SPORTON International Inc.
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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	5250 ~ 5350MHz / 5470 ~ 5725MHz
Received Date	Nov. 17, 2015
Final Test Date	Dec. 21, 2015
Submission Type	Class II Change

Statement

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

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

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

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

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

TAF
Testing Laboratory
1190

Table of Contents

History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR541521-02AB	Rev. 01	Initial issue of report	Jan. 18, 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	15.407(a)	26dB Spectrum Bandwidth and 99% Occupied Bandwidth	Complies	-
4.2	15.407(e)	6dB Spectrum Bandwidth	Complies	-
4.3	15.407(a)	Maximum Conducted Output Power	Complies	0.01 dB
4.4	15.407(a)	Power Spectral Density	Complies	0.01 dB
4.5	15.407(b)	Radiated Emissions	Complies	3.29 dB
4.6	15.407(b)	Band Edge Emissions	Complies	1.01 dB
4.7	15.407(g)	Frequency Stability	Complies	-
4.8	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 power adapter or 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	5250 ~ 5350MHz / 5470 ~ 5725MHz
Channel Number	16 for 20MHz bandwidth ; 8 for 40MHz bandwidth 4 for 80MHz bandwidth
Channel Band Width (99%)	Mode 1: EUT 1 + Set 1 Sector Antenna / 6.5 dBi Band 2: IEEE 802.11ac MCS0/Nss1 (VHT20): 18.06 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.19 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 76.41 MHz Band 3: IEEE 802.11ac MCS0/Nss1 (VHT20): 17.97 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.05 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 76.41 MHz Mode 2: EUT 1 + Set 2 Sector Antenna / 4.5 dBi Band 2: IEEE 802.11ac MCS0/Nss1 (VHT20): 18.06 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.19 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 76.70 MHz Band 3: IEEE 802.11ac MCS0/Nss1 (VHT20): 17.97 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.05 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 76.70 MHz Mode 3: EUT 1 + Set 3 Sector Antenna / 5.5 dBi Band 2: IEEE 802.11ac MCS0/Nss1 (VHT20): 18.06 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.19 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 76.12 MHz Band 3: IEEE 802.11ac MCS0/Nss1 (VHT20): 17.97 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 36.90 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 76.70 MHz

	Mode 4: EUT 1 + Set 4 Sector Antenna / 7.5 dBi Band 2: IEEE 802.11ac MCS0/Nss1 (VHT20): 17.97 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.19 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 76.41 MHz Band 3: IEEE 802.11ac MCS0/Nss1 (VHT20): 17.97 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.05 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 76.70 MHz Mode 5: EUT 1 + Set 5 Panel Antenna / 6 dBi Band 2: IEEE 802.11ac MCS0/Nss1 (VHT20): 18.06 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.19 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 76.41 MHz Band 3: IEEE 802.11ac MCS0/Nss1 (VHT20): 17.97 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.05 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 76.70 MHz Mode 6: EUT 1 + Set 7 Sector Antenna / 11.5 dBi Band 2: IEEE 802.11ac MCS0/Nss1 (VHT20): 17.97 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.05 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 76.70 MHz Band 3: IEEE 802.11ac MCS0/Nss1 (VHT20): 17.97 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.05 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 76.70 MHz Mode 7: EUT 1 + Set 8 Sector Antenna / 12 dBi Band 2: IEEE 802.11ac MCS0/Nss1 (VHT20): 18.06 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.19 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 76.41 MHz Band 3: IEEE 802.11ac MCS0/Nss1 (VHT20): 17.97 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.05 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 76.70 MHz Mode 8: EUT 1 + Set 9 Sector Antenna / 4 dBi Band 2: IEEE 802.11ac MCS0/Nss1 (VHT20): 18.06 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.19 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 76.12 MHz Band 3: IEEE 802.11ac MCS0/Nss1 (VHT20): 18.06 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.19 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 76.99 MHz

	Mode 9: EUT 1 + Set 10 Panel Antenna / 23 dBi Band 2: IEEE 802.11ac MCS0/Nss1 (VHT20): 17.97 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.34 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 76.41 MHz Band 3: IEEE 802.11ac MCS0/Nss1 (VHT20): 17.97 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.19 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 76.70 MHz Mode 10: EUT 1 + Set 11 Omni Antenna / 6 dBi Band 2: IEEE 802.11ac MCS0/Nss1 (VHT20): 18.06 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.19 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 76.70 MHz Band 3: IEEE 802.11ac MCS0/Nss1 (VHT20): 18.06 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.05 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 76.70 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 2: IEEE 802.11ac MCS0/Nss1 (VHT20): 17.97 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.19 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 76.41 MHz Band 3: IEEE 802.11ac MCS0/Nss1 (VHT20): 17.97 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.19 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 76.41 MHz
Maximum Conducted Output Power	Mode 1: EUT 1 + Set 1 Sector Antenna / 6.5 dBi Band 2: IEEE 802.11ac MCS0/Nss1 (VHT20): 20.45 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 20.32 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 15.28 dBm Band 3: IEEE 802.11ac MCS0/Nss1 (VHT20): 20.48 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 20.33 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 20.26 dBm Mode 2: EUT 1 + Set 2 Sector Antenna / 4.5 dBi Band 2: IEEE 802.11ac MCS0/Nss1 (VHT20): 22.48 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 22.37 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 19.43 dBm Band 3: IEEE 802.11ac MCS0/Nss1 (VHT20): 22.24 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 22.34 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 22.42 dBm

	Mode 3: EUT 1 + Set 3 Sector Antenna / 5.5 dBi Band 2: IEEE 802.11ac MCS0/Nss1 (VHT20): 21.47 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 21.27 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 17.75 dBm Band 3: IEEE 802.11ac MCS0/Nss1 (VHT20): 21.43 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 21.35 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 21.31 dBm Mode 4: EUT 1 + Set 4 Sector Antenna / 7.5 dBi Band 2: IEEE 802.11ac MCS0/Nss1 (VHT20): 19.43 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 19.02 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 16.65 dBm Band 3: IEEE 802.11ac MCS0/Nss1 (VHT20): 19.48 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 19.46 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 19.28 dBm Mode 5: EUT 1 + Set 5 Panel Antenna / 6 dBi Band 2: IEEE 802.11ac MCS0/Nss1 (VHT20): 17.92 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 17.73 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 16.65 dBm Band 3: IEEE 802.11ac MCS0/Nss1 (VHT20): 17.95 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 17.95 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 17.72 dBm Mode 6: EUT 1 + Set 7 Sector Antenna / 11.5 dBi Band 2: IEEE 802.11ac MCS0/Nss1 (VHT20): 15.46 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 15.37 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 13.97 dBm Band 3: IEEE 802.11ac MCS0/Nss1 (VHT20): 15.42 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 15.47 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 15.43 dBm Mode 7: EUT 1 + Set 8 Sector Antenna / 12 dBi Band 2: IEEE 802.11ac MCS0/Nss1 (VHT20): 14.97 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 14.86 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 13.42 dBm Band 3: IEEE 802.11ac MCS0/Nss1 (VHT20): 14.93 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 14.97 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 14.65 dBm

	Mode 8: EUT 1 + Set 9 Sector Antenna / 4 dBi Band 2: IEEE 802.11ac MCS0/Nss1 (VHT20): 22.59 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 22.53 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 17.25 dBm Band 3: IEEE 802.11ac MCS0/Nss1 (VHT20): 22.57 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 22.93 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 22.81 dBm Mode 9: EUT 1 + Set 10 Panel Antenna / 23 dBi Band 2: IEEE 802.11ac MCS0/Nss1 (VHT20): 3.72 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 3.84 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 3.81 dBm Band 3: IEEE 802.11ac MCS0/Nss1 (VHT20): 3.74 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 3.92 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 3.70 dBm Mode 10: EUT 1 + Set 11 Omni Antenna / 6 dBi Band 2: IEEE 802.11ac MCS0/Nss1 (VHT20): 17.92 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 17.73 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 12.58 dBm Band 3: IEEE 802.11ac MCS0/Nss1 (VHT20): 17.97 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 17.97 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 17.72 dBm 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 2: IEEE 802.11ac MCS0/Nss1 (VHT20): 17.61 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 17.82 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 17.46 dBm Band 3: IEEE 802.11ac MCS0/Nss1 (VHT20): 17.90 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 17.87 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 17.73 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
TPC Function	☒ With TPC	☐ Without TPC
Weather Band (5600~5650MHz)	☒ With 5600~5650MHz	☐ Without 5600~5650MHz
Operating Mode	☒ Outdoor access point	
	☐ Indoor access point	
	☒ Fixed point-to-point access points	
	☐ Mobile and portable client devices	

Note1: The product has beamforming function for 802.11n/ac in 2.4G/5G.

Note2: Test results of non-beamforming are recorded in test report: FR541521-02AA. Test results of beamforming are recorded in this test report.

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 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.

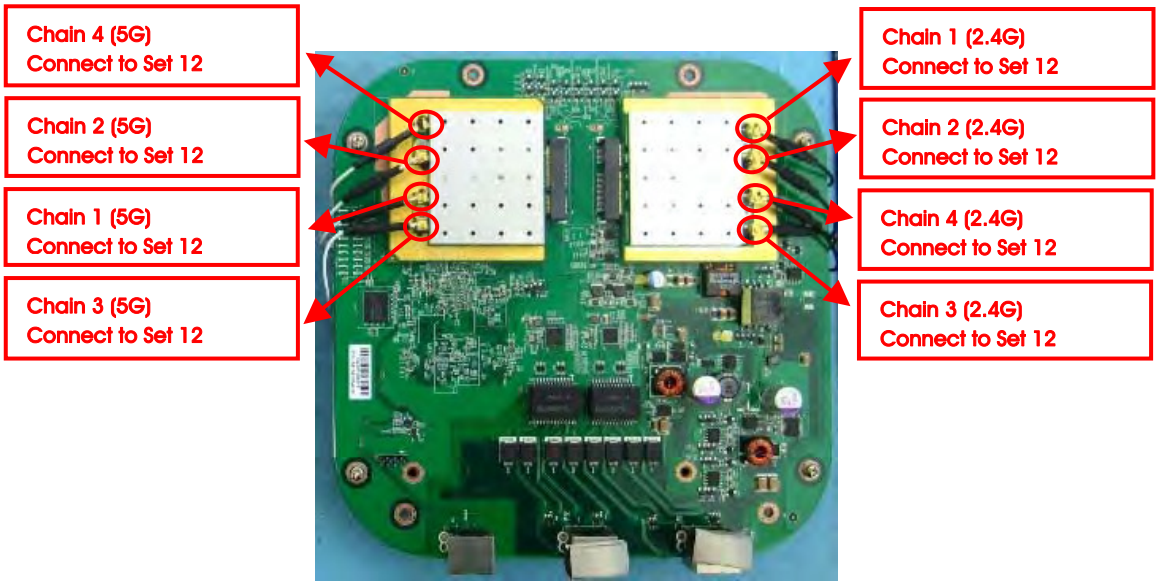
<For 5GHz Function>

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 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140, 144.

For 40MHz bandwidth systems, use Channel 54, 62, 102, 110, 118, 126, 134, 142.

For 80MHz bandwidth systems, use Channel 58, 106, 122, 138.

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
5250~5350 MHz Band 2	52	5260 MHz	60	5300 MHz
	54	5270 MHz	62	5310 MHz
	56	5280 MHz	64	5320 MHz
	58	5290 MHz	-	-
5470~5725 MHz Band 3	100	5500 MHz	124	5620 MHz
	102	5510 MHz	126	5630 MHz
	104	5520 MHz	128	5640 MHz
	106	5530 MHz	132	5660 MHz
	108	5540 MHz	134	5670 MHz
	110	5550 MHz	136	5680 MHz
	112	5560 MHz	138	5690 MHz
	116	5580 MHz	140	5700 MHz
	118	5590 MHz	142	5710 MHz
	120	5600 MHz	144	5720 MHz
	122	5610 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
Max. Conducted Output Power	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/116/140/144	1+2+3+4
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/134/142	1+2+3+4
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122/138	1+2+3+4
Power Spectral Density	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/116/140/144	1+2+3+4
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/134/142	1+2+3+4
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122/138	1+2+3+4
26dB Spectrum Bandwidth 99% Occupied Bandwidth Measurement	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/116/140/144	1+2+3+4
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/134/142	1+2+3+4
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122/138	1+2+3+4
6dB Spectrum Bandwidth Measurement	11ac VHT20	Band 4	MCS0/Nss1	144	1+2+3+4
	11ac VHT40	Band 4	MCS0/Nss1	142	1+2+3+4
	11ac VHT80	Band 4	MCS0/Nss1	138	1+2+3+4
Radiated Emission Above 1GHz	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/116/140/144	1+2+3+4
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/134/142	1+2+3+4
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122/138	1+2+3+4
Band Edge Emission	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/116/140/144	1+2+3+4
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/134/142	1+2+3+4
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122/138	1+2+3+4

Frequency Stability	20 MHz	Band 2-3	-	60/116	3, 4
	40 MHz	Band 2-3	-	62/110	3, 4
	80 MHz	Band 2-3	-	58/106	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 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

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	-
TH01-CB	OVEN Room	Hsin Chu	-	-	-

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

3.7. Table for Multiple Listing and Class II Change

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.

This product is an extension of original one reported under Sporton project number: FR541521-01AD

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

Modifications	Performance Checking
Add Band 2 and Band 3 (5250~5350 MHz, 5470~5725 MHz)	1. 26dB Bandwidth and 99% Occupied Bandwidth Measurement 2. 6dB Spectrum Bandwidth Measurement 3. Maximum Conducted Output Power Measurement 4. Power Spectral Density Measurement 5. Radiated Emissions Above 1GHz 6. Band Edge Emissions Measurement 7. Frequency Stability Measurement

3.8. Table for Supporting Units

For Test Site No: 03CH01-CB

Support Unit	Brand	Model	FCC ID
NB*2	DELL	E4300	DoC
Device	Extreme Networks	31018	QXO-4411AC
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						
	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz	5720 MHz
802.11ac MCS0/Nss1 VHT20	16	16	16	16	16	16	16
Mode	NCB: 40MHz						
802.11ac MCS0/Nss1 VHT40	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz	5710 MHz	
	15	15	15	15	15	15	
Mode	NCB: 80MHz						
802.11ac MCS0/Nss1 VHT80	5290 MHz		5530 MHz		5610 MHz	5690 MHz	
	10.5		10.5		15.5	15.5	

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						
	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz	5720 MHz
802.11ac MCS0/Nss1 VHT20	17.5	17.5	17.5	17.5	17.5	16	17.5
Mode	NCB: 40MHz						
802.11ac MCS0/Nss1 VHT40	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz	5710 MHz	
	17	16	16.5	17	17	17	
Mode	NCB: 80MHz						
802.11ac MCS0/Nss1 VHT80	5290 MHz		5530 MHz		5610 MHz	5690 MHz	
	14.5		13.5		17.5	17.5	

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						
	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz	5720 MHz
802.11ac MCS0/Nss1 VHT20	16.5	16.5	17	17	16.5	16.5	16.5
Mode	NCB: 40MHz						
802.11ac MCS0/Nss1 VHT40	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz	5710 MHz	
	16	14	16	16	16	16	
Mode	NCB: 80MHz						
802.11ac MCS0/Nss1 VHT80	5290 MHz	5530 MHz	5610 MHz	5690 MHz			
	13	13	16.5	16.5			

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						
	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz	5720 MHz
802.11ac MCS0/Nss1 VHT20	15	15	15	15	15	15	14.5
Mode	NCB: 40MHz						
802.11ac MCS0/Nss1 VHT40	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz	5710 MHz	
	14	13.5	14	14.5	14	14	
Mode	NCB: 80MHz						
802.11ac MCS0/Nss1 VHT80	5290 MHz	5530 MHz	5610 MHz	5690 MHz			
	12	10.5	14.5	14.5			

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

Test Software Version	QCA VER3.0.144.0						
Mode	Test Frequency (MHz)						
	NCB: 20MHz						
	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz	5720 MHz
802.11ac MCS0/Nss1 VHT20	13.5	13.5	13.5	13.5	13.5	13.5	13
Mode	NCB: 40MHz						
802.11ac MCS0/Nss1 VHT40	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz	5710 MHz	
	12.5	12.5	12.5	13	12.5	12.5	
Mode	NCB: 80MHz						
802.11ac MCS0/Nss1 VHT80	5290 MHz	5530 MHz	5610 MHz	5690 MHz			
	12	11	13	13			

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						
	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz	5720 MHz
802.11ac MCS0/Nss1 VHT20	11	11	11	11	11	11	10.5
Mode	NCB: 40MHz						
802.11ac MCS0/Nss1 VHT40	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz	5710 MHz	
	10	10	10.5	10.5	10	10	
Mode	NCB: 80MHz						
802.11ac MCS0/Nss1 VHT80	5290 MHz	5530 MHz	5610 MHz	5690 MHz			
	9	9	10	10.5			

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

Test Software Version	QCA VER3.0.144.0						
Mode	Test Frequency (MHz)						
	NCB: 20MHz						
	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz	5720 MHz
802.11ac MCS0/Nss1 VHT20	10.5	10.5	10.5	10.5	10.5	10.5	10
Mode	NCB: 40MHz						
802.11ac MCS0/Nss1 VHT40	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz	5710 MHz	
	9.5	9.5	10	10	9.5	9.5	
Mode	NCB: 80MHz						
802.11ac MCS0/Nss1 VHT80	5290 MHz	5530 MHz	5610 MHz	5690 MHz			
	8.5	8.5	10	10			

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

Test Software Version	QCA VER3.0.144.0						
Mode	Test Frequency (MHz)						
	NCB: 20MHz						
	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz	5720 MHz
802.11ac MCS0/Nss1 VHT20	18	18	18	18	18	17.5	17.5
Mode	NCB: 40MHz						
802.11ac MCS0/Nss1 VHT40	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz	5710 MHz	
	18	14.5	15	18	17.5	17.5	
Mode	NCB: 80MHz						
802.11ac MCS0/Nss1 VHT80	5290 MHz	5530 MHz	5610 MHz	5690 MHz			
	12.5	11.5	18	17.5			

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

Test Software Version	QCA VER3.0.144.0						
Mode	Test Frequency (MHz)						
	NCB: 20MHz						
	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz	5720 MHz
802.11ac MCS0/Nss1 VHT20	0.5	0.5	0.5	0.5	0.5	0.5	2
Mode	NCB: 40MHz						
802.11ac MCS0/Nss1 VHT40	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz	5710 MHz	
	0	0	0.5	0	0	2	
Mode	NCB: 80MHz						
802.11ac MCS0/Nss1 VHT80	5290 MHz	5530 MHz	5610 MHz	5690 MHz			
	0.5	0.5	0.5	2			

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

Test Software Version	QCA VER3.0.144.0						
Mode	Test Frequency (MHz)						
	NCB: 20MHz						
	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz	5720 MHz
802.11ac MCS0/Nss1 VHT20	13.5	13.5	13.5	13.5	13.5	13.5	13
Mode	NCB: 40MHz						
802.11ac MCS0/Nss1 VHT40	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz	5710 MHz	
	12.5	11	12.5	13	12.5	12.5	
Mode	NCB: 80MHz						
802.11ac MCS0/Nss1 VHT80	5290 MHz	5530 MHz	5610 MHz	5690 MHz			
	7.5	7.5	12.5	13			

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						
	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz	5720 MHz
802.11ac MCS0/Nss1 VHT20	11.5	11.5	11.5	12	12	12	11.5

Mode	NCB: 40MHz					
802.11ac MCS0/Nss1 VHT40	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz	5710 MHz
	11	11	11	11	11	12

Mode	NCB: 80MHz			
802.11ac MCS0/Nss1 VHT80	5290 MHz	5530 MHz	5610 MHz	5690 MHz
	11.5	10	11.5	12

3.10. EUT Operation during Test

For Conducted Mode:
The EUT was programmed to be in continuously transmitting mode.
For Radiated Mode:
During the test, the following programs under WIN 7 were executed.
The program was executed as follows:
1. During the test, the EUT operation to normal function.
2. Executed command fixed test channel under DOS.
3. Executed "Lantest.exe " to link with the remote workstation to receive and transmit packet by Device and transmit duty cycle no less 98%

3.11. Duty Cycle

Mode 1 ~ Mode 10

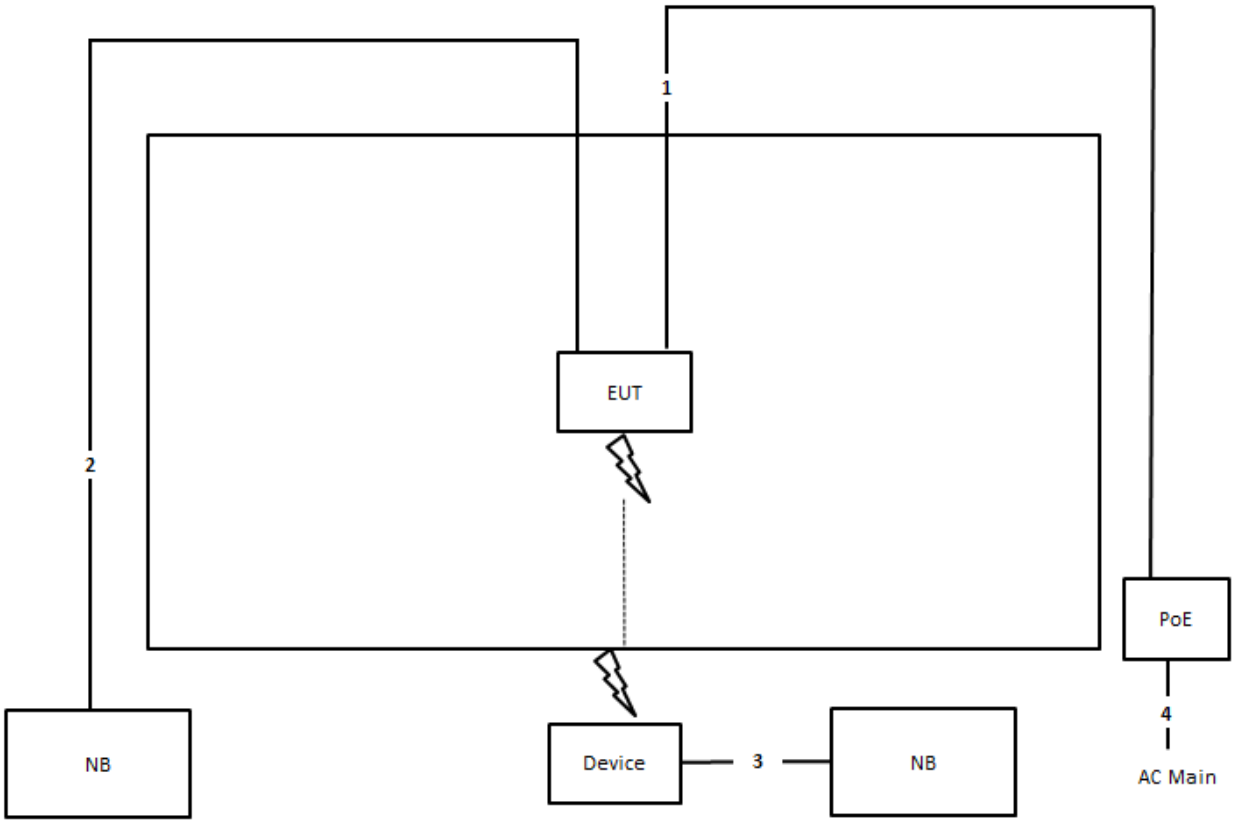
Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11ac MCS0/Nss1 VHT20	1.740	1.870	93.05%	0.31	0.57
802.11ac MCS0/Nss1 VHT40	1.597	1.800	88.70%	0.52	0.63
802.11ac MCS0/Nss1 VHT80	1.898	2.079	91.30%	0.40	0.53

Mode 11

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11ac MCS0/Nss1 VHT20	1.747	1.914	91.30	0.40	0.57
802.11ac MCS0/Nss1 VHT40	1.656	1.848	89.61	0.48	0.60
802.11ac MCS0/Nss1 VHT80	1.897	2.086	90.93	0.41	0.53

3.12. Test Configurations

3.12.1. Radiation Emissions Test Configuration



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

4. TEST RESULT

4.1. 26dB Bandwidth and 99% Occupied Bandwidth Measurement

4.1.1. Limit

No restriction limits.

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 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	≥ 3 x RBW
Detector	Peak
Trace	Max Hold

4.1.3. 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%.

4.1.4. Test Setup Layout

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

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

4.1.5. Test Deviation

There is no deviation with the original standard.

4.1.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.1.7. 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)
802.11ac MCS0/Nss1 VHT20	5260 MHz	22.09	18.06
	5300 MHz	22.70	17.97
	5320 MHz	22.17	17.97
	5500 MHz	22.52	17.97
	5580 MHz	21.83	17.89
	5700 MHz	21.83	17.97
802.11ac MCS0/Nss1 VHT40	5270 MHz	44.93	37.19
	5310 MHz	45.36	37.19
	5510 MHz	45.36	37.05
	5550 MHz	45.22	36.90
	5670 MHz	45.22	36.76
802.11ac MCS0/Nss1 VHT80	5290 MHz	87.25	76.41
	5530 MHz	88.41	76.41
	5610 MHz	86.67	76.41

Straddle Channel

Mode	Frequency	26dB BW (MHz)	99% OBW (MHz)	26dB BW F1 (MHz)	99% OBW T1 (MHz)	UNII 2C 26dB BW (MHz)	UNII 3 26dB BW (MHz)	UNII 2C 99% BW (MHz)	UNII 3 99% BW (MHz)
802.11ac MCS0/Nss1 VHT20	5720 MHz	21.83	17.97	5709.22	5711.06	15.78	6.04	13.94	4.03
802.11ac MCS0/Nss1 VHT40	5710 MHz	44.93	36.90	5687.39	5691.48	37.61	7.32	33.52	3.38
802.11ac MCS0/Nss1 VHT80	5690 MHz	86.96	76.99	5645.94	5651.22	79.06	7.90	73.78	3.21

Temperature	25℃	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)
802.11ac MCS0/Nss1 VHT20	5260 MHz	21.74	18.06
	5300 MHz	22.43	17.97
	5320 MHz	22.26	18.06
	5500 MHz	21.91	17.97
	5580 MHz	22.26	17.89
	5700 MHz	21.83	17.97
802.11ac MCS0/Nss1 VHT40	5270 MHz	45.51	37.19
	5310 MHz	45.07	37.19
	5510 MHz	45.36	37.05
	5550 MHz	45.51	37.05
	5670 MHz	45.65	36.76
802.11ac MCS0/Nss1 VHT80	5290 MHz	86.96	76.70
	5530 MHz	87.25	76.70
	5610 MHz	86.96	76.70

Straddle Channel

Mode	Frequency	26dB BW (MHz)	99% OBW (MHz)	26dB BW F1 (MHz)	99% OBW T1 (MHz)	UNII 2C 26dB BW (MHz)	UNII 3 26dB BW (MHz)	UNII 2C 99% BW (MHz)	UNII 3 99% BW (MHz)
802.11ac MCS0/Nss1 VHT20	5720 MHz	21.22	17.97	5709.57	5711.06	15.43	5.78	13.94	4.03
802.11ac MCS0/Nss1 VHT40	5710 MHz	46.81	36.90	5687.25	5691.48	37.75	9.06	33.52	3.38
802.11ac MCS0/Nss1 VHT80	5690 MHz	87.54	76.99	5645.65	5651.22	79.35	8.19	73.78	3.21

Temperature	25℃	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)
802.11ac MCS0/Nss1 VHT20	5260 MHz	22.09	17.97
	5300 MHz	22.78	17.97
	5320 MHz	22.70	18.06
	5500 MHz	22.43	17.97
	5580 MHz	22.35	17.89
	5700 MHz	21.22	17.97
802.11ac MCS0/Nss1 VHT40	5270 MHz	45.22	37.19
	5310 MHz	45.07	37.19
	5510 MHz	45.07	36.90
	5550 MHz	45.51	36.90
	5670 MHz	45.22	36.61
802.11ac MCS0/Nss1 VHT80	5290 MHz	87.25	76.12
	5530 MHz	88.99	76.41
	5610 MHz	87.25	76.70

Straddle Channel

Mode	Frequency	26dB BW (MHz)	99% OBW (MHz)	26dB BW F1 (MHz)	99% OBW T1 (MHz)	UNII 2C 26dB BW (MHz)	UNII 3 26dB BW (MHz)	UNII 2C 99% BW (MHz)	UNII 3 99% BW (MHz)
802.11ac MCS0/Nss1 VHT20	5720 MHz	21.04	17.89	5709.48	5711.06	15.52	5.52	13.94	3.94
802.11ac MCS0/Nss1 VHT40	5710 MHz	45.07	36.76	5687.25	5691.48	37.75	7.32	33.52	3.23
802.11ac MCS0/Nss1 VHT80	5690 MHz	84.64	76.70	5647.68	5651.51	77.32	7.32	73.49	3.21

Temperature	25℃	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)
802.11ac MCS0/Nss1 VHT20	5260 MHz	21.65	17.97
	5300 MHz	22.35	17.97
	5320 MHz	22.43	17.97
	5500 MHz	21.74	17.97
	5580 MHz	21.91	17.89
	5700 MHz	21.13	17.97
802.11ac MCS0/Nss1 VHT40	5270 MHz	45.07	37.05
	5310 MHz	45.36	37.19
	5510 MHz	45.22	37.05
	5550 MHz	45.36	36.90
	5670 MHz	44.78	36.90
802.11ac MCS0/Nss1 VHT80	5290 MHz	87.25	76.41
	5530 MHz	87.83	76.70
	5610 MHz	86.96	76.41

Straddle Channel

Mode	Frequency	26dB BW (MHz)	99% OBW (MHz)	26dB BW F1 (MHz)	99% OBW T1 (MHz)	UNII 2C 26dB BW (MHz)	UNII 3 26dB BW (MHz)	UNII 2C 99% BW (MHz)	UNII 3 99% BW (MHz)
802.11ac MCS0/Nss1 VHT20	5720 MHz	21.39	17.97	5709.39	5711.06	15.61	5.78	13.94	4.03
802.11ac MCS0/Nss1 VHT40	5710 MHz	44.35	37.34	5687.83	5691.19	37.17	7.17	33.81	3.52
802.11ac MCS0/Nss1 VHT80	5690 MHz	84.35	76.41	5647.68	5651.80	77.32	7.03	73.20	3.21

Temperature	25℃	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)
802.11ac MCS0/Nss1 VHT20	5260 MHz	21.57	17.97
	5300 MHz	22.43	17.97
	5320 MHz	22.17	18.06
	5500 MHz	21.57	17.97
	5580 MHz	21.83	17.89
	5700 MHz	21.48	17.97
802.11ac MCS0/Nss1 VHT40	5270 MHz	44.93	37.05
	5310 MHz	45.22	37.19
	5510 MHz	45.22	37.05
	5550 MHz	45.07	36.90
	5670 MHz	44.78	36.90
802.11ac MCS0/Nss1 VHT80	5290 MHz	87.54	76.41
	5530 MHz	87.25	76.70
	5610 MHz	86.38	76.41

Straddle Channel

Mode	Frequency	26dB BW (MHz)	99% OBW (MHz)	26dB BW F1 (MHz)	99% OBW T1 (MHz)	UNII 2C 26dB BW (MHz)	UNII 3 26dB BW (MHz)	UNII 2C 99% BW (MHz)	UNII 3 99% BW (MHz)
802.11ac MCS0/Nss1 VHT20	5720 MHz	21.74	17.97	5709.13	5711.06	15.87	5.87	13.94	4.03
802.11ac MCS0/Nss1 VHT40	5710 MHz	44.64	36.90	5687.68	5691.48	37.32	7.32	33.52	3.38
802.11ac MCS0/Nss1 VHT80	5690 MHz	84.93	76.70	5647.39	5651.51	77.61	7.32	73.49	3.21

Temperature	25℃	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)
802.11ac MCS0/Nss1 VHT20	5260 MHz	21.65	17.89
	5300 MHz	22.35	17.97
	5320 MHz	22.09	17.97
	5500 MHz	21.83	17.97
	5580 MHz	21.83	17.89
	5700 MHz	21.13	17.97
802.11ac MCS0/Nss1 VHT40	5270 MHz	44.93	37.05
	5310 MHz	45.36	37.05
	5510 MHz	44.93	37.05
	5550 MHz	45.07	36.90
	5670 MHz	44.93	36.90
802.11ac MCS0/Nss1 VHT80	5290 MHz	87.54	76.70
	5530 MHz	86.96	76.70
	5610 MHz	86.67	76.41

Straddle Channel

Mode	Frequency	26dB BW (MHz)	99% OBW (MHz)	26dB BW F1 (MHz)	99% OBW T1 (MHz)	UNII 2C 26dB BW (MHz)	UNII 3 26dB BW (MHz)	UNII 2C 99% BW (MHz)	UNII 3 99% BW (MHz)
802.11ac MCS0/Nss1 VHT20	5720 MHz	22.35	17.97	5709.04	5711.06	15.96	6.39	13.94	4.03
802.11ac MCS0/Nss1 VHT40	5710 MHz	44.78	36.90	5687.54	5691.48	37.46	7.32	33.52	3.38
802.11ac MCS0/Nss1 VHT80	5690 MHz	84.35	76.41	5647.68	5651.80	77.32	7.03	73.20	3.21

Temperature	25℃	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)
802.11ac MCS0/Nss1 VHT20	5260 MHz	21.91	17.89
	5300 MHz	22.26	17.97
	5320 MHz	22.00	18.06
	5500 MHz	22.26	17.97
	5580 MHz	22.09	17.89
	5700 MHz	22.26	17.97
802.11ac MCS0/Nss1 VHT40	5270 MHz	44.78	37.05
	5310 MHz	44.93	37.19
	5510 MHz	45.07	37.05
	5550 MHz	45.22	36.90
	5670 MHz	45.07	36.90
802.11ac MCS0/Nss1 VHT80	5290 MHz	87.54	76.41
	5530 MHz	87.83	76.70
	5610 MHz	86.67	76.41

Straddle Channel

Mode	Frequency	26dB BW (MHz)	99% OBW (MHz)	26dB BW F1 (MHz)	99% OBW T1 (MHz)	UNII 2C 26dB BW (MHz)	UNII 3 26dB BW (MHz)	UNII 2C 99% BW (MHz)	UNII 3 99% BW (MHz)
802.11ac MCS0/Nss1 VHT20	5720 MHz	22.26	17.97	5708.96	5711.06	16.04	6.22	13.94	4.03
802.11ac MCS0/Nss1 VHT40	5710 MHz	45.07	36.90	5687.39	5691.48	37.61	7.46	33.52	3.38
802.11ac MCS0/Nss1 VHT80	5690 MHz	84.64	76.41	5647.68	5651.80	77.32	7.32	73.20	3.21

Temperature	25℃	Humidity	45%
Test Engineer	Eddie Weng & Lucas Huang		
Test Mode	Mode 8: EUT 1 + Set 9 Sector Antenna / 4 dBi		

Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11ac MCS0/Nss1 VHT20	5260 MHz	22.35	18.06
	5300 MHz	22.52	18.06
	5320 MHz	22.52	18.06
	5500 MHz	22.70	18.06
	5580 MHz	22.00	17.89
	5700 MHz	22.61	17.97
802.11ac MCS0/Nss1 VHT40	5270 MHz	45.51	37.19
	5310 MHz	45.22	37.19
	5510 MHz	45.51	37.05
	5550 MHz	46.09	37.19
	5670 MHz	45.80	36.76
802.11ac MCS0/Nss1 VHT80	5290 MHz	86.67	76.12
	5530 MHz	88.12	76.70
	5610 MHz	101.45	76.99

Straddle Channel

Mode	Frequency	26dB BW (MHz)	99% OBW (MHz)	26dB BW F1 (MHz)	99% OBW T1 (MHz)	UNII 2C 26dB BW (MHz)	UNII 3 26dB BW (MHz)	UNII 2C 99% BW (MHz)	UNII 3 99% BW (MHz)
802.11ac MCS0/Nss1 VHT20	5720 MHz	21.22	17.97	5709.57	5711.06	15.43	5.78	13.94	4.03
802.11ac MCS0/Nss1 VHT40	5710 MHz	46.81	36.90	5687.25	5691.48	37.75	9.06	33.52	3.38
802.11ac MCS0/Nss1 VHT80	5690 MHz	87.54	76.99	5645.65	5651.22	79.35	8.19	73.78	3.21

Temperature	25℃	Humidity	45%
Test Engineer	Eddie Weng & Lucas Huang		
Test Mode	Mode 9: EUT 1 + Set 10 Panel Antenna / 23 dBi		

Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11ac MCS0/Nss1 VHT20	5260 MHz	22.43	17.97
	5300 MHz	22.43	17.97
	5320 MHz	22.43	17.97
	5500 MHz	22.09	17.97
	5580 MHz	22.35	17.89
	5700 MHz	22.09	17.97
802.11ac MCS0/Nss1 VHT40	5270 MHz	44.93	37.34
	5310 MHz	45.22	37.19
	5510 MHz	45.22	37.19
	5550 MHz	45.36	37.05
	5670 MHz	45.07	36.90
802.11ac MCS0/Nss1 VHT80	5290 MHz	87.54	76.41
	5530 MHz	89.86	76.70
	5610 MHz	87.54	76.70

Straddle Channel

Mode	Frequency	26dB BW (MHz)	99% OBW (MHz)	26dB BW F1 (MHz)	99% OBW T1 (MHz)	UNII 2C 26dB BW (MHz)	UNII 3 26dB BW (MHz)	UNII 2C 99% BW (MHz)	UNII 3 99% BW (MHz)
802.11ac MCS0/Nss1 VHT20	5720 MHz	19.57	17.37	5710.43	5711.49	14.57	5.00	13.51	3.86
802.11ac MCS0/Nss1 VHT40	5710 MHz	45.21	36.90	5687.68	5691.62	37.32	7.89	33.38	3.52
802.11ac MCS0/Nss1 VHT80	5690 MHz	86.38	76.41	5646.81	5651.79	78.19	8.19	73.21	3.20

Temperature	25℃	Humidity	45%
Test Engineer	Eddie Weng & Lucas Huang		
Test Mode	Mode 10: EUT 1 + Set 11 Omni Antenna / 6 dBi		

Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11ac MCS0/Nss1 VHT20	5260 MHz	21.57	17.97
	5300 MHz	22.43	17.97
	5320 MHz	22.17	18.06
	5500 MHz	21.57	17.97
	5580 MHz	21.83	17.89
	5700 MHz	21.48	17.97
802.11ac MCS0/Nss1 VHT40	5270 MHz	44.93	37.05
	5310 MHz	45.22	37.19
	5510 MHz	45.22	37.05
	5550 MHz	45.07	36.90
	5670 MHz	44.78	36.90
802.11ac MCS0/Nss1 VHT80	5290 MHz	87.83	76.70
	5530 MHz	87.83	76.70
	5610 MHz	86.67	76.41

Straddle Channel

Mode	Frequency	26dB BW (MHz)	99% OBW (MHz)	26dB BW F1 (MHz)	99% OBW T1 (MHz)	UNII 2C 26dB BW (MHz)	UNII 3 26dB BW (MHz)	UNII 2C 99% BW (MHz)	UNII 3 99% BW (MHz)
802.11ac MCS0/Nss1 VHT20	5720 MHz	21.74	17.97	5709.13	5711.06	15.87	5.87	13.94	4.03
802.11ac MCS0/Nss1 VHT40	5710 MHz	44.64	36.90	5687.68	5691.48	37.32	7.32	33.52	3.38
802.11ac MCS0/Nss1 VHT80	5690 MHz	84.93	76.70	5647.39	5651.51	77.61	7.32	73.49	3.21

Temperature	25℃	Humidity	45%
Test Engineer	Eddie Weng & Lucas Huang		
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		

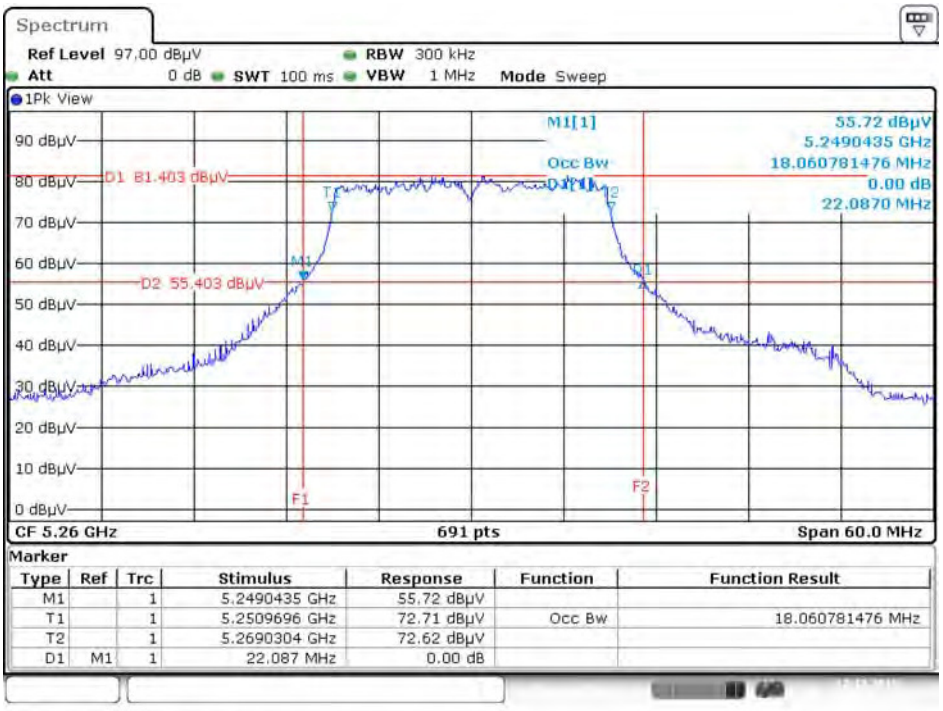
Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11ac MCS0/Nss1 VHT20	5260 MHz	22.26	17.89
	5300 MHz	22.43	17.89
	5320 MHz	22.09	17.97
	5500 MHz	22.43	17.89
	5580 MHz	22.09	17.97
	5700 MHz	22.00	17.89
802.11ac MCS0/Nss1 VHT40	5270 MHz	45.07	37.05
	5310 MHz	45.07	37.19
	5510 MHz	45.80	37.19
	5550 MHz	44.64	36.90
	5670 MHz	45.65	37.19
802.11ac MCS0/Nss1 VHT80	5290 MHz	86.38	76.41
	5530 MHz	86.38	76.12
	5610 MHz	87.54	76.41

Straddle Channel

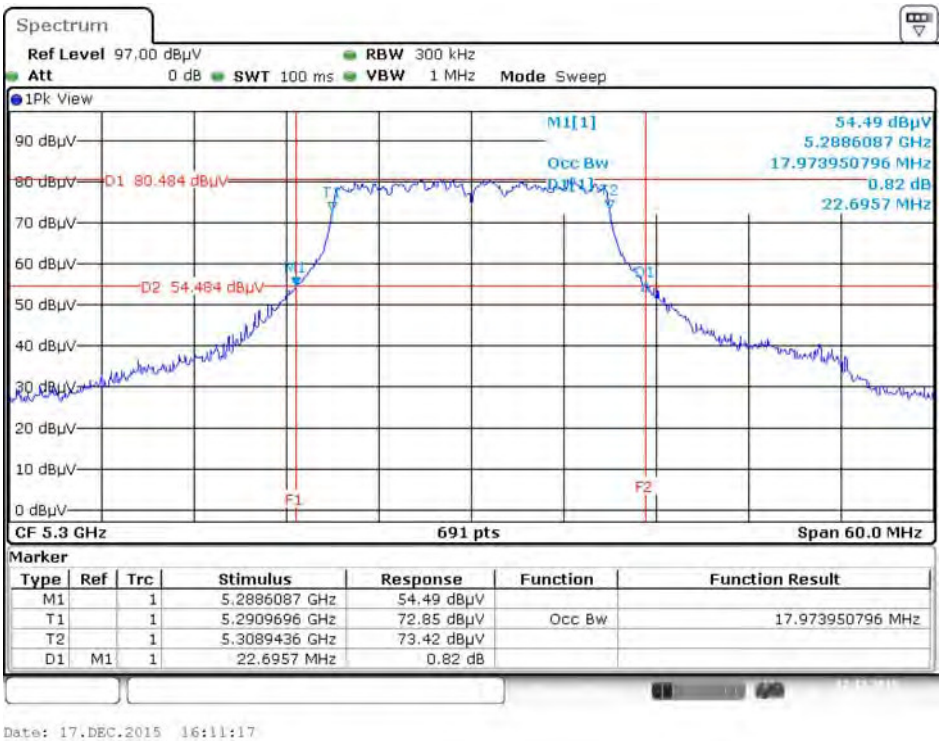
Mode	Frequency	26dB BW (MHz)	99% OBW (MHz)	26dB BW F1 (MHz)	99% OBW T1 (MHz)	UNII 2C 26dB BW (MHz)	UNII 3 26dB BW (MHz)	UNII 2C 99% BW (MHz)	UNII 3 99% BW (MHz)
802.11ac MCS0/Nss1 VHT20	5720 MHz	22.35	17.89	5709.04	5711.06	15.96	6.39	13.94	3.94
802.11ac MCS0/Nss1 VHT40	5710 MHz	45.36	37.05	5687.83	5691.62	37.17	8.19	33.38	3.67
802.11ac MCS0/Nss1 VHT80	5690 MHz	88.12	76.41	5645.65	5651.80	79.35	8.77	73.20	3.21

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

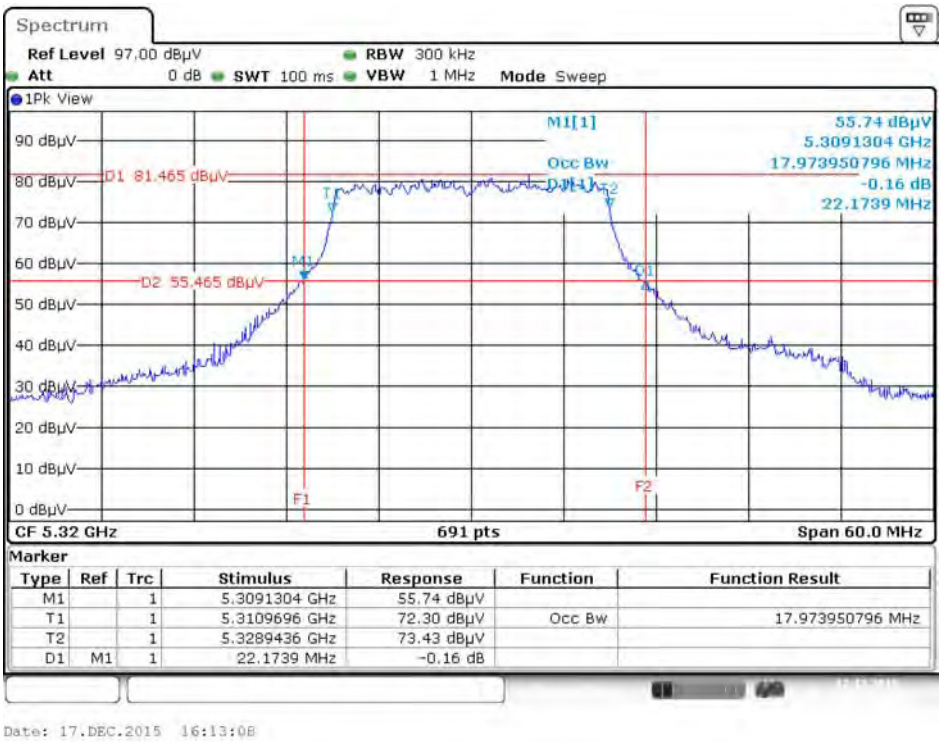
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5260 MHz



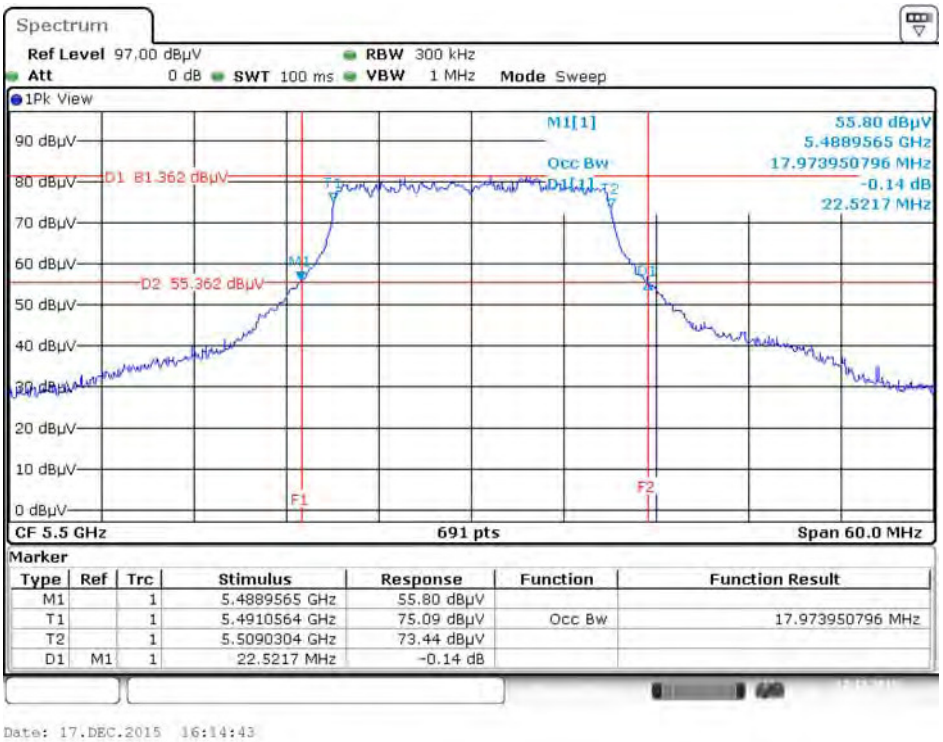
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5300 MHz



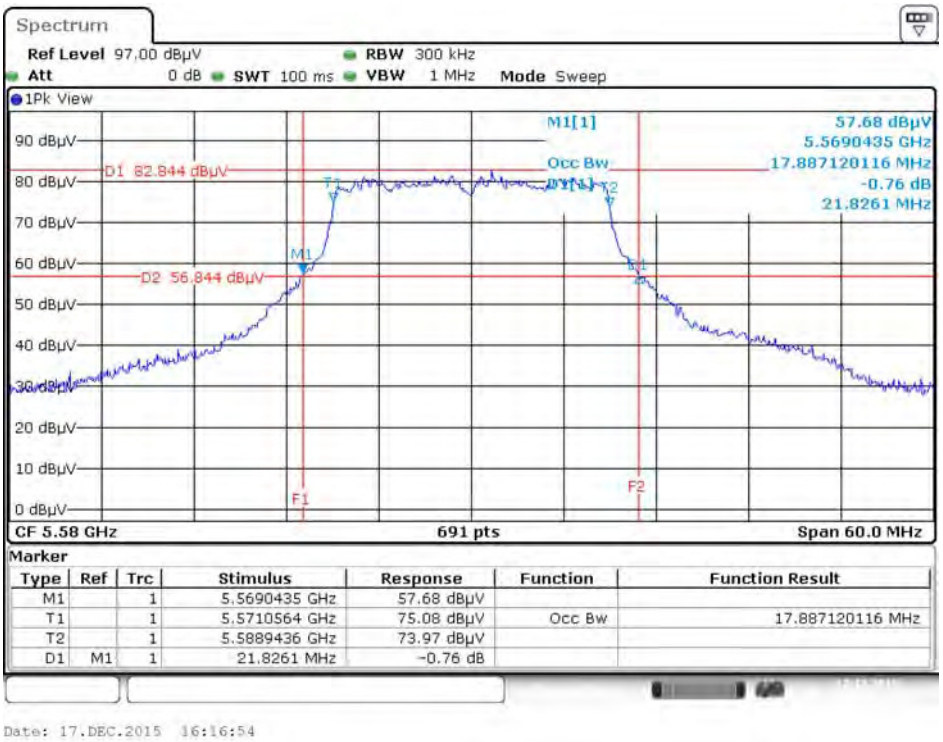
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5320 MHz



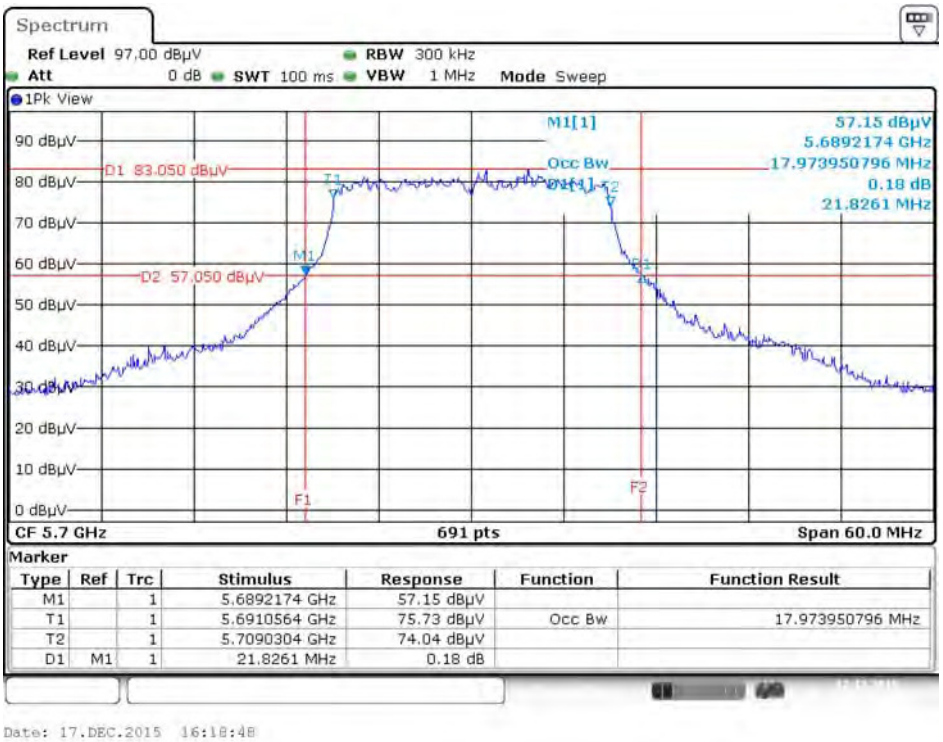
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5500 MHz



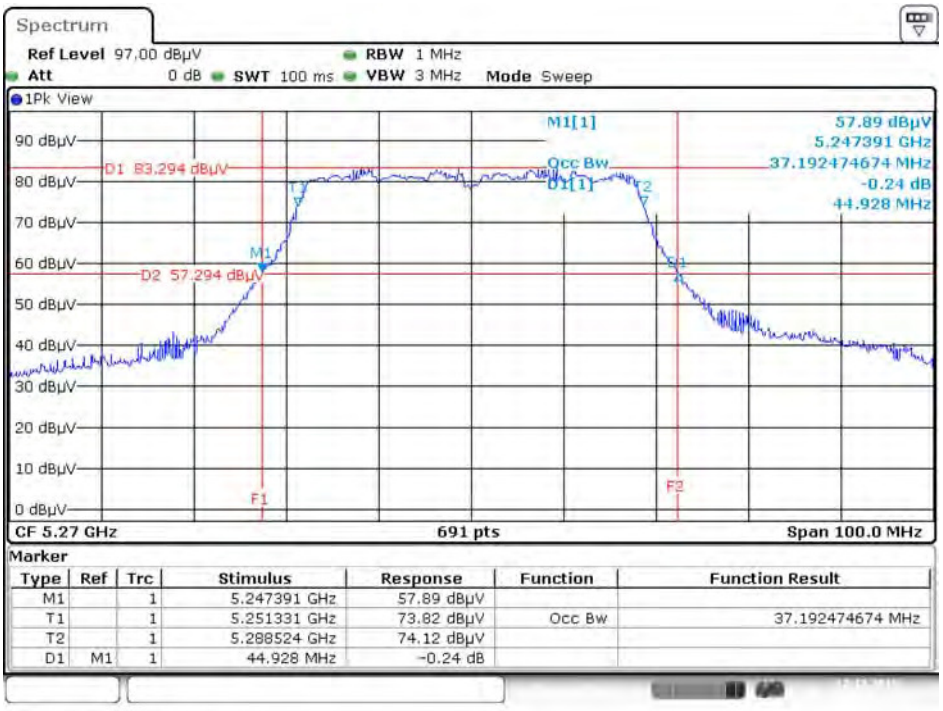
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5580 MHz



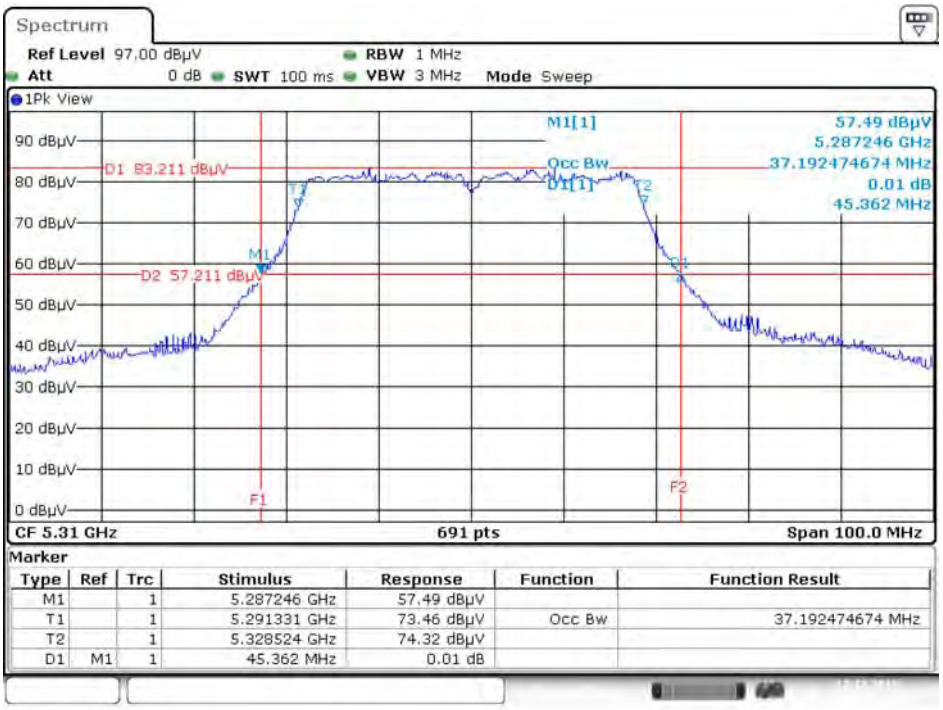
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5700 MHz



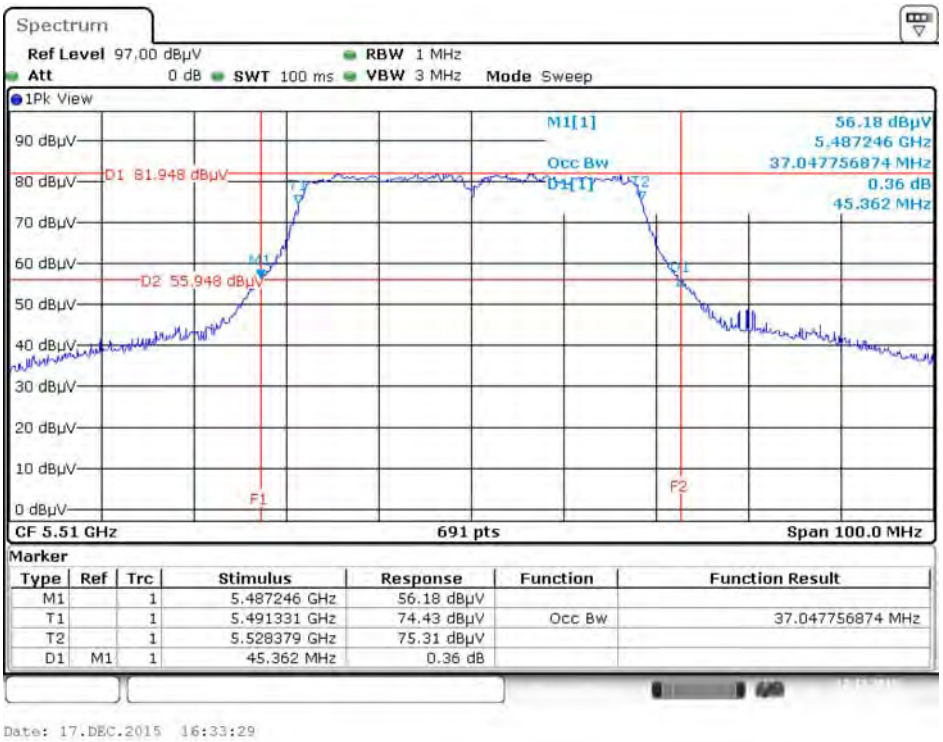
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5270 MHz



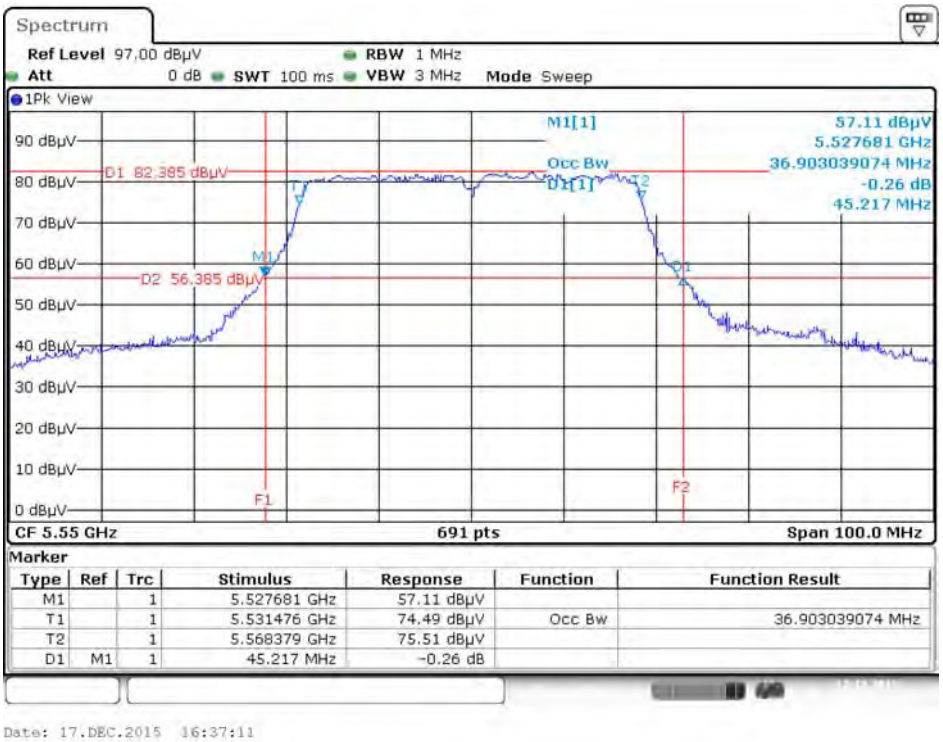
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5310 MHz



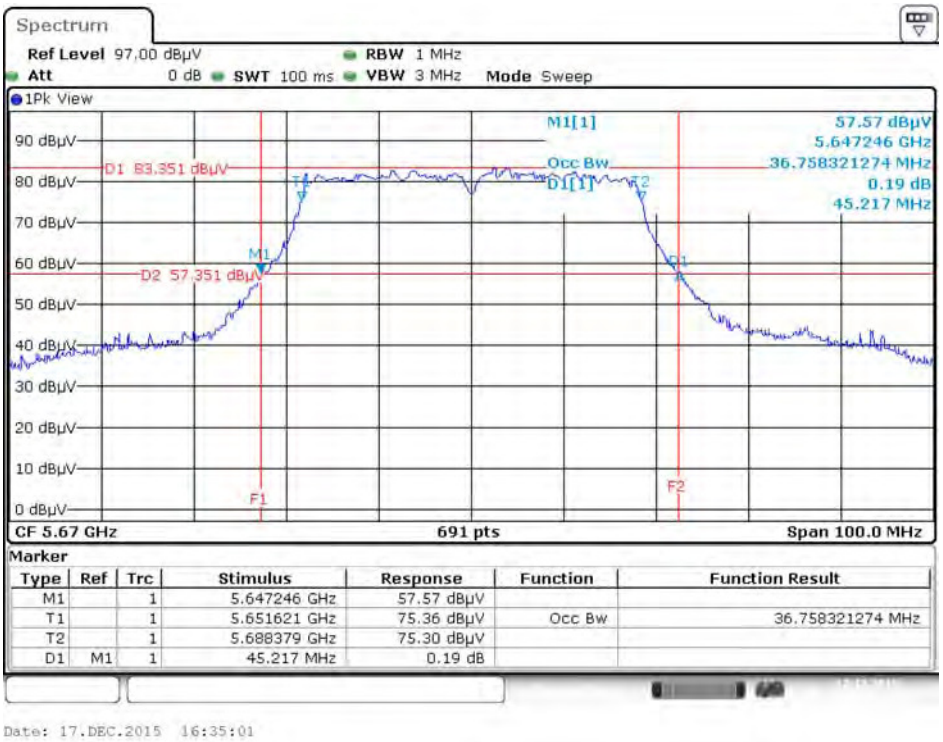
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5510 MHz



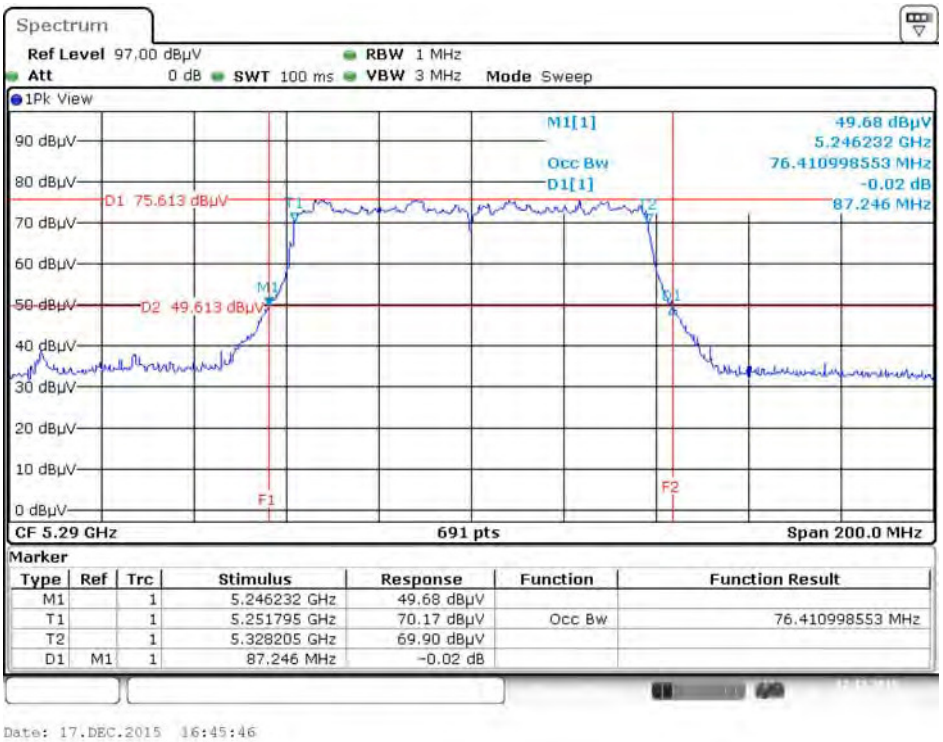
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5550 MHz



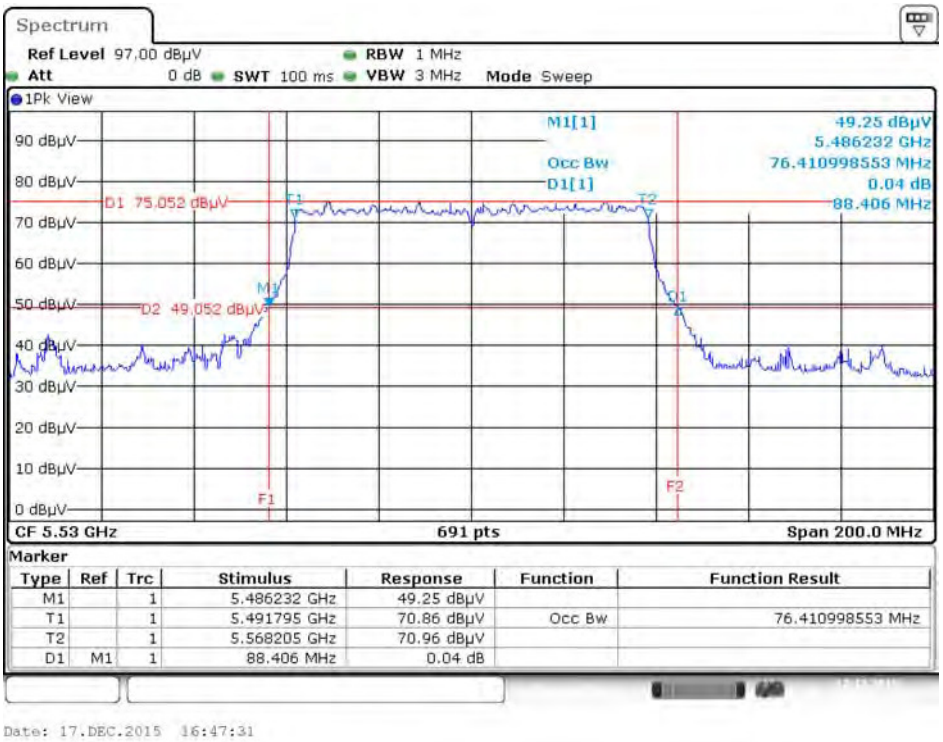
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5670 MHz



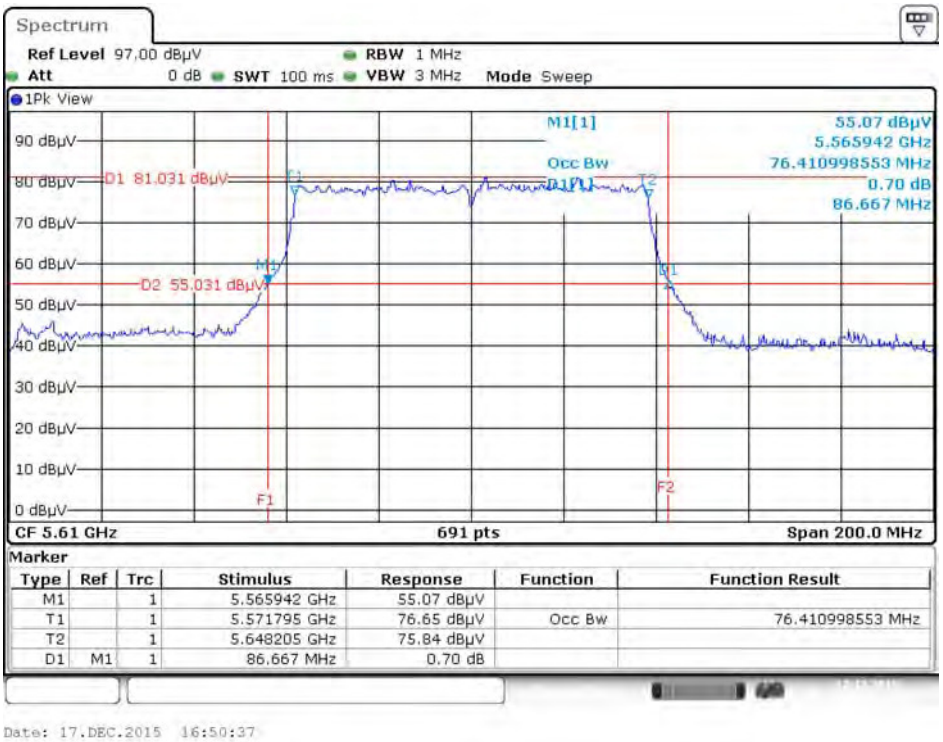
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5290 MHz



26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5530 MHz

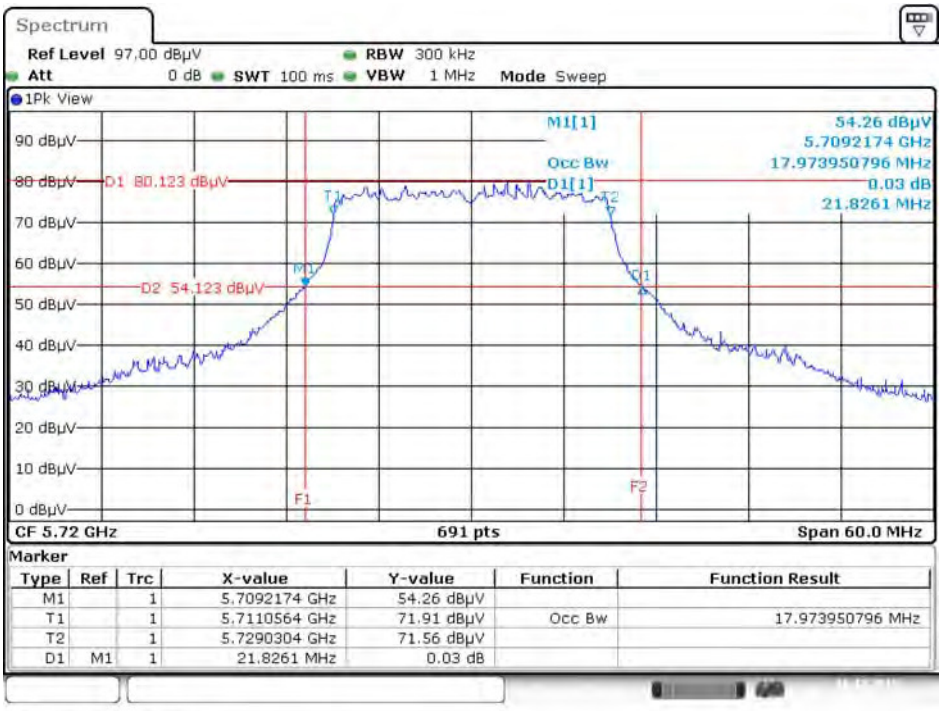


26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5610 MHz



Straddle Channel

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5720 MHz



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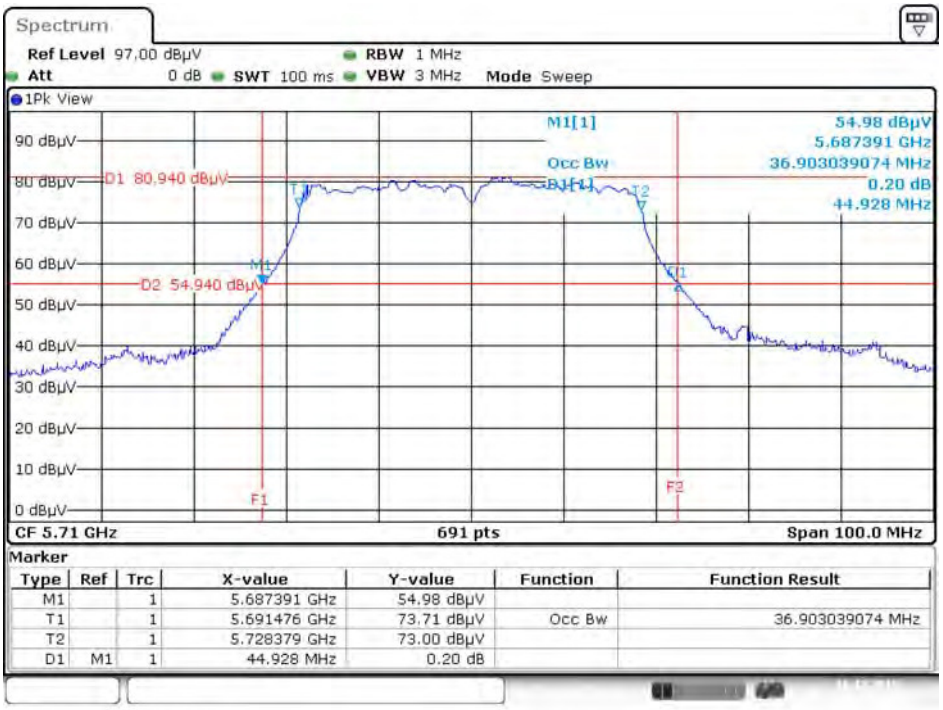
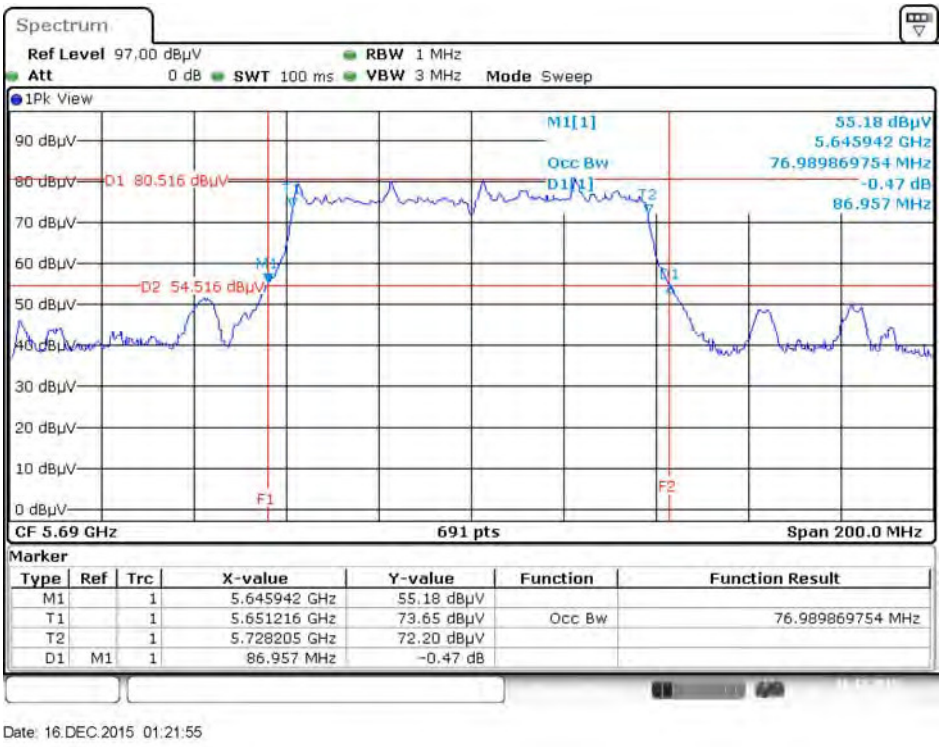
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5710 MHz



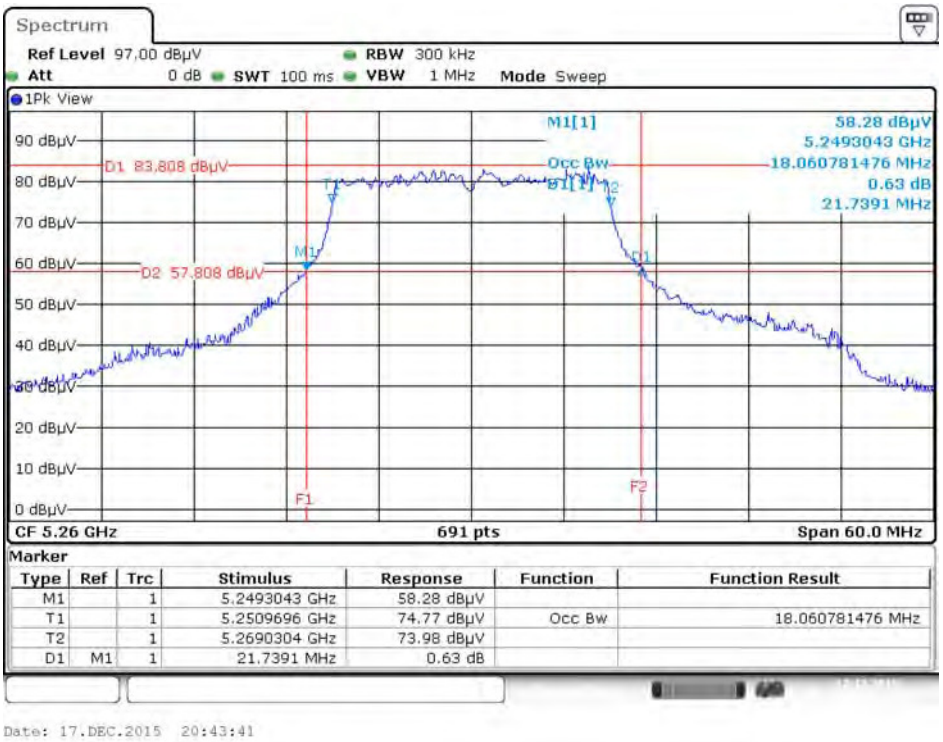
Date: 16.DEC.2015 01:21:09

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5690 MHz

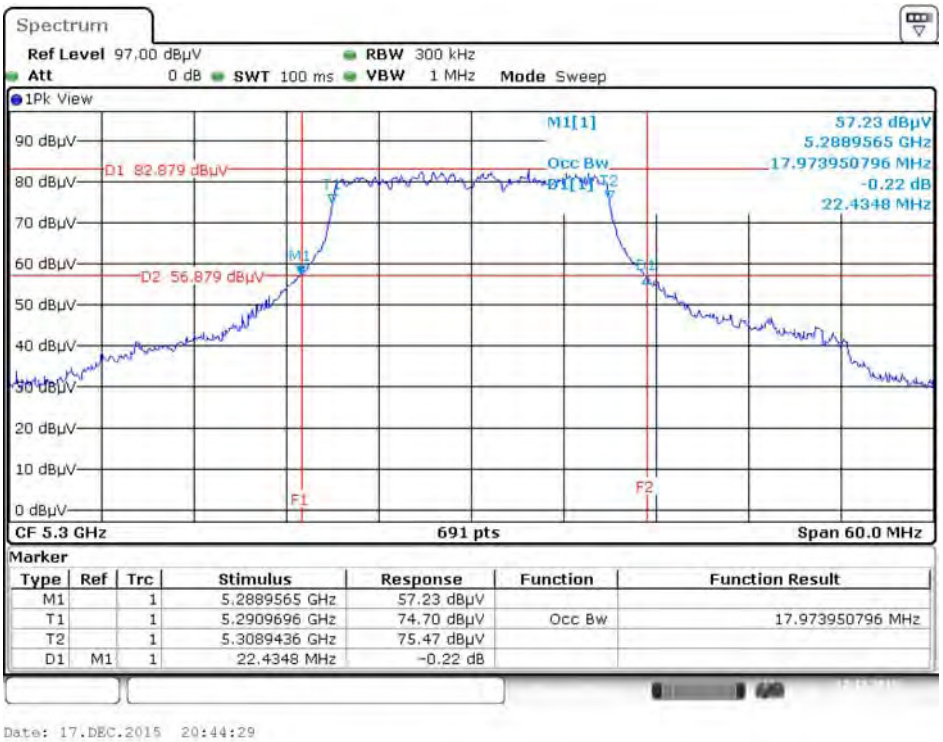


Mode 2: EUT 1 + Set 2 Sector Antenna / 4.5 dBi

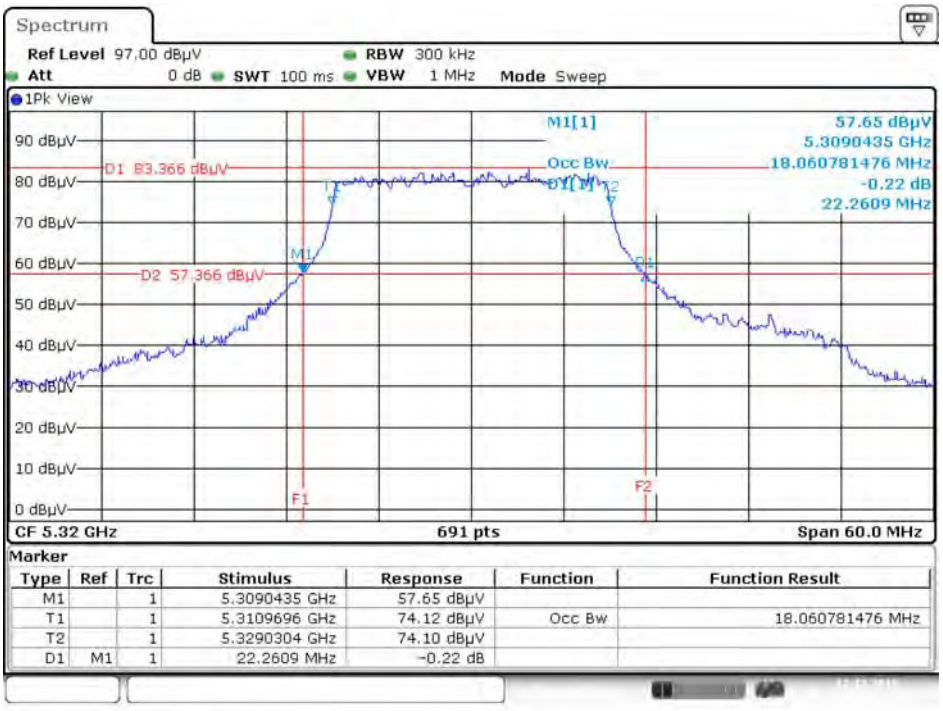
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5260 MHz



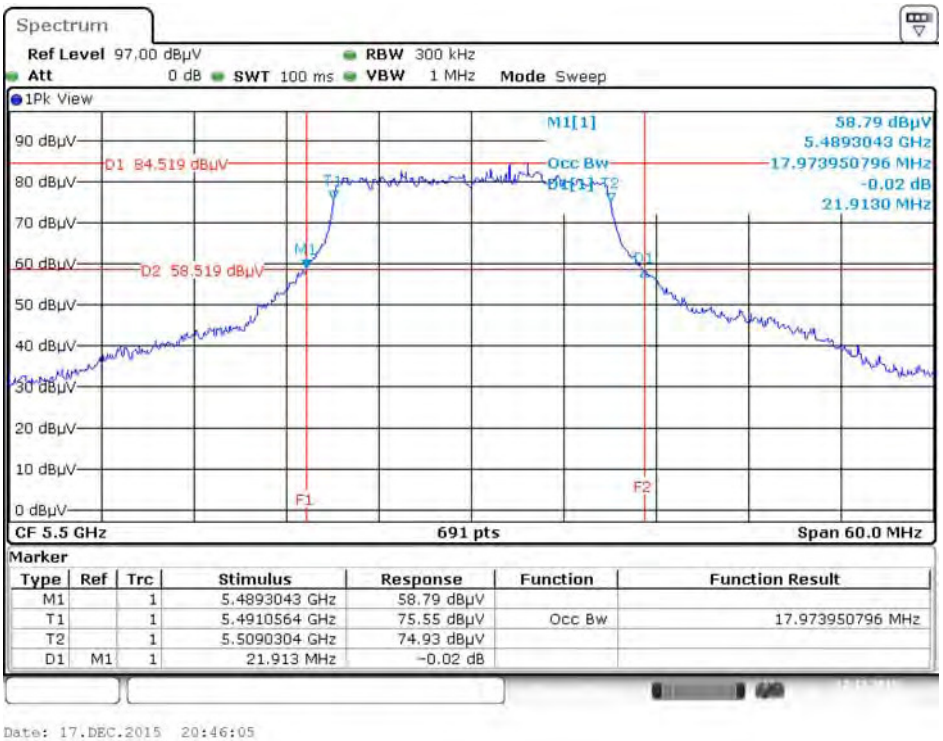
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5300 MHz



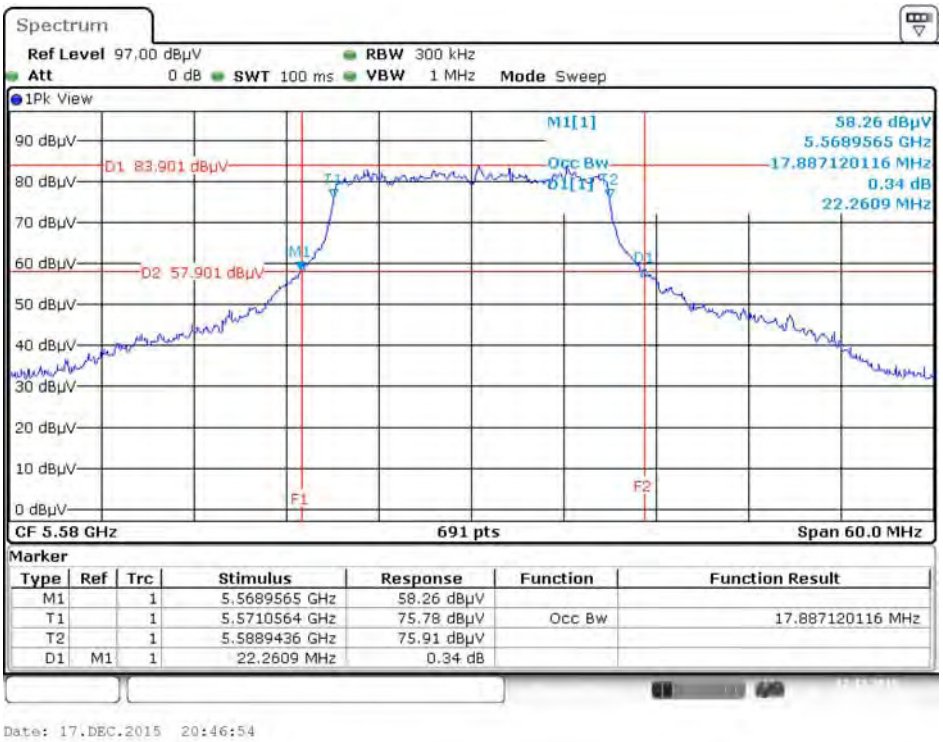
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5320 MHz



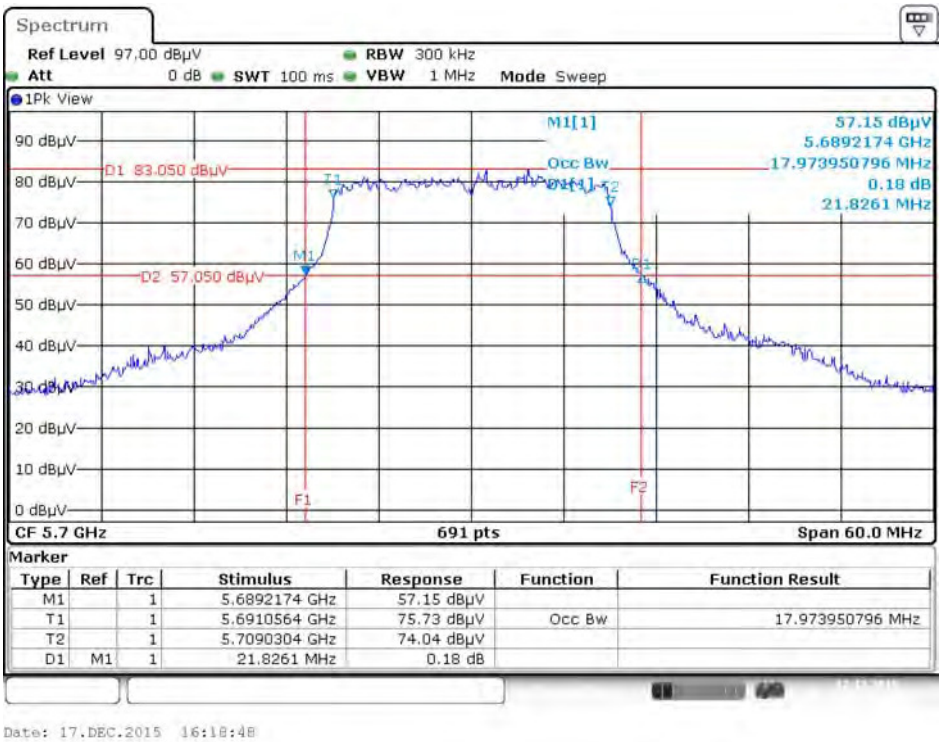
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5500 MHz



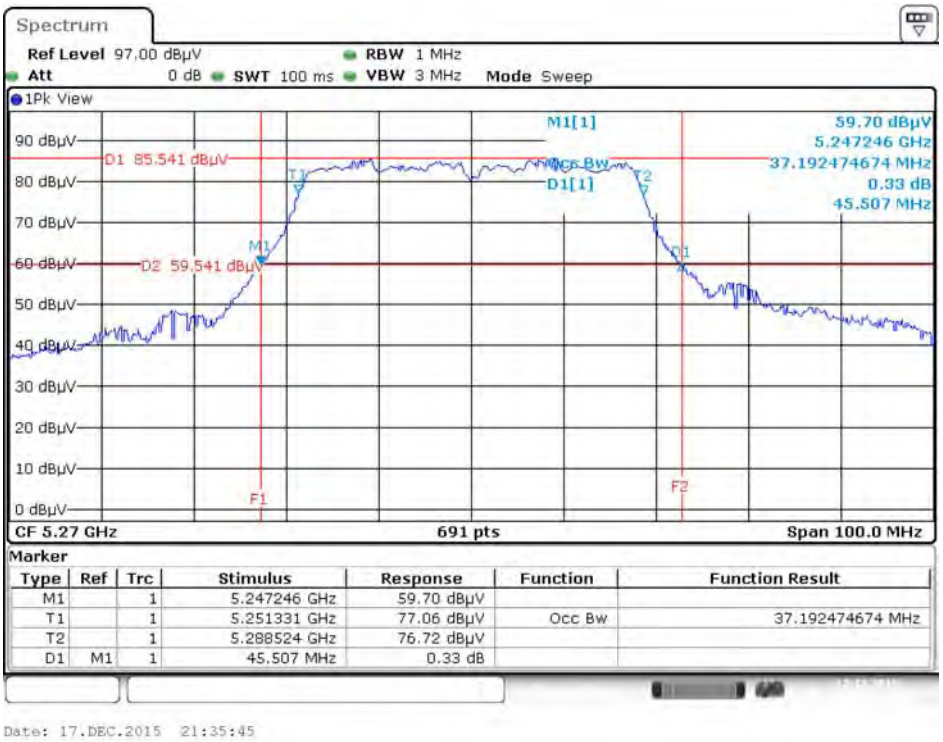
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5580 MHz



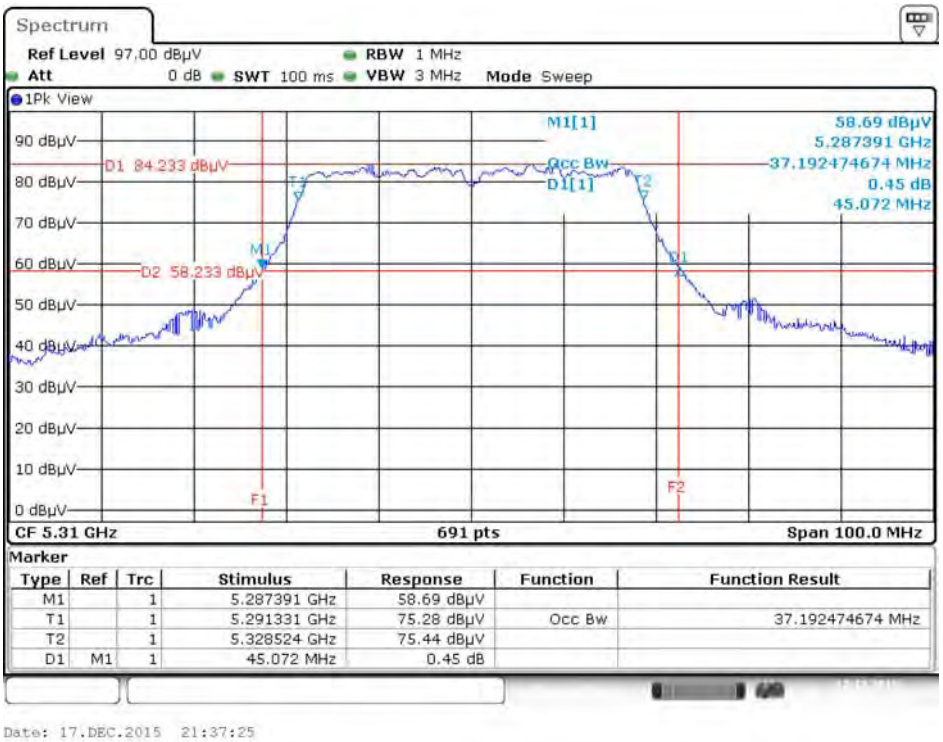
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5700 MHz



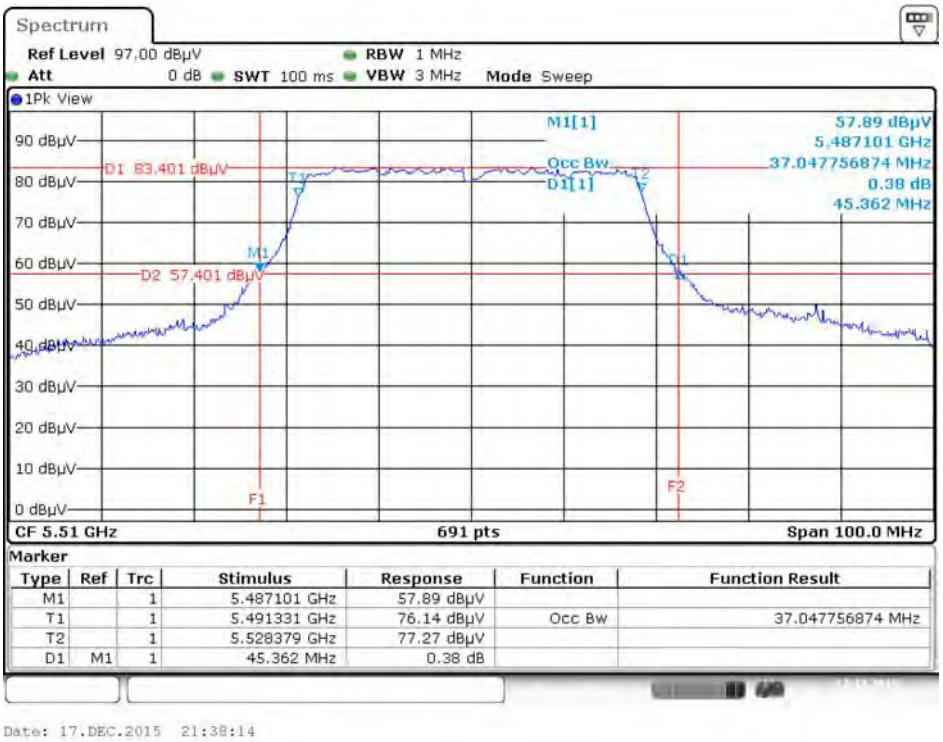
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5270 MHz



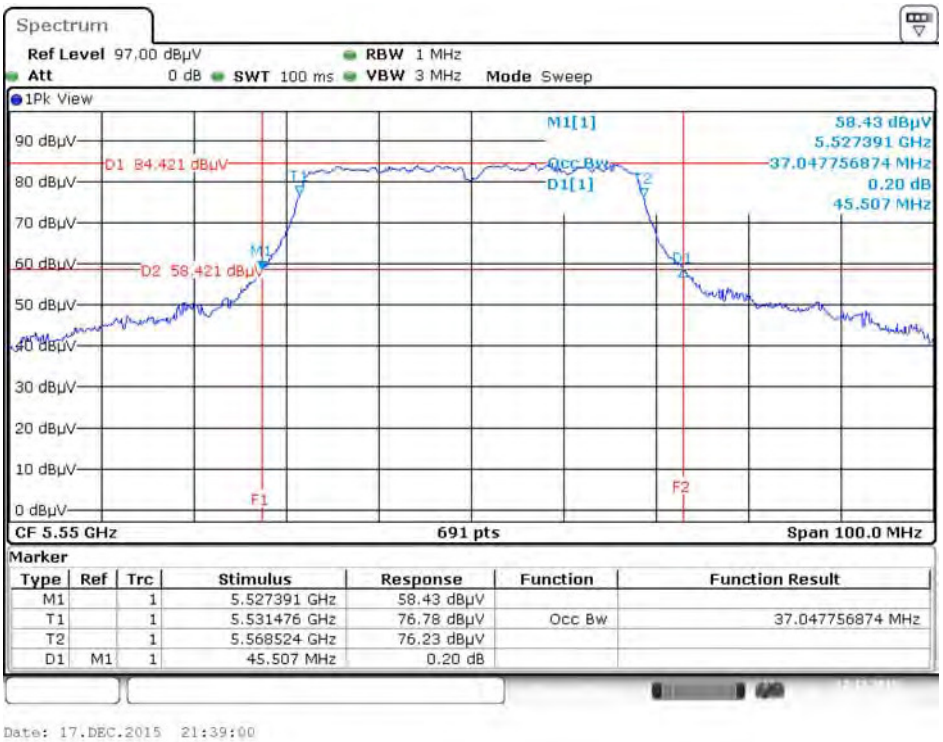
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5310 MHz



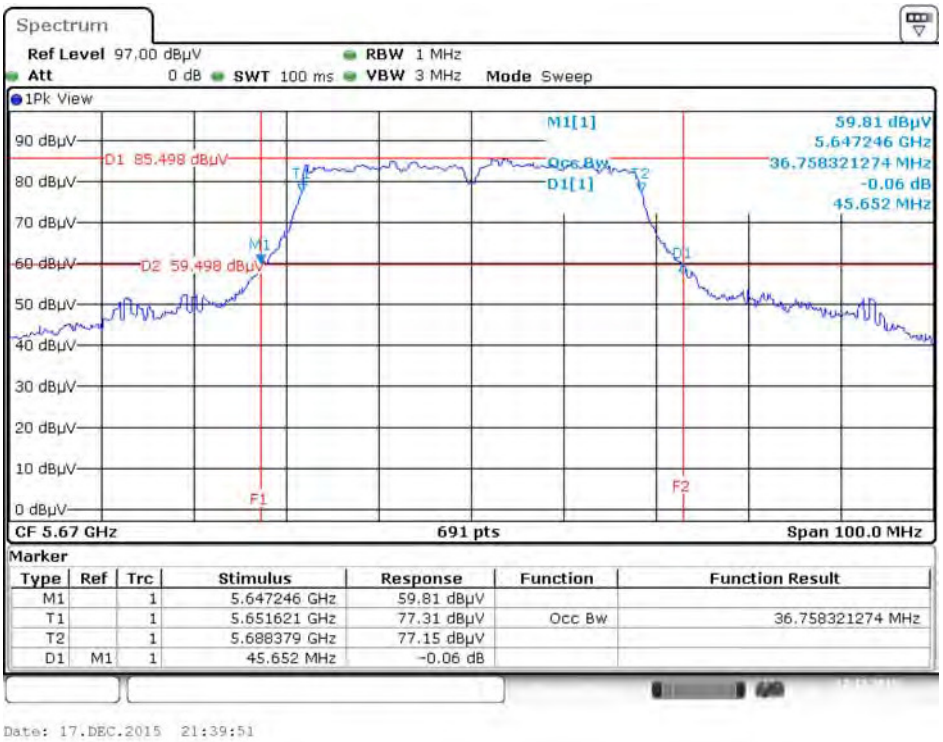
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5510 MHz



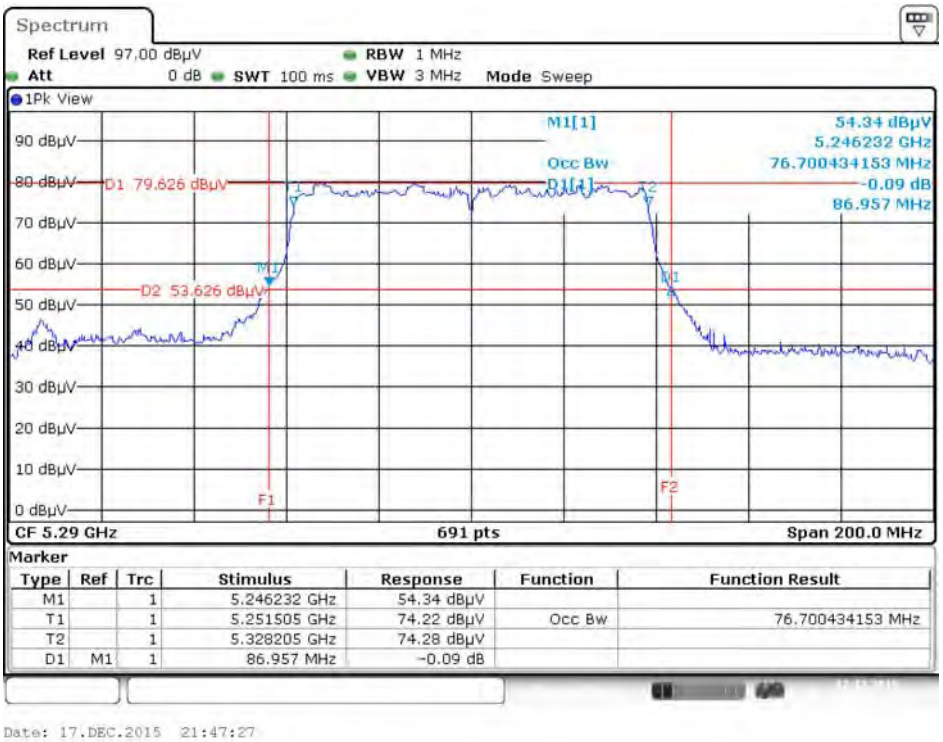
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5550 MHz



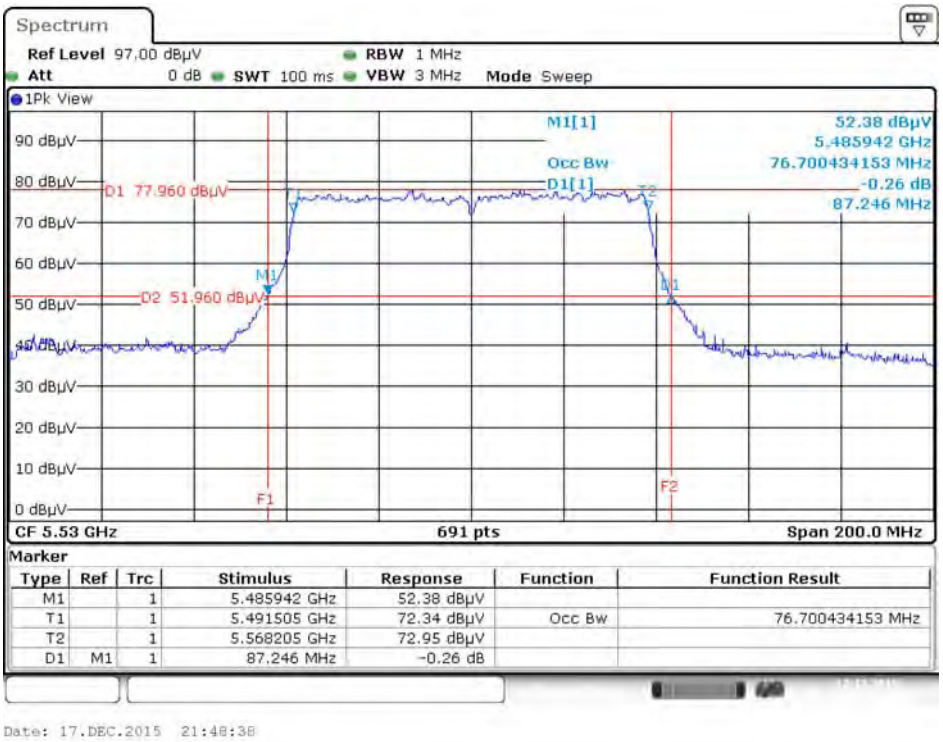
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5670 MHz



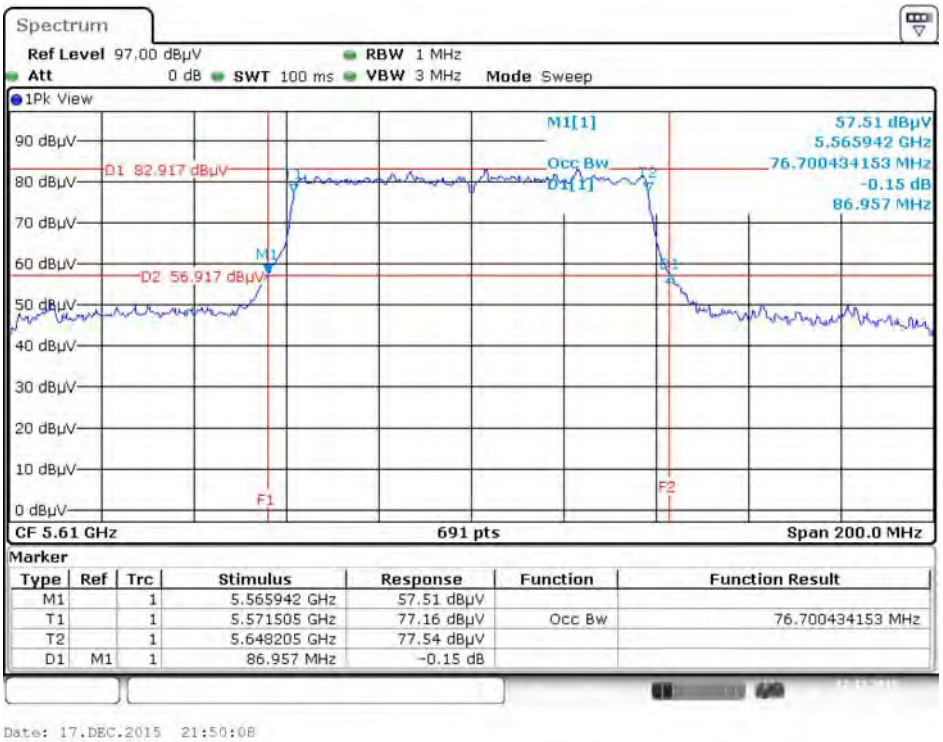
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5290 MHz



26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5530 MHz

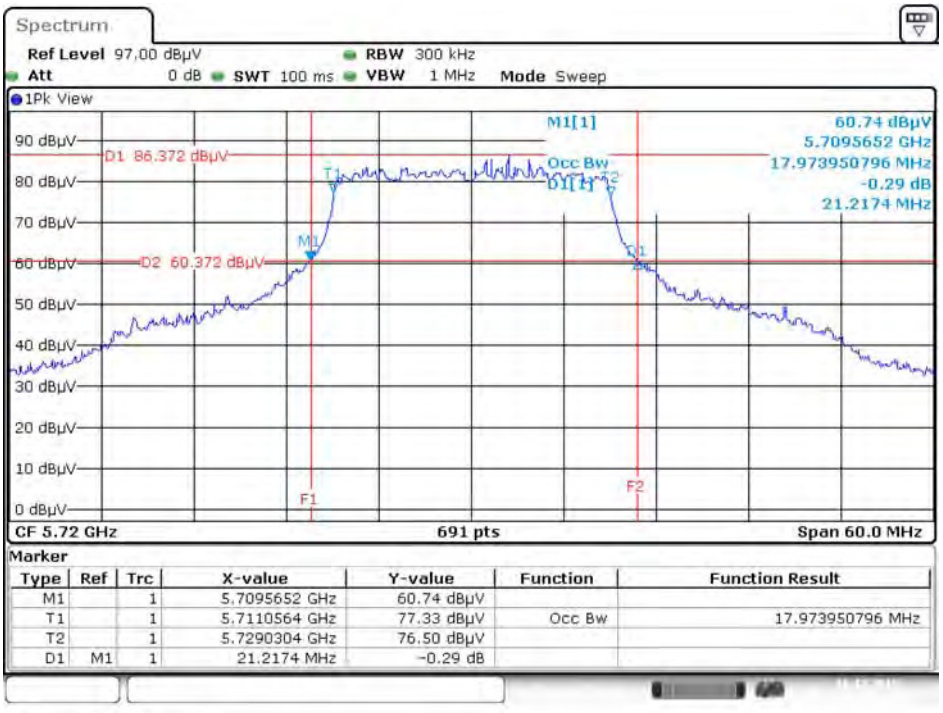


26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5610 MHz



Straddle Channel

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5720 MHz



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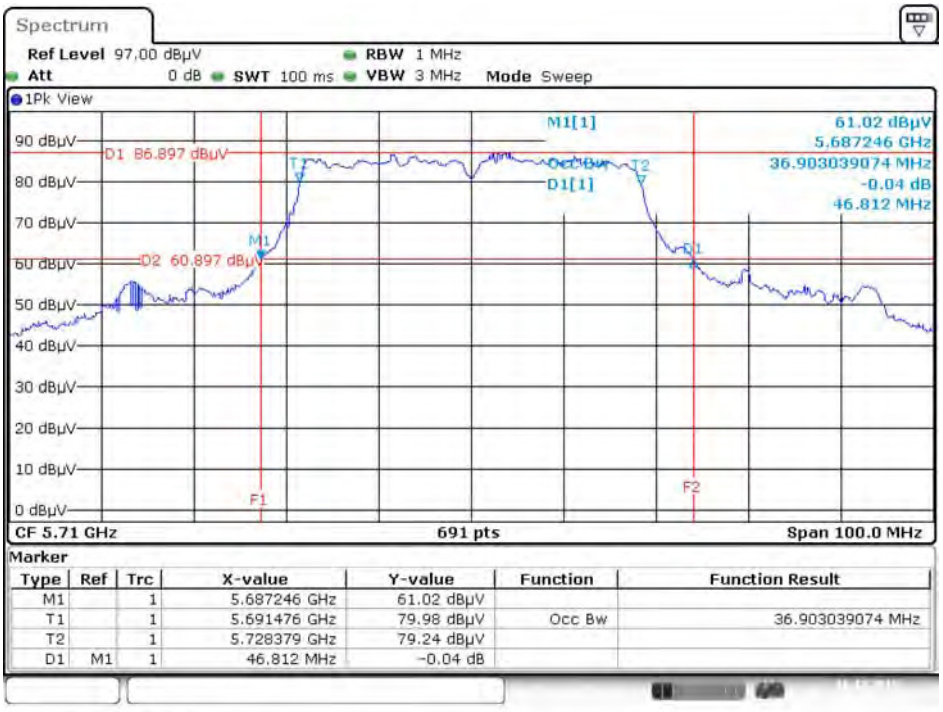
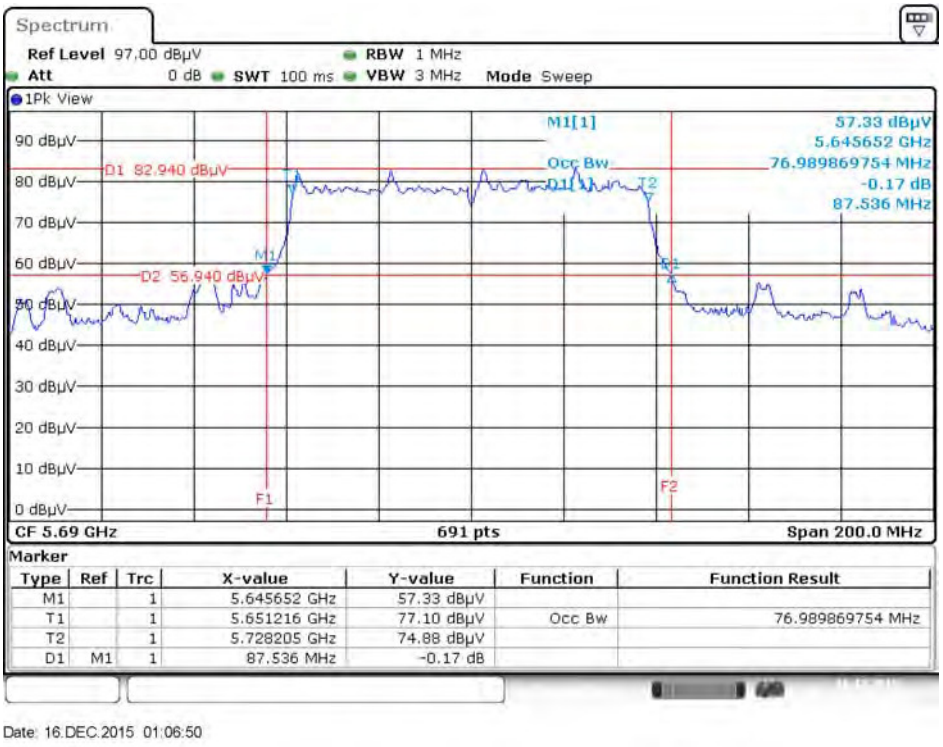
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5710 MHz



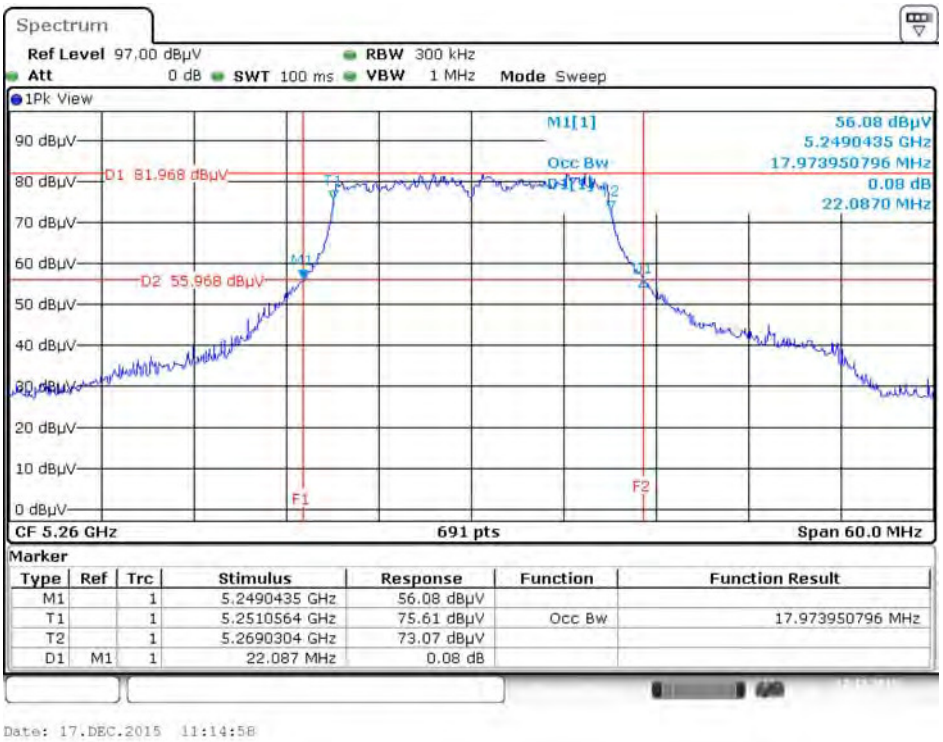
Date: 16.DEC.2015 01:04:38

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5690 MHz

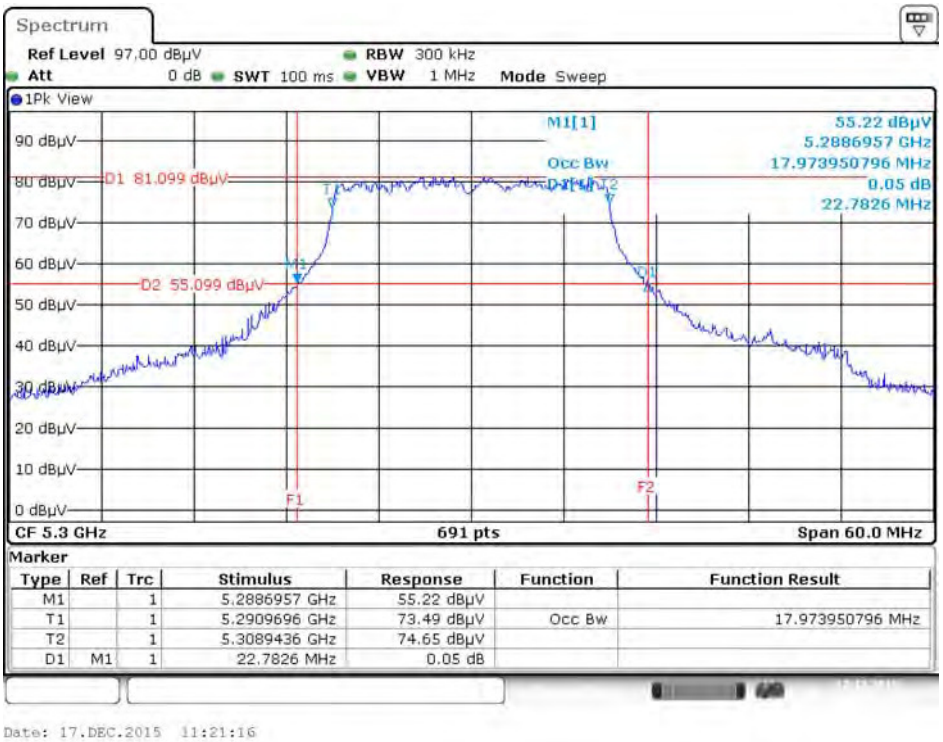


Mode 3: EUT 1 + Set 3 Sector Antenna / 5.5 dBi

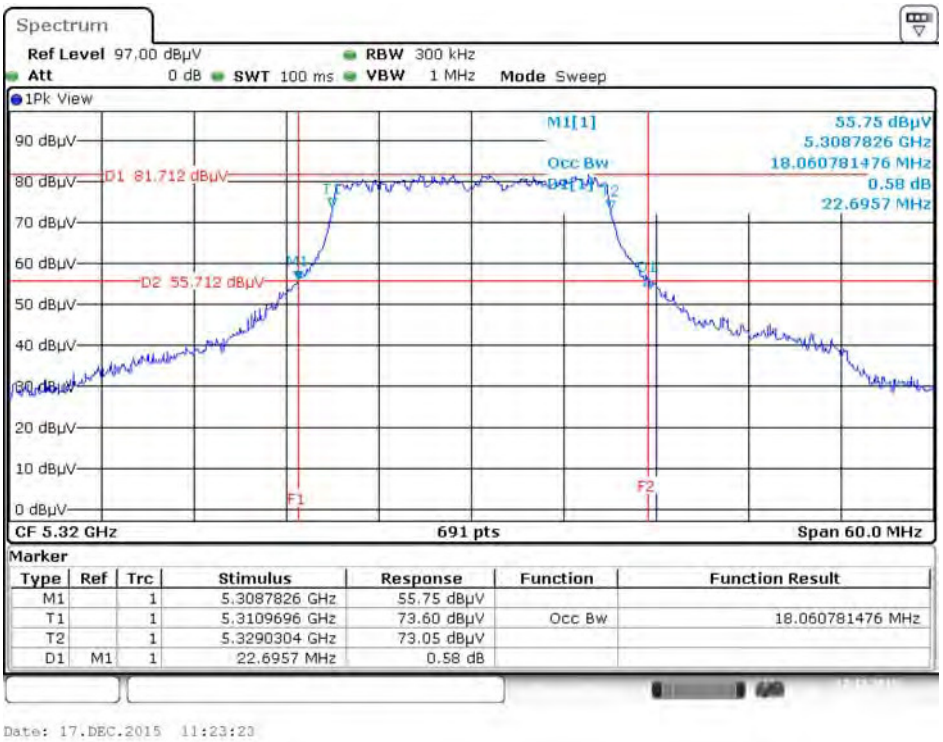
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5260 MHz



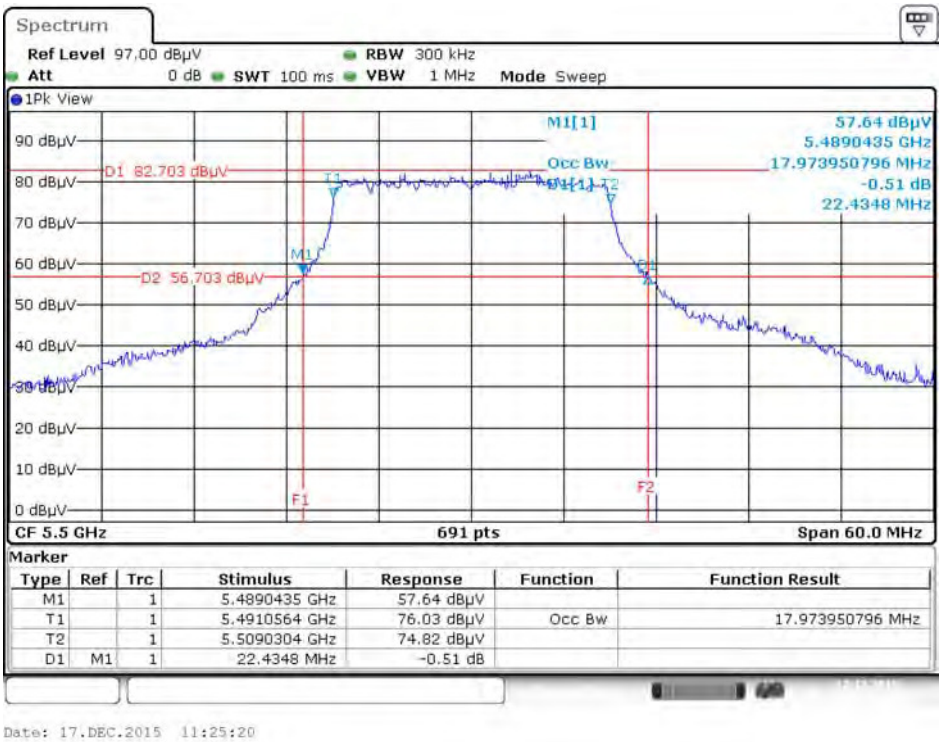
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5300 MHz



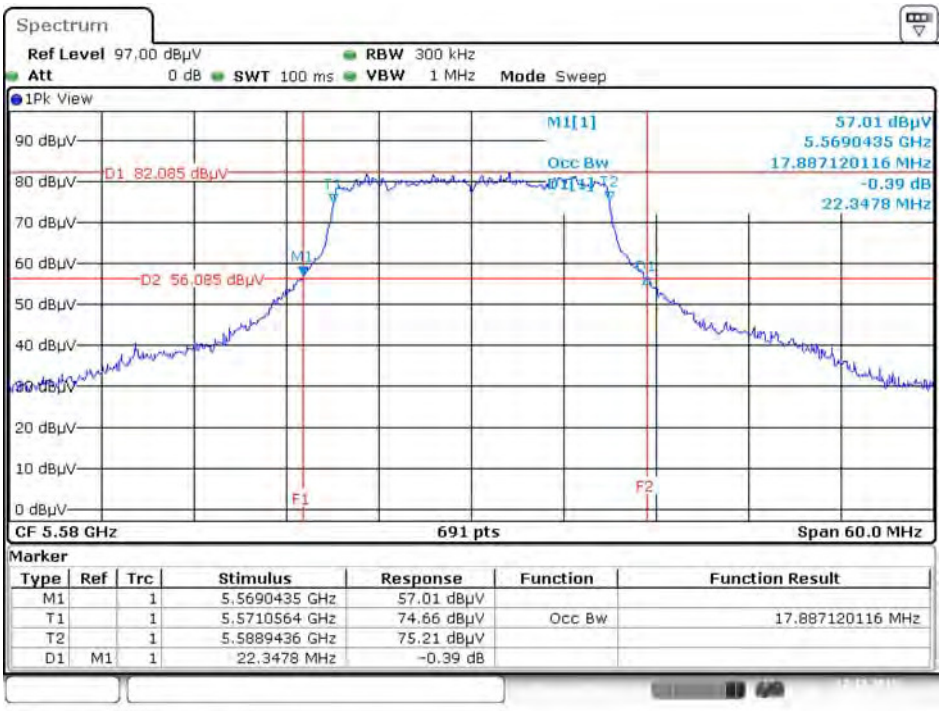
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5320 MHz



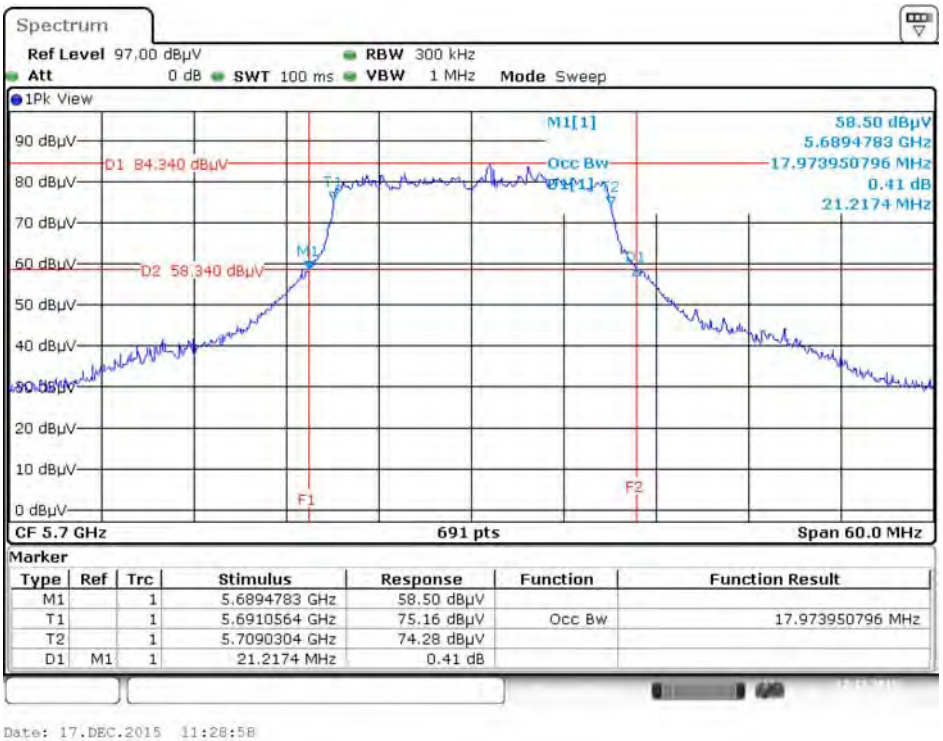
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5500 MHz



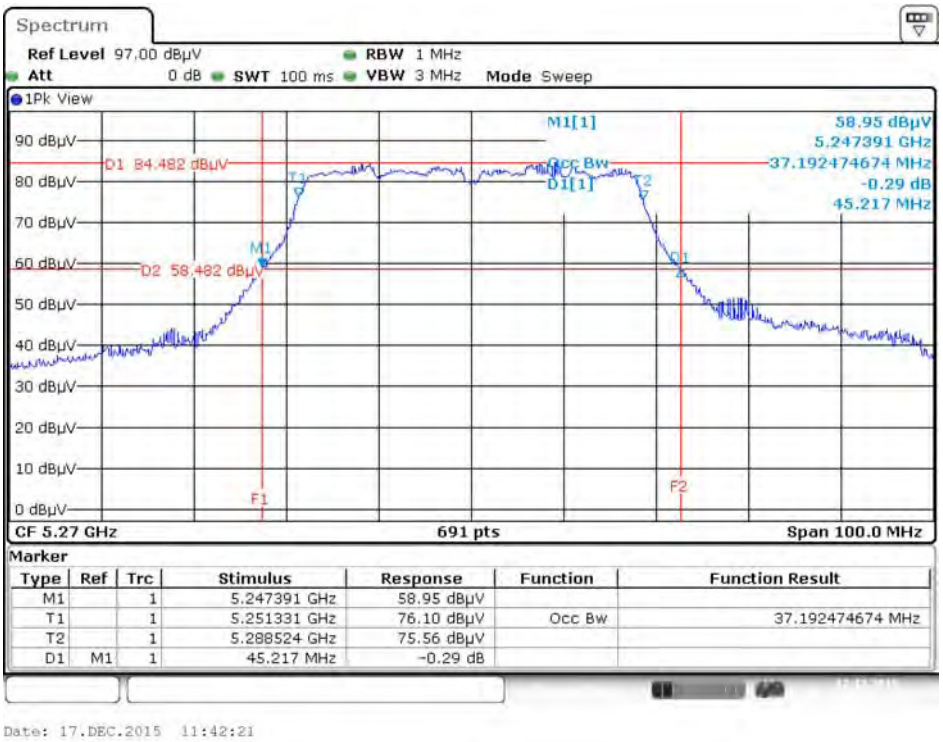
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5580 MHz



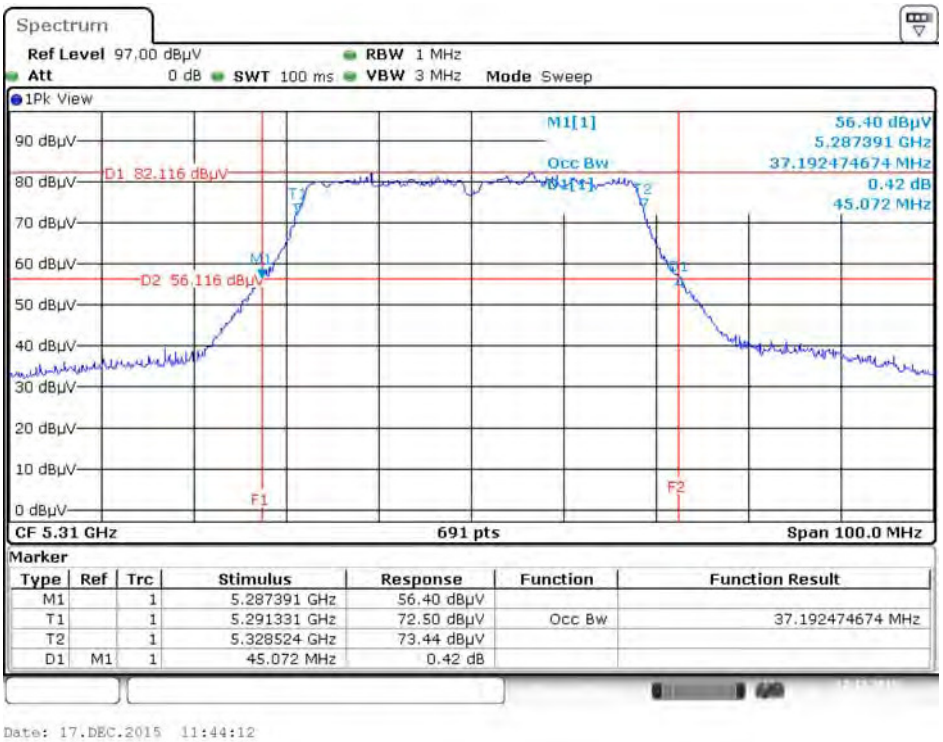
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5700 MHz



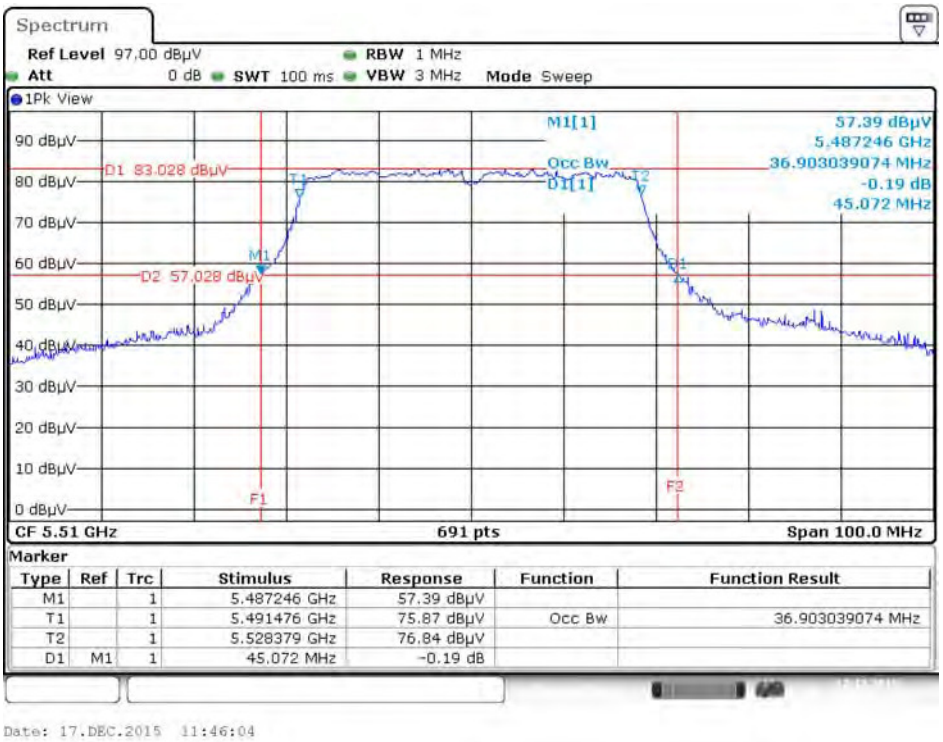
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5270 MHz



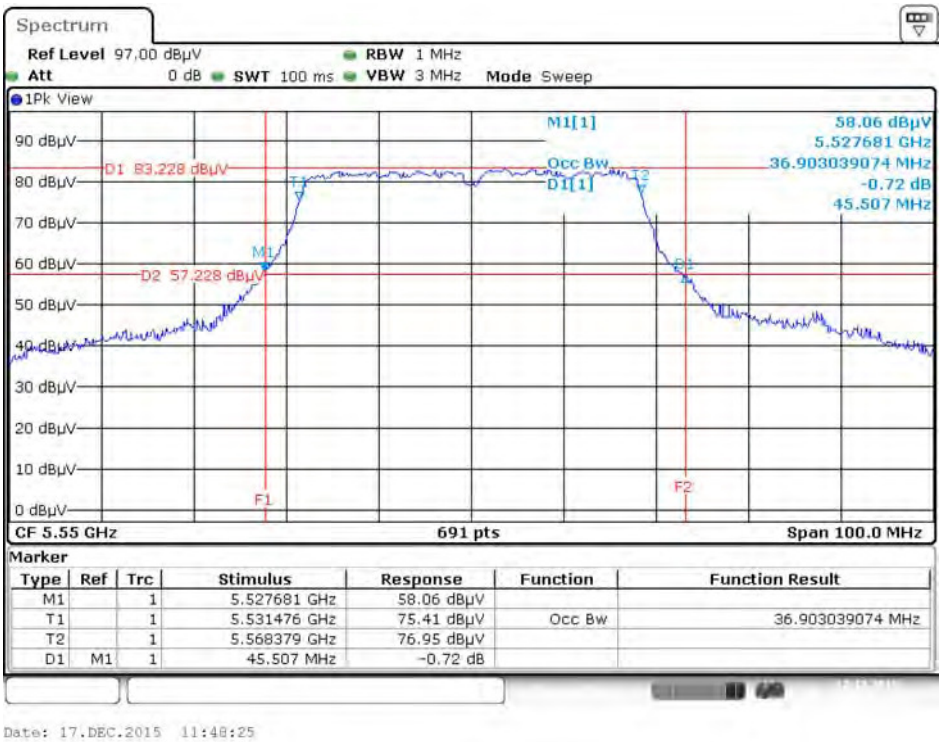
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5310 MHz



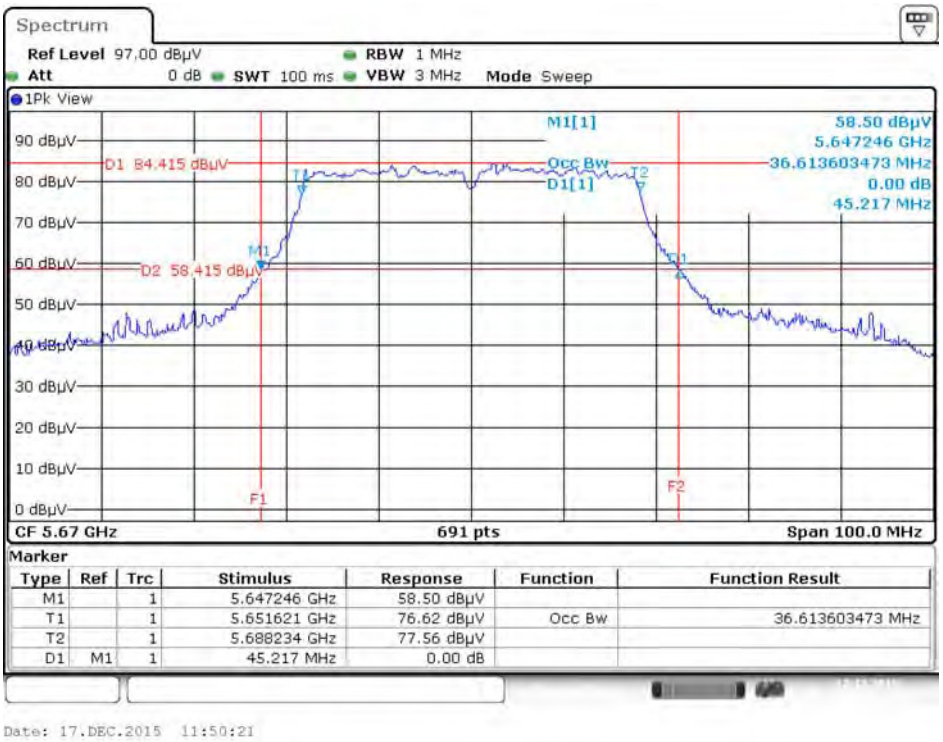
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5510 MHz



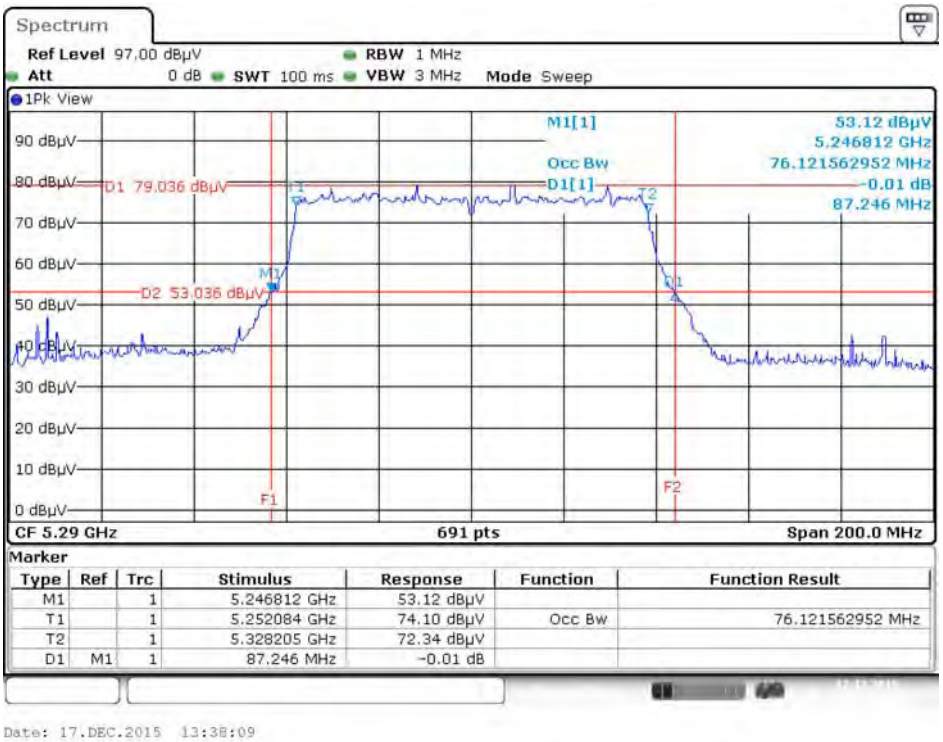
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5550 MHz



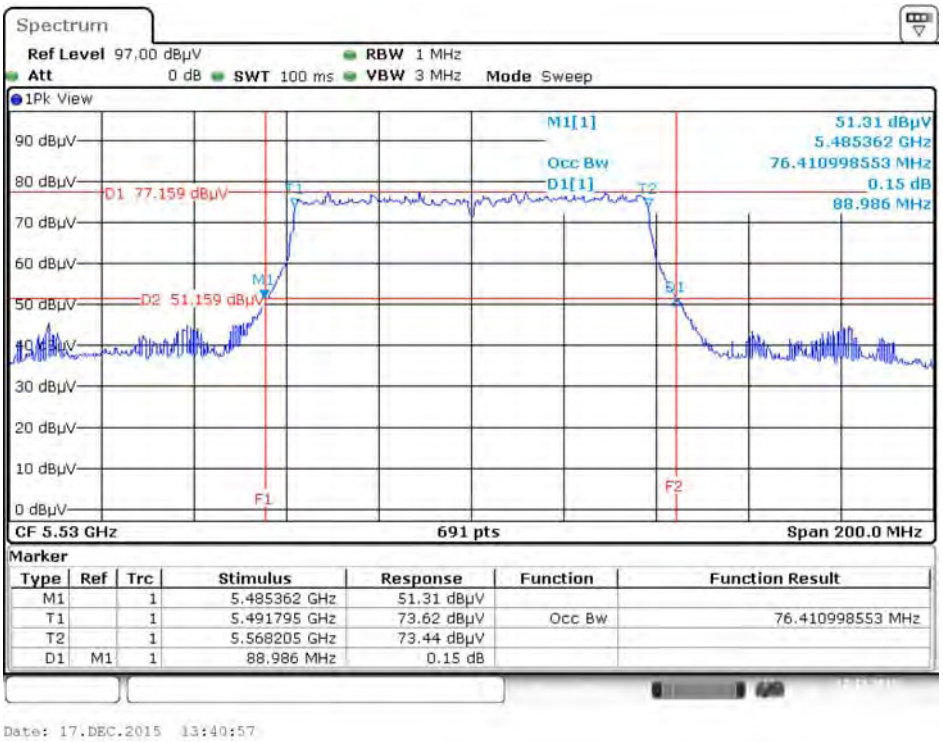
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5670 MHz



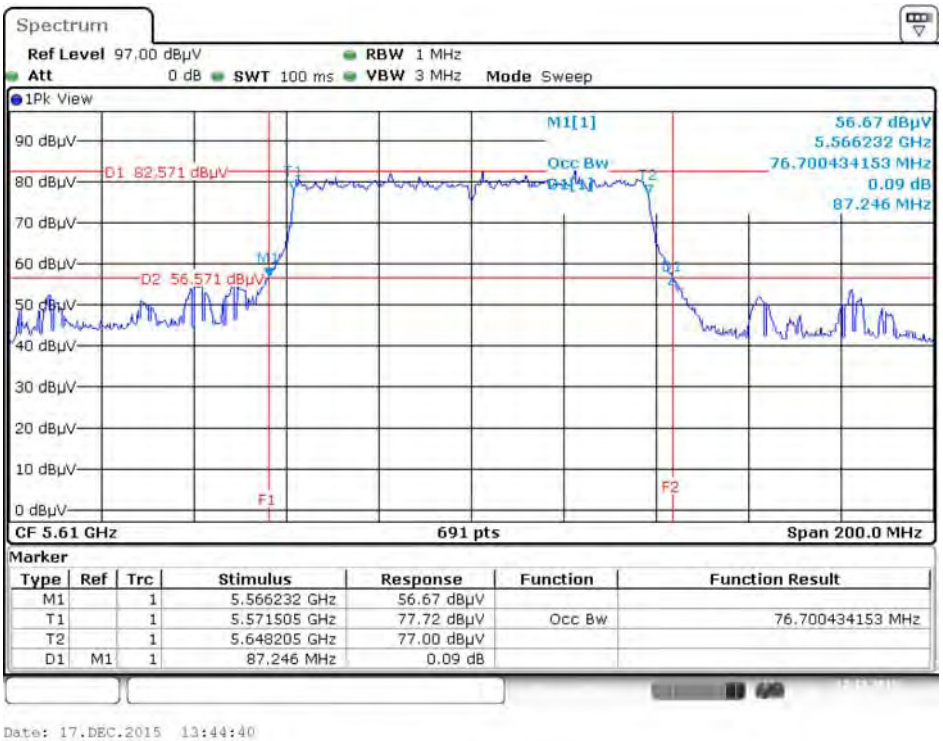
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5290 MHz



26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5530 MHz

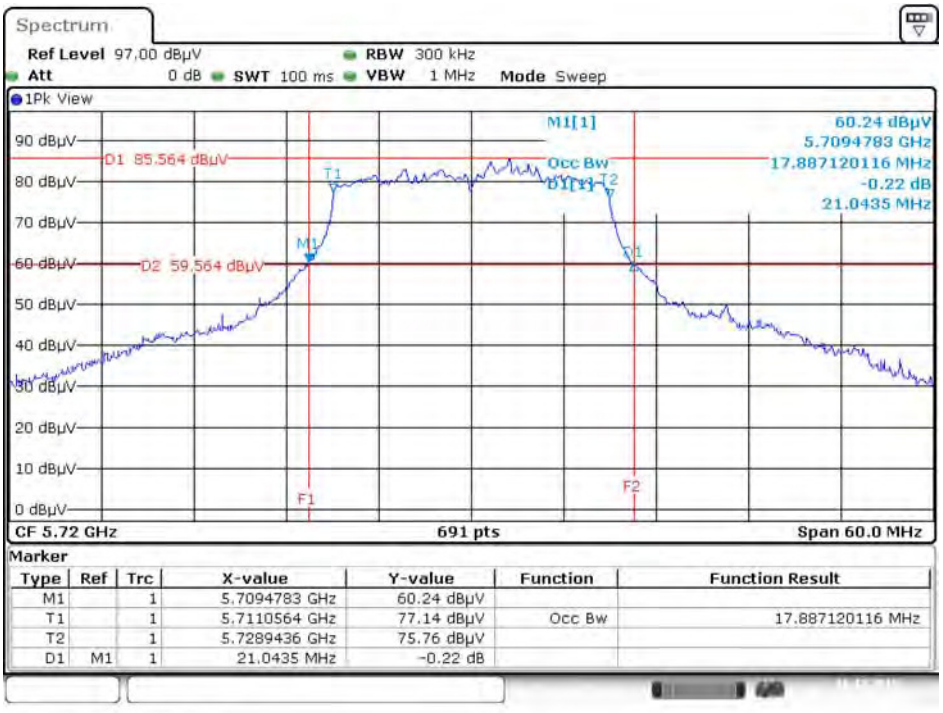


26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5610 MHz



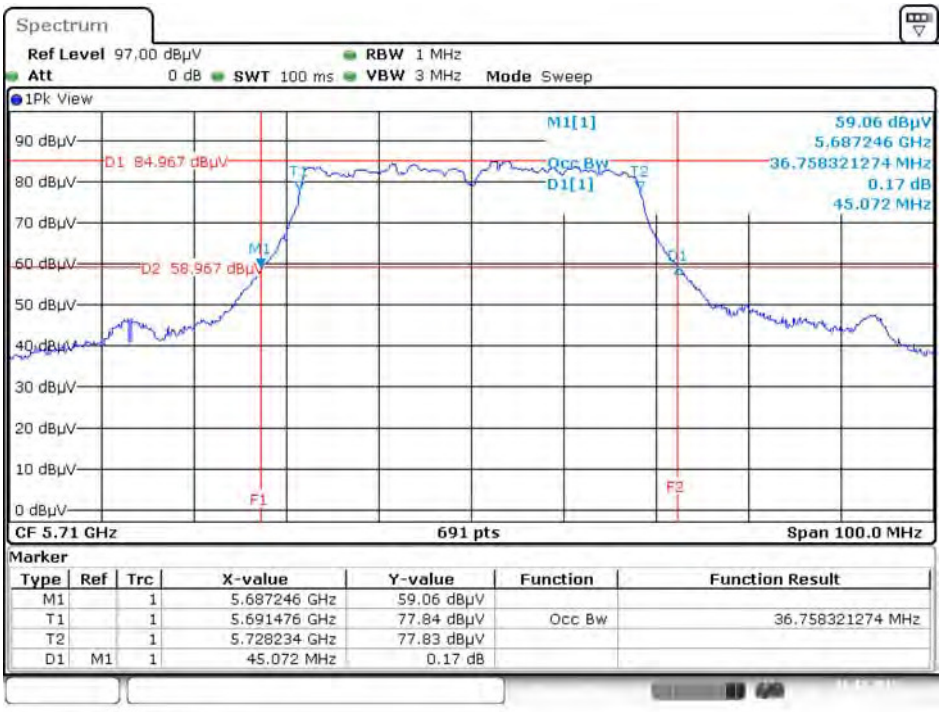
Straddle Channel

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5720 MHz



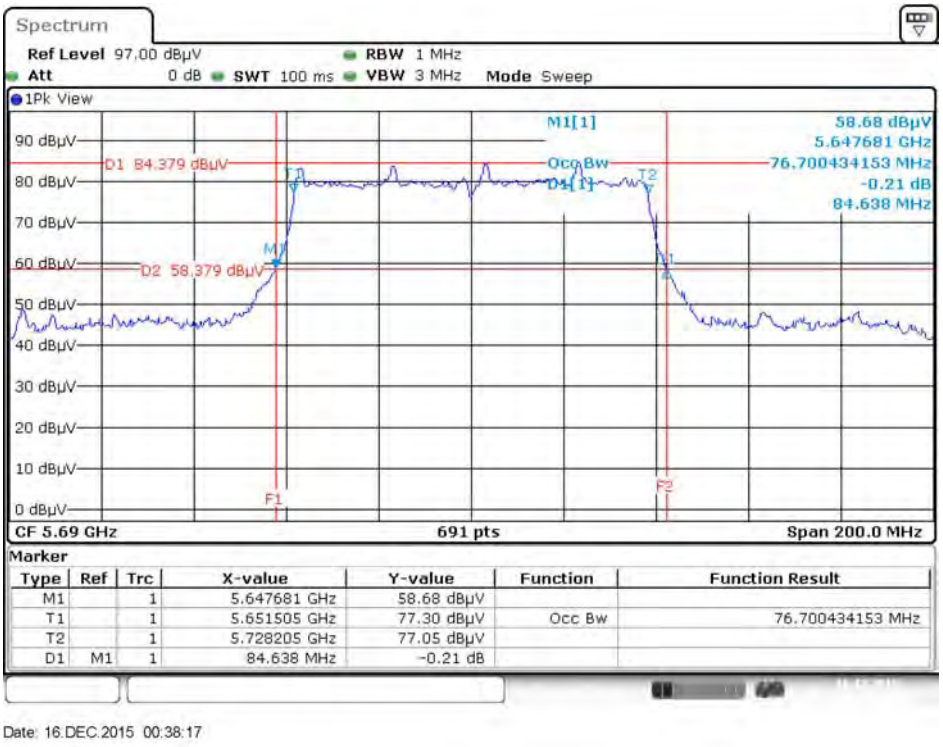
Date: 16.DEC.2015 00:35:38

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5710 MHz



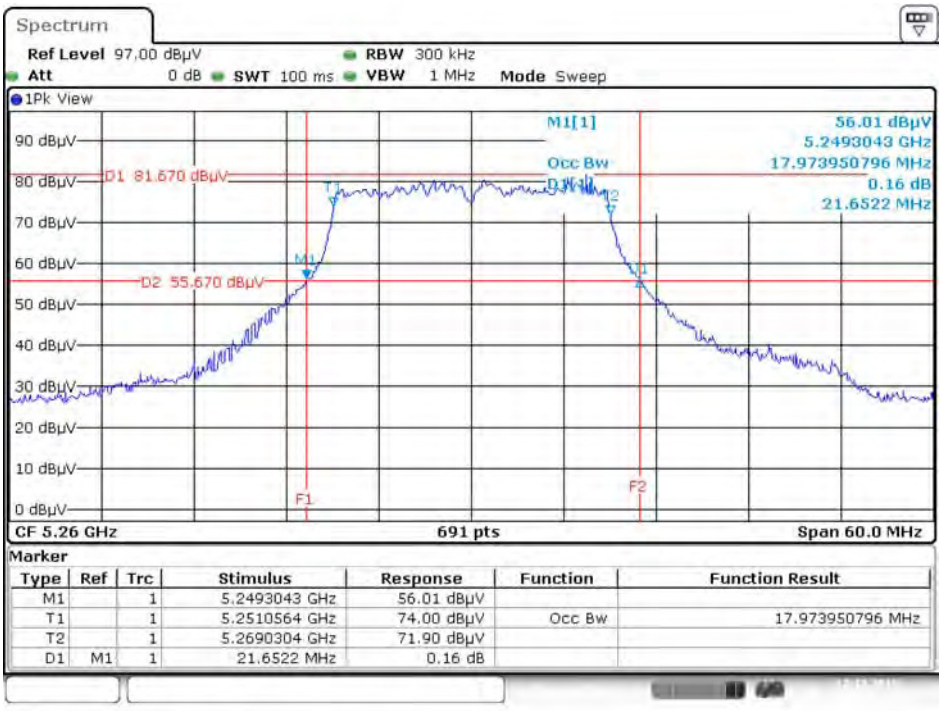
Date: 16.DEC.2015 00:37:09

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5690 MHz

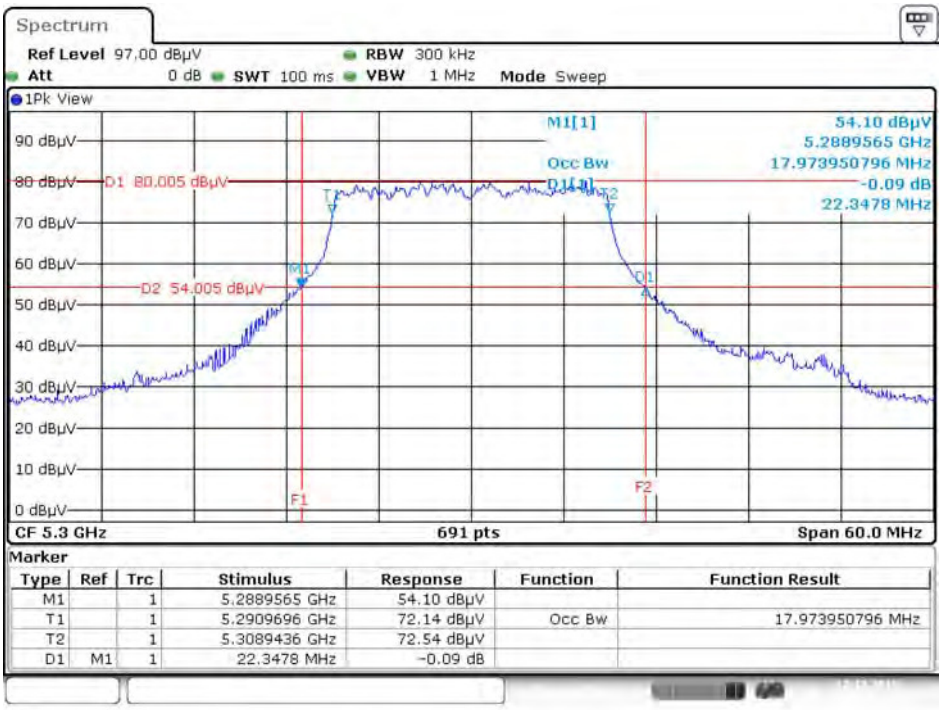


Mode 4: EUT 1 + Set 4 Sector Antenna / 7.5 dBi

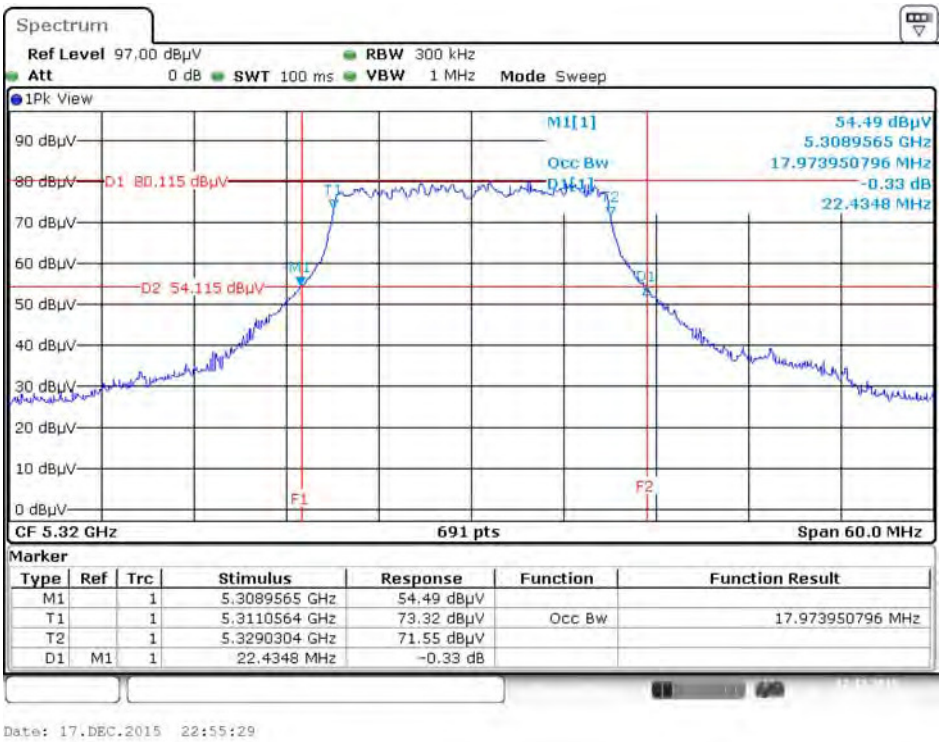
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5260 MHz



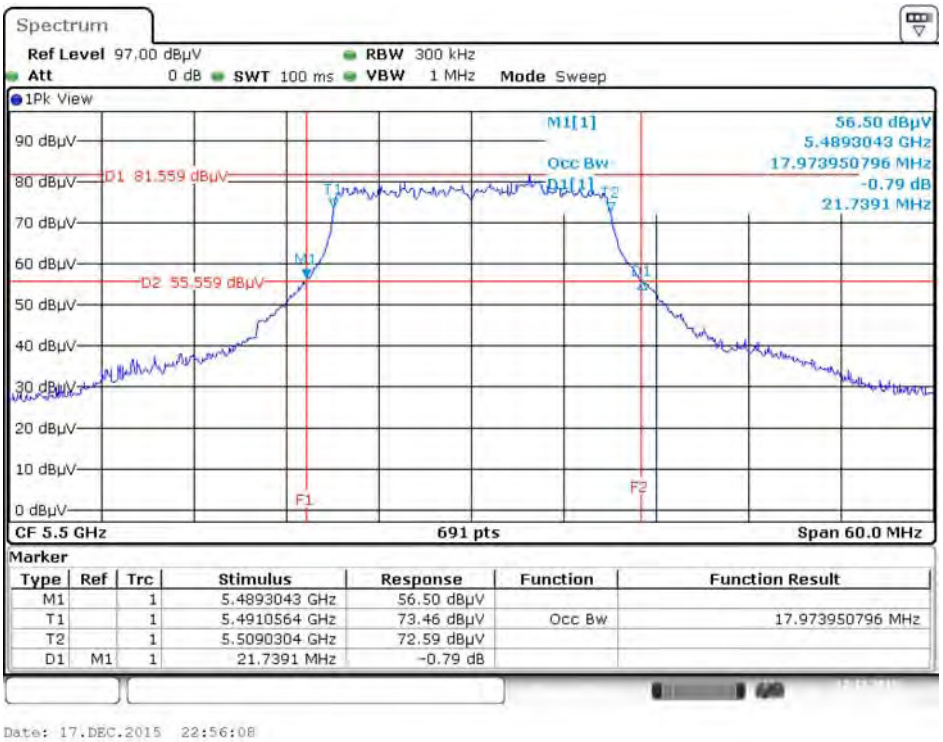
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5300 MHz



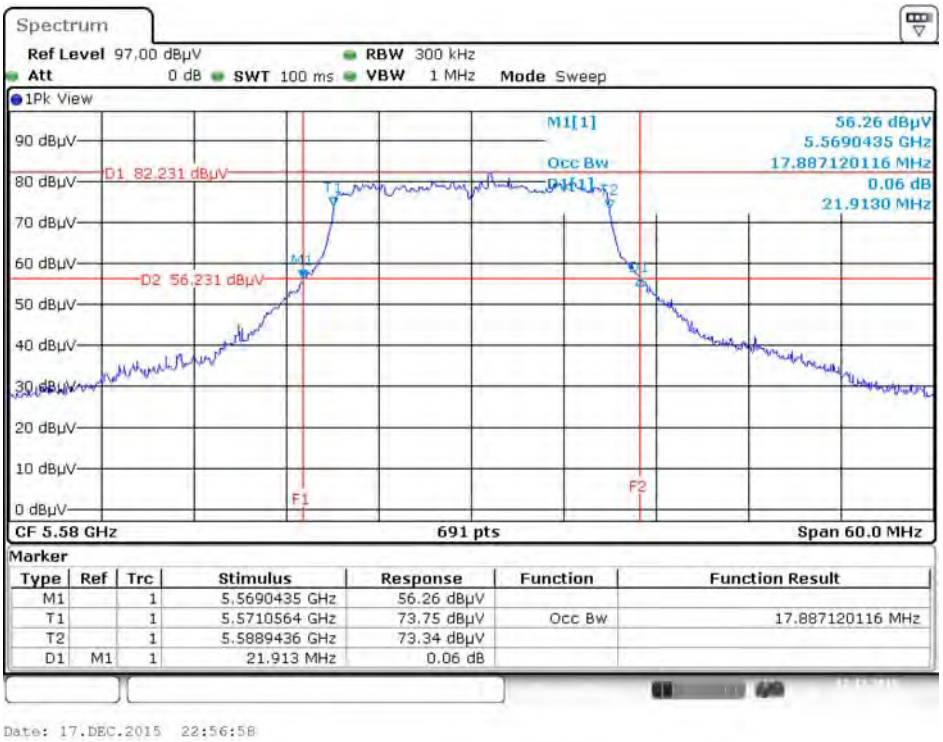
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5320 MHz



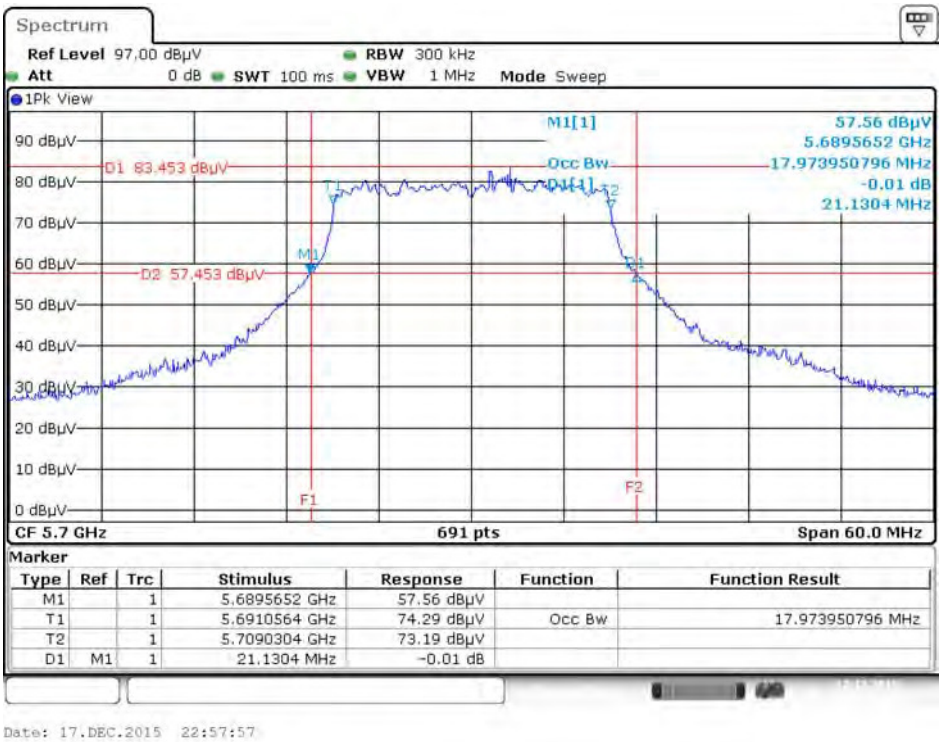
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5500 MHz



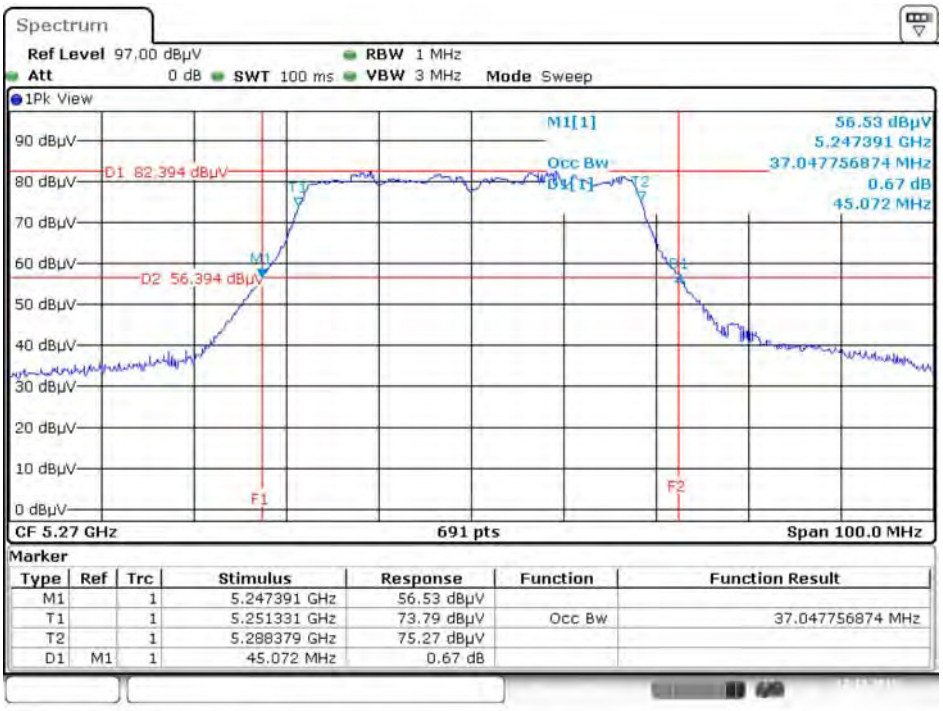
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5580 MHz



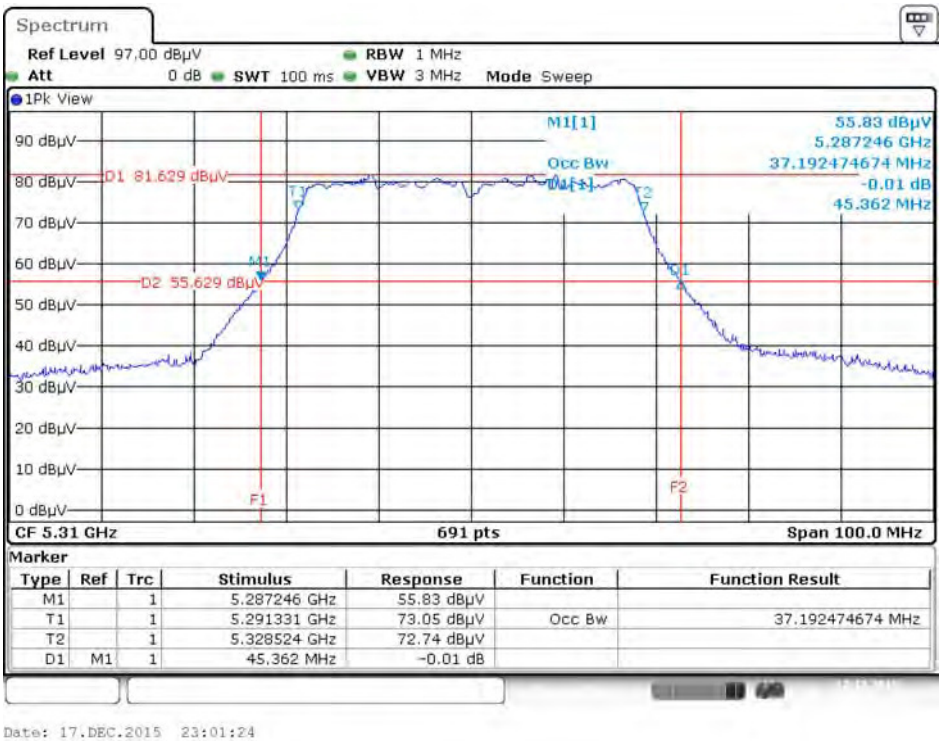
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5700 MHz



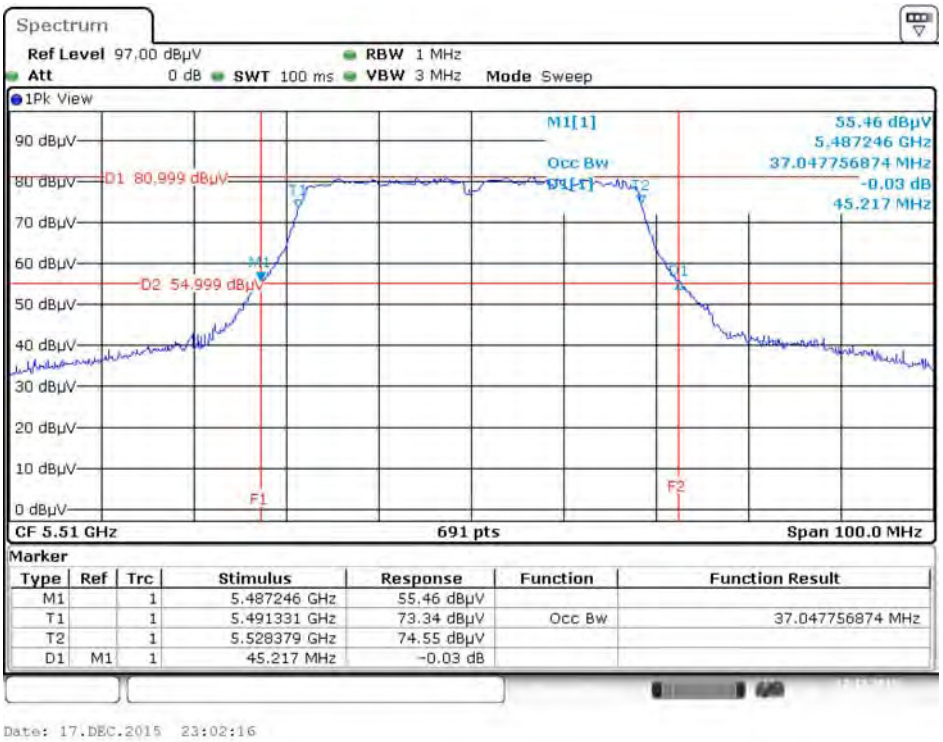
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5270 MHz



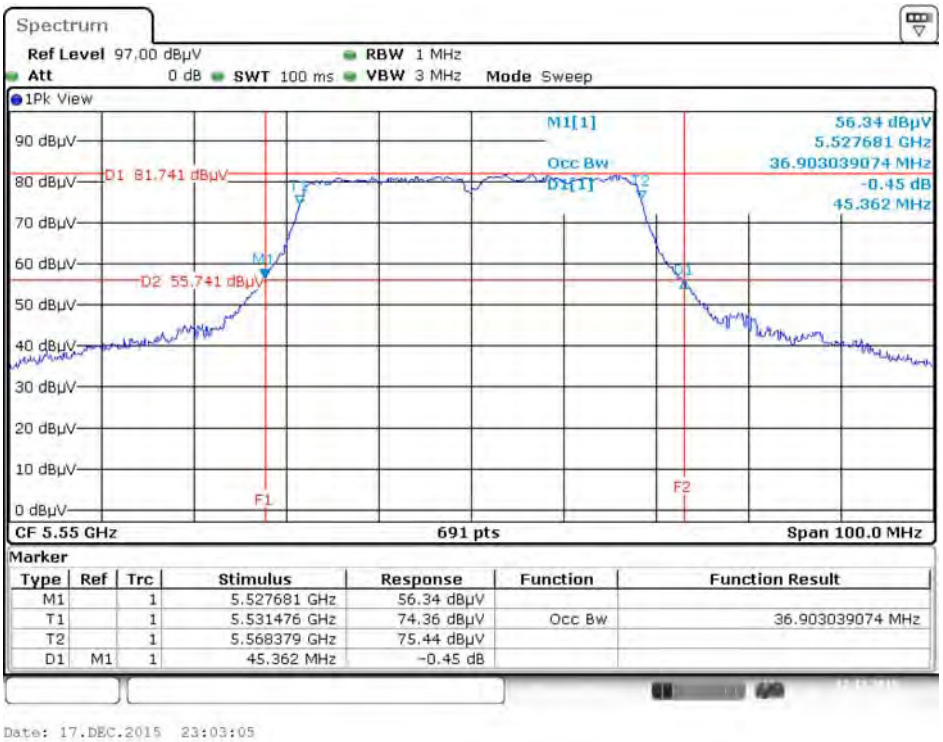
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5310 MHz



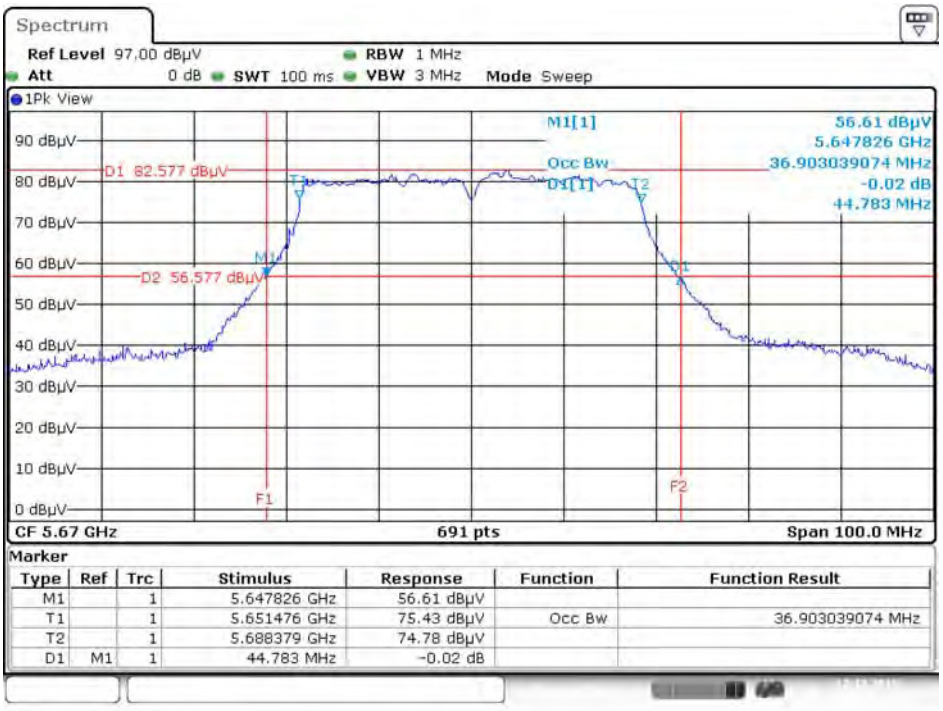
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5510 MHz



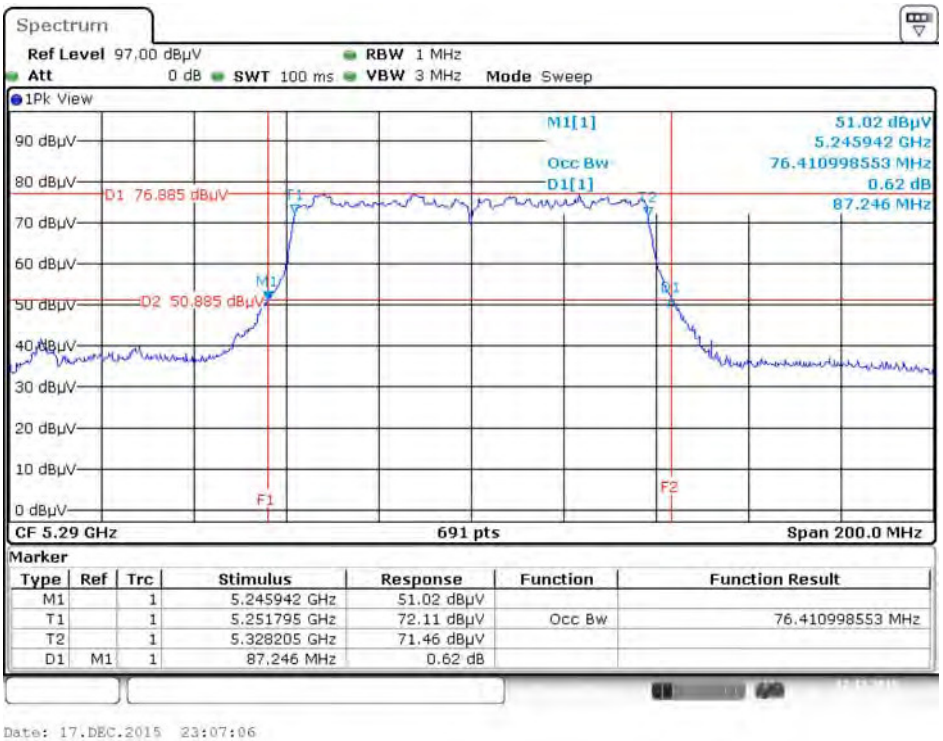
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5550 MHz



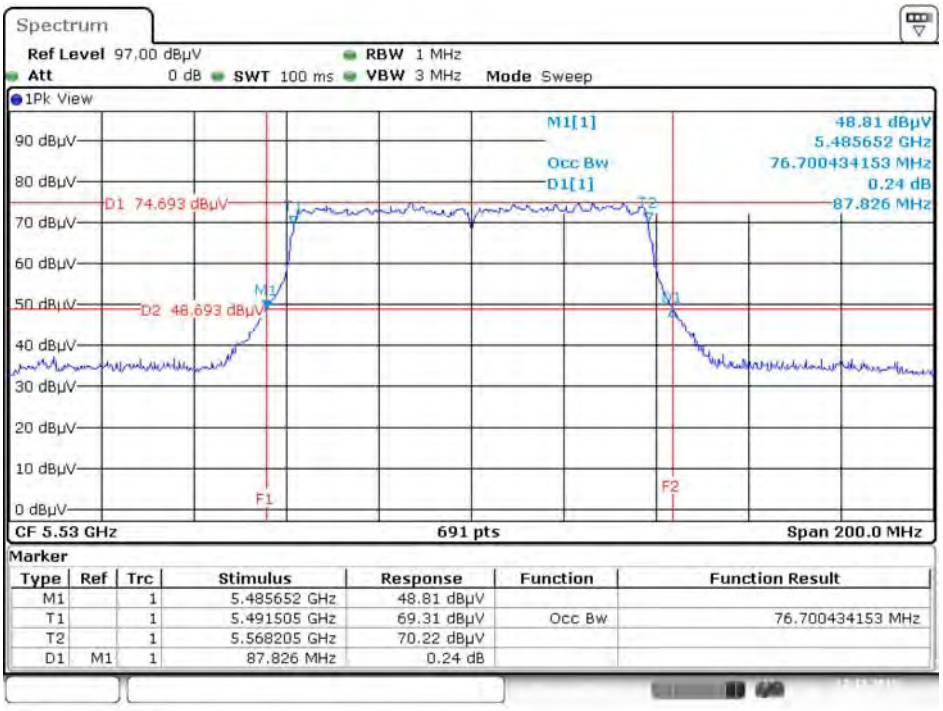
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5670 MHz



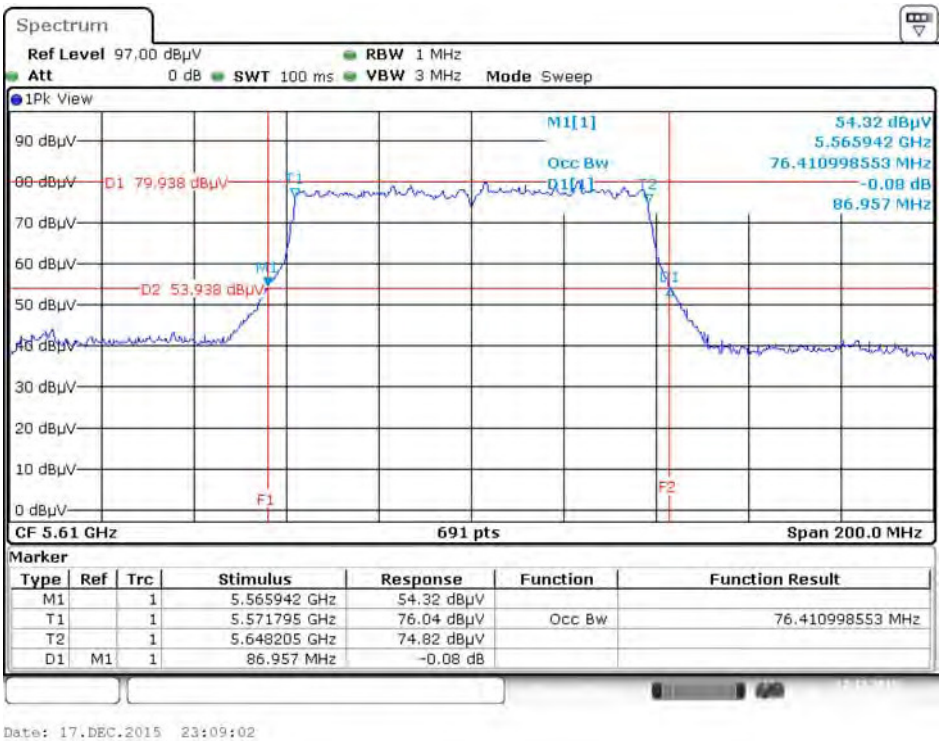
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5290 MHz



26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5530 MHz

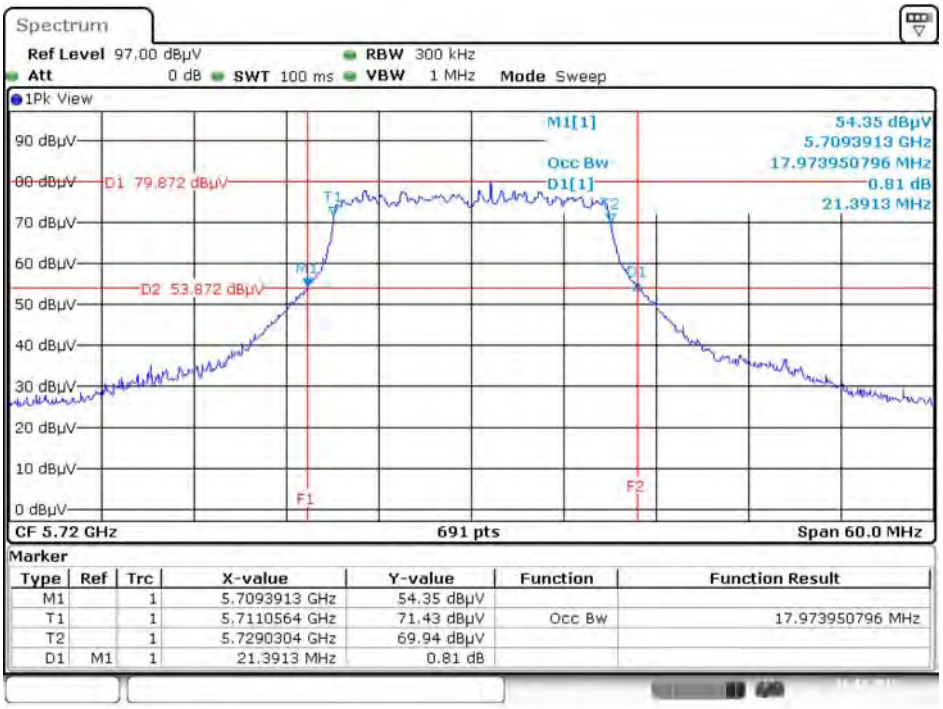


26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5610 MHz



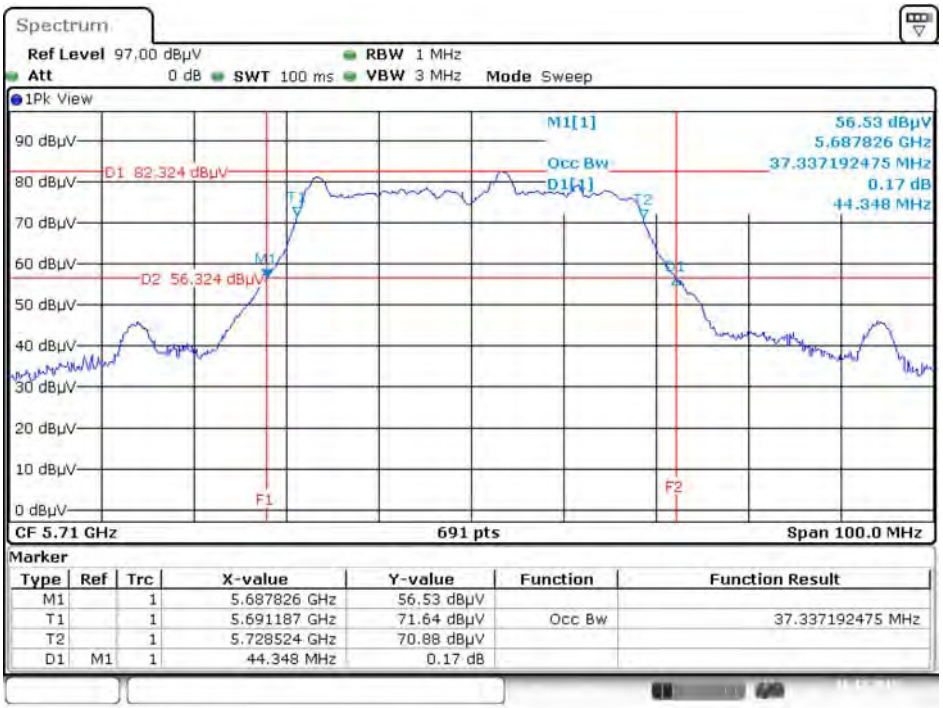
Straddle Channel

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5720 MHz



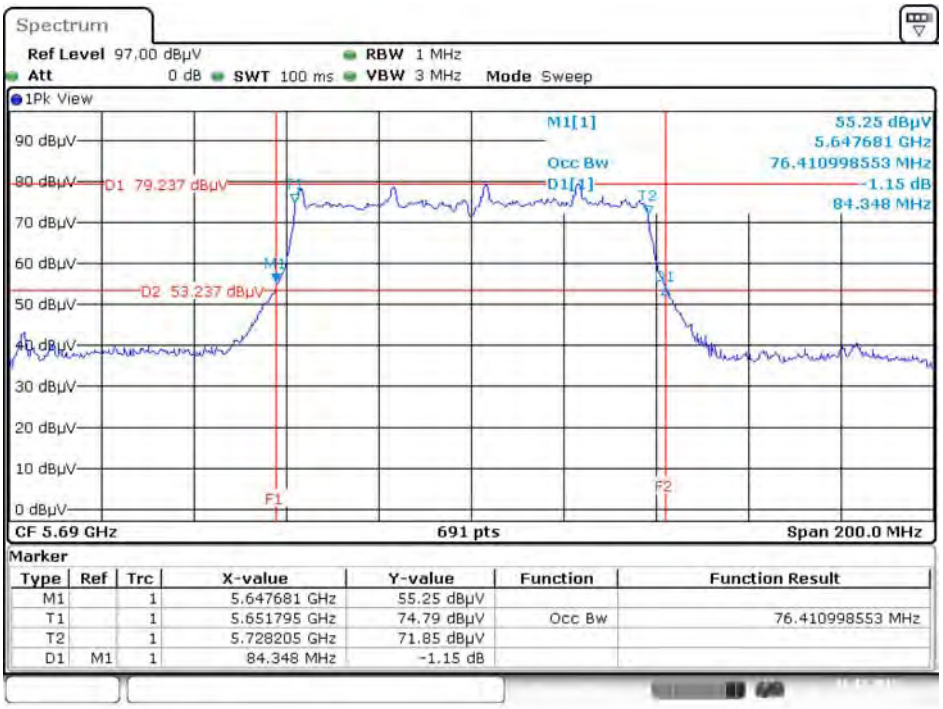
Date: 16.DEC.2015 01:38:36

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5710 MHz



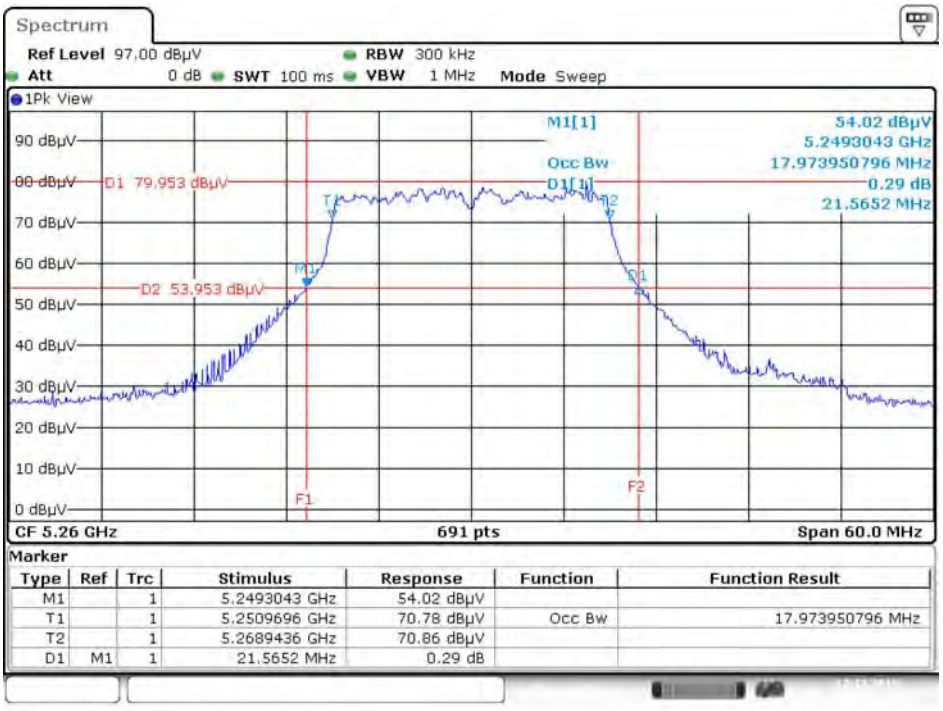
Date: 16.DEC.2015 01:36:43

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5690 MHz

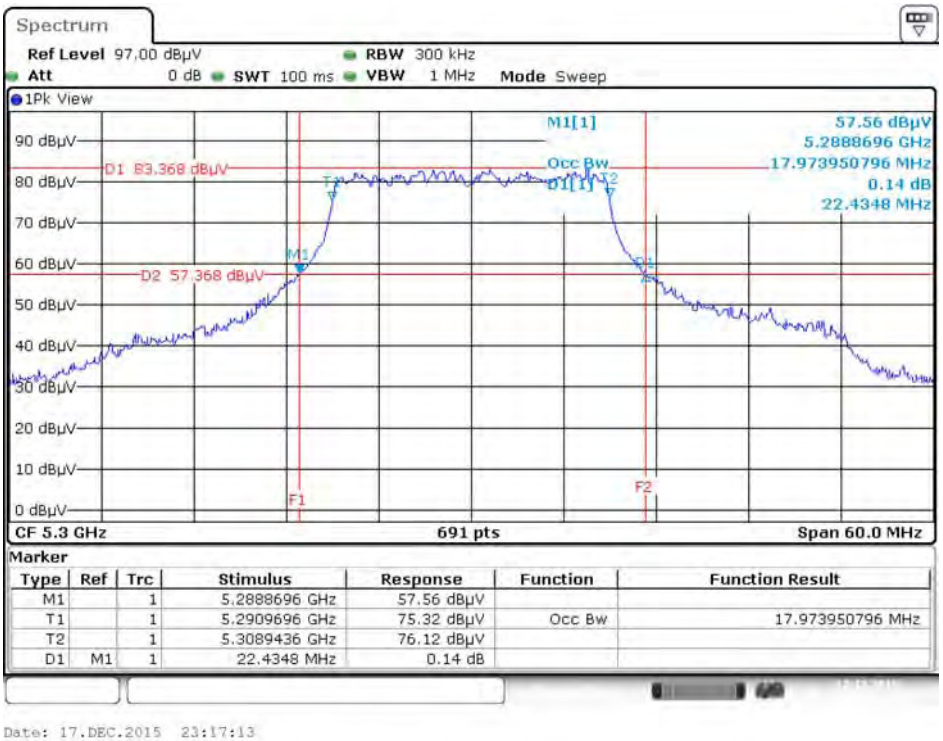


Mode 5: EUT 1 + Set 5 Panel Antenna / 6 dBi

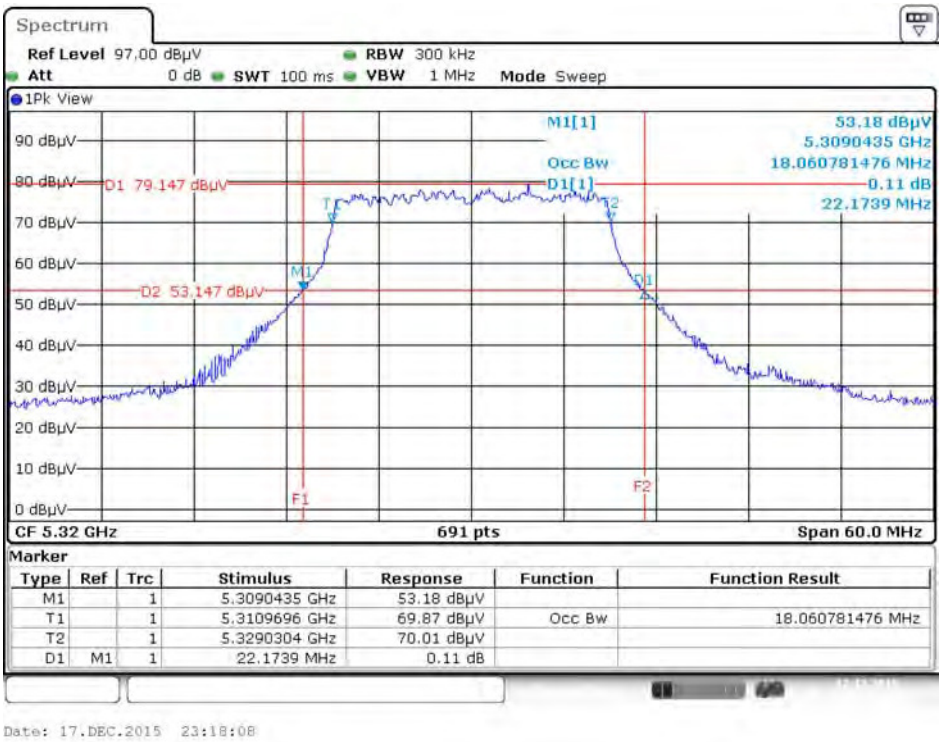
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5260 MHz



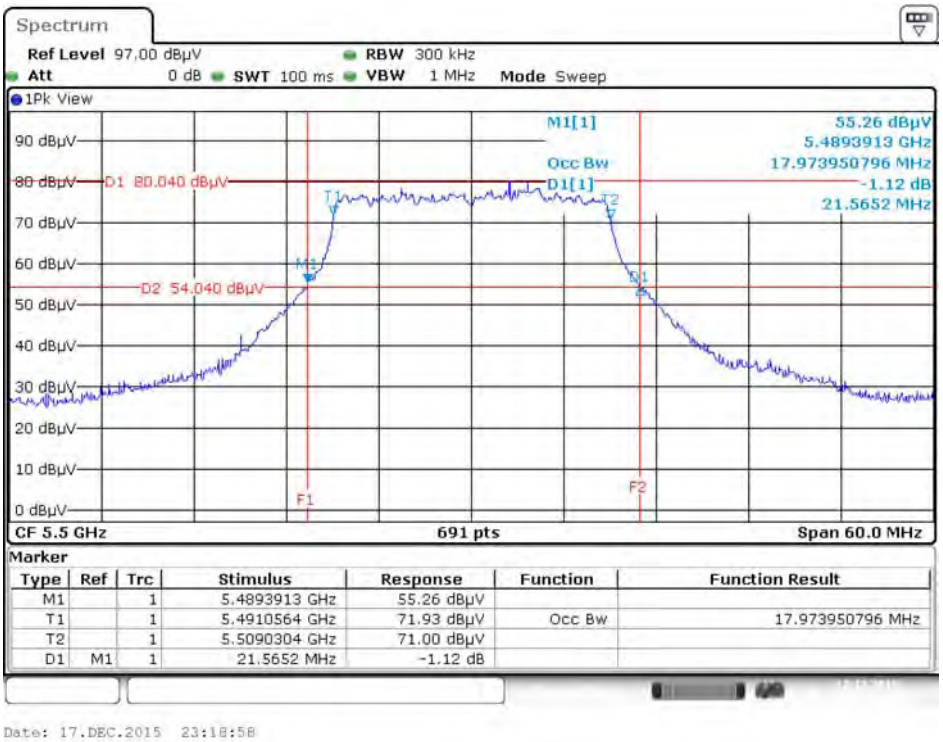
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5300 MHz



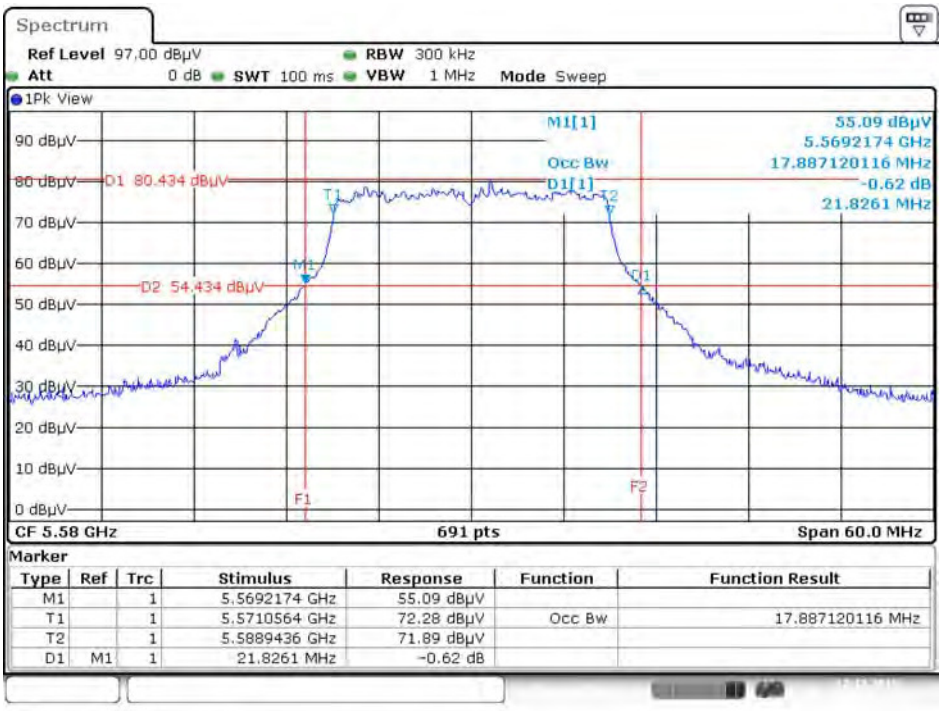
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5320 MHz



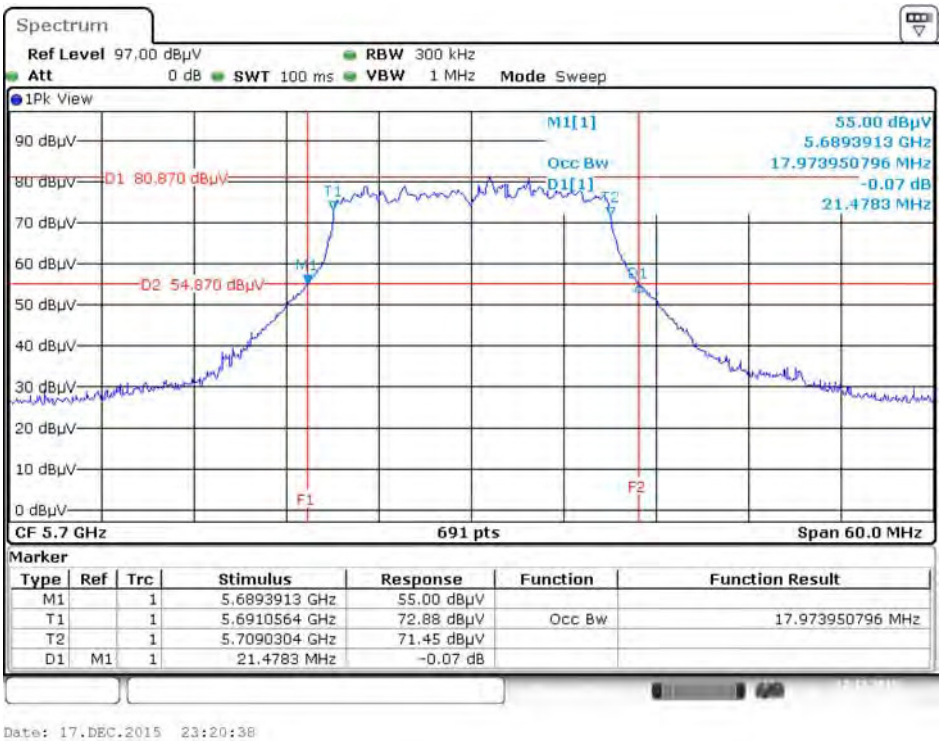
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5500 MHz



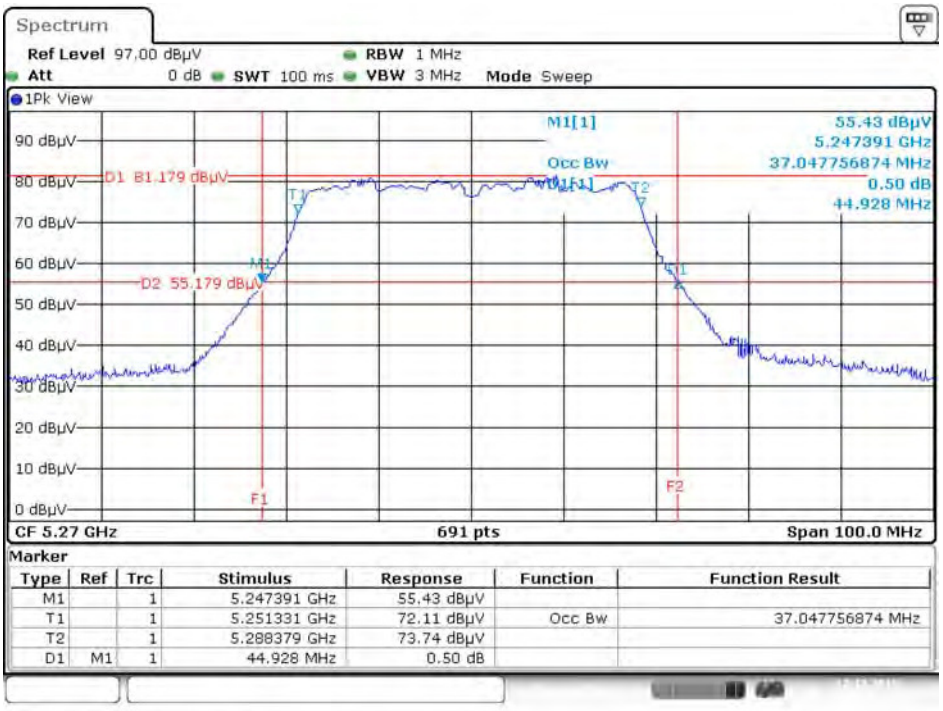
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5580 MHz



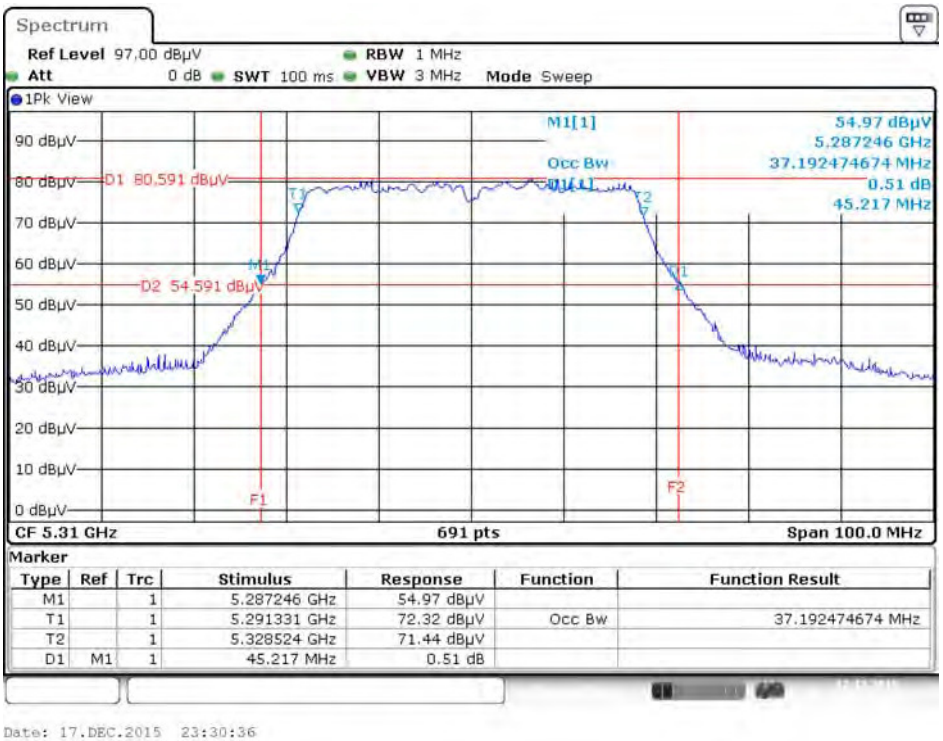
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5700 MHz



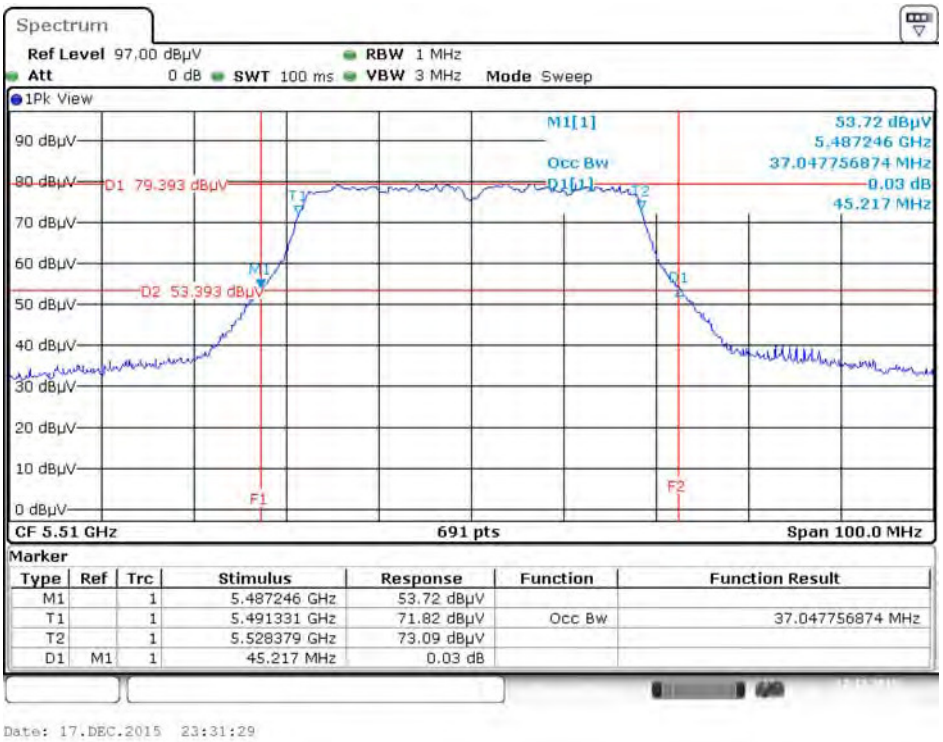
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5270 MHz



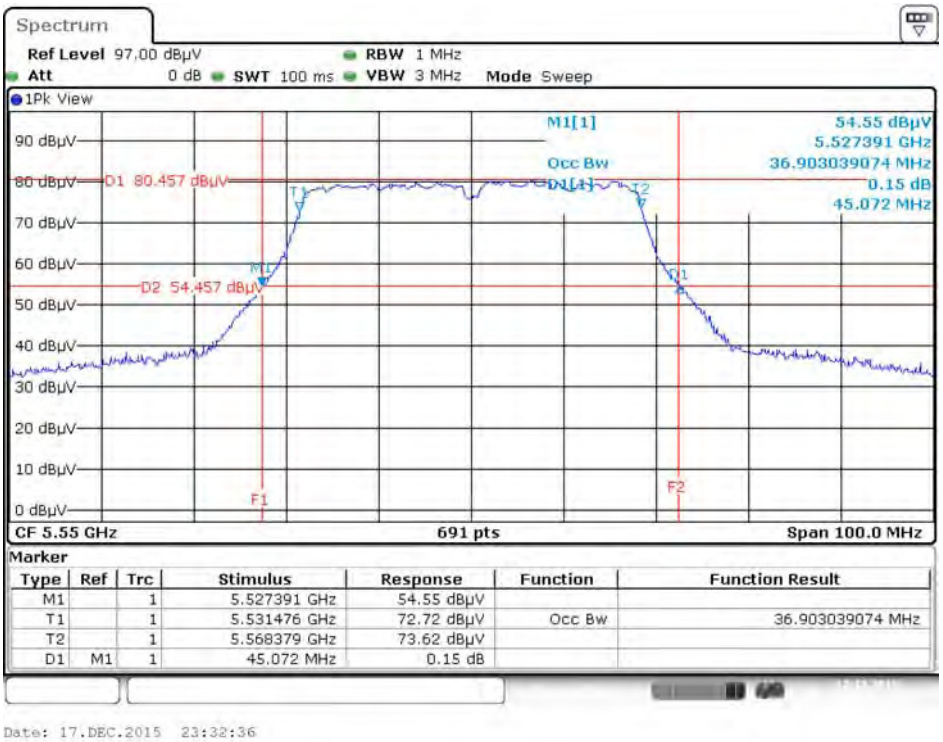
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5310 MHz



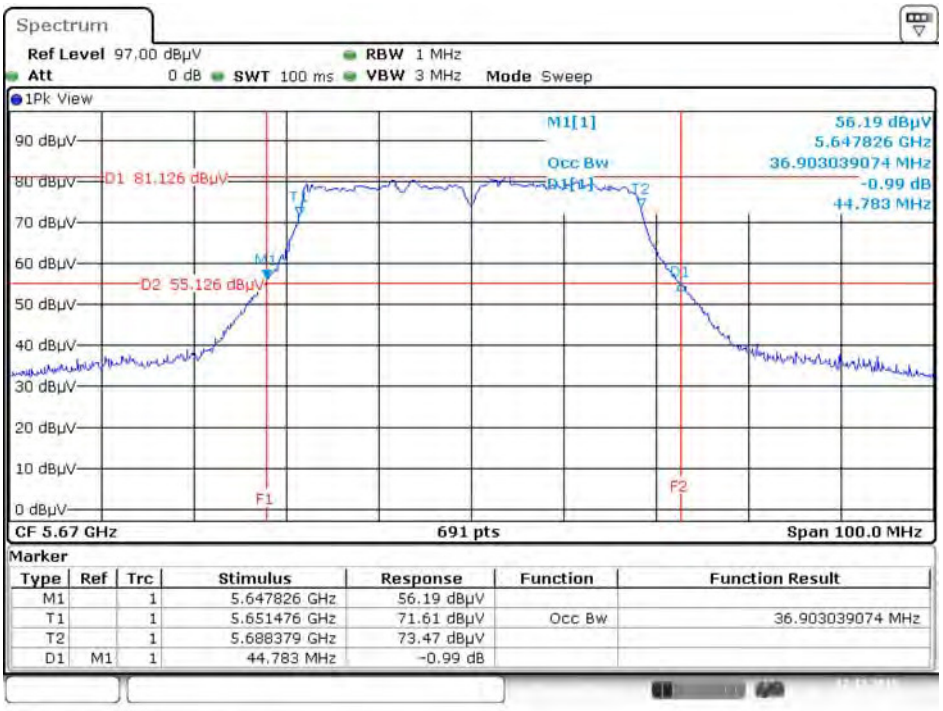
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5510 MHz



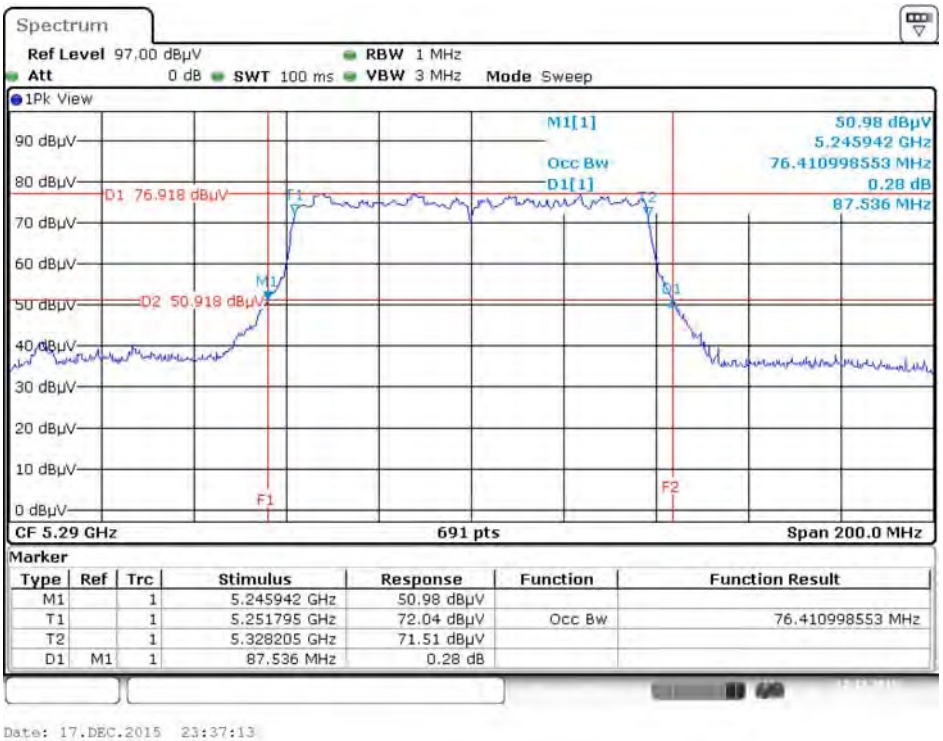
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5550 MHz



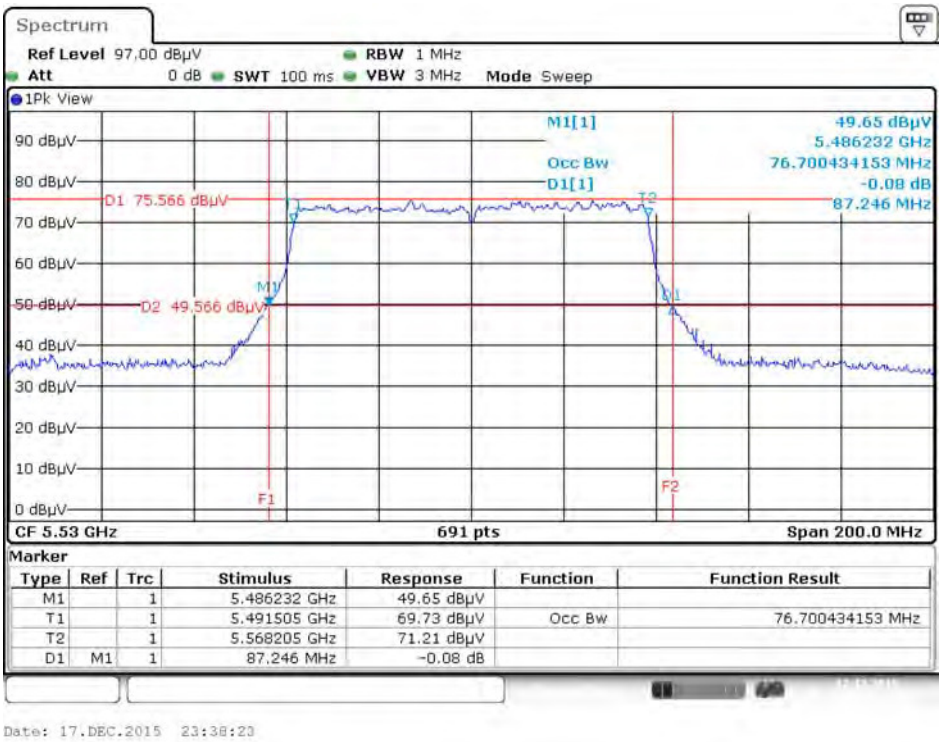
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5670 MHz



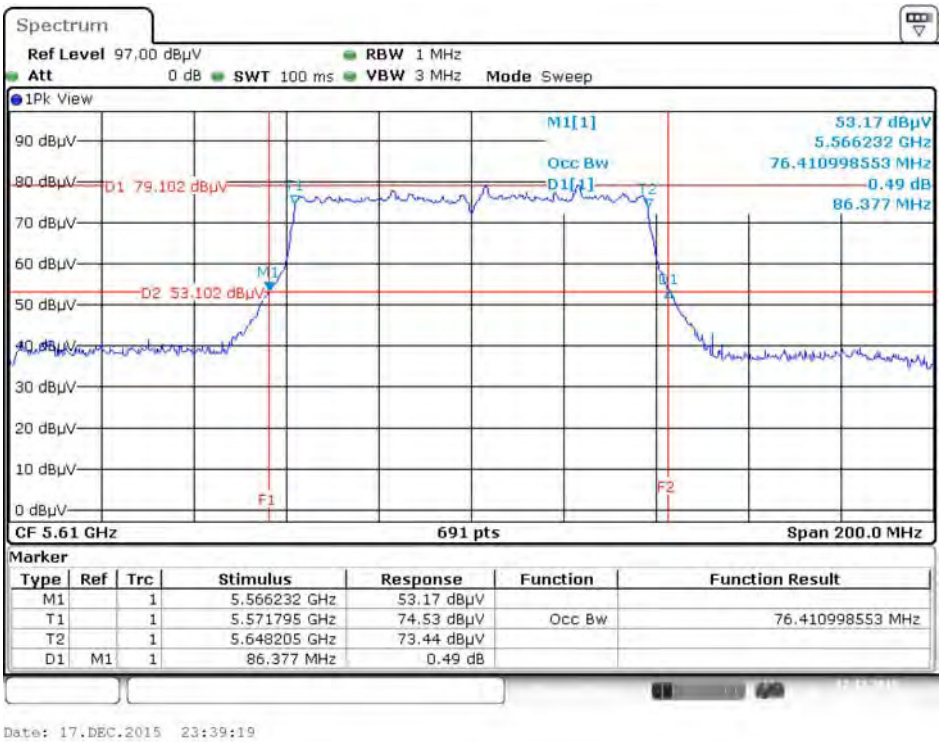
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5290 MHz



26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5530 MHz

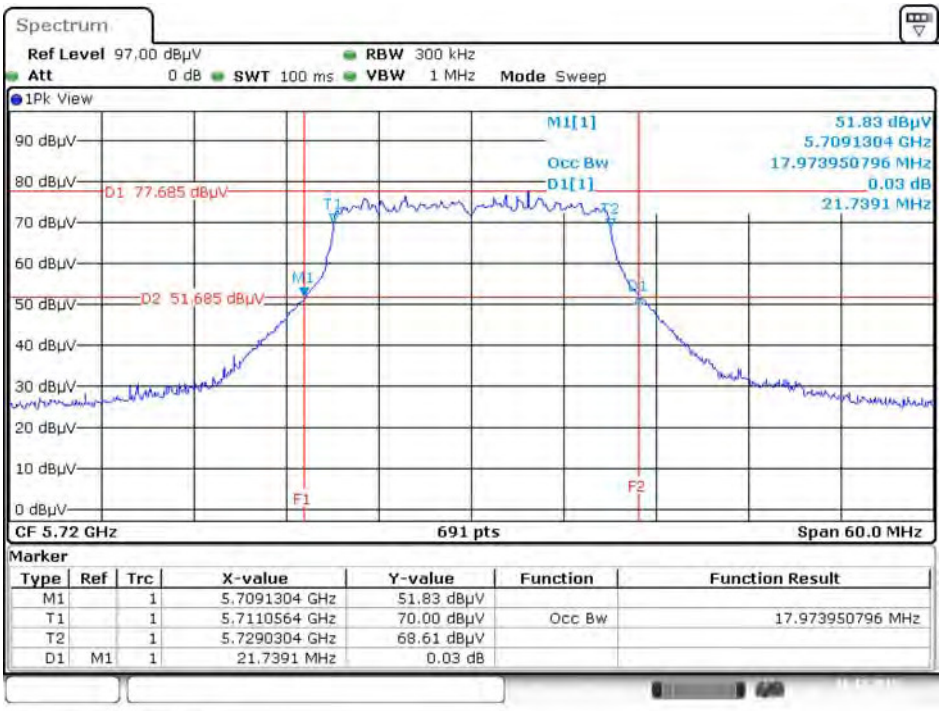


26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5610 MHz



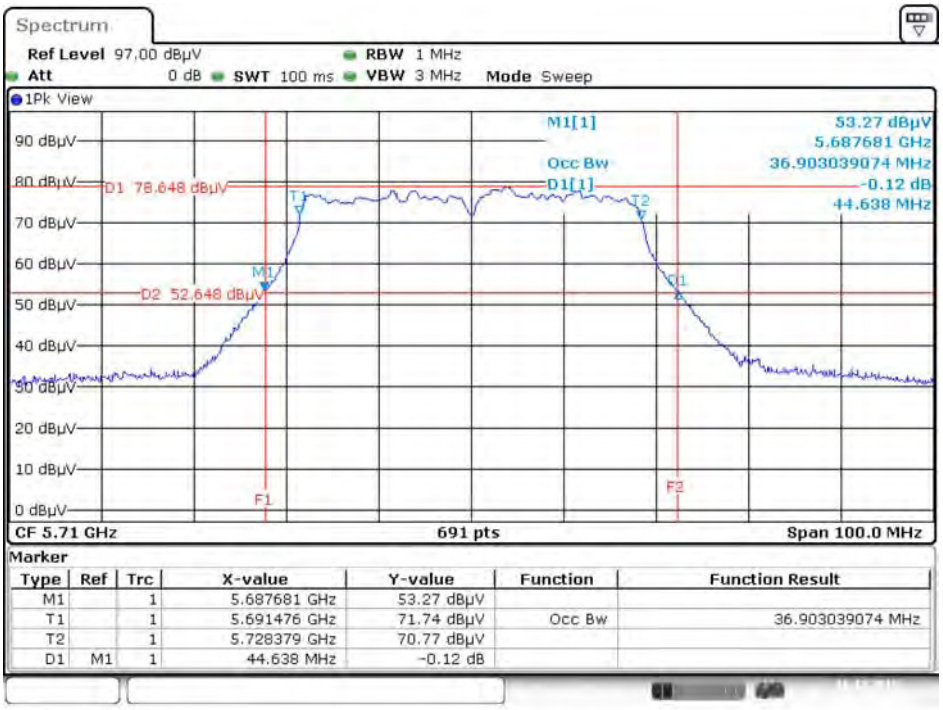
Straddle Channel

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5720 MHz



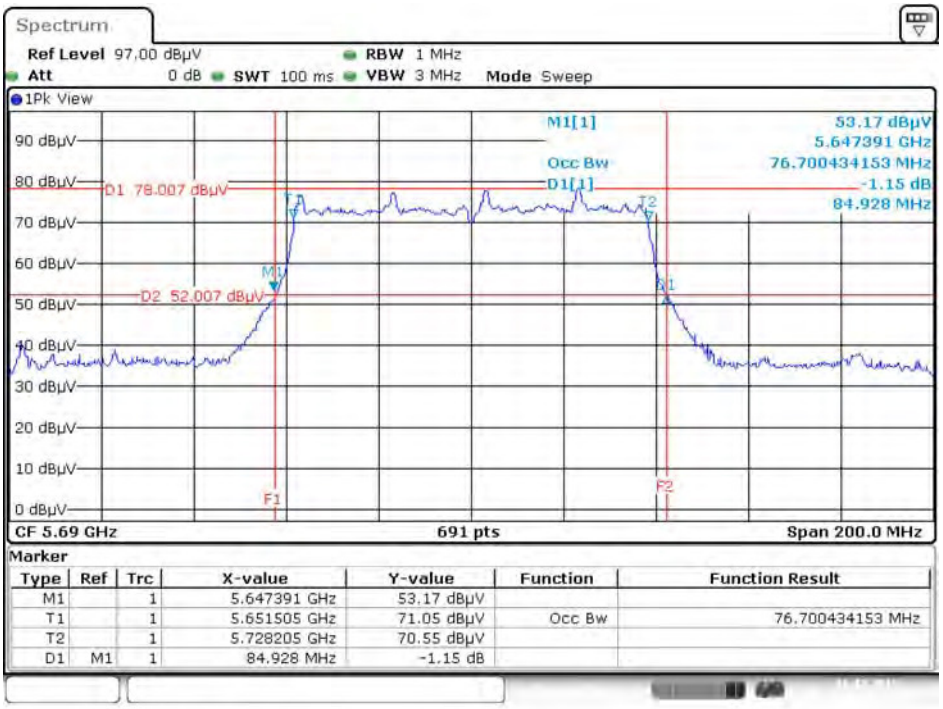
Date: 16.DEC.2015 02:04:37

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5710 MHz



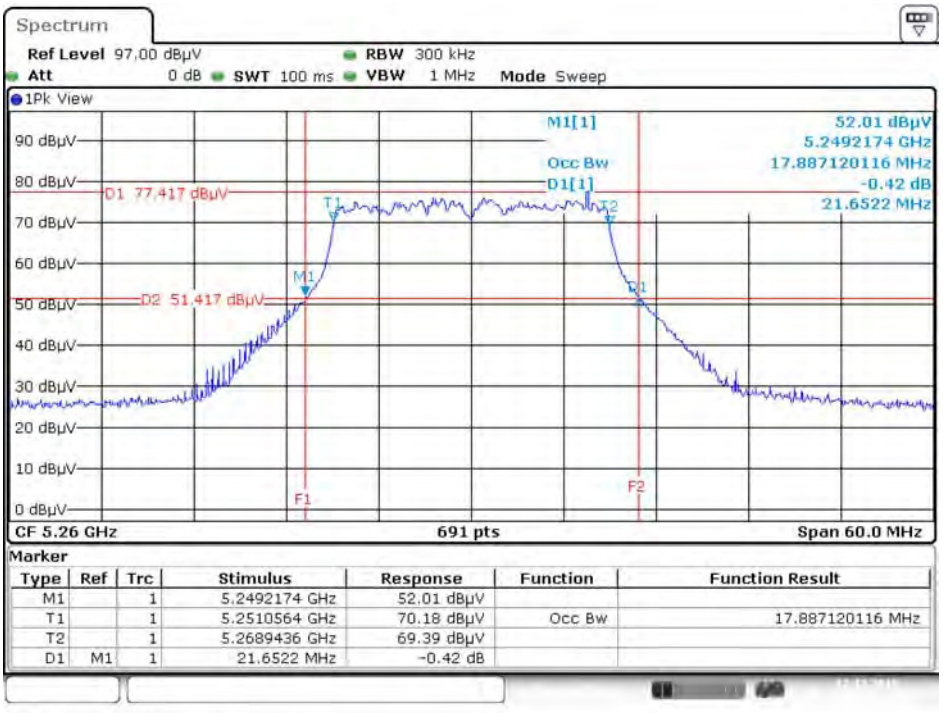
Date: 16.DEC.2015 02:03:48

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5690 MHz

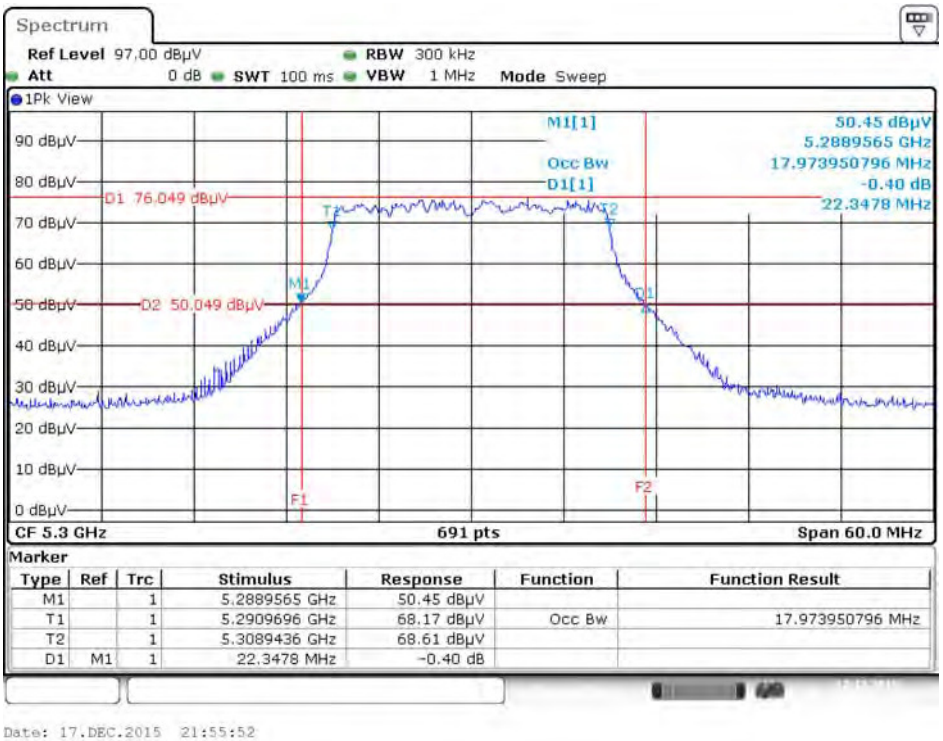


Mode 6: EUT 1 + Set 7 Sector Antenna / 11.5 dBi

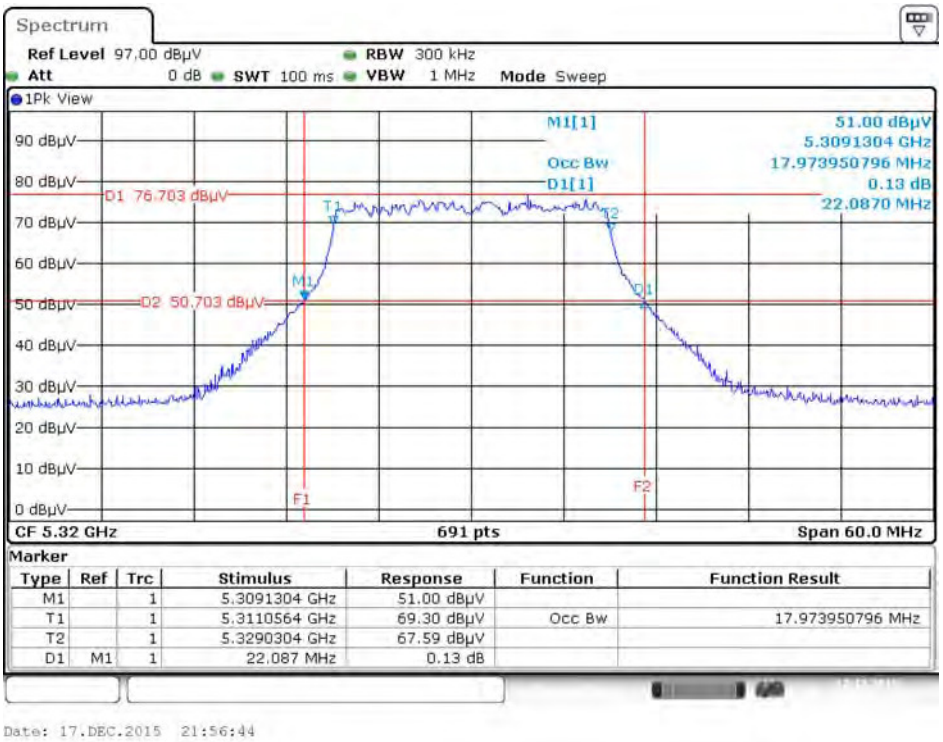
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5260 MHz



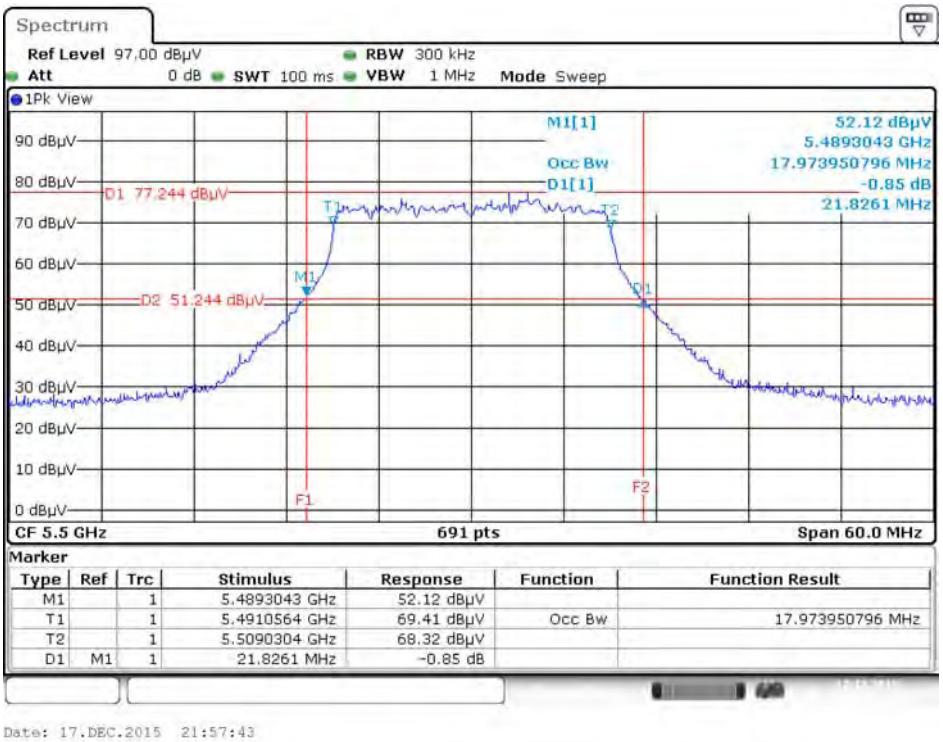
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5300 MHz



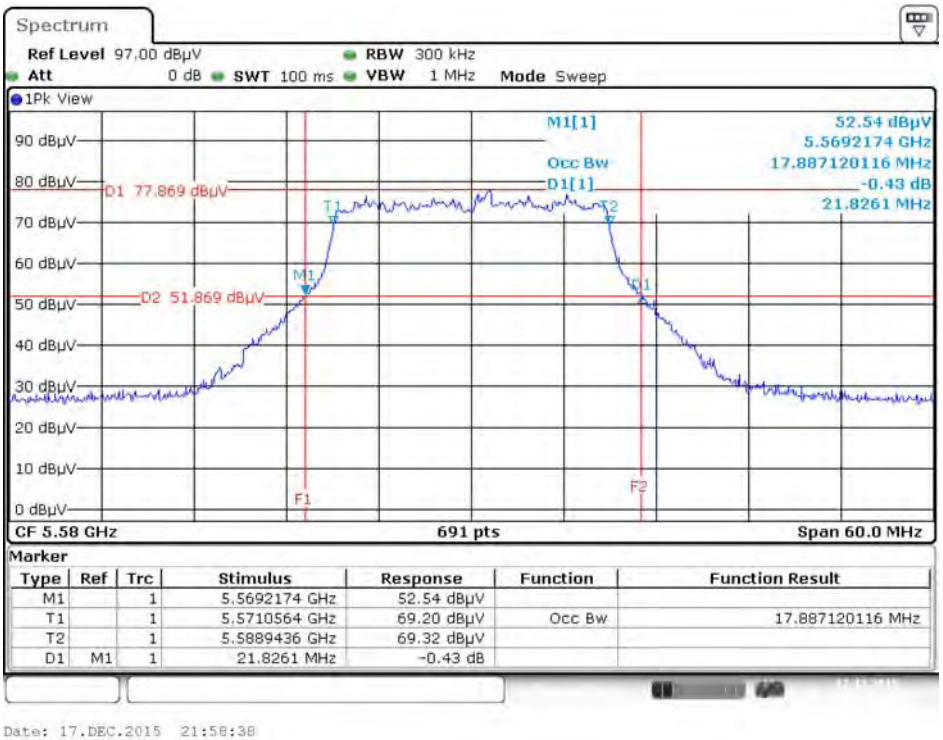
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5320 MHz



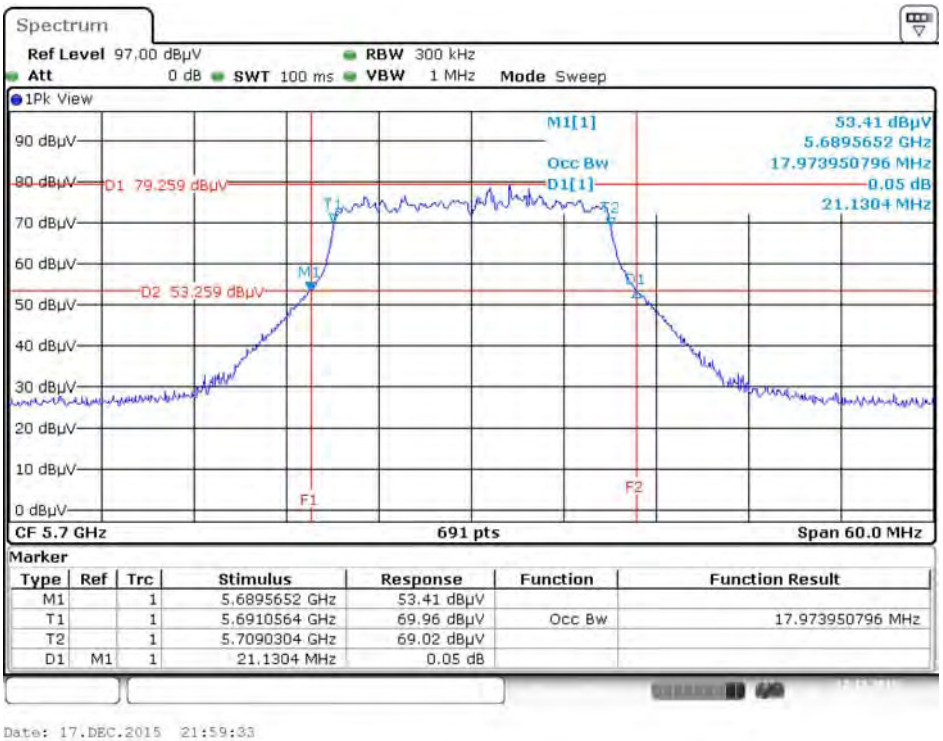
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5500 MHz



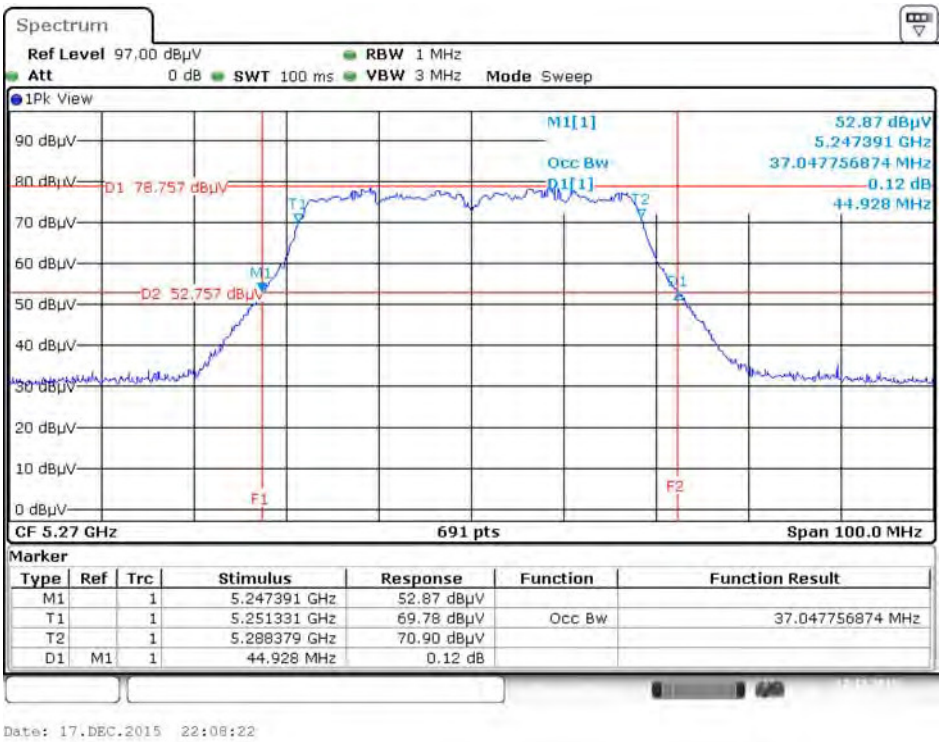
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5580 MHz



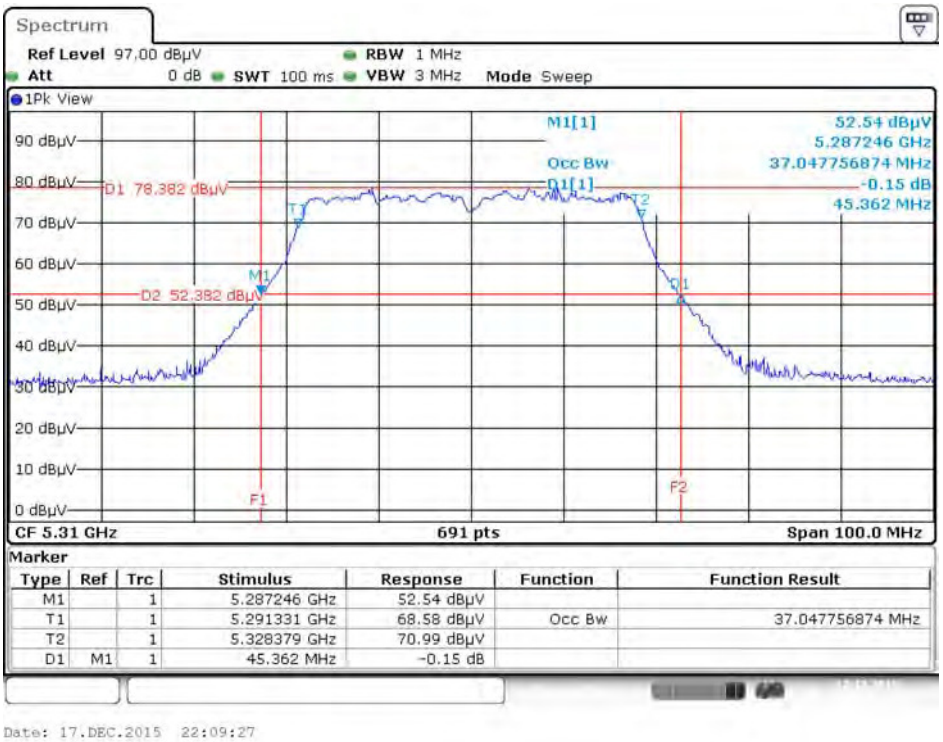
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5700 MHz



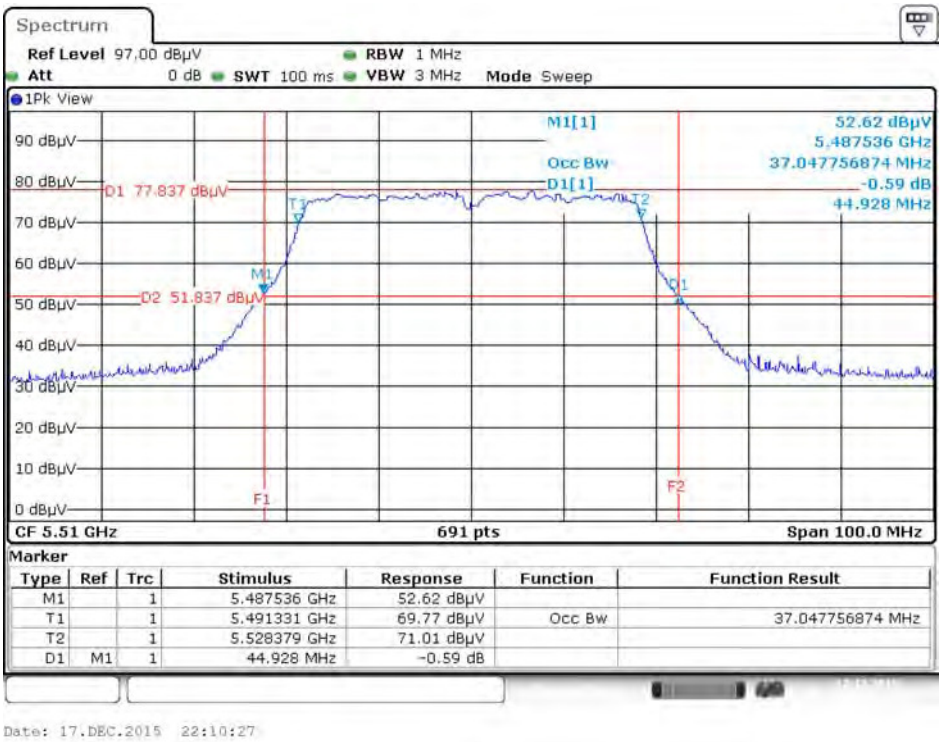
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5270 MHz



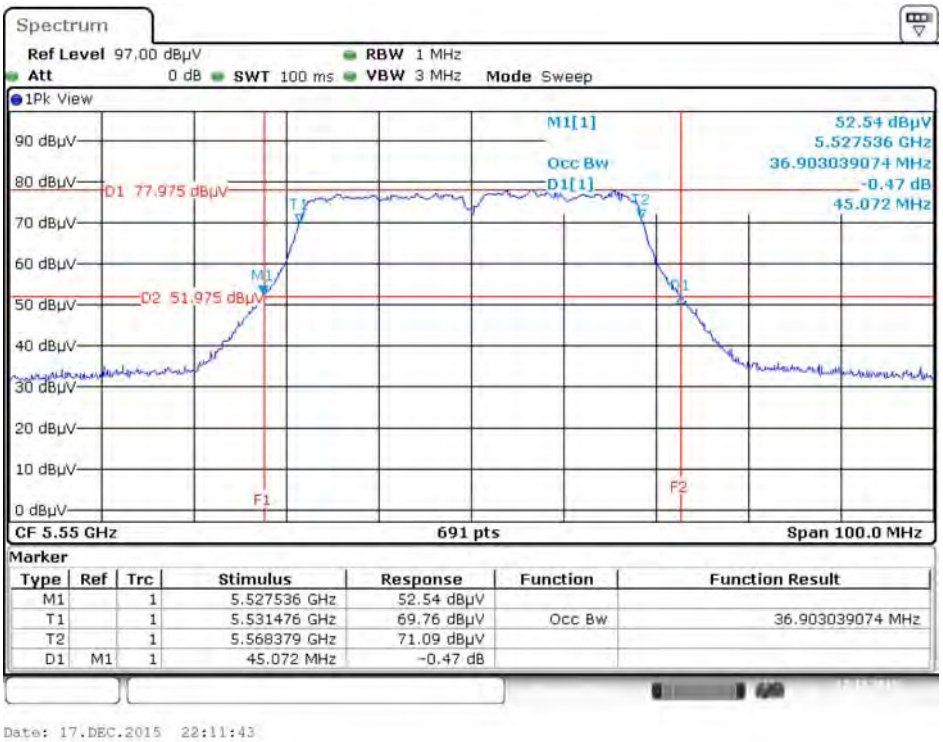
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5310 MHz



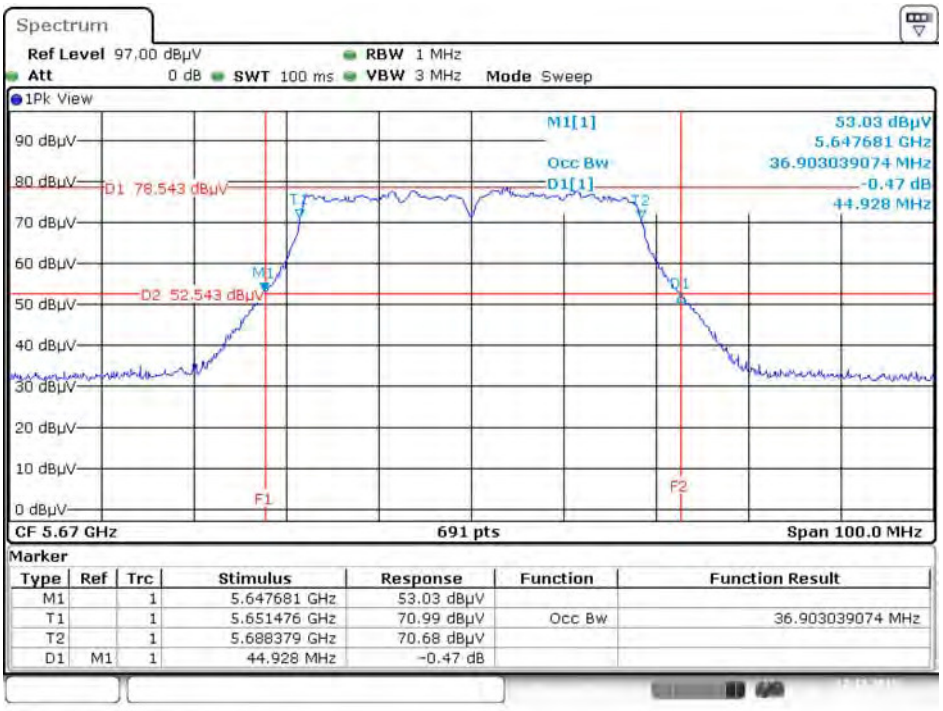
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5510 MHz



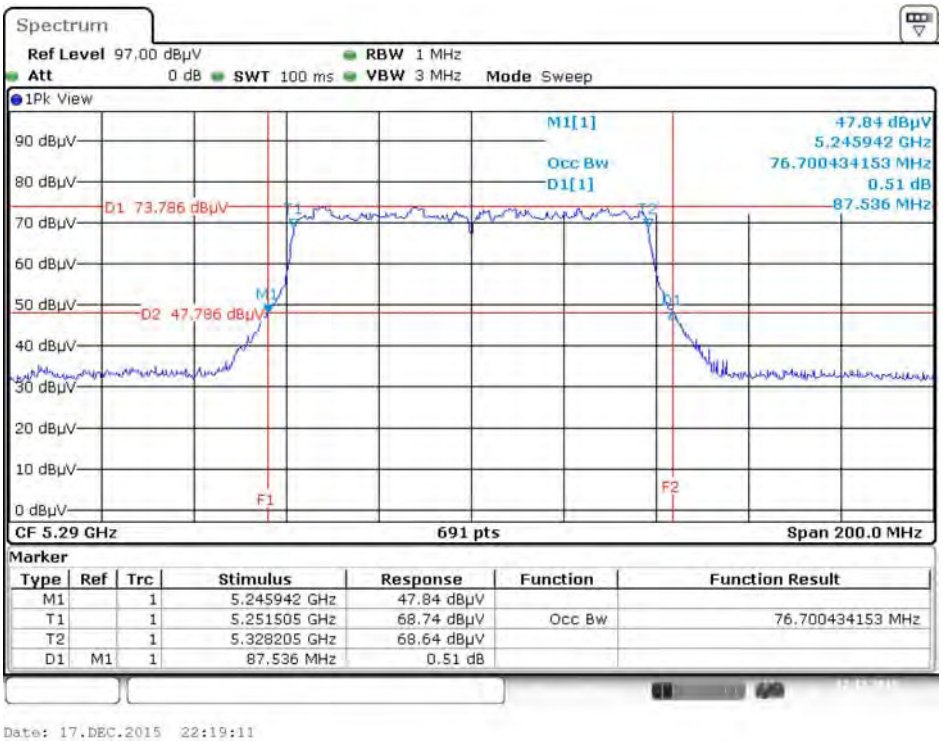
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5550 MHz



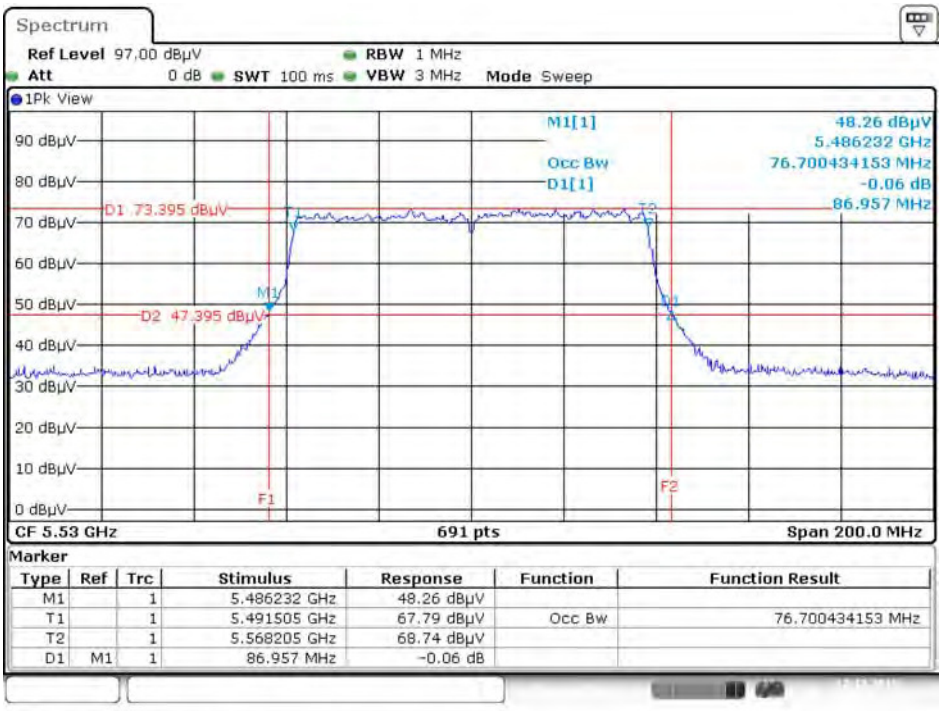
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5670 MHz



26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5290 MHz



26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5530 MHz



26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5610 MHz