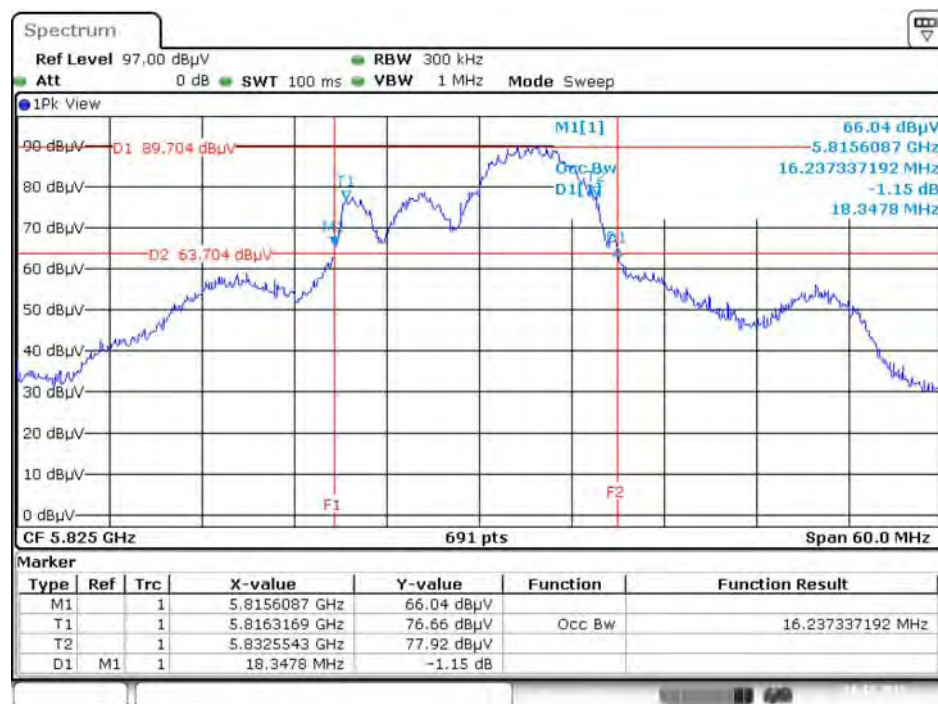
Date: 10.DEC.2015 21:57:33

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5785 MHz



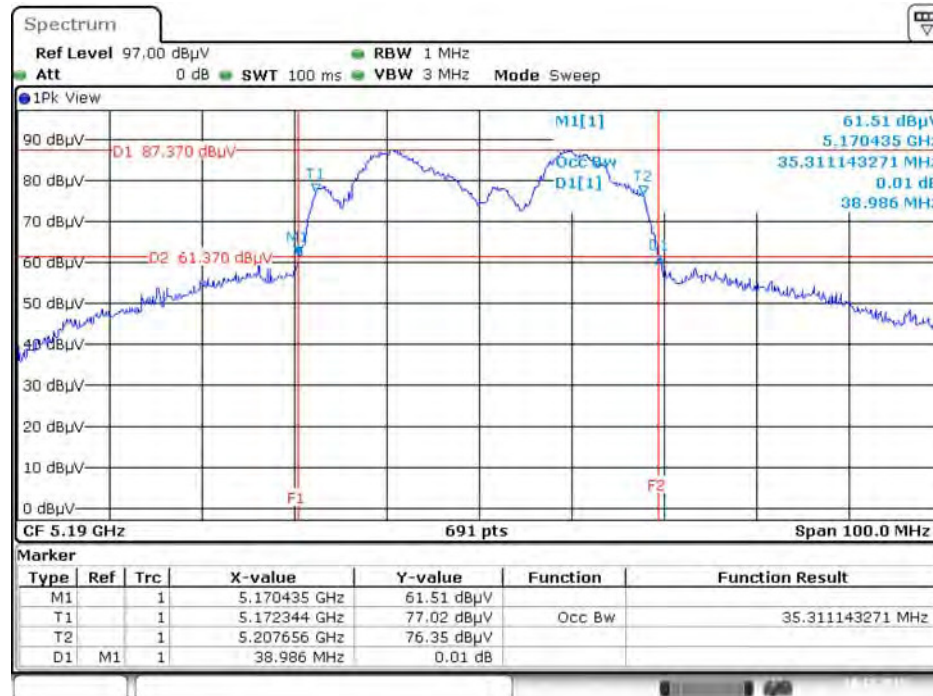
Date: 10.DEC.2015 21:59:34

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5825 MHz



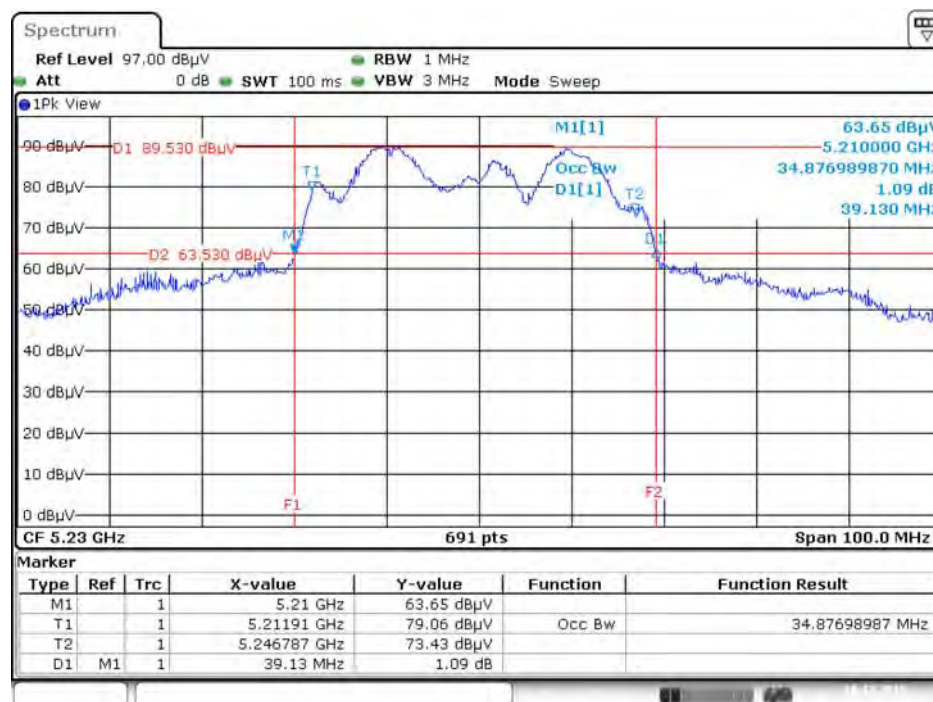
Date: 10.DEC.2015 22:00:49

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5190 MHz



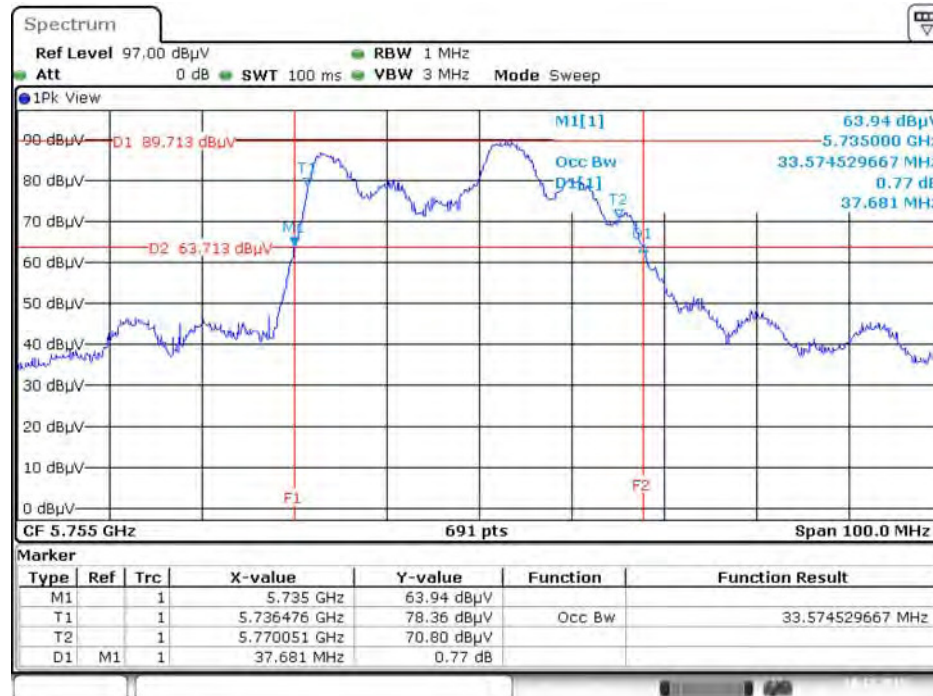
Date: 10.DEC.2015 22:20:29

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5230 MHz



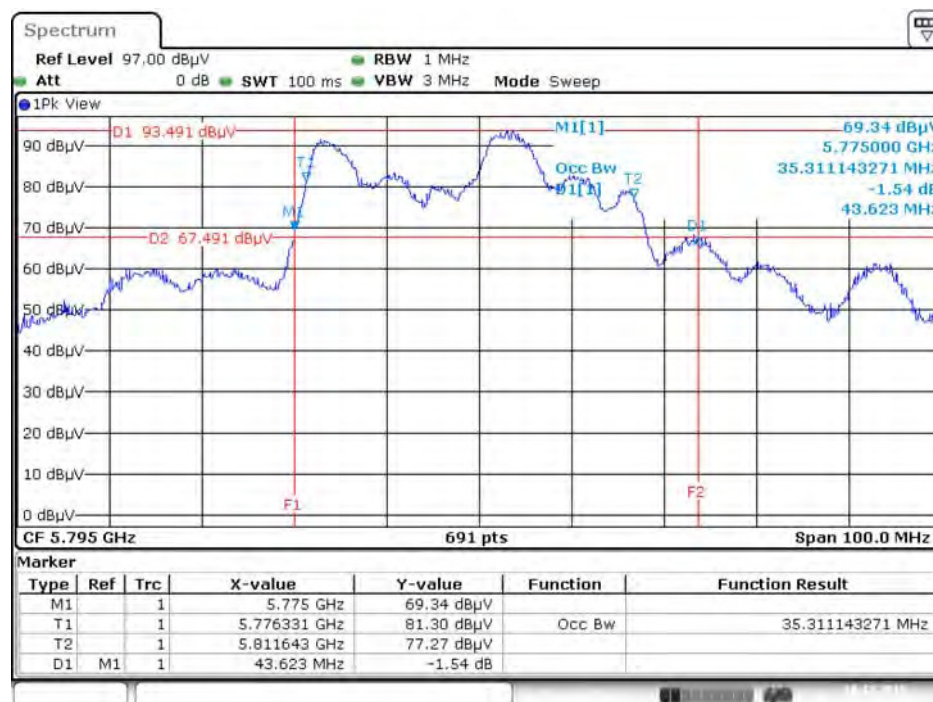
Date: 10.DEC.2015 22:23:05

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5755 MHz



Date: 10.DEC.2015 22:58:59

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5795 MHz

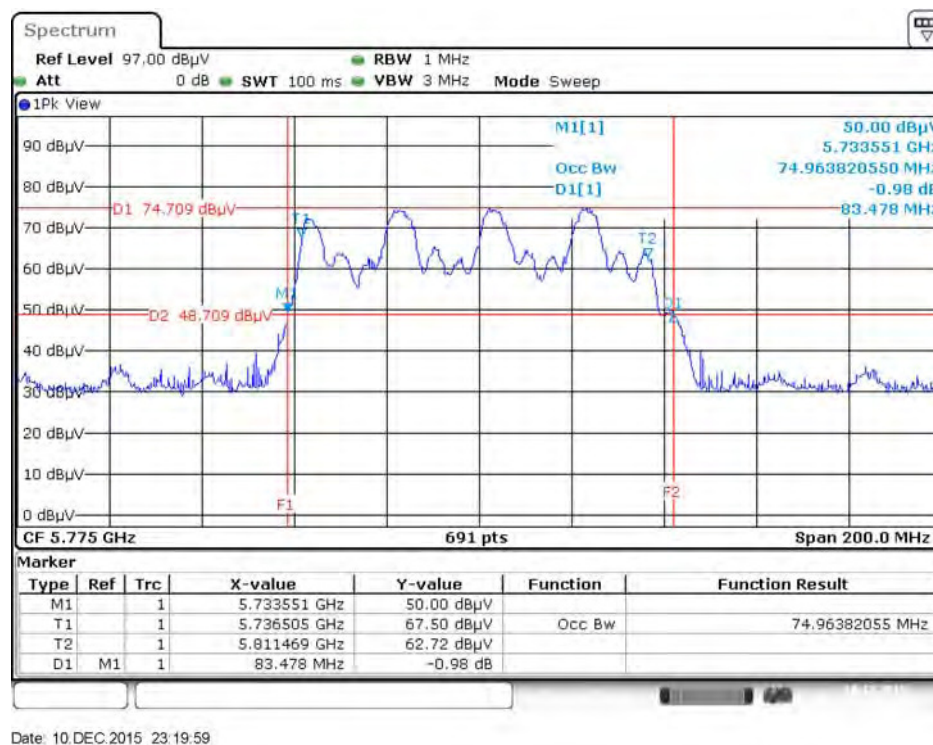


Date: 10.DEC.2015 23:02:05

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5210 MHz

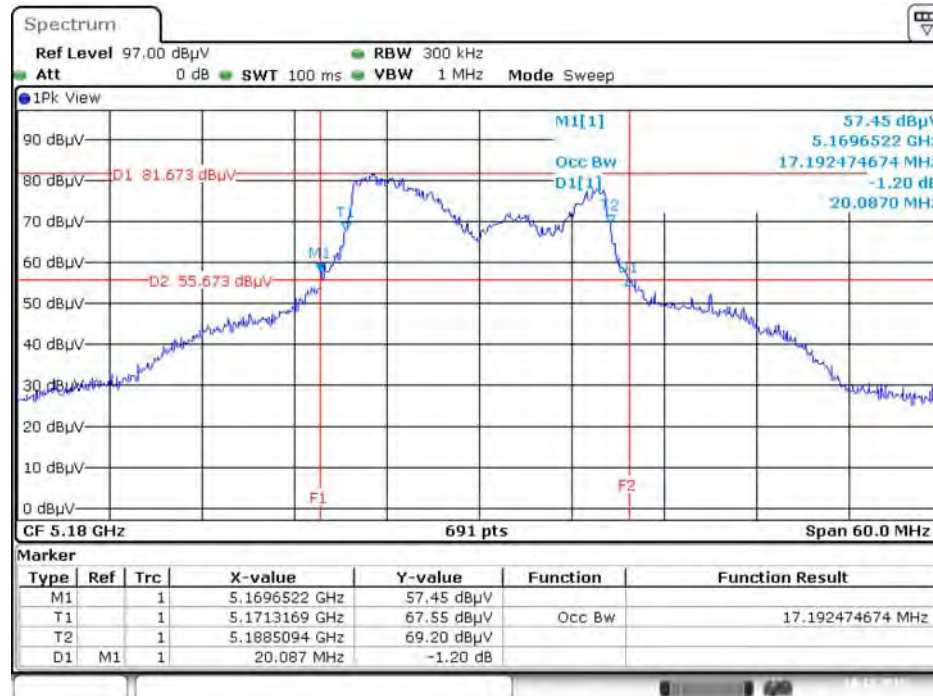


26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5775 MHz



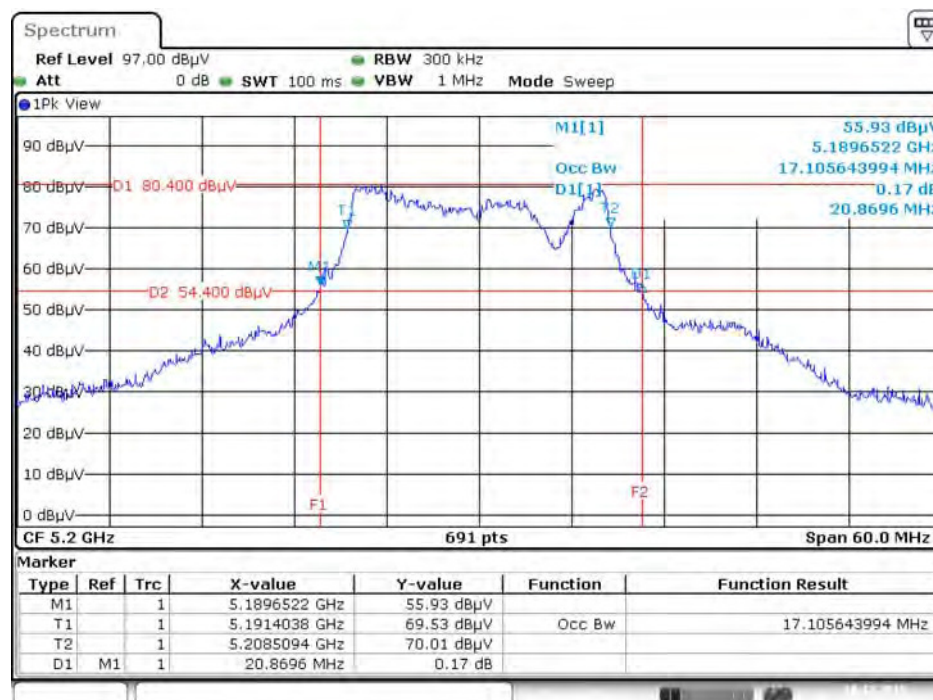
Mode 2: EUT 1 + Set 2 Sector Antenna / 4.5 dBi

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2
+ Chain 3 + Chain 4 / 5180 MHz



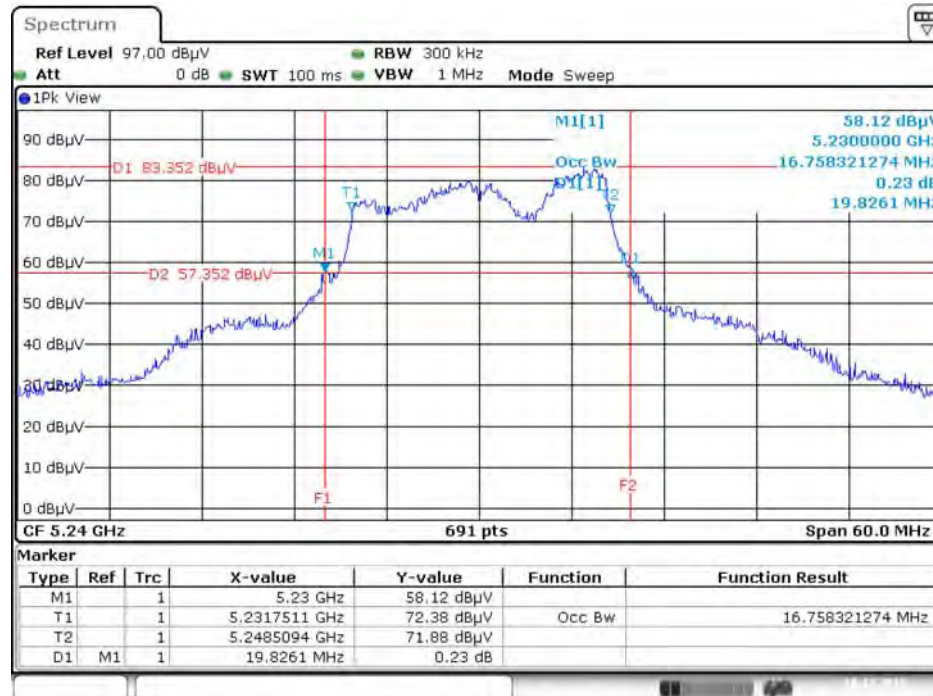
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26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2
+ Chain 3 + Chain 4 / 5200 MHz



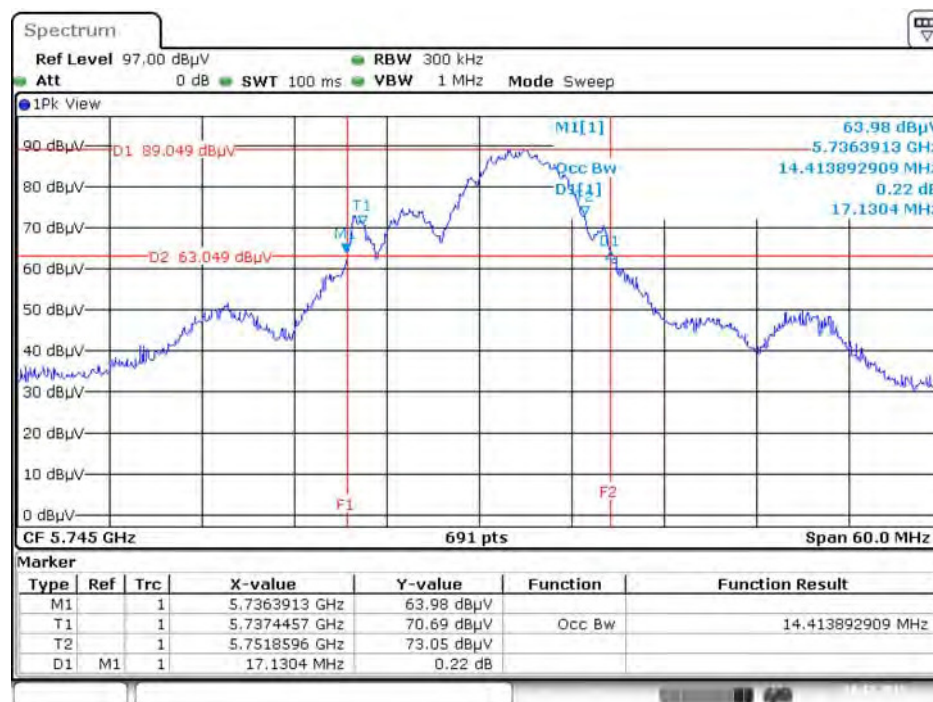
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26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2
+ Chain 3 + Chain 4 / 5240 MHz



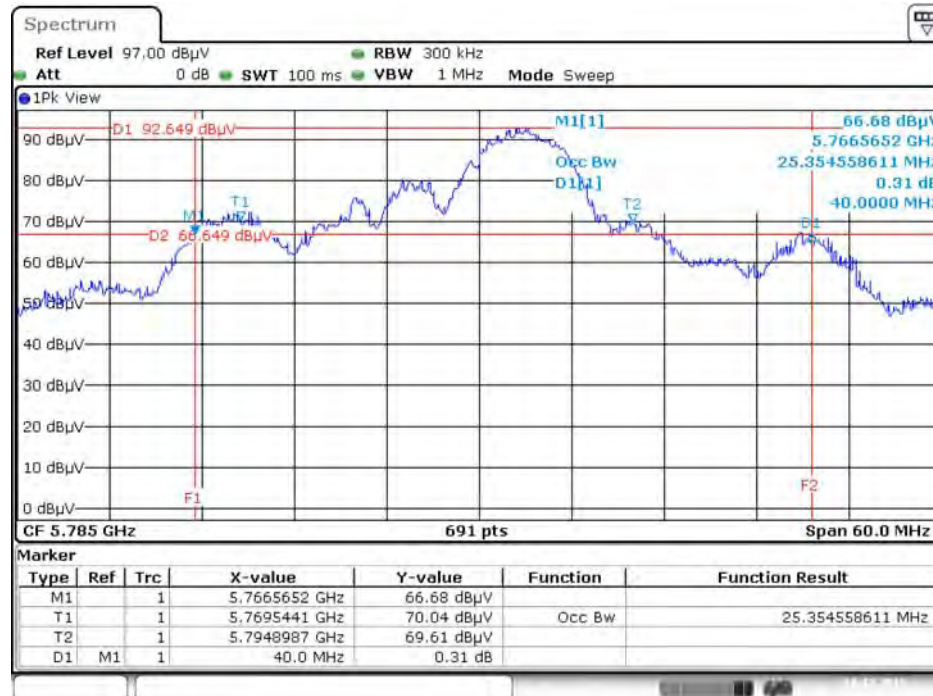
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26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2
+ Chain 3 + Chain 4 / 5745 MHz



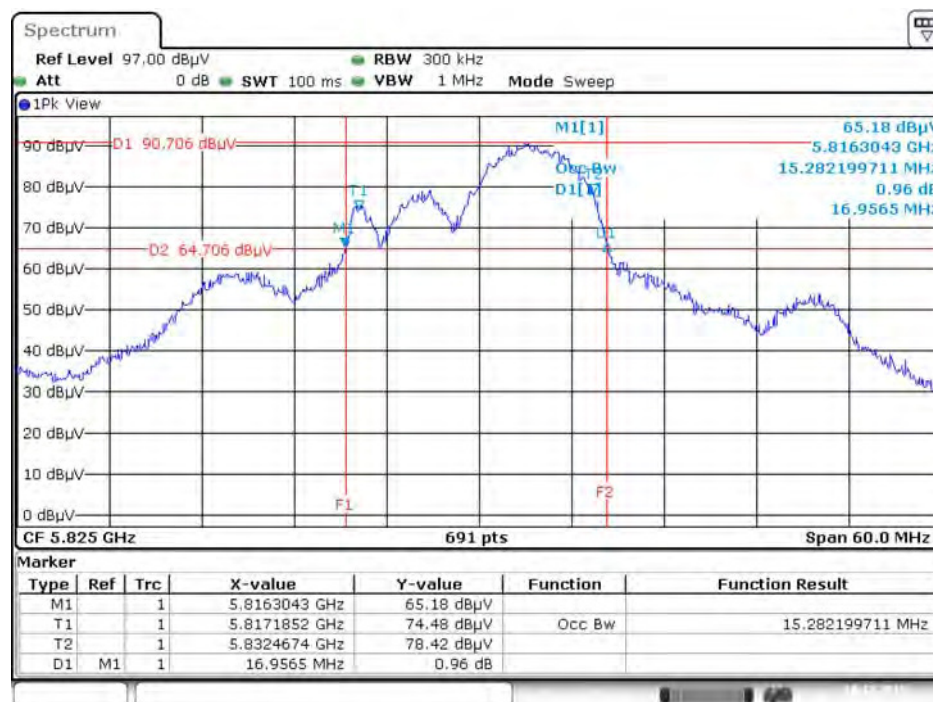
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26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2
+ Chain 3 + Chain 4 / 5785 MHz



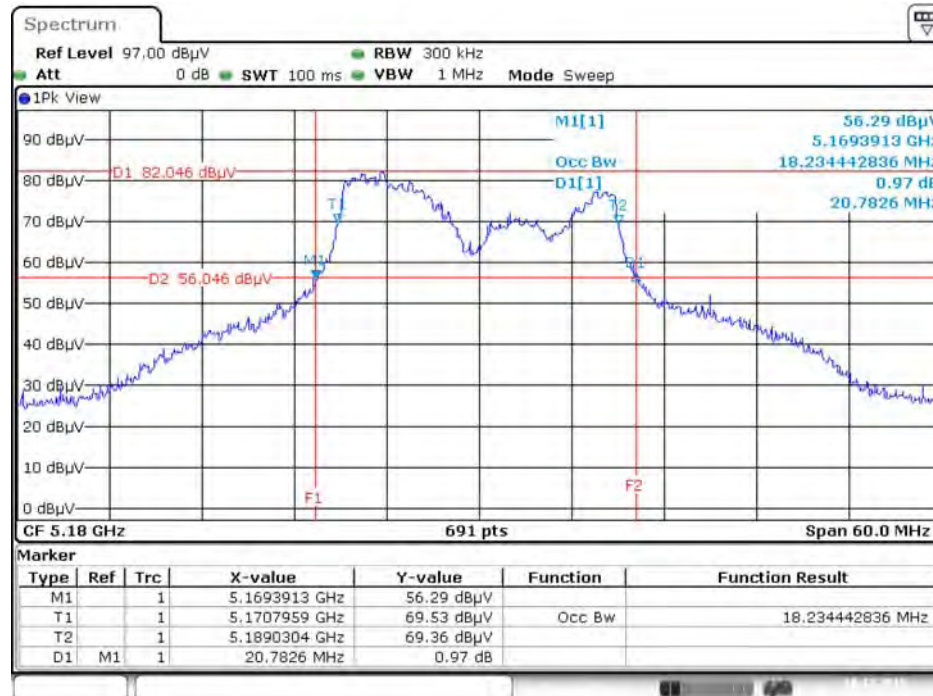
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26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2
+ Chain 3 + Chain 4 / 5825 MHz



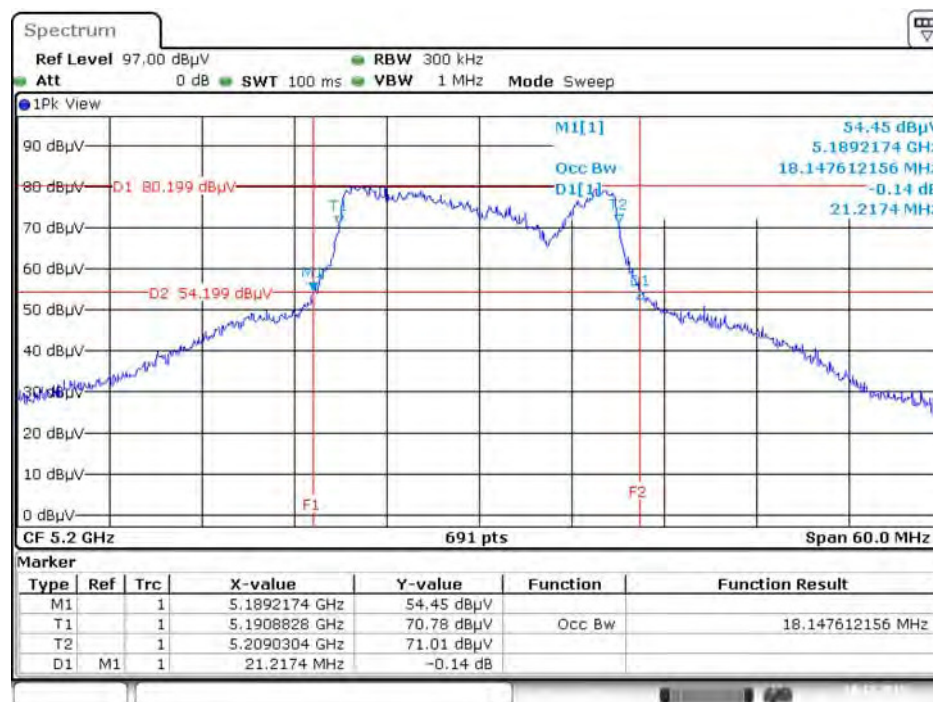
Date: 10.DEC.2015 21:04:54

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5180 MHz



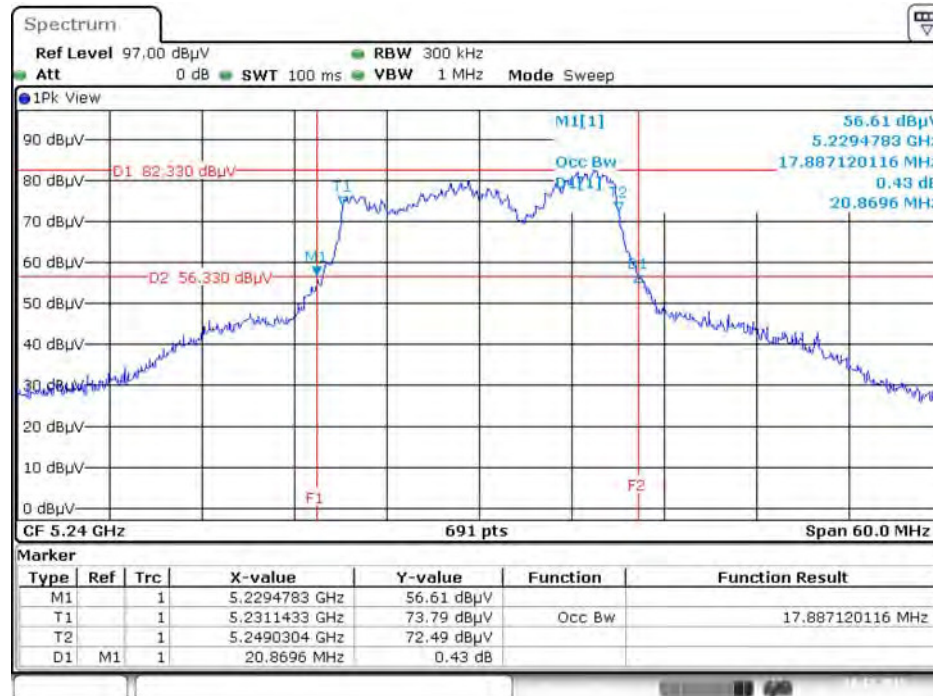
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26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5200 MHz



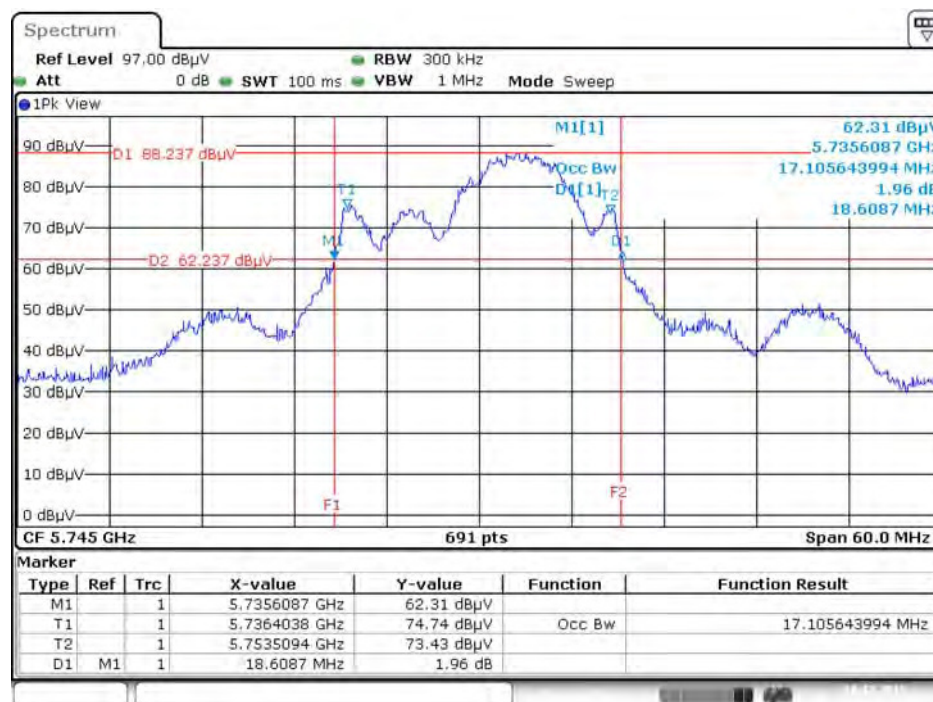
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26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5240 MHz



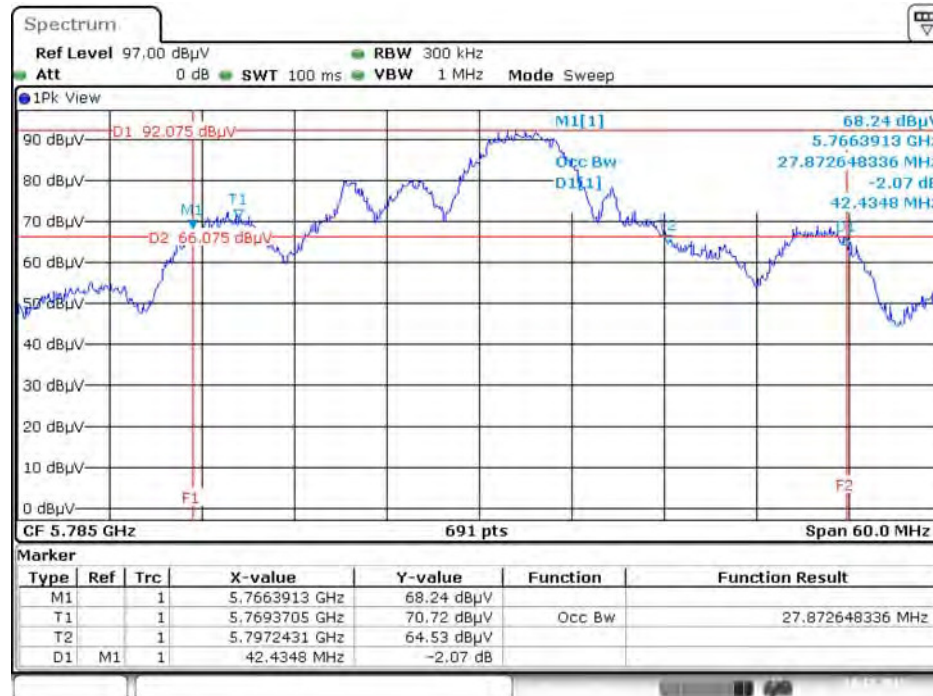
Date: 10.DEC.2015 21:15:51

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5745 MHz

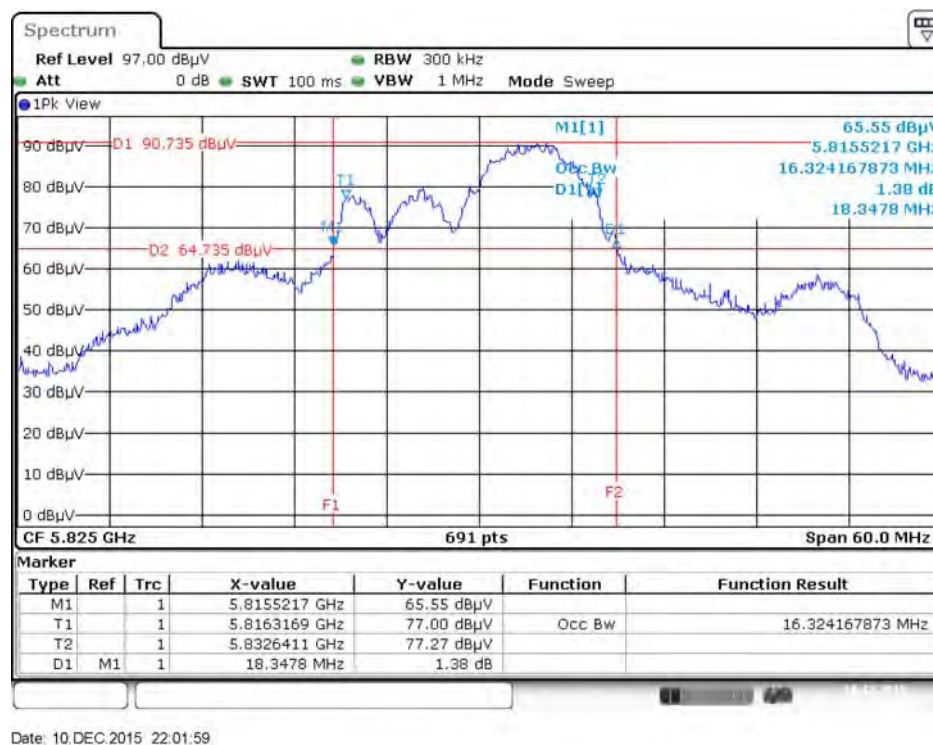


Date: 10.DEC.2015 21:57:16

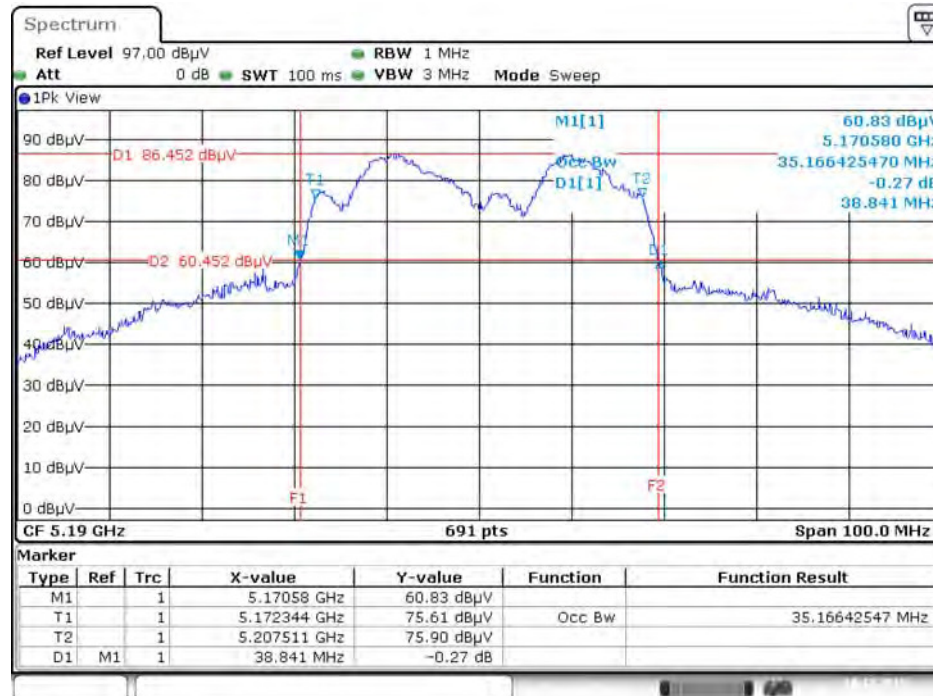
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5785 MHz



26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5825 MHz

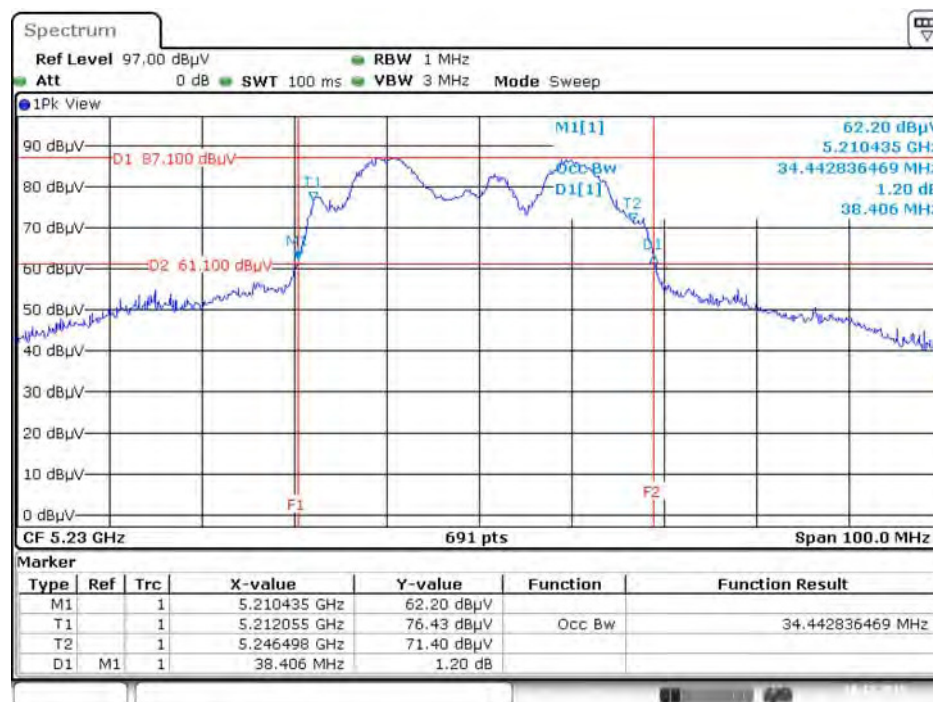


26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5190 MHz



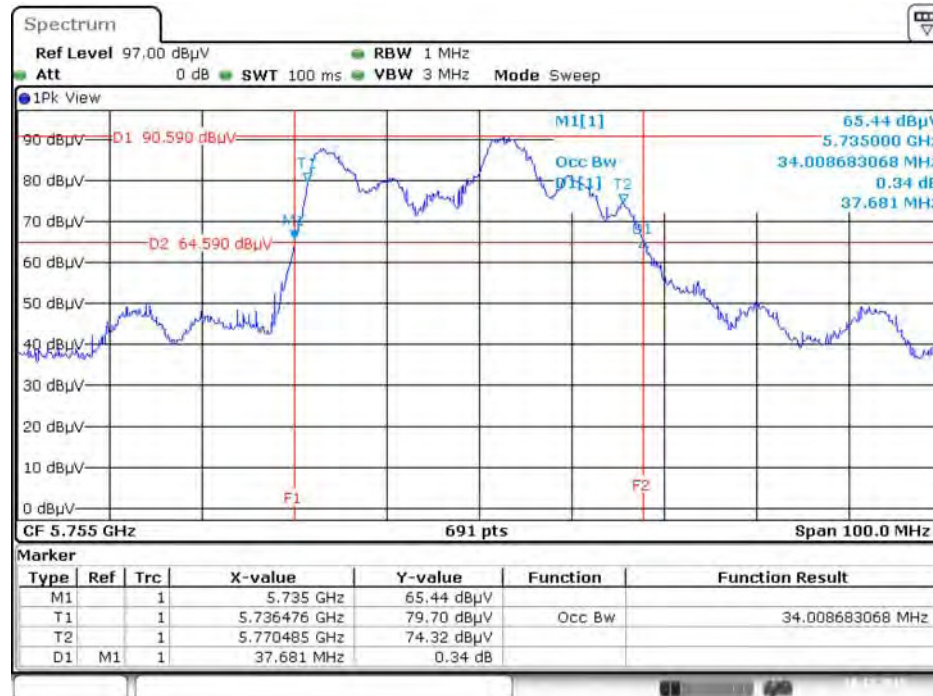
Date: 10.DEC.2015 22:21:01

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5230 MHz



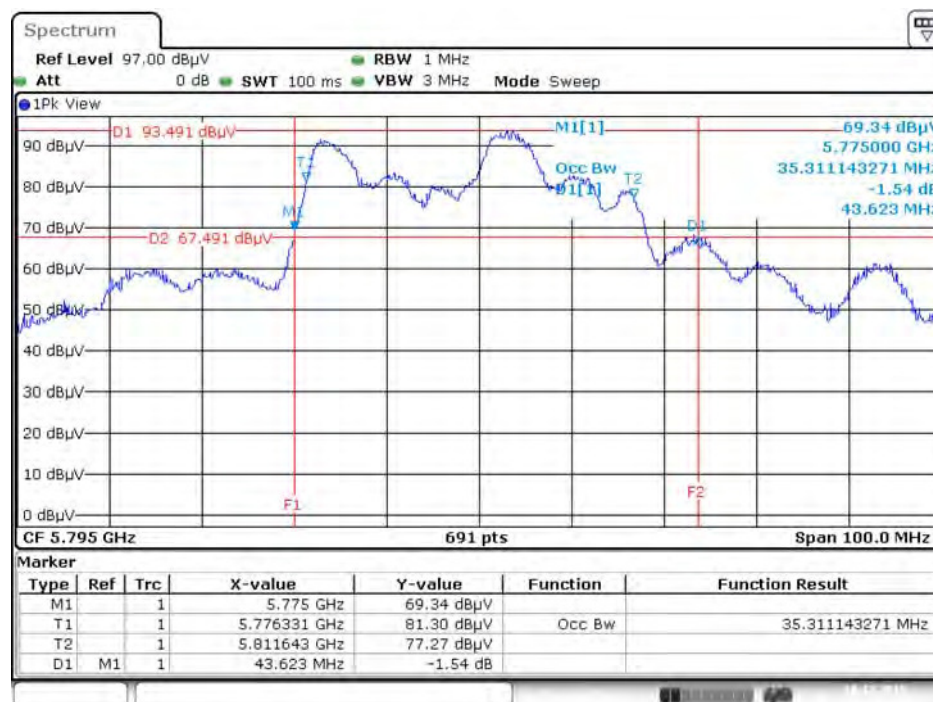
Date: 10.DEC.2015 22:23:37

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5755 MHz



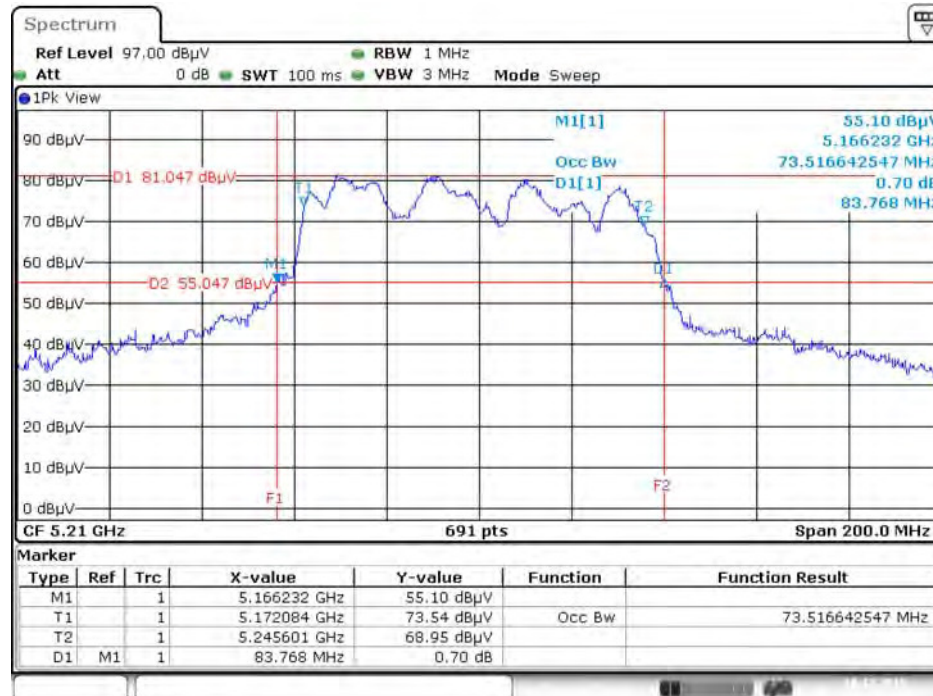
Date: 10.DEC.2015 23:00:25

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5795 MHz



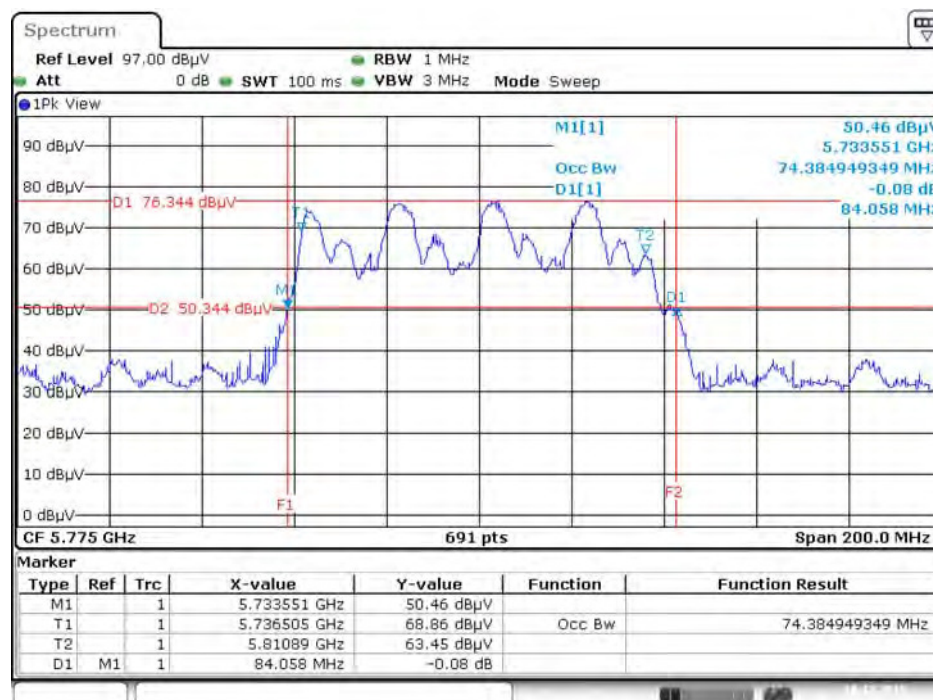
Date: 10.DEC.2015 23:02:05

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5210 MHz



Date: 10.DEC.2015 23:07:57

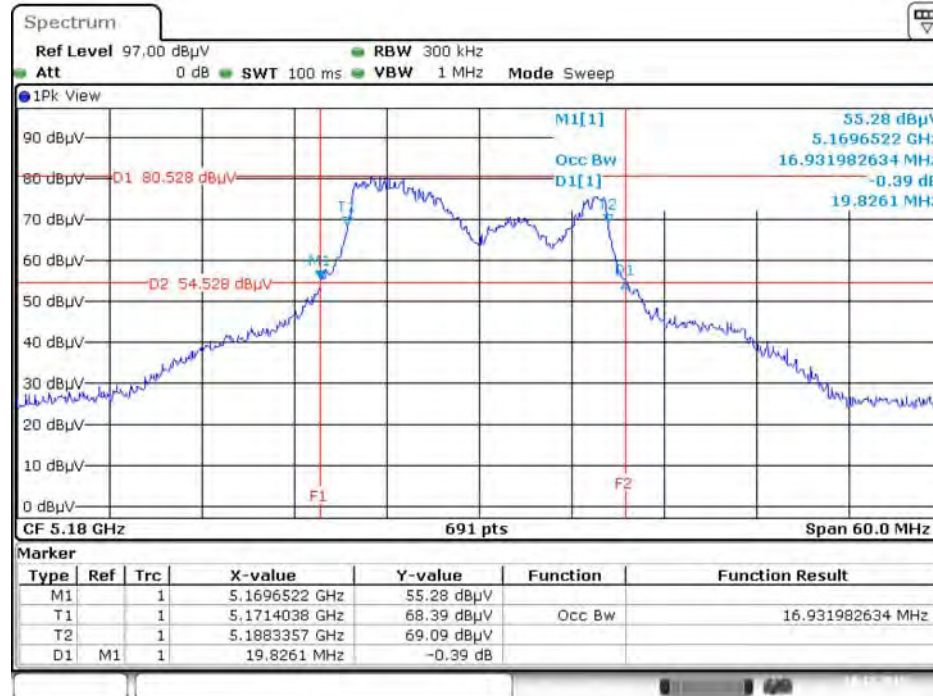
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5775 MHz



Date: 10.DEC.2015 23:20:48

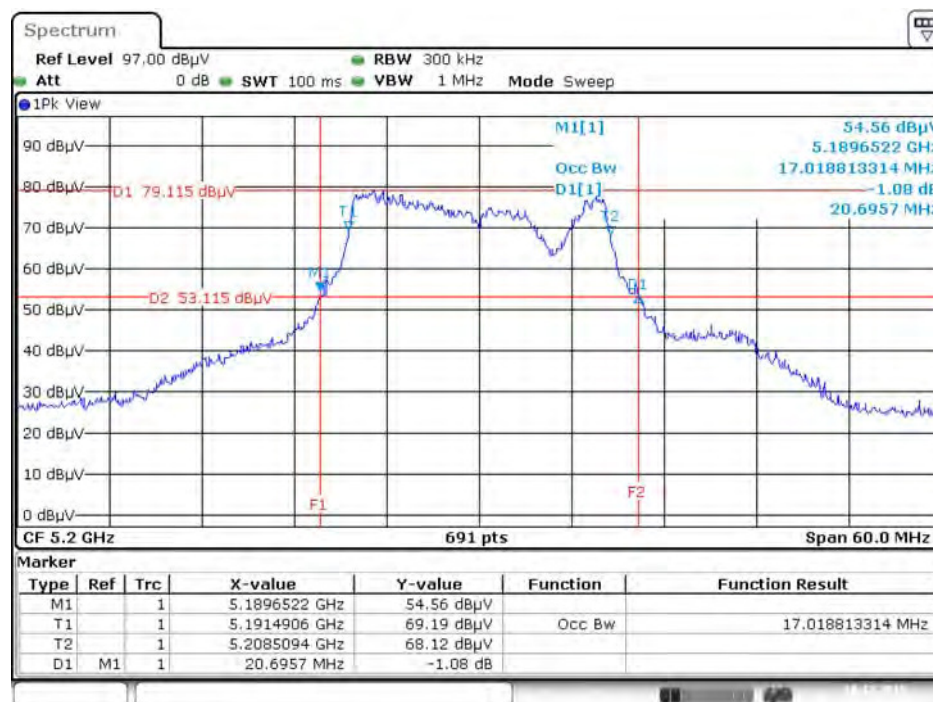
Mode 3: EUT 1 + Set 3 Sector Antenna / 5.5 dBi

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2
+ Chain 3 + Chain 4 / 5180 MHz



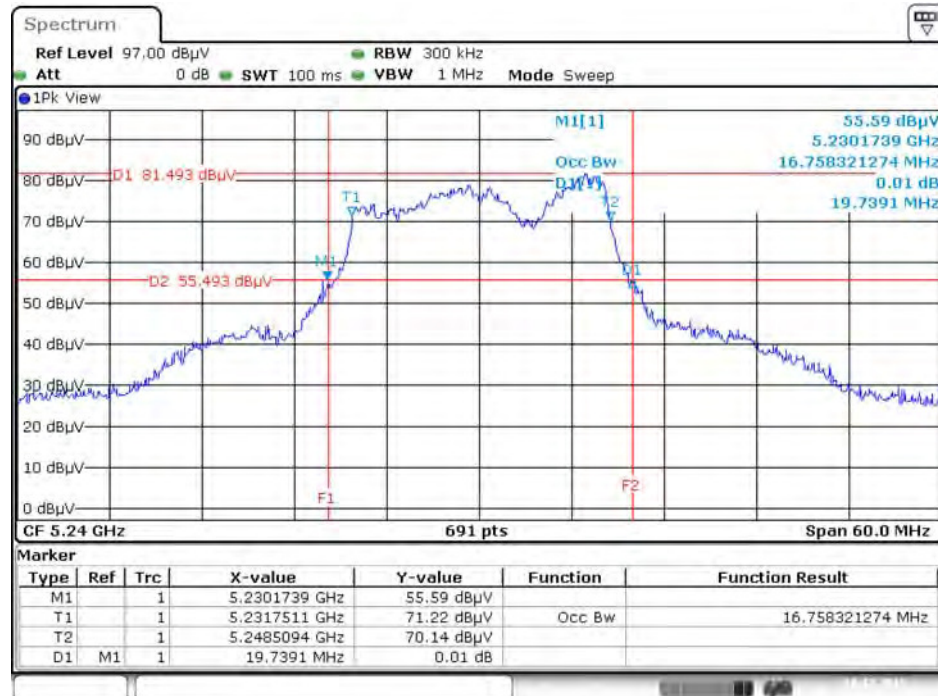
Date: 10.DEC.2015 20:13:19

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2
+ Chain 3 + Chain 4 / 5200 MHz



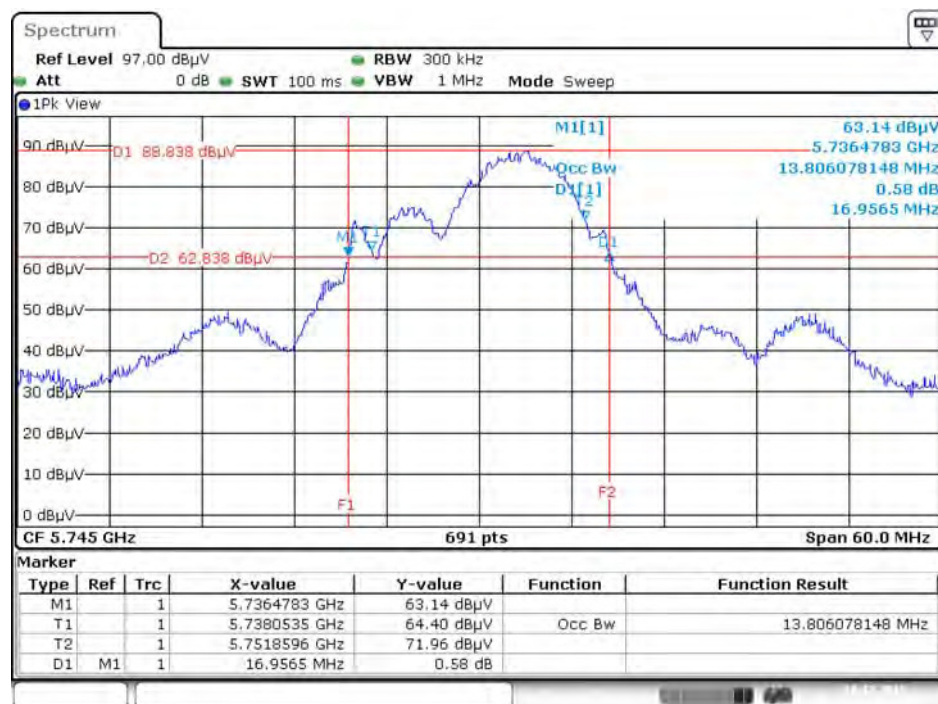
Date: 10.DEC.2015 20:16:07

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2
+ Chain 3 + Chain 4 / 5240 MHz



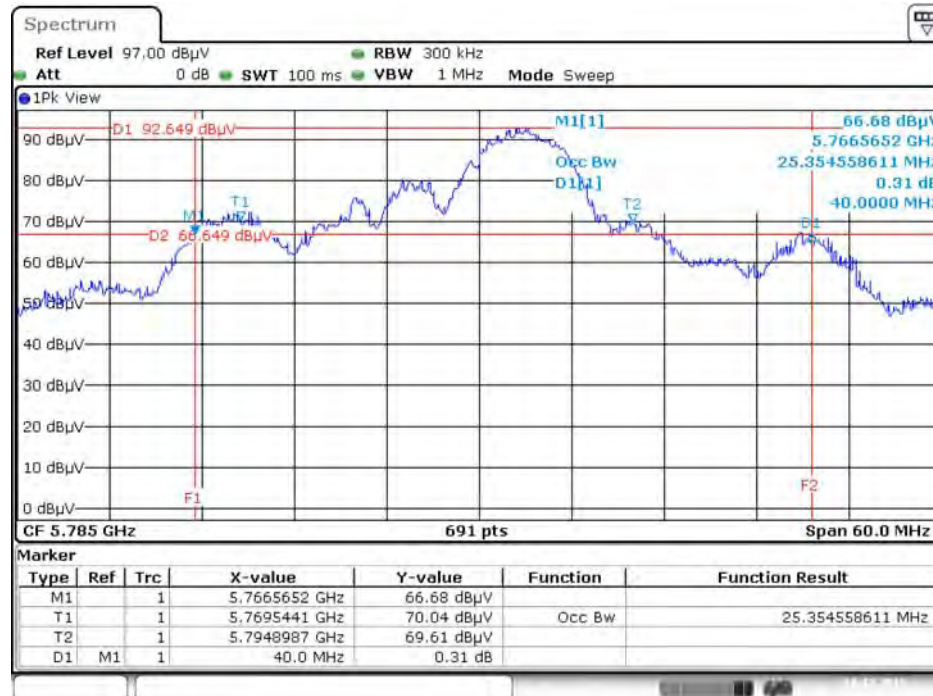
Date: 10.DEC.2015 20:19:10

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2
+ Chain 3 + Chain 4 / 5745 MHz



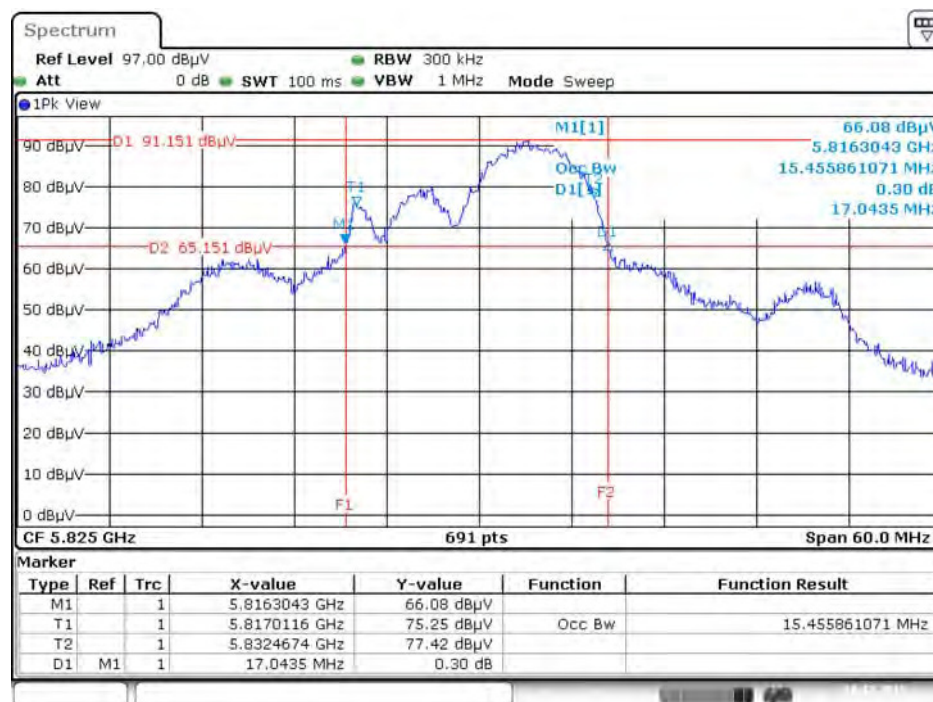
Date: 10.DEC.2015 20:59:43

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2
+ Chain 3 + Chain 4 / 5785 MHz



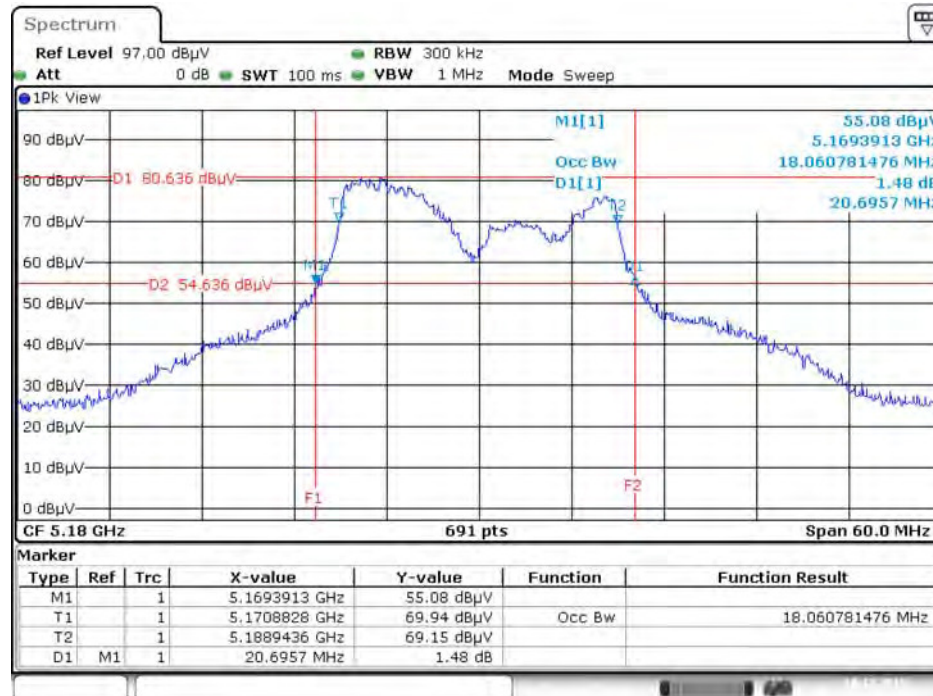
Date: 10.DEC.2015 21:02:09

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2
+ Chain 3 + Chain 4 / 5825 MHz



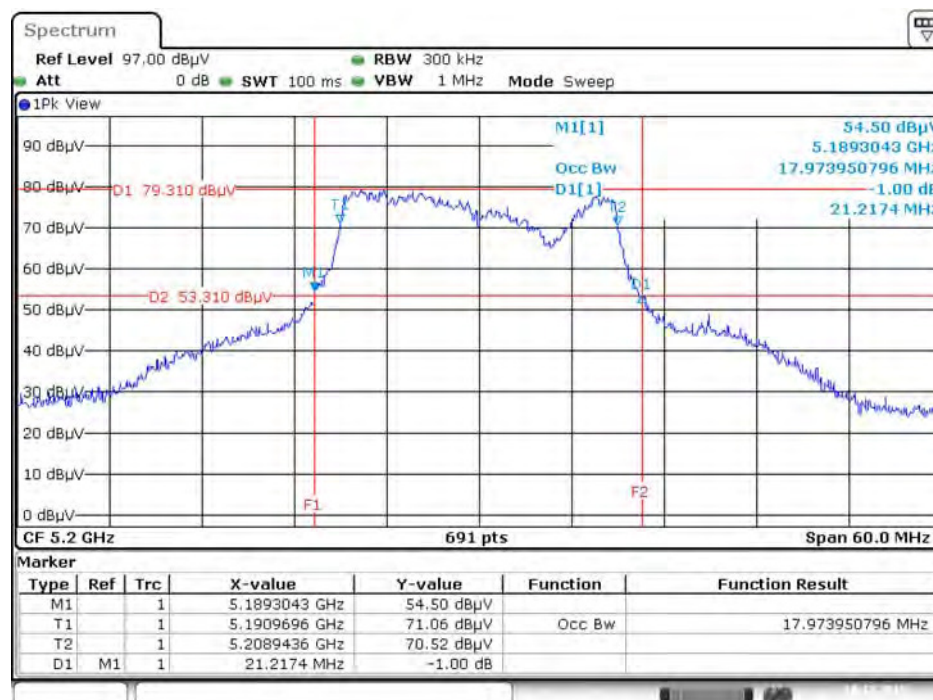
Date: 10.DEC.2015 21:03:33

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5180 MHz



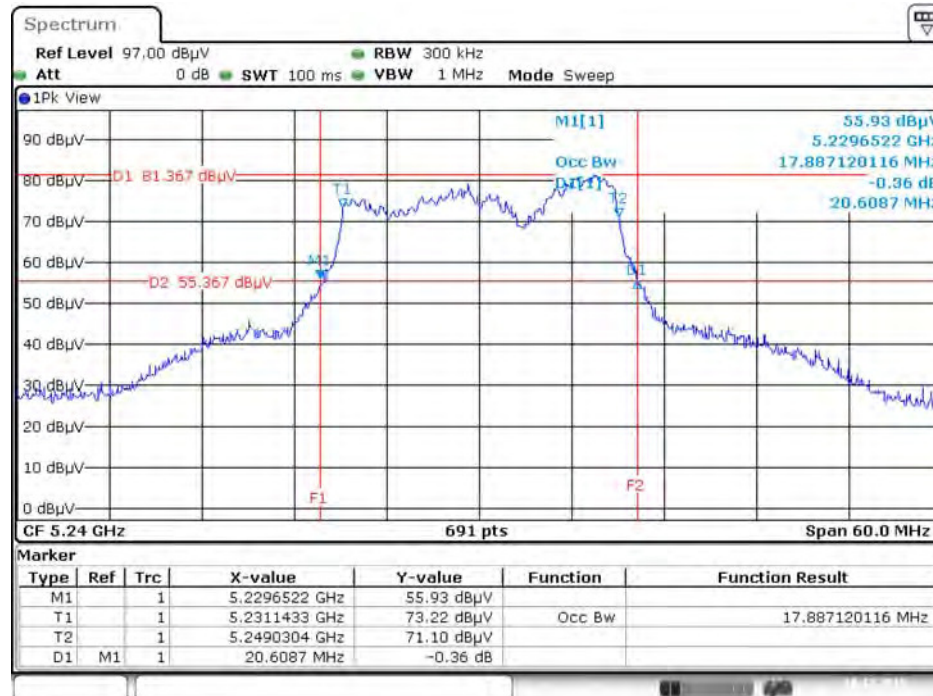
Date: 10.DEC.2015 21:08:17

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5200 MHz



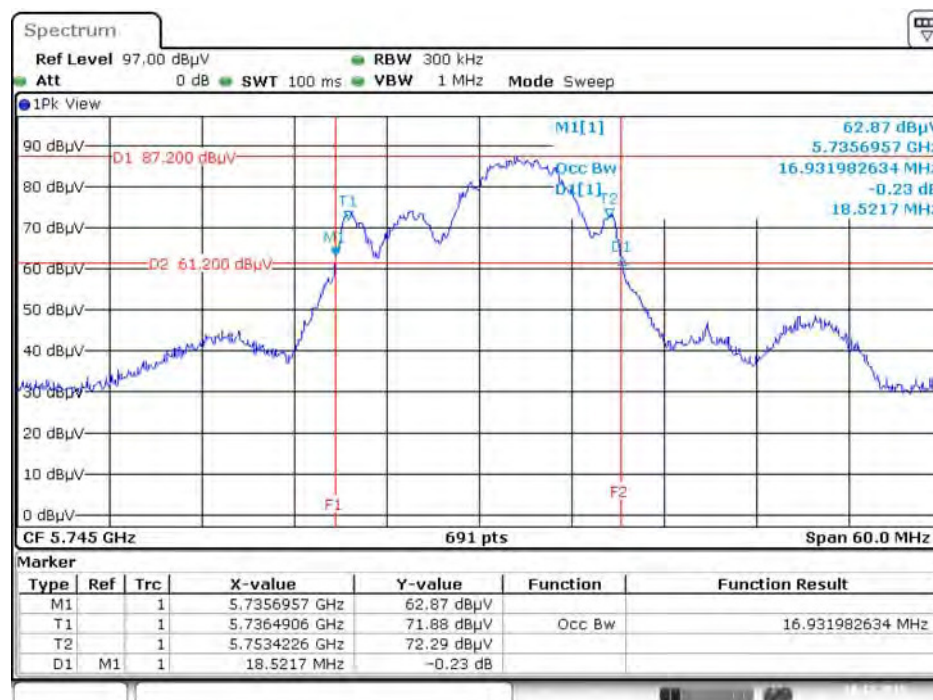
Date: 10.DEC.2015 21:11:11

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5240 MHz



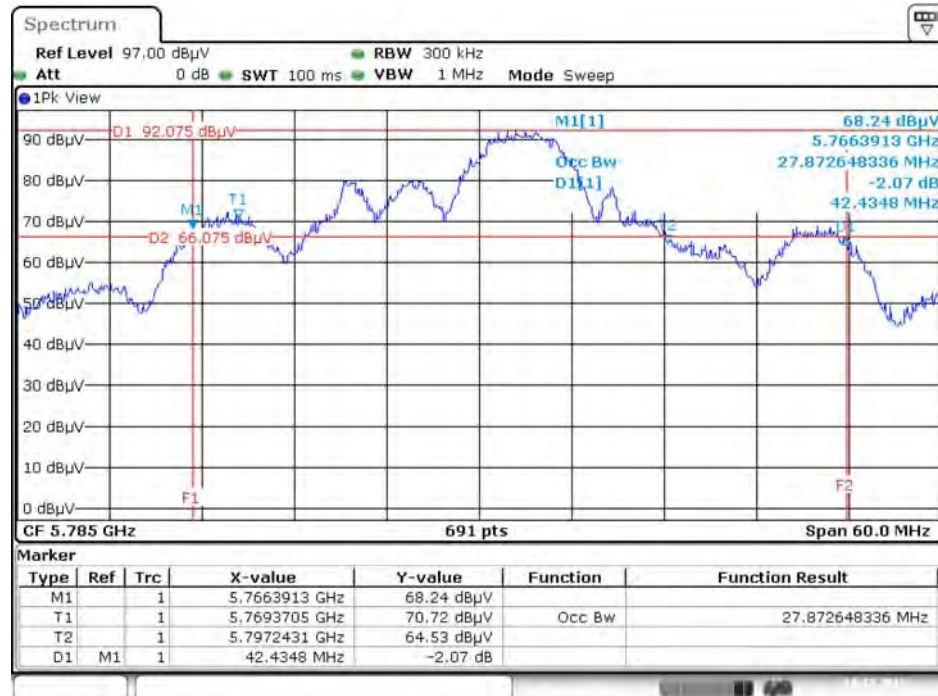
Date: 10.DEC.2015 21:14:38

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5745 MHz

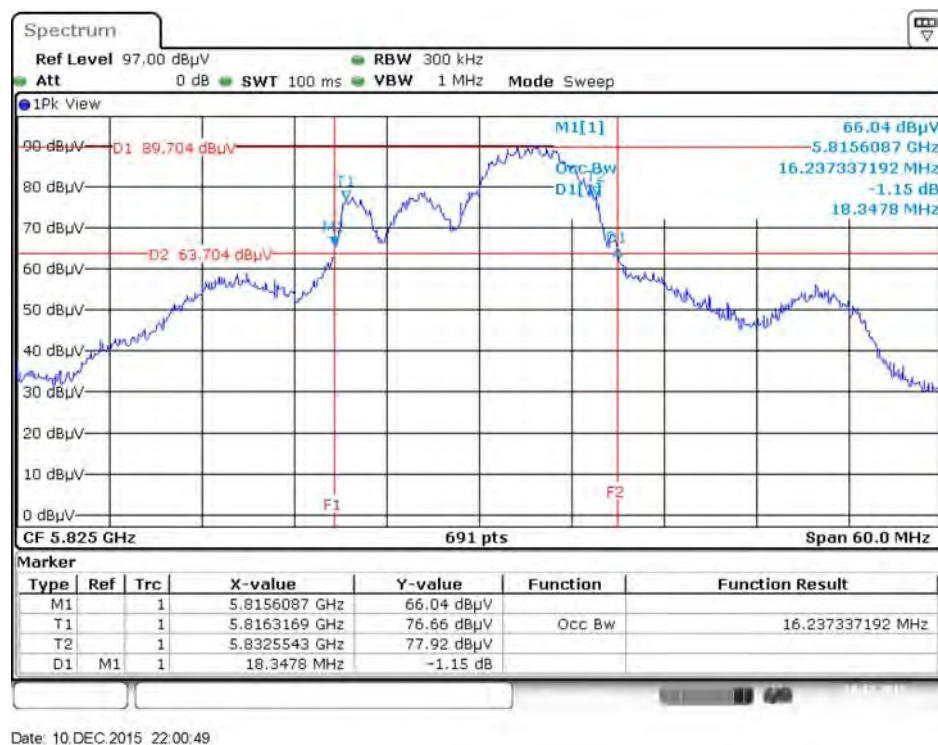


Date: 10.DEC.2015 21:58:56

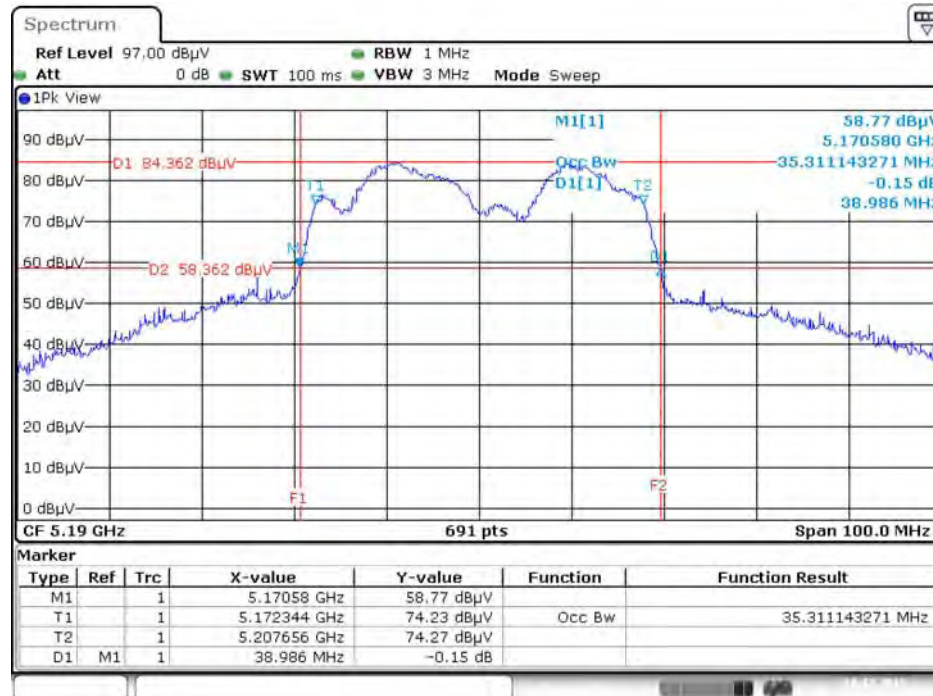
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5785 MHz



26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5825 MHz

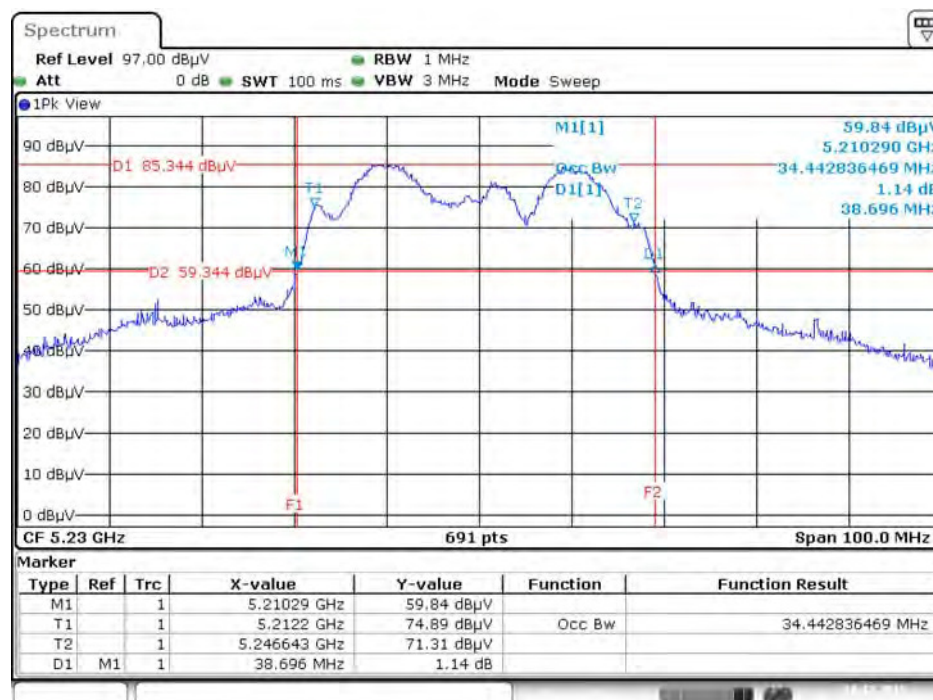


26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5190 MHz



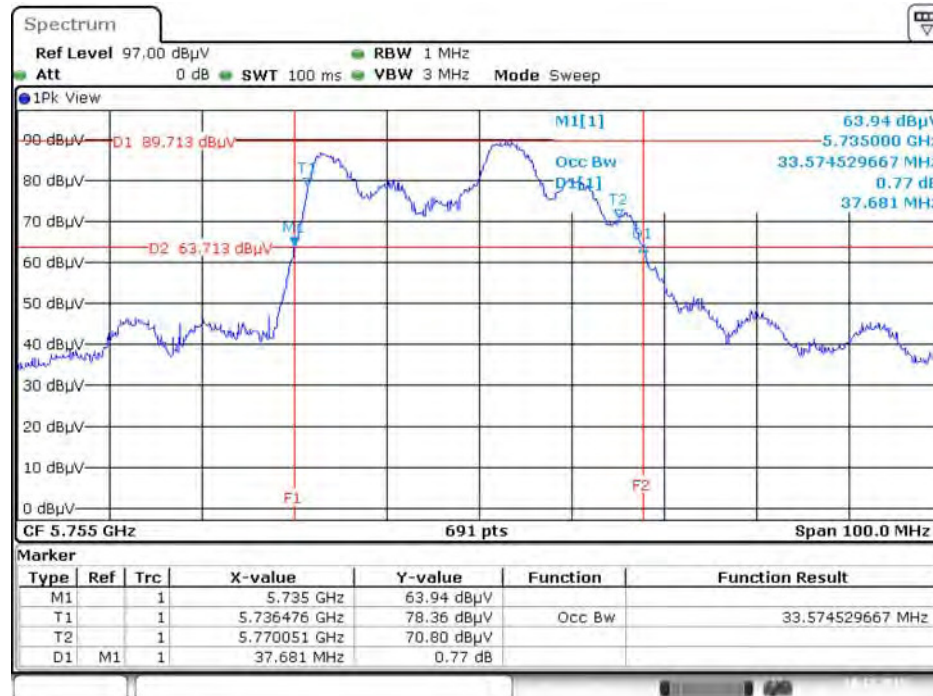
Date: 10.DEC.2015 22:19:44

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5230 MHz



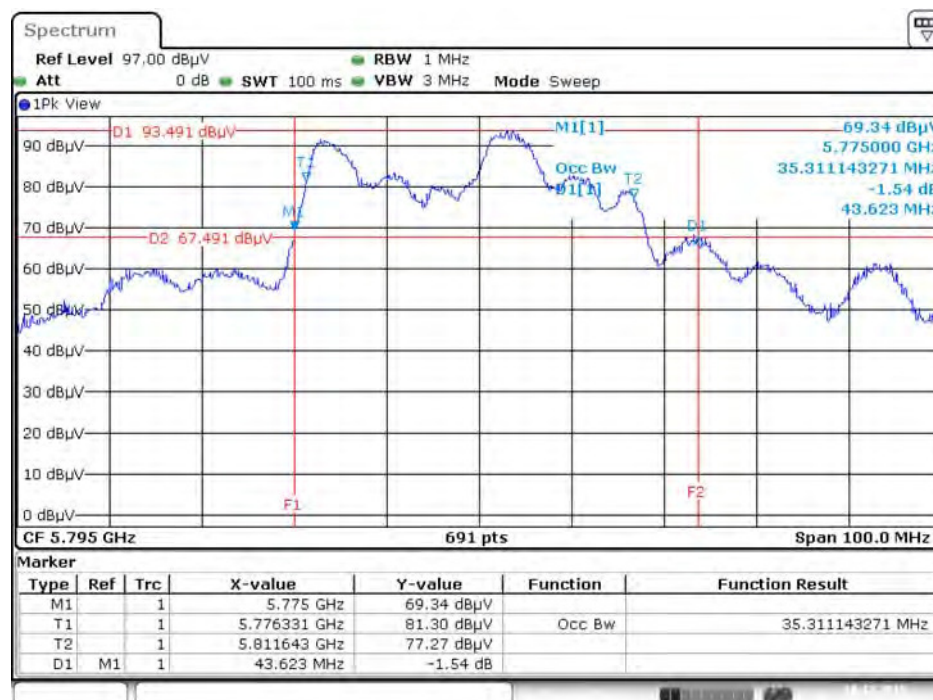
Date: 10.DEC.2015 22:22:22

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5755 MHz



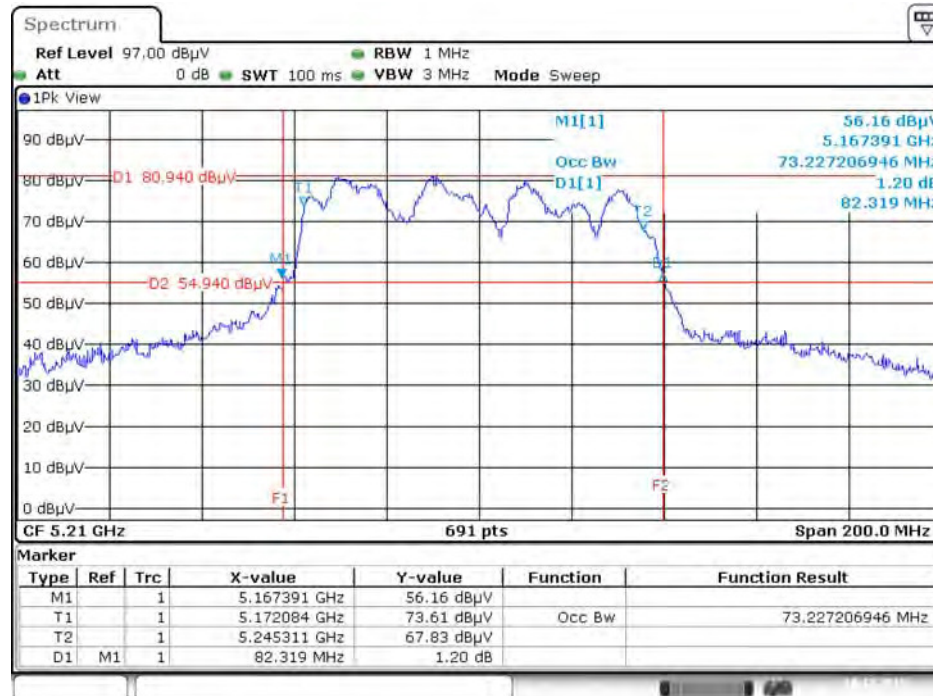
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26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5795 MHz



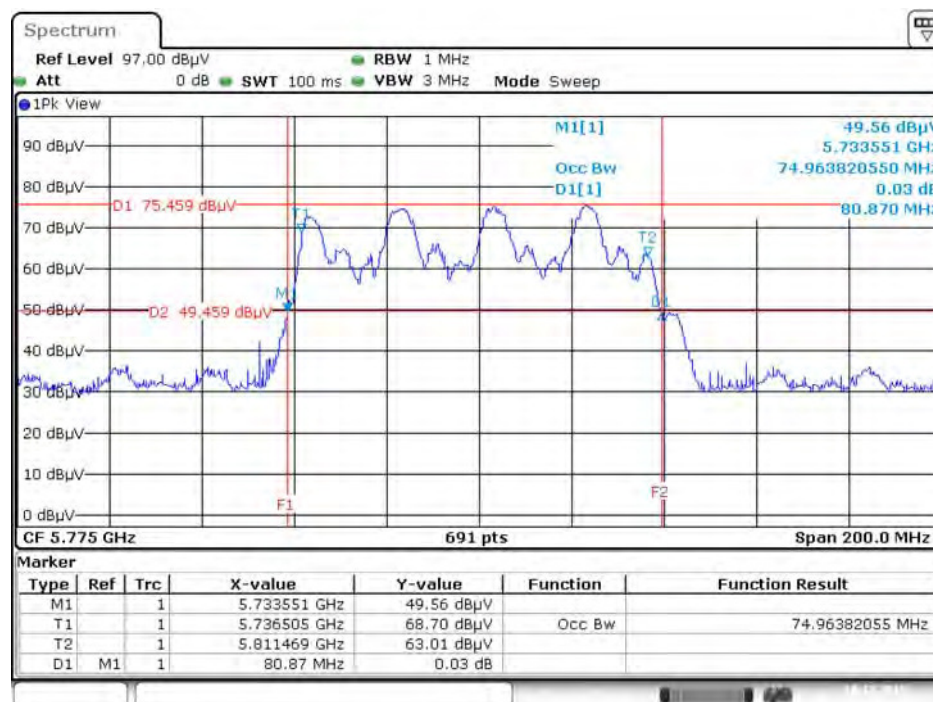
Date: 10.DEC.2015 23:02:05

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5210 MHz



Date: 10.DEC.2015 23:05:40

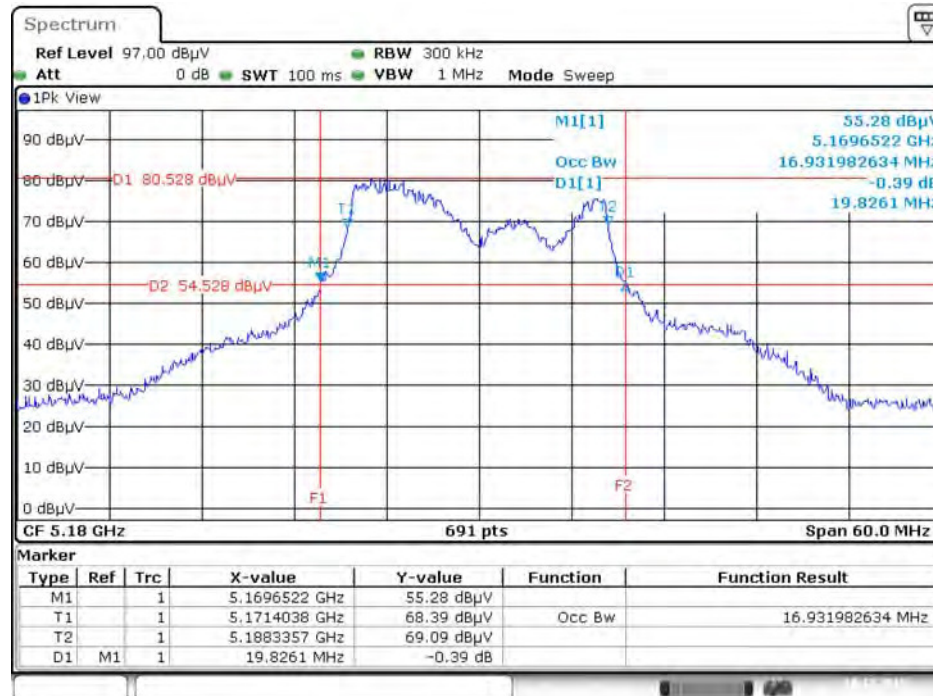
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5775 MHz



Date: 10.DEC.2015 23:19:42

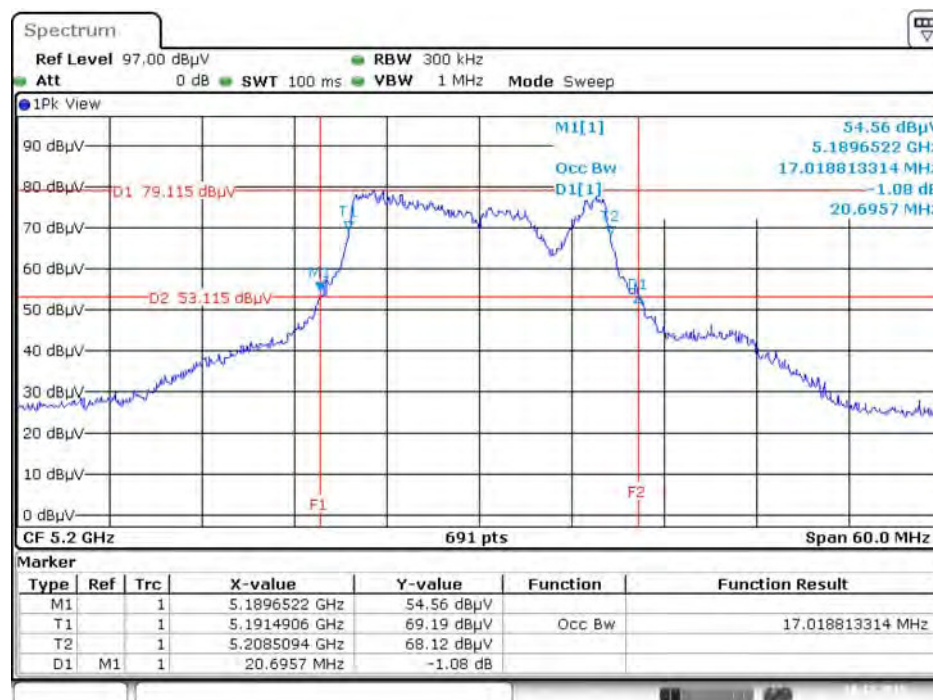
Mode 4: EUT 1 + Set 4 Sector Antenna / 7.5 dBi

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2
+ Chain 3 + Chain 4 / 5180 MHz



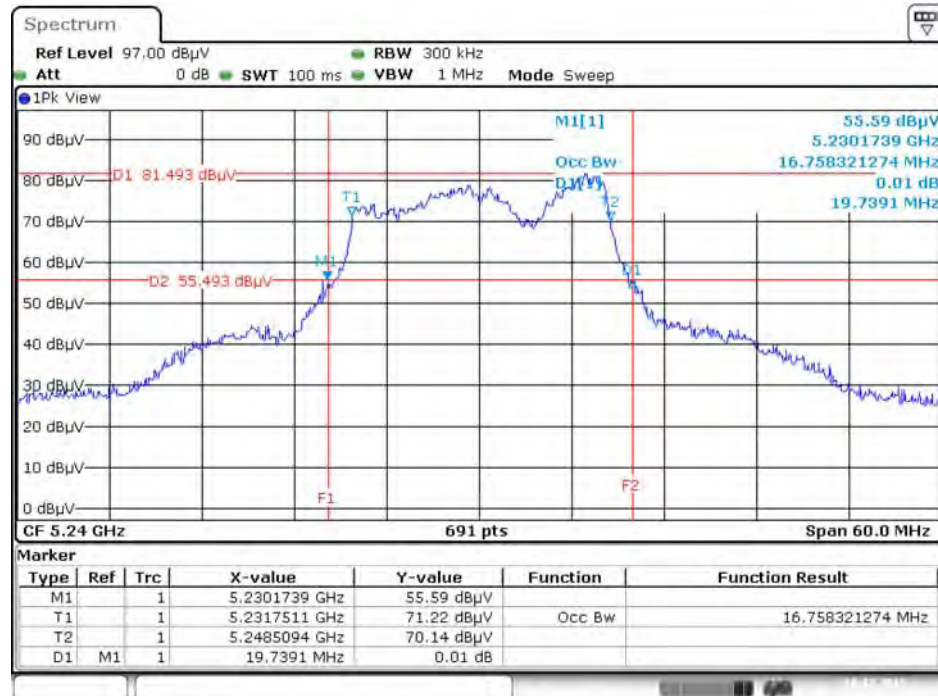
Date: 10.DEC.2015 20:13:19

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2
+ Chain 3 + Chain 4 / 5200 MHz



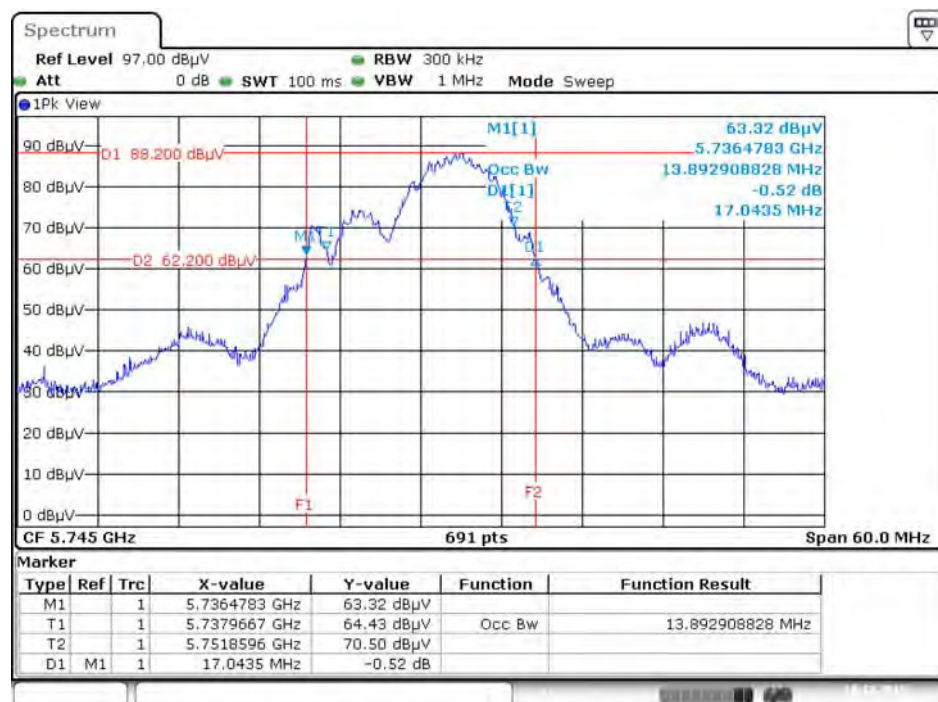
Date: 10.DEC.2015 20:16:07

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5240 MHz



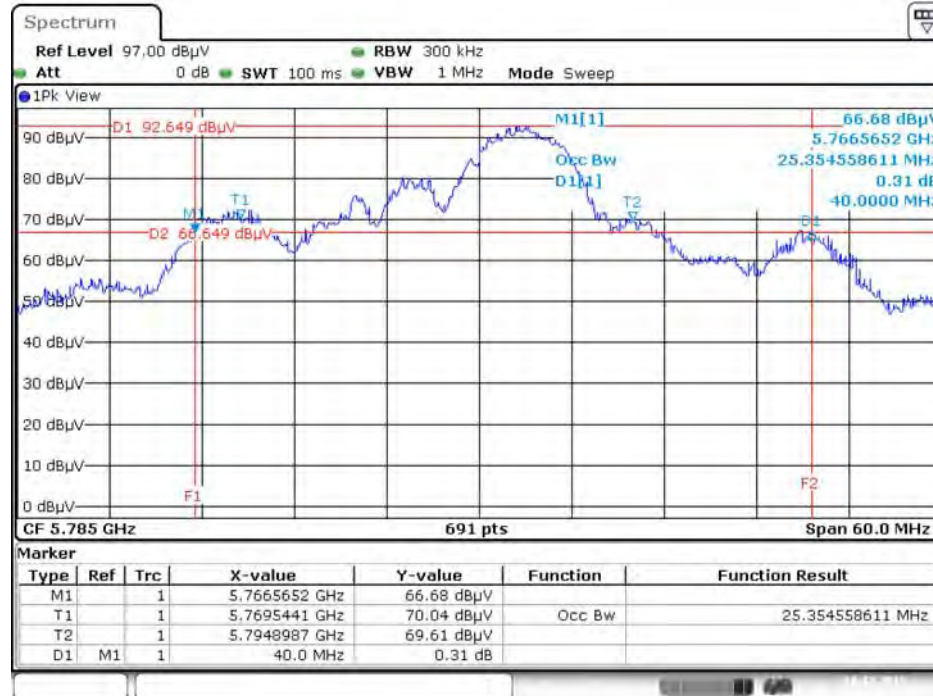
Date: 10.DEC.2015 20:19:10

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5745 MHz



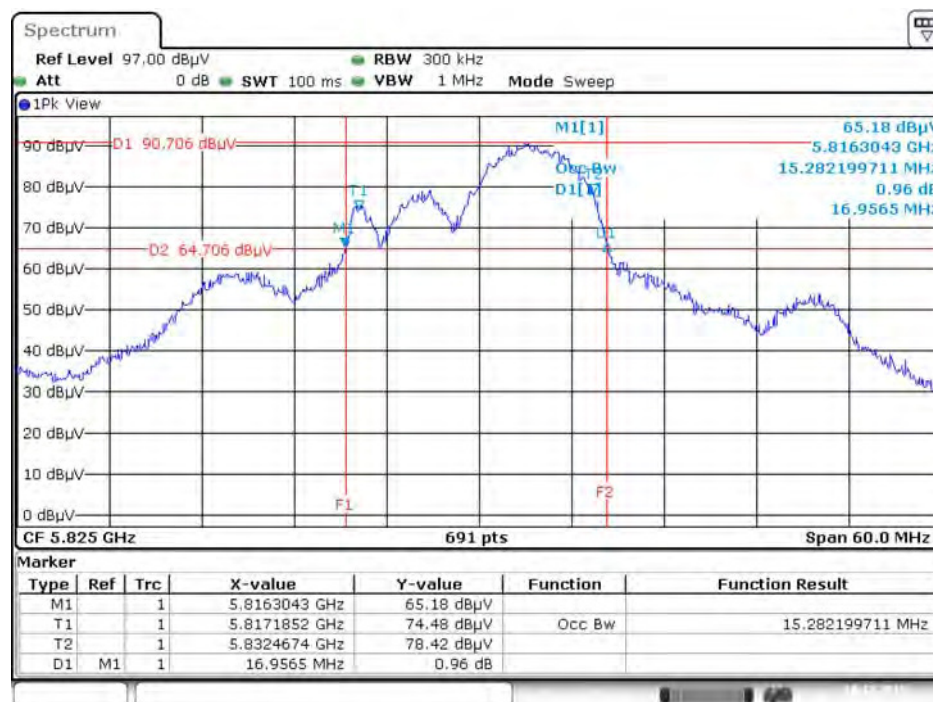
Date: 10.DEC.2015 21:01:39

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2
+ Chain 3 + Chain 4 / 5785 MHz



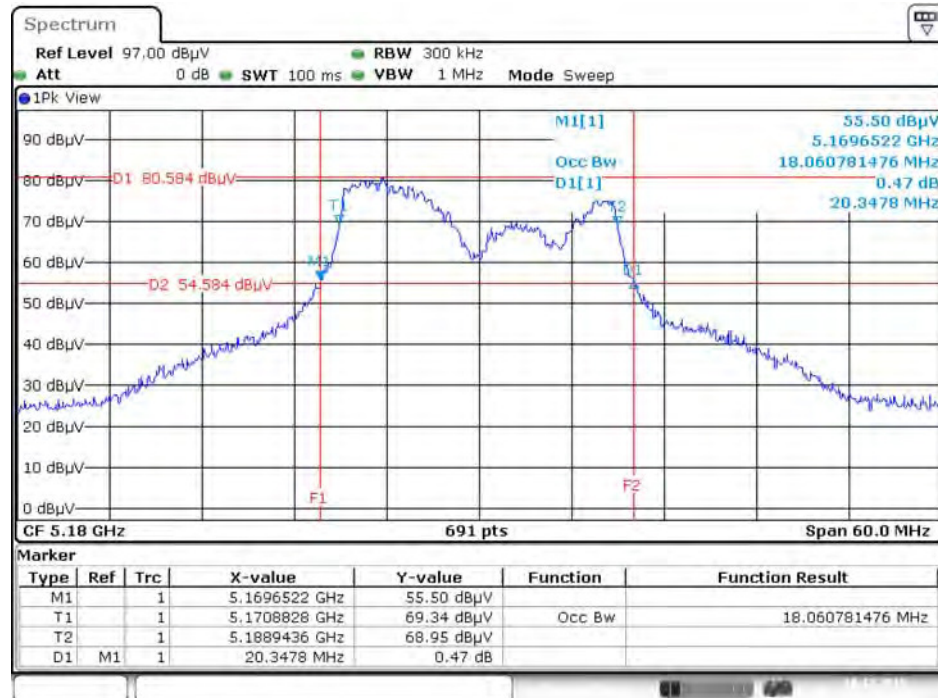
Date: 10.DEC.2015 21:02:09

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2
+ Chain 3 + Chain 4 / 5825 MHz



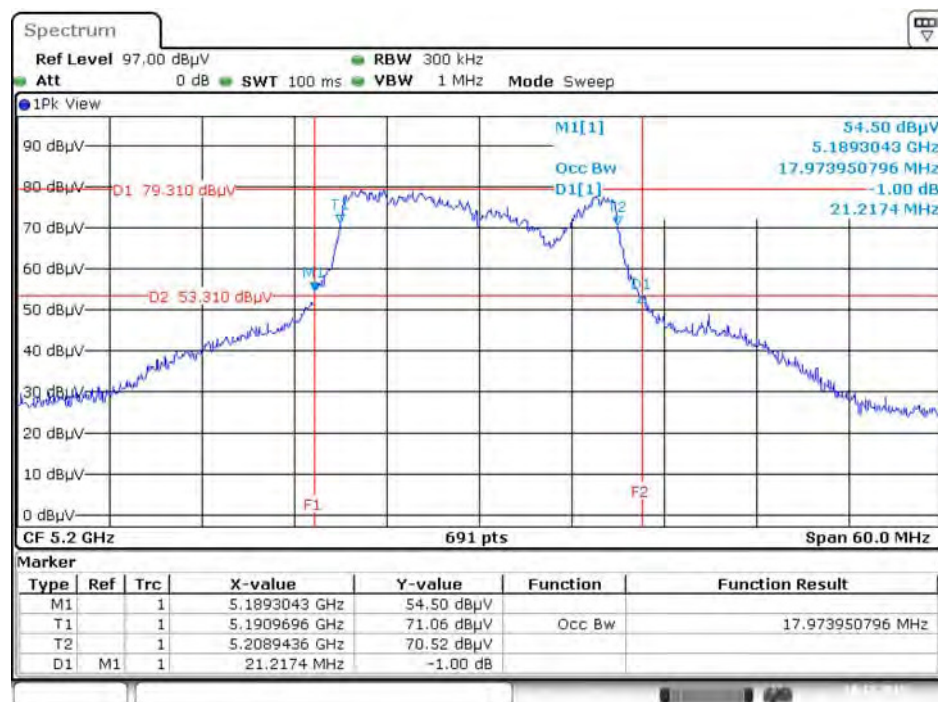
Date: 10.DEC.2015 21:04:54

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5180 MHz



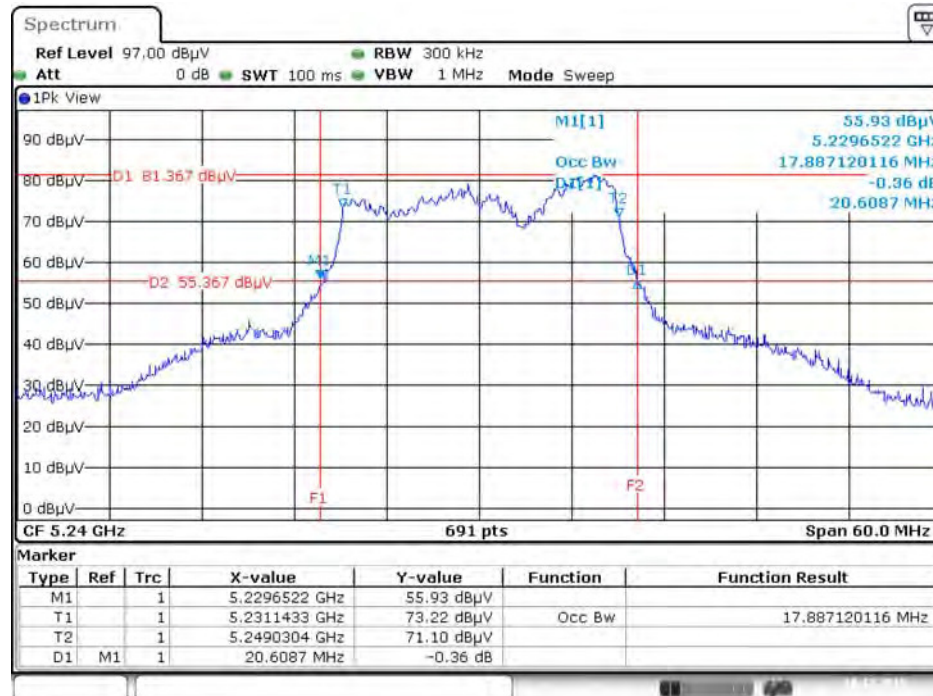
Date: 10.DEC.2015 21:10:20

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5200 MHz



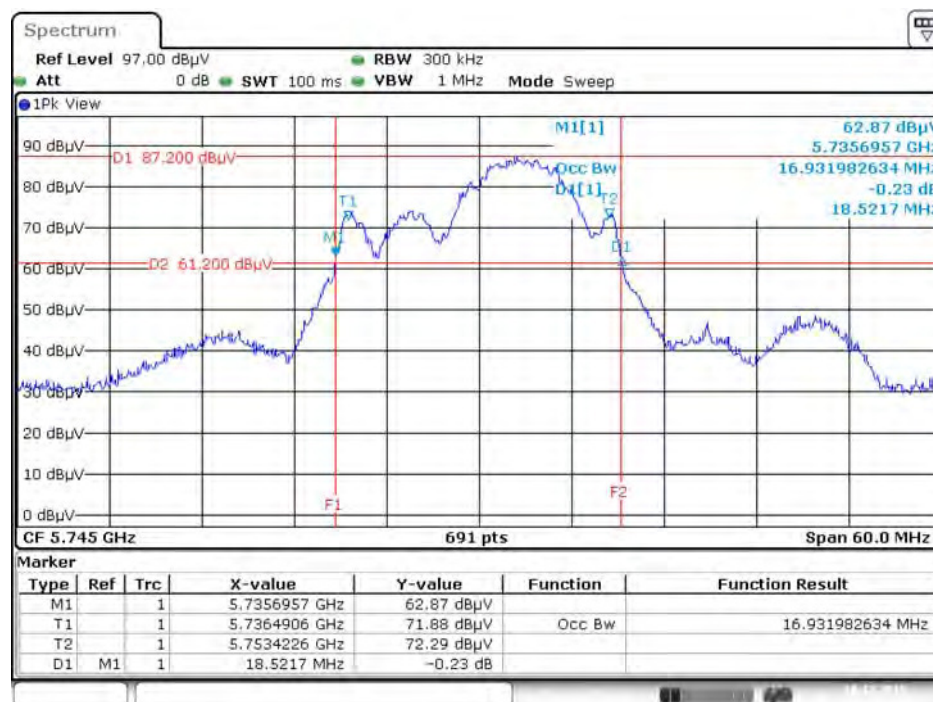
Date: 10.DEC.2015 21:11:11

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5240 MHz



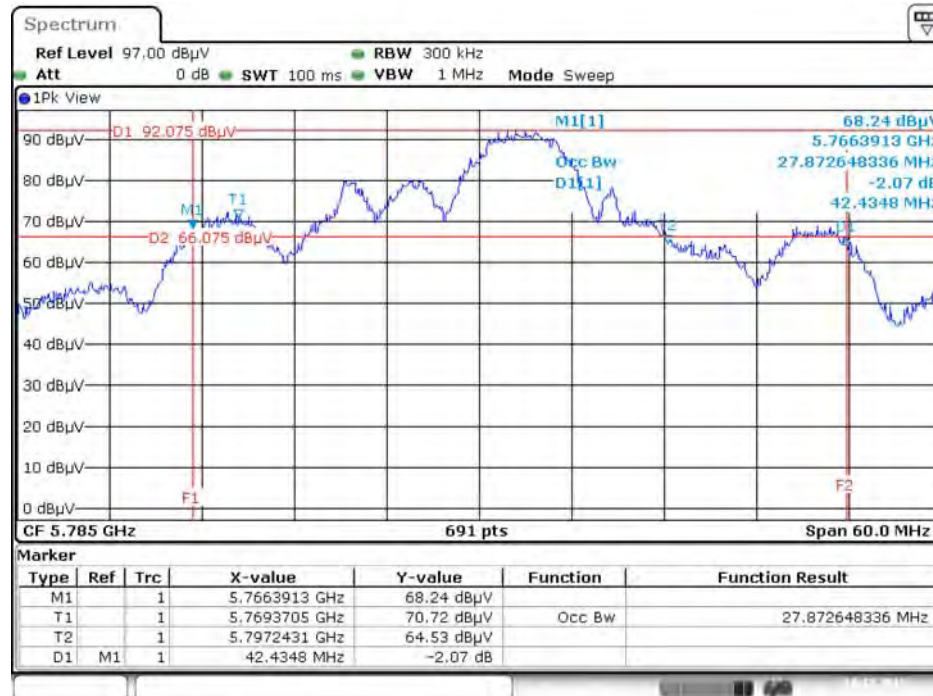
Date: 10.DEC.2015 21:14:38

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5745 MHz

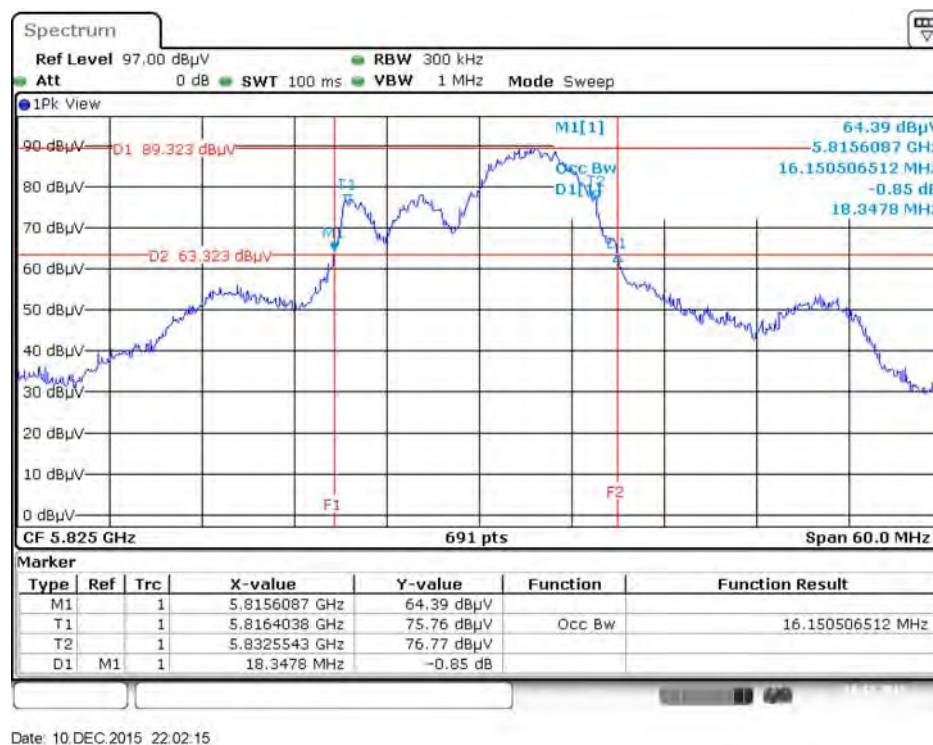


Date: 10.DEC.2015 21:56:56

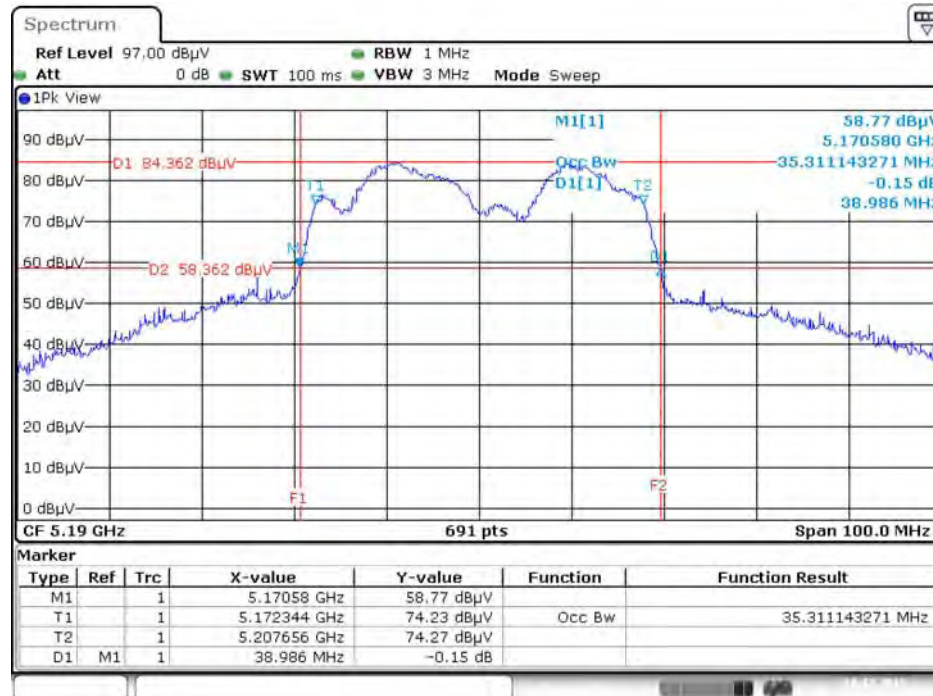
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5785 MHz



26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5825 MHz

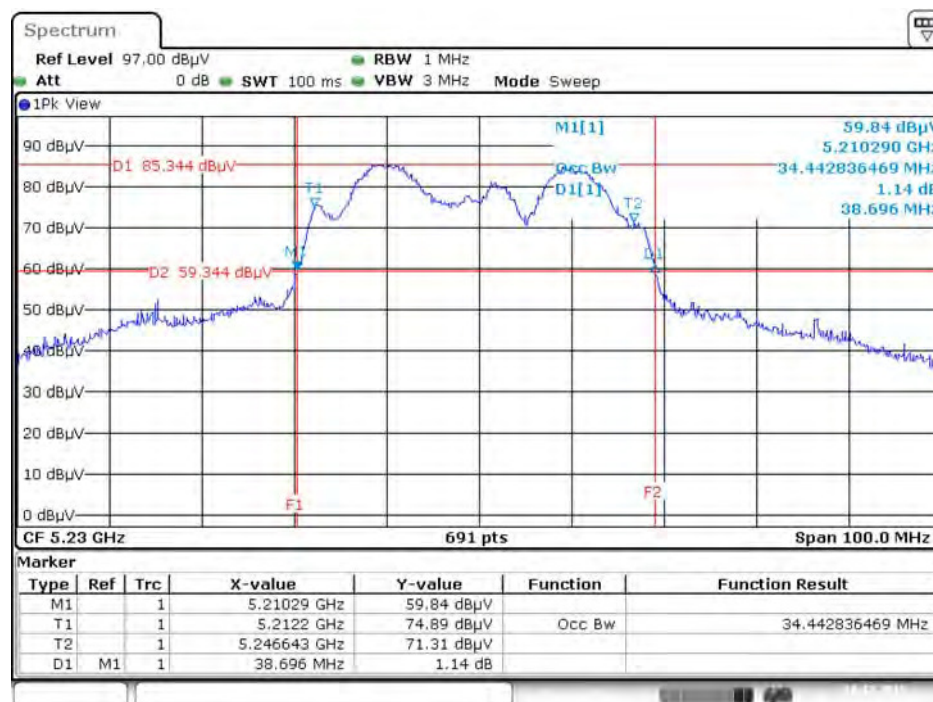


26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 /
Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5190 MHz



Date: 10.DEC.2015 22:19:44

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 /
Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5230 MHz



Date: 10.DEC.2015 22:22:22



Spectrum

Ref Level 97.00 dBμV RBW 1 MHz

Att 0 dB SWT 100 ms VBW 3 MHz Mode Sweep

1Pk View

90 dBμV D1 88.082 dBμV M1[1] 63.33 dBμV 5.735000 GHz

80 dBμV T1 Occ Bw D1[1] 34.587554269 MHz 0.38 dB

70 dBμV T2 37.971 MHz

60 dBμV D2 62.082 dBμV D1

50 dBμV

40 dBμV

30 dBμV

20 dBμV

10 dBμV

0 dBμV

F1 F2

CF 5.755 GHz 691 pts Span 100.0 MHz

Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.735 GHz	63.33 dBμV		
T1		1	5.736476 GHz	77.17 dBμV	Occ Bw	34.587554269 MHz
T2		1	5.771064 GHz	72.83 dBμV		
D1	M1	1	37.971 MHz	0.38 dB		

Spectrum

Ref Level 97.00 dBμV
Att 0 dB
RBW 1 MHz
SWT 100 ms
VBW 3 MHz
Mode Sweep

1Pk View

90 dBμV
80 dBμV
70 dBμV
60 dBμV
50 dBμV
40 dBμV
30 dBμV
20 dBμV
10 dBμV
0 dBμV

D1 92.365 dBμV
D2 66.365 dBμV
M1
T1
M2
T2
D1
Occ Bw
F1
F2

68.39 dBμV
5.775000 GHz
34.876989870 MHz
-1.80 dB
38.116 MHz

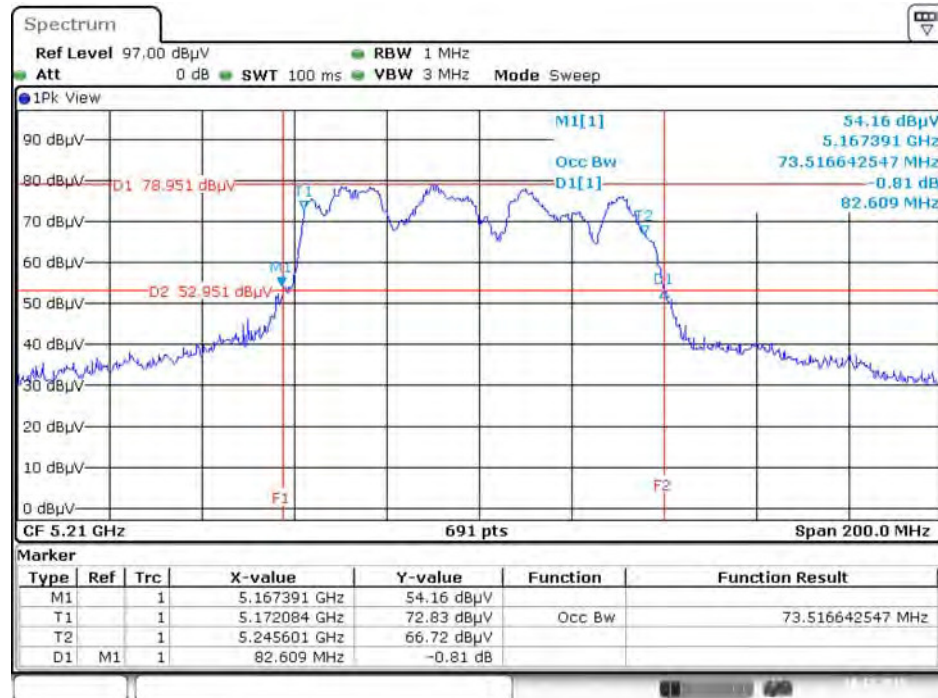
CF 5.795 GHz
691 pts
Span 100.0 MHz

Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.775 GHz	68.39 dBμV		
T1		1	5.776331 GHz	80.33 dBμV	Occ Bw	34.87698987 MHz
T2		1	5.811208 GHz	76.75 dBμV		
D1	M1	1	38.116 MHz	-1.80 dB		

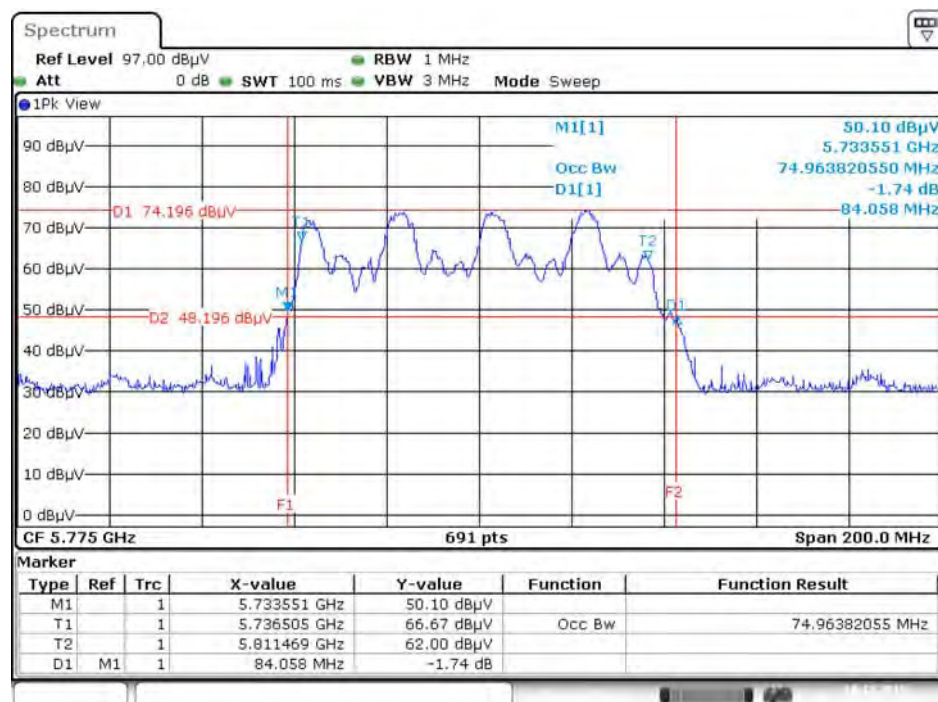
Issued Date : Jan. 12, 2016

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5210 MHz



Date: 10.DEC.2015 23:08:35

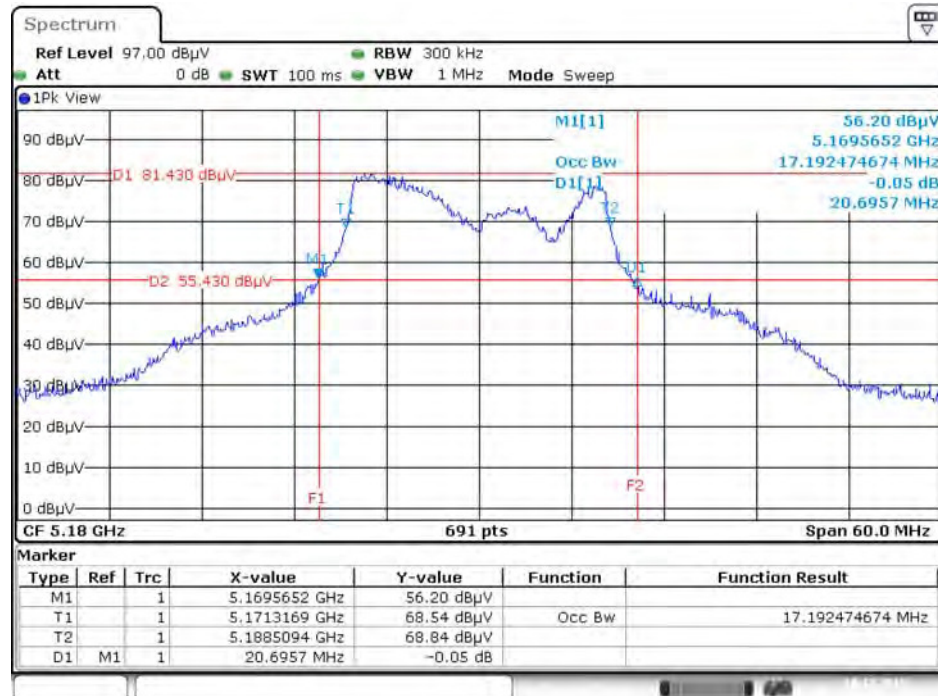
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5775 MHz



Date: 10.DEC.2015 23:21:04

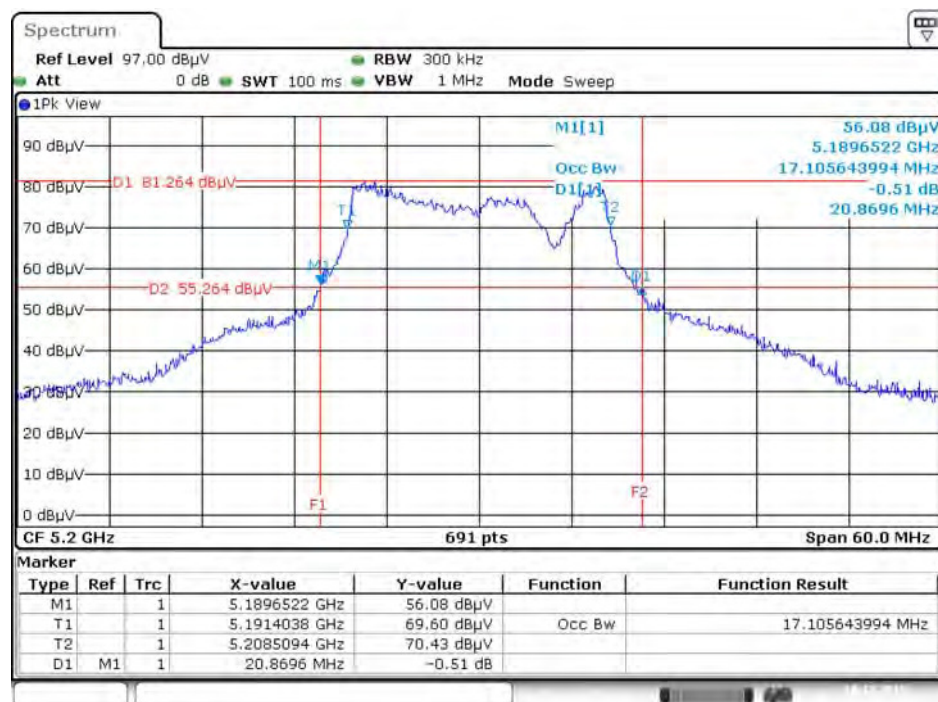
Mode 5: EUT 1 + Set 5 Panel Antenna / 6 dBi

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2
+ Chain 3 + Chain 4 / 5180 MHz



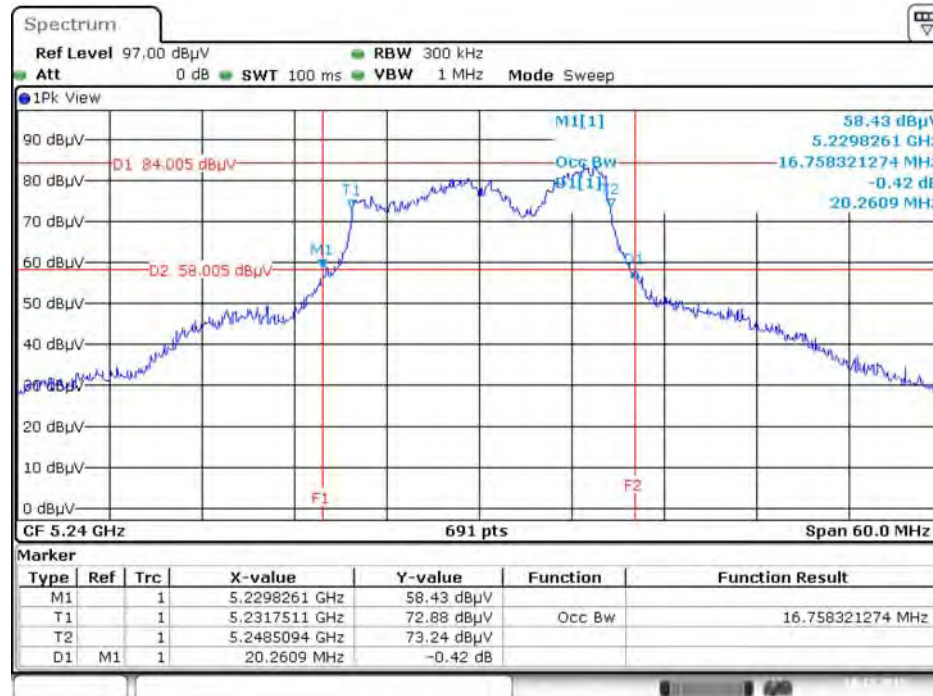
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26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2
+ Chain 3 + Chain 4 / 5200 MHz



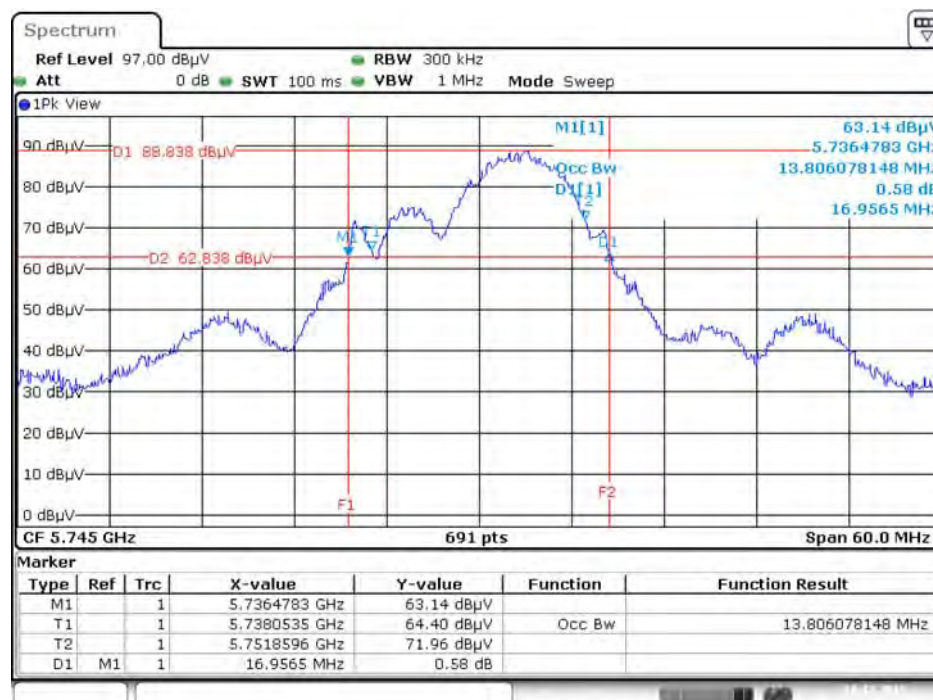
Date: 10.DEC.2015 20:18:22

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5240 MHz



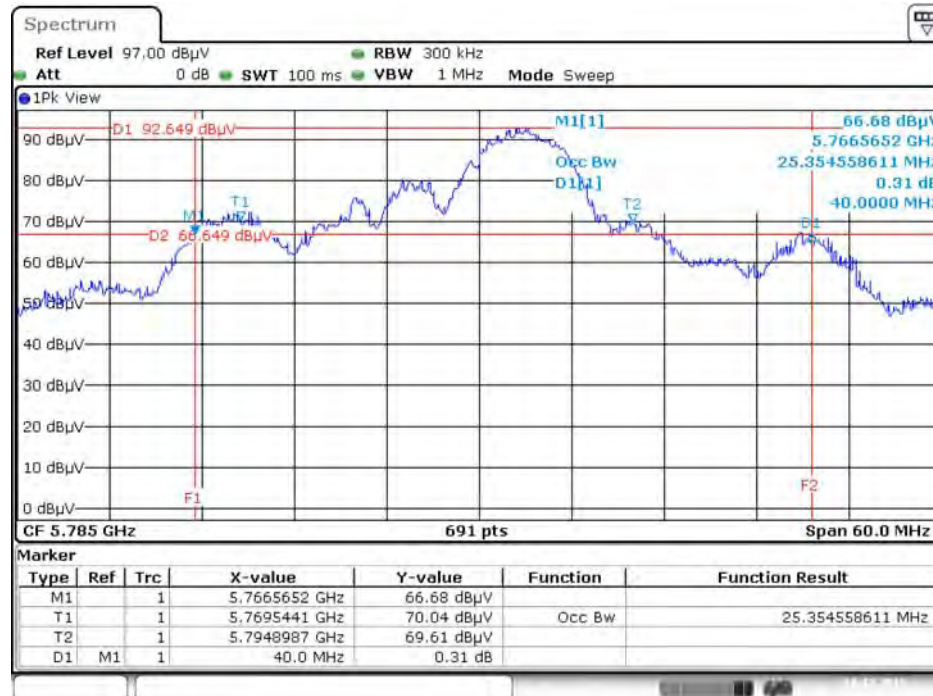
Date: 10.DEC.2015 20:21:12

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5745 MHz



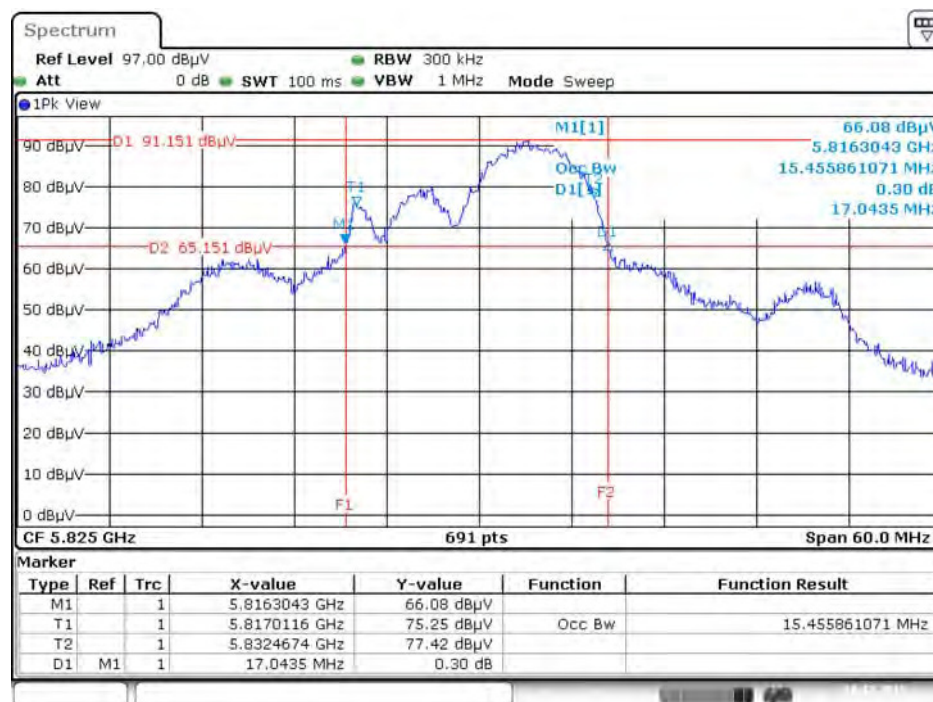
Date: 10.DEC.2015 20:59:43

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2
+ Chain 3 + Chain 4 / 5785 MHz



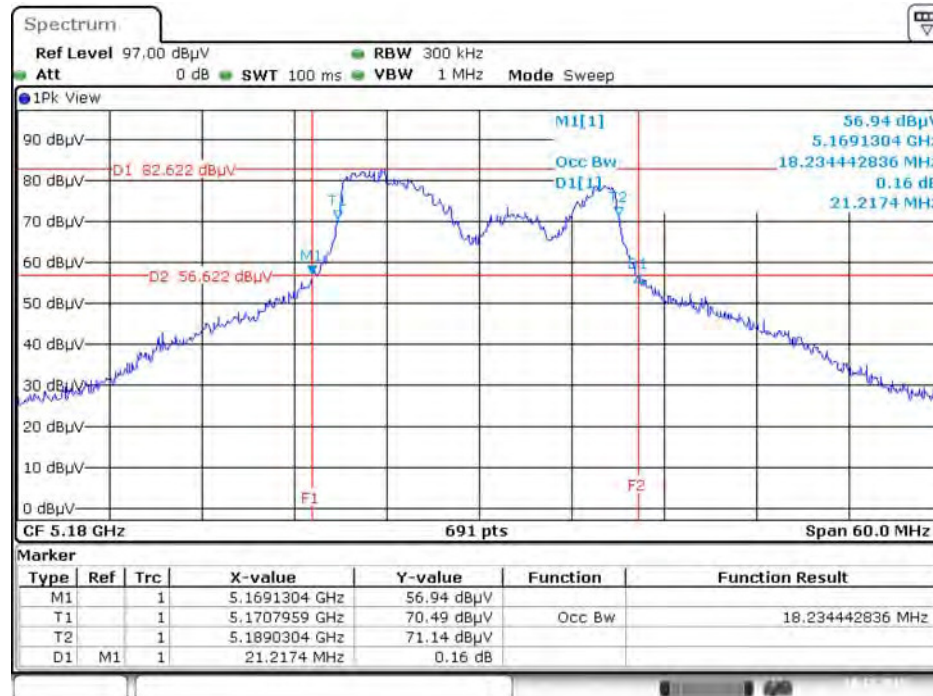
Date: 10.DEC.2015 21:02:09

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2
+ Chain 3 + Chain 4 / 5825 MHz



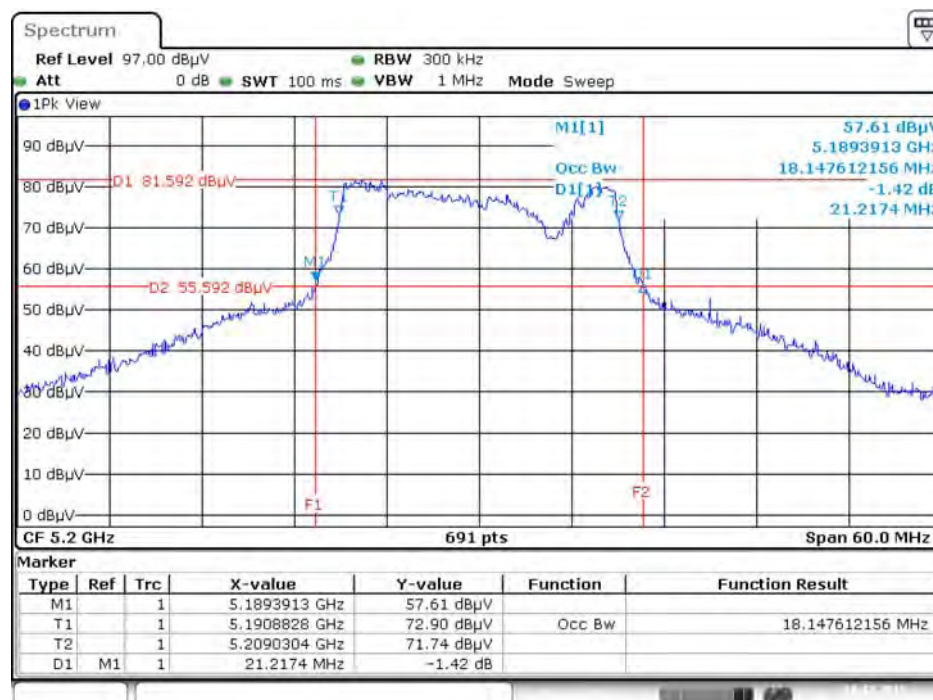
Date: 10.DEC.2015 21:03:33

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5180 MHz



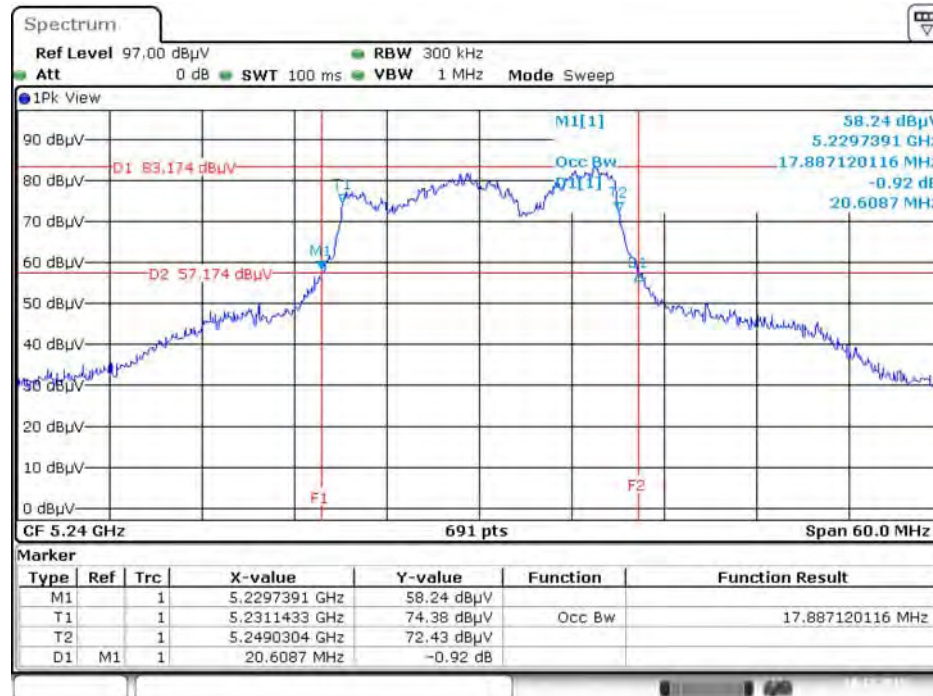
Date: 10.DEC.2015 21:10:43

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5200 MHz



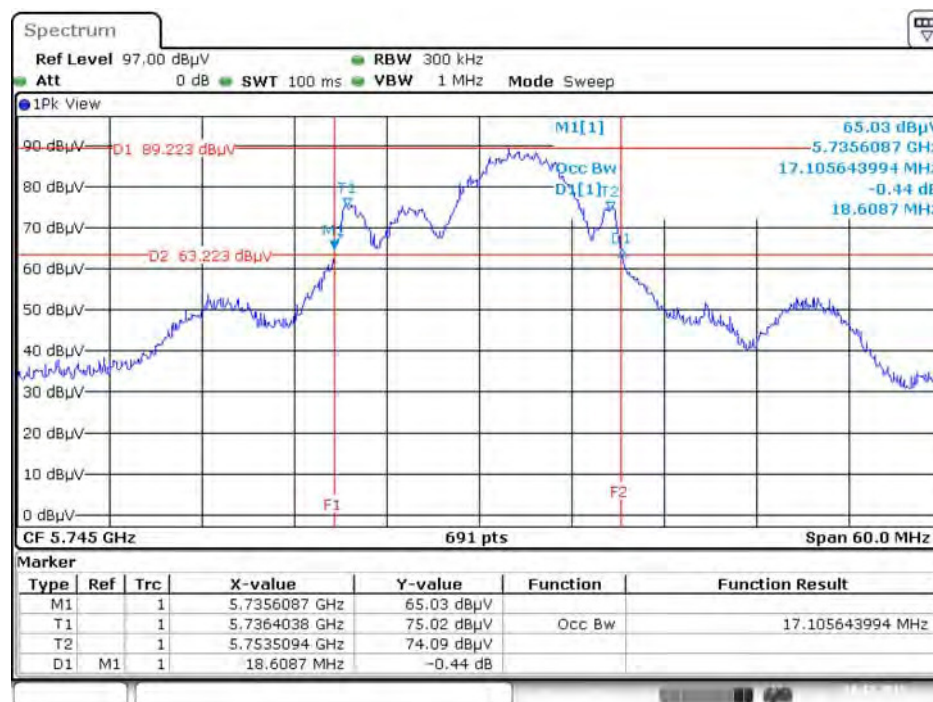
Date: 10.DEC.2015 21:13:49

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5240 MHz



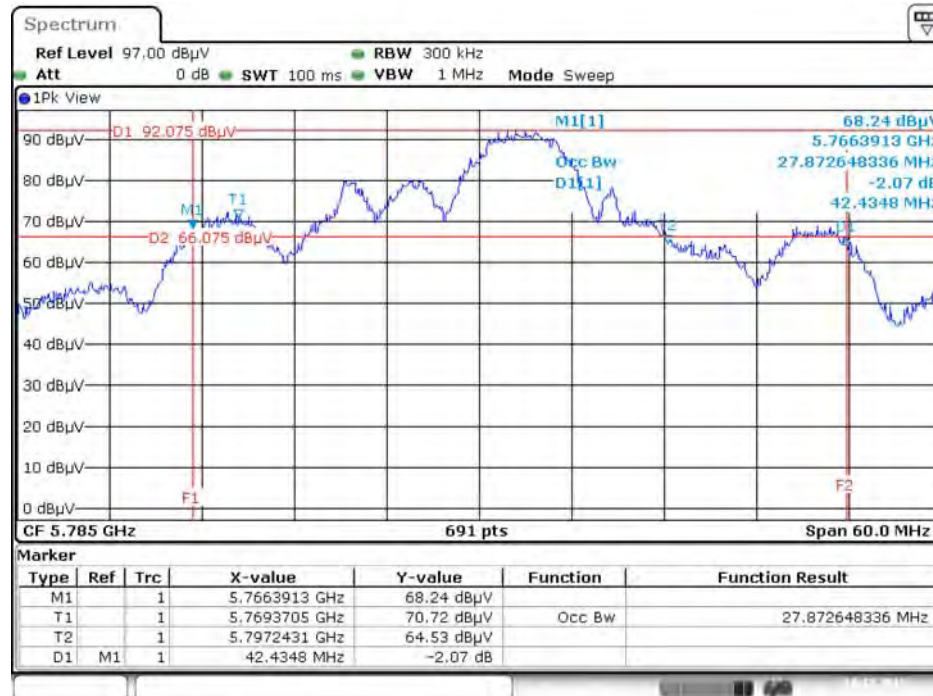
Date: 10.DEC.2015 21:16:36

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5745 MHz



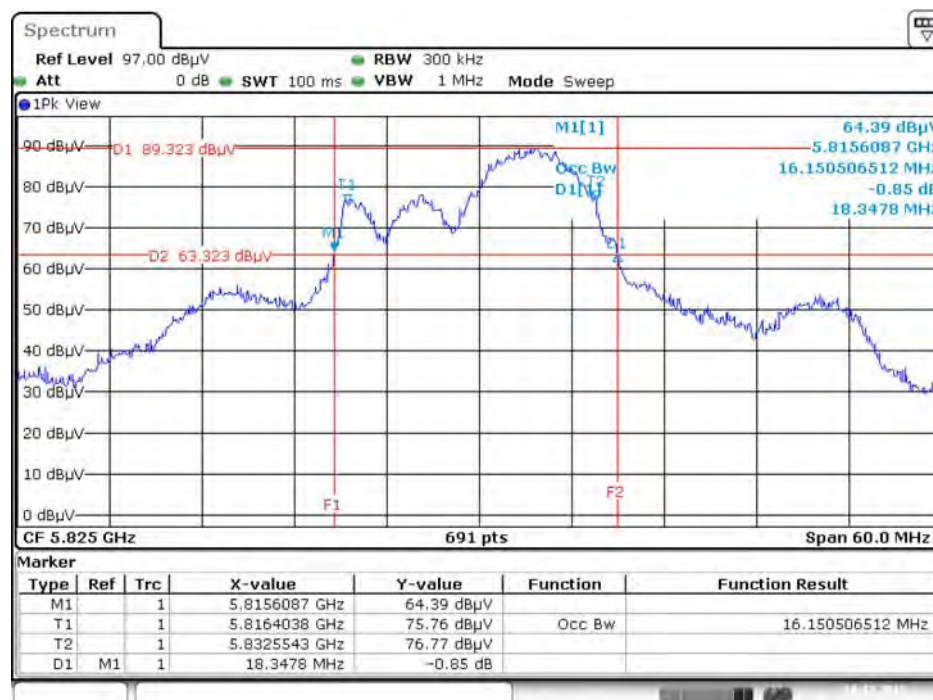
Date: 10.DEC.2015 21:59:04

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5785 MHz



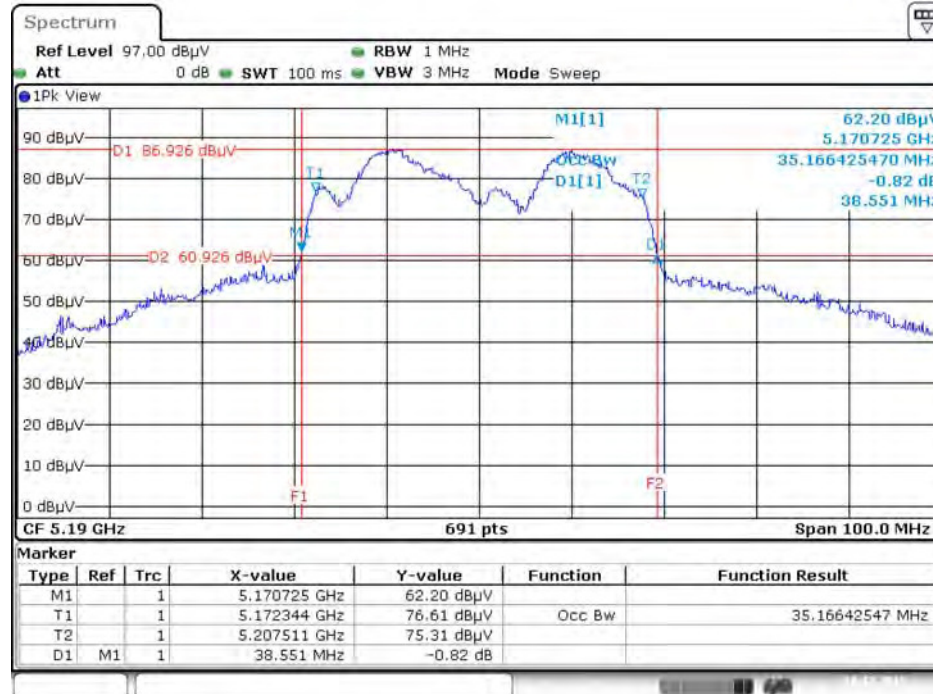
Date: 10.DEC.2015 21:59:34

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5825 MHz



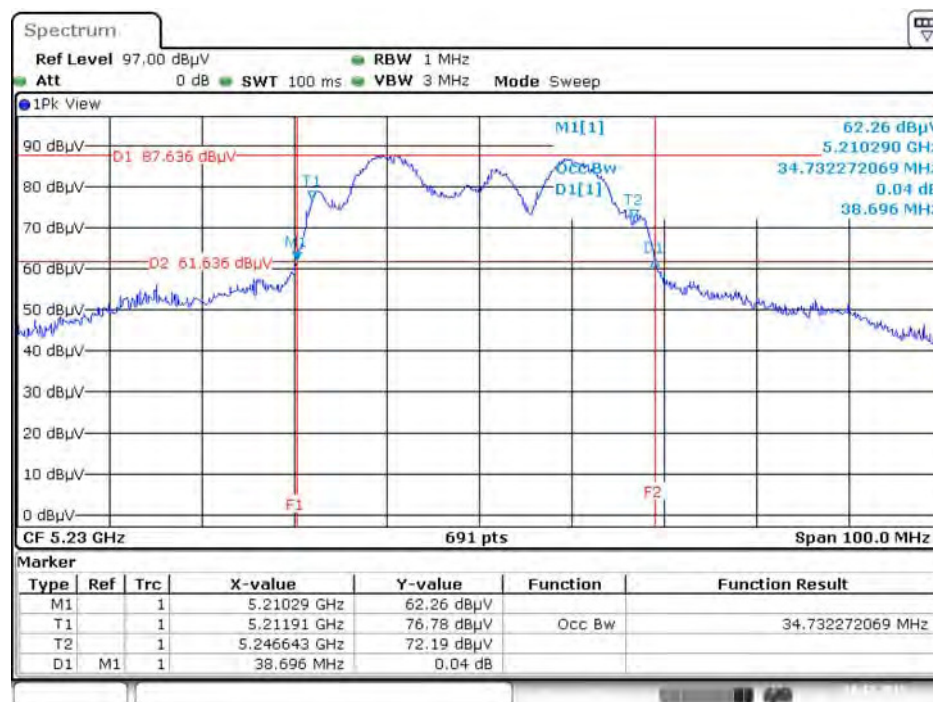
Date: 10.DEC.2015 22:02:15

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5190 MHz



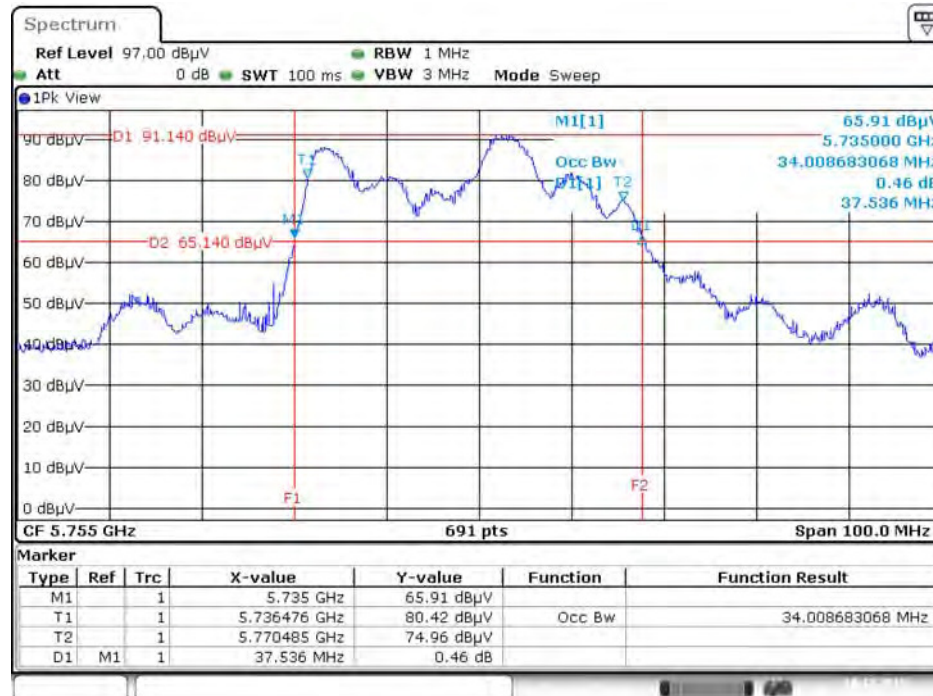
Date: 10.DEC.2015 22:21:34

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5230 MHz



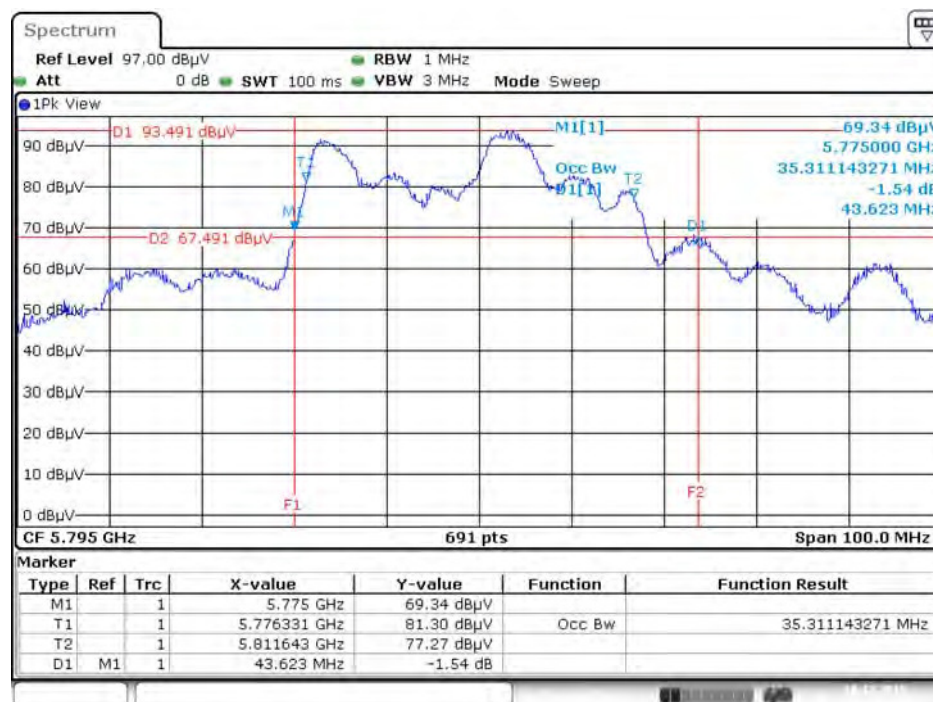
Date: 10.DEC.2015 22:24:10

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5755 MHz



Date: 10.DEC.2015 23:01:13

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5795 MHz

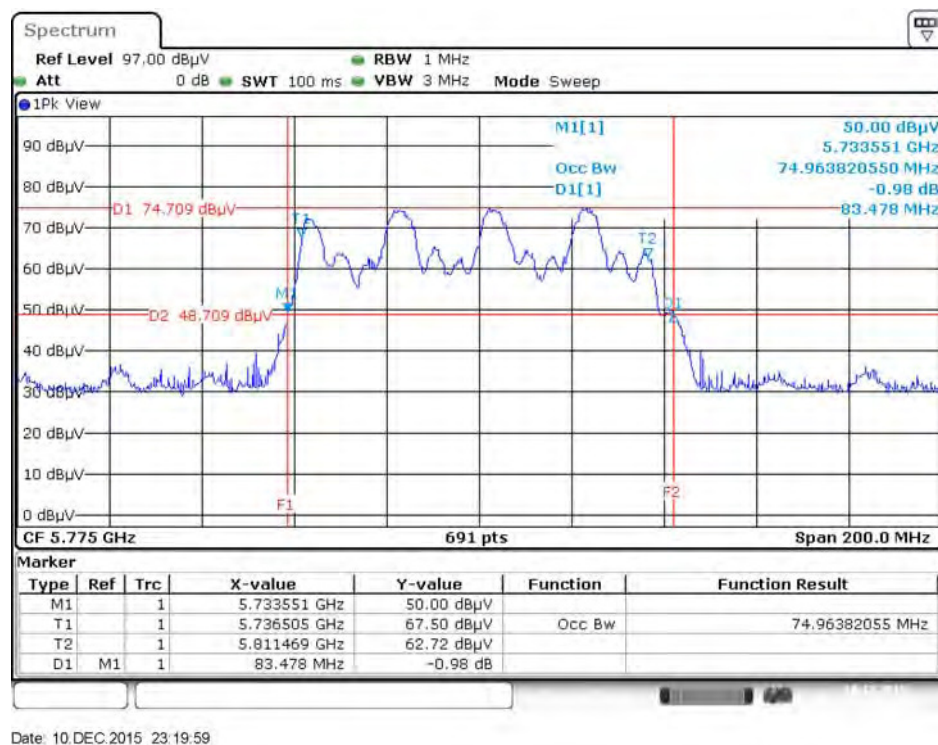


Date: 10.DEC.2015 23:02:05

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5210 MHz

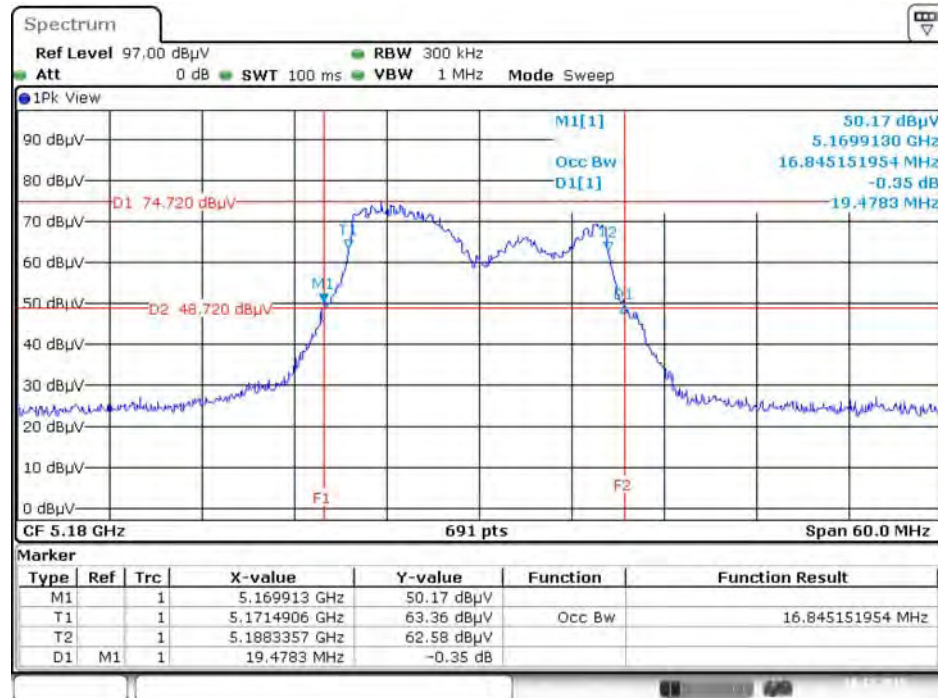


26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5775 MHz



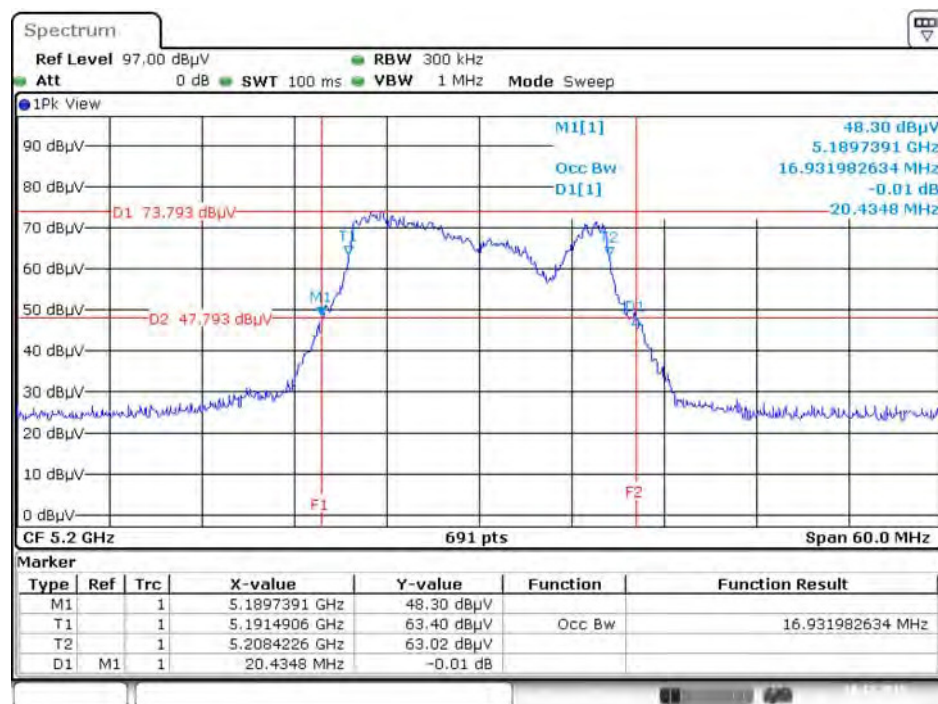
Mode 6: EUT 1 + Set 7 Sector Antenna / 11.5 dBi

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2
+ Chain 3 + Chain 4 / 5180 MHz



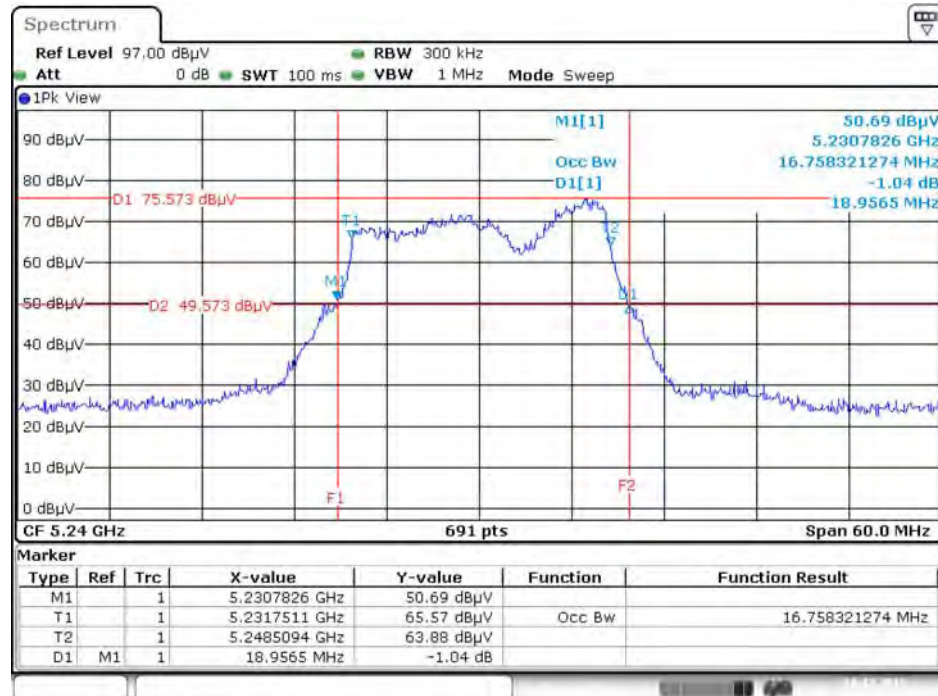
Date: 10.DEC.2015 20:15:02

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2
+ Chain 3 + Chain 4 / 5200 MHz



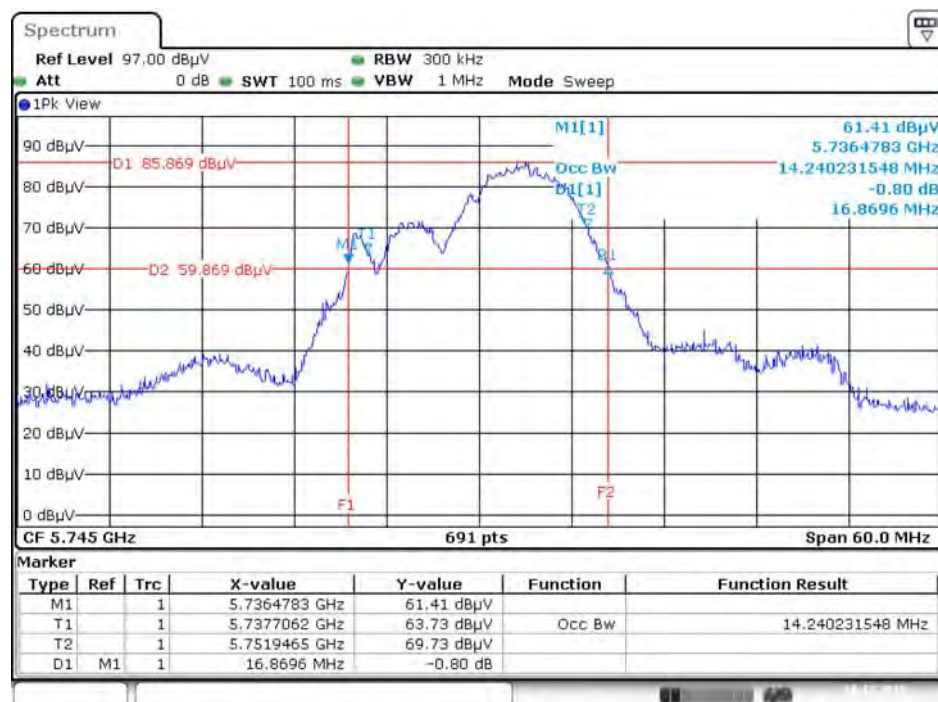
Date: 10.DEC.2015 20:18:06

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5240 MHz



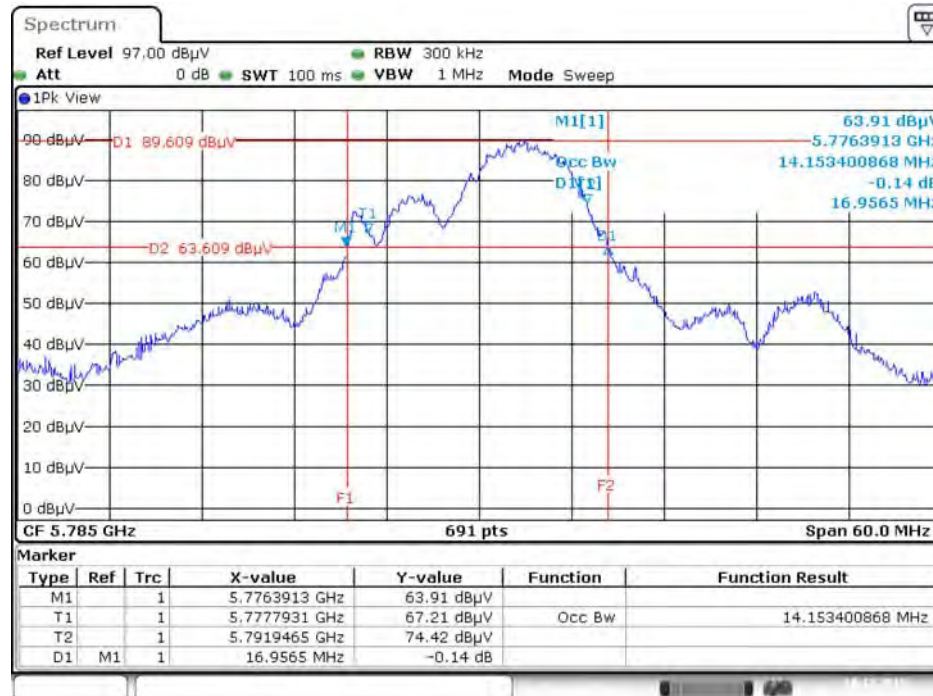
Date: 10.DEC.2015 20:20:49

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5745 MHz



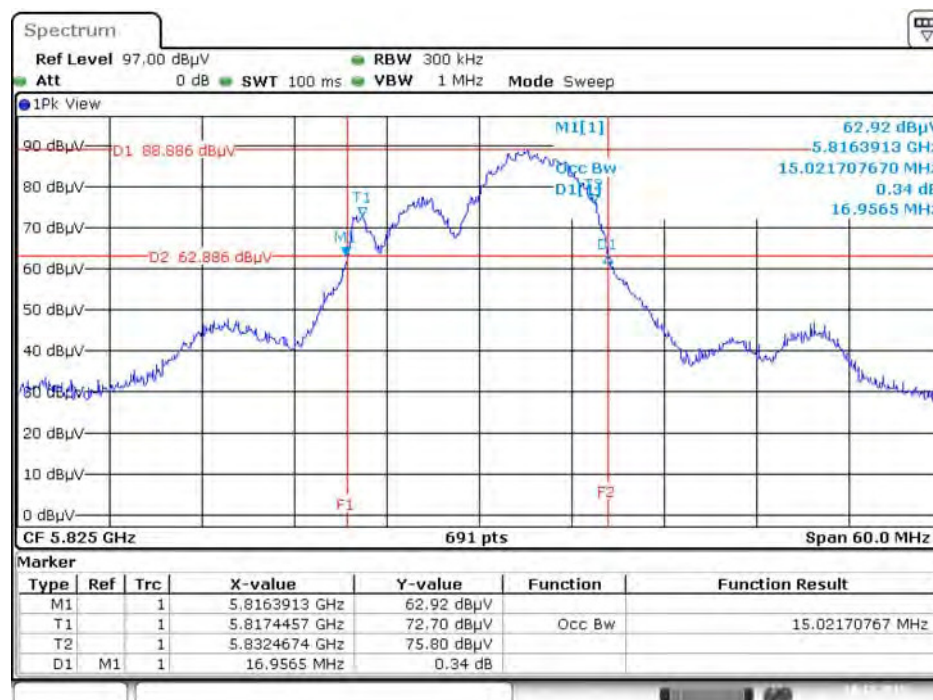
Date: 10.DEC.2015 21:01:20

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5785 MHz



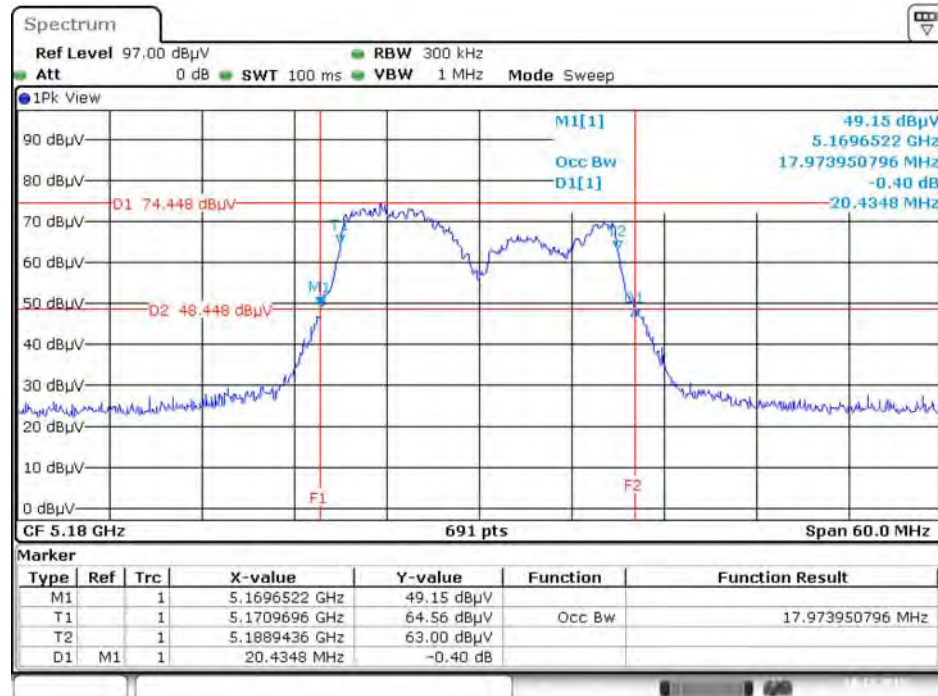
Date: 10.DEC.2015 21:03:05

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5825 MHz



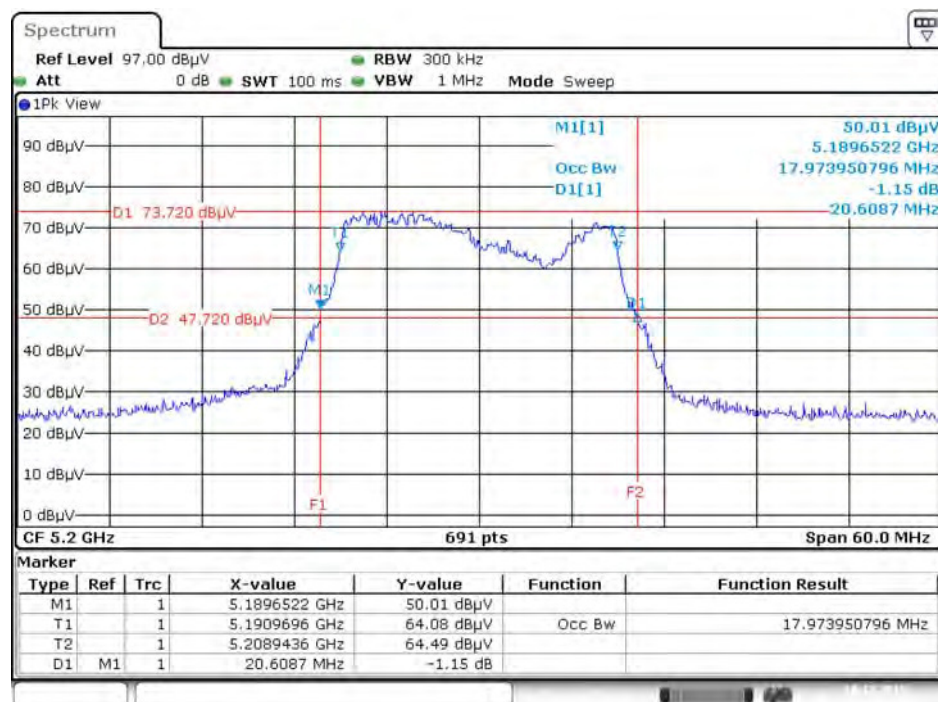
Date: 10.DEC.2015 21:05:32

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5180 MHz



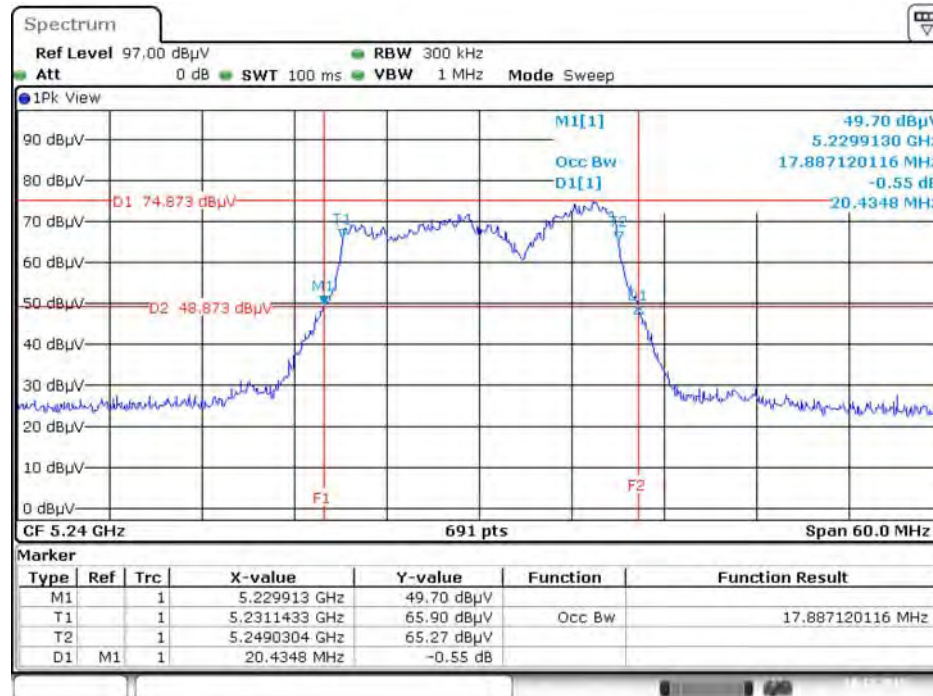
Date: 10.DEC.2015 21:09:57

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5200 MHz



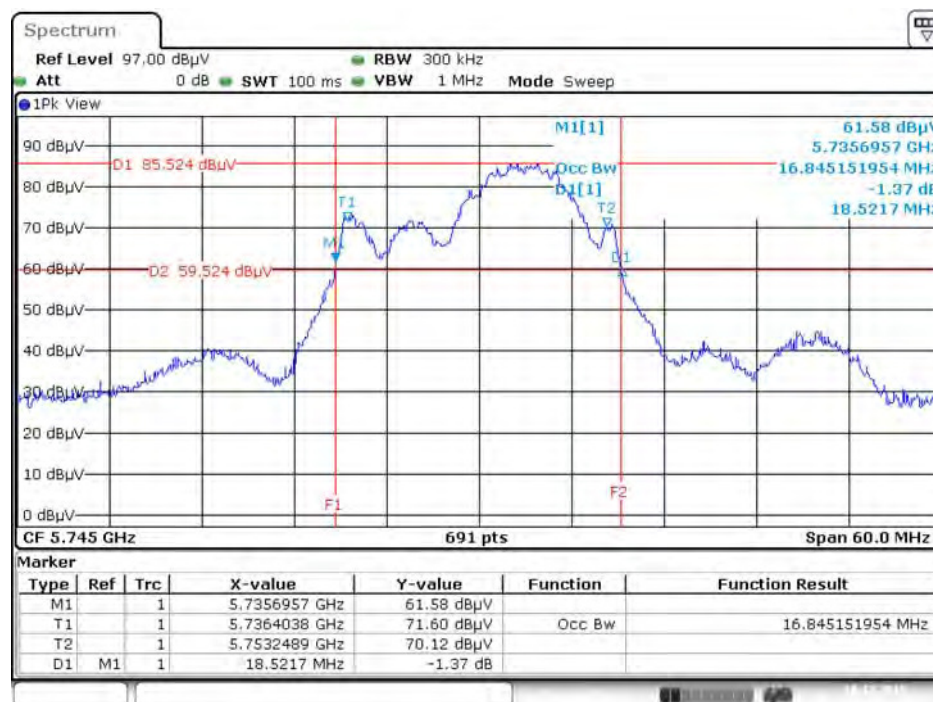
Date: 10.DEC.2015 21:13:25

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5240 MHz



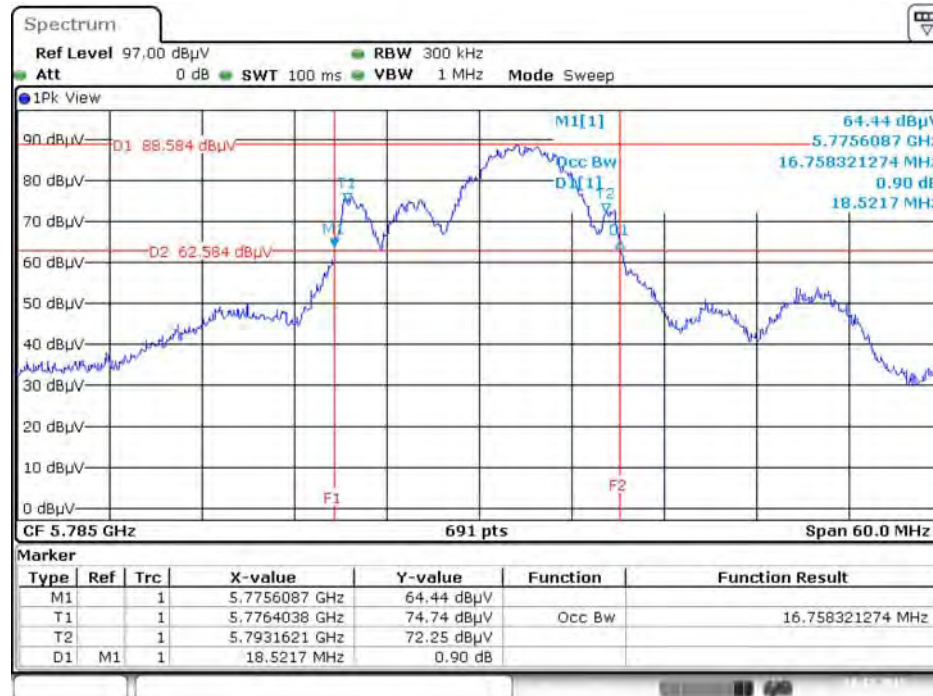
Date: 10.DEC.2015 21:16:19

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5745 MHz



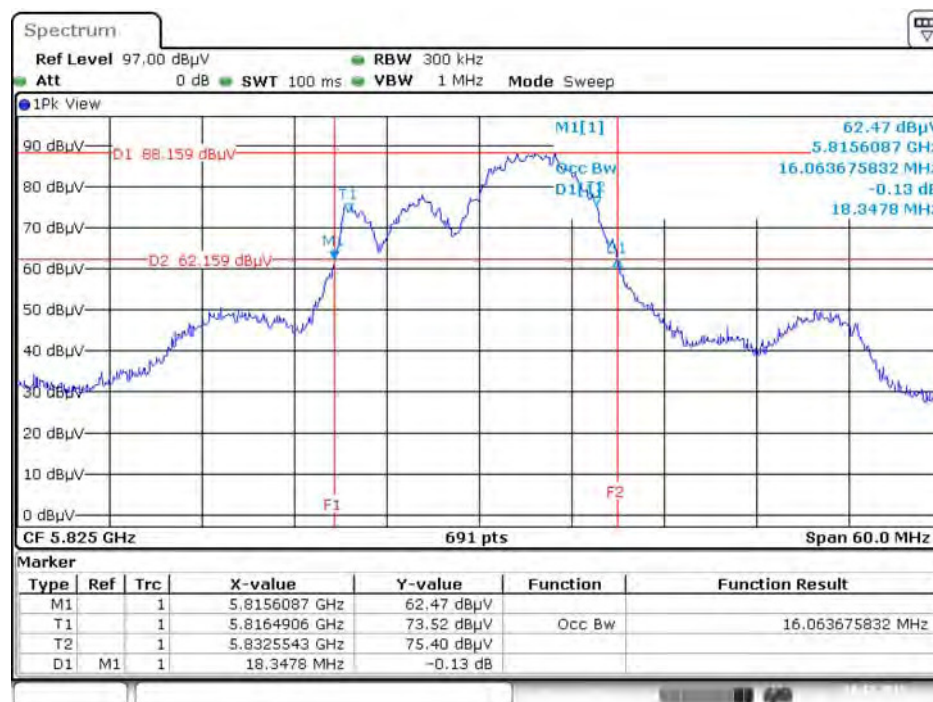
Date: 10.DEC.2015 21:58:34

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5785 MHz



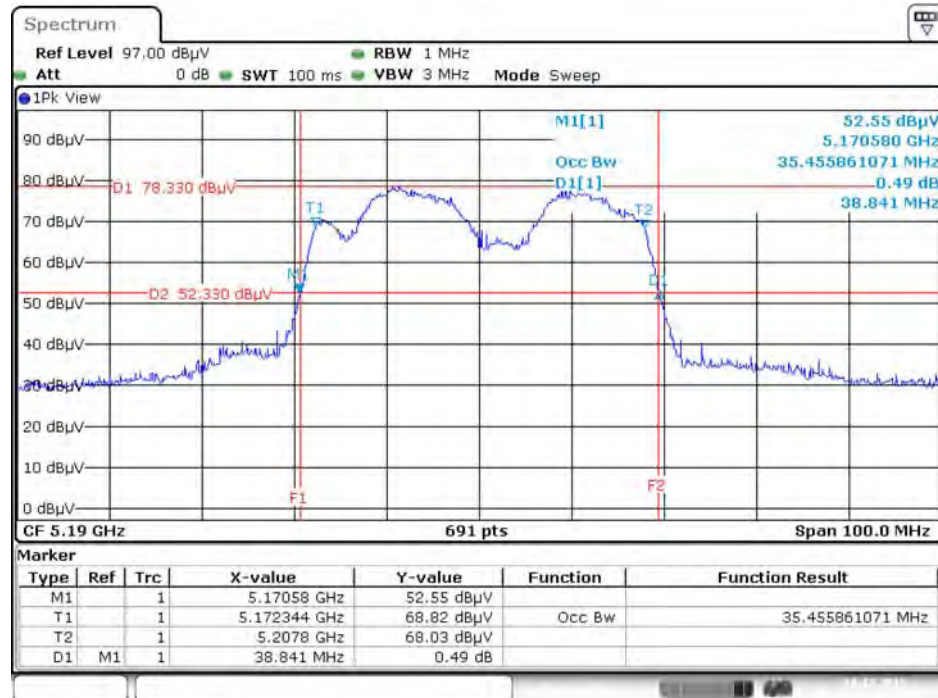
Date: 10.DEC.2015 22:00:19

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5825 MHz



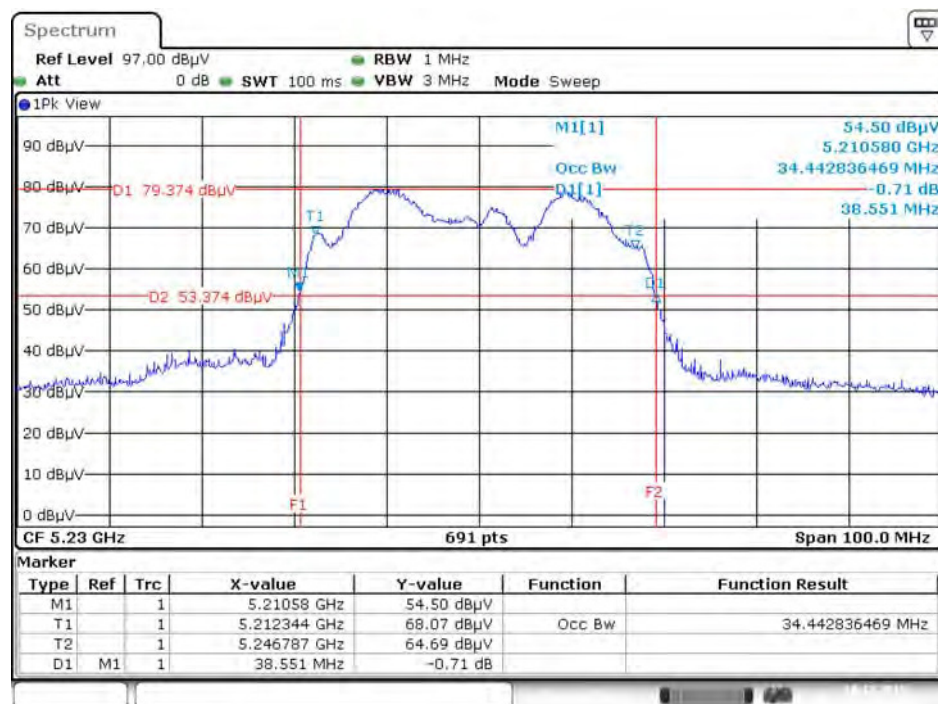
Date: 10.DEC.2015 22:01:40

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5190 MHz



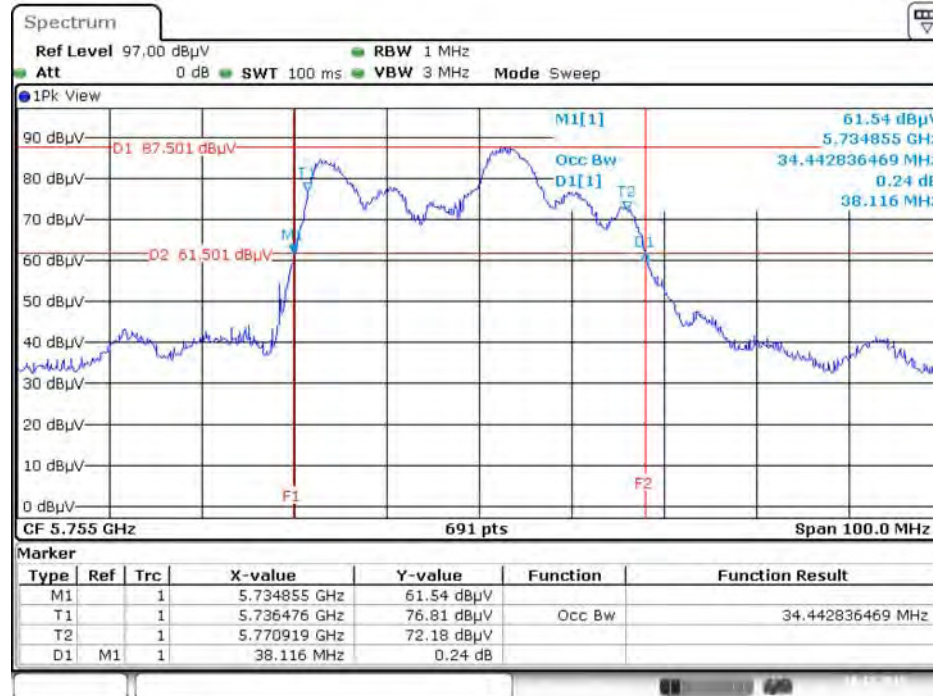
Date: 10.DEC.2015 22:21:17

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5230 MHz



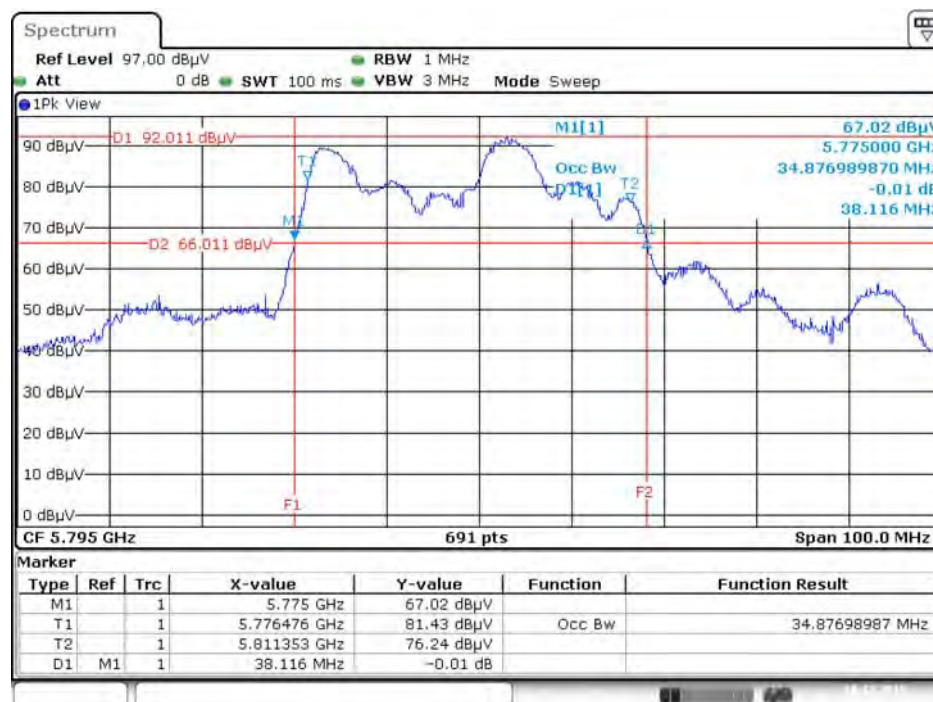
Date: 10.DEC.2015 22:23:55

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5755 MHz



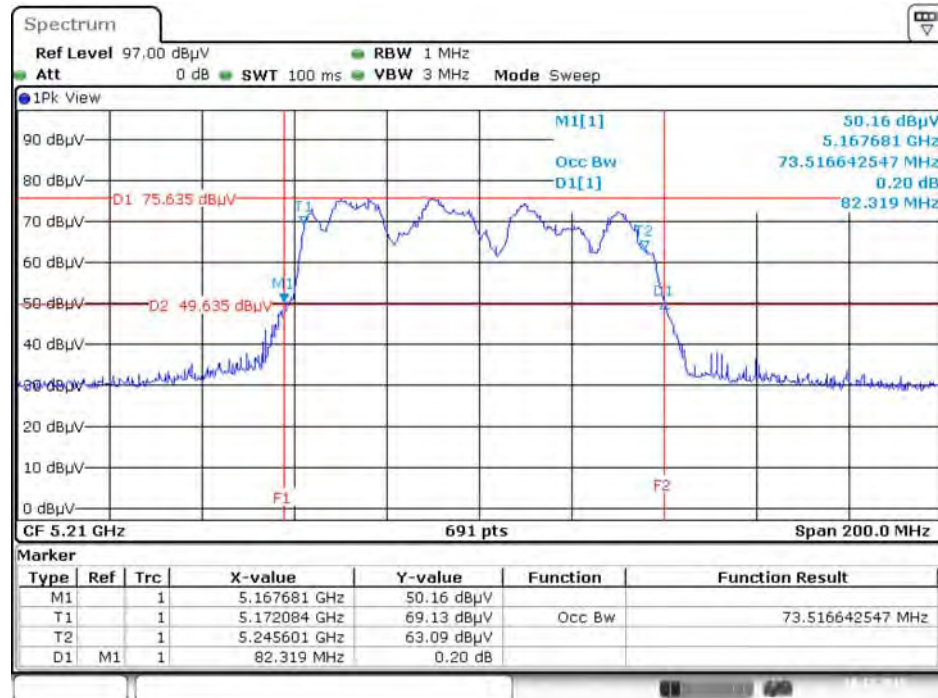
Date: 10.DEC.2015 23:00:42

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5795 MHz



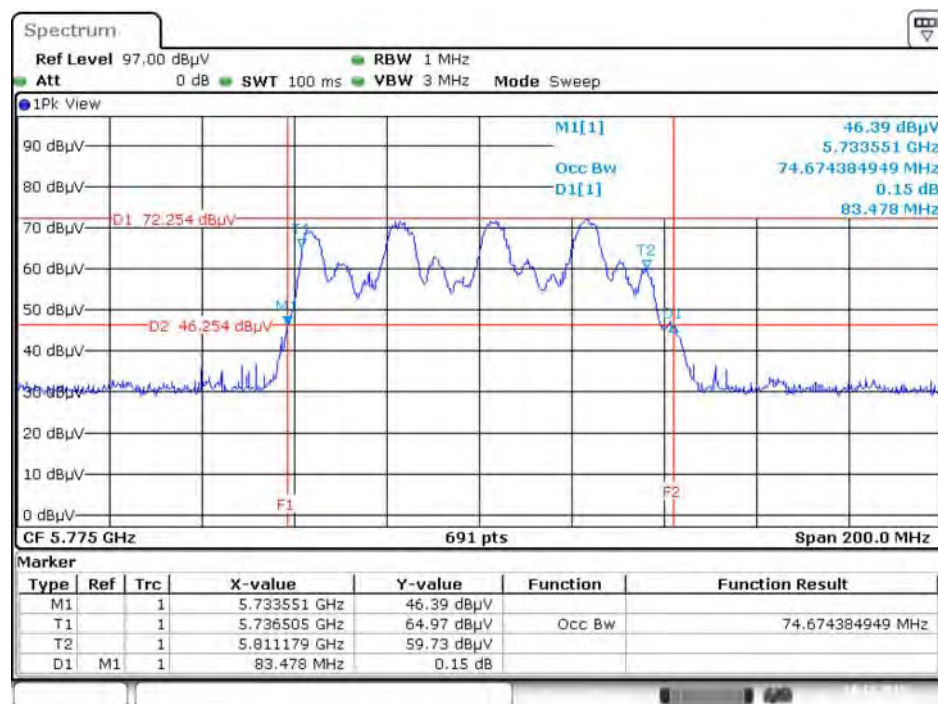
Date: 10.DEC.2015 23:02:52

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5210 MHz



Date: 10.DEC.2015 23:08:14

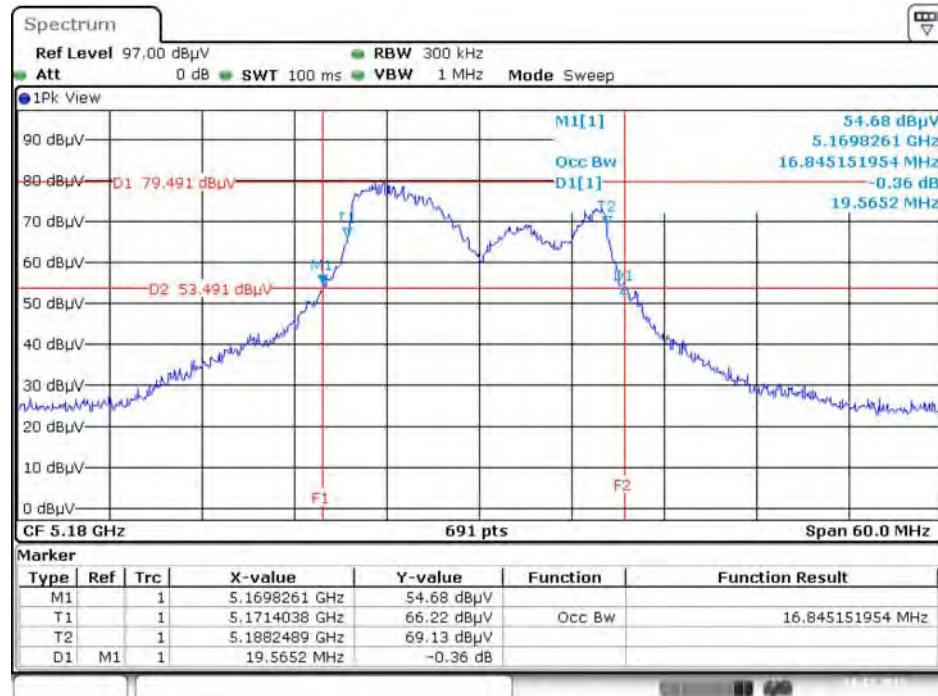
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5775 MHz



Date: 10.DEC.2015 23:20:26

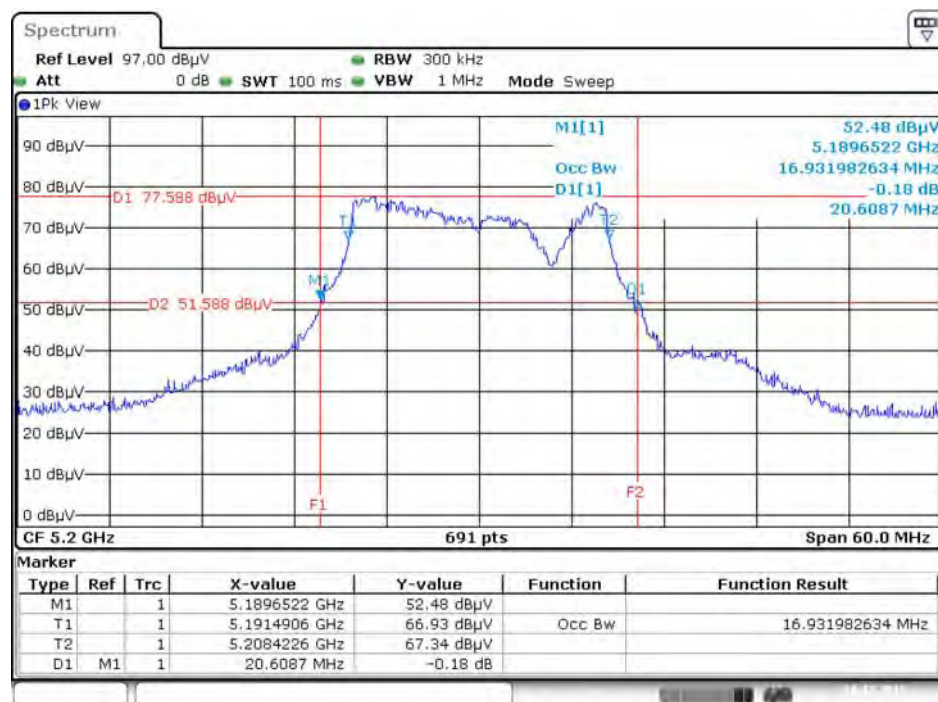
Mode 7: EUT 1 + Set 8 Sector Antenna / 12 dBi

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2
+ Chain 3 + Chain 4 / 5180 MHz



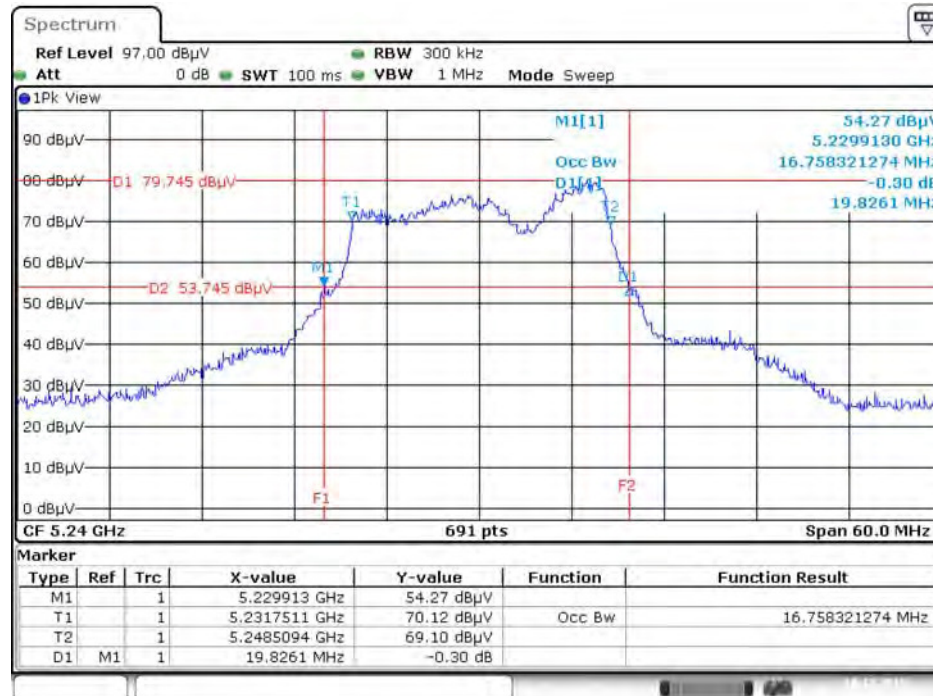
Date: 10.DEC.2015 20:14:26

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2
+ Chain 3 + Chain 4 / 5200 MHz



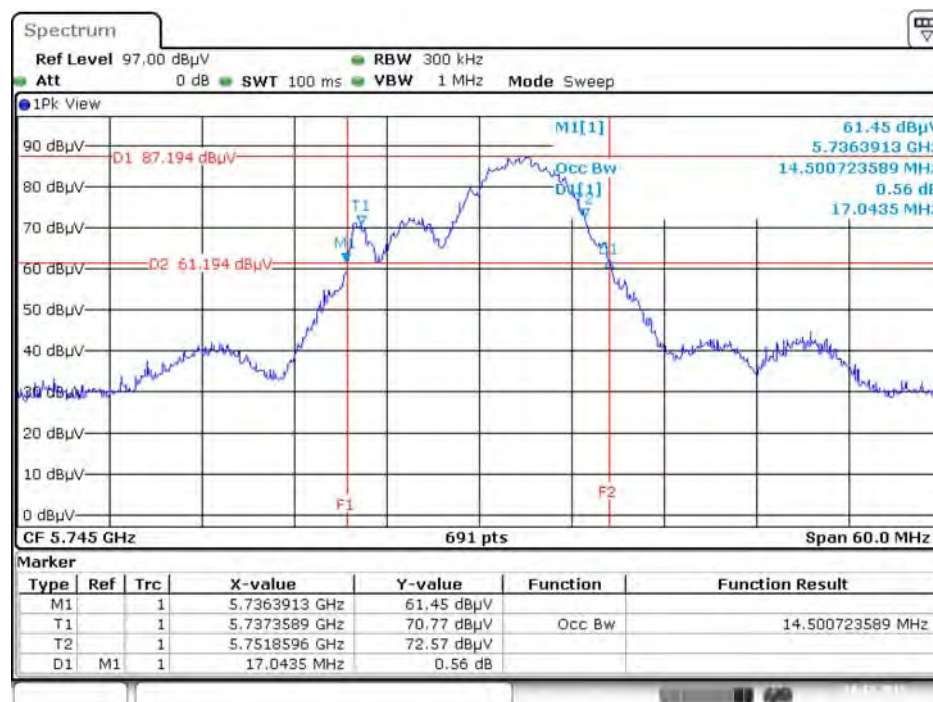
Date: 10.DEC.2015 20:17:24

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5240 MHz



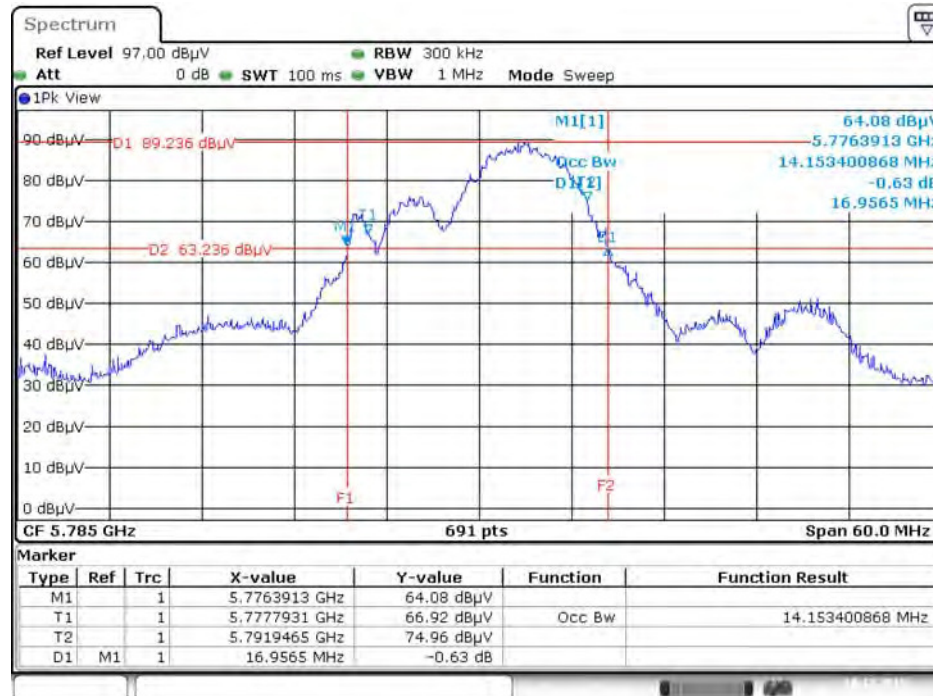
Date: 10.DEC.2015 20:20:12

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5745 MHz



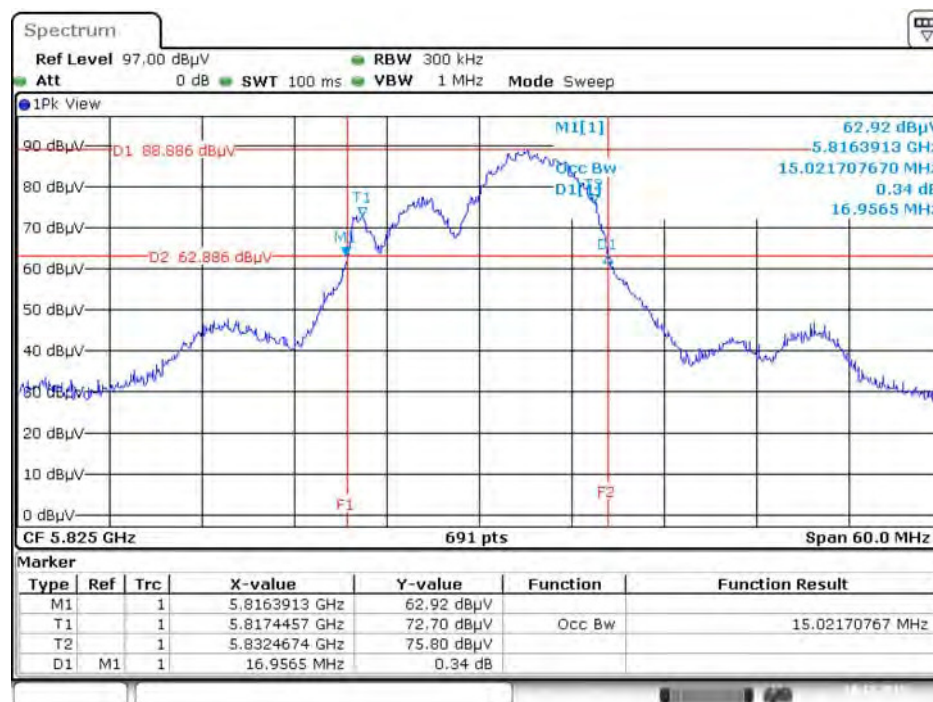
Date: 10.DEC.2015 21:01:04

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5785 MHz



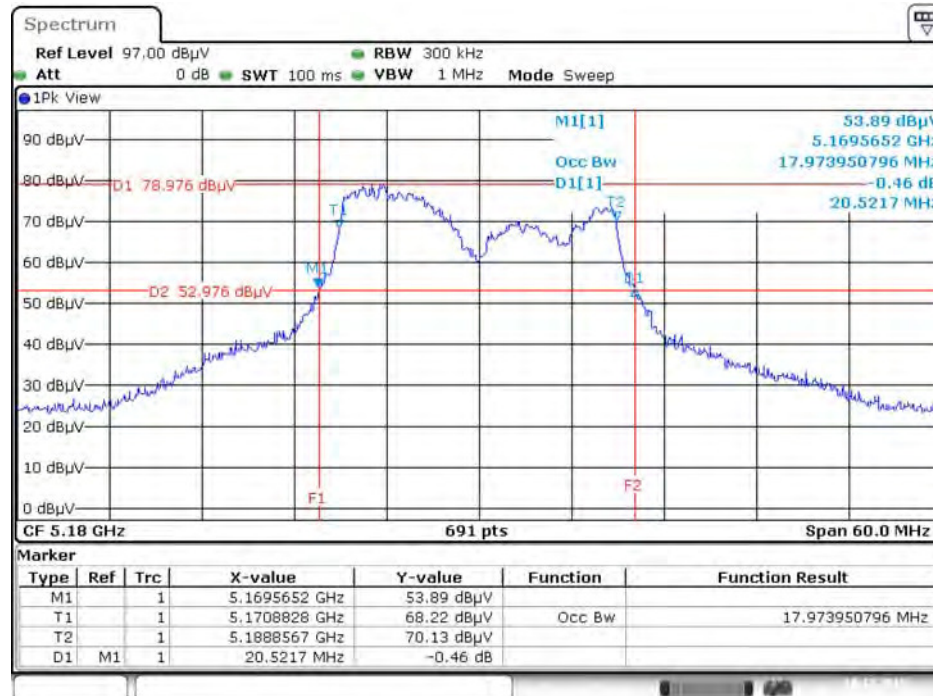
Date: 10.DEC.2015 21:02:50

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5825 MHz



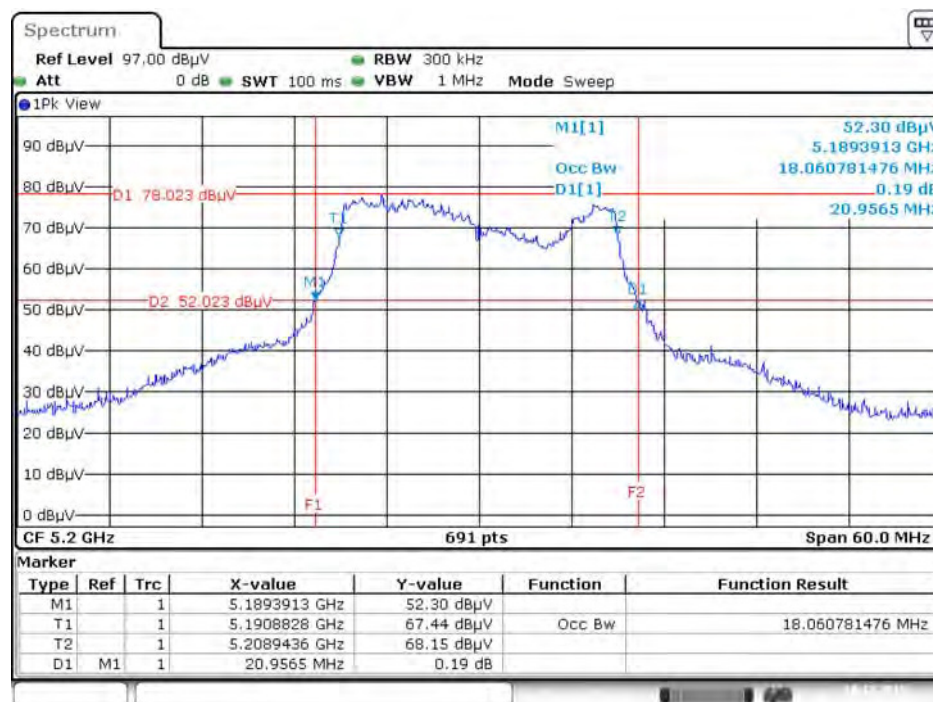
Date: 10.DEC.2015 21:05:32

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5180 MHz



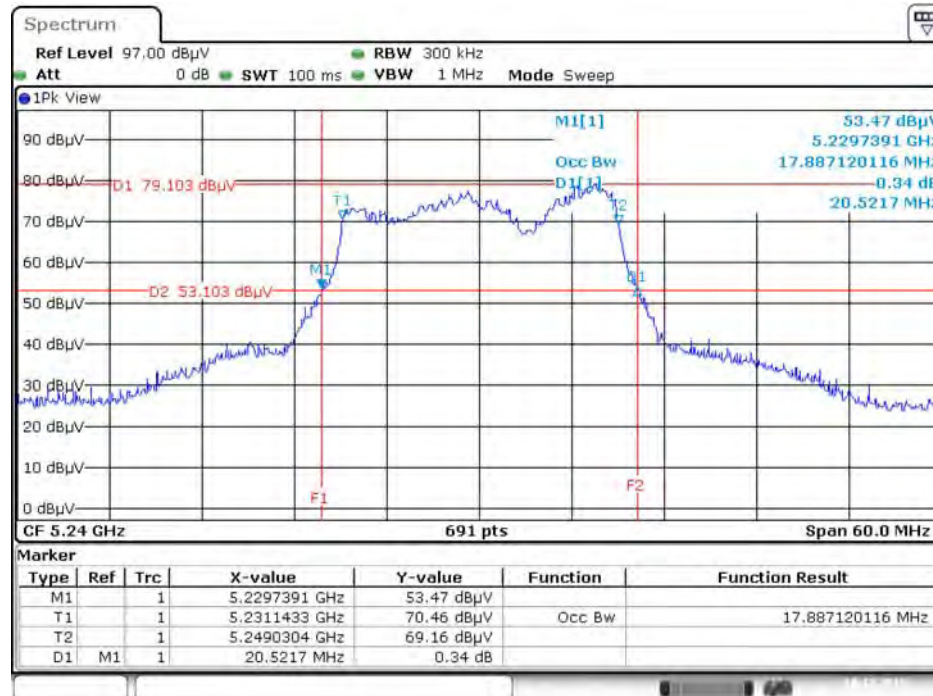
Date: 10.DEC.2015 21:09:14

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5200 MHz



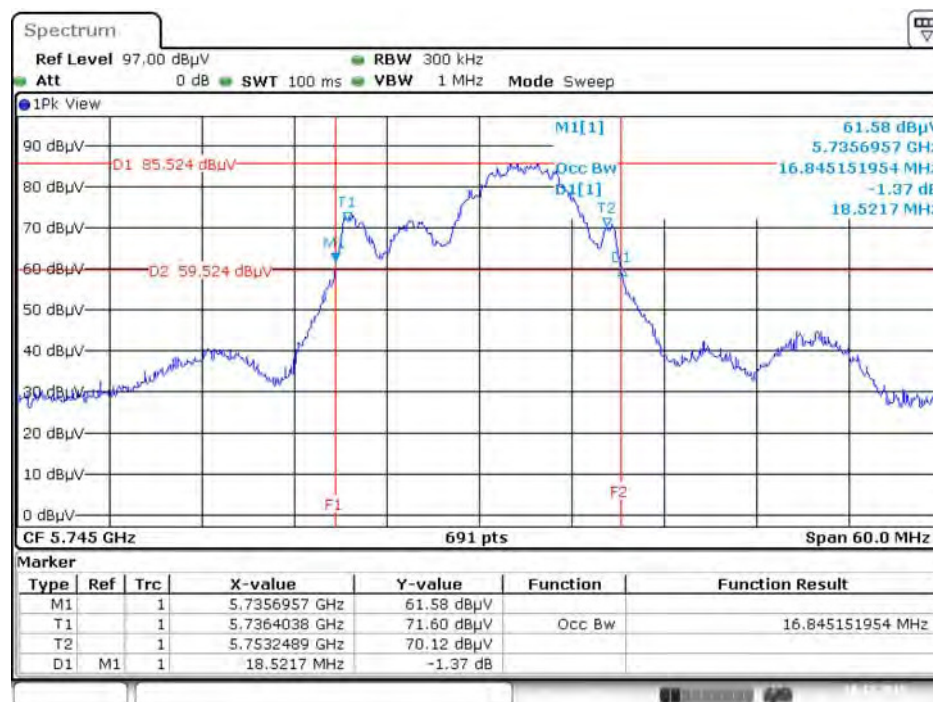
Date: 10.DEC.2015 21:12:36

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5240 MHz



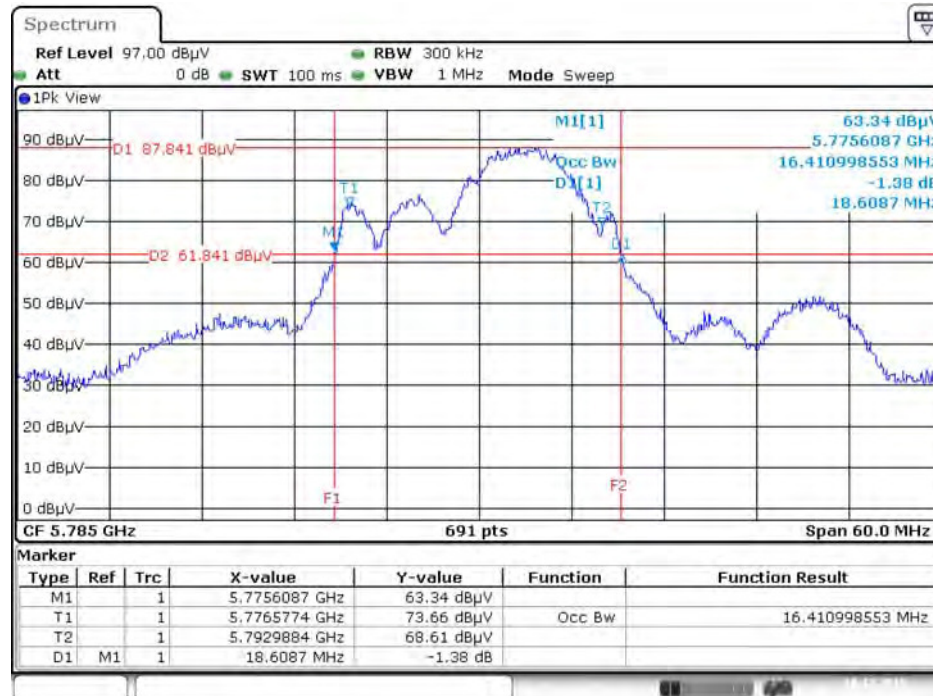
Date: 10.DEC.2015 21:15:36

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5745 MHz



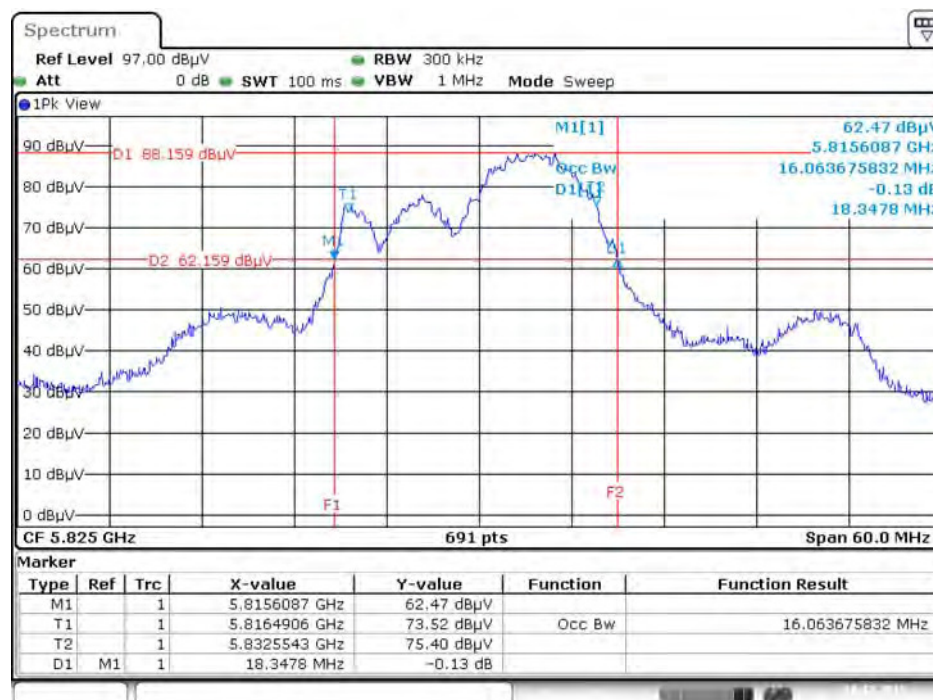
Date: 10.DEC.2015 21:58:34

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5785 MHz



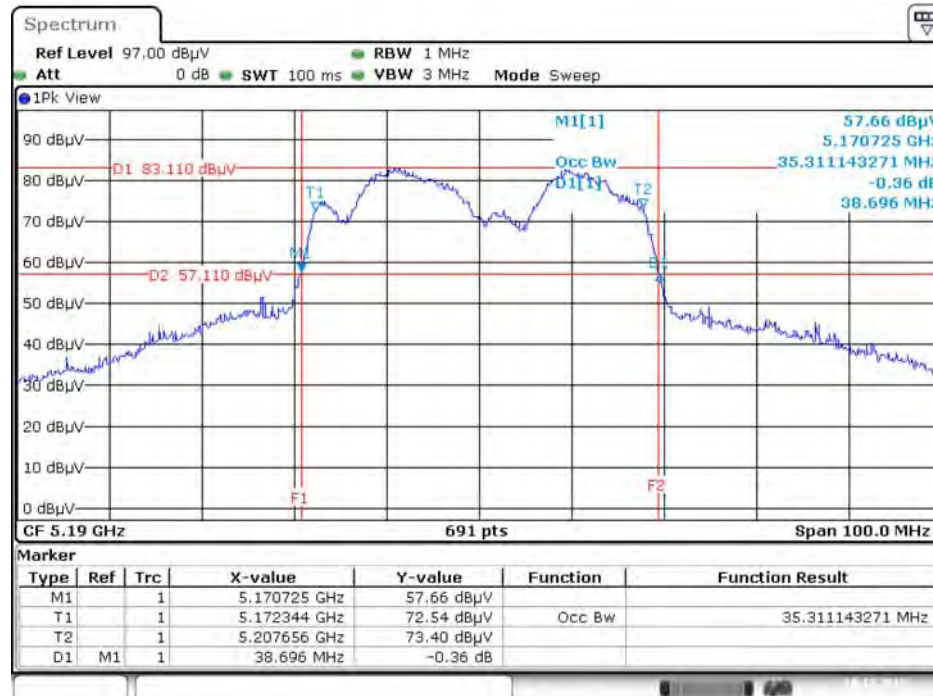
Date: 10.DEC.2015 22:00:03

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5825 MHz

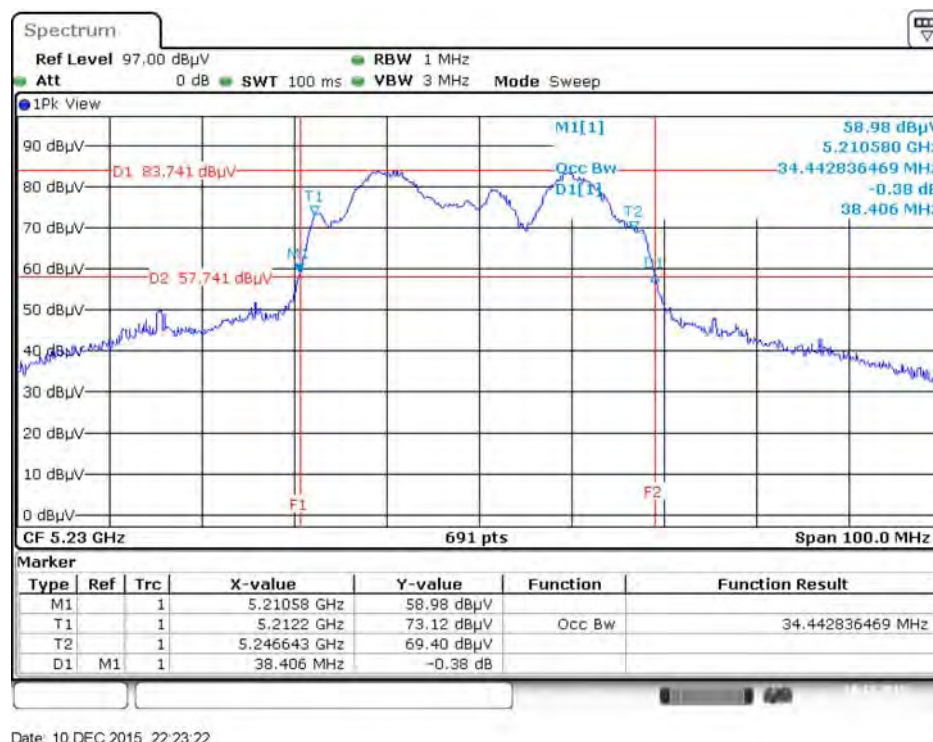


Date: 10.DEC.2015 22:01:40

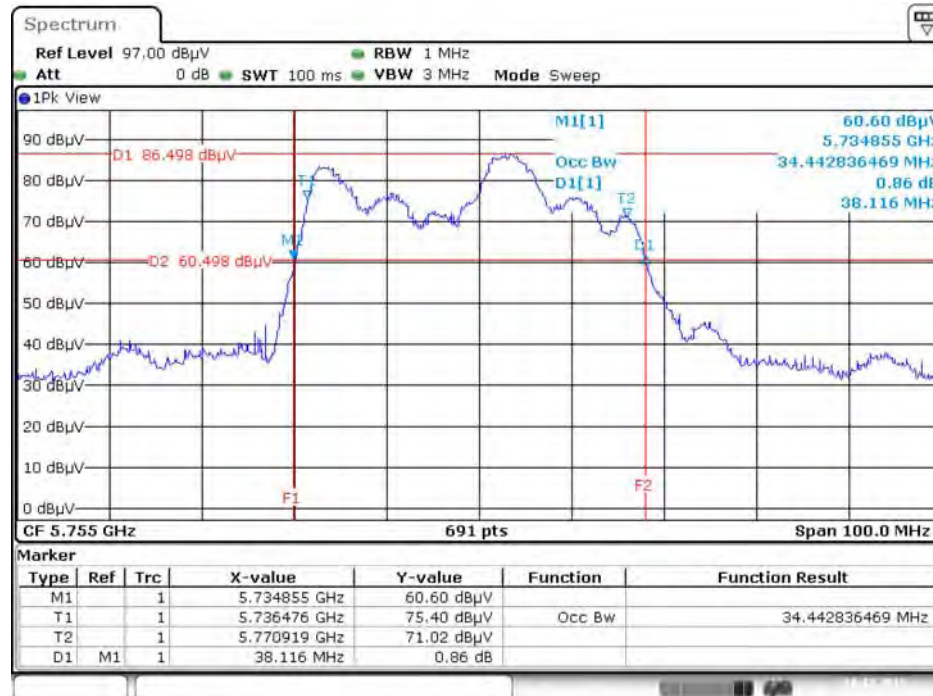
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5190 MHz



26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5230 MHz

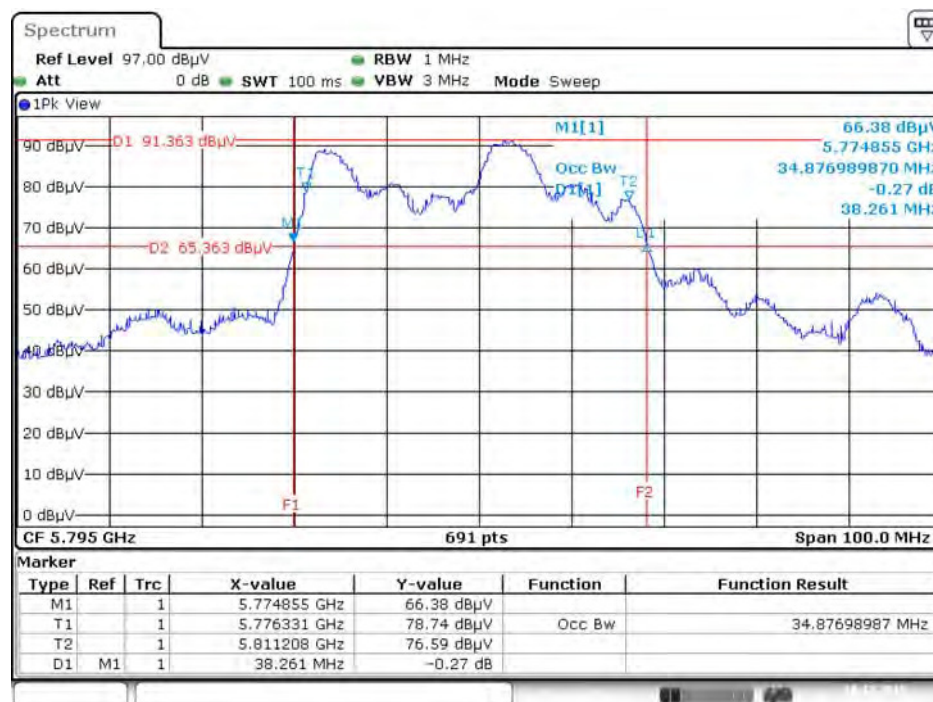


26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5755 MHz



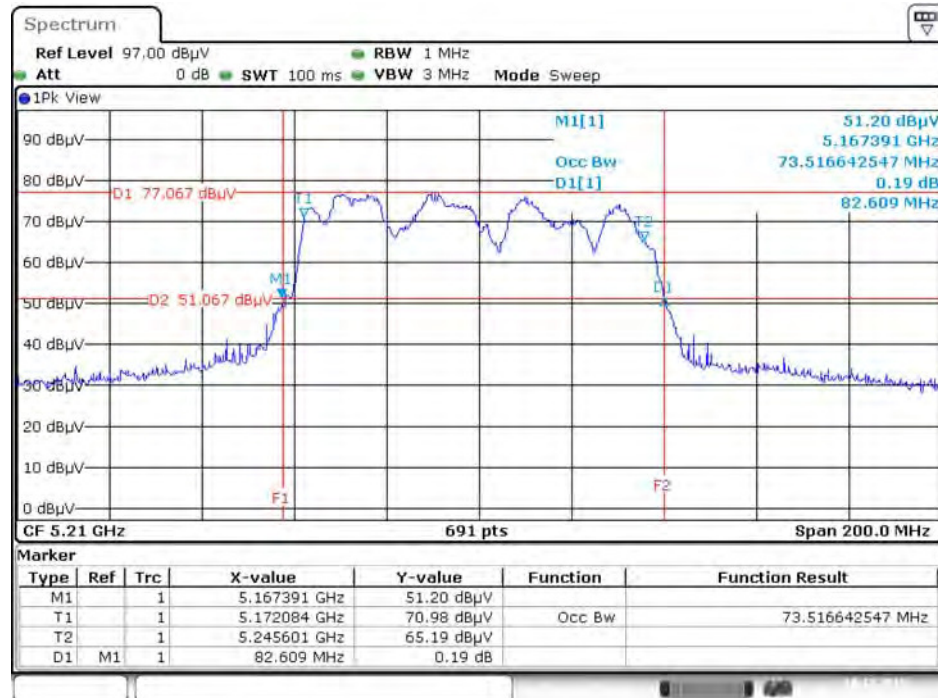
Date: 10.DEC.2015 22:59:50

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5795 MHz



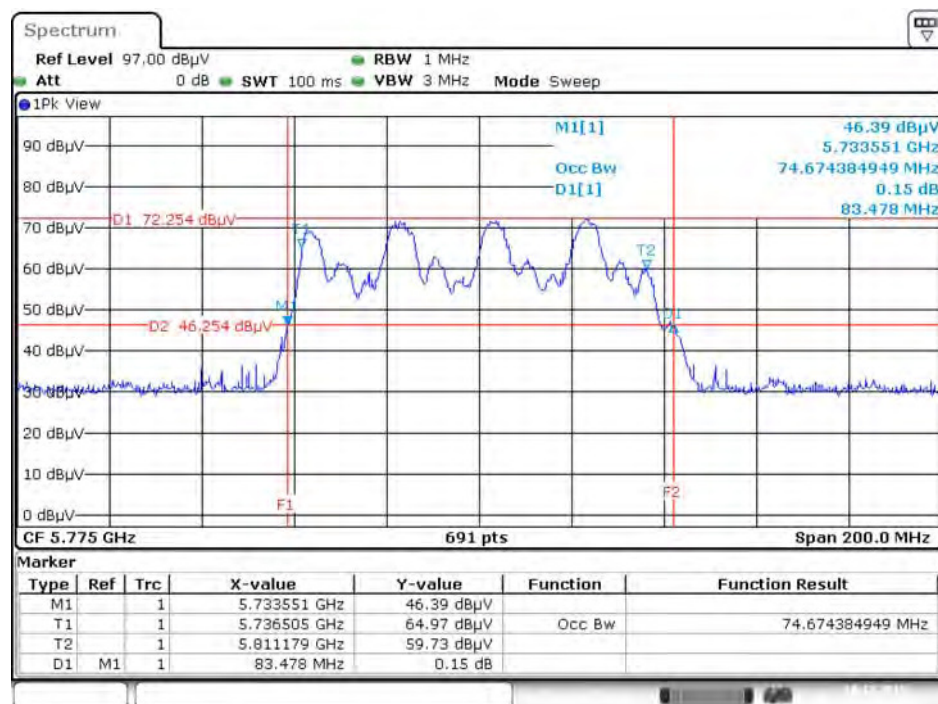
Date: 10.DEC.2015 23:02:35

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5210 MHz



Date: 10.DEC.2015 23:07:32

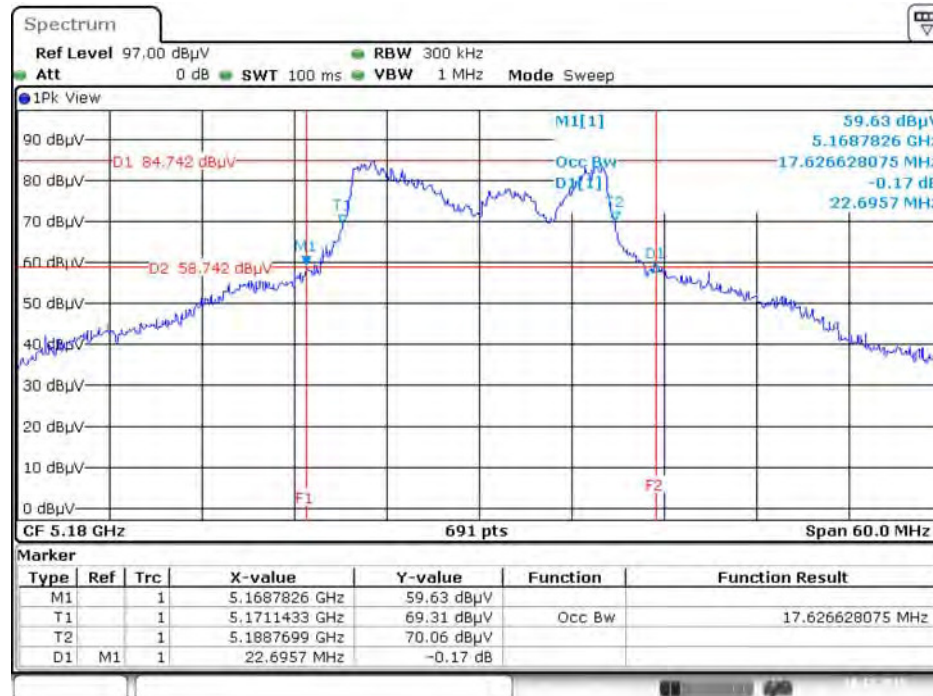
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5775 MHz



Date: 10.DEC.2015 23:20:26

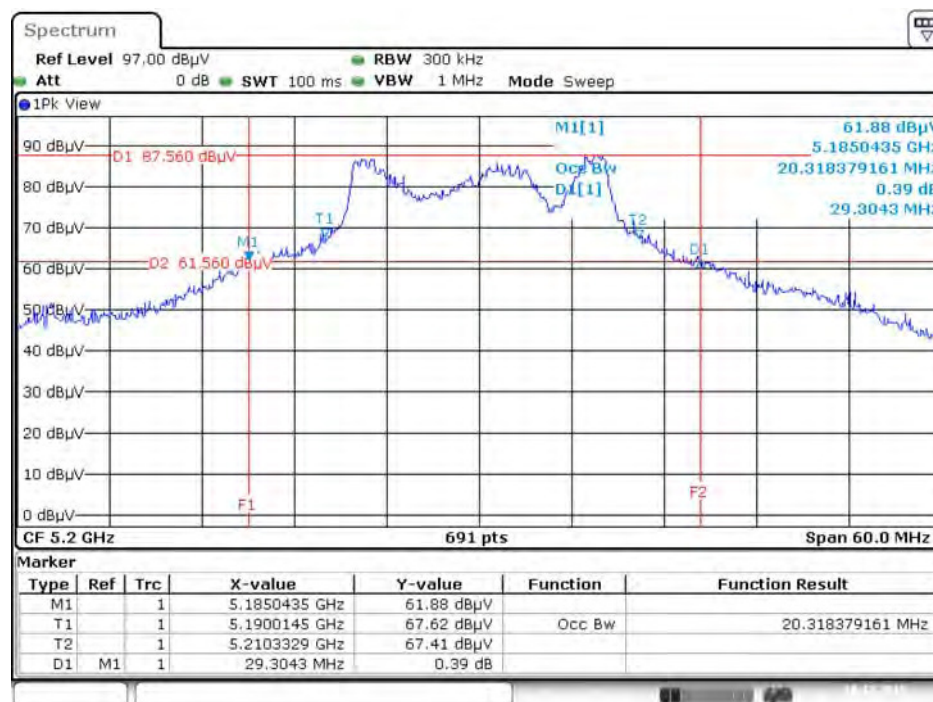
Mode 8: EUT 1 + Set 9 Sector Antenna / 4 dBi

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2
+ Chain 3 + Chain 4 / 5180 MHz



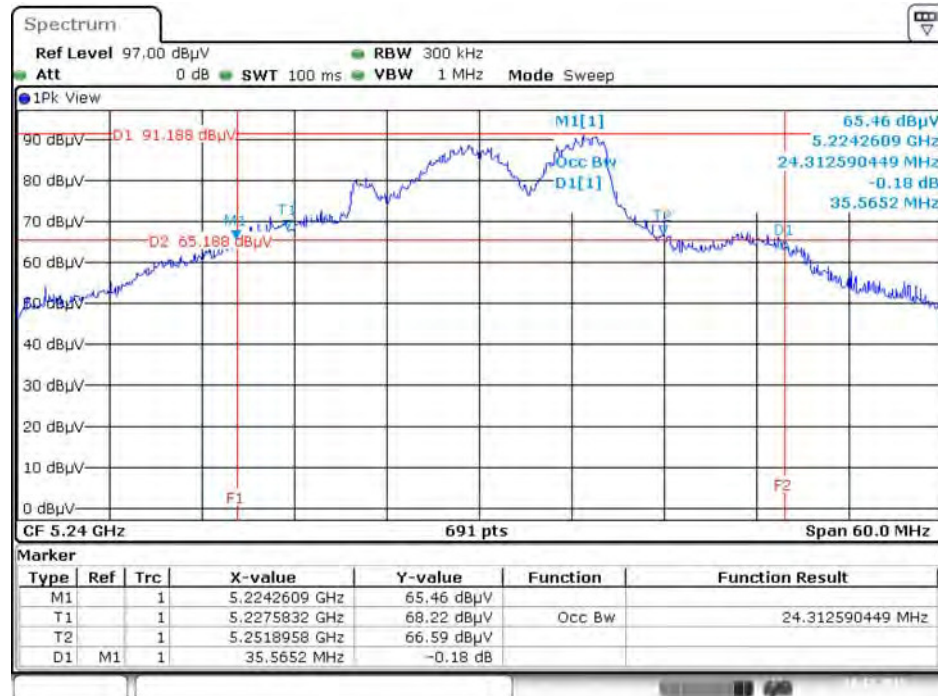
Date: 10.DEC.2015 20:13:53

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2
+ Chain 3 + Chain 4 / 5200 MHz



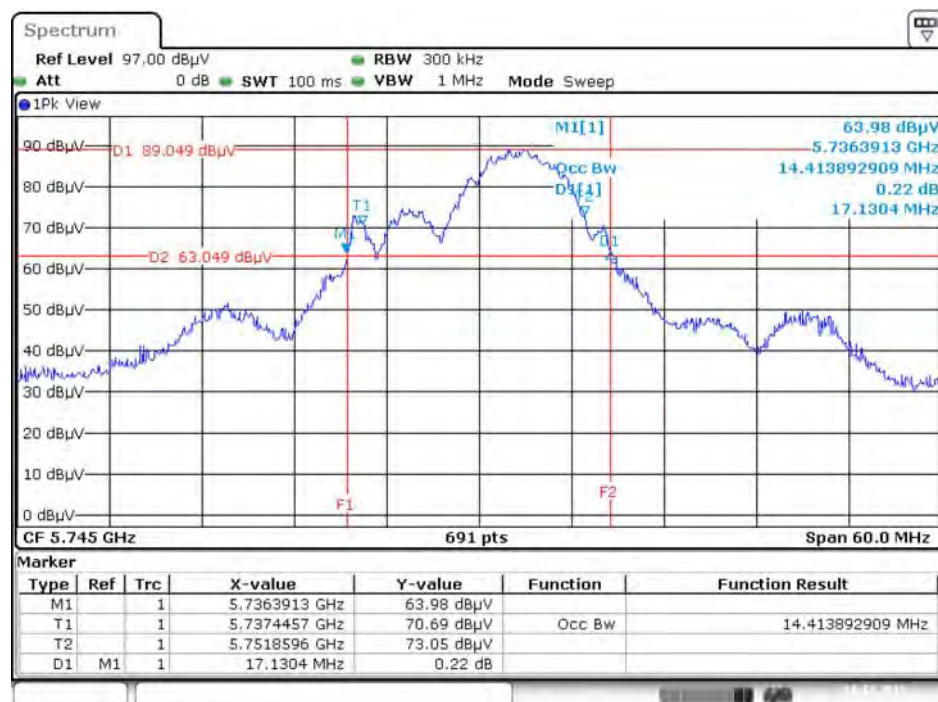
Date: 10.DEC.2015 20:16:41

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2
+ Chain 3 + Chain 4 / 5240 MHz



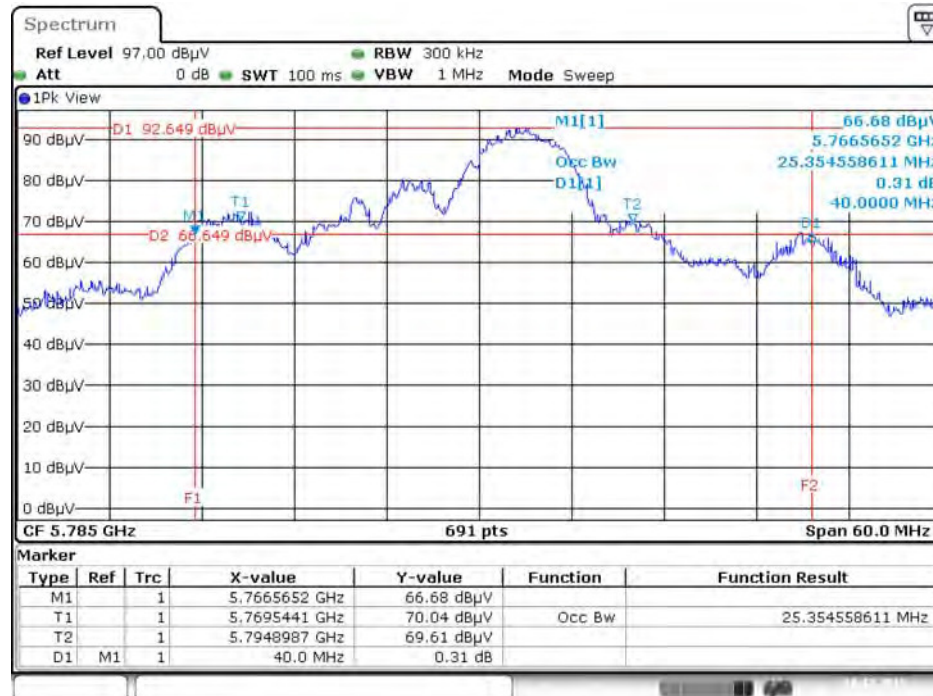
Date: 10.DEC.2015 20:19:27

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2
+ Chain 3 + Chain 4 / 5745 MHz



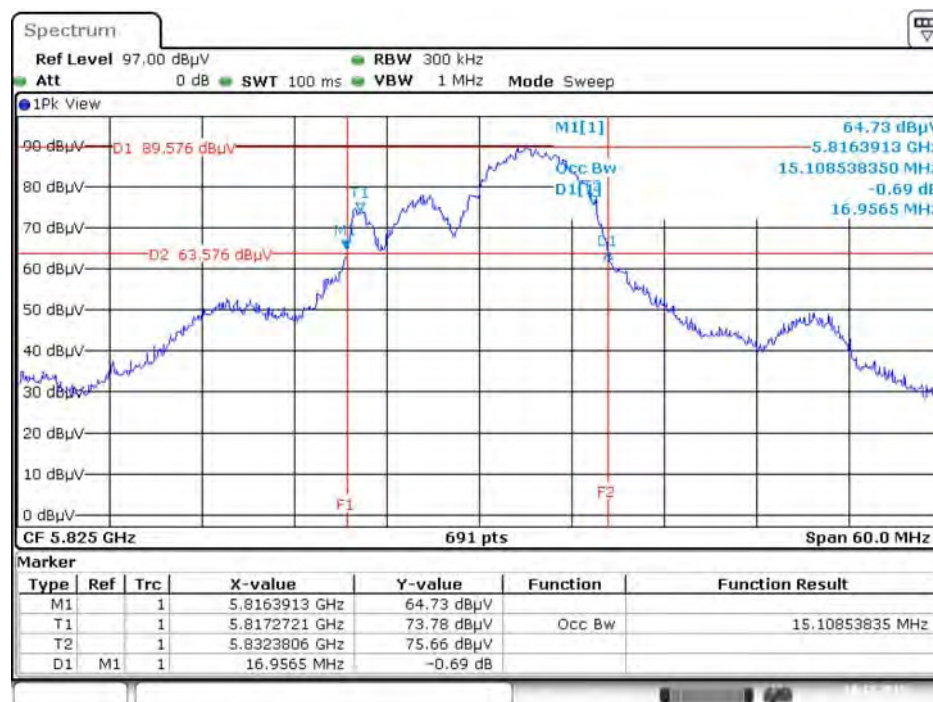
Date: 10.DEC.2015 21:00:30

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2
+ Chain 3 + Chain 4 / 5785 MHz



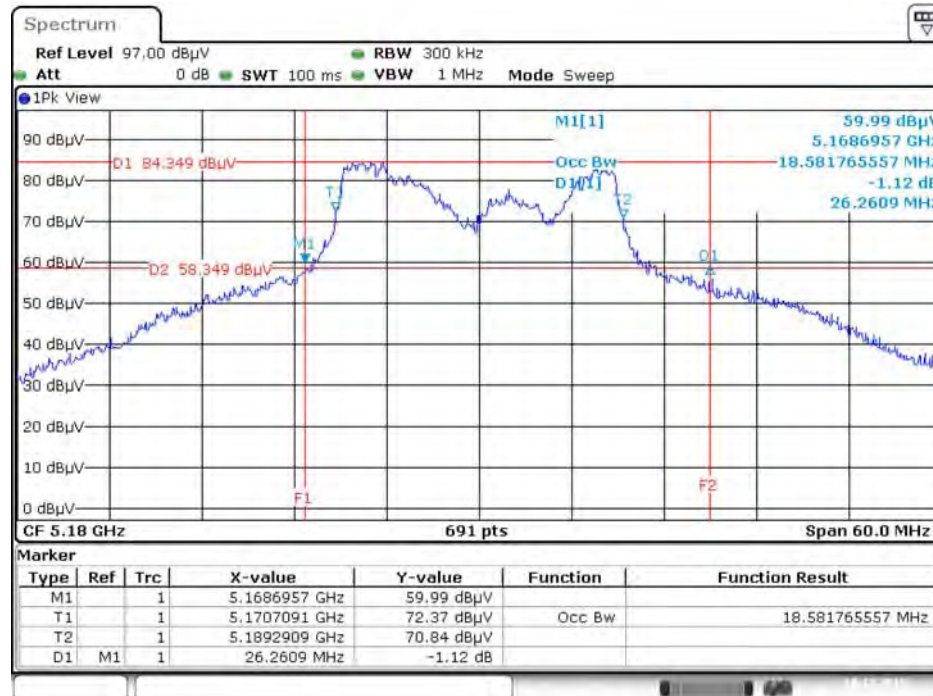
Date: 10.DEC.2015 21:02:09

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2
+ Chain 3 + Chain 4 / 5825 MHz



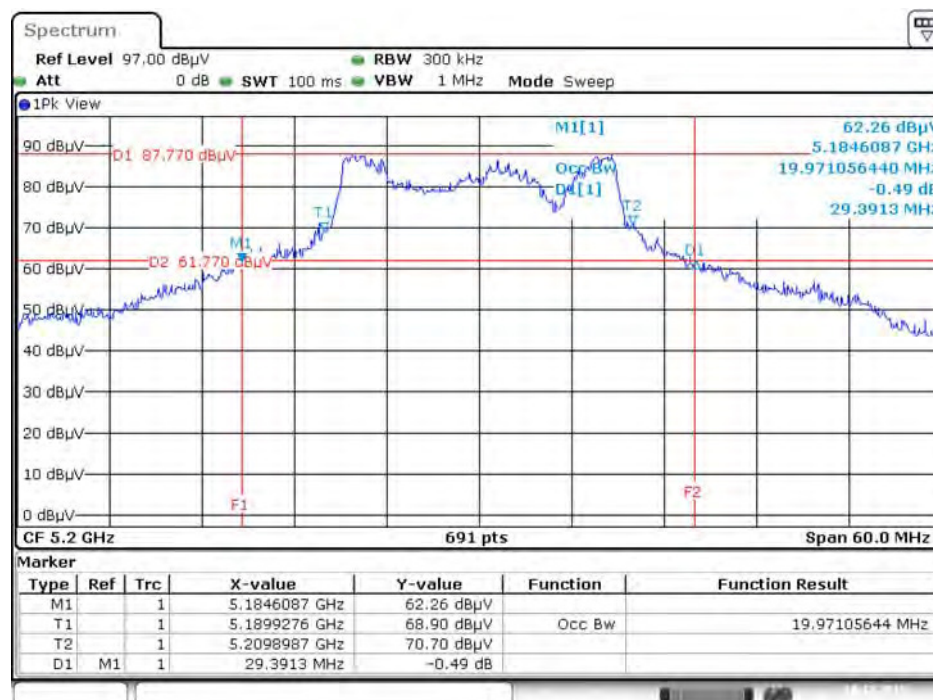
Date: 10.DEC.2015 21:04:32

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5180 MHz



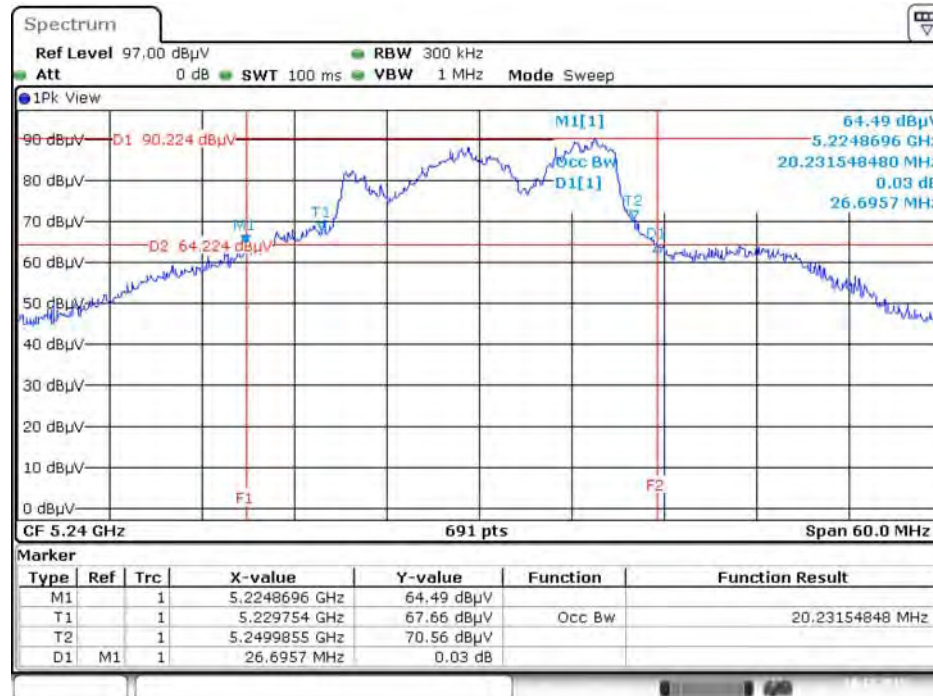
Date: 10.DEC.2015 21:08:38

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5200 MHz



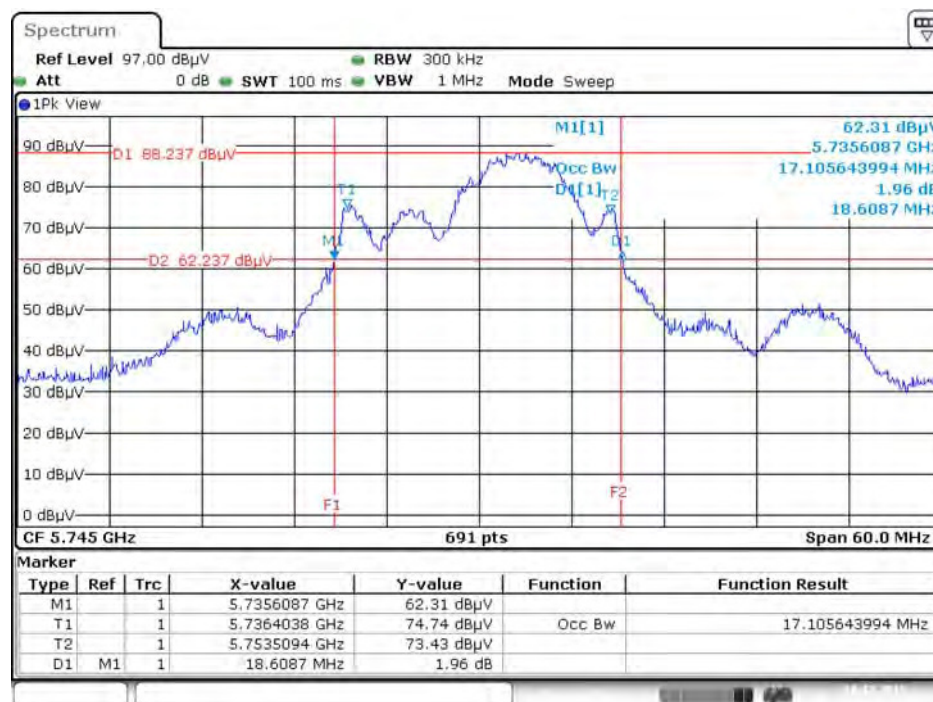
Date: 10.DEC.2015 21:11:45

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5240 MHz



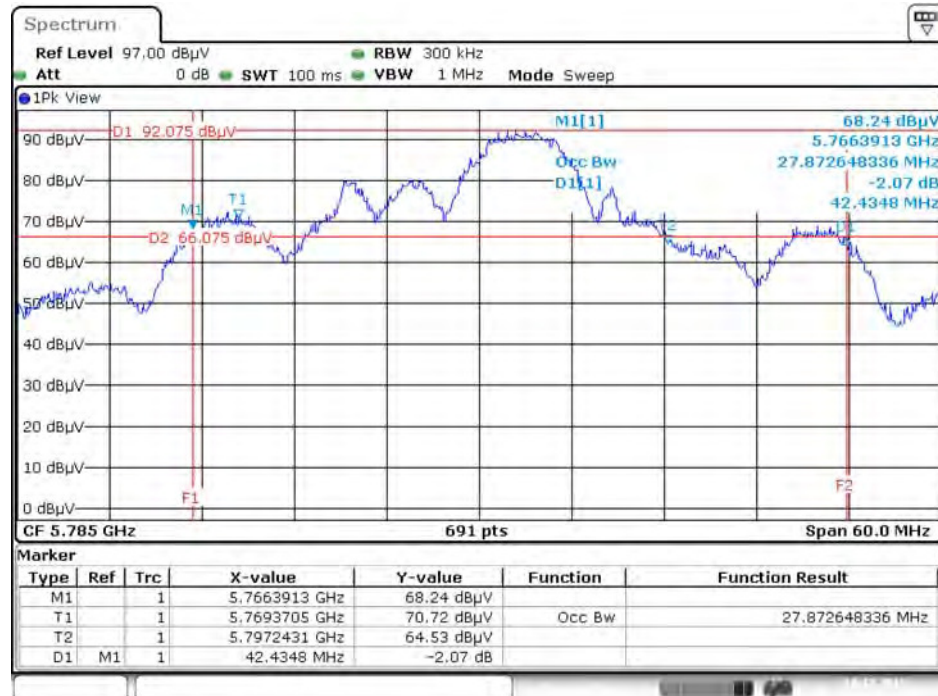
Date: 10.DEC.2015 21:15:01

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5745 MHz



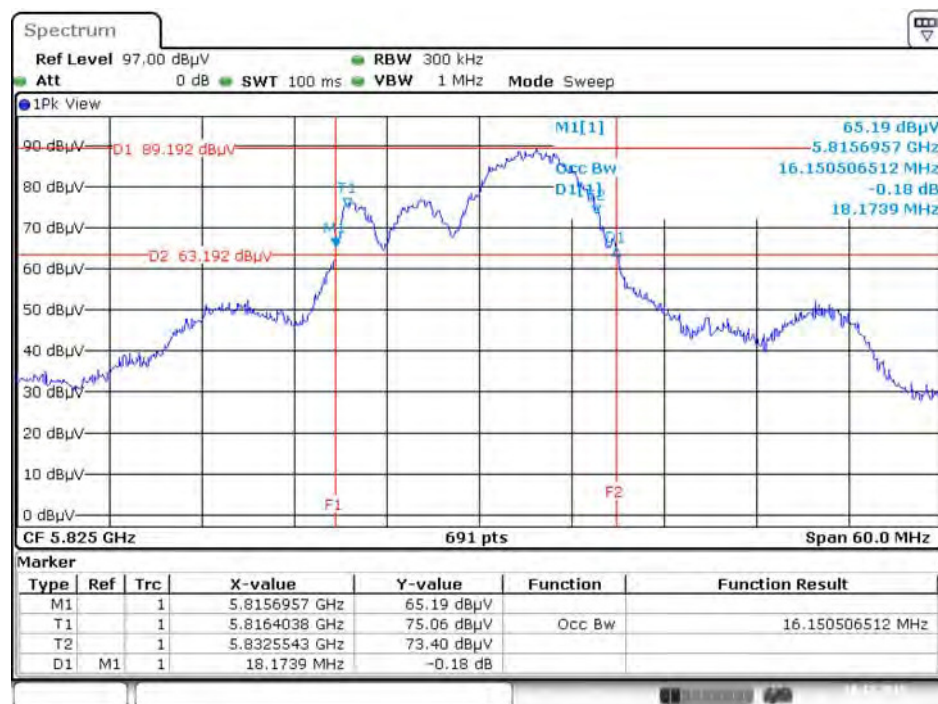
Date: 10.DEC.2015 21:57:16

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5785 MHz



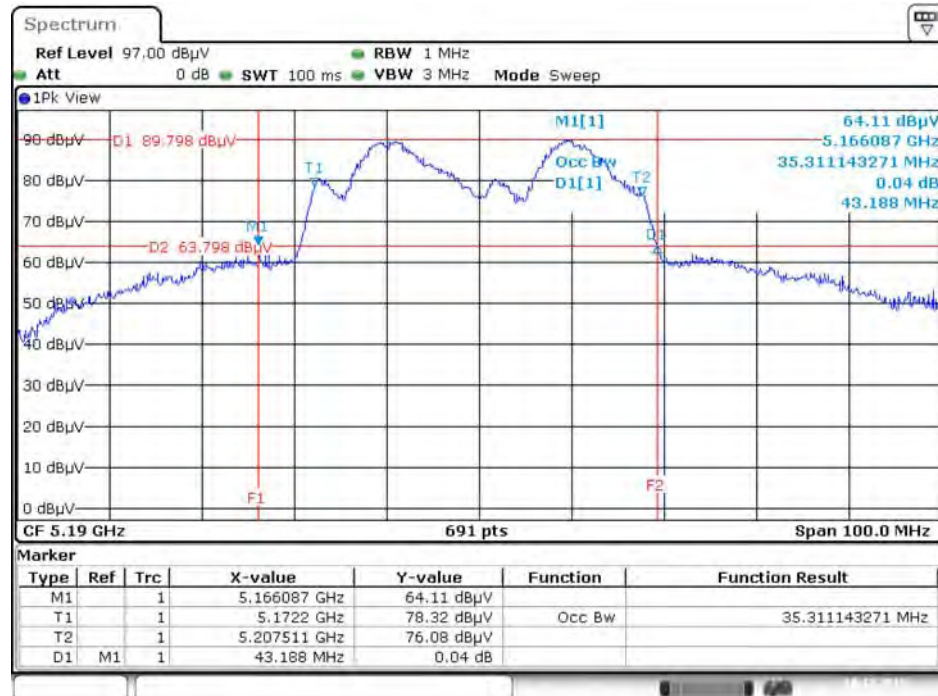
Date: 10.DEC.2015 21:59:34

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5825 MHz



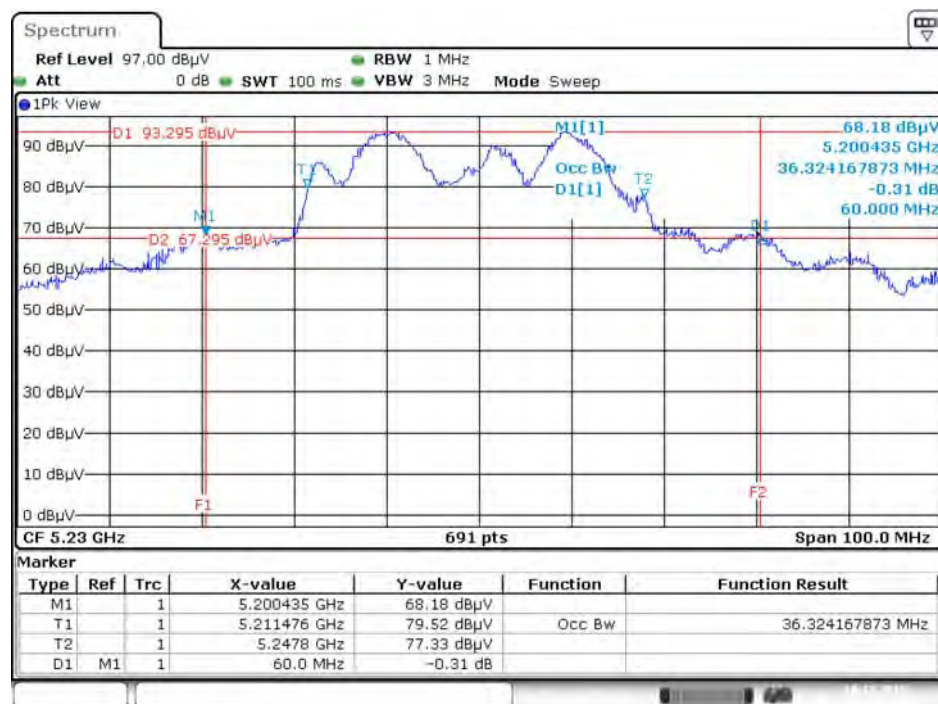
Date: 10.DEC.2015 22:01:11

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5190 MHz



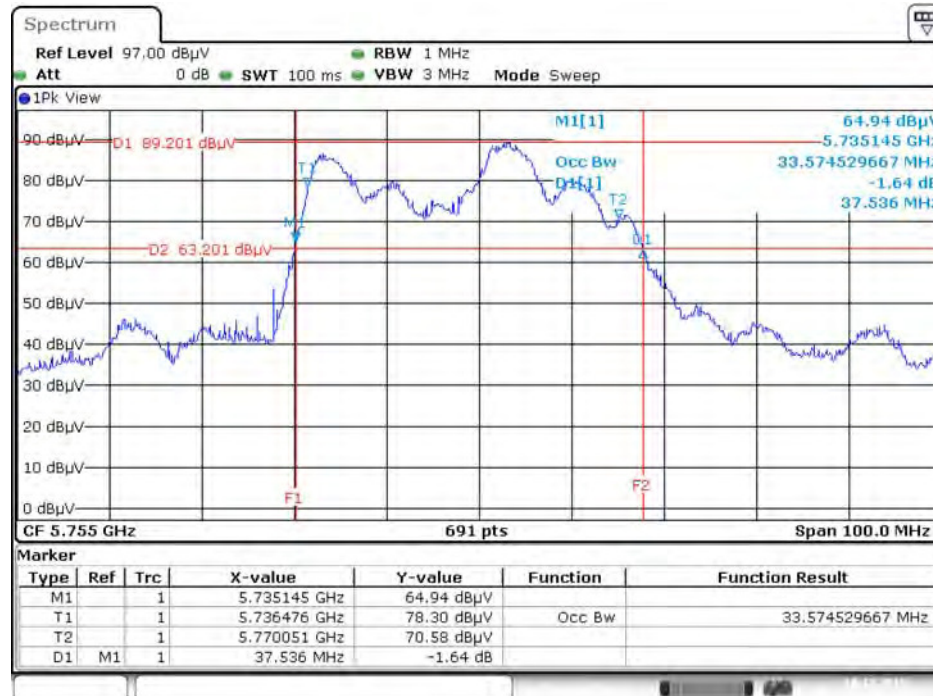
Date: 10.DEC.2015 22:20:13

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5230 MHz



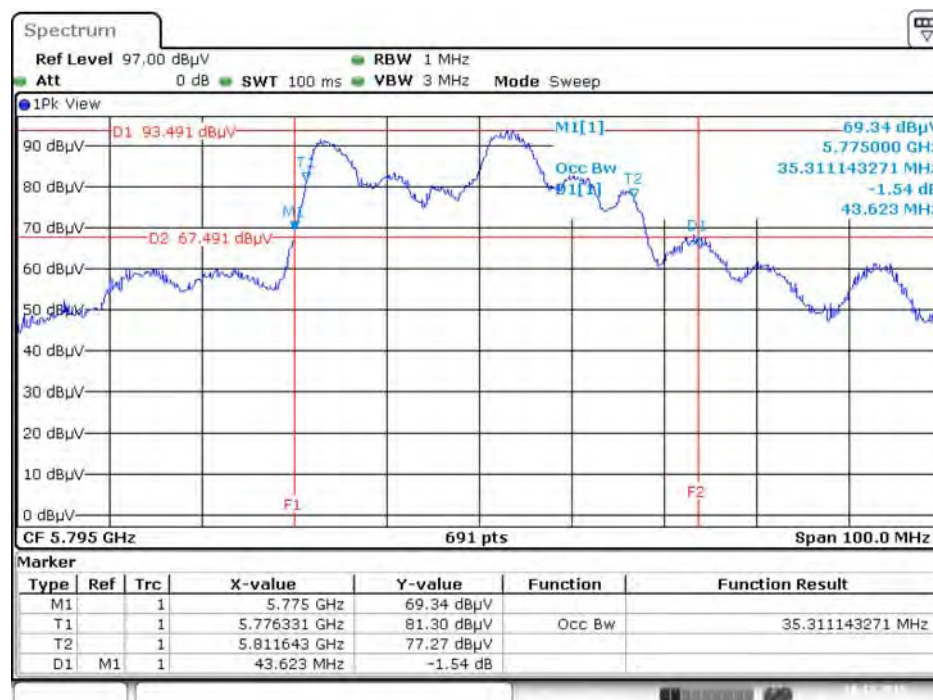
Date: 10.DEC.2015 22:22:48

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5755 MHz



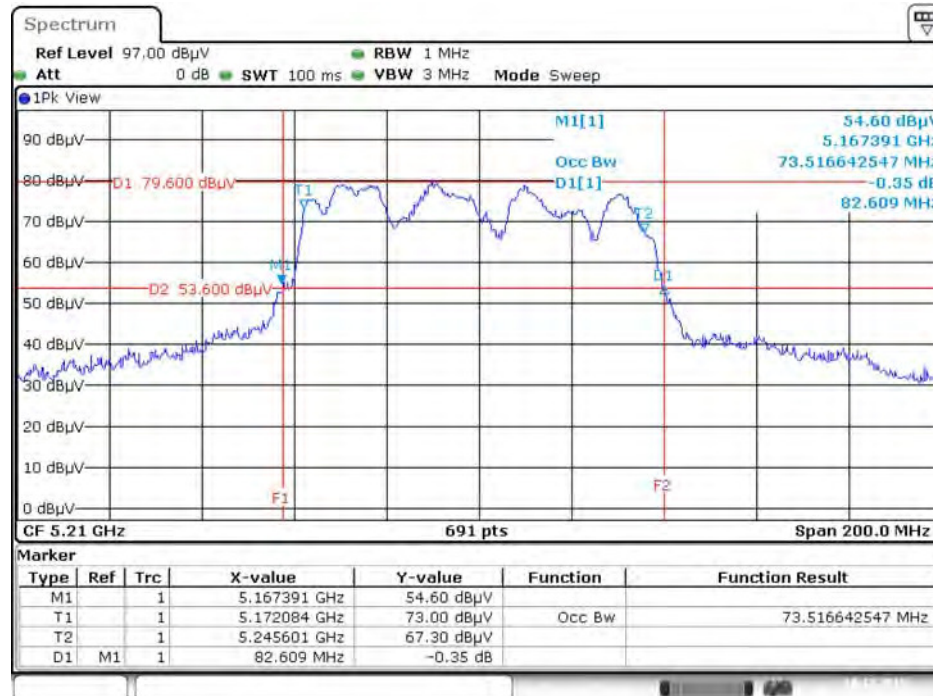
Date: 10.DEC.2015 22:59:32

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5795 MHz



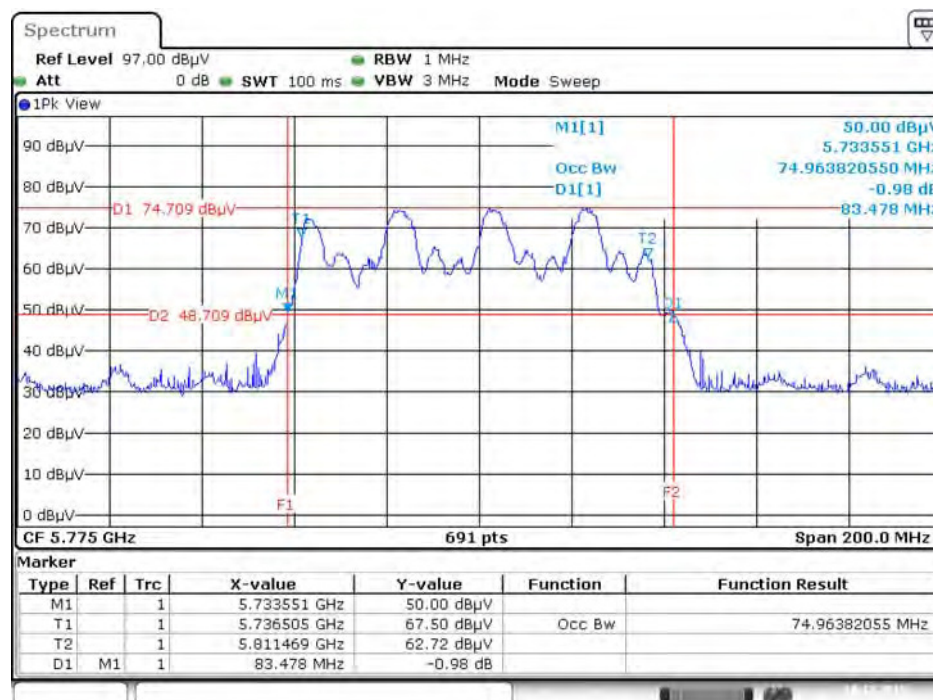
Date: 10.DEC.2015 23:02:05

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5210 MHz



Date: 10.DEC.2015 23:05:59

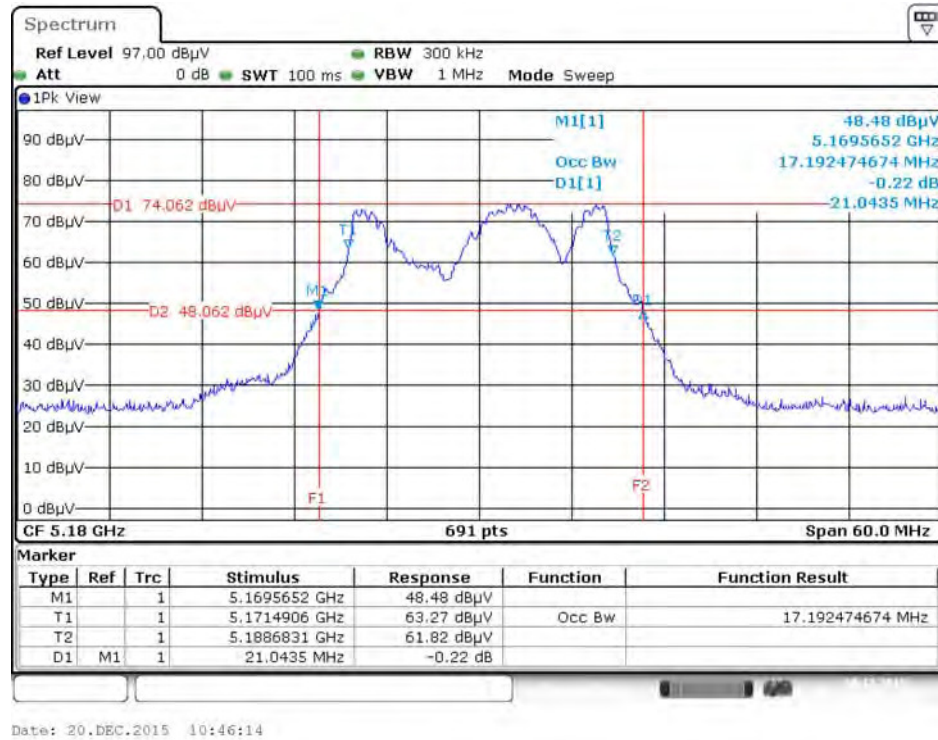
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5775 MHz



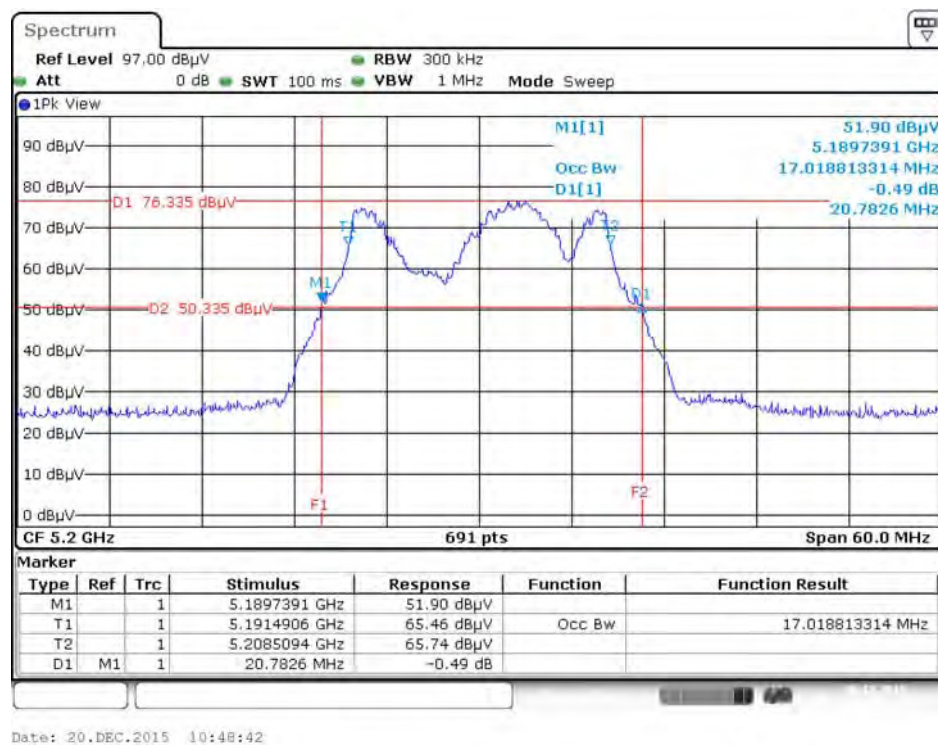
Date: 10.DEC.2015 23:19:59

Mode 9: EUT 1 + Set 10 Panel Antenna / 23 dBi

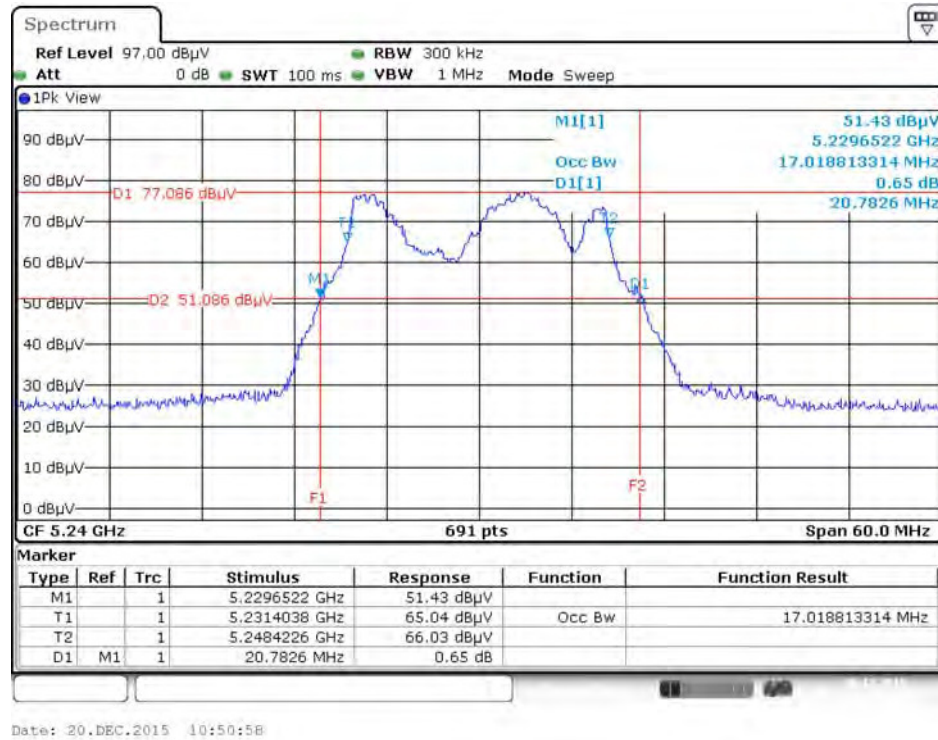
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2
+ Chain 3 + Chain 4 / 5180 MHz



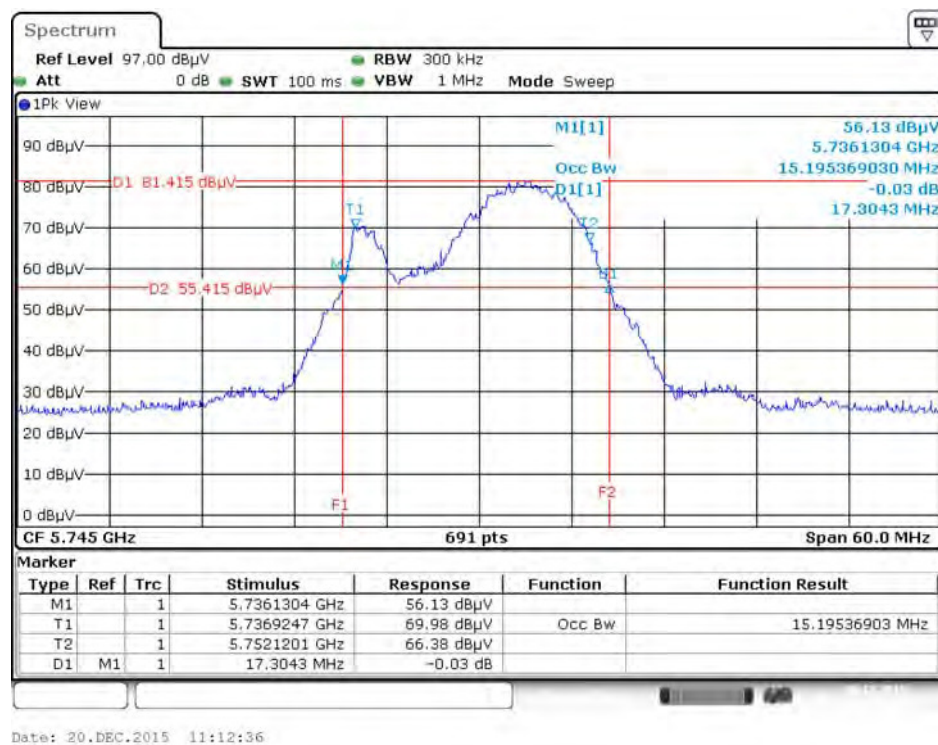
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2
+ Chain 3 + Chain 4 / 5200 MHz



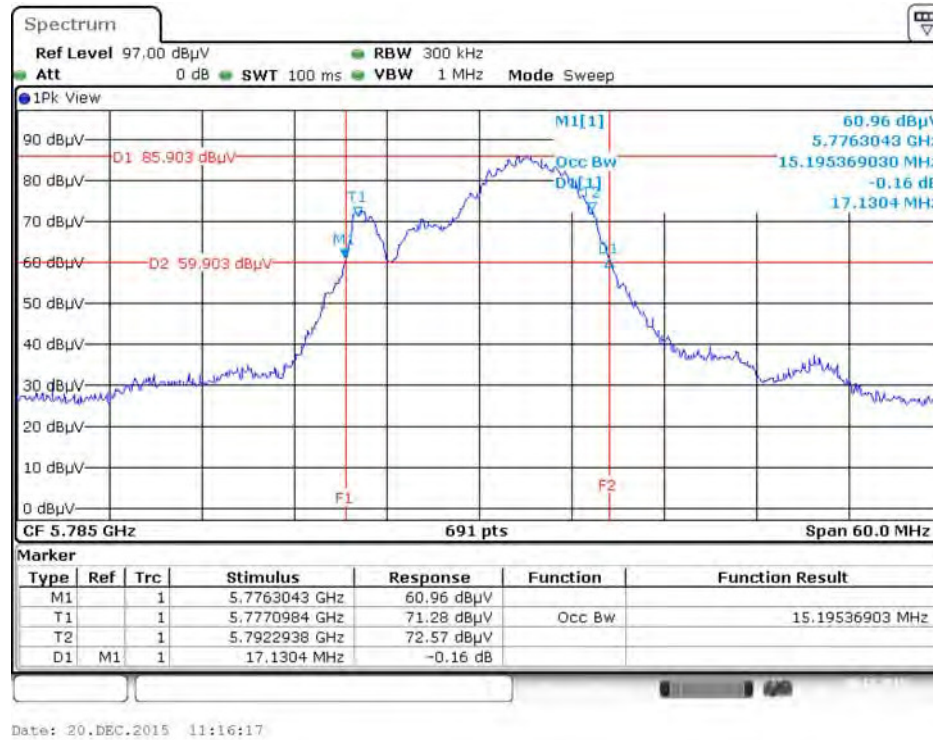
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2
+ Chain 3 + Chain 4 / 5240 MHz



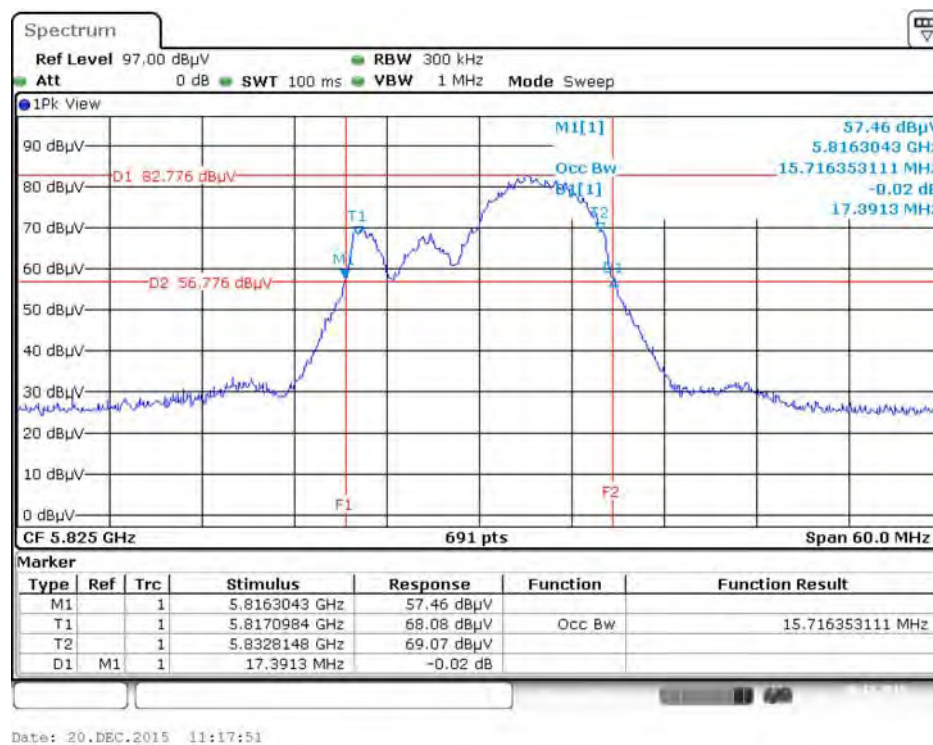
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2
+ Chain 3 + Chain 4 / 5745 MHz



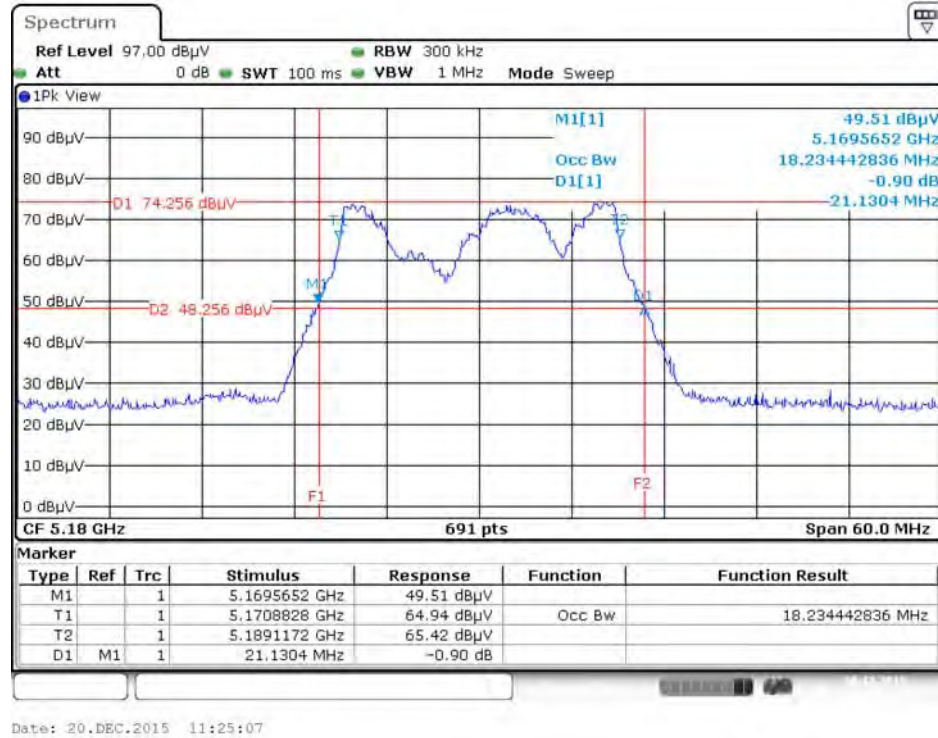
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5785 MHz



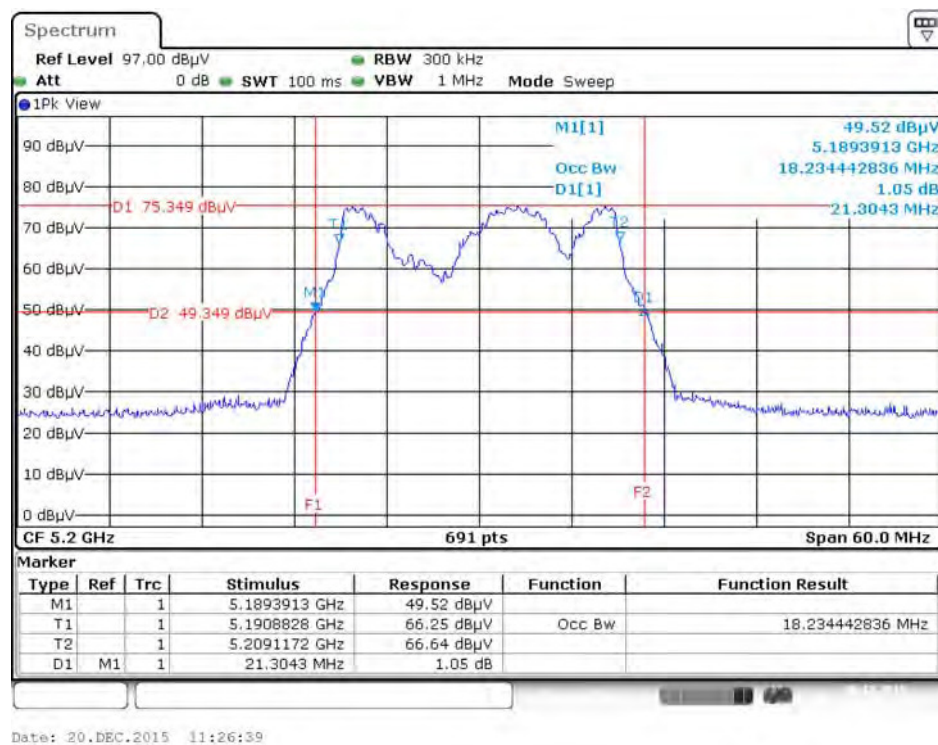
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5825 MHz



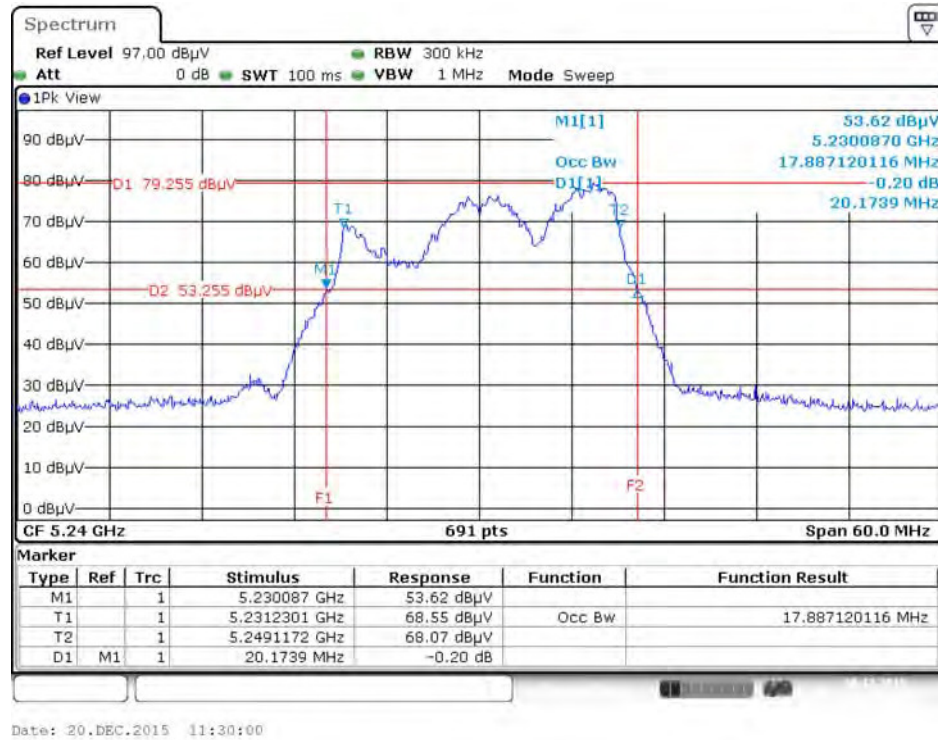
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5180 MHz



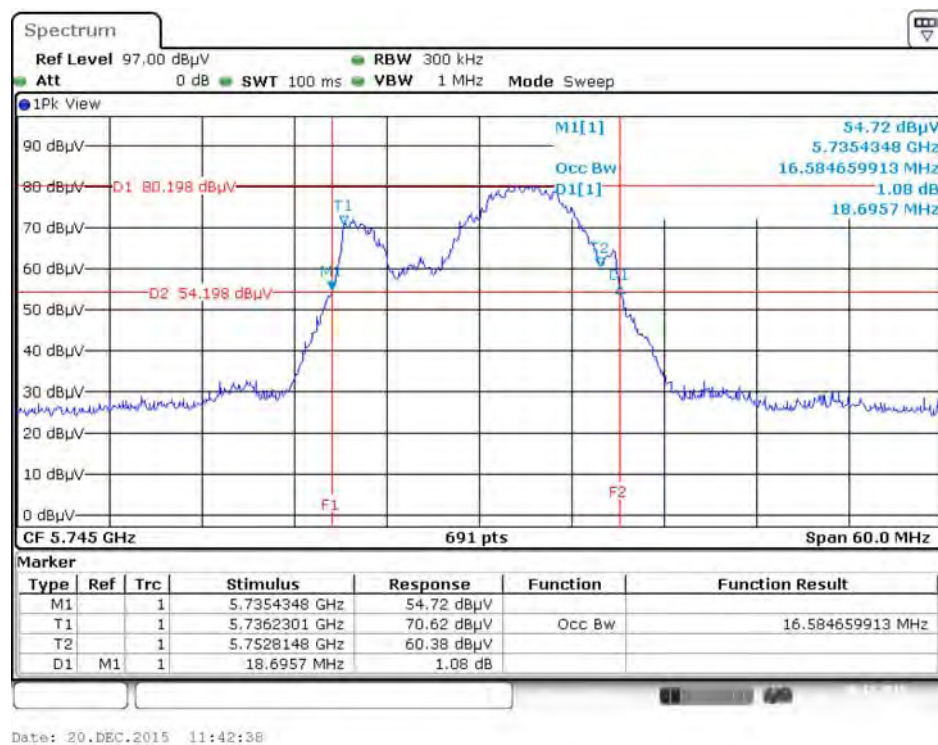
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5200 MHz



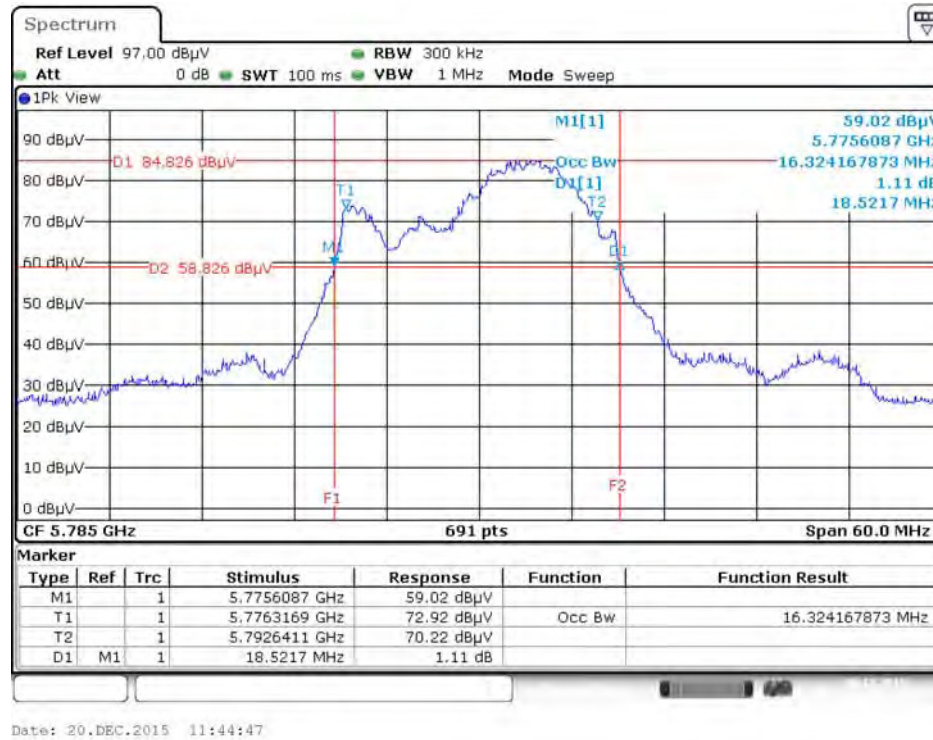
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5240 MHz



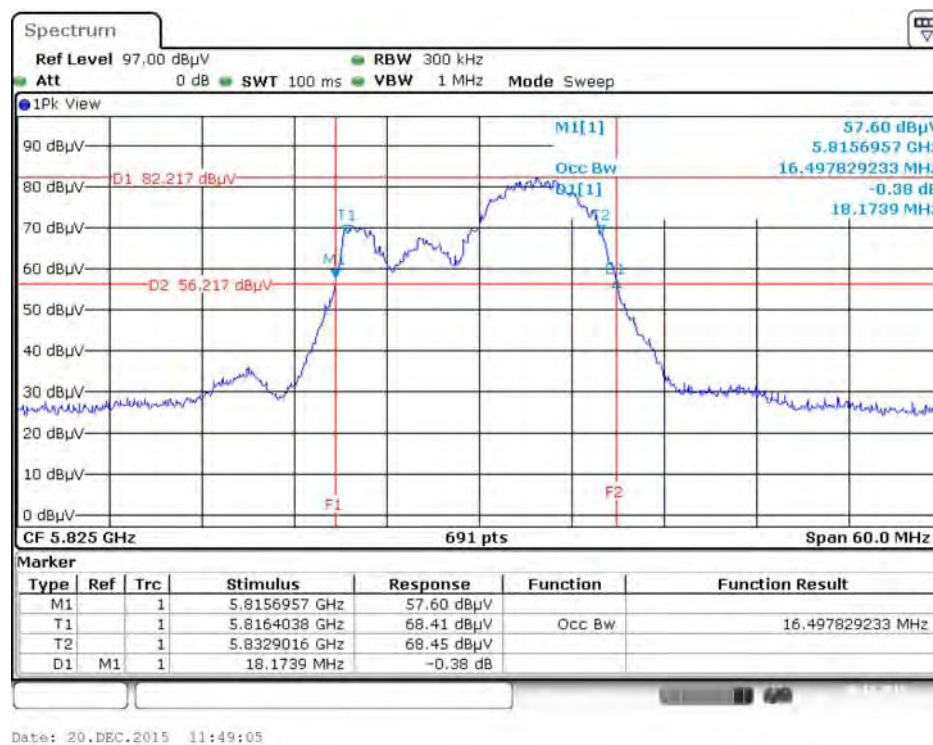
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5745 MHz



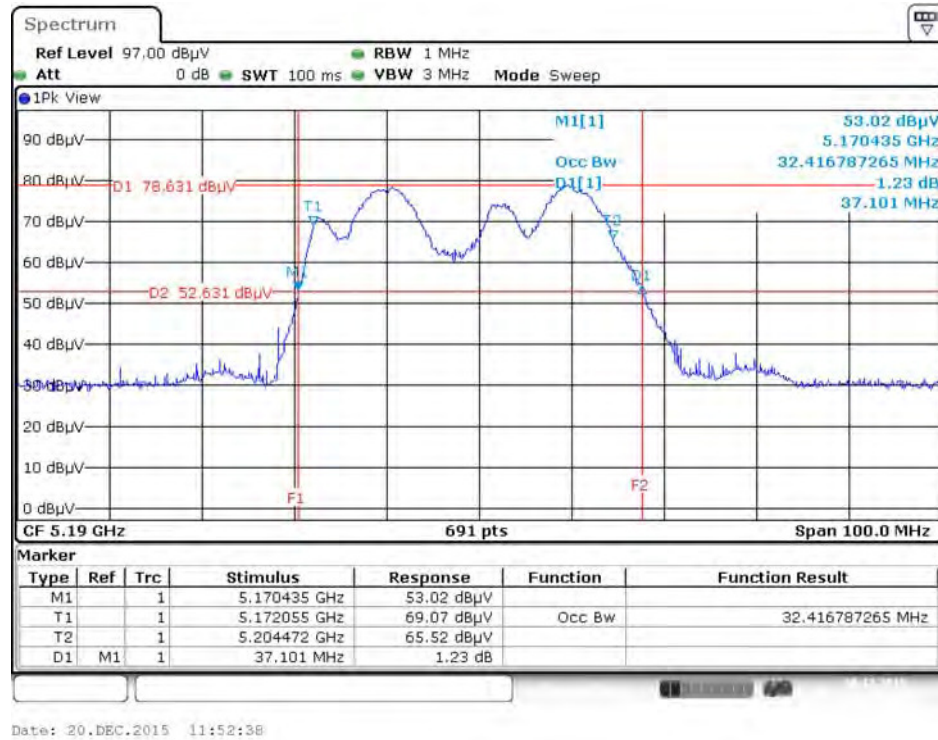
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5785 MHz



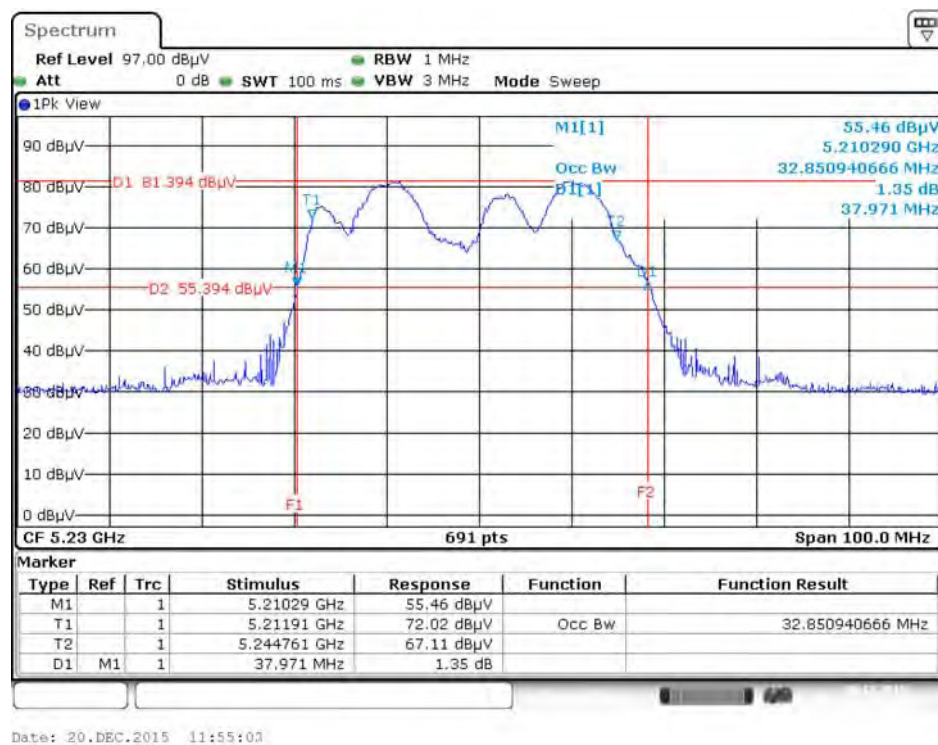
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5825 MHz



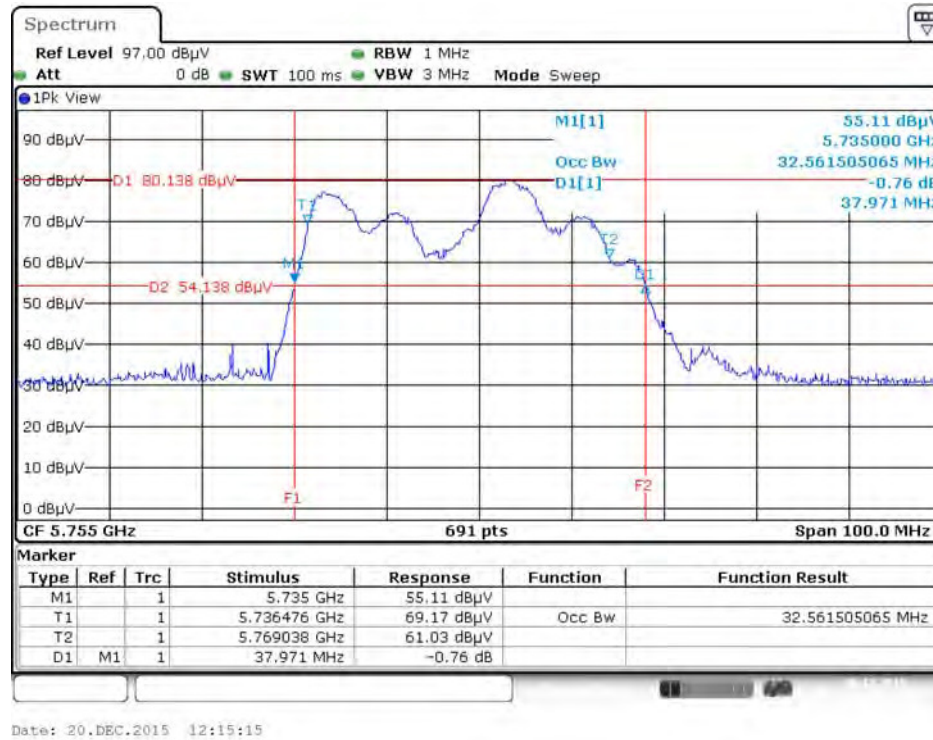
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5190 MHz



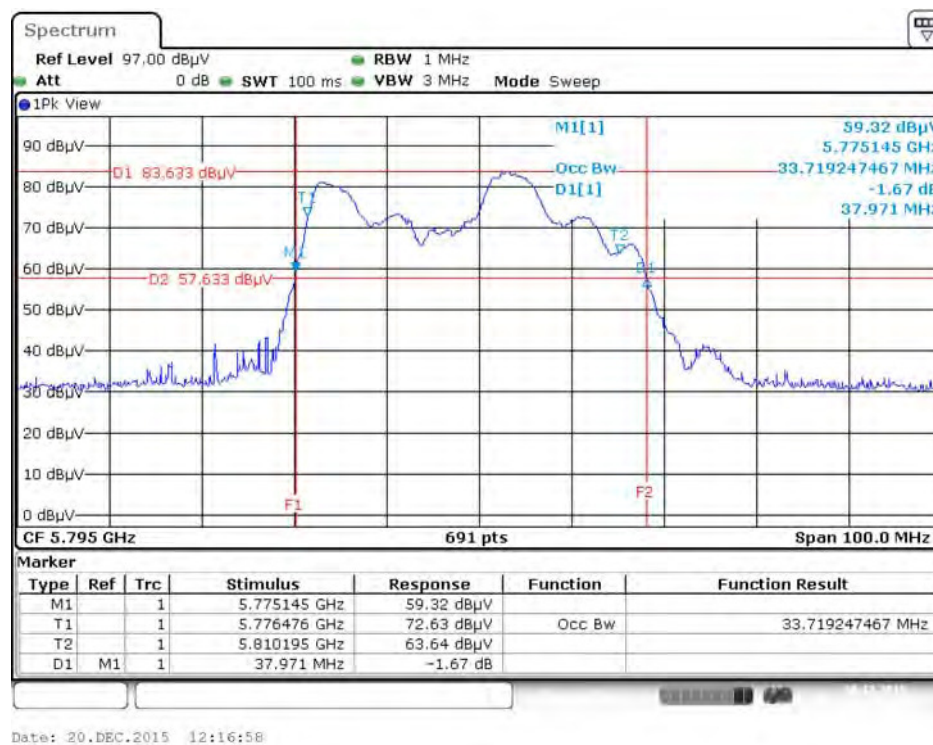
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5230 MHz



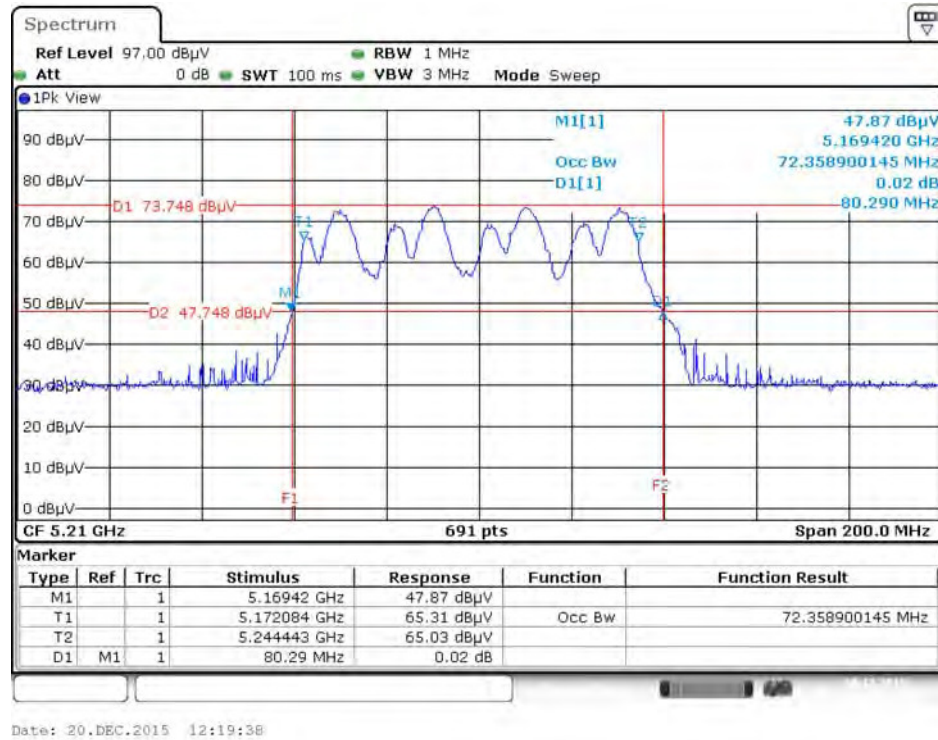
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5755 MHz



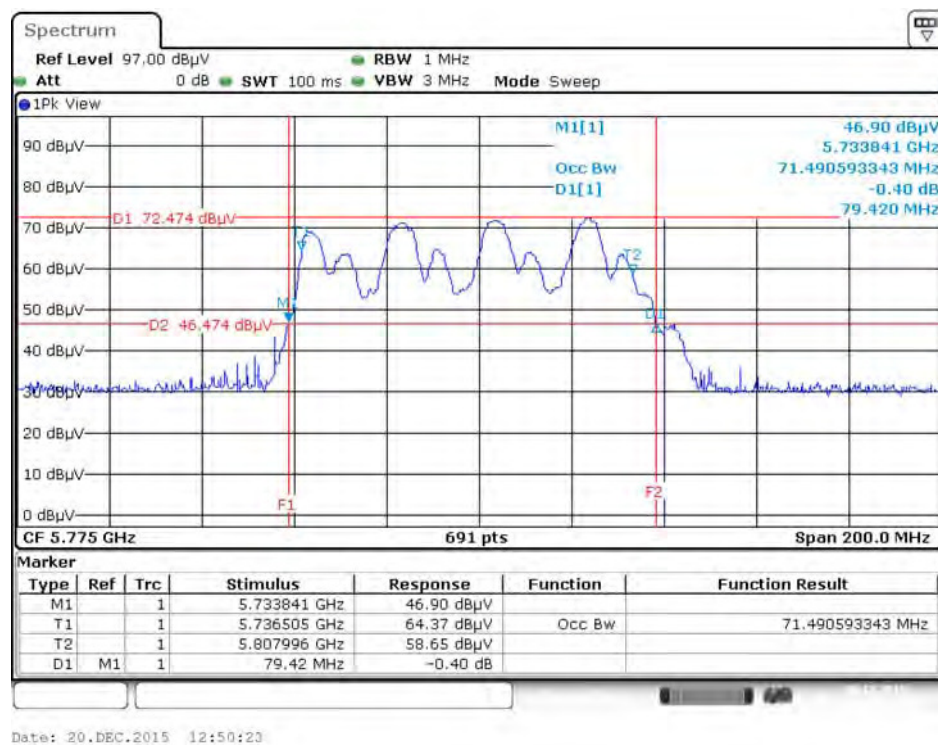
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5795 MHz



26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5210 MHz

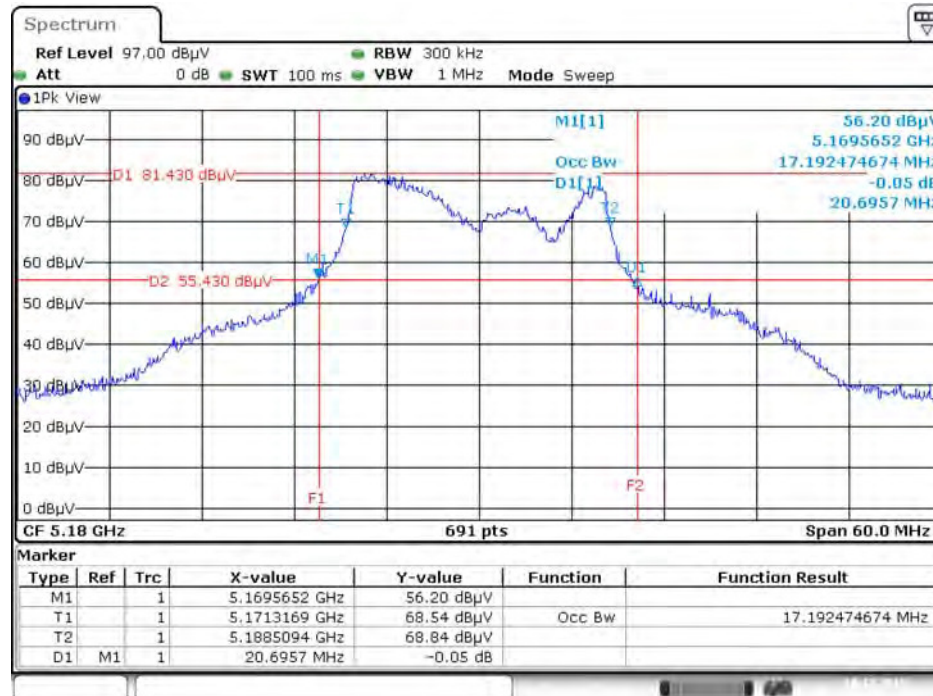


26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5775 MHz



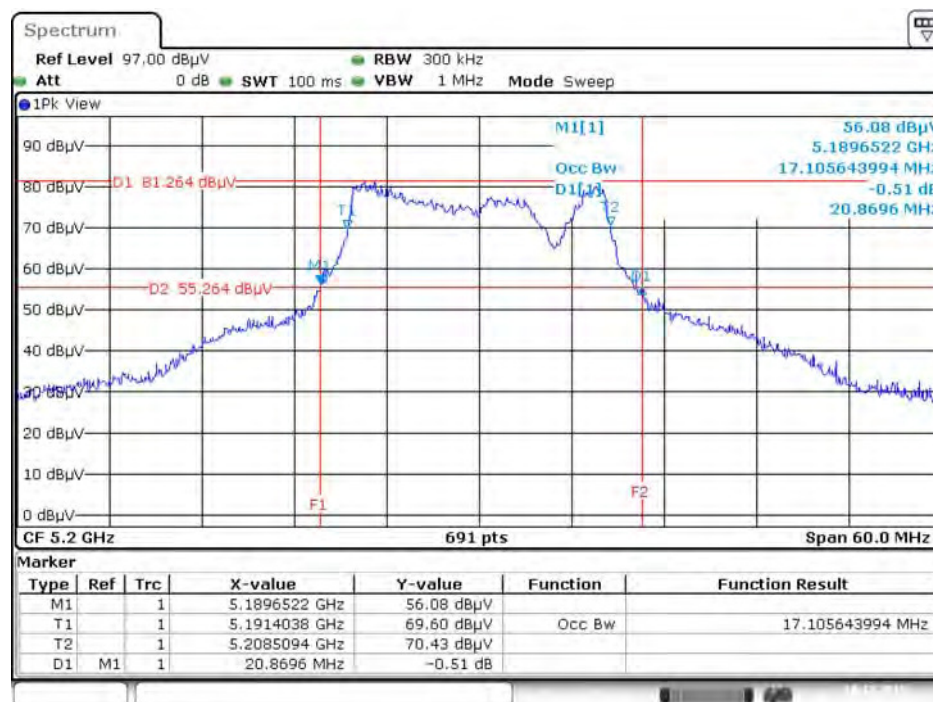
Mode 10: EUT 1 + Set 11 Omni Antenna / 6 dBi

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2
+ Chain 3 + Chain 4 / 5180 MHz



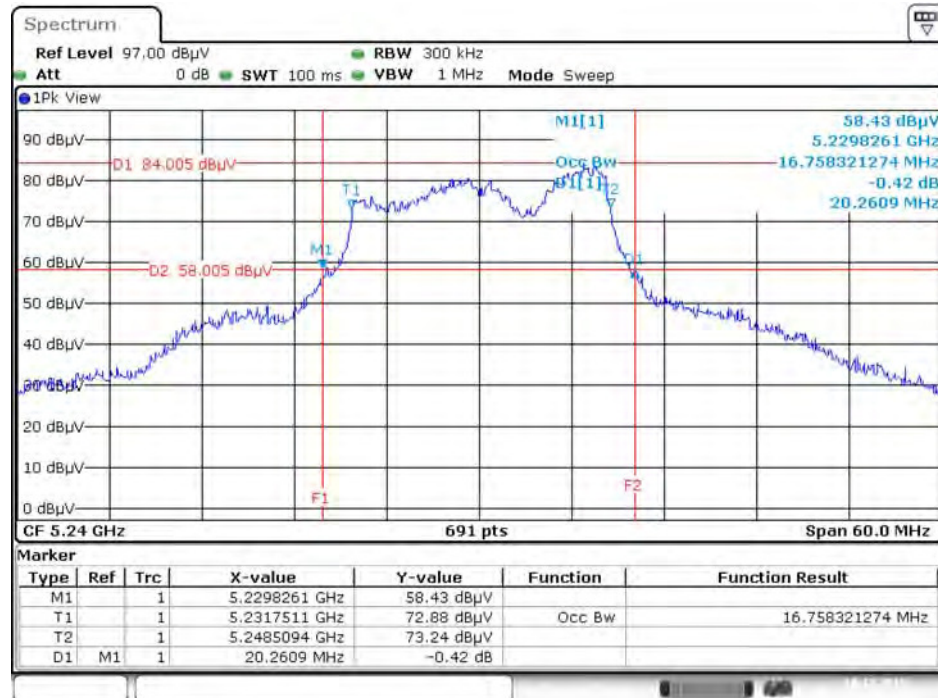
Date: 10.DEC.2015 20:15:24

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2
+ Chain 3 + Chain 4 / 5200 MHz



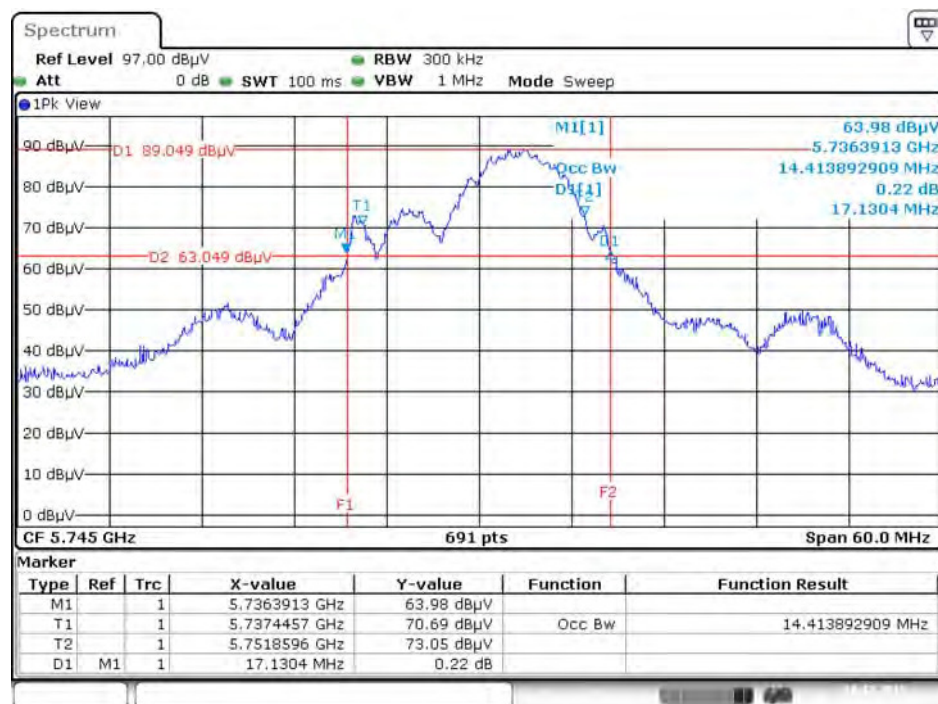
Date: 10.DEC.2015 20:18:22

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5240 MHz



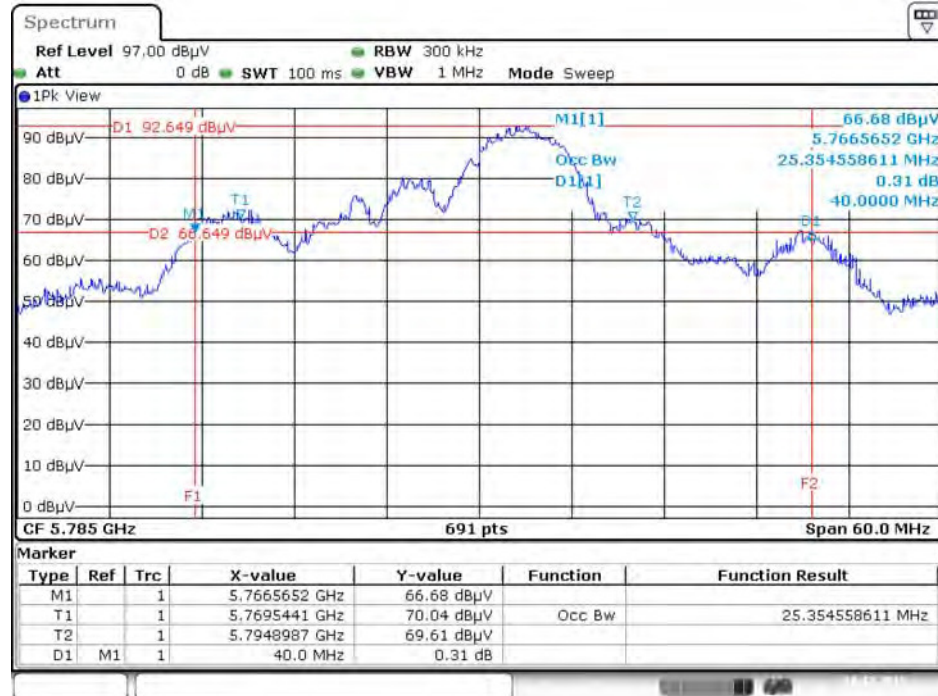
Date: 10.DEC.2015 20:21:12

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5745 MHz



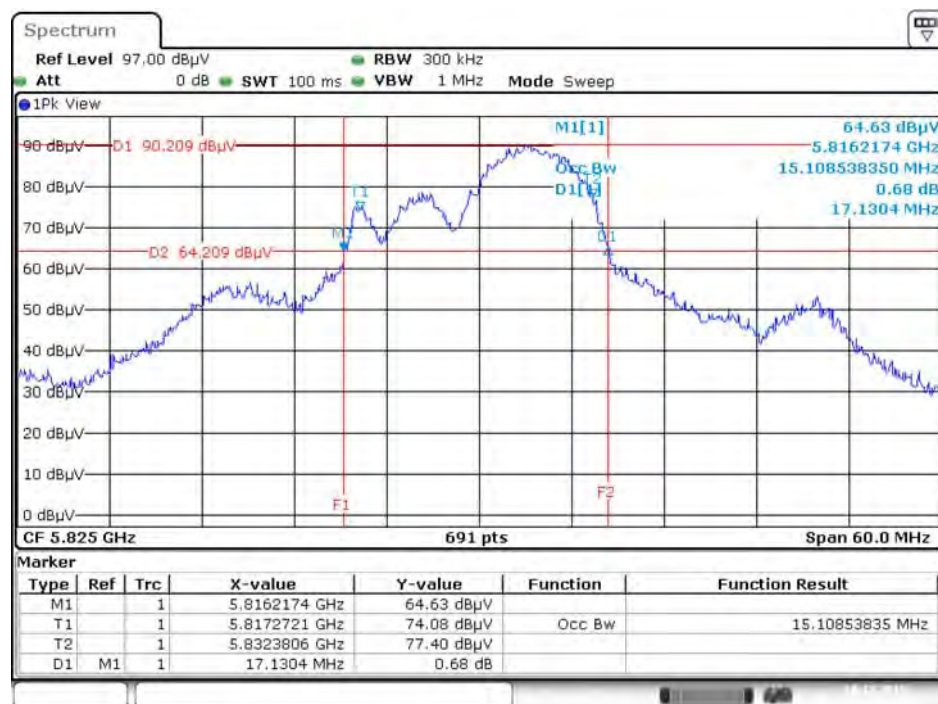
Date: 10.DEC.2015 21:00:30

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2
+ Chain 3 + Chain 4 / 5785 MHz



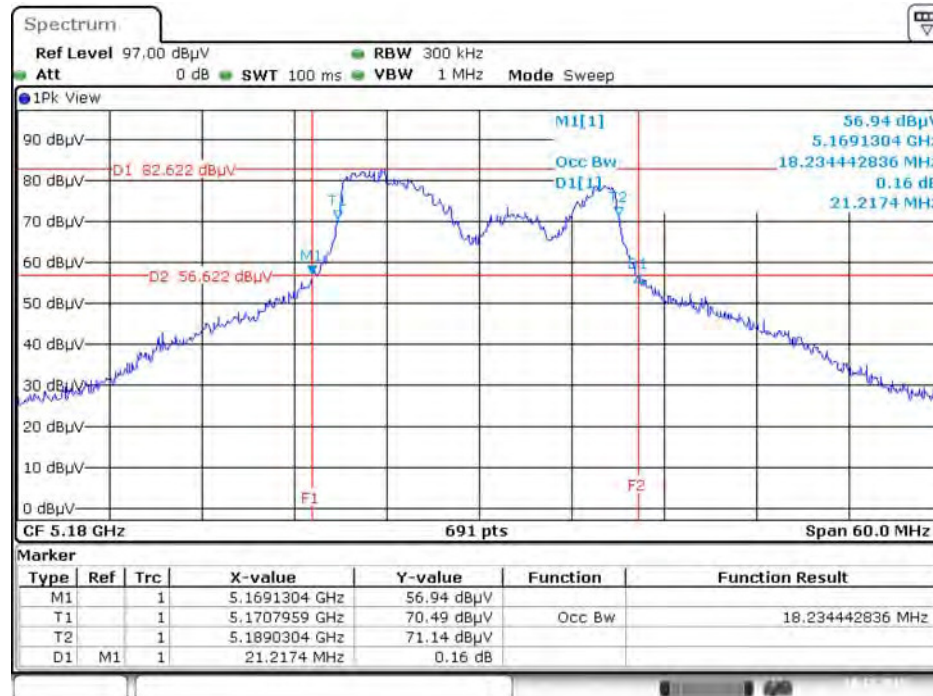
Date: 10.DEC.2015 21:02:09

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2
+ Chain 3 + Chain 4 / 5825 MHz



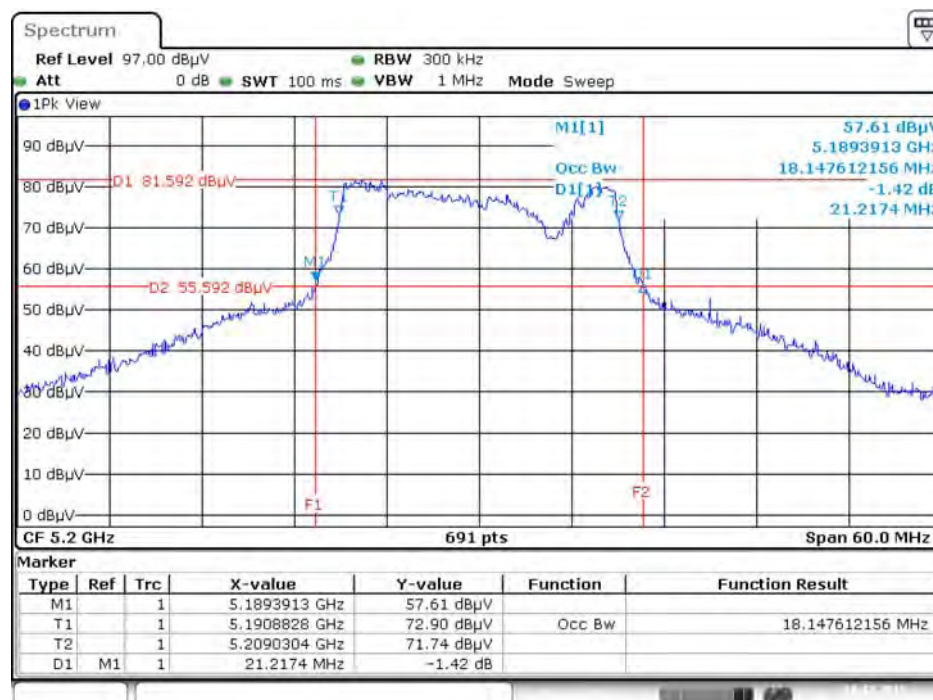
Date: 10.DEC.2015 21:06:07

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5180 MHz



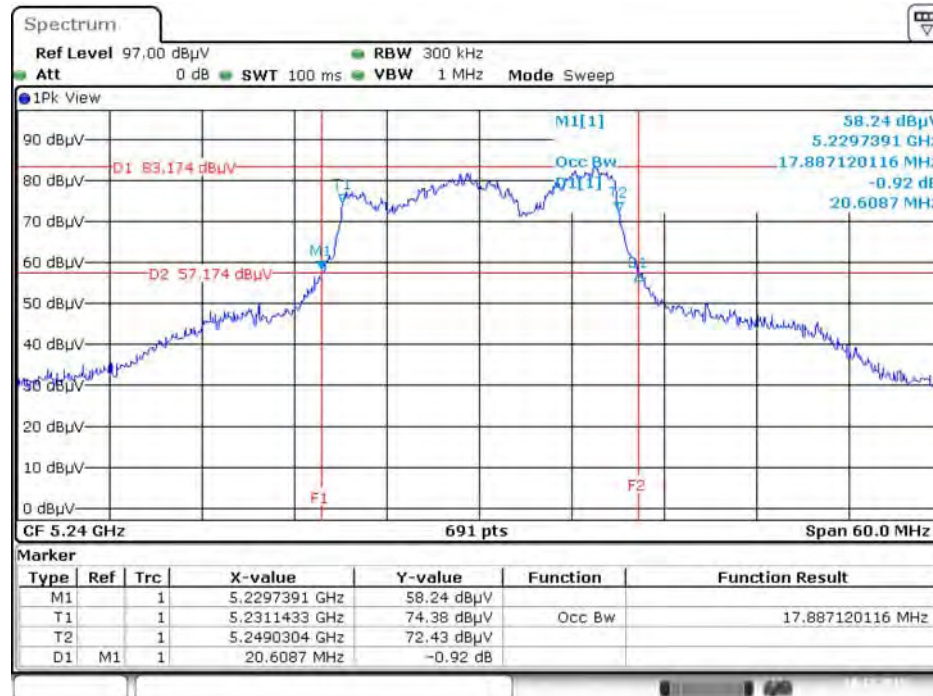
Date: 10.DEC.2015 21:10:43

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5200 MHz



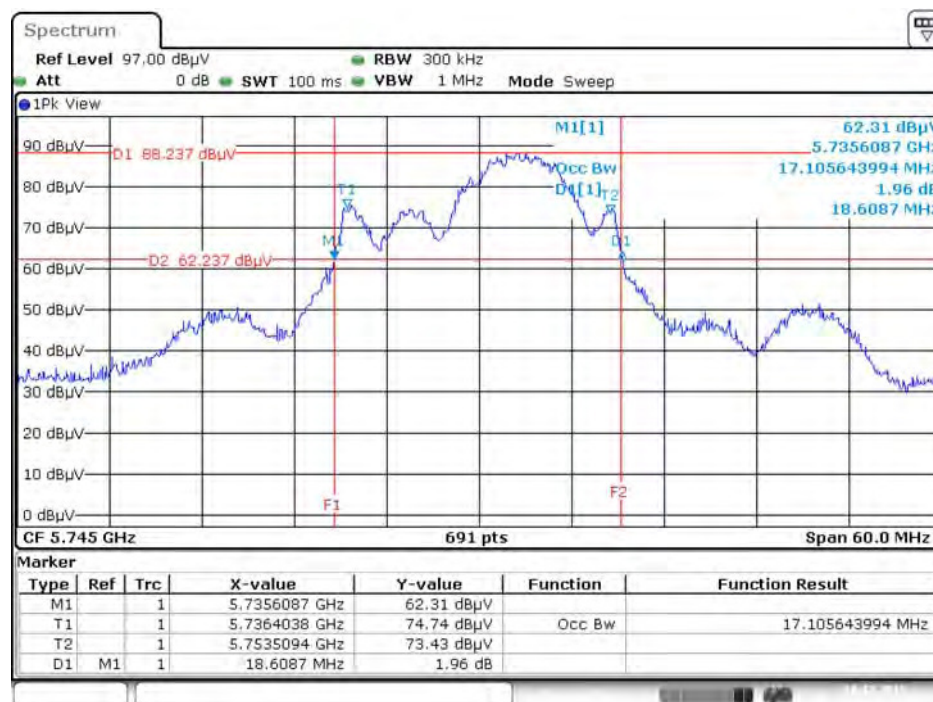
Date: 10.DEC.2015 21:13:49

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5240 MHz



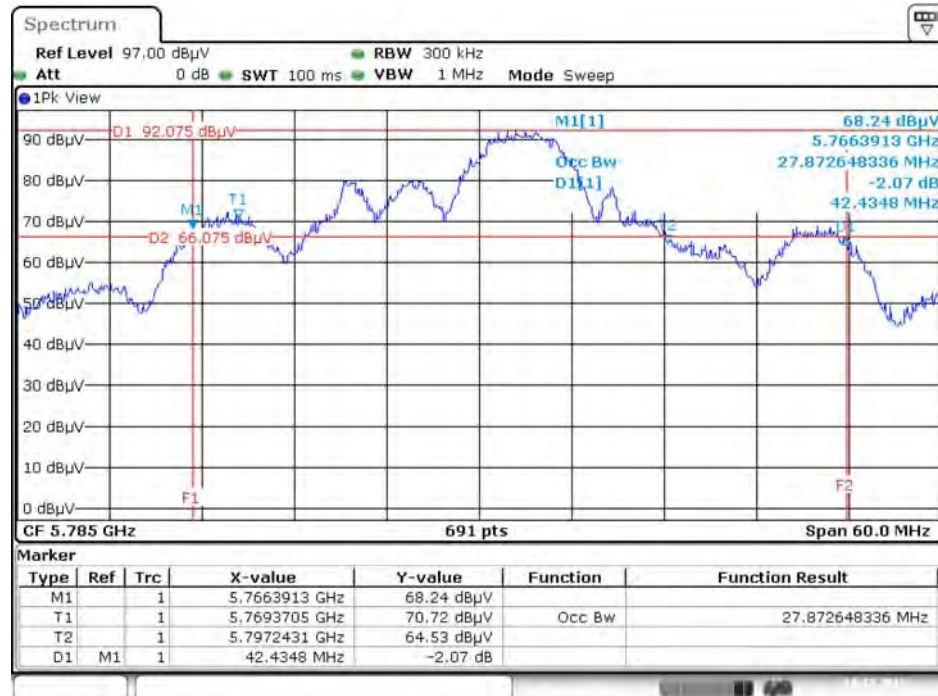
Date: 10.DEC.2015 21:16:36

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5745 MHz



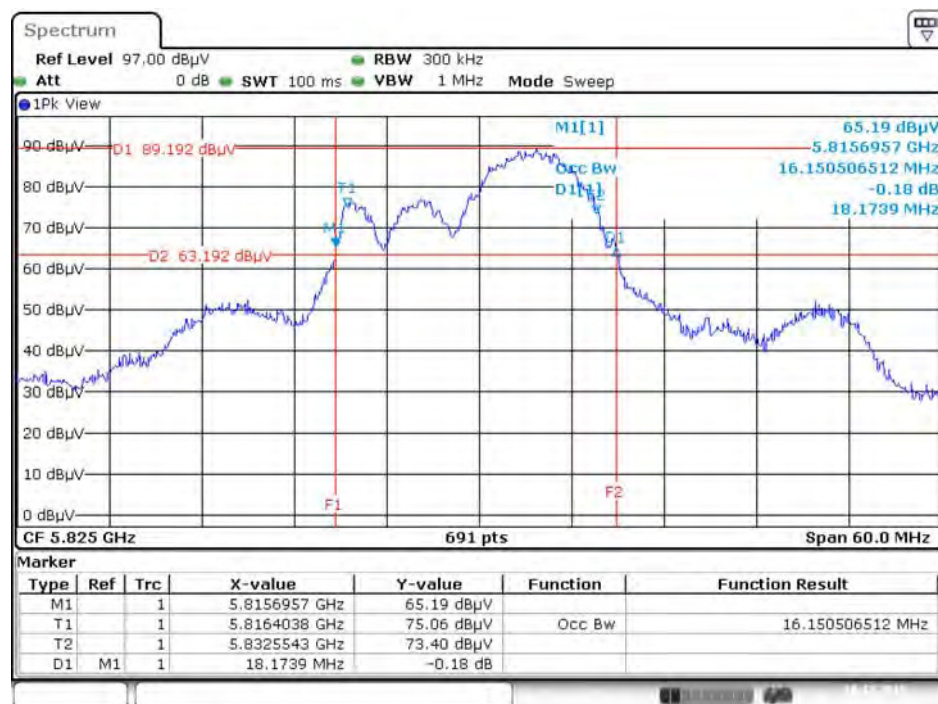
Date: 10.DEC.2015 21:57:16

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5785 MHz



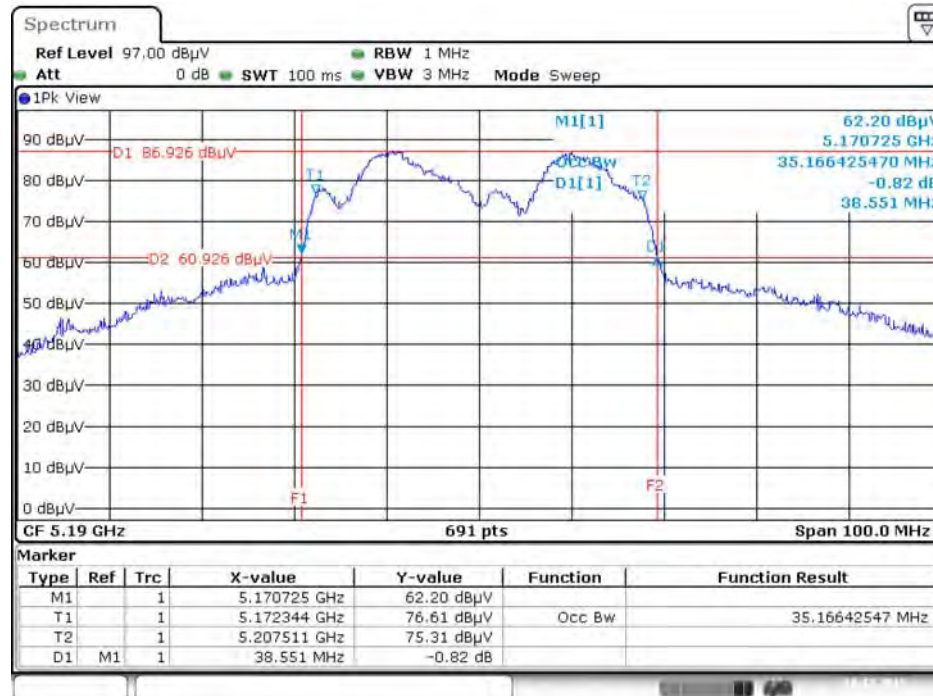
Date: 10.DEC.2015 21:59:34

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5825 MHz



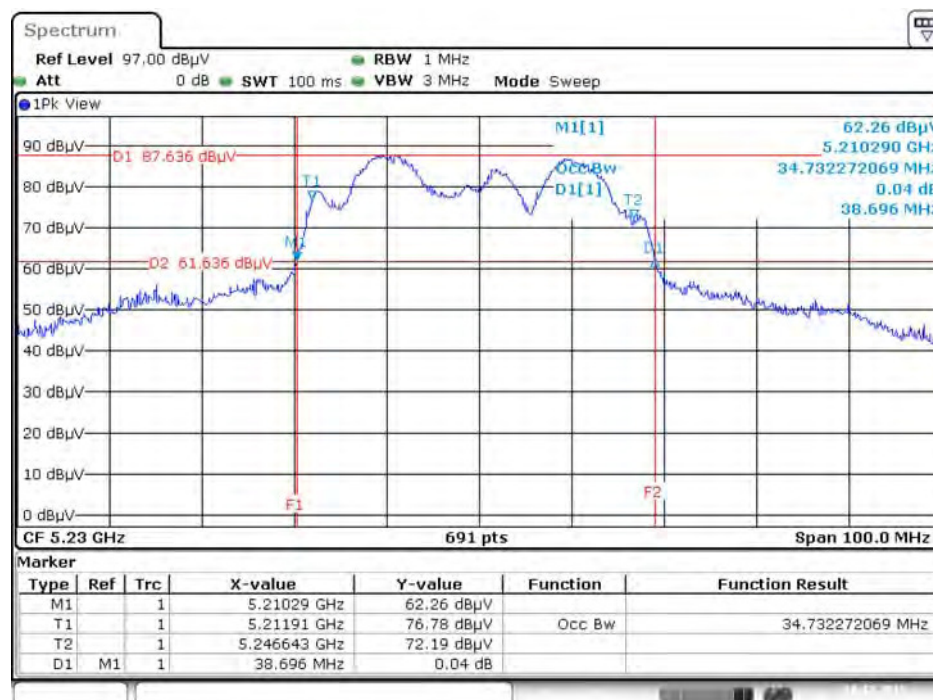
Date: 10.DEC.2015 22:01:11

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5190 MHz



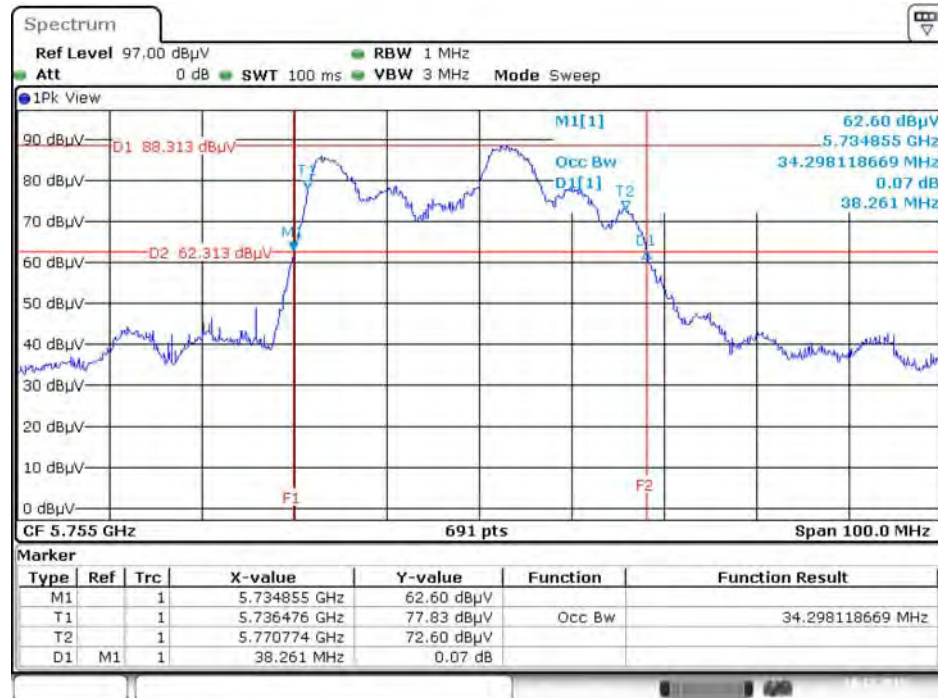
Date: 10.DEC.2015 22:21:34

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5230 MHz



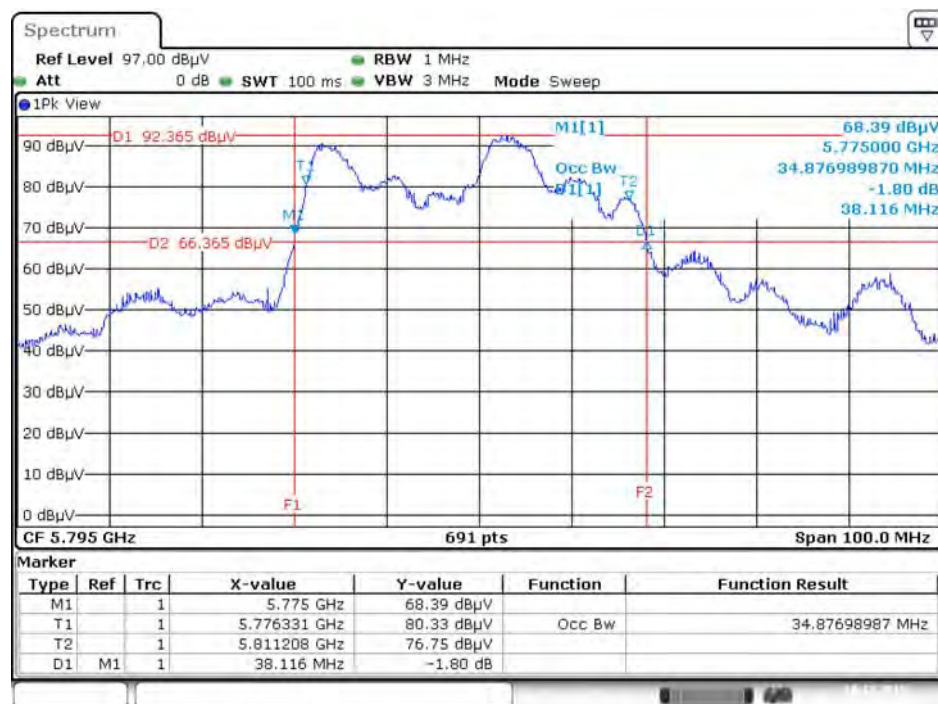
Date: 10.DEC.2015 22:24:10

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5755 MHz



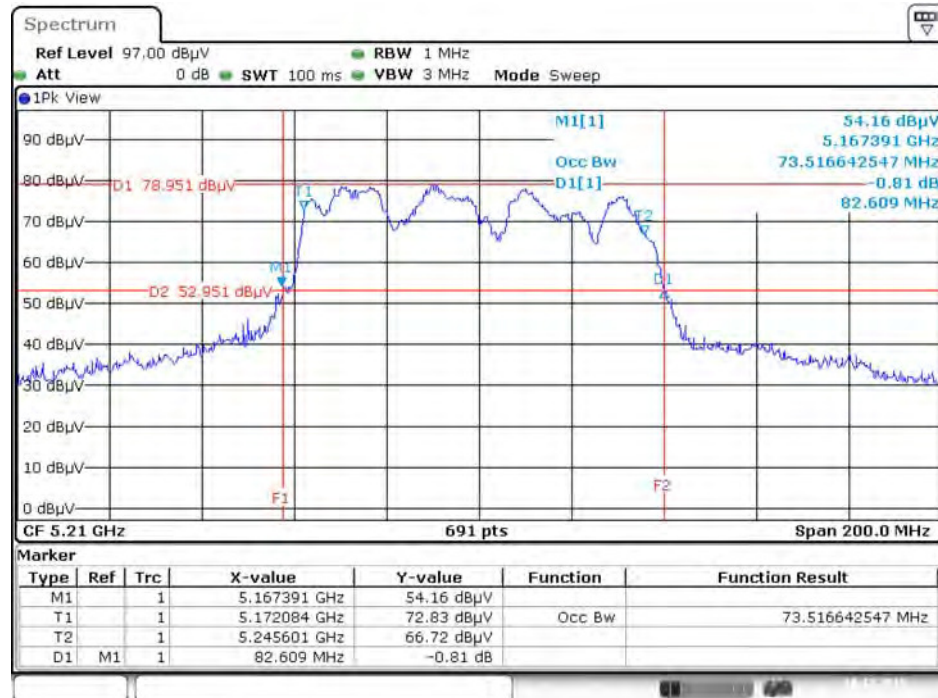
Date: 10.DEC.2015 23:01:38

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5795 MHz

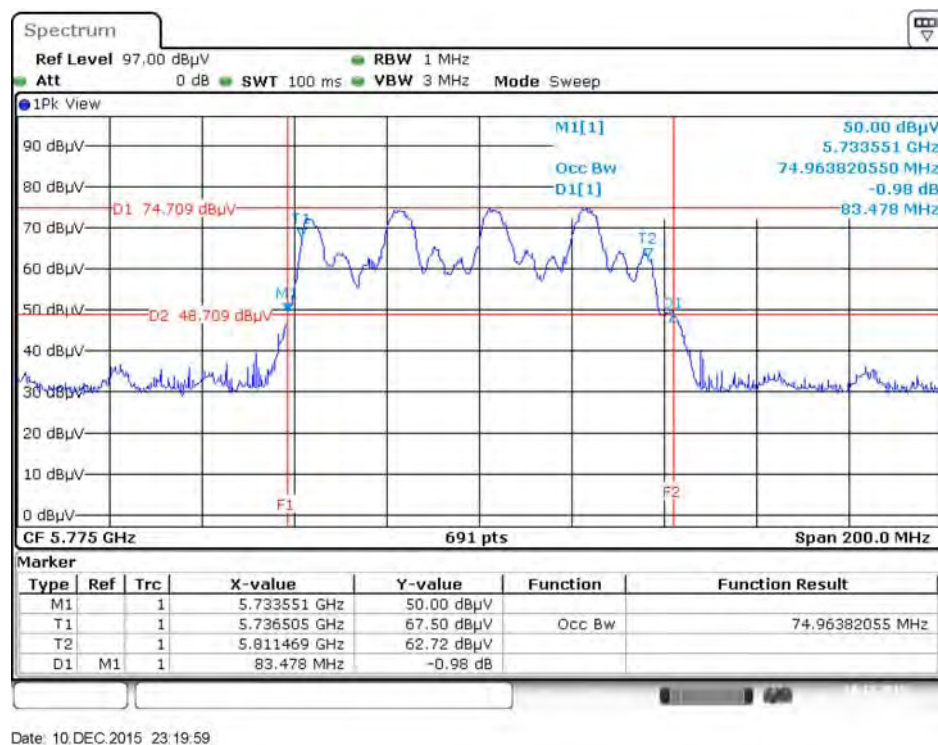


Date: 10.DEC.2015 23:03:09

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5210 MHz

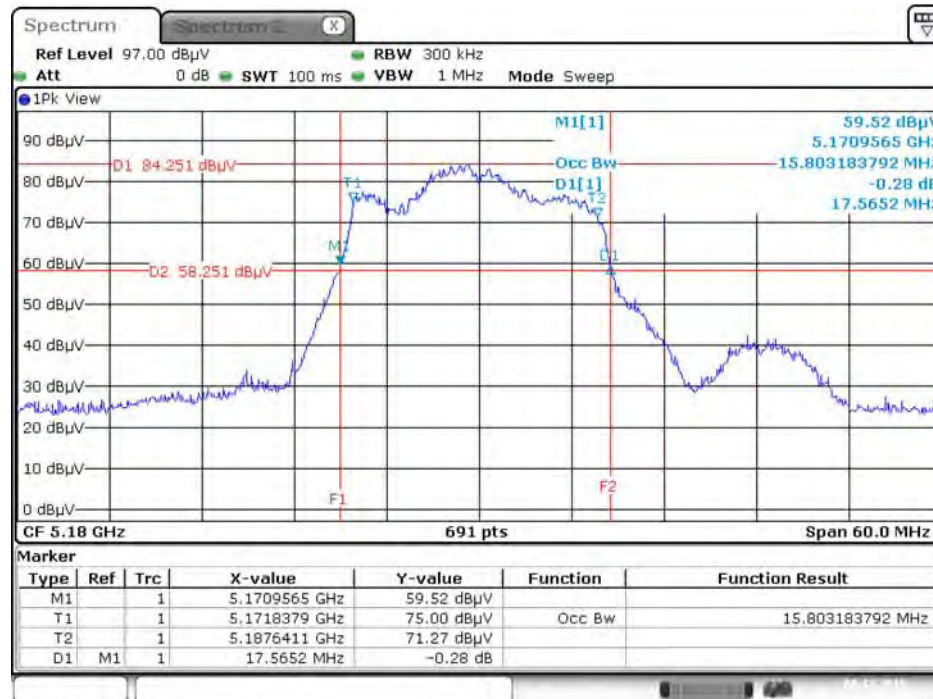


26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5775 MHz



Mode 11: EUT 2 + Set 12 PIFA Antenna / Chain1:5.96 dBi, Chain2:5.97 dBi, Chain3:6.25 dBi, Chain4:6.08 dBi

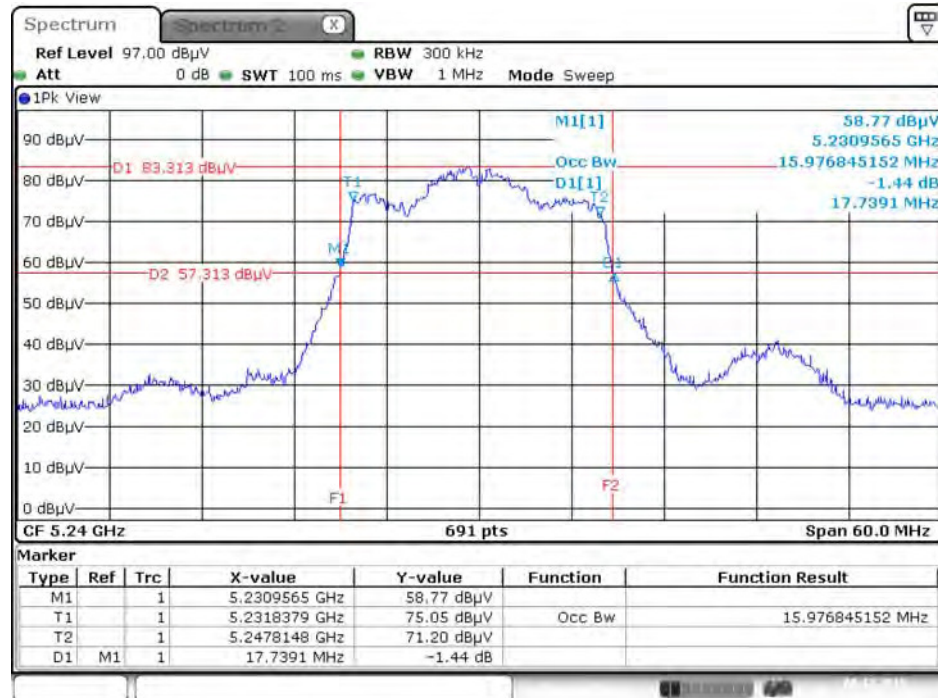
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5180 MHz



26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5200 MHz

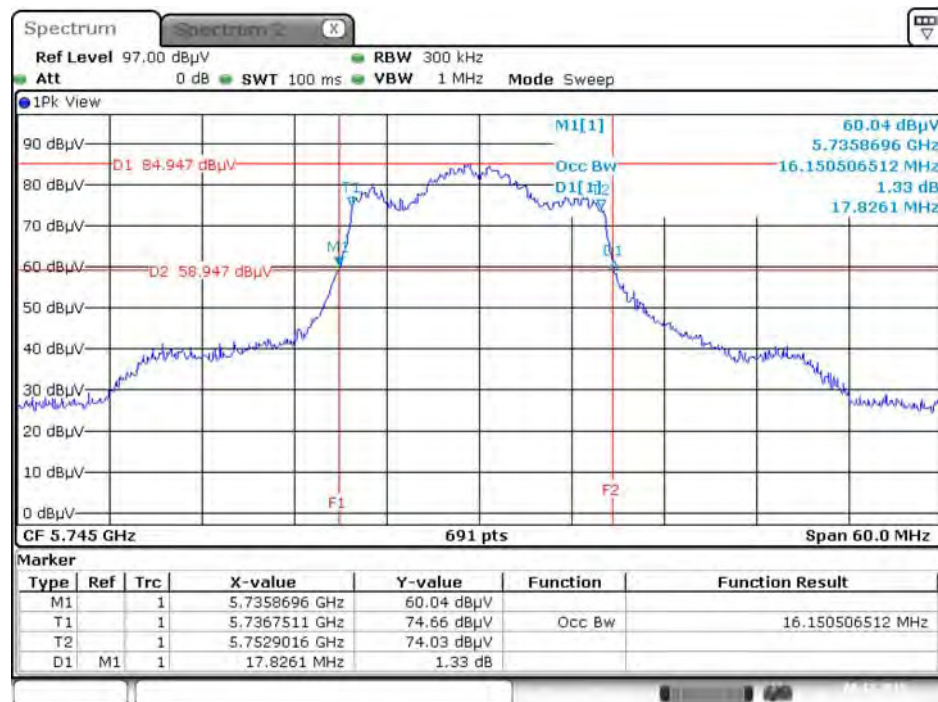


26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5240 MHz



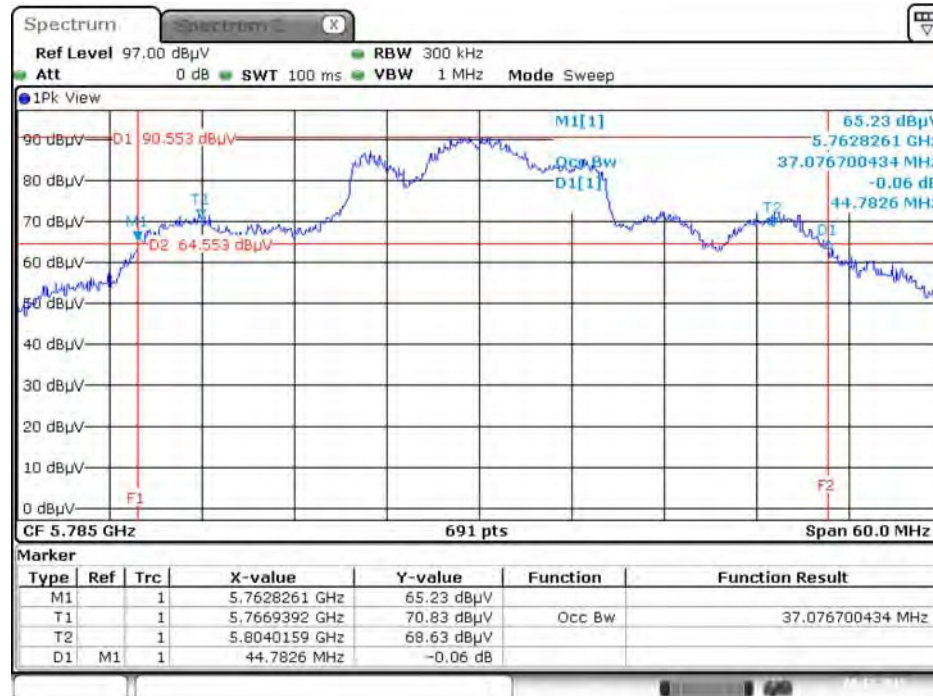
Date: 8.DEC.2015 00:37:33

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5745 MHz



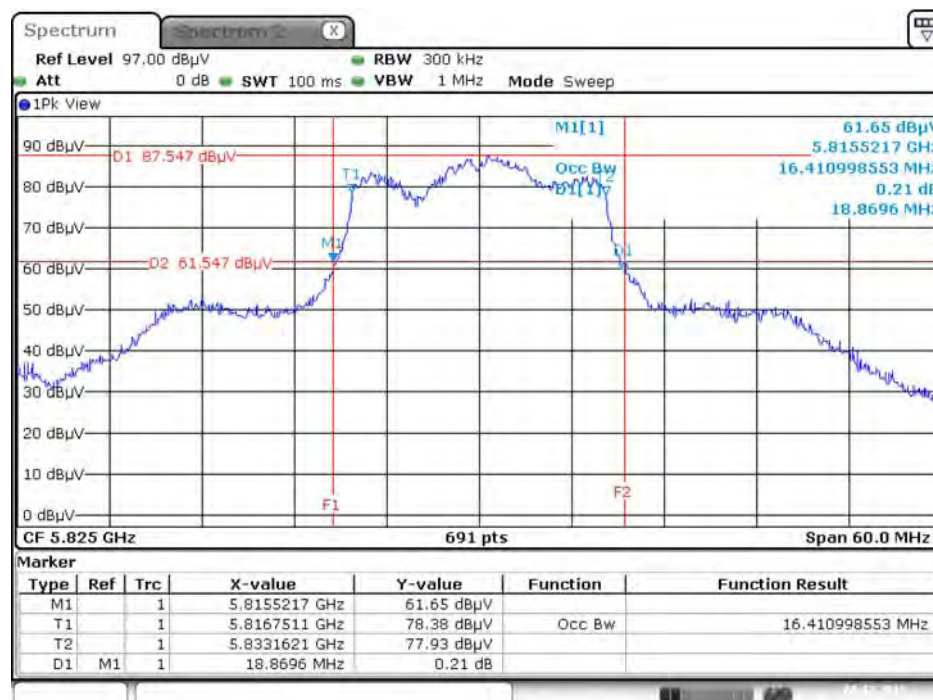
Date: 8.DEC.2015 00:40:58

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5785 MHz



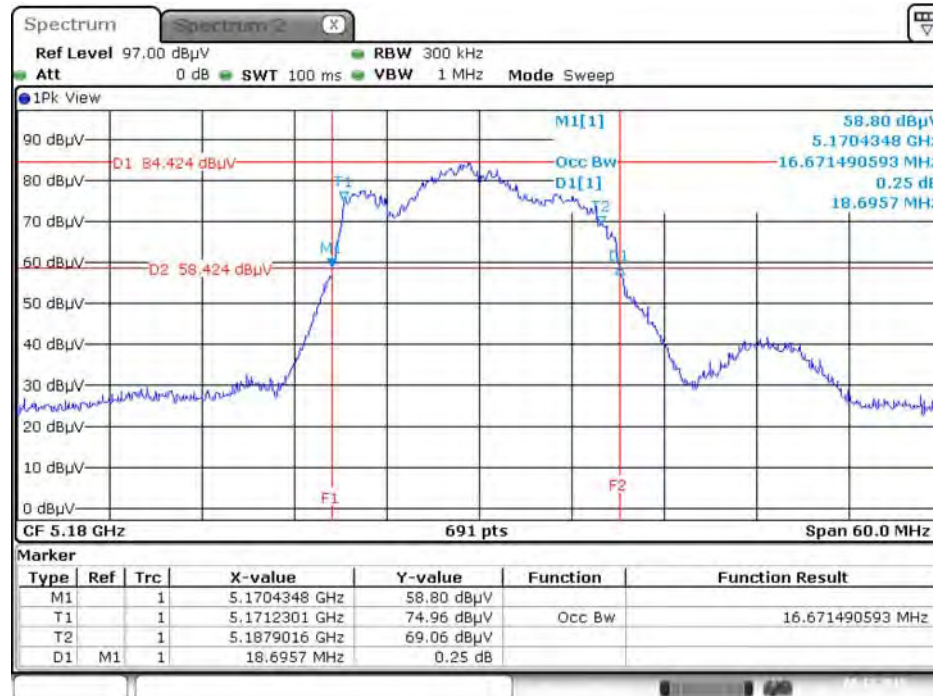
Date: 8.DEC.2015 00:41:19

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5825 MHz



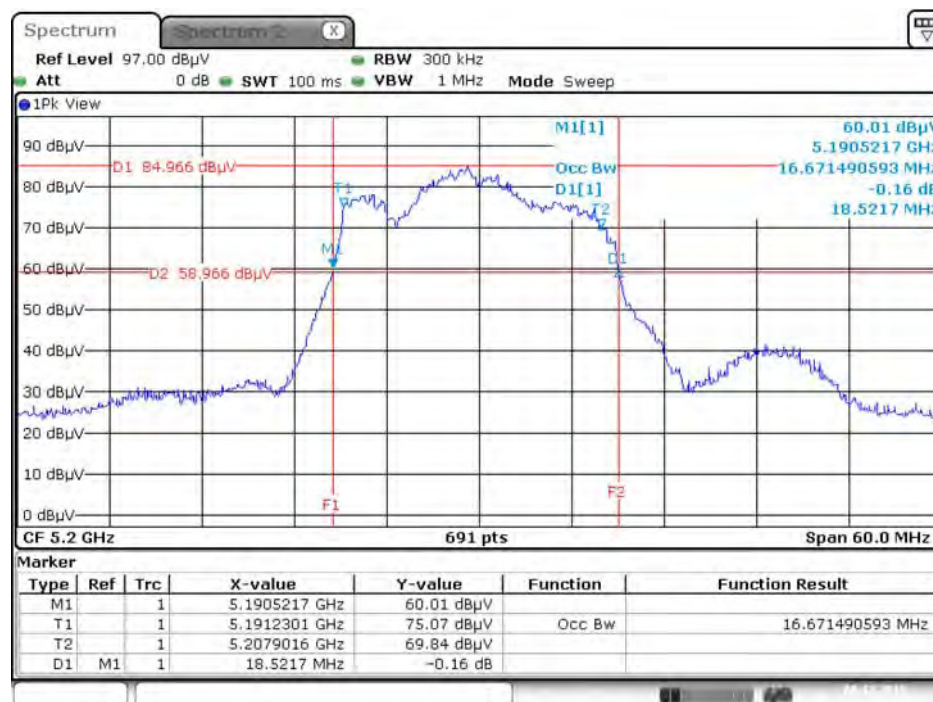
Date: 8.DEC.2015 00:41:42

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5180 MHz



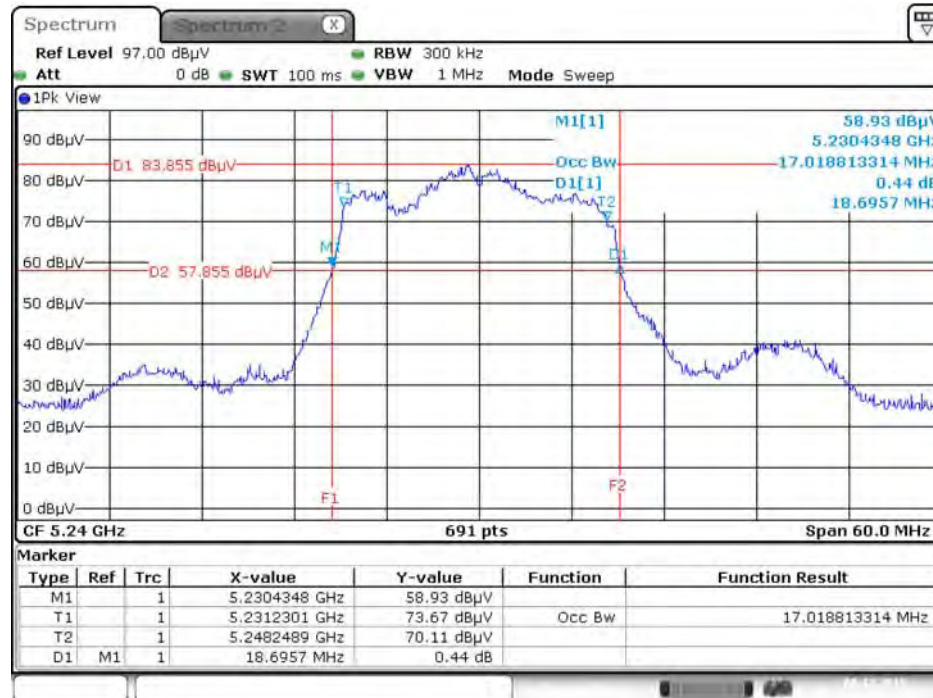
Date: 8.DEC.2015 01:01:43

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5200 MHz



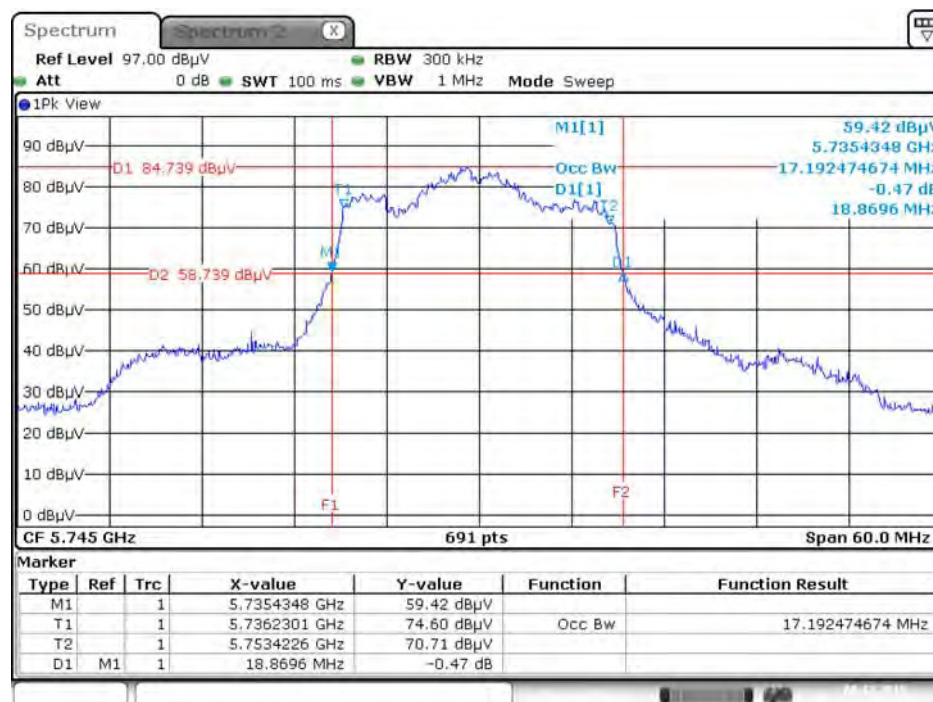
Date: 8.DEC.2015 01:02:05

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5240 MHz



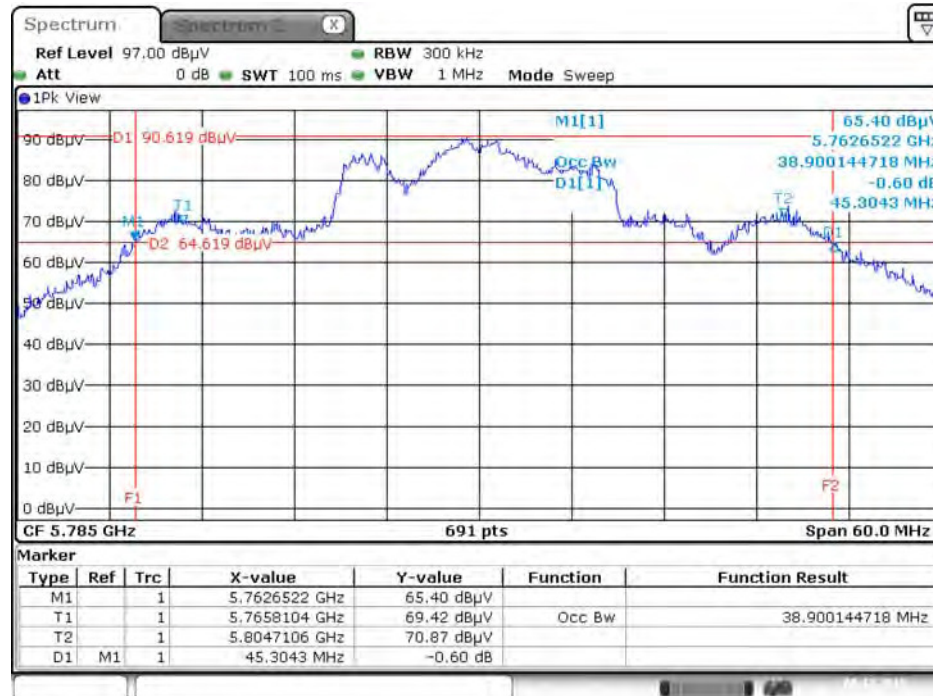
Date: 8 DEC 2015 01:02:23

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5745 MHz



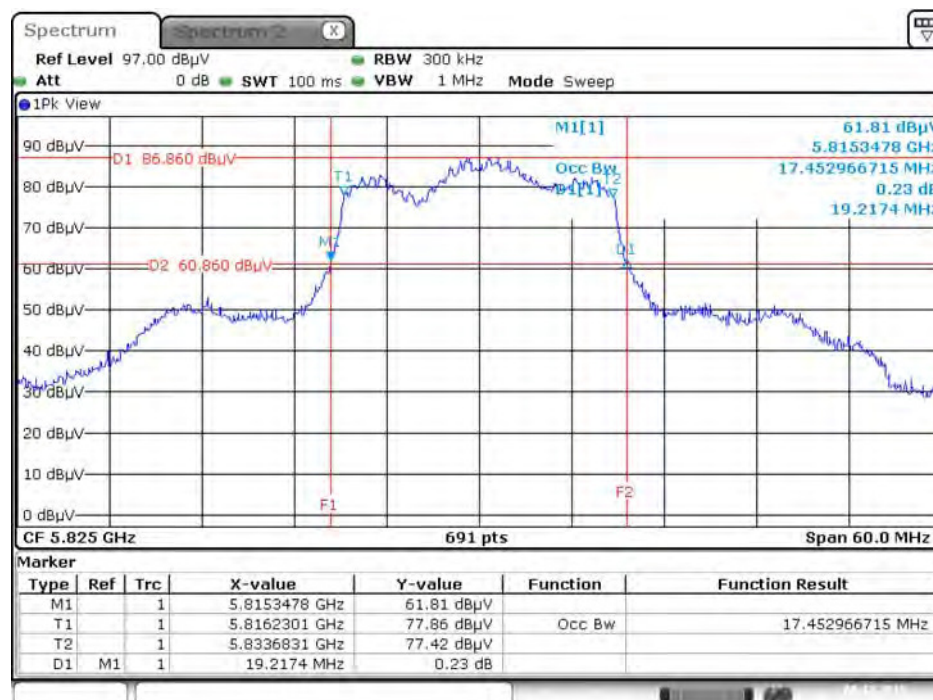
Date: 8 DEC 2015 01:05:49

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5785 MHz



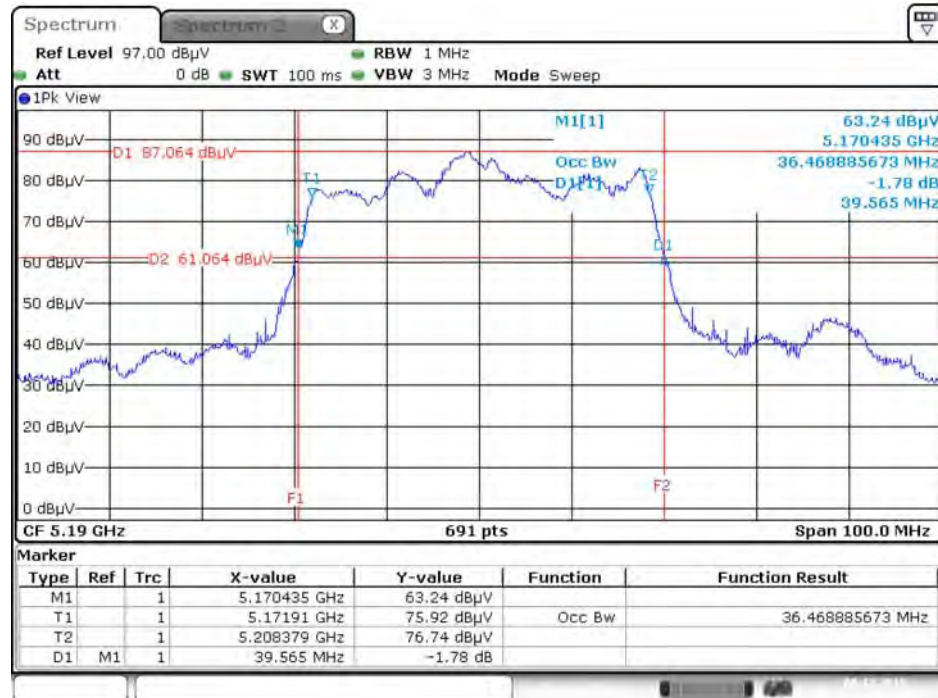
Date: 8.DEC.2015 01:06:11

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5825 MHz



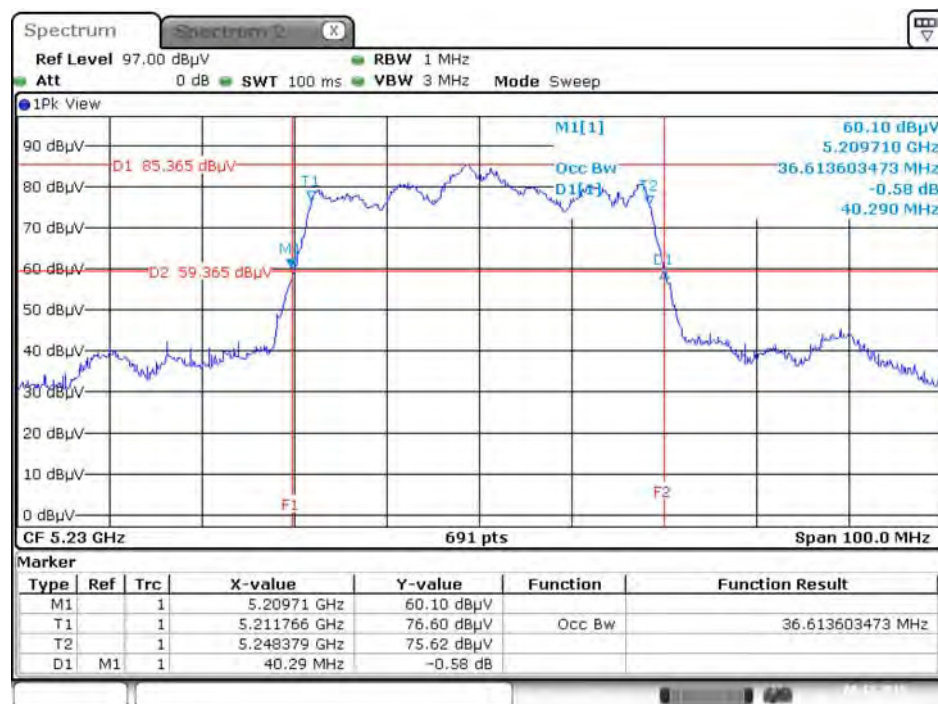
Date: 8.DEC.2015 01:06:34

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5190 MHz



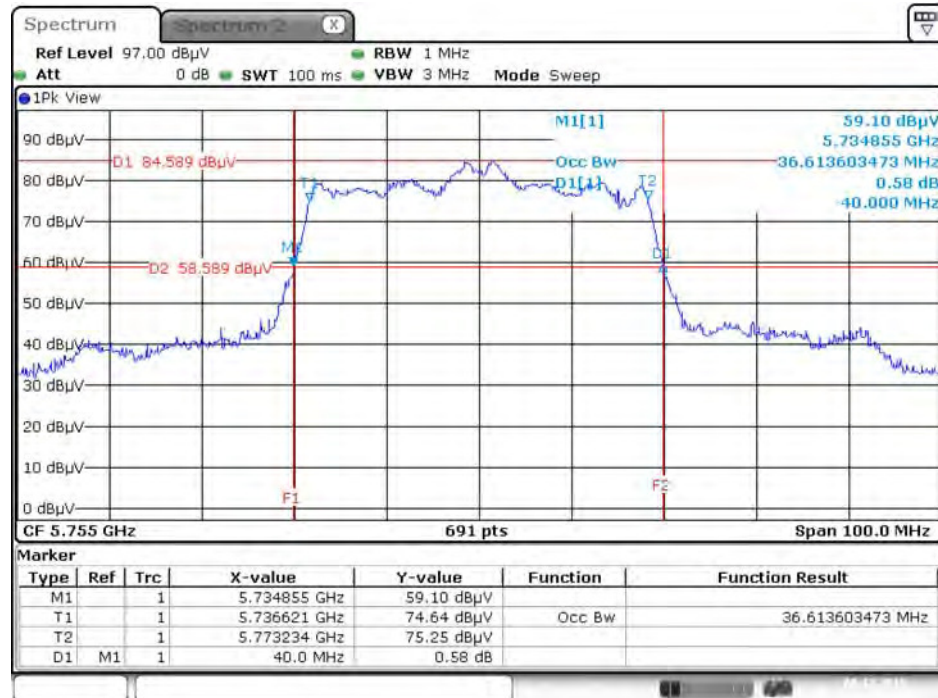
Date: 8.DEC.2015 01:07:21

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5230 MHz



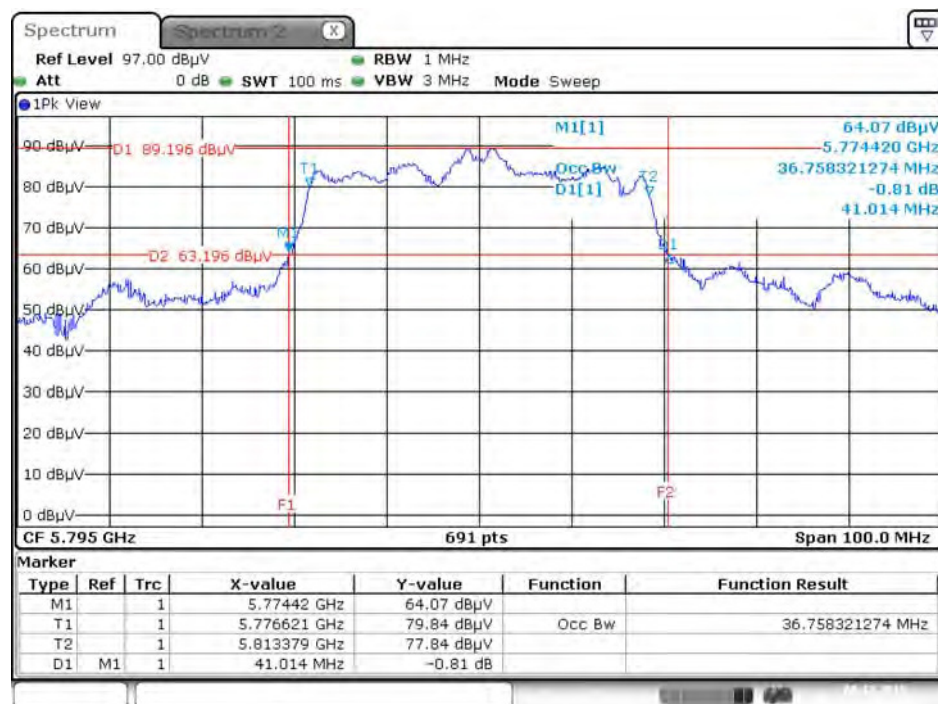
Date: 8.DEC.2015 01:07:42

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5755 MHz



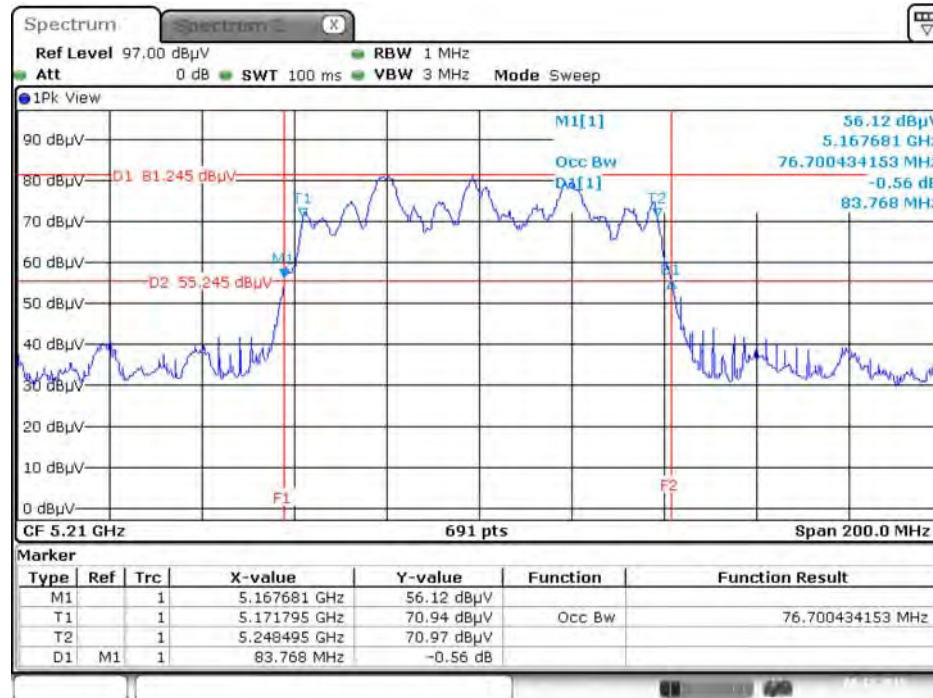
Date: 8.DEC.2015 01:10:59

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5795 MHz



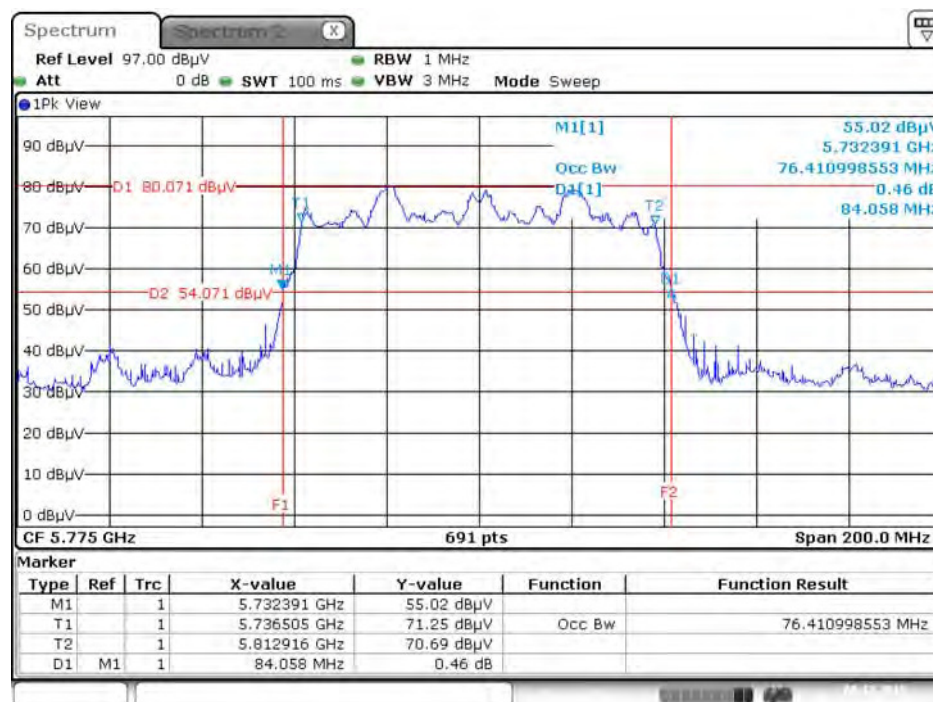
Date: 8.DEC.2015 01:11:21

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5210 MHz



Date: 8.DEC.2015 01:12:09

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5775 MHz



Date: 8.DEC.2015 01:15:41

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	100kHz
VBW	$\geq 3 \times \text{RBW}$
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

Temperature	25°C	Humidity	45%
Test Engineer	Roki Liu		
Test Mode	Mode 1: EUT 1 + Set 1 Sector Antenna / 6.5 dBi		

Mode	Frequency	6dB Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11a	5745 MHz	4.41	500	Complies
	5785 MHz	4.11	500	Complies
	5825 MHz	5.68	500	Complies
802.11ac MCS0/Nss1 VHT20	5745 MHz	4.41	500	Complies
	5785 MHz	4.12	500	Complies
	5825 MHz	3.48	500	Complies
802.11ac MCS0/Nss1 VHT40	5755 MHz	35.01	500	Complies
	5795 MHz	35.48	500	Complies
802.11ac MCS0/Nss1 VHT80	5775 MHz	71.59	500	Complies

Temperature	25°C	Humidity	45%
Test Engineer	Roki Liu		
Test Mode	Mode 2: EUT 1 + Set 2 Sector Antenna / 4.5 dBi		

Mode	Frequency	6dB Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11a	5745 MHz	4.41	500	Complies
	5785 MHz	4.12	500	Complies
	5825 MHz	4.46	500	Complies
802.11ac MCS0/Nss1 VHT20	5745 MHz	4.41	500	Complies
	5785 MHz	4.12	500	Complies
	5825 MHz	5.68	500	Complies
802.11ac MCS0/Nss1 VHT40	5755 MHz	35.13	500	Complies
	5795 MHz	35.48	500	Complies
802.11ac MCS0/Nss1 VHT80	5775 MHz	69.57	500	Complies

Temperature	25°C	Humidity	45%
Test Engineer	Roki Liu		
Test Mode	Mode 3: EUT 1 + Set 3 Sector Antenna / 5.5 dBi		

Mode	Frequency	6dB Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11a	5745 MHz	5.16	500	Complies
	5785 MHz	4.12	500	Complies
	5825 MHz	4.99	500	Complies
802.11ac MCS0/Nss1 VHT20	5745 MHz	5.22	500	Complies
	5785 MHz	4.12	500	Complies
	5825 MHz	3.48	500	Complies
802.11ac MCS0/Nss1 VHT40	5755 MHz	35.01	500	Complies
	5795 MHz	35.48	500	Complies
802.11ac MCS0/Nss1 VHT80	5775 MHz	72.75	500	Complies

Temperature	25°C	Humidity	45%
Test Engineer	Roki Liu		
Test Mode	Mode 4: EUT 1 + Set 4 Sector Antenna / 7.5 dBi		

Mode	Frequency	6dB Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11a	5745 MHz	4.06	500	Complies
	5785 MHz	4.12	500	Complies
	5825 MHz	4.46	500	Complies
802.11ac MCS0/Nss1 VHT20	5745 MHz	5.22	500	Complies
	5785 MHz	4.12	500	Complies
	5825 MHz	3.83	500	Complies
802.11ac MCS0/Nss1 VHT40	5755 MHz	33.28	500	Complies
	5795 MHz	33.97	500	Complies
802.11ac MCS0/Nss1 VHT80	5775 MHz	67.54	500	Complies

Temperature	25°C	Humidity	45%
Test Engineer	Roki Liu		
Test Mode	Mode 5: EUT 1 + Set 5 Panel Antenna / 6 dBi		

Mode	Frequency	6dB Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11a	5745 MHz	5.16	500	Complies
	5785 MHz	4.12	500	Complies
	5825 MHz	4.99	500	Complies
802.11ac MCS0/Nss1 VHT20	5745 MHz	5.10	500	Complies
	5785 MHz	4.12	500	Complies
	5825 MHz	3.83	500	Complies
802.11ac MCS0/Nss1 VHT40	5755 MHz	35.25	500	Complies
	5795 MHz	35.48	500	Complies
802.11ac MCS0/Nss1 VHT80	5775 MHz	71.59	500	Complies

Temperature	25°C	Humidity	45%
Test Engineer	Roki Liu		
Test Mode	Mode 6: EUT 1 + Set 7 Sector Antenna / 11.5 dBi		

Mode	Frequency	6dB Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11a	5745 MHz	5.39	500	Complies
	5785 MHz	4.41	500	Complies
	5825 MHz	4.46	500	Complies
802.11ac MCS0/Nss1 VHT20	5745 MHz	4.75	500	Complies
	5785 MHz	5.45	500	Complies
	5825 MHz	5.68	500	Complies
802.11ac MCS0/Nss1 VHT40	5755 MHz	35.01	500	Complies
	5795 MHz	34.44	500	Complies
802.11ac MCS0/Nss1 VHT80	5775 MHz	73.04	500	Complies

Temperature	25°C	Humidity	45%
Test Engineer	Roki Liu		
Test Mode	Mode 7: EUT 1 + Set 8 Sector Antenna / 12 dBi		

Mode	Frequency	6dB Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11a	5745 MHz	4.06	500	Complies
	5785 MHz	4.41	500	Complies
	5825 MHz	4.46	500	Complies
802.11ac MCS0/Nss1 VHT20	5745 MHz	4.75	500	Complies
	5785 MHz	5.45	500	Complies
	5825 MHz	5.68	500	Complies
802.11ac MCS0/Nss1 VHT40	5755 MHz	35.13	500	Complies
	5795 MHz	35.71	500	Complies
802.11ac MCS0/Nss1 VHT80	5775 MHz	73.04	500	Complies

Temperature	25°C	Humidity	45%
Test Engineer	Roki Liu		
Test Mode	Mode 8: EUT 1 + Set 9 Sector Antenna / 4 dBi		

Mode	Frequency	6dB Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11a	5745 MHz	4.41	500	Complies
	5785 MHz	4.12	500	Complies
	5825 MHz	5.68	500	Complies
802.11ac MCS0/Nss1 VHT20	5745 MHz	4.41	500	Complies
	5785 MHz	4.12	500	Complies
	5825 MHz	3.83	500	Complies
802.11ac MCS0/Nss1 VHT40	5755 MHz	33.39	500	Complies
	5795 MHz	35.48	500	Complies
802.11ac MCS0/Nss1 VHT80	5775 MHz	71.59	500	Complies

Temperature	25°C	Humidity	45%
Test Engineer	Roki Liu		
Test Mode	Mode 9: EUT 1 + Set 10 Panel Antenna / 23 dBi		

Mode	Frequency	6dB Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11a	5745 MHz	4.41	500	Complies
	5785 MHz	5.39	500	Complies
	5825 MHz	6.26	500	Complies
802.11ac MCS0/Nss1 VHT20	5745 MHz	4.75	500	Complies
	5785 MHz	5.39	500	Complies
	5825 MHz	5.86	500	Complies
802.11ac MCS0/Nss1 VHT40	5755 MHz	29.45	500	Complies
	5795 MHz	24.23	500	Complies
802.11ac MCS0/Nss1 VHT80	5775 MHz	62.03	500	Complies

Temperature	25°C	Humidity	45%
Test Engineer	Roki Liu		
Test Mode	Mode 10: EUT 1 + Set 11 Omni Antenna / 6 dBi		

Mode	Frequency	6dB Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11a	5745 MHz	4.41	500	Complies
	5785 MHz	4.12	500	Complies
	5825 MHz	4.41	500	Complies
802.11ac MCS0/Nss1 VHT20	5745 MHz	4.41	500	Complies
	5785 MHz	4.12	500	Complies
	5825 MHz	3.83	500	Complies
802.11ac MCS0/Nss1 VHT40	5755 MHz	35.01	500	Complies
	5795 MHz	33.97	500	Complies
802.11ac MCS0/Nss1 VHT80	5775 MHz	71.59	500	Complies

Temperature	25°C	Humidity	45%
Test Engineer	Roki Liu		
Test Mode	Mode 11: EUT 2 + Set 12 PIFA Antenna / Chain1:5.96 dBi, Chain2:5.97 dBi, Chain3:6.25 dBi, Chain4:6.08 dBi		

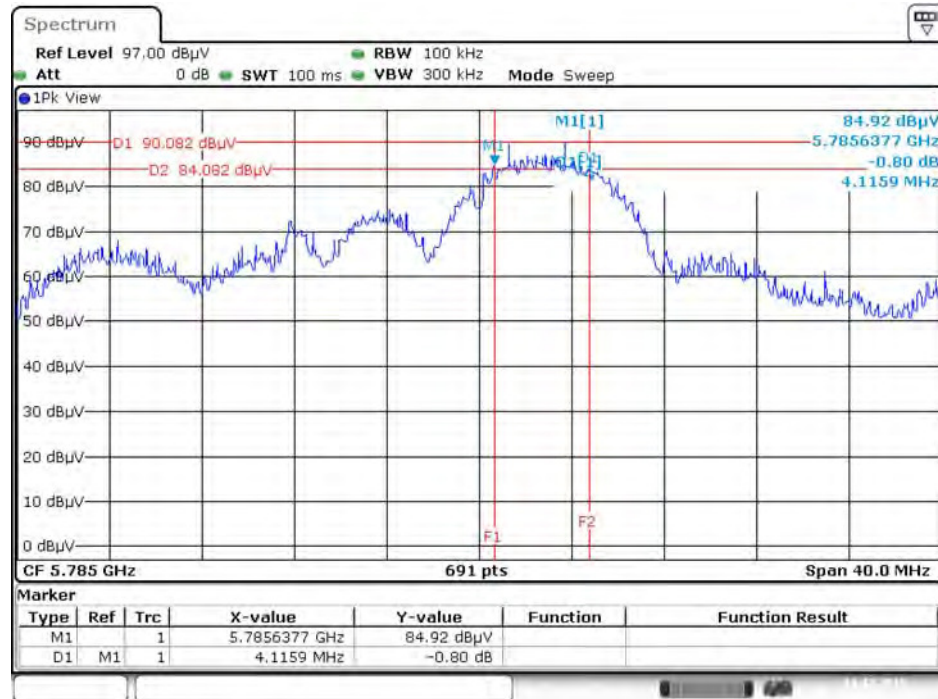
Mode	Frequency	6dB Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11a	5745 MHz	3.54	500	Complies
	5785 MHz	10.90	500	Complies
	5825 MHz	13.45	500	Complies
802.11ac MCS0/Nss1 VHT20	5745 MHz	3.54	500	Complies
	5785 MHz	10.90	500	Complies
	5825 MHz	13.45	500	Complies
802.11ac MCS0/Nss1 VHT40	5755 MHz	30.73	500	Complies
	5795 MHz	31.88	500	Complies
802.11ac MCS0/Nss1 VHT80	5775 MHz	61.16	500	Complies

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

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

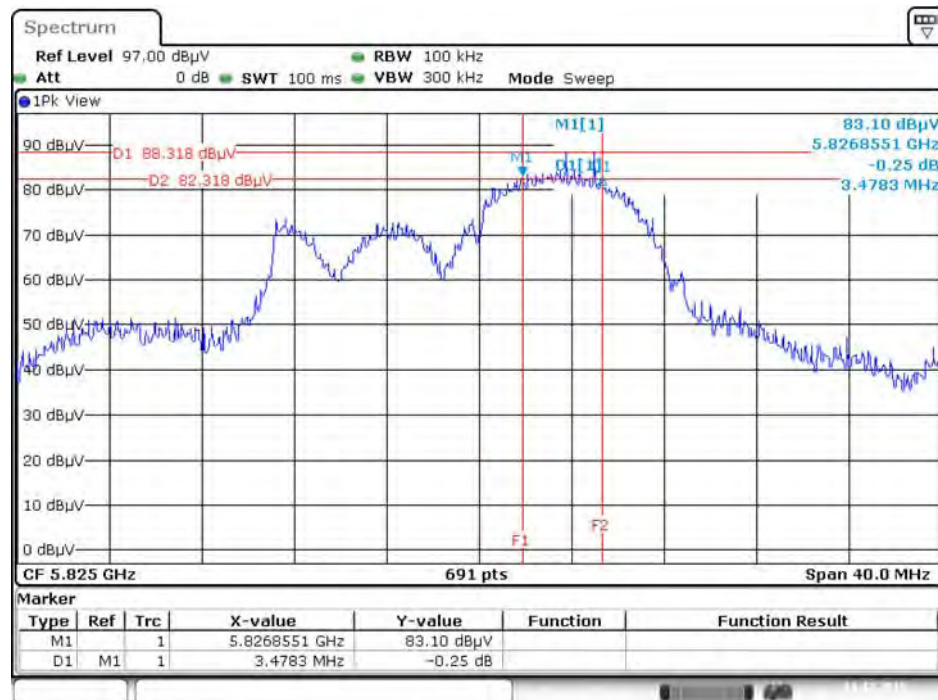
Mode 1: EUT 1 + Set 1 Sector Antenna / 6.5 dBi

6 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5785 MHz



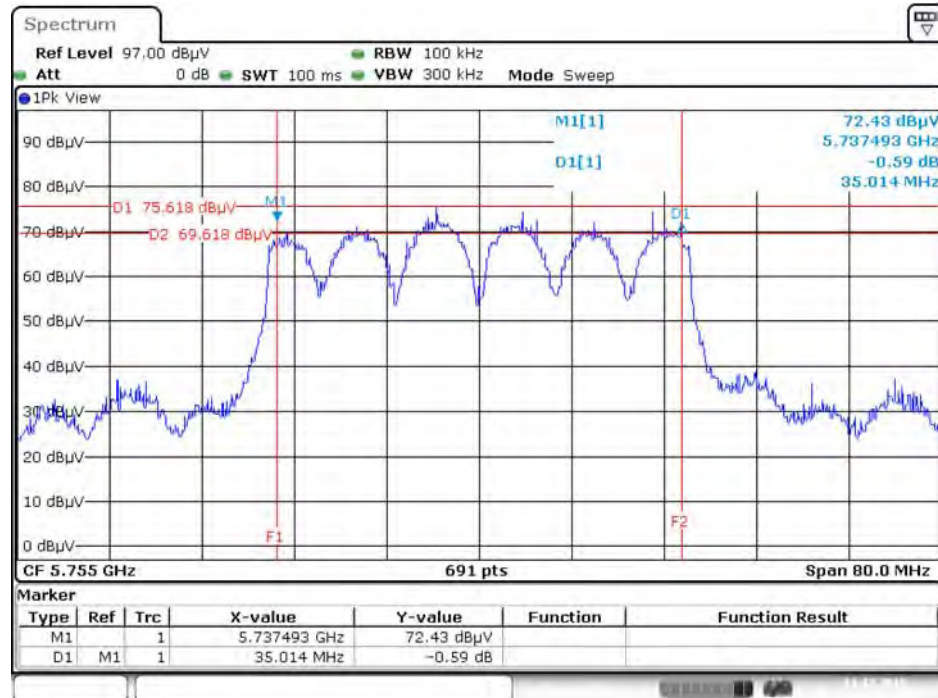
Date: 11.DEC.2015 00:25:29

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5825 MHz



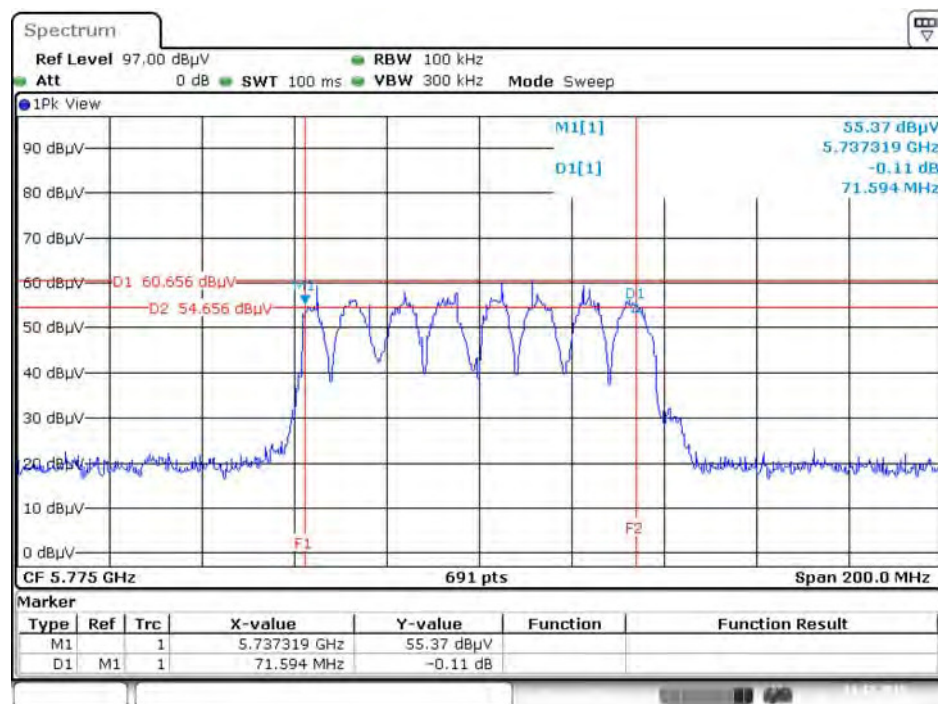
Date: 11.DEC.2015 00:37:53

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5755 MHz



Date: 11.DEC.2015 00:44:20

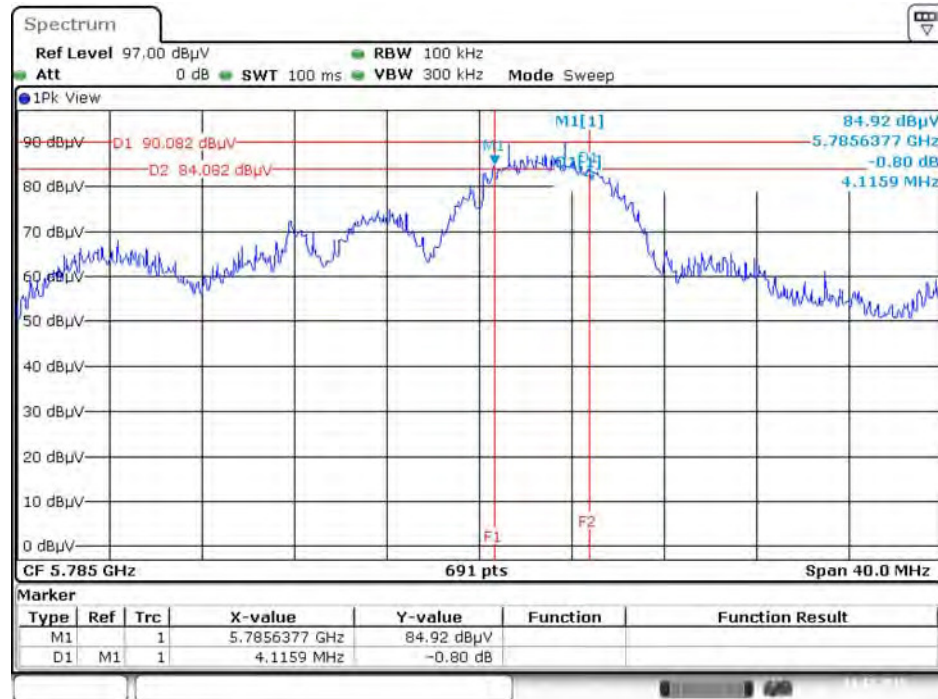
6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5775 MHz



Date: 11.DEC.2015 00:52:38

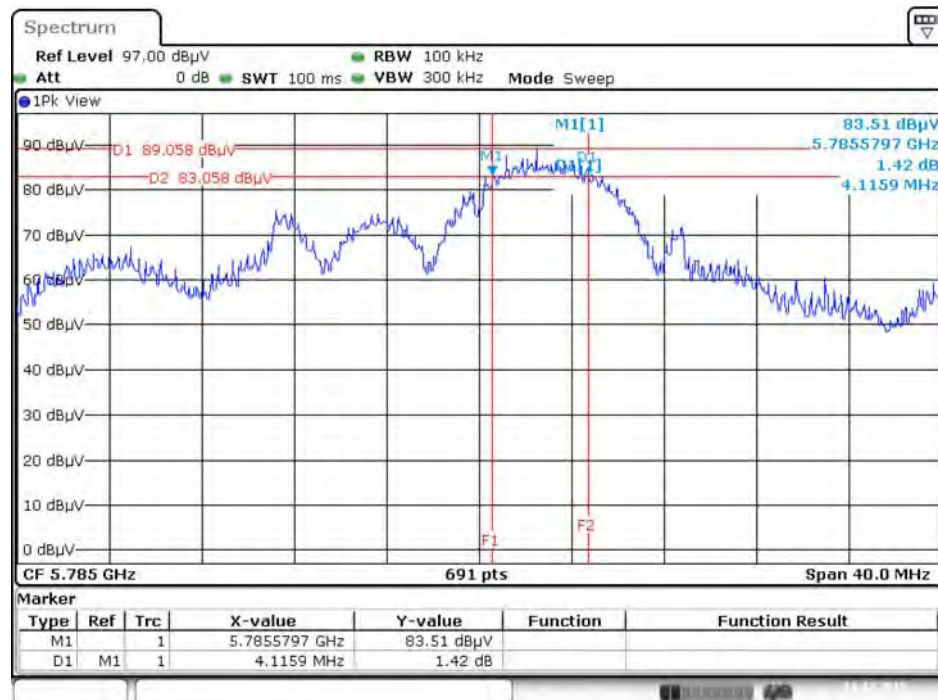
Mode 2: EUT 1 + Set 2 Sector Antenna / 4.5 dBi

6 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5785 MHz



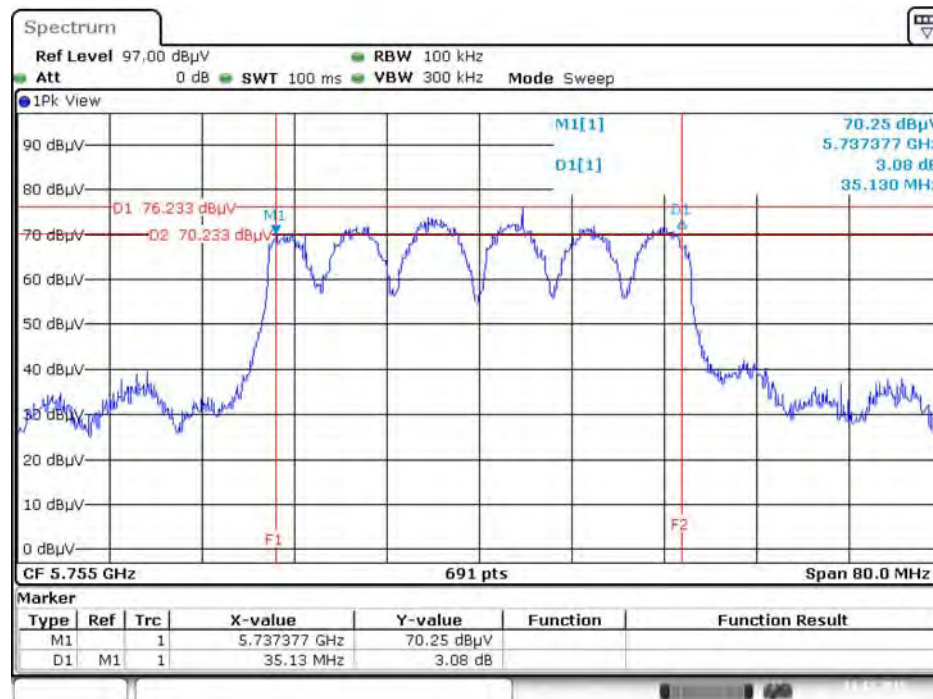
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6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5785 MHz



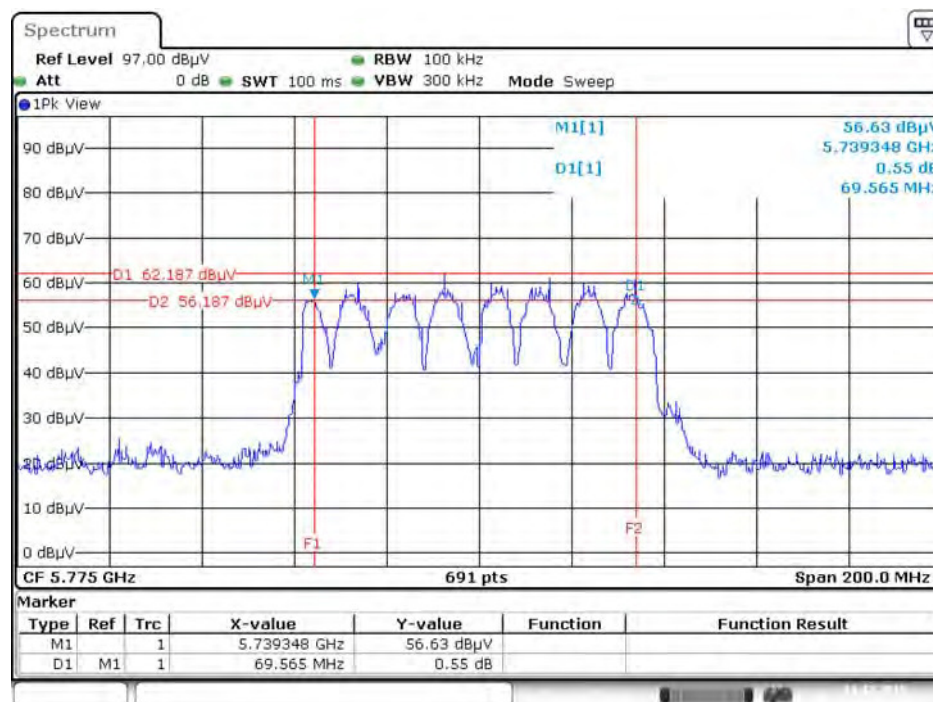
Date: 11.DEC.2015 00:36:21

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5755 MHz



Date: 11.DEC.2015 00:45:21

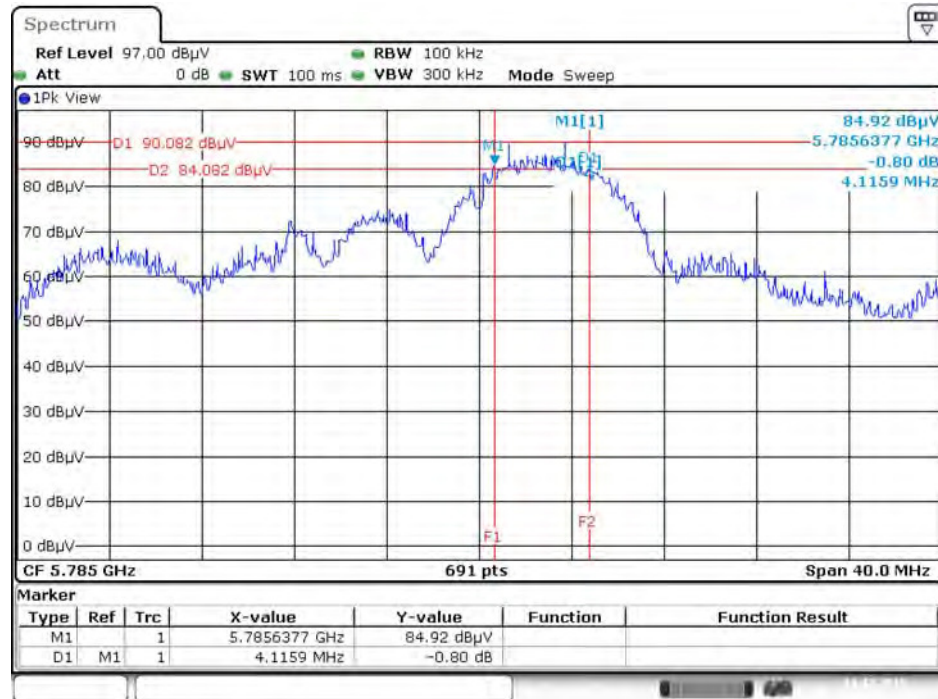
6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5775 MHz



Date: 11.DEC.2015 00:53:31

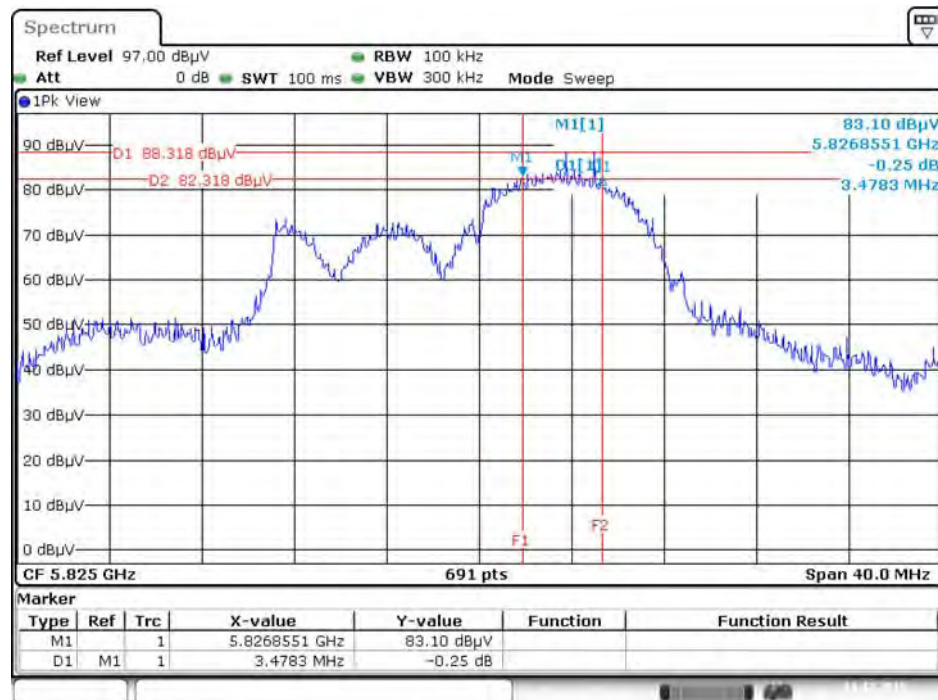
Mode 3: EUT 1 + Set 3 Sector Antenna / 5.5 dBi

6 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5785 MHz



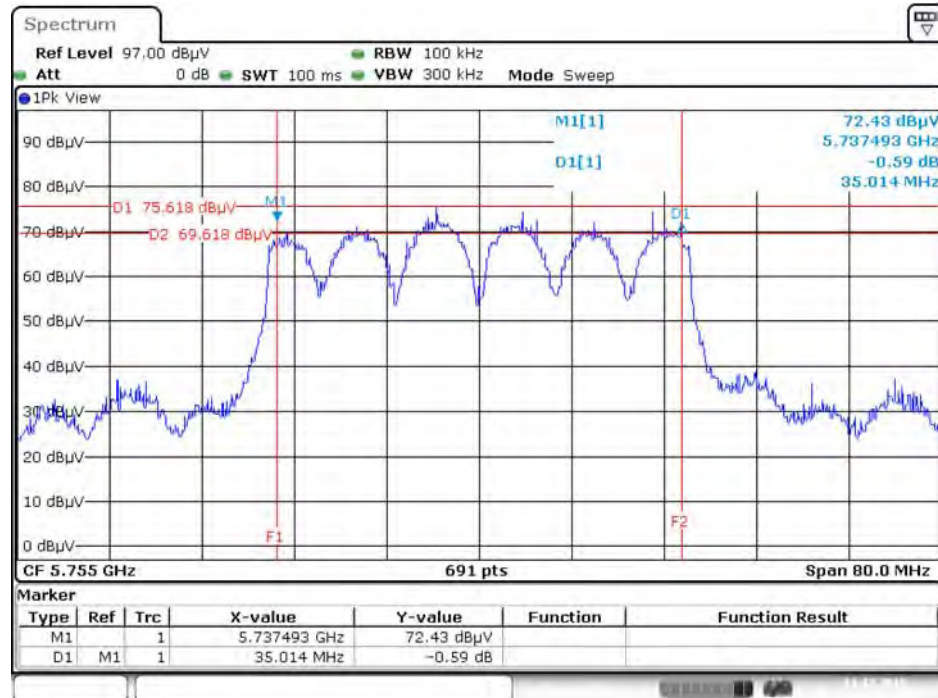
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6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5825 MHz



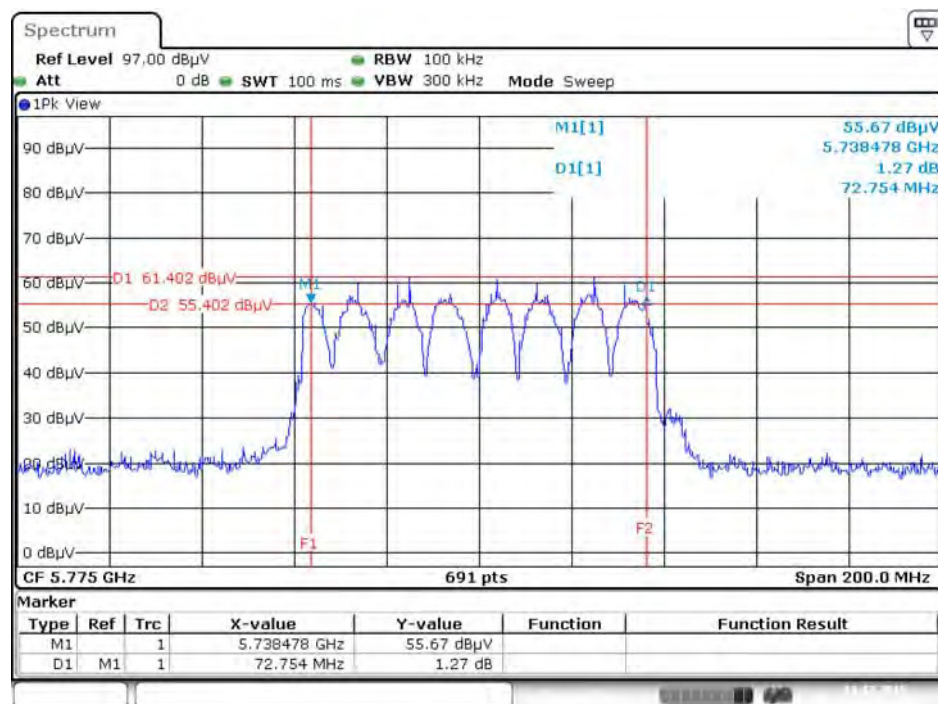
Date: 11.DEC.2015 00:37:53

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5755 MHz



Date: 11.DEC.2015 00:44:20

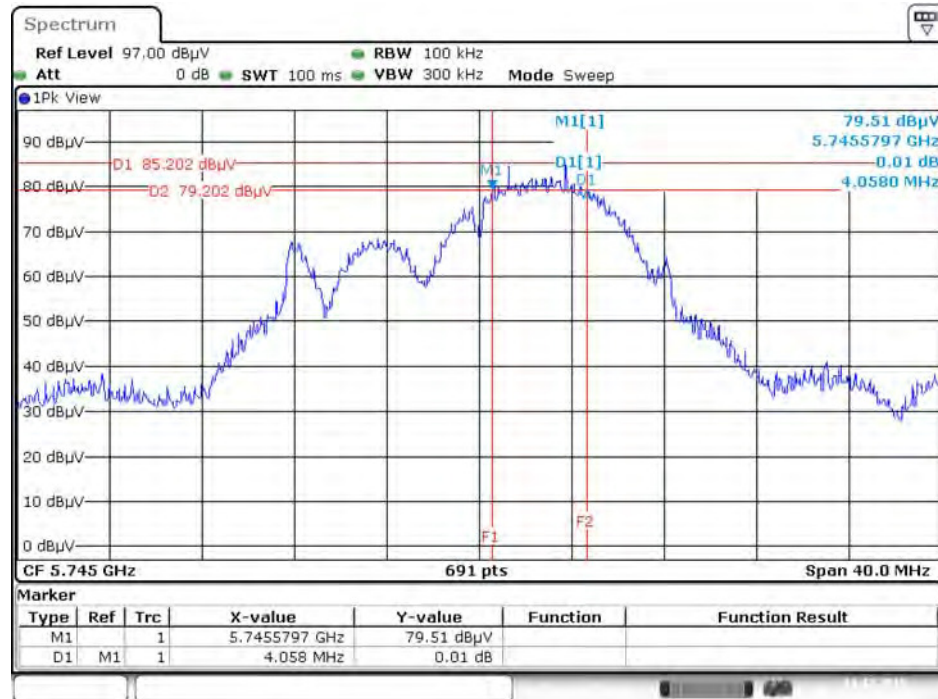
6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5775 MHz



Date: 11.DEC.2015 00:52:24

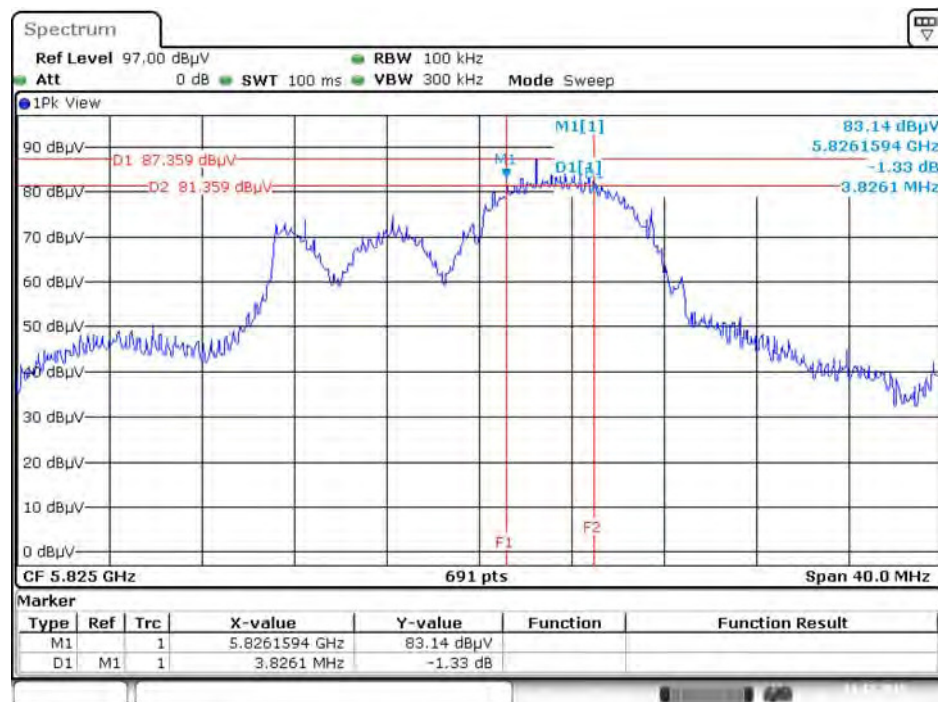
Mode 4: EUT 1 + Set 4 Sector Antenna / 7.5 dBi

6 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5745 MHz



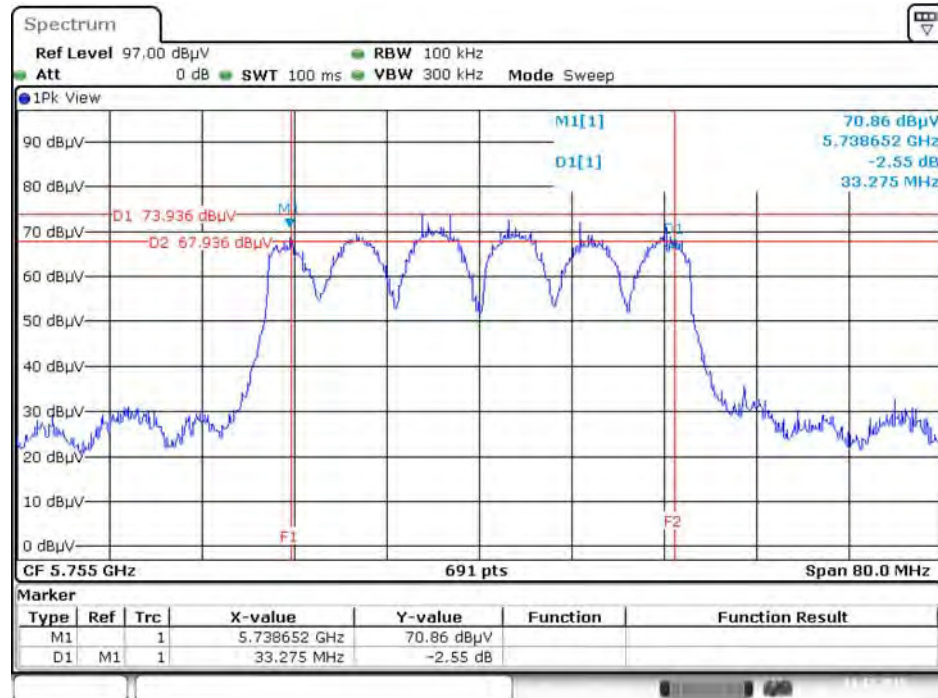
Date: 11.DEC.2015 00:25:05

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5825 MHz



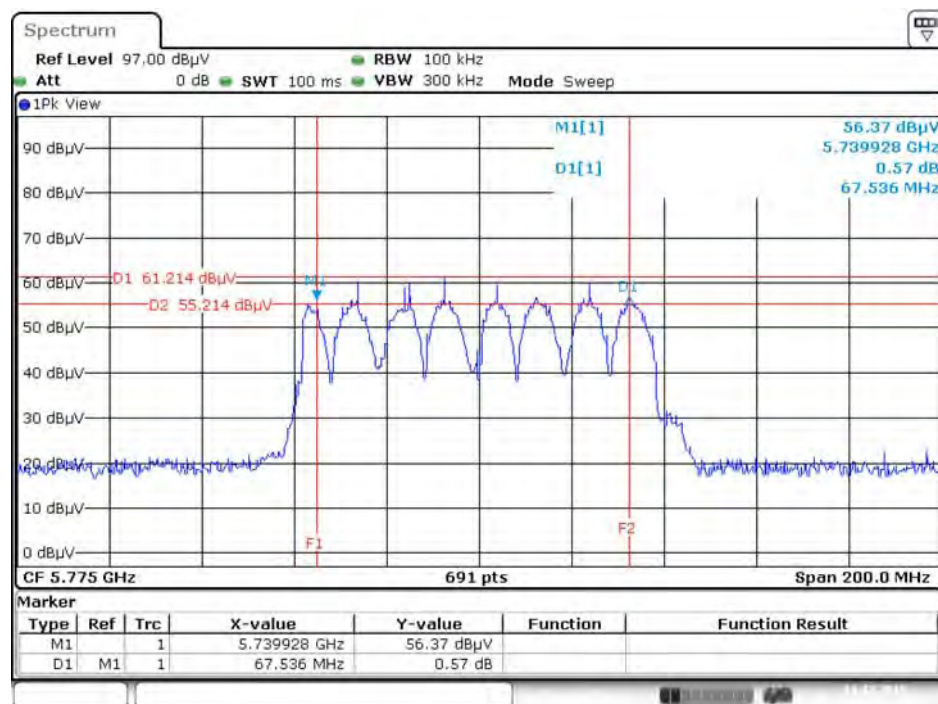
Date: 11.DEC.2015 00:39:11

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5755 MHz



Date: 11.DEC.2015 00:46:00

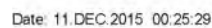
6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5775 MHz



Date: 11.DEC.2015 00:53:45

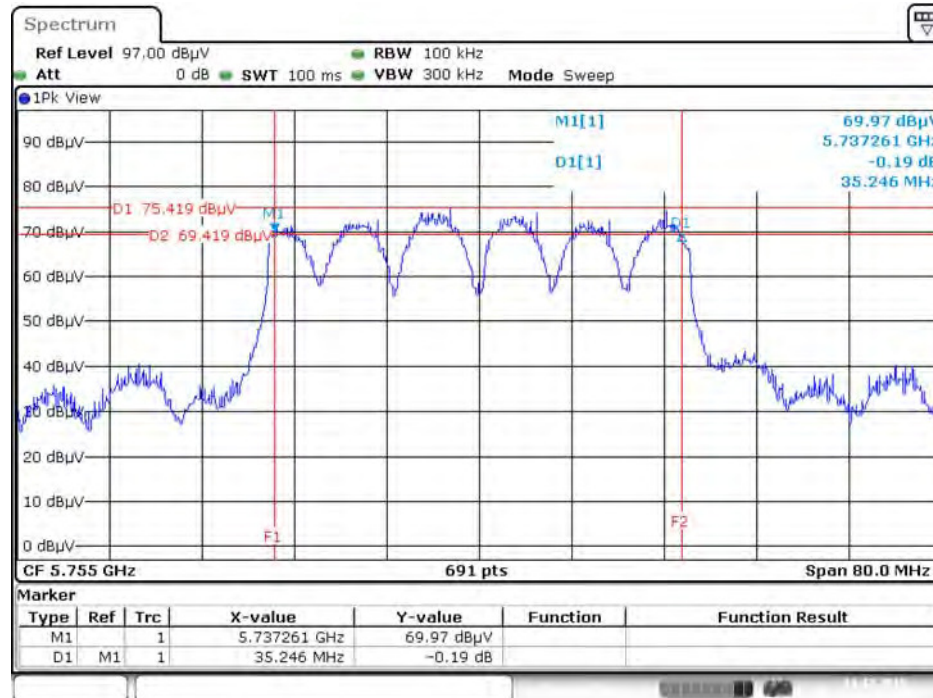


6 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5785 MHz



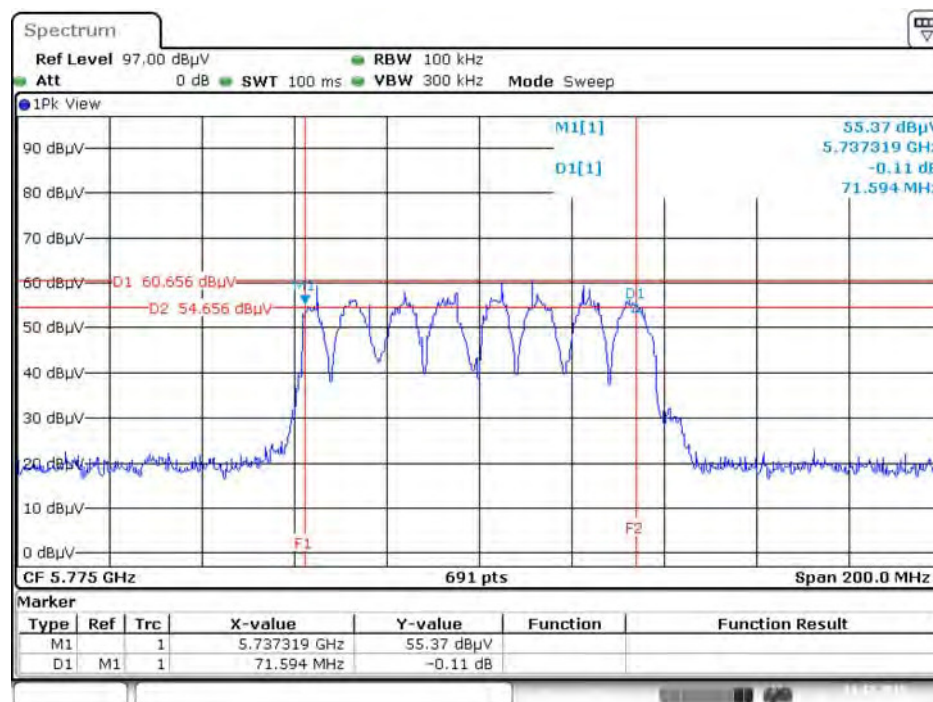
Date: 11.DEC.2015 00:39:11

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5755 MHz



Date: 11.DEC.2015 00:46:16

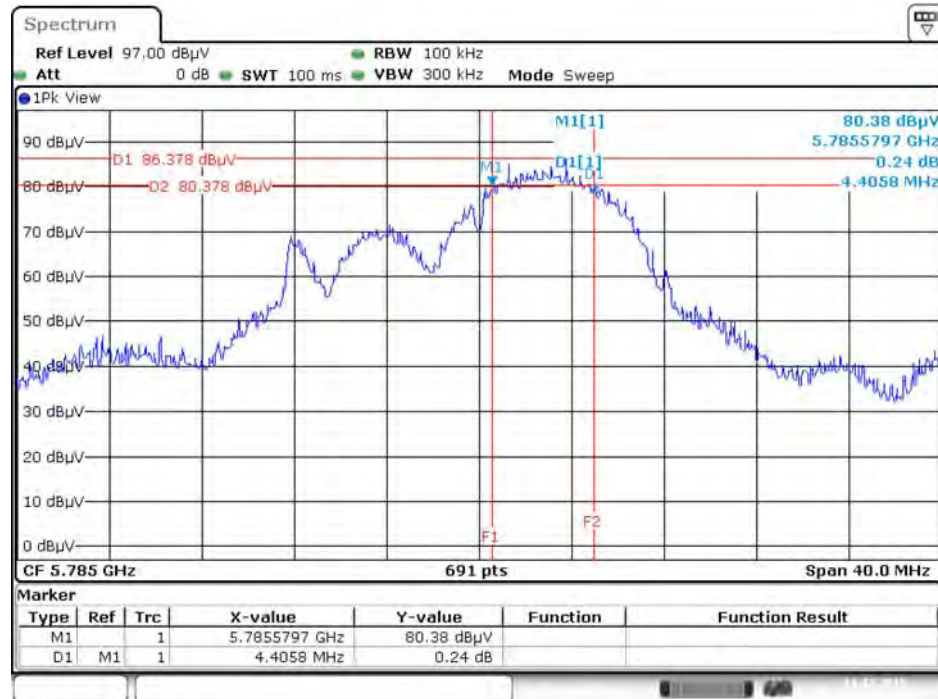
6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5775 MHz



Date: 11.DEC.2015 00:52:38

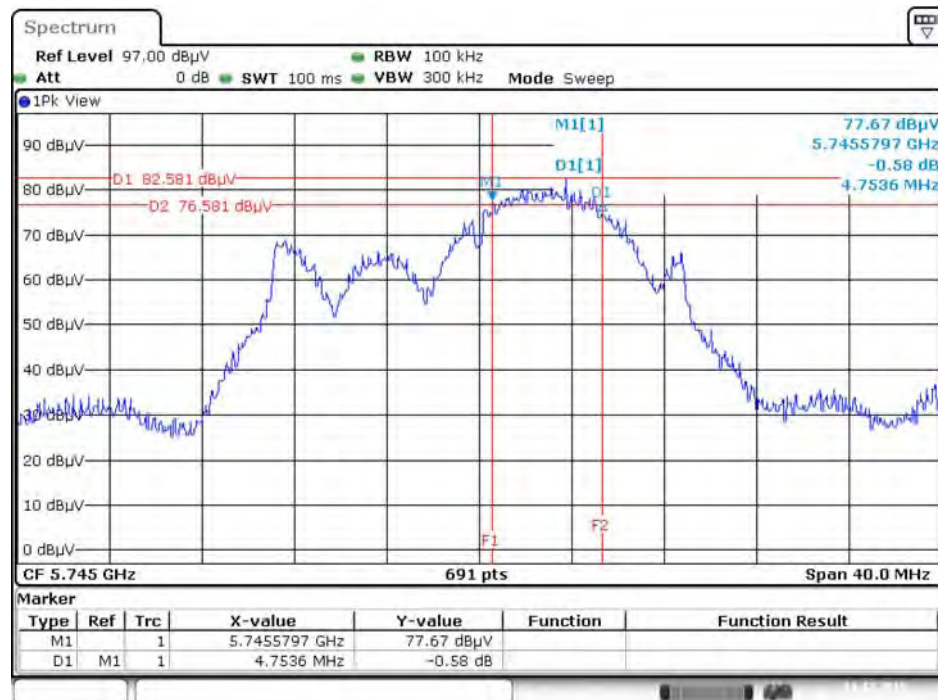
Mode 6: EUT 1 + Set 7 Sector Antenna / 11.5 dBi

6 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5785 MHz



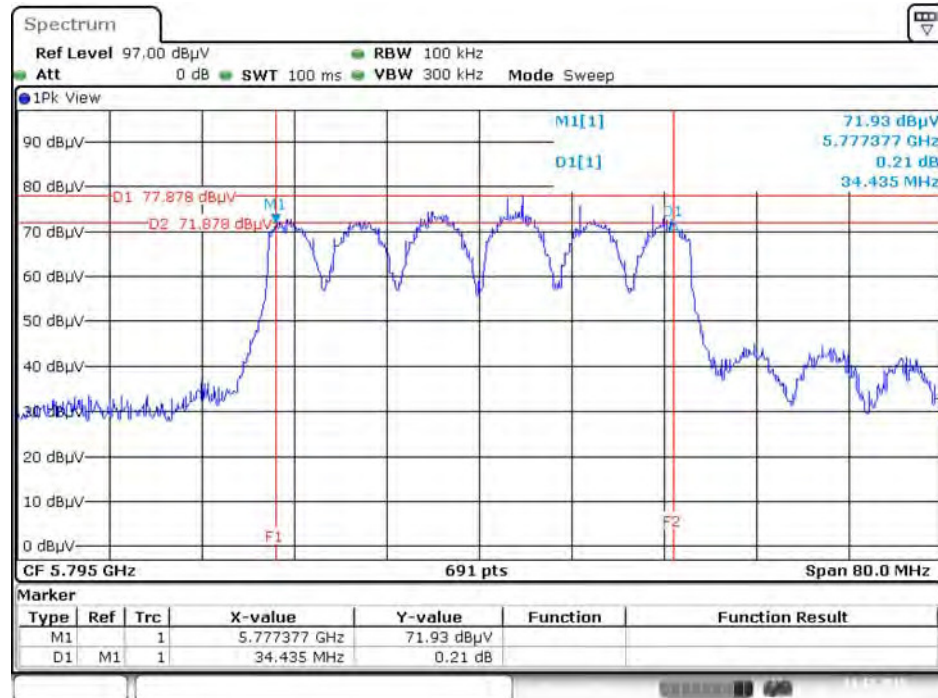
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6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5745 MHz



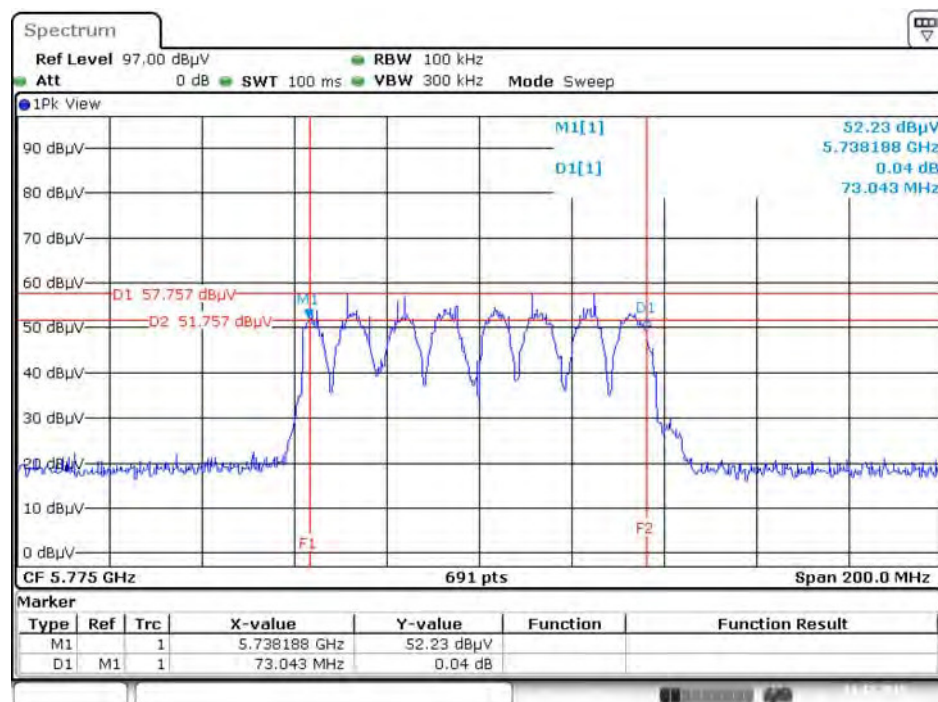
Date: 11.DEC.2015 00:35:32

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5795 MHz



Date: 11.DEC.2015 00:47:42

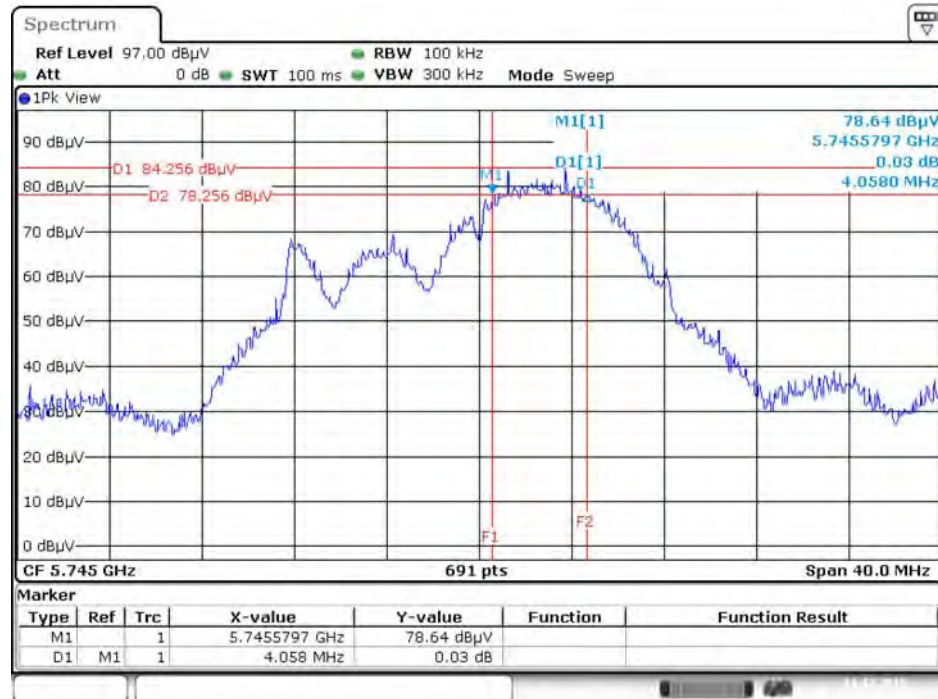
6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5775 MHz



Date: 11.DEC.2015 00:53:10

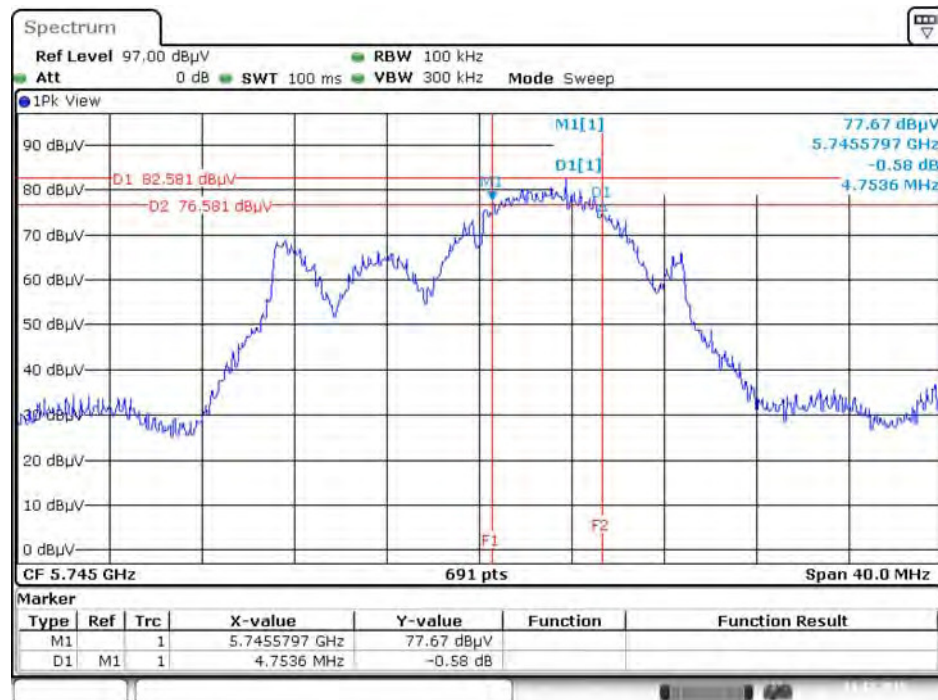
Mode 7: EUT 1 + Set 8 Sector Antenna / 12 dBi

6 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5745 MHz



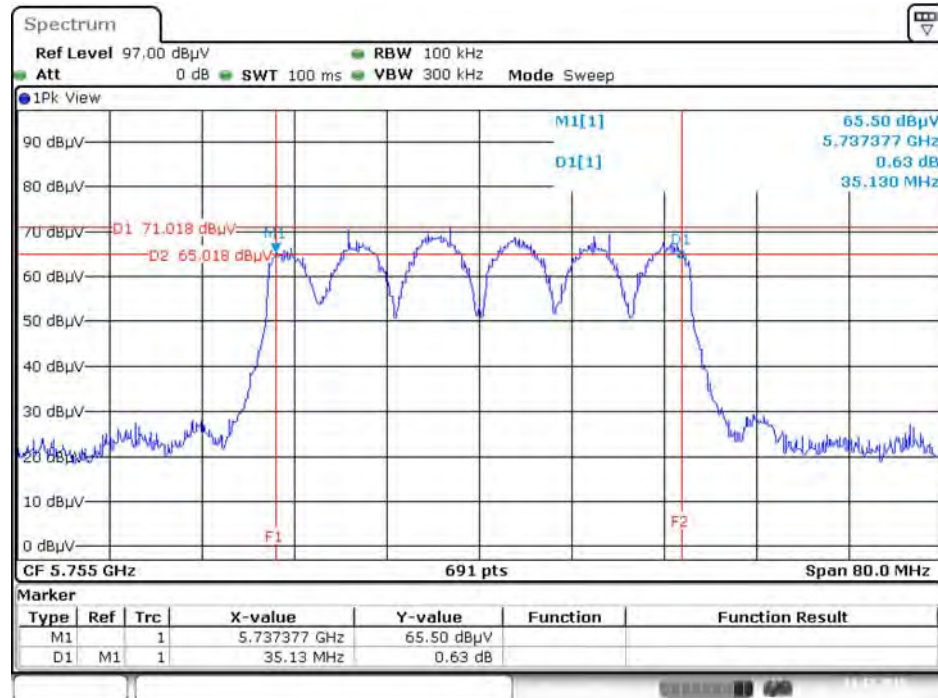
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6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5745 MHz

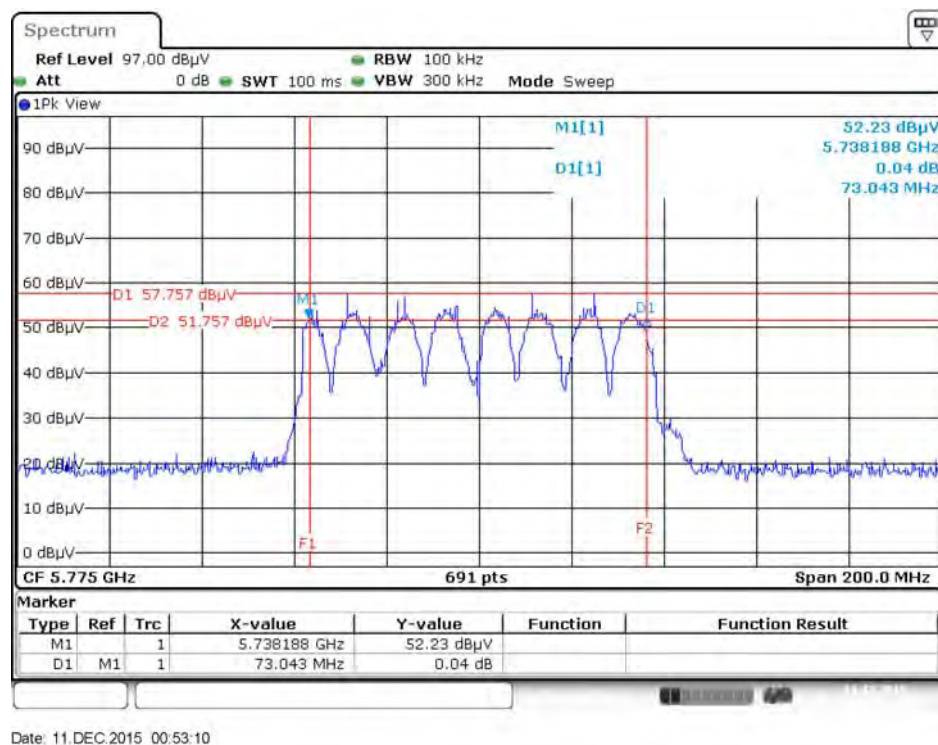


Date: 11.DEC.2015 00:35:32

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5755 MHz

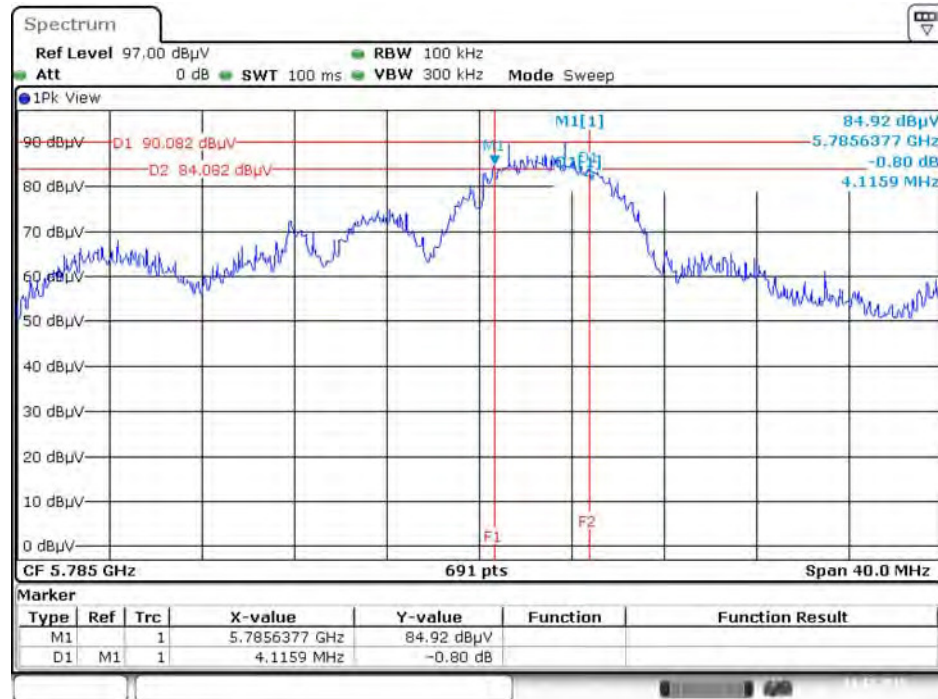


6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5775 MHz



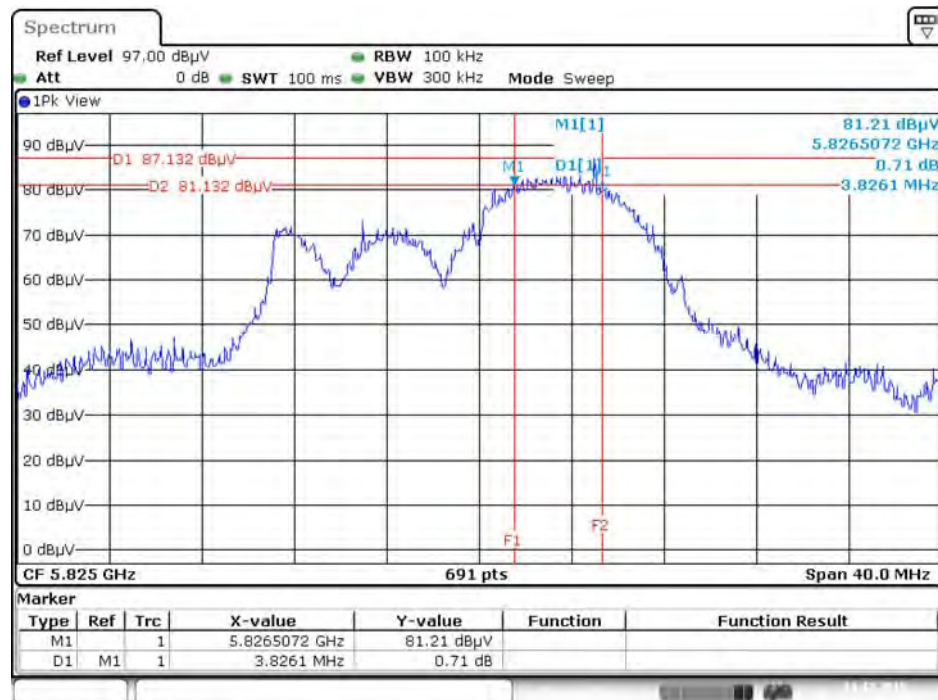
Mode 8: EUT 1 + Set 9 Sector Antenna / 4 dBi

6 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5785 MHz



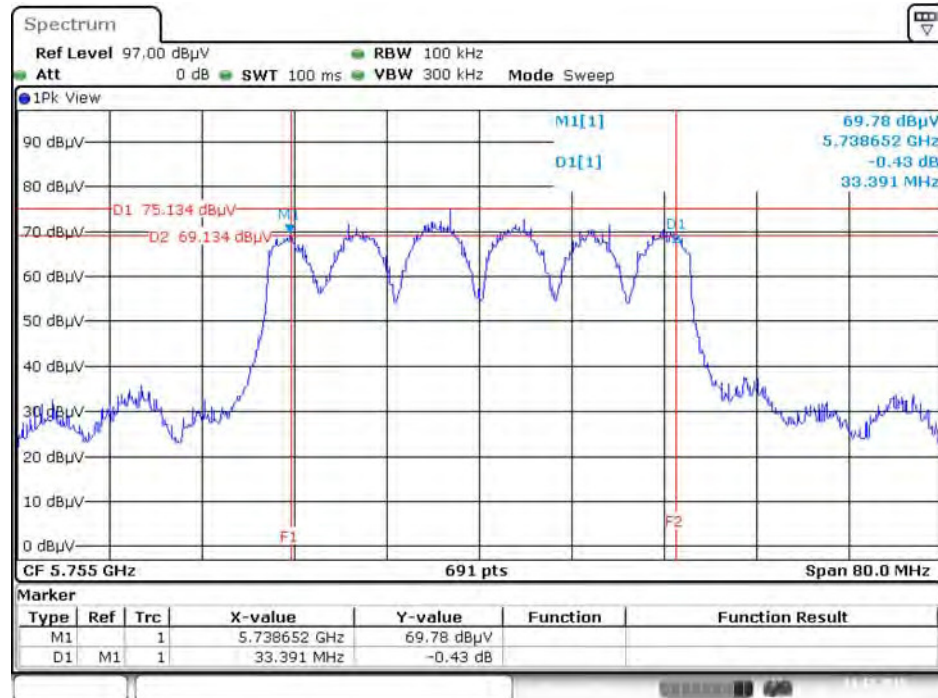
Date: 11.DEC.2015 00:25:29

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5825 MHz



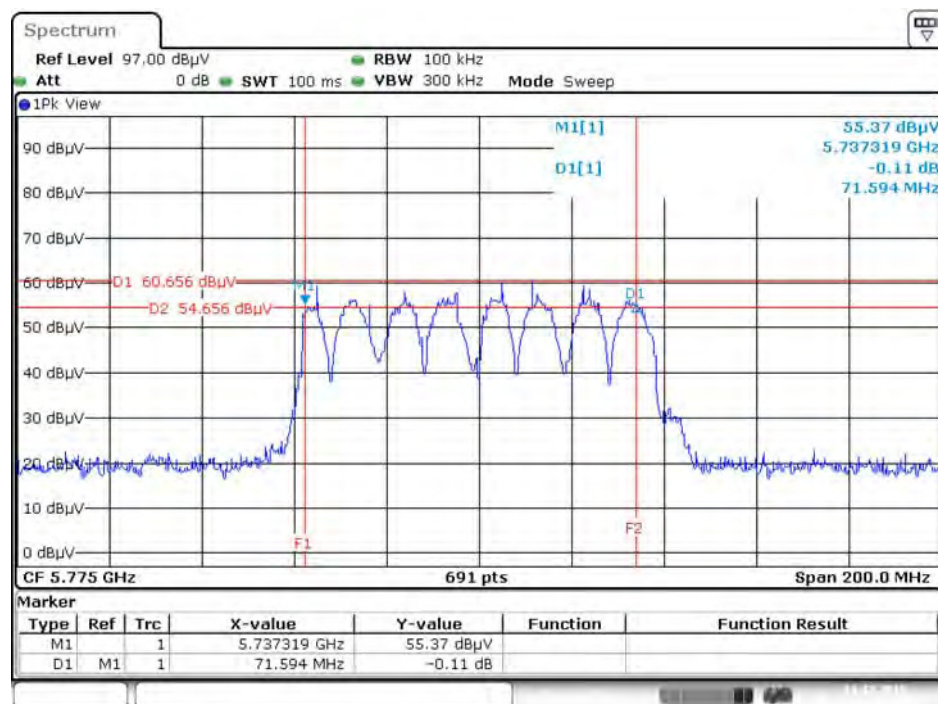
Date: 11.DEC.2015 00:38:13

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5755 MHz



Date: 11.DEC.2015 00:44:47

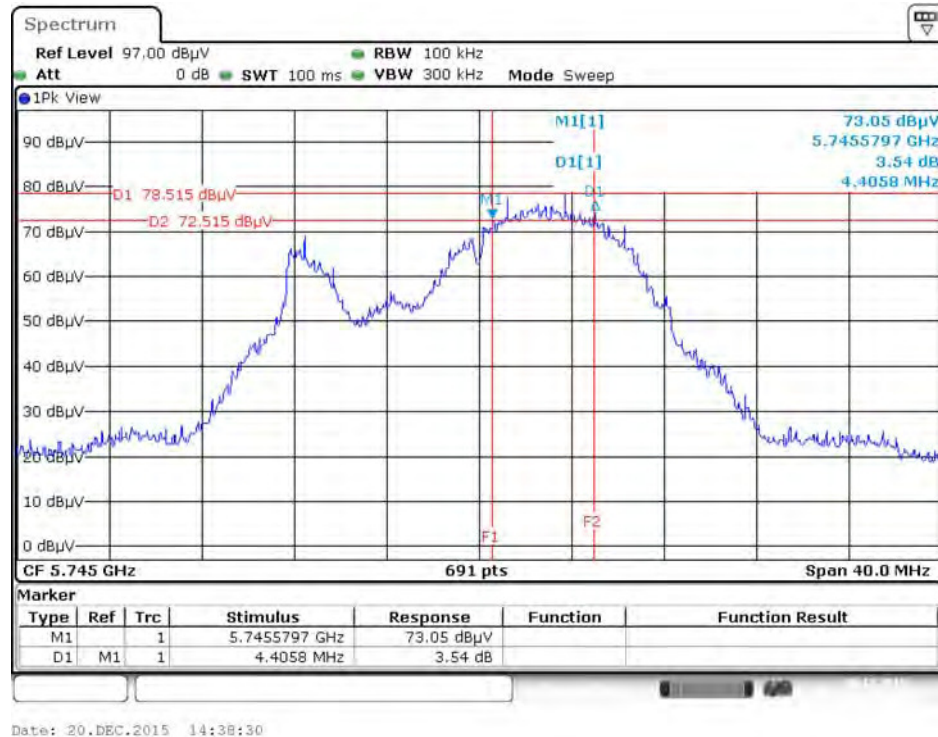
6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5775 MHz



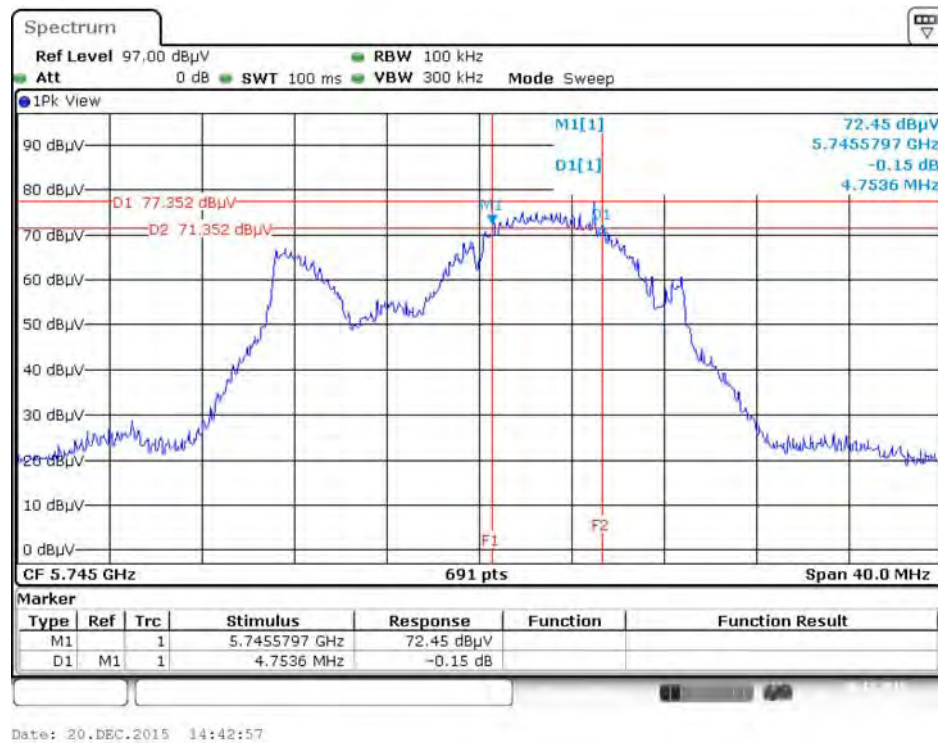
Date: 11.DEC.2015 00:52:38

Mode 9: EUT 1 + Set 10 Panel Antenna / 23 dBi

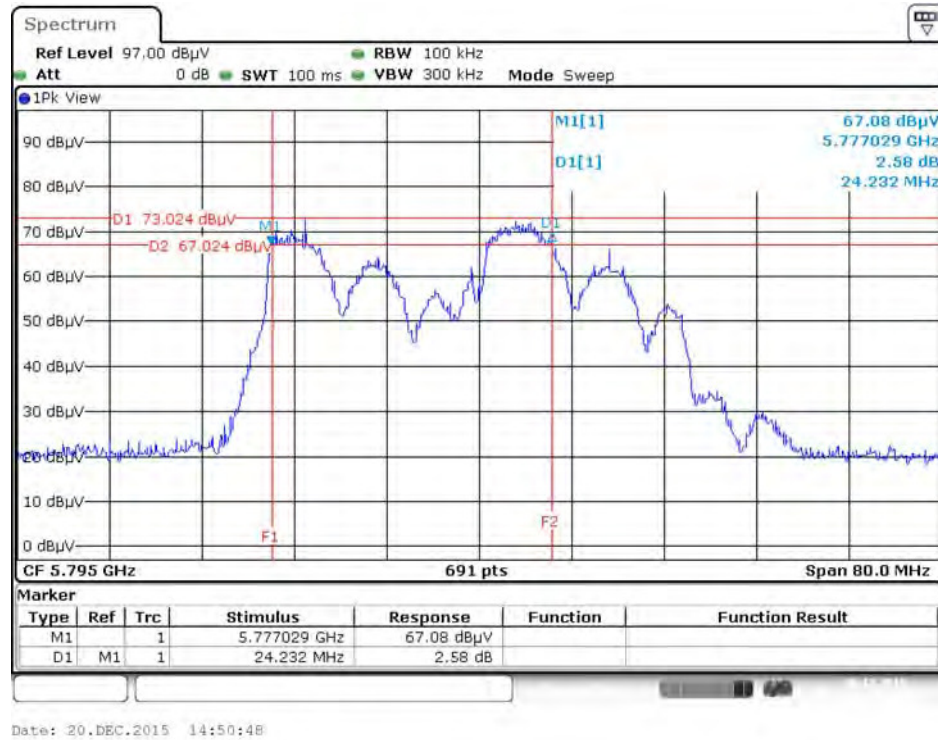
6 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5745 MHz



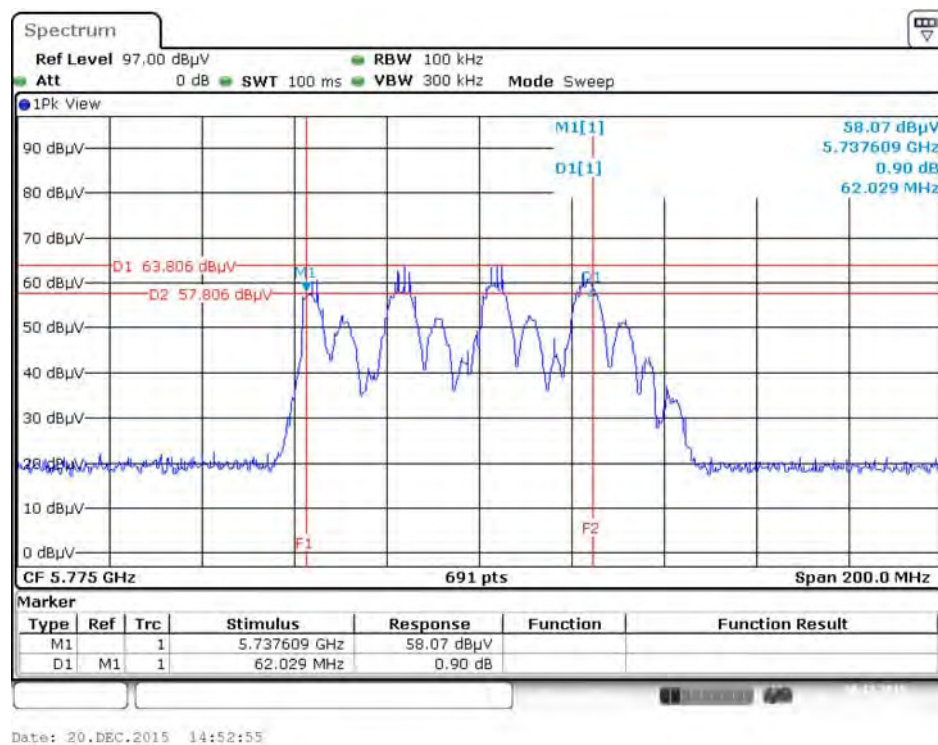
6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5745 MHz



6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5795 MHz

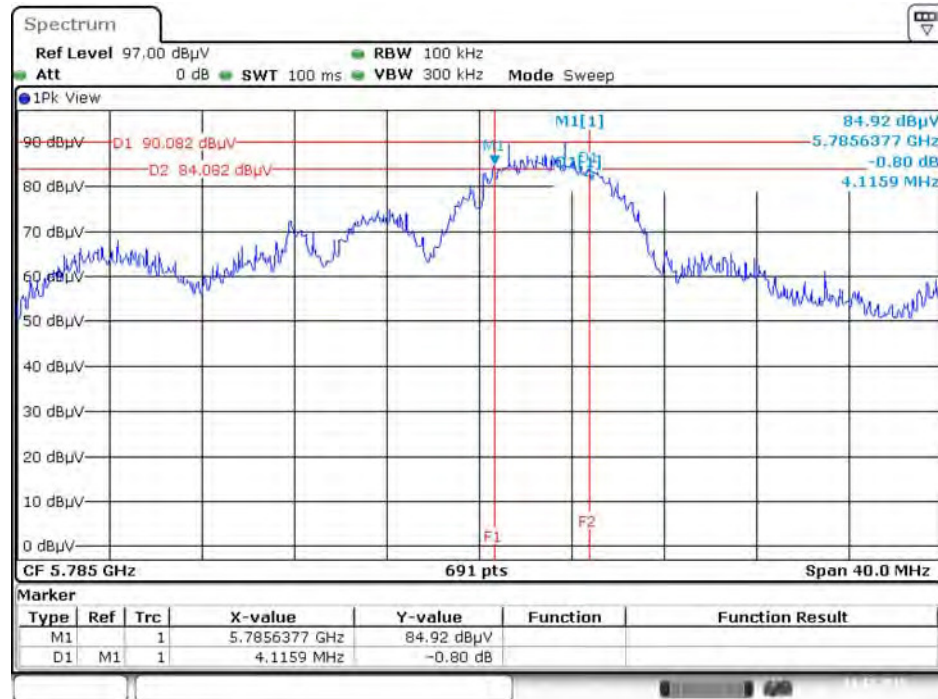


6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5775 MHz



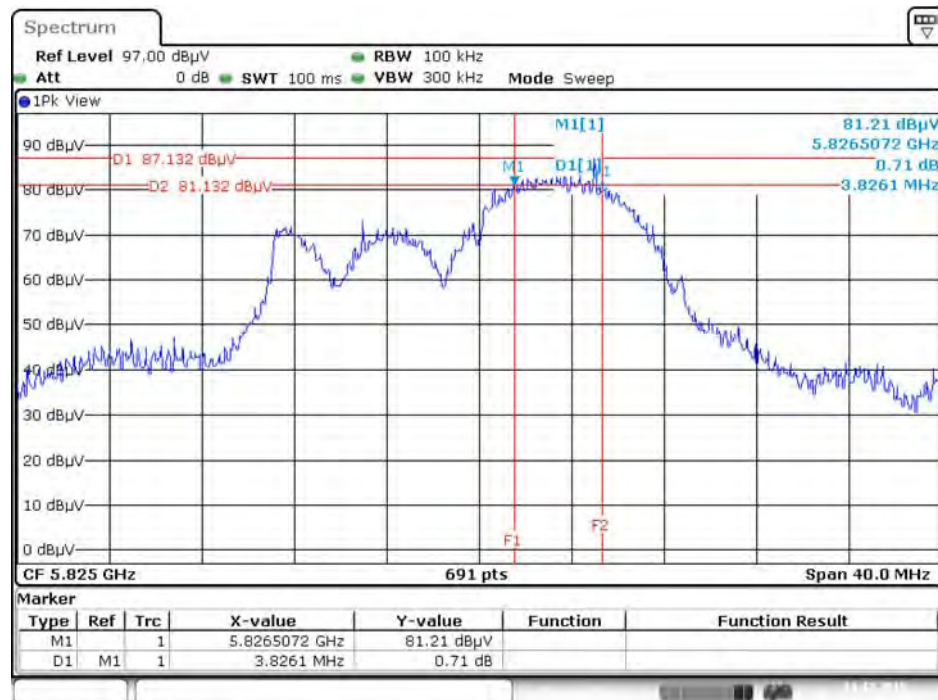
Mode 10: EUT 1 + Set 11 Omni Antenna / 6 dBi

6 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5785 MHz



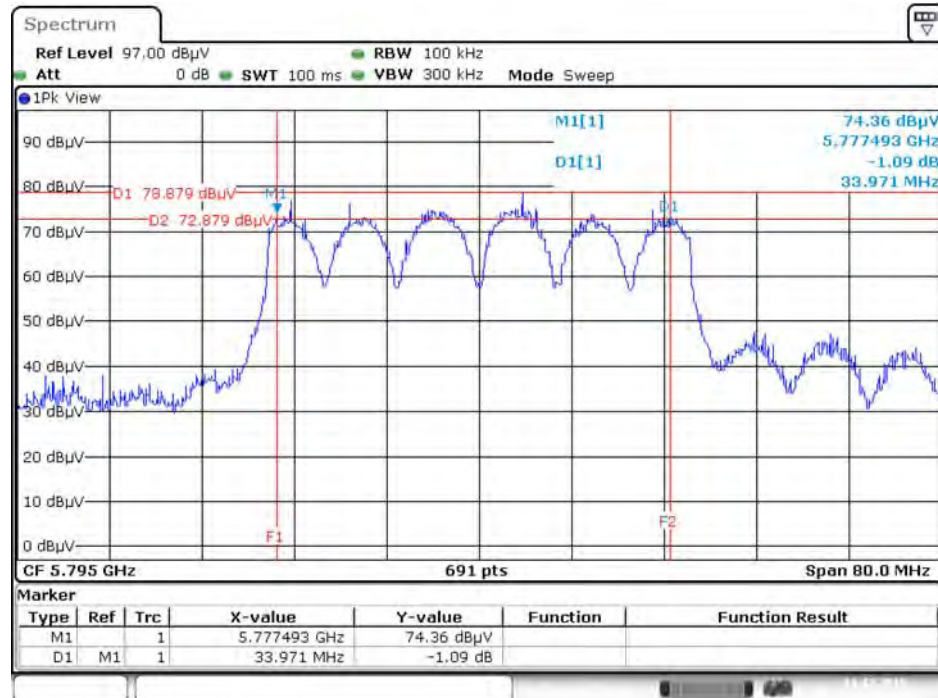
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6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5825 MHz



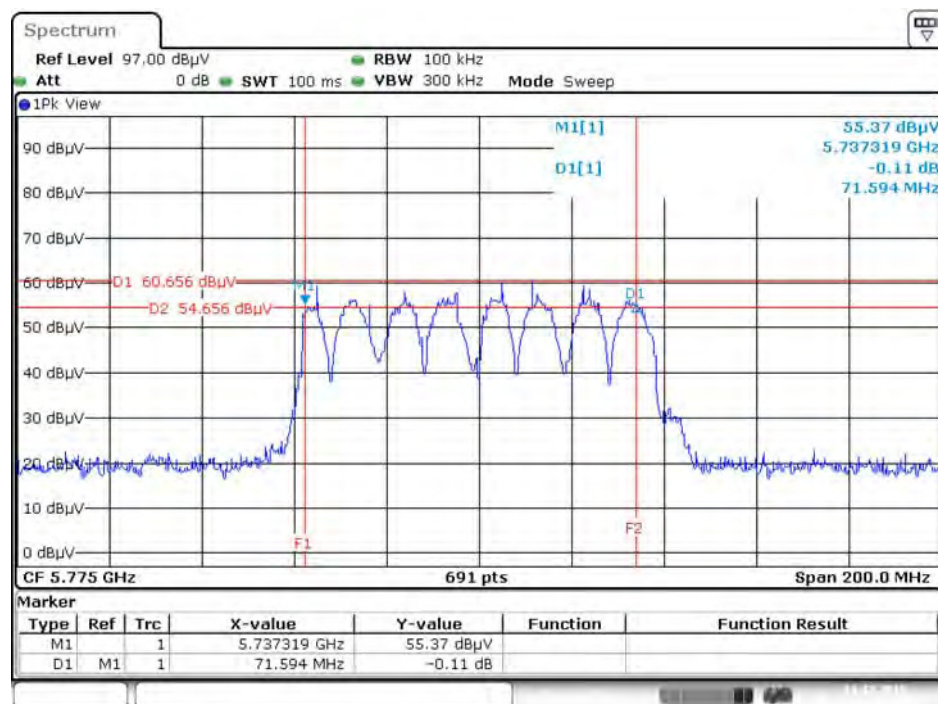
Date: 11.DEC.2015 00:38:13

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5795 MHz



Date: 11.DEC.2015 00:47:59

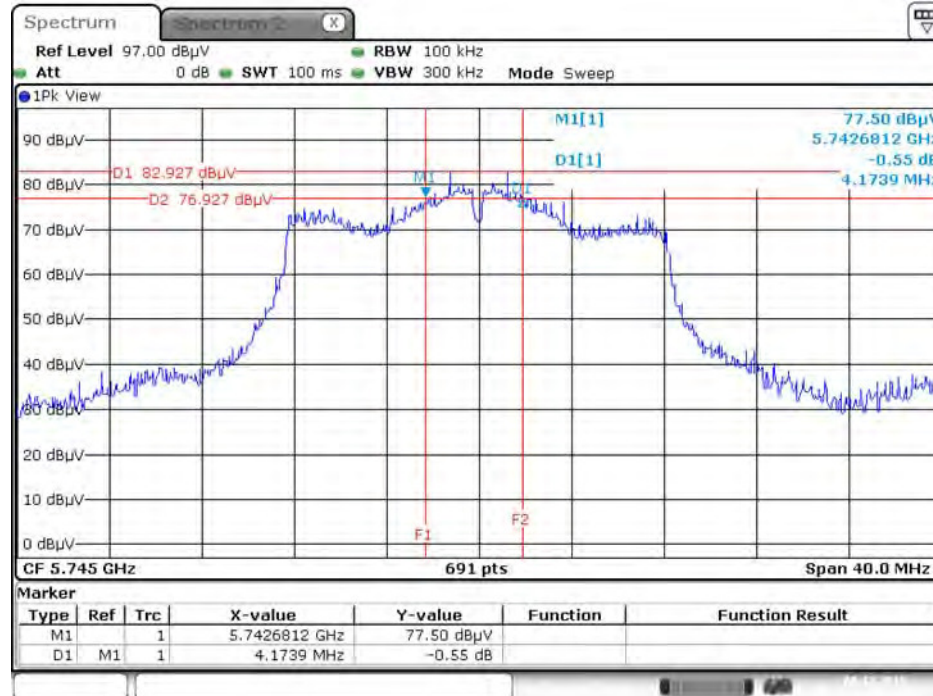
6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5775 MHz



Date: 11.DEC.2015 00:52:38

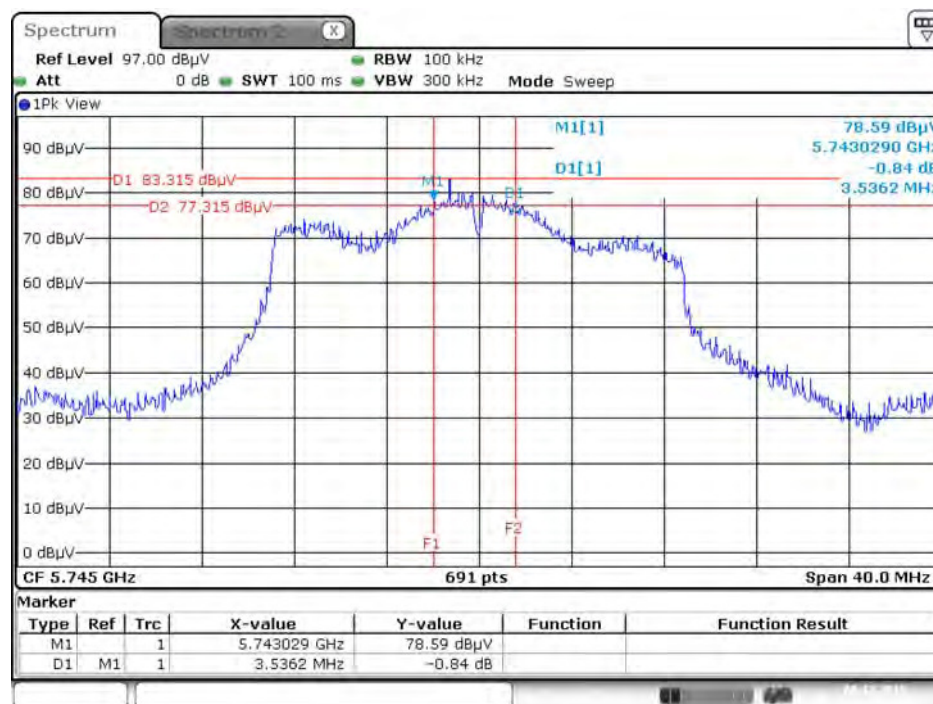
Mode 11: EUT 2 + Set 12 PIFA Antenna / Chain1:5.96 dBi, Chain2:5.97 dBi, Chain3:6.25 dBi, Chain4:6.08 dBi

6 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5745 MHz



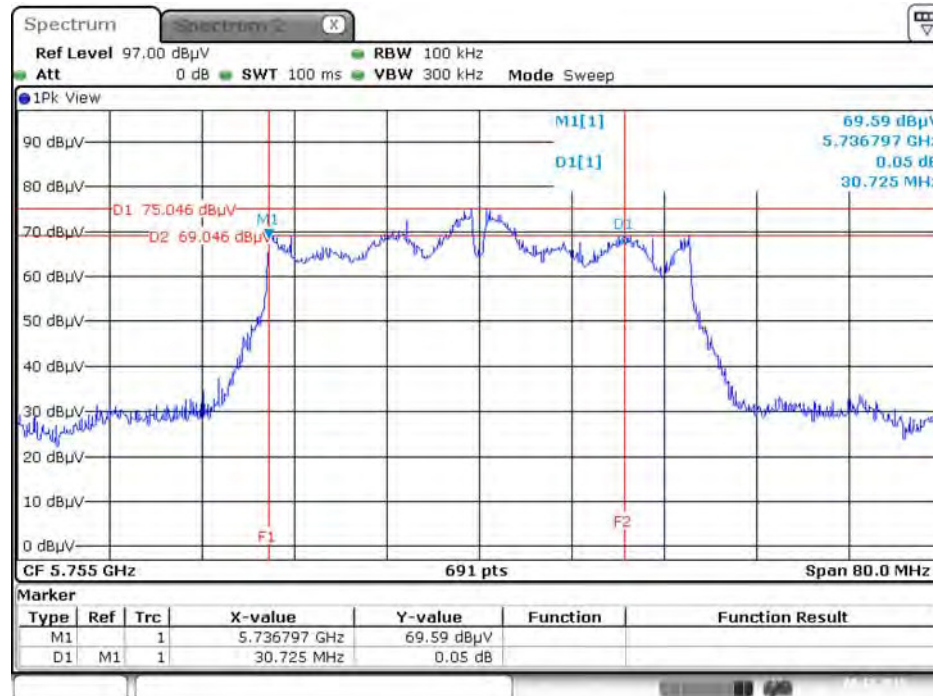
Date: 8.DEC.2015 02:44:32

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5745 MHz



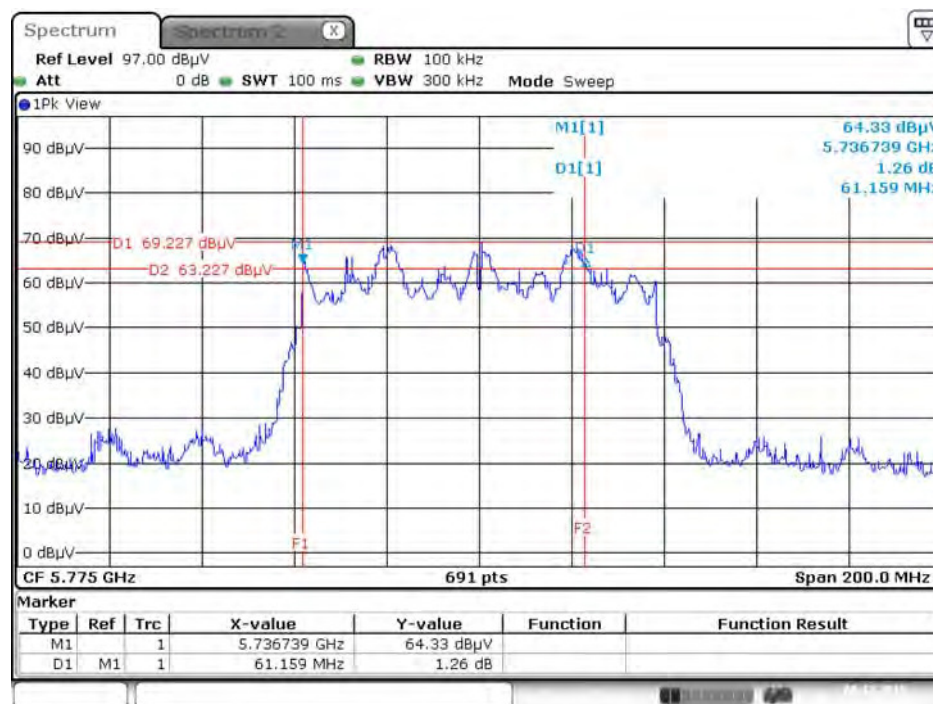
Date: 8.DEC.2015 02:46:50

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5755 MHz



Date: 8.DEC.2015 02:50:01

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5775 MHz



Date: 8.DEC.2015 02:51:00

4.4. Maximum Conducted Output Power Measurement

4.4.1. Limit

Frequency Band		Limit
☒	5.15~5.25 GHz	
	Operating Mode	
	☒ 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).
	☐ 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.
	☒ 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.
	☐ 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.

☒	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.
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4.4.2. Measuring Instruments and Setting

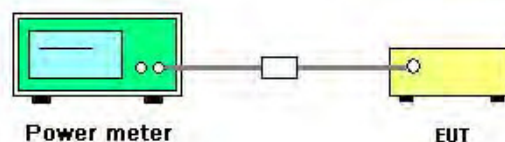
Please refer to section 5 of equipments list in this report. The following table is the setting of the power meter.

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

Temperature	25°C	Humidity	45%
Test Engineer	Roki Liu	Test Date	Dec. 11, 2015
Test Mode	Mode 1: EUT 1 + Set 1 Sector Antenna / 6.5 dBi		

P to M

Mode	Frequency	Conducted Power (dBm)					Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
802.11a	5180 MHz	17.06	16.72	17.17	17.03	23.02	29.50	Complies
	5200 MHz	16.95	16.72	17.17	16.90	22.96	29.50	Complies
	5240 MHz	16.75	17.03	17.02	16.74	22.91	29.50	Complies
	5745 MHz	18.33	17.13	17.45	17.66	23.69	29.50	Complies
	5785 MHz	21.14	21.35	21.63	21.22	27.36	29.50	Complies
	5825 MHz	20.06	19.16	19.05	19.33	25.44	29.50	Complies
802.11ac MCS0/Nss1 VHT20	5180 MHz	17.29	16.82	17.13	16.99	23.08	29.50	Complies
	5200 MHz	17.22	16.92	17.28	17.02	23.13	29.50	Complies
	5240 MHz	17.16	16.89	17.37	17.05	23.14	29.50	Complies
	5745 MHz	18.02	17.12	17.23	17.23	23.44	29.50	Complies
	5785 MHz	21.09	21.15	21.17	21.34	27.21	29.50	Complies
	5825 MHz	19.88	18.94	18.87	19.13	25.24	29.50	Complies
802.11ac MCS0/Nss1 VHT40	5190 MHz	15.65	15.41	15.46	15.11	21.43	29.50	Complies
	5230 MHz	17.13	16.72	17.22	16.93	23.02	29.50	Complies
	5755 MHz	16.52	15.28	15.57	15.57	21.78	29.50	Complies
	5795 MHz	20.09	19.06	19.03	19.34	25.42	29.50	Complies
802.11ac MCS0/Nss1 VHT80	5210 MHz	11.45	11.22	11.56	11.37	17.42	29.50	Complies
	5775 MHz	11.43	10.35	10.72	10.68	16.83	29.50	Complies

Note: Antenna gain=6.50dBi > 6dBi, So Limit =30-(6.50-6)=29.50dBm.

Temperature	25°C	Humidity	45%
Test Engineer	Roki Liu	Test Date	Dec. 11, 2015
Test Mode	Mode 2: EUT 1 + Set 2 Sector Antenna / 4.5 dBi		

P to M

Mode	Frequency	Conducted Power (dBm)					Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
802.11a	5180 MHz	14.71	14.22	14.02	14.44	20.38	30.00	Complies
	5200 MHz	14.49	14.21	14.11	14.30	20.30	30.00	Complies
	5240 MHz	14.52	14.01	14.03	14.46	20.28	30.00	Complies
	5745 MHz	18.67	17.57	18.39	17.96	24.19	30.00	Complies
	5785 MHz	21.14	21.35	21.63	21.22	27.36	30.00	Complies
	5825 MHz	20.06	19.16	19.05	19.33	25.44	30.00	Complies
802.11ac MCS0/Nss1 VHT20	5180 MHz	14.46	13.81	13.77	14.21	20.09	30.00	Complies
	5200 MHz	14.17	13.92	14.01	14.11	20.07	30.00	Complies
	5240 MHz	14.21	13.92	13.96	14.07	20.06	30.00	Complies
	5745 MHz	18.59	17.56	17.53	17.99	23.96	30.00	Complies
	5785 MHz	21.09	21.15	21.17	21.34	27.21	30.00	Complies
	5825 MHz	21.32	19.58	19.44	19.58	26.07	30.00	Complies
802.11ac MCS0/Nss1 VHT40	5190 MHz	14.71	14.33	14.32	14.39	20.46	30.00	Complies
	5230 MHz	14.52	14.05	14.17	14.42	20.31	30.00	Complies
	5755 MHz	17.23	16.27	16.97	16.54	22.79	30.00	Complies
	5795 MHz	20.09	19.06	19.03	19.34	25.42	30.00	Complies
802.11ac MCS0/Nss1 VHT80	5210 MHz	12.72	12.42	12.34	12.54	18.53	30.00	Complies
	5775 MHz	13.12	11.79	12.02	12.32	18.36	30.00	Complies

Temperature	25°C	Humidity	45%
Test Engineer	Roki Liu	Test Date	Dec. 11, 2015
Test Mode	Mode 3: EUT 1 + Set 3 Sector Antenna / 5.5 dBi		

P to M

Mode	Frequency	Conducted Power (dBm)					Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
802.11a	5180 MHz	13.21	12.65	12.54	12.97	18.87	30.00	Complies
	5200 MHz	13.02	12.64	12.55	12.84	18.79	30.00	Complies
	5240 MHz	13.03	12.54	12.46	12.91	18.76	30.00	Complies
	5745 MHz	18.33	17.13	17.45	17.66	23.69	30.00	Complies
	5785 MHz	21.14	21.35	21.63	21.22	27.36	30.00	Complies
	5825 MHz	20.54	19.59	19.45	19.77	25.88	30.00	Complies
802.11ac MCS0/Nss1 VHT20	5180 MHz	13.37	12.95	12.91	13.17	19.12	30.00	Complies
	5200 MHz	13.22	12.82	12.95	13.06	19.04	30.00	Complies
	5240 MHz	13.23	12.79	12.77	13.08	18.99	30.00	Complies
	5745 MHz	17.54	16.47	16.79	16.89	22.96	30.00	Complies
	5785 MHz	21.09	21.15	21.17	21.34	27.21	30.00	Complies
	5825 MHz	19.88	18.94	18.87	19.13	25.24	30.00	Complies
802.11ac MCS0/Nss1 VHT40	5190 MHz	13.16	12.79	12.75	12.92	18.93	30.00	Complies
	5230 MHz	13.07	12.52	12.74	12.93	18.84	30.00	Complies
	5755 MHz	16.52	15.28	15.57	15.57	21.78	30.00	Complies
	5795 MHz	20.09	19.06	19.03	19.34	25.42	30.00	Complies
802.11ac MCS0/Nss1 VHT80	5210 MHz	12.13	11.83	11.88	11.99	17.98	30.00	Complies
	5775 MHz	12.03	10.76	11.14	11.18	17.32	30.00	Complies

Temperature	25°C	Humidity	45%
Test Engineer	Roki Liu	Test Date	Dec. 11, 2015
Test Mode	Mode 4: EUT 1 + Set 4 Sector Antenna / 7.5 dBi		

P to M

Mode	Frequency	Conducted Power (dBm)					Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
802.11a	5180 MHz	13.21	12.65	12.54	12.97	18.87	28.50	Complies
	5200 MHz	13.02	12.64	12.55	12.84	18.79	28.50	Complies
	5240 MHz	13.03	12.54	12.46	12.91	18.76	28.50	Complies
	5745 MHz	17.78	16.74	17.05	17.07	23.20	28.50	Complies
	5785 MHz	21.14	21.35	21.63	21.22	27.36	28.50	Complies
	5825 MHz	20.06	19.16	19.05	19.33	25.44	28.50	Complies
802.11ac MCS0/Nss1 VHT20	5180 MHz	12.99	12.34	12.37	12.63	18.61	28.50	Complies
	5200 MHz	13.22	12.82	12.95	13.06	19.04	28.50	Complies
	5240 MHz	13.23	12.79	12.77	13.08	18.99	28.50	Complies
	5745 MHz	17.54	16.47	16.79	16.89	22.96	28.50	Complies
	5785 MHz	21.09	21.15	21.17	21.34	27.21	28.50	Complies
	5825 MHz	19.35	18.61	18.52	18.63	24.81	28.50	Complies
802.11ac MCS0/Nss1 VHT40	5190 MHz	13.16	12.79	12.75	12.92	18.93	28.50	Complies
	5230 MHz	13.07	12.52	12.74	12.93	18.84	28.50	Complies
	5755 MHz	14.92	13.73	14.55	13.97	20.34	28.50	Complies
	5795 MHz	19.07	17.89	17.68	18.34	24.30	28.50	Complies
802.11ac MCS0/Nss1 VHT80	5210 MHz	10.64	10.23	9.96	10.57	16.38	28.50	Complies
	5775 MHz	10.62	9.58	9.94	9.71	16.00	28.50	Complies

Note: Antenna gain=7.50dBi > 6dBi, So Limit =30-(7.50-6)=28.50dBm.

Temperature	25°C	Humidity	45%
Test Engineer	Roki Liu	Test Date	Dec. 11, 2015
Test Mode	Mode 5: EUT 1 + Set 5 Panel Antenna / 6 dBi		

P to M

Mode	Frequency	Conducted Power (dBm)					Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
802.11a	5180 MHz	15.01	14.77	15.08	14.84	20.95	30.00	Complies
	5200 MHz	14.88	14.74	15.07	14.76	20.89	30.00	Complies
	5240 MHz	14.69	14.83	15.08	14.86	20.89	30.00	Complies
	5745 MHz	18.33	17.13	17.45	17.66	23.69	30.00	Complies
	5785 MHz	21.14	21.35	21.63	21.22	27.36	30.00	Complies
	5825 MHz	20.54	19.59	19.45	19.77	25.88	30.00	Complies
802.11ac MCS0/Nss1 VHT20	5180 MHz	15.29	14.98	15.22	15.01	21.15	30.00	Complies
	5200 MHz	15.23	14.92	15.31	15.02	21.14	30.00	Complies
	5240 MHz	15.08	14.97	15.36	15.15	21.16	30.00	Complies
	5745 MHz	18.87	18.02	18.69	18.28	24.50	30.00	Complies
	5785 MHz	21.09	21.15	21.17	21.34	27.21	30.00	Complies
	5825 MHz	19.35	18.61	18.52	18.63	24.81	30.00	Complies
802.11ac MCS0/Nss1 VHT40	5190 MHz	15.13	14.81	15.08	14.73	20.96	30.00	Complies
	5230 MHz	15.01	14.72	15.17	14.76	20.94	30.00	Complies
	5755 MHz	17.75	16.82	17.48	17.03	23.31	30.00	Complies
	5795 MHz	20.09	19.06	19.03	19.34	25.42	30.00	Complies
802.11ac MCS0/Nss1 VHT80	5210 MHz	11.45	11.22	11.56	11.37	17.42	30.00	Complies
	5775 MHz	11.43	10.35	10.72	10.68	16.83	30.00	Complies

Temperature	25°C	Humidity	45%
Test Engineer	Roki Liu	Test Date	Dec. 11, 2015 ~ Dec. 14, 2015
Test Mode	Mode 6: EUT 1 + Set 7 Sector Antenna / 11.5 dBi		

P to M

Mode	Frequency	Conducted Power (dBm)					Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
802.11a	5180 MHz	7.13	6.59	6.54	6.86	12.81	24.50	Complies
	5200 MHz	7.02	6.57	6.49	6.80	12.75	24.50	Complies
	5240 MHz	7.12	6.62	6.50	7.01	12.84	24.50	Complies
	5745 MHz	15.34	14.18	14.67	14.54	20.72	24.50	Complies
	5785 MHz	19.02	17.94	18.05	18.08	24.32	24.50	Complies
	5825 MHz	18.22	17.19	17.08	17.49	23.54	24.50	Complies
802.11ac MCS0/Nss1 VHT20	5180 MHz	6.88	6.24	6.38	6.78	12.60	24.50	Complies
	5200 MHz	7.29	6.87	6.89	7.14	13.07	24.50	Complies
	5240 MHz	6.87	6.27	6.45	6.88	12.65	24.50	Complies
	5745 MHz	16.15	14.99	15.43	15.32	21.51	24.50	Complies
	5785 MHz	18.81	17.77	17.85	17.87	24.12	24.50	Complies
	5825 MHz	18.52	17.59	17.61	17.69	23.89	24.50	Complies
802.11ac MCS0/Nss1 VHT40	5190 MHz	7.28	6.76	6.68	6.95	12.94	24.50	Complies
	5230 MHz	7.07	6.65	6.68	6.92	12.85	24.50	Complies
	5755 MHz	14.49	13.14	13.45	13.47	19.69	24.50	Complies
	5795 MHz	18.76	17.46	17.61	17.93	23.99	24.50	Complies
802.11ac MCS0/Nss1 VHT80	5210 MHz	7.22	6.86	6.77	7.04	13.00	24.50	Complies
	5775 MHz	8.46	7.41	7.49	7.54	13.77	24.50	Complies

Note: Antenna gain=11.50dBi > 6dBi, So Limit =30-(11.50-6)=24.50dBm.

Temperature	25°C	Humidity	45%
Test Engineer	Roki Liu	Test Date	Dec. 11, 2015
Test Mode	Mode 7: EUT 1 + Set 8 Sector Antenna / 12 dBi		

P to M

Mode	Frequency	Conducted Power (dBm)					Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
802.11a	5180 MHz	11.62	11.06	11.16	11.34	17.32	24.00	Complies
	5200 MHz	11.58	10.96	11.07	11.39	17.28	24.00	Complies
	5240 MHz	11.36	10.76	11.03	11.37	17.16	24.00	Complies
	5745 MHz	16.76	15.87	15.96	15.95	22.17	24.00	Complies
	5785 MHz	18.48	17.49	17.61	17.72	23.86	24.00	Complies
	5825 MHz	18.22	17.19	17.08	17.49	23.54	24.00	Complies
802.11ac MCS0/Nss1 VHT20	5180 MHz	11.39	10.79	10.81	11.31	17.10	24.00	Complies
	5200 MHz	11.42	10.69	10.71	11.12	17.02	24.00	Complies
	5240 MHz	11.14	10.64	10.89	11.11	16.97	24.00	Complies
	5745 MHz	16.15	14.99	15.43	15.32	21.51	24.00	Complies
	5785 MHz	18.32	17.14	17.37	17.42	23.61	24.00	Complies
	5825 MHz	18.52	17.59	17.61	17.69	23.89	24.00	Complies
802.11ac MCS0/Nss1 VHT40	5190 MHz	11.68	11.08	11.28	11.55	17.42	24.00	Complies
	5230 MHz	11.61	10.93	11.19	11.47	17.33	24.00	Complies
	5755 MHz	13.31	12.10	12.47	12.51	18.64	24.00	Complies
	5795 MHz	18.18	16.98	17.05	17.36	23.44	24.00	Complies
802.11ac MCS0/Nss1 VHT80	5210 MHz	8.62	8.41	8.37	8.48	14.49	24.00	Complies
	5775 MHz	8.46	7.41	7.49	7.54	13.77	24.00	Complies

Note: Antenna gain=11.00dBi > 6dBi, So Limit =30-(11.00-6)=24.00dBm.

Temperature	25°C	Humidity	45%
Test Engineer	Roki Liu	Test Date	Dec. 11, 2015
Test Mode	Mode 8: EUT 1 + Set 9 Sector Antenna / 4 dBi		

P to M

Mode	Frequency	Conducted Power (dBm)					Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
802.11a	5180 MHz	18.47	18.12	18.23	18.32	24.31	30.00	Complies
	5200 MHz	21.39	21.06	21.14	21.11	27.20	30.00	Complies
	5240 MHz	21.85	21.33	21.54	21.64	27.61	30.00	Complies
	5745 MHz	18.67	17.57	18.39	17.96	24.19	30.00	Complies
	5785 MHz	21.14	21.35	21.63	21.22	27.36	30.00	Complies
	5825 MHz	19.12	18.23	18.61	18.36	24.61	30.00	Complies
802.11ac MCS0/Nss1 VHT20	5180 MHz	17.78	17.42	17.68	17.71	23.67	30.00	Complies
	5200 MHz	21.17	20.91	21.01	21.02	27.05	30.00	Complies
	5240 MHz	21.08	20.76	21.04	21.11	27.02	30.00	Complies
	5745 MHz	18.59	17.56	17.53	17.99	23.96	30.00	Complies
	5785 MHz	21.09	21.15	21.17	21.34	27.21	30.00	Complies
	5825 MHz	18.93	18.04	17.94	18.27	24.33	30.00	Complies
802.11ac MCS0/Nss1 VHT40	5190 MHz	17.87	17.26	17.24	17.58	23.52	30.00	Complies
	5230 MHz	20.82	20.06	20.26	20.38	26.41	30.00	Complies
	5755 MHz	16.04	14.77	15.16	15.21	21.34	30.00	Complies
	5795 MHz	20.09	19.06	19.03	19.34	25.42	30.00	Complies
802.11ac MCS0/Nss1 VHT80	5210 MHz	11.11	10.75	10.88	11.14	16.99	30.00	Complies
	5775 MHz	11.43	10.35	10.72	10.68	16.83	30.00	Complies

Temperature	25°C	Humidity	45%
Test Engineer	Roki Liu	Test Date	Dec. 18, 2015
Test Mode	Mode 9: EUT 1 + Set 10 Panel Antenna / 23 dBi		

P to P

Mode	Frequency	Conducted Power (dBm)					Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
802.11a	5180 MHz	7.61	7.76	8.02	7.55	13.76	30.00	Complies
	5200 MHz	9.18	9.60	9.32	9.14	15.33	30.00	Complies
	5240 MHz	10.23	10.42	10.28	10.04	16.27	30.00	Complies
	5745 MHz	10.42	10.71	9.78	9.66	16.19	30.00	Complies
	5785 MHz	14.18	14.56	13.47	13.44	19.96	30.00	Complies
	5825 MHz	11.07	11.67	10.54	10.66	17.03	30.00	Complies
802.11ac MCS0/Nss1 VHT20	5180 MHz	7.39	7.41	7.76	7.26	13.48	30.00	Complies
	5200 MHz	9.02	9.25	9.13	8.82	15.08	30.00	Complies
	5240 MHz	10.11	10.28	10.15	9.87	16.13	30.00	Complies
	5745 MHz	10.12	10.41	9.68	9.43	15.95	30.00	Complies
	5785 MHz	13.86	14.42	13.20	13.17	19.71	30.00	Complies
	5825 MHz	10.89	11.49	10.49	10.37	16.85	30.00	Complies
802.11ac MCS0/Nss1 VHT40	5190 MHz	5.25	5.55	5.34	5.29	11.38	30.00	Complies
	5230 MHz	8.44	8.56	8.57	8.23	14.47	30.00	Complies
	5755 MHz	5.91	6.16	5.65	5.06	11.73	30.00	Complies
	5795 MHz	8.93	9.47	8.84	8.46	14.96	30.00	Complies
802.11ac MCS0/Nss1 VHT80	5210 MHz	3.52	3.67	3.41	3.38	9.52	30.00	Complies
	5775 MHz	1.42	1.90	1.13	0.72	7.33	30.00	Complies

Temperature	25°C	Humidity	45%
Test Engineer	Roki Liu	Test Date	Dec. 11, 2015 ~ Dec. 14, 2015
Test Mode	Mode 10: EUT 1 + Set 11 Omni Antenna / 6 dBi		

P to M

Mode	Frequency	Conducted Power (dBm)					Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
802.11a	5180 MHz	15.01	14.77	15.08	14.84	20.95	30.00	Complies
	5200 MHz	14.88	14.74	15.07	14.76	20.89	30.00	Complies
	5240 MHz	14.69	14.83	15.08	14.86	20.89	30.00	Complies
	5745 MHz	18.67	17.57	18.39	17.96	24.19	30.00	Complies
	5785 MHz	20.89	22.98	21.56	22.07	27.96	30.00	Complies
	5825 MHz	19.45	18.82	19.28	18.92	25.15	30.00	Complies
802.11ac MCS0/Nss1 VHT20	5180 MHz	15.29	14.98	15.22	15.01	21.15	30.00	Complies
	5200 MHz	15.23	14.92	15.31	15.02	21.14	30.00	Complies
	5240 MHz	15.08	14.97	15.36	15.15	21.16	30.00	Complies
	5745 MHz	18.59	17.56	17.53	17.99	23.96	30.00	Complies
	5785 MHz	20.74	22.81	21.41	21.68	27.75	30.00	Complies
	5825 MHz	18.93	18.04	17.94	18.27	24.33	30.00	Complies
802.11ac MCS0/Nss1 VHT40	5190 MHz	15.13	14.81	15.08	14.73	20.96	30.00	Complies
	5230 MHz	15.01	14.72	15.17	14.76	20.94	30.00	Complies
	5755 MHz	15.32	14.27	15.12	14.38	20.82	30.00	Complies
	5795 MHz	19.07	17.89	17.68	18.34	24.30	30.00	Complies
802.11ac MCS0/Nss1 VHT80	5210 MHz	10.64	10.23	9.96	10.57	16.38	30.00	Complies
	5775 MHz	11.43	10.35	10.72	10.68	16.83	30.00	Complies

Temperature	25°C	Humidity	45%
Test Engineer	Roki Liu	Test Date	Dec. 07, 2015
Test Mode	Mode 11: EUT 2 + Set 12 PIFA Antenna / Chain1:5.96 dBi, Chain2:5.97 dBi, Chain3:6.25 dBi, Chain4:6.08 dBi		

P to M

Mode	Frequency	Conducted Power (dBm)					Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
802.11a	5180 MHz	15.31	14.54	15.36	15.77	21.29	29.75	Complies
	5200 MHz	15.41	15.08	15.54	15.92	21.52	29.75	Complies
	5240 MHz	15.11	14.98	15.19	15.69	21.27	29.75	Complies
	5745 MHz	15.71	15.59	16.62	16.58	22.17	29.75	Complies
	5785 MHz	22.37	21.85	22.86	22.36	28.40	29.75	Complies
	5825 MHz	18.50	18.54	19.06	19.84	25.04	29.75	Complies
802.11ac MCS0/Nss1 VHT20	5180 MHz	15.19	15.08	15.25	15.29	21.22	29.75	Complies
	5200 MHz	15.26	14.95	15.28	15.82	21.36	29.75	Complies
	5240 MHz	15.35	15.12	15.46	15.71	21.44	29.75	Complies
	5745 MHz	15.50	15.45	16.37	16.47	21.99	29.75	Complies
	5785 MHz	22.39	21.89	22.71	22.51	28.41	29.75	Complies
	5825 MHz	18.42	18.38	18.99	19.81	24.96	29.75	Complies
802.11ac MCS0/Nss1 VHT40	5190 MHz	15.28	15.13	15.54	15.93	21.50	29.75	Complies
	5230 MHz	15.07	14.82	15.21	15.84	21.27	29.75	Complies
	5755 MHz	13.77	13.76	14.67	14.76	20.29	29.75	Complies
	5795 MHz	18.54	18.76	19.44	19.78	25.18	29.75	Complies
802.11ac MCS0/Nss1 VHT80	5210 MHz	11.16	11.19	11.69	12.02	17.55	29.75	Complies
	5775 MHz	10.16	10.34	11.25	11.21	16.79	29.75	Complies

Note: Antenna gain=6.25dBi > 6dBi, So Limit =30-(6.25-6)=29.75dBm.

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
☒	5.15~5.25 GHz	
	Operating Mode	
☒	Outdoor access point	17 dBm/MHz
☐	Indoor access point	17 dBm/MHz
☒	Fixed point-to-point access points	17 dBm/MHz
☐	Mobile and portable client devices	11 dBm/MHz
☒	5.725~5.85 GHz	30 dBm/500kHz

4.5.2. Measuring Instruments and Setting

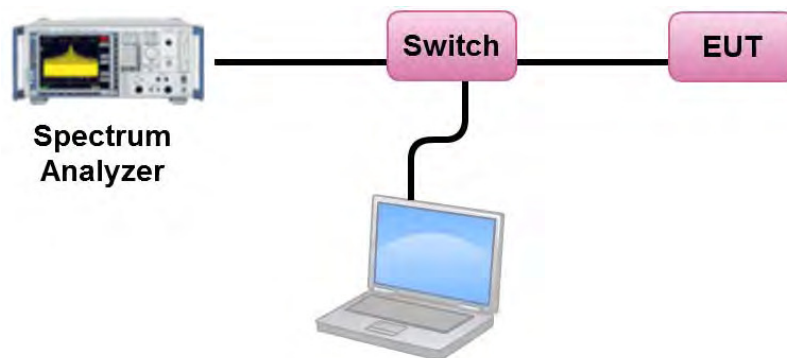
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

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
Note: If measurement bandwidth of Maximum PSD is specified in 500 kHz, add $10\log(500\text{kHz}/\text{RBW})$ to the measured result, whereas RBW (< 500 kHz) is the reduced resolution bandwidth of the spectrum analyzer set during measurement.	

4.5.3. Test Procedures

1. The transmitter output (antenna port) was connected RF switch to the spectrum analyzer.
2. Test was performed in accordance with KDB789033 D02 v01 for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - section (F) Maximum Power Spectral Density (PSD).
3. Multiple antenna systems was performed in accordance KDB662911 D01 v02r01 in-Band Power Spectral Density (PSD) Measurements (a) Measure and sum the spectra across the outputs.
4. When measuring first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3 and so on up to the Nth output to obtain the value for the first frequency bin of the summed spectrum. The summed spectrum value for each of the other frequency bins is computed in the same way.
5. For 5.725~5.85 GHz, the measured result of PSD level must add $10\log(500\text{kHz}/\text{RBW})$ and the final result should $\leq 30 \text{ dBm}$.

4.5.4. Test Setup Layout



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

Temperature	25°C	Humidity	45%
Test Engineer	Roki Liu	Test Date	Dec. 11, 2015
Test Mode	Mode 1: EUT 1 + Set 1 Sector Antenna / 6.5 dBi		

P to M

Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
36	5180 MHz	8.94	13.49	Complies
40	5200 MHz	8.91	13.49	Complies
48	5240 MHz	8.86	13.49	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 9.51 \text{ dBi} > 6 \text{ dBi}$, So Limit = 17-(9.51-6)=13.49dBm/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	10.52	-3.01	7.51	26.49	Complies
157	5785 MHz	14.06	-3.01	11.05	26.49	Complies
165	5825 MHz	12.28	-3.01	9.27	26.49	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 9.51 \text{ dBi} > 6 \text{ dBi}$, So Limit = 30-(9.51-6)=26.49dBm/500kHz.

Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
36	5180 MHz	9.01	13.49	Complies
40	5200 MHz	8.97	13.49	Complies
48	5240 MHz	9.03	13.49	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 9.51 \text{ dBi} > 6 \text{ dBi}$, So Limit = 17-(9.51-6)=13.49dBm/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	10.05	-3.01	7.04	26.49	Complies
157	5785 MHz	13.97	-3.01	10.96	26.49	Complies
165	5825 MHz	11.58	-3.01	8.57	26.49	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 9.51 \text{ dBi} > 6 \text{ dBi}$, So Limit = 30-(9.51-6)=26.49dBm/500kHz.

Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
38	5190 MHz	5.90	13.49	Complies
46	5230 MHz	5.97	13.49	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 9.51 \text{ dBi} > 6 \text{ dBi}$, So Limit = 17-(9.51-6)=13.49dBm/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	5.45	-3.01	2.44	26.49	Complies
159	5795 MHz	9.15	-3.01	6.14	26.49	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 9.51 \text{ dBi} > 6 \text{ dBi}$, So Limit = 30-(9.51-6)=26.49dBm/500kHz.

Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
42	5210 MHz	-1.67	13.49	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 9.51 \text{ dBi} > 6 \text{ dBi}$, So Limit = 17-(9.51-6)=13.49dBm/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	-2.23	-3.01	-5.24	26.49	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 9.51 \text{ dBi} > 6 \text{ dBi}$, So Limit = 30-(9.51-6)=26.49dBm/500kHz.

Temperature	25°C	Humidity	45%
Test Engineer	Roki Liu	Test Date	Dec. 11, 2015
Test Mode	Mode 2: EUT 1 + Set 2 Sector Antenna / 4.5 dBi		

P to M

Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
36	5180 MHz	4.98	15.49	Complies
40	5200 MHz	4.84	15.49	Complies
48	5240 MHz	4.87	15.49	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 7.51 \text{ dBi} > 6 \text{ dBi}$, So Limit = 17-(7.51-6)=15.49dBm/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	10.90	-3.01	7.89	28.49	Complies
157	5785 MHz	14.06	-3.01	11.05	28.49	Complies
165	5825 MHz	12.28	-3.01	9.27	28.49	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 7.51 \text{ dBi} > 6 \text{ dBi}$, So Limit = 30-(7.51-6)=28.49dBm/500kHz.

Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
36	5180 MHz	4.87	15.49	Complies
40	5200 MHz	5.27	15.49	Complies
48	5240 MHz	5.05	15.49	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 7.51 \text{ dBi} > 6 \text{ dBi}$, So Limit = 17-(7.51-6)=15.49dBm/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	10.66	-3.01	7.65	28.49	Complies
157	5785 MHz	13.97	-3.01	10.96	28.49	Complies
165	5825 MHz	12.67	-3.01	9.66	28.49	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 7.51 \text{ dBi} > 6 \text{ dBi}$, So Limit = 30-(7.51-6)=28.49dBm/500kHz.

Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
38	5190 MHz	2.23	15.49	Complies
46	5230 MHz	2.32	15.49	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 7.51 \text{ dBi} > 6 \text{ dBi}$, So Limit = 17-(7.51-6)=15.49dBm/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	6.62	-3.01	3.61	28.49	Complies
159	5795 MHz	9.15	-3.01	6.14	28.49	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 7.51 \text{ dBi} > 6 \text{ dBi}$, So Limit = 30-(7.51-6)=28.49dBm/500kHz.