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FCC RADIO TEST REPORT

Applicant's company	Mojo Networks, Inc.
Applicant Address	339 N. Bernardo Avenue, Suite #200 Mountain View, CA 94043 United States
FCC ID	TOR-C130
Manufacturer's company	Mojo Networks, Inc.
Manufacturer Address	339 N. Bernardo Avenue, Suite #200 Mountain View, CA 94043 United States

Product Name	802.11a/b/g/n/ac AP
Brand Name	MOJO
Model No.	C-130
Test Rule Part(s)	47 CFR FCC Part 15 Subpart E § 15.407
Test Freq. Range	5150 ~ 5350MHz / 5470 ~ 5725MHz / 5725 ~ 5850 MHz
Received Date	Apr. 13, 2016
Final Test Date	Aug. 26, 2016
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 v01r04, KDB662911 D01 v02r01, KDB644545 D03 v01, ET Docket No. 13-49; FCC 16-24.**

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



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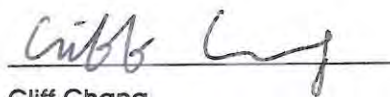
History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR641226-03	Rev. 01	Initial issue of report	May 18, 2017

1. VERIFICATION OF COMPLIANCE

Product Name : 802.11a/b/g/n/ac AP
Brand Name : MOJO
Model No. : C-130
Applicant : Mojo 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 Apr. 13, 2016 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.



Cliff Chang

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
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
4.4	15.407(a)	Power Spectral Density	Complies
4.5	15.407(b)	Radiated Emissions	Complies
4.6	15.407(b)	Band Edge Emissions	Complies
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	For rado 2- WLAN (4TX, 4RX) For rado 3- WLAN (2TX, 2RX)
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	5150 ~ 5350MHz / 5470 ~ 5725MHz / 5725 ~ 5850 MHz
Channel Number	25 for 20MHz bandwidth ; 12 for 40MHz bandwidth 6 for 80MHz bandwidth
Channel Bandwidth (99%)	For radio 2 <For Non-Beamforming Mode> Band 1: IEEE 802.11ac MCS0/Nss2 (VHT80+80): 75.83 MHz Band 2: IEEE 802.11a: 16.41 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 17.54 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 36.61 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 75.83 MHz IEEE 802.11ac MCS0/Nss2 (VHT80+80): 76.12 MHz Band 3: IEEE 802.11a: 16.59 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 17.71 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 36.61 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 75.54 MHz IEEE 802.11ac MCS0/Nss2 (VHT80+80): 75.83 MHz Band 4: IEEE 802.11ac MCS0/Nss2 (VHT80+80): 75.83 MHz

	<For Beamforming Mode> Band 1: IEEE 802.11ac MCS0/Nss2 (VHT80+80): 76.70 MHz 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 IEEE 802.11ac MCS0/Nss2 (VHT80+80): 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 IEEE 802.11ac MCS0/Nss2 (VHT80+80): 76.70 MHz Band 4: IEEE 802.11ac MCS0/Nss2 (VHT80+80): 76.70 MHz For radio 3 Band 2: IEEE 802.11a: 17.02 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 18.41 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 38.78 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 76.41 MHz Band 3: IEEE 802.11a: 17.02 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 18.32 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 40.38 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 76.70 MHz
Maximum Conducted Output Power	For radio 2 <For Non-Beamforming Mode> Band 1: IEEE 802.11ac MCS0/Nss2 (VHT80+80): 22.19 dBm Band 2: IEEE 802.11a: 18.54 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 18.40 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 21.50 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 19.54 dBm IEEE 802.11ac MCS0/Nss2 (VHT80+80): 21.23 dBm Band 3: IEEE 802.11a: 18.41 dBm

	IEEE 802.11ac MCS0/Nss1 (VHT20): 18.40 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 21.45 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 23.66 dBm IEEE 802.11ac MCS0/Nss2 (VHT80+80): 23.62 dBm Band 4: IEEE 802.11ac MCS0/Nss2 (VHT80+80): 22.82 dBm <For Beamforming Mode> Band 1: IEEE 802.11ac MCS0/Nss2 (VHT80+80): 21.67 dBm Band 2: IEEE 802.11ac MCS0/Nss1 (VHT20): 18.27 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 18.13 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 18.17 dBm IEEE 802.11ac MCS0/Nss2 (VHT80+80): 18.01 dBm Band 3: IEEE 802.11ac MCS0/Nss1 (VHT20): 18.11 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 18.27 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 18.19 dBm IEEE 802.11ac MCS0/Nss2 (VHT80+80): 21.25 dBm Band 4: IEEE 802.11ac MCS0/Nss2 (VHT80+80): 21.55 dBm For radio 3 Band 2: IEEE 802.11a: 21.15 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 21.12 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 23.83 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 18.02 dBm Band 3: IEEE 802.11a: 21.04 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 21.02 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 23.95 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 21.08 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
Beamforming Function	☒ With beamforming	☐ Without beamforming

Note: The product has beamforming function for 802.11n/ac in 2.4GHz and 5GHz for radio 1/radio 2.

Antenna and Bandwidth

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

IEEE 11n/ac Spec.

Radio	Protocol	Number of Transmit Chains (NTX)	Data Rate / MCS
Radio 2	802.11n (HT20)	4	MCS 0-31
Radio 2	802.11n (HT40)	4	MCS 0-31
Radio 2	802.11ac (VHT20)	4	MCS 0-9/Nss1-4
Radio 2	802.11ac (VHT40)	4	MCS 0-9/Nss1-4
Radio 2	802.11ac (VHT80)	4	MCS 0-9/Nss1-4
Radio 3	802.11n (HT20)	2	MCS 0-15
Radio 3	802.11n (HT40)	2	MCS 0-15
Radio 3	802.11ac (VHT20)	2	MCS 0-9/Nss1-2
Radio 3	802.11ac (VHT40)	2	MCS 0-9/Nss1-2
Radio 3	802.11ac (VHT80)	2	MCS 0-9/Nss1-2

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

Then EUT supports HT20 and HT40.

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

Note 3: Modulation modes consist of below configuration:

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

3.2. Accessories

Power	Brand	Model	Rating
Adapter (Switchable Adapter)	APD	WA-24Q12R	Input: 100-240V~, 50-60Hz, 0.7A Max Output: 12V, 2A
Others			
RJ-45 cable, Non-shielded, 1m			
US Plug*1			

3.3. Table for Filed Antenna

Ant.	Brand	P/N	Antenna Type	Connector	Gain (dBi)	
					2.4GHz	5GHz
1	WNC	95XKAA15.GBV	PIFA Antenna	I-PEX	4.64	-
2	WNC	95XKAA15.GBW	PIFA Antenna	I-PEX	4.56	-
3	WNC	95XKAA15.GBX	PIFA Antenna	I-PEX	4.47	-
4	WNC	95XKAA15.GBY	PIFA Antenna	I-PEX	4.82	-
5	WNC	95XKAA15.GBZ	PIFA Antenna	I-PEX	-	5.71
6	WNC	95XKAA15.GB1	PIFA Antenna	I-PEX	-	5.64
7	WNC	95XKAA15.GB2	PIFA Antenna	I-PEX	-	5.67
8	WNC	95XKAA15.GB3	PIFA Antenna	I-PEX	-	5.68
9	WNC	95XKAA15.GAI	PIFA Antenna	I-PEX	4.20	5.77
10	WNC	95XKAA15.GAH	PIFA Antenna	I-PEX	4.64	5.75

Note1: The EUT has ten antennas.

Note2: The EUT has three radios, Radio 1 supports WLAN 2.4GHz, Radio 2 supports WLAN 5GHz and Radio 3 supports WLAN 2.4GHz + 5GHz (scanning radio) function.

For radio 1

For 2.4GHz WLAN function:

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

Chain 1, Chain 2, Chain 3 and Chain 4 can be used as transmitting/receiving antenna.

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

For radio 2

For 5GHz WLAN function:

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

Chain 5, Chain 6, Chain 7 and Chain 8 can be used as transmitting/receiving antenna.

Chain 5, Chain 6, Chain 7 and Chain 8 could transmit/receive simultaneously.

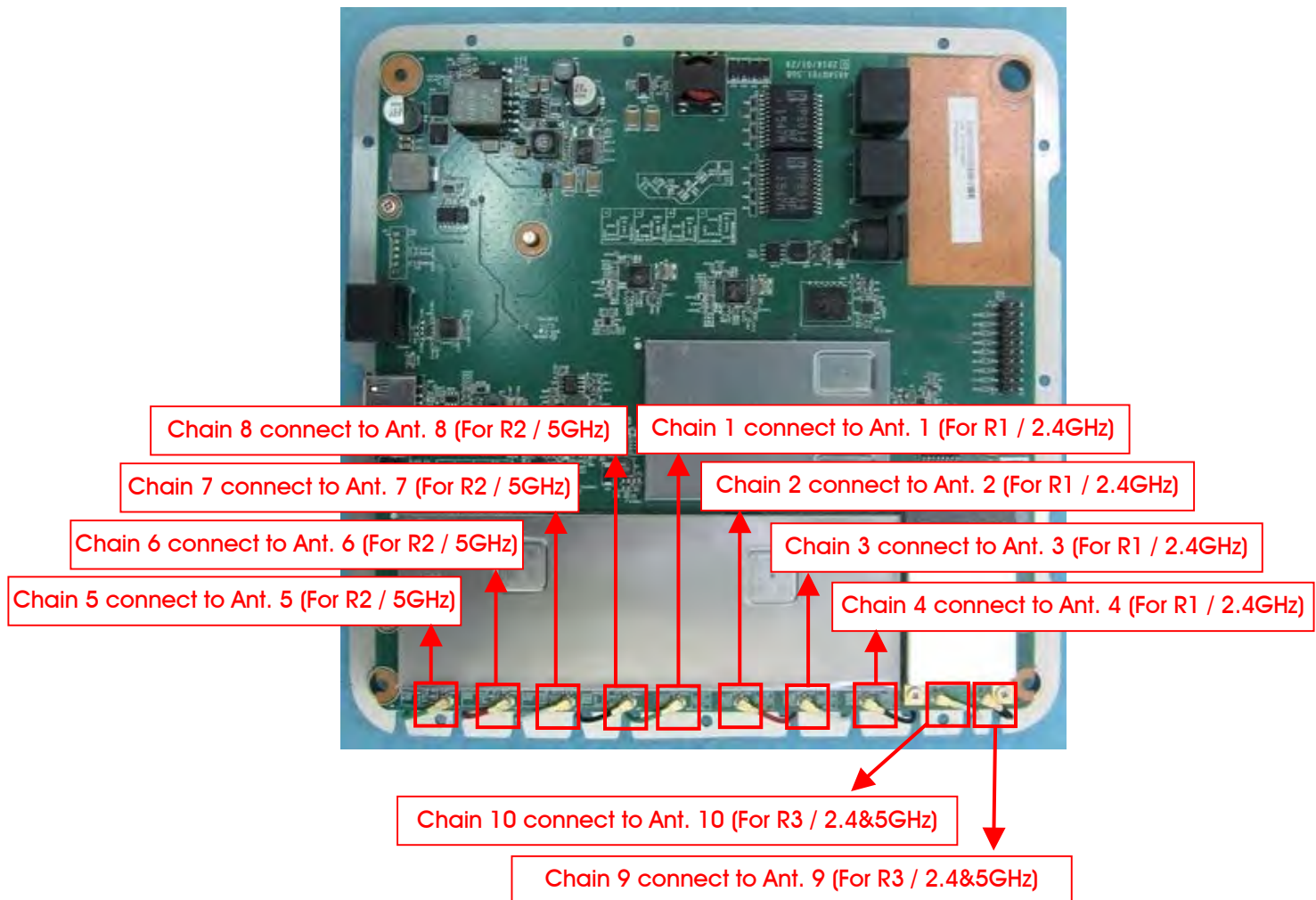
For radio 3

For 2.4GHz / 5GHz WLAN function:

For IEEE 802.11a/b/g/n/ac mode (2TX/2RX)

Chain 9 and Chain 10 can be used as transmitting/receiving antenna.

Chain 9 and Chain 10 could transmit/receive simultaneously.



3.4. Table for Carrier Frequencies

There are three bandwidth systems.

For 20MHz bandwidth systems, use Channel 36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140, 144, 149, 153, 157, 161, 165.

For 40MHz bandwidth systems, use Channel 38, 46, 54, 62, 102, 110, 118, 126, 134, 142, 151, 159.

For 80MHz bandwidth systems, use Channel 42, 58, 106, 122, 138, 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	-	-
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	-	-
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

Note: Only radio 2 supports straddle channel.

3.5. Table for 80+80 MHz Mode

Type	Channel No.	Frequency
1	42+106	5210+5530 MHz
2	42+122	5210+5610 MHz
3	42+138	5210+5690 MHz
4	58+106	5290+5530 MHz
5	58+122	5290+5610 MHz
6	58+138	5290+5690 MHz
7	58+155	5290+5775 MHz
8	106+138	5530+5690 MHz
9	106+155	5530+5775 MHz
10	122+155	5610+5775 MHz
11	138+155	5690+5775 MHz

Note: Only radio 2 supports 80+80MHz mode.

3.6. 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	For radio 2				
	<For Non-Beamforming Mode>				
	11a/BPSK	Band 2-3	6Mbps	52/60/64/100/ 116/140/144	5+6+7+8
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/ 116/140/144	5+6+7+8
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/ 134/142	5+6+7+8
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122/138	5+6+7+8
	<For Beamforming Mode>				
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/ 116/140/144	5+6+7+8
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/ 134/142	5+6+7+8
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122/138	5+6+7+8
	For radio 3				
	11a/BPSK	Band 2-3	6Mbps	52/60/64/100/ 116/140	9+10
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/ 116/140	9+10
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/ 134	9+10
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122	9+10
Power Spectral Density	For radio 2				
	<For Non-Beamforming Mode>				
	11a/BPSK	Band 2-3	6Mbps	52/60/64/100/ 116/140/144	5+6+7+8
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/ 116/140/144	5+6+7+8
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/ 134/142	5+6+7+8

	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122/138	5+6+7+8
	<For Beamforming Mode>				
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/ 116/140/144	5+6+7+8
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/ 134/142	5+6+7+8
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122/138	5+6+7+8
	For radio 3				
	11a/BPSK	Band 2-3	6Mbps	52/60/64/100/ 116/140	9+10
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/ 116/140	9+10
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/ 134	9+10
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122	9+10
26dB Spectrum Bandwidth & 99% Occupied Bandwidth Measurement	For radio 2				
	<For Non-Beamforming Mode>				
	11a/BPSK	Band 2-3	6Mbps	52/60/64/100/ 116/140/144	5+6+7+8
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/ 116/140/144	5+6+7+8
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/ 134/142	5+6+7+8
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122/138	5+6+7+8
	<For Beamforming Mode>				
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/ 116/140/144	5+6+7+8
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/ 134/142	5+6+7+8
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122/138	5+6+7+8
	For radio 3				
	11a/BPSK	Band 2-3	6Mbps	52/60/64/100/ 116/140	9+10
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/ 116/140	9+10
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/ 134	9+10
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122	9+10

6dB Spectrum Bandwidth Measurement	For radio 2				
	<For Non-Beamforming Mode>				
	11a/BPSK	Band 4	6Mbps	144	5+6+7+8
	11ac VHT20	Band 4	MCS0/Nss1	144	5+6+7+8
	11ac VHT40	Band 4	MCS0/Nss1	142	5+6+7+8
	11ac VHT80	Band 4	MCS0/Nss1	138	5+6+7+8
	<For Beamforming Mode>				
	11ac VHT20	Band 4	MCS0/Nss1	144	5+6+7+8
	11ac VHT40	Band 4	MCS0/Nss1	142	5+6+7+8
	11ac VHT80	Band 4	MCS0/Nss1	138	5+6+7+8
Radiated Emission Above 1GHz	For radio 2				
	<For Non-Beamforming Mode>				
	11a/BPSK	Band 2-3	6Mbps	52/60/64/100/ 116/140/144	5+6+7+8
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/ 116/140/144	5+6+7+8
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/ 134/142	5+6+7+8
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122/138	5+6+7+8
	<For Beamforming Mode>				
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/ 116/140/144	5+6+7+8
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/ 134/142	5+6+7+8
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122/138	5+6+7+8
	For radio 3				
	11a/BPSK	Band 2-3	6Mbps	52/60/64/100/ 116/140	9+10
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/ 116/140	9+10
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/ 134	9+10
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122	9+10
Band Edge Emission	For radio 2				
	<For Non-Beamforming Mode>				
	11a/BPSK	Band 2-3	6Mbps	52/60/64/100/ 116/140/144	5+6+7+8

	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/ 116/140/144	5+6+7+8
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/ 134/142	5+6+7+8
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122/138	5+6+7+8
	<For Beamforming Mode>				
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/ 116/140/144	5+6+7+8
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/ 134/142	5+6+7+8
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122/138	5+6+7+8
	For radio 3				
	11a/BPSK	Band 2-3	6Mbps	52/60/64/100/ 116/140	9+10
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/ 116/140	9+10
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/ 134	9+10
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122	9+10
Frequency Stability	For Radio 2				
	20 MHz	Band 2-3	-	60/116	5
	40 MHz	Band 2-3	-	62/110	5
	80 MHz	Band 2-3	-	58/106	5
	For Radio 3				
	20 MHz	Band 2-3	-	60/116	9
	40 MHz	Band 2-3	-	62/110	9
	80 MHz	Band 2-3	-	58/106	9

802.11ac MCS0/Nss2 VHT80+80

Test Items	Mode		Data Rate	Type	Channel	Chain
Max. Conducted Output Power Power Spectral Density 26dB Spectrum Bandwidth & 99% Occupied Bandwidth Measurement Radiated Emission Above 1GHz Band Edge Emission	11ac VHT80+80	Band 1-4	MCS0/Nss2	1	42	6+7
					106	5+8
				2	42	6+7
					122	5+8
				3	42	6+7
					138	5+8
				4	58	6+7
					106	5+8
				5	58	6+7
					122	5+8
				6	58	6+7
					138	5+8
				7	58	6+7
					155	5+8
				8	106	6+7
					138	5+8
				9	106	6+7
					155	5+8
				10	122	6+7
					155	5+8
				11	138	6+7
					155	5+8
6dB Spectrum Bandwidth Measurement	11ac VHT80+80	Band 4	MCS0/Nss2	3	42	-
					138	5+8
				6	58	-
					138	5+8
				7	58	-
					155	5+8
				8	106	-
					138	5+8
				9	106	-
					155	5+8
				10	122	-
					155	5+8
				11	138	6+7
					155	5+8

Note 1: 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.

Note 2: There are two modes of EUT, one is beamforming mode, and the other is non-beamforming mode for 802.11n/ac. All test results were recorded in the report.

Note 3: The PoE information as below, The PoE is for measurement only and it would not be marketed.

Support Unit	Brand	Model	FCC ID
PoE	PHIHONG	POE16R-1AF	DoC

The following test modes were performed for all tests:

For Radiated Emission test (Above 1GHz):

The EUT was performed at Y axis and Z axis position for Radiated emission above 1GHz test, and the worst case was found at Z axis. So the measurement will follow this same test configuration.

Mode 1. CTX - EUT in Z axis + Radio 2 (5GHz)

Mode 2. CTX - EUT in Z axis + Radio 3 (5GHz)

For Co-location MPE Test:

Mode 1. EUT + Radio 1 (2.4GHz) + Radio 2 (5GHz) + Radio 3 (2.4GHz)

Mode 2. EUT + Radio 1 (2.4GHz) + Radio 2 (5GHz) + Radio 3 (5GHz)

The EUT could be applied with 2.4GHz WLAN function and 5GHz WLAN function; therefore Co-location Maximum Permissible Exposure (Please refer to FA641226-03) is added for simultaneously transmit between 2.4GHz WLAN function and 5GHz WLAN function.

3.7. 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 Designation No.	IC File No.	VCCI Reg. No
03CH01-CB	SAC	Hsin Chu	TW0006	IC 4086D	-
TH01-CB	OVEN Room	Hsin Chu	-	-	-

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

3.8. Table for Class II Change

This product is an extension of original one reported under Sporton project number: FR641226-02AB

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

Description	Performance Checking
Add 5GHz B2 and B3 (5250~5350 MHz, 5470~5725 MHz) for this device.	1. 26dB Spectrum Bandwidth and 99% Occupied Bandwidth 2. 6dB Spectrum Bandwidth Measurement 3. Maximum Conducted Output Power 4. Power Spectral Density 5. Radiated Emissions (Above 1GHz) 6. Band Edge Emissions 7. Frequency Stability Measurement
Add eleven sets 80+80 Mode also includes the 5150 ~ 5250 MHz and 5725 ~ 5850 MHz, please refer to the section 3.5 for detail.	1. 26dB Spectrum Bandwidth and 99% Occupied Bandwidth 2. 6dB Spectrum Bandwidth Measurement 3. Maximum Conducted Output Power 4. Power Spectral Density 5. Radiated Emissions (Above 1GHz) 6. Band Edge Emissions

3.9. Table for Supporting Units

For Test Site No: 03CH01-CB

For radio 2

<For Non-Beamforming Mode>

Support Unit	Brand	Model	FCC ID
NB	DELL	E4300	DoC

<For Beamforming Mode>

Support Unit	Brand	Model	FCC ID
NB*2	DELL	E4300	DoC
RX Device	MOJO	C-130	TOR-C130

For radio 3

Support Unit	Brand	Model	FCC ID
NB	DELL	E4300	DoC

For Test Site No: TH01-CB

Support Unit	Brand	Model	FCC ID
NB	DELL	E4300	DoC

3.10. Table for Parameters of Test Software Setting

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

For radio 2

<For Non-Beamforming Mode>

Test Software Version	QCA VER 3.0.144.0						
Mode	Test Frequency (MHz)						
	NCB: 20MHz						
	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz	5720 MHz
802.11a	10.5	10	10	10.5	10	10	11.5
802.11ac MCS0/Nss1 VHT20	10.5	10	10	10.5	10	10	12
Mode	NCB: 40MHz						
802.11ac MCS0/Nss1 VHT40	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz	5710 MHz	
	13.5	13	13.5	13.5	13	14	
Mode	NCB: 80MHz						
802.11ac MCS0/Nss1 VHT80	5290 MHz		5530 MHz		5610 MHz		5690 MHz
	11.5		13.5		15.5		16

Mode	NCB: 80MHz+80MHz			
802.11ac MCS0/Nss2 VHT80+80	Type 1	Type 2	Type 3	Type 4
	5210+5530 MHz	5210+5610 MHz	5210+5690 MHz	5290+5530 MHz
	17	17.5	17.5	16
	Type 5	Type 6	Type 7	Type 8
	5290+5610 MHz	5290+5690 MHz	5290+5775 MHz	5530+5690 MHz
	15.5	16	16	16
	Type 9	Type 10	Type 11	-
	5530+5775 MHz	5610+5775 MHz	5690+5775 MHz	-
	17.5	17.5	17.5	-

<For Beamforming Mode>

Test Software Version	QCARCT 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	15.5	14.5	14	14	17
Mode	NCB: 40MHz						
802.11ac MCS0/Nss1 VHT40	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz	5710 MHz	
	15.5	15.5	15	15.5	15.5	17.5	
Mode	NCB: 80MHz						
802.11ac MCS0/Nss1 VHT80	5290 MHz		5530 MHz		5610 MHz		5690 MHz
	15		13.5		13.5		17.5
Mode	NCB: 80MHz+80MHz						
802.11ac MCS0/Nss2 VHT80+80	Type 1		Type 2		Type 3		Type 4
	5210+5530 MHz		5210+5610 MHz		5210+5690 MHz		5290+5530 MHz
	22		23		23		19
	Type 5		Type 6		Type 7		Type 8
	5290+5610 MHz		5290+5690 MHz		5290+5775 MHz		5530+5690 MHz
	19		19		19		20
	Type 9		Type 10		Type 11		-
	5530+5775 MHz		5610+5775 MHz		5690+5775 MHz		-
	22		22		23		-

For radio 3

Test Software Version	QCARCT Ver3.0.144.0					
Mode	Test Frequency (MHz)					
	NCB: 20MHz					
	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz
802.11a	15	15.5	15.5	15	15	15.5
802.11ac MCS0/Nss1 VHT20	15.5	15.5	15.5	15	15	15
Mode	NCB: 40MHz					
802.11ac MCS0/Nss1 VHT40	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz	
	20	16	16.5	20.5	18.5	
Mode	NCB: 80MHz					
802.11ac MCS0/Nss1 VHT80	5290 MHz		5530 MHz		5610 MHz	
	14		15.5		17.5	

3.11. EUT Operation during Test

For non-beamforming mode:

The EUT was programmed to be in continuously transmitting mode.

For beamforming mode:

For Conducted Mode:

The EUT was programmed to be in continuously transmitting mode.

For Radiated Mode:

During the test, the following programs under WIN 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 Telnet.
3. Executed "Lantest.exe " to link with the remote workstation to receive and transmit packet by RX Device and transmit duty cycle no less 98%

3.12. Duty Cycle

For radio 2

For non-beamforming mode:

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Min. VBW (kHz)
802.11a	2.060	2.120	97.17%	0.12	0.49
802.11ac MCS0/Nss1 VHT20	5.040	5.080	99.21%	0.03	0.01
802.11ac MCS0/Nss1 VHT40	2.420	2.480	97.58%	0.11	0.41
802.11ac MCS0/Nss1 VHT80	1.140	1.220	93.44%	0.29	0.88
802.11ac MCS0/Nss2 VHT80+80	2.203	2.297	95.90%	0.18	0.45

For beamforming mode:

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Min. VBW (kHz)
802.11ac MCS0/Nss1 VHT20	1.720	1.890	91.01%	0.41	0.58
802.11ac MCS0/Nss1 VHT40	1.646	1.789	92.01%	0.36	0.61
802.11ac MCS0/Nss1 VHT80	1.537	1.705	90.15%	0.45	0.65
802.11ac MCS0/Nss2 VHT80+80	1.744	1.944	89.71%	0.47	0.57

For radio 3

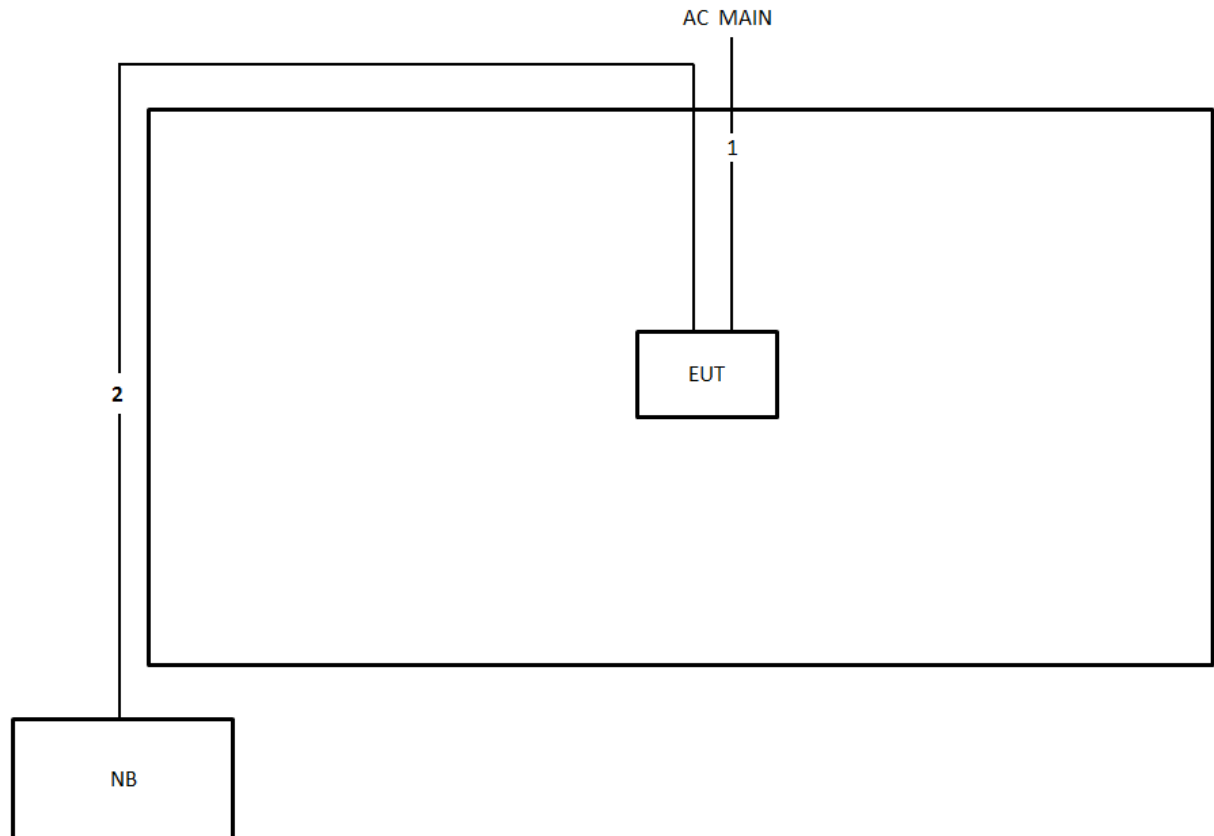
Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Min. VBW (kHz)
802.11a	2.027	2.107	96.20%	0.17	0.49
802.11ac MCS0/Nss1 VHT20	1.931	2.003	96.41%	0.16	0.52
802.11ac MCS0/Nss1 VHT40	2.420	2.492	97.11%	0.13	0.41
802.11ac MCS0/Nss1 VHT80	1.120	1.212	92.45%	0.34	0.89

3.13. Test Configurations

3.13.1. Radiation Emissions Test Configuration

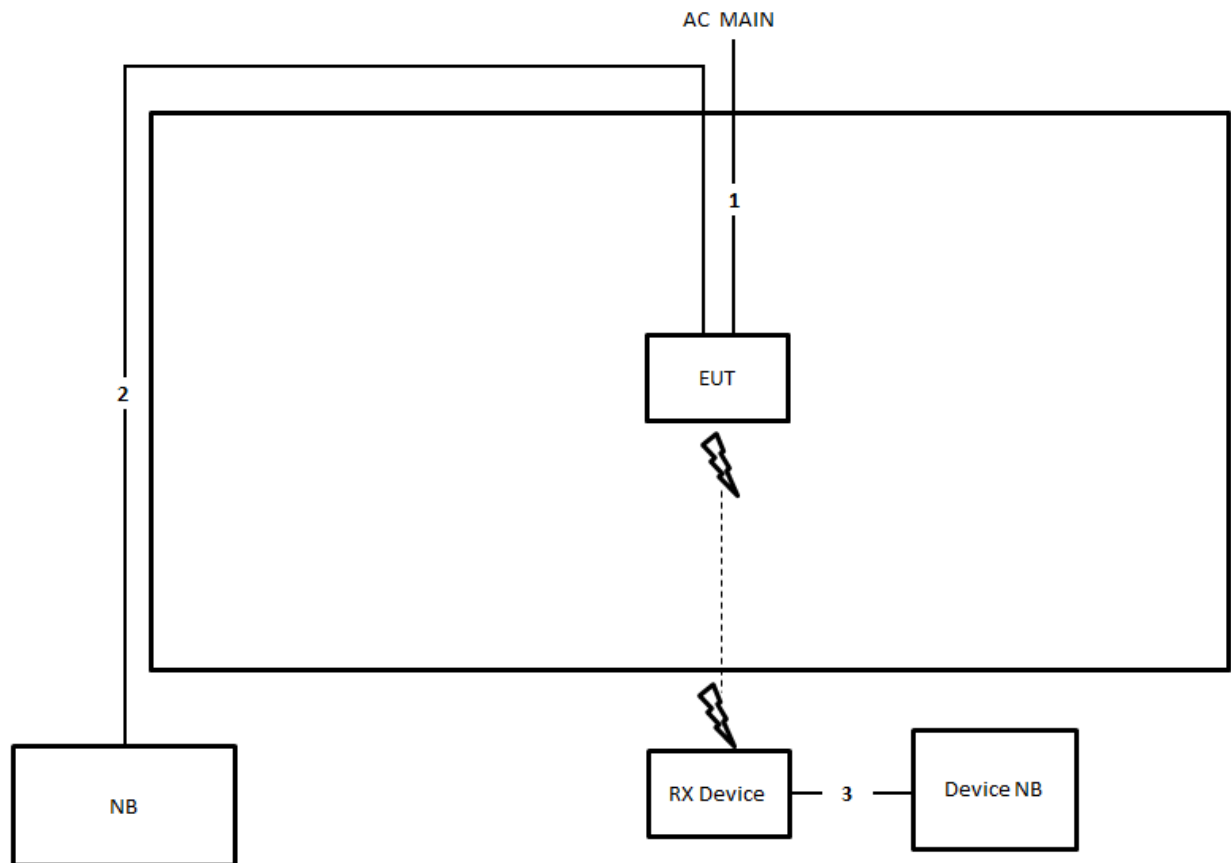
Test Configuration: above 1GHz

<For Non-Beamforming Mode>



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

<For Beamforming Mode>



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

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	$\geq 3 \times \text{RBW}$
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	24°C	Humidity	60%
Test Engineer	Clemens Fang		

For radio 2

<For Non-Beamforming Mode>

Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11a	5260 MHz	18.44	16.41
	5300 MHz	18.61	16.41
	5320 MHz	18.35	16.32
	5500 MHz	18.96	16.50
	5580 MHz	18.87	16.59
	5700 MHz	18.87	16.41
802.11ac MCS0/Nss1 VHT20	5260 MHz	19.48	17.45
	5300 MHz	19.57	17.54
	5320 MHz	19.39	17.45
	5500 MHz	20.17	17.54
	5580 MHz	19.91	17.71
	5700 MHz	19.83	17.63
802.11ac MCS0/Nss1 VHT40	5270 MHz	40.44	36.61
	5310 MHz	40.15	36.61
	5510 MHz	40.44	36.18
	5550 MHz	40.44	36.04
	5670 MHz	40.44	36.61
802.11ac MCS0/Nss1 VHT80	5290 MHz	79.42	75.83
	5530 MHz	79.71	75.54
	5610 MHz	79.42	74.67

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)
802.11a	5720 MHz	18.70	16.41	5710.35	5711.75	14.65	4.04	13.25	3.16
802.11ac MCS0/Nss1 VHT20	5720 MHz	19.74	17.54	5710.00	5711.14	15.00	4.74	13.86	3.68
802.11ac MCS0/Nss1 VHT40	5710 MHz	40.29	36.47	5690.00	5691.77	35.00	5.29	33.23	3.23
802.11ac MCS0/Nss1 VHT80	5690 MHz	79.71	75.83	5650.29	5652.08	74.71	5.00	72.92	2.92

802.11ac MCS0/Nss2 VHT80+80

Type	Frequency	26dB BW (MHz)	99% OBW (MHz)	26dB BW F1 (MHz)	99% OBW T1 (MHz)	UNII 1 or UNII 2C 26dB BW (MHz)	UNII 2A or UNII 3 26dB BW (MHz)	UNII 1 or UNII 2C 99% BW (MHz)	UNII 2A or UNII 3 99% BW (MHz)	26dB Total BW (MHz)
1	5210 MHz	79.71	75.83	-						160.00
	5530 MHz	80.29	75.83							
2	5210 MHz	80.00	75.83	-						160.00
	5610 MHz	80.00	75.83							
3	5210 MHz	80.00	75.83	-						160.00
	5690 MHz	80.00	75.83							
4	5290 MHz	80.58	76.12	-						160.87
	5530 MHz	80.29	75.83							
5	5290 MHz	80.00	76.12	-						160.29
	5610 MHz	80.29	75.83							
6	5290 MHz	80.29	75.83	-						160.29
	5690 MHz	80.00	75.83							
7	5290 MHz	80.00	75.83	-						160.29
	5775 MHz	80.29	75.83							
8	5530 MHz	80.29	75.83	-						160.29
	5690 MHz	80.00	75.83							
9	5530 MHz	80.00	75.83	-						160.29
	5775 MHz	80.29	75.83							
10	5610 MHz	79.71	75.83	-						159.71
	5775 MHz	80.00	75.83							
11	5690 MHz	80.00	75.83	5650.00	5652.37	75.00	5.00	72.63	3.20	160.00
	5775 MHz	80.00	75.83	-						

<For Beamforming Mode>

Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11ac MCS0/Nss1 VHT20	5260 MHz	22.43	17.89
	5300 MHz	22.61	17.97
	5320 MHz	22.35	17.97
	5500 MHz	21.57	17.89
	5580 MHz	22.09	17.97
	5700 MHz	22.26	17.89
802.11ac MCS0/Nss1 VHT40	5270 MHz	45.51	37.05
	5310 MHz	45.65	37.05
	5510 MHz	45.51	37.05
	5550 MHz	45.65	37.05
	5670 MHz	45.65	37.05
802.11ac MCS0/Nss1 VHT80	5290 MHz	87.83	76.70
	5530 MHz	86.38	76.12
	5610 MHz	87.25	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	20.96	17.71	5709.48	5711.14	15.52	5.44	13.86	3.86
802.11ac MCS0/Nss1 VHT40	5710 MHz	39.86	36.32	5690.15	5691.91	34.85	5.00	33.09	3.23
802.11ac MCS0/Nss1 VHT80	5690 MHz	79.42	75.83	5650.29	5652.08	74.71	4.71	72.92	2.92

802.11ac MCS0/Nss2 VHT80+80

Type	Frequency	26dB BW (MHz)	99% OBW (MHz)	26dB BW F1 (MHz)	99% OBW T1 (MHz)	UNII 1 or UNII 2C 26dB BW (MHz)	UNII 2A or UNII 3 26dB BW (MHz)	UNII 1 or UNII 2C 99% BW (MHz)	UNII 2A or UNII 3 99% BW (MHz)	26dB Total BW (MHz)
1	5210 MHz	86.96	76.41	-						175.07
	5530 MHz	88.12	76.12							
2	5210 MHz	87.25	76.41	-						185.80
	5610 MHz	98.55	76.70							
3	5210 MHz	87.83	76.70	-						167.83
	5690 MHz	80.00	75.83							
4	5290 MHz	90.15	76.41	-						178.55
	5530 MHz	88.41	76.70							
5	5290 MHz	87.25	76.12	-						173.91
	5610 MHz	86.67	76.70							
6	5290 MHz	86.67	76.12	-						166.67
	5690 MHz	80.00	75.83							
7	5290 MHz	87.83	76.41	-						176.81
	5775 MHz	88.99	76.41							
8	5530 MHz	88.99	76.41	-						168.70
	5690 MHz	79.71	75.83							
9	5530 MHz	88.70	76.41	-						178.26
	5775 MHz	89.57	76.70							
10	5610 MHz	90.15	76.41	-						186.38
	5775 MHz	96.23	76.70							
11	5690 MHz	80.29	75.83	5649.71	5652.08	75.29	5.00	72.92	2.92	171.30
	5775 MHz	91.01	76.70	-						

For radio 3

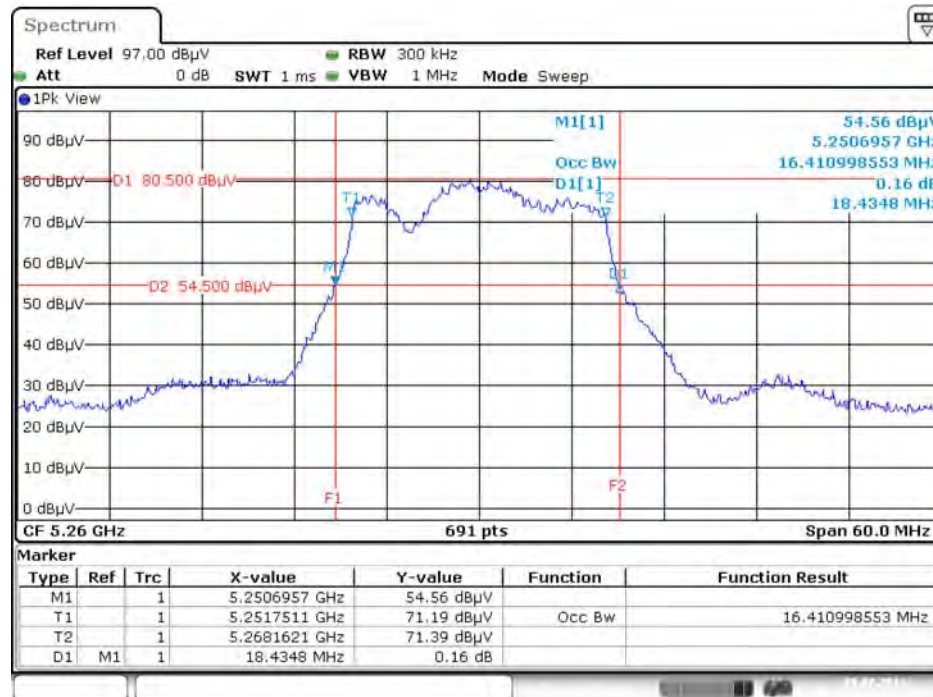
Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11a	5260 MHz	22.52	17.02
	5300 MHz	22.43	17.02
	5320 MHz	22.43	17.02
	5500 MHz	24.78	17.02
	5580 MHz	24.52	17.02
	5700 MHz	24.17	17.02
802.11ac MCS0/Nss1 VHT20	5260 MHz	23.22	18.41
	5300 MHz	23.74	18.32
	5320 MHz	22.70	18.32
	5500 MHz	23.57	18.32
	5580 MHz	23.65	18.32
	5700 MHz	24.09	18.32
802.11ac MCS0/Nss1 VHT40	5270 MHz	61.74	38.78
	5310 MHz	46.23	37.77
	5510 MHz	46.38	37.77
	5550 MHz	80.87	40.38
	5670 MHz	51.59	38.35
802.11ac MCS0/Nss1 VHT80	5290 MHz	85.80	76.41
	5530 MHz	85.51	76.41
	5610 MHz	87.25	76.70

For radio 2

<For Non-Beamforming Mode>

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 5 + Chain 6

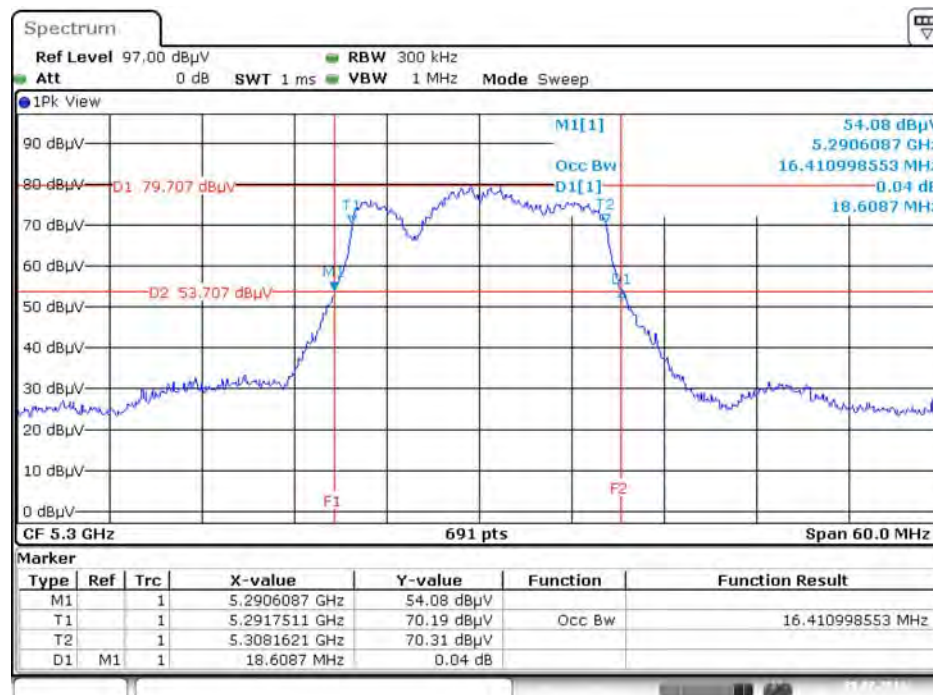
+ Chain 7 + Chain 8 / 5260 MHz



Date: 29 JUL 2016 22:46:51

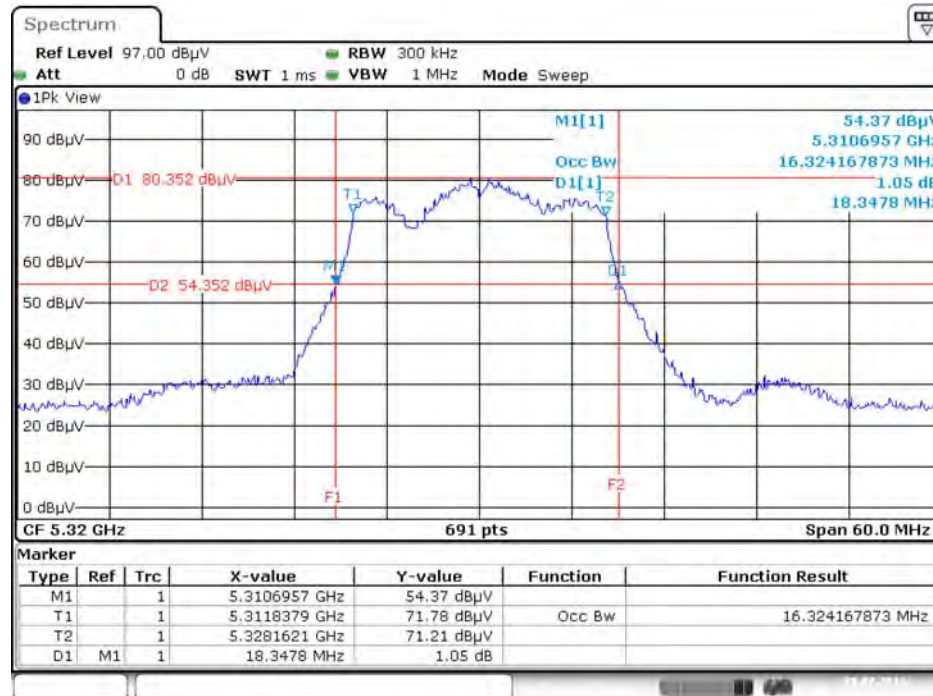
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 5 + Chain 6

+ Chain 7 + Chain 8 / 5300 MHz



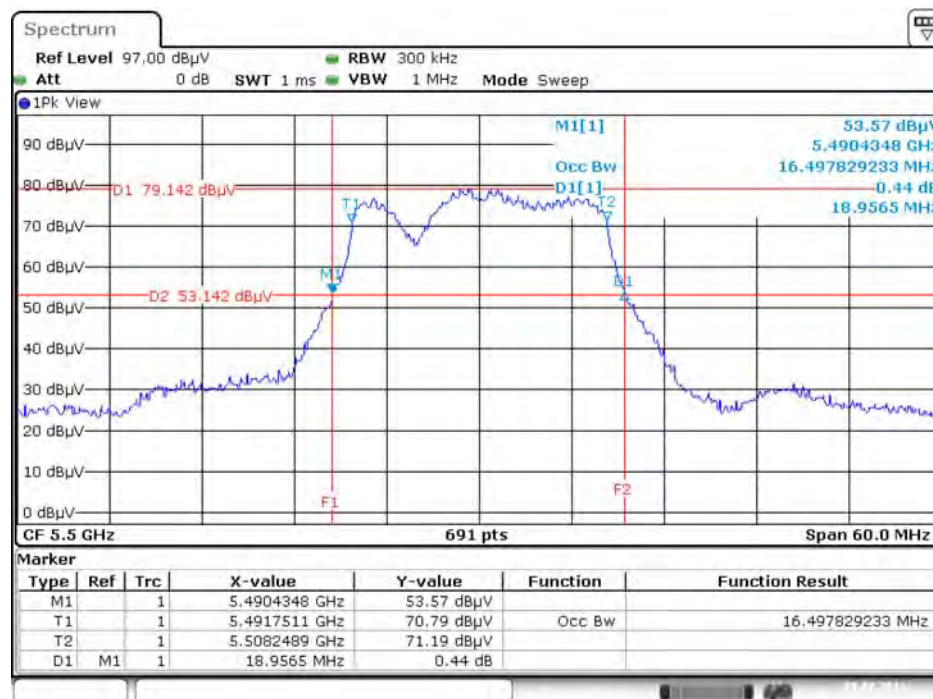
Date: 29 JUL 2016 22:47:25

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 5 + Chain 6
+ Chain 7 + Chain 8 / 5320 MHz



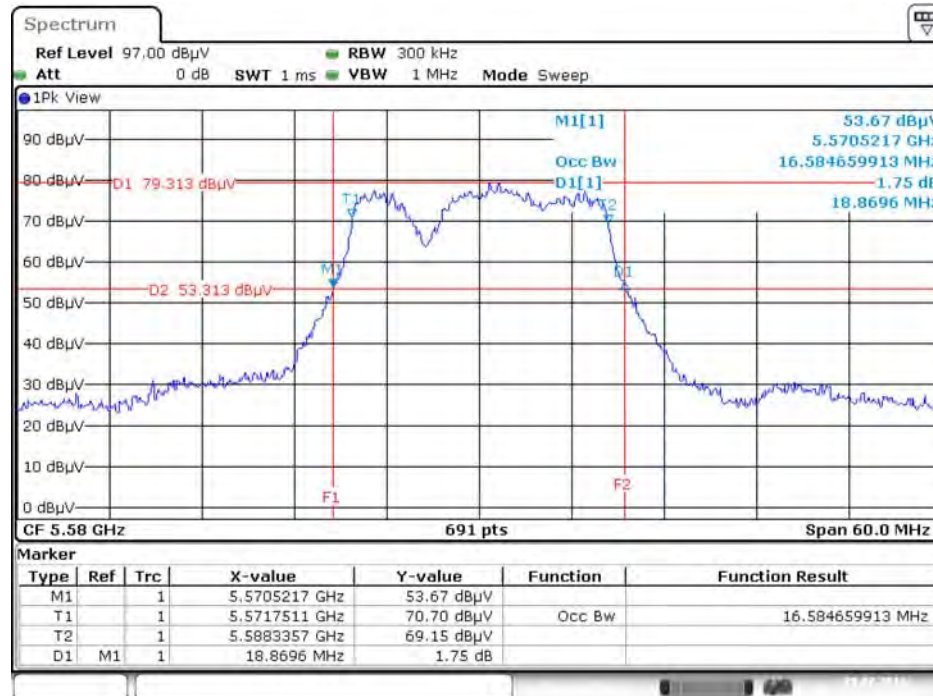
Date: 29 JUL 2016 22:47:55

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 5 + Chain 6
+ Chain 7 + Chain 8 / 5500 MHz

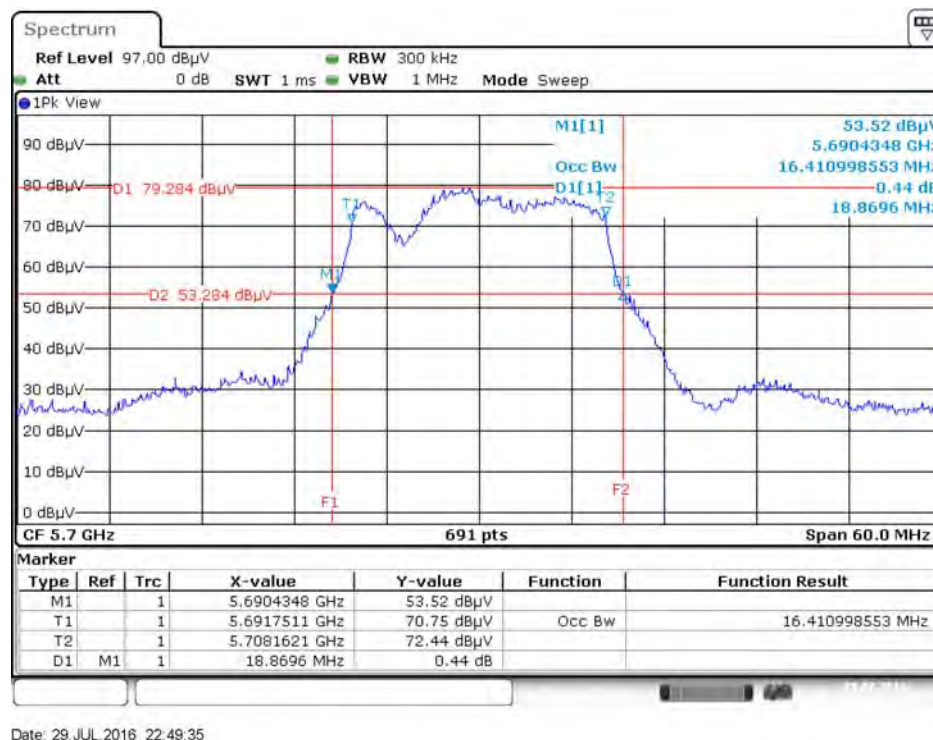


Date: 29 JUL 2016 22:48:26

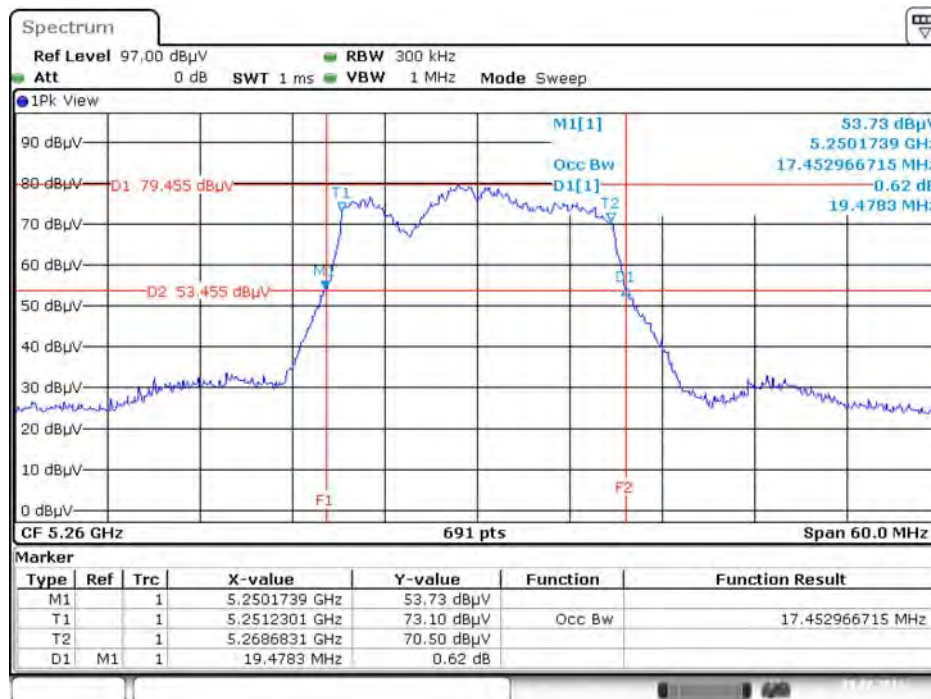
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5580 MHz



26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5700 MHz

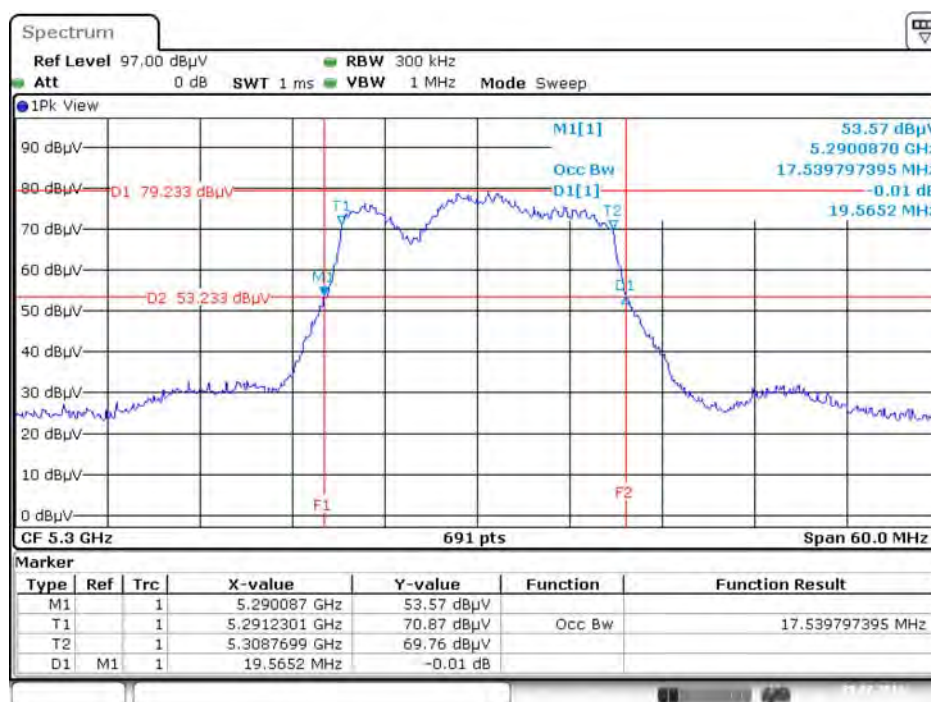


26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5260 MHz



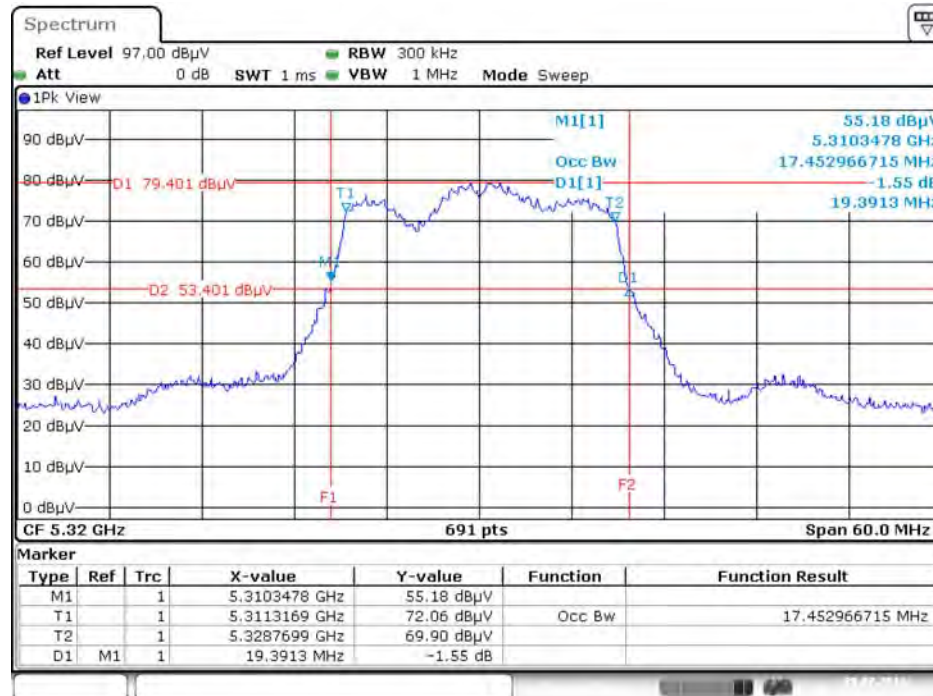
Date: 29 JUL 2016 22:50:26

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5300 MHz



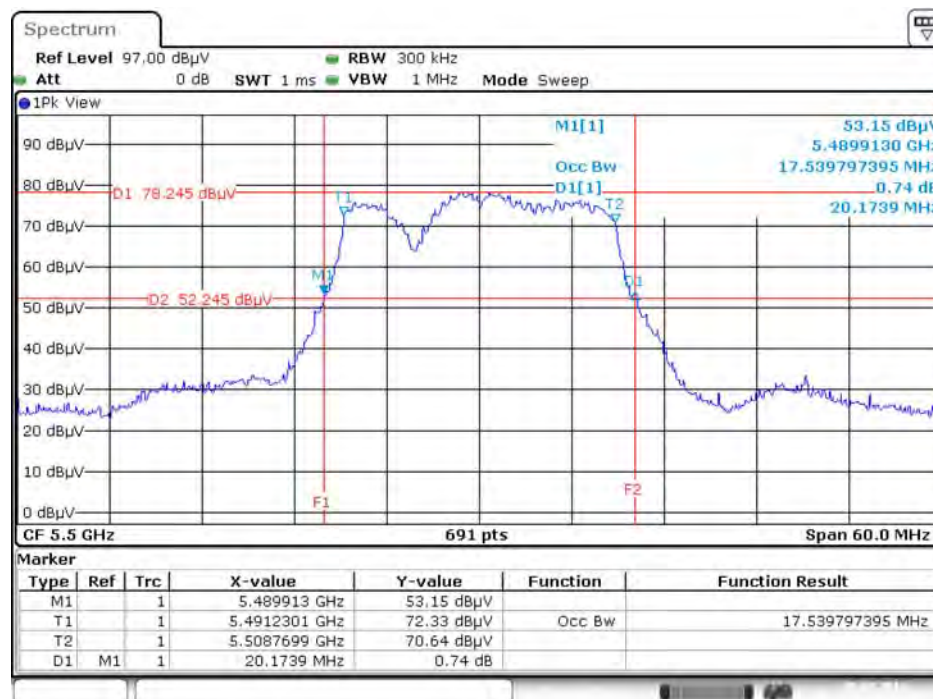
Date: 29 JUL 2016 22:50:55

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5320 MHz



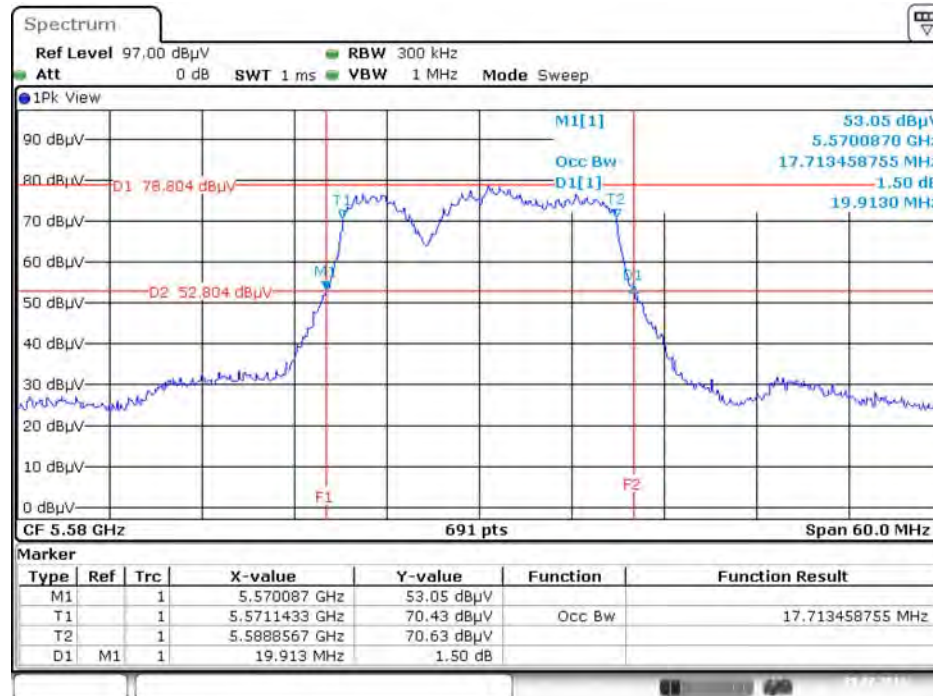
Date: 29 JUL 2016 22:51:21

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5500 MHz



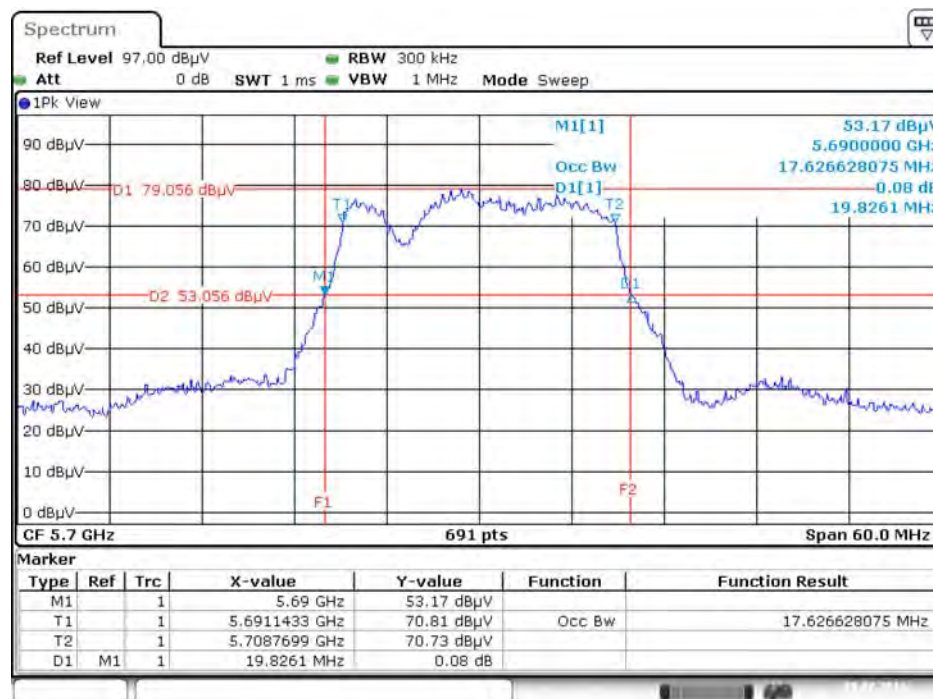
Date: 29 JUL 2016 22:51:52

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5580 MHz



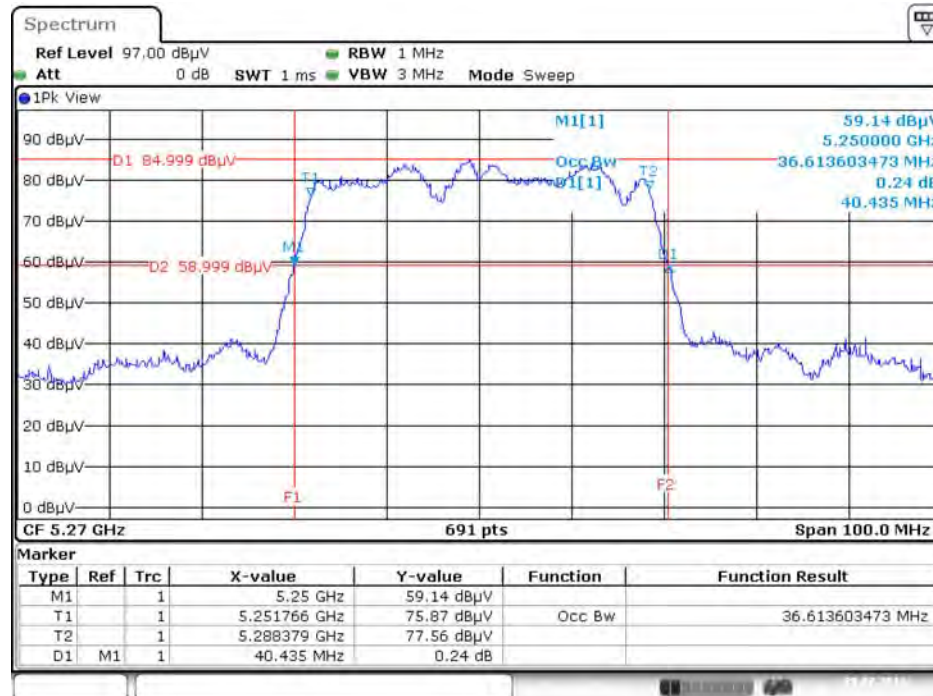
Date: 29 JUL 2016 22:52:20

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5700 MHz



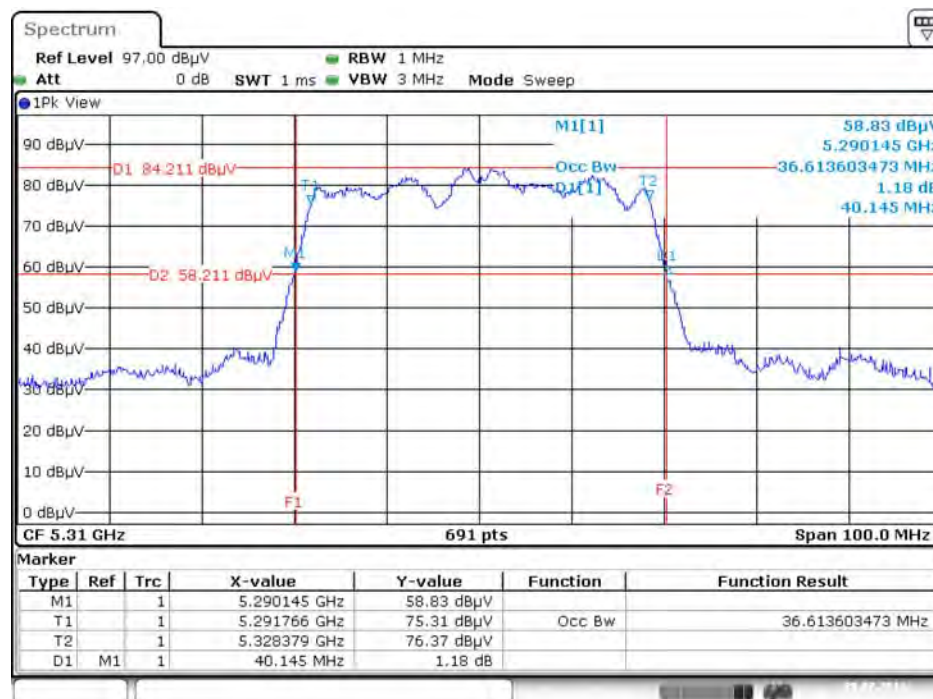
Date: 29 JUL 2016 22:52:50

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5270 MHz



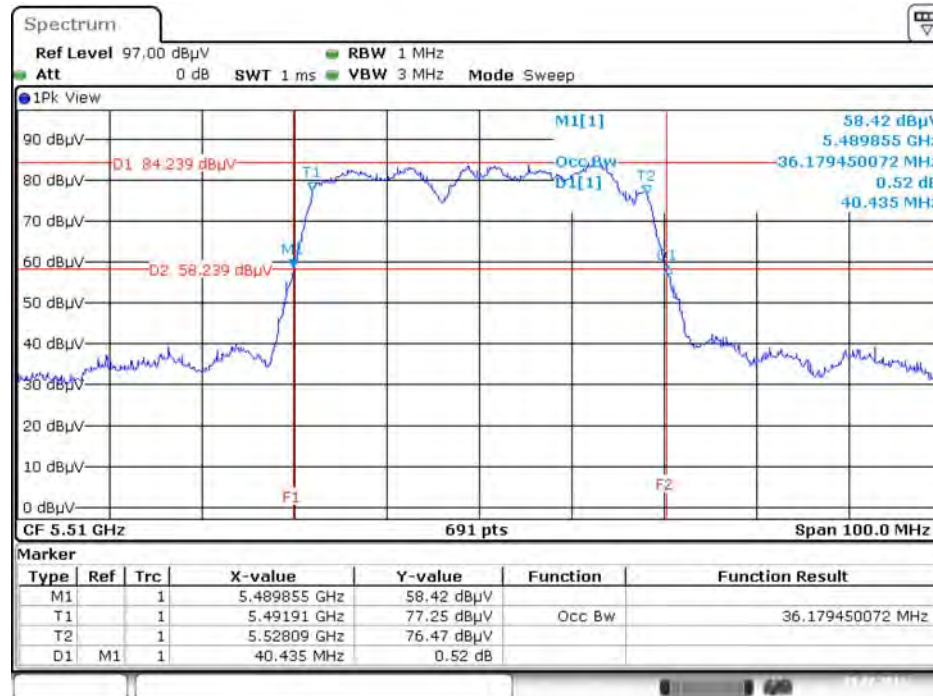
Date: 29 JUL 2016 22:53:31

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5310 MHz



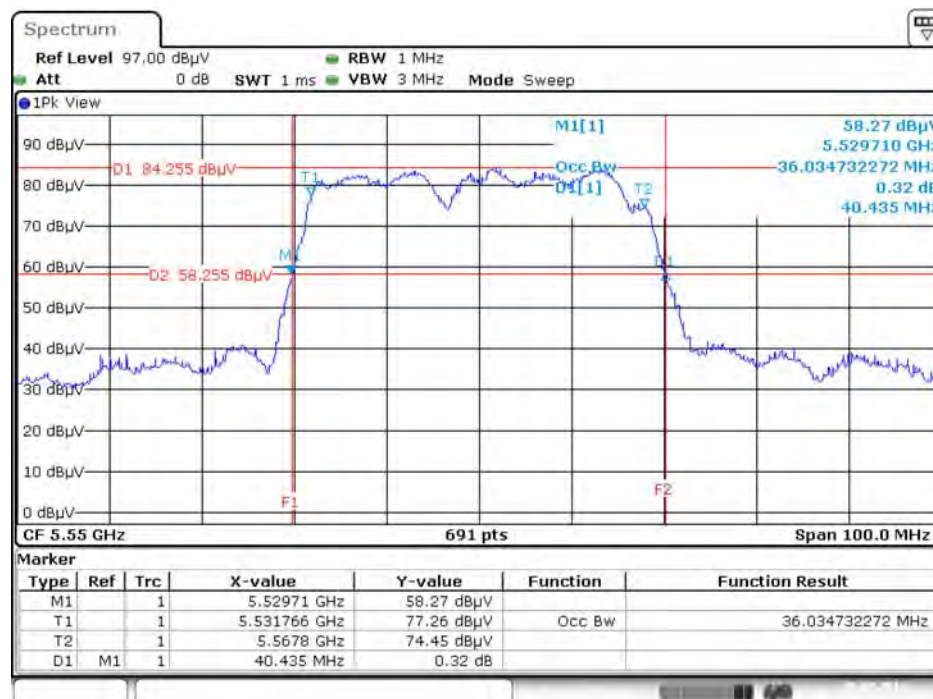
Date: 29 JUL 2016 22:53:56

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5510 MHz



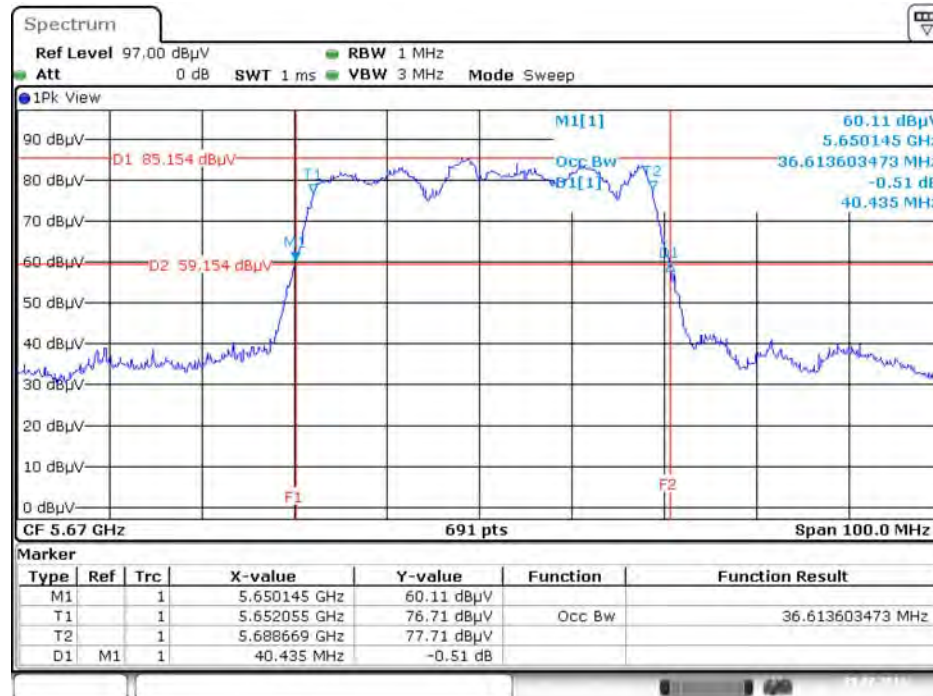
Date: 29 JUL 2016 22:54:23

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5550 MHz



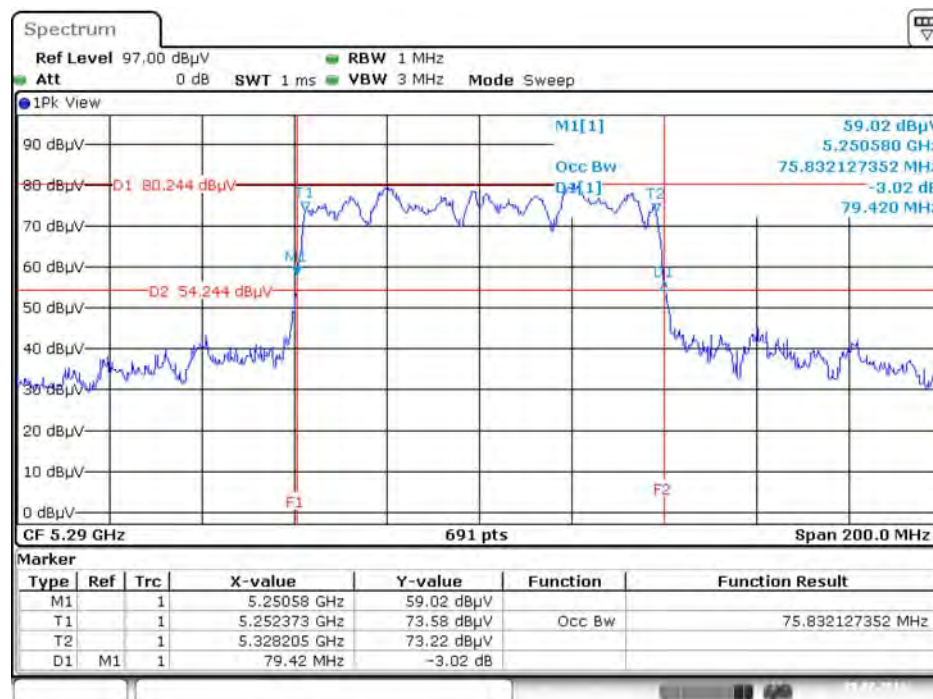
Date: 29 JUL 2016 22:55:07

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5670 MHz



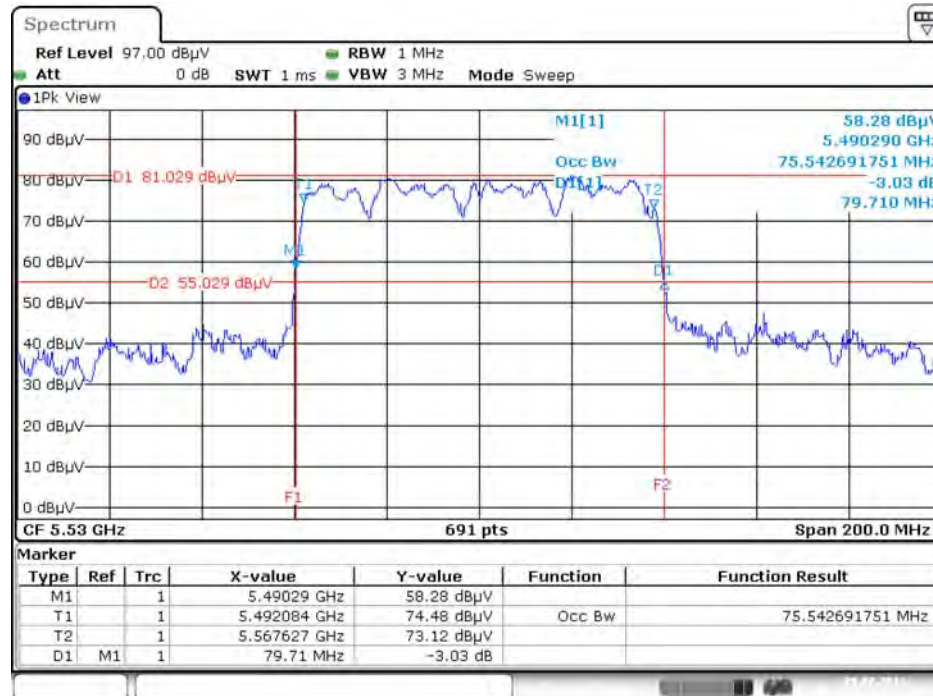
Date: 29 JUL 2016 22:55:37

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5290 MHz



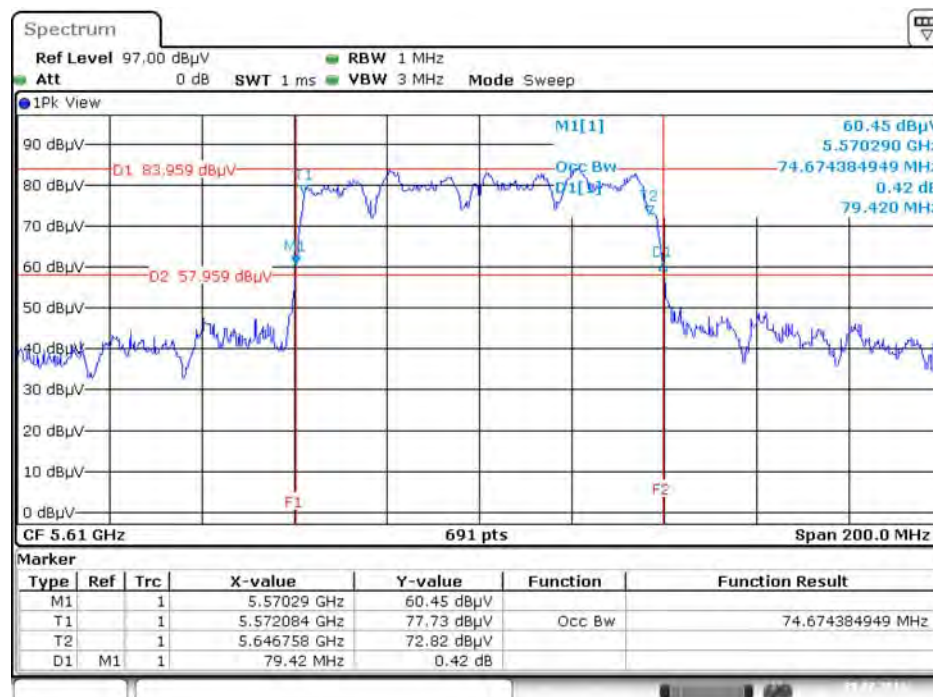
Date: 29 JUL 2016 22:56:20

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5530 MHz



Date: 29 JUL 2016 22:56:47

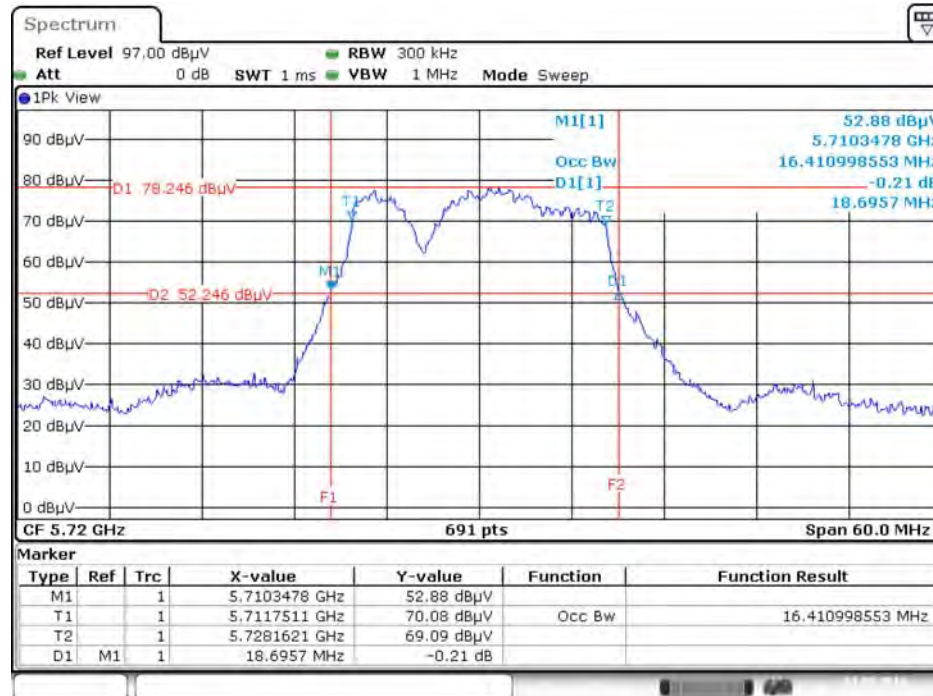
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5610 MHz



Date: 29 JUL 2016 22:57:15

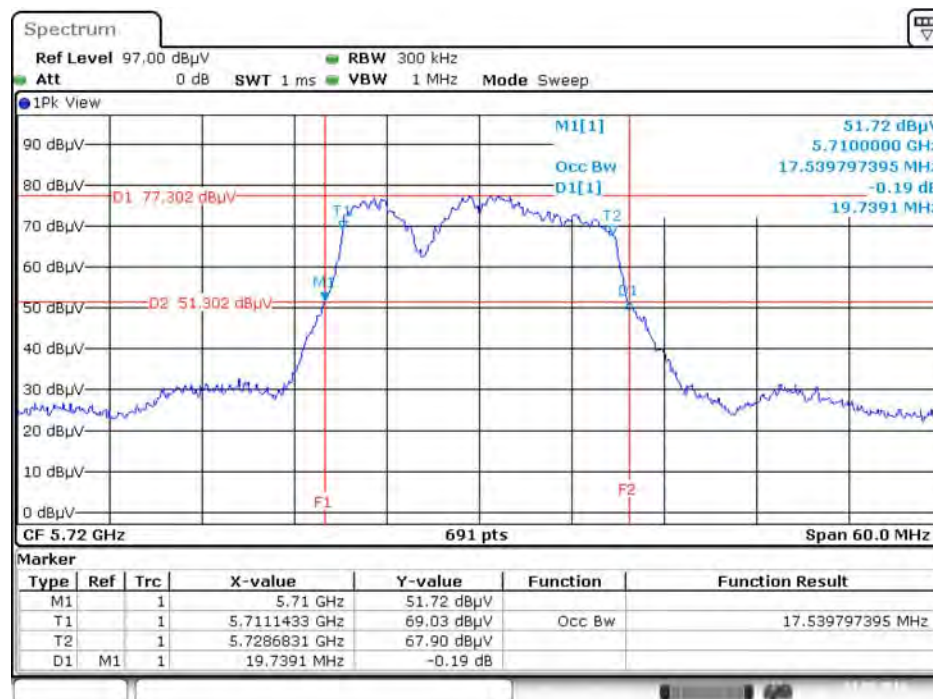
Straddle Channel

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 5 + Chain 6
+ Chain 7 + Chain 8 / 5720 MHz



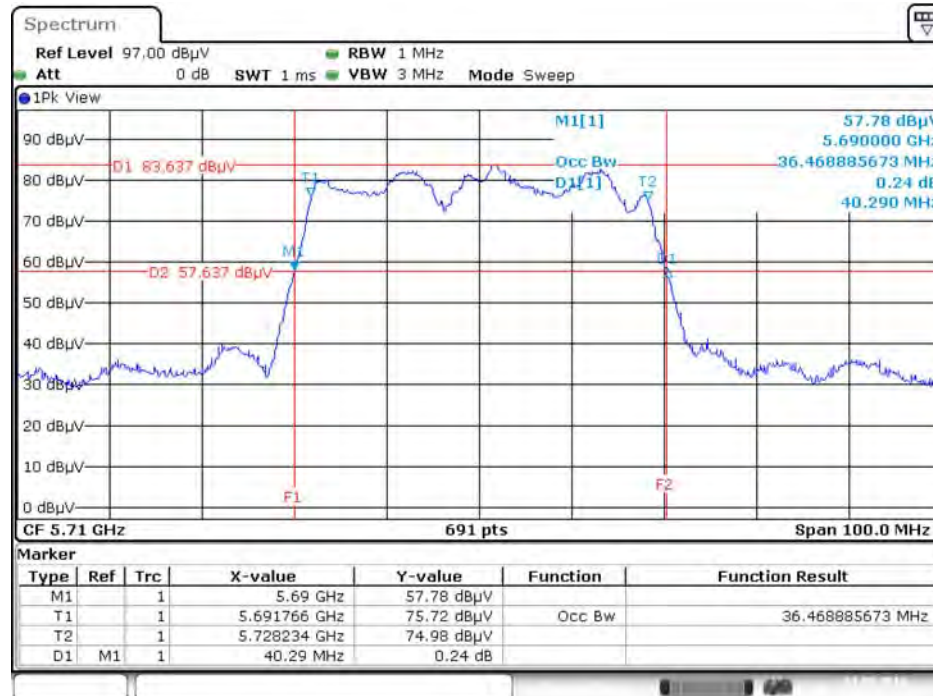
Date: 3.MAY.2016 22:49:30

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 /
Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5720 MHz



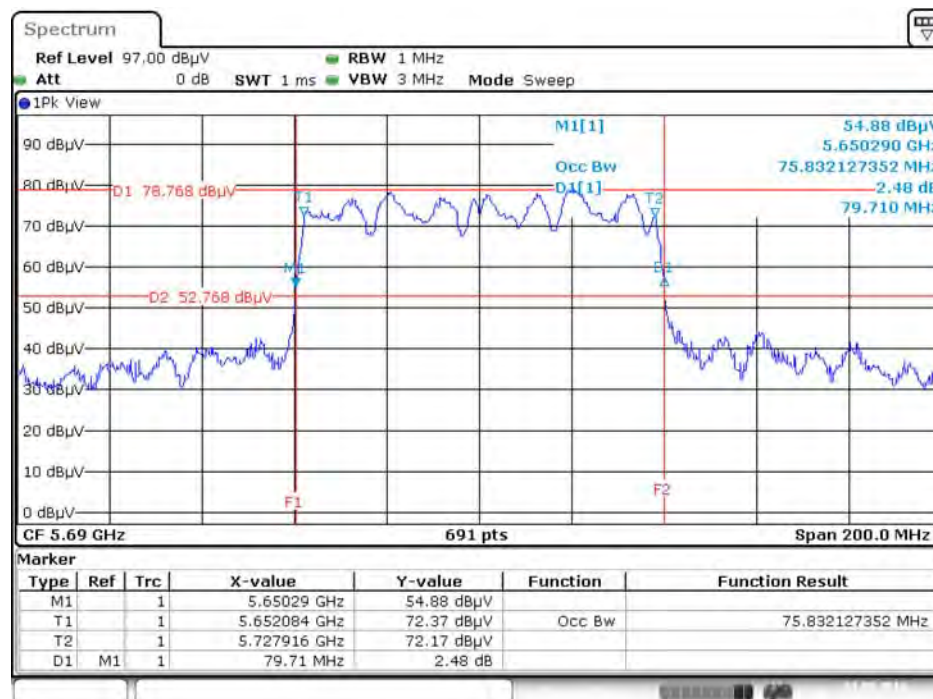
Date: 3.MAY.2016 22:55:51

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5710 MHz



Date: 3.MAY.2016 22:56:22

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5690 MHz

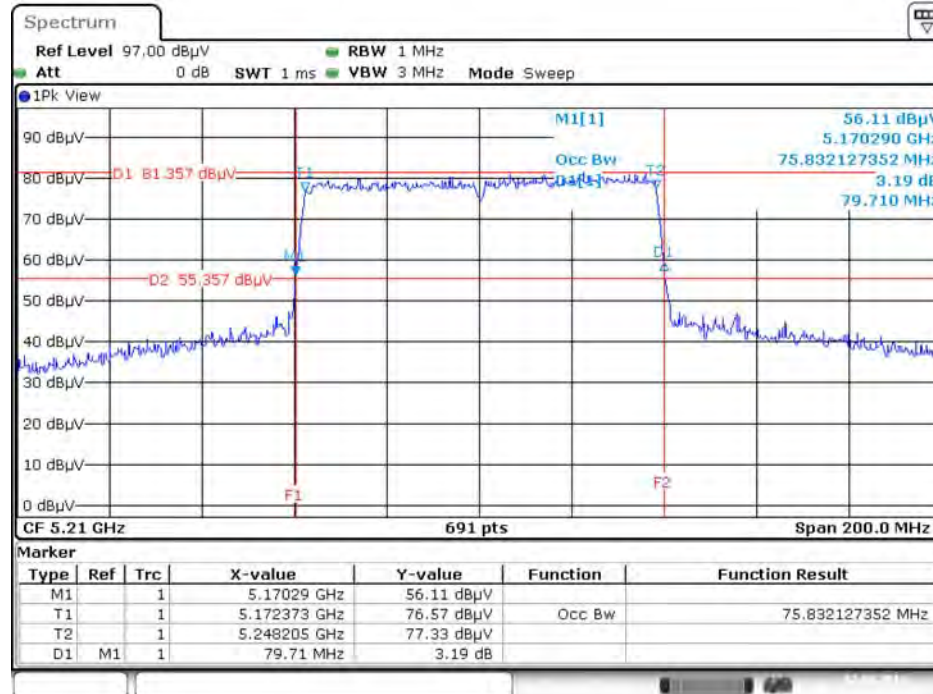


Date: 3.MAY.2016 22:56:56

802.11ac MCS0/Nss2 VHT80+80

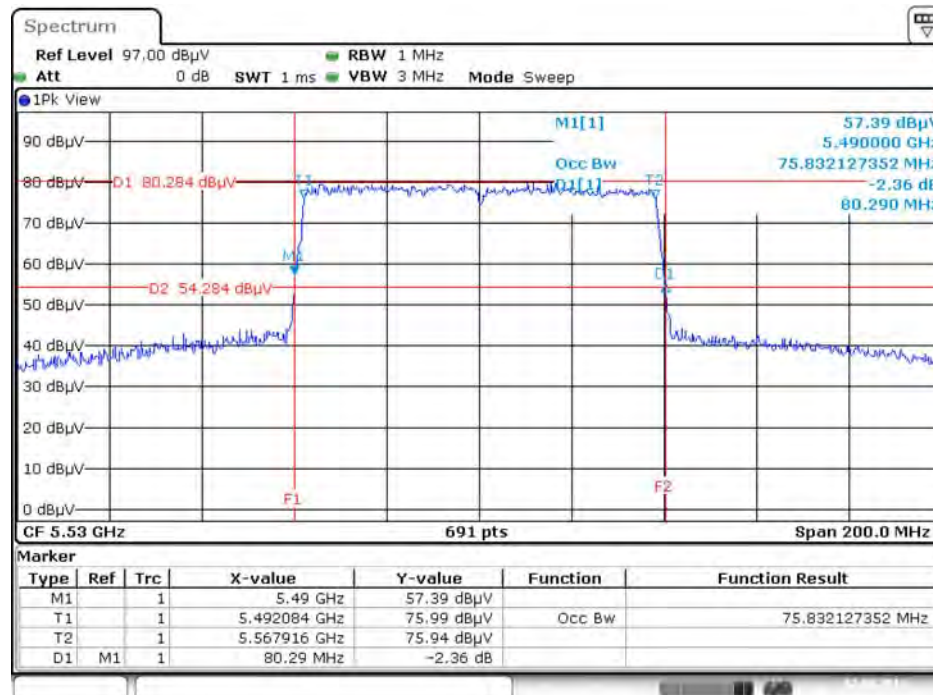
Type 1

26dB Bandwidth and 99% Occupied Bandwidth Plot on Chain 6 + Chain 7 / 5210 MHz



Date: 2.AUG.2016 02:03:52

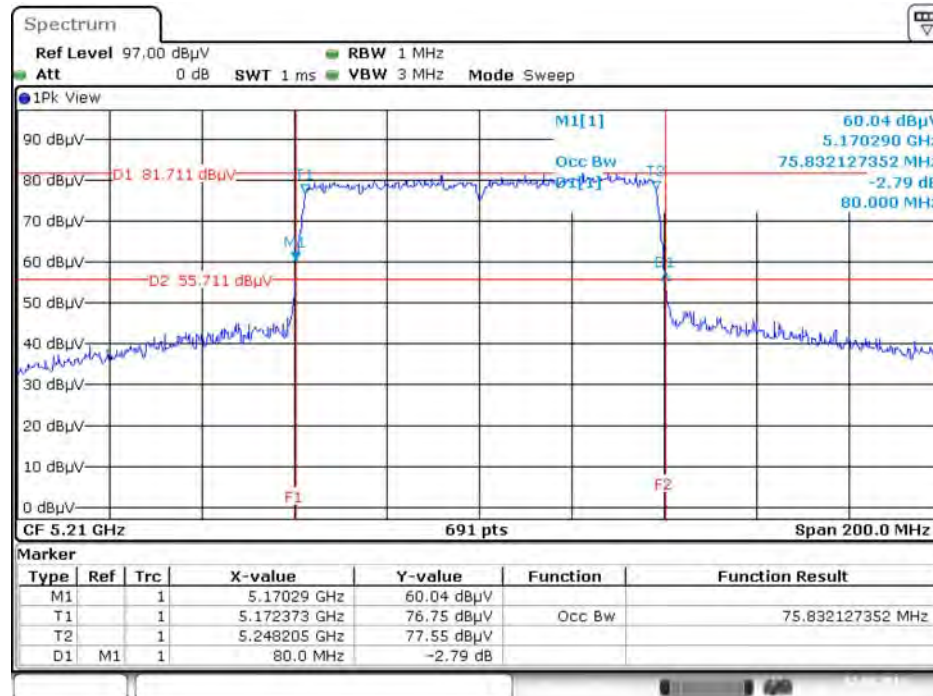
26dB Bandwidth and 99% Occupied Bandwidth Plot on Chain 5 + Chain 8 / 5530 MHz



Date: 2.AUG.2016 02:04:20

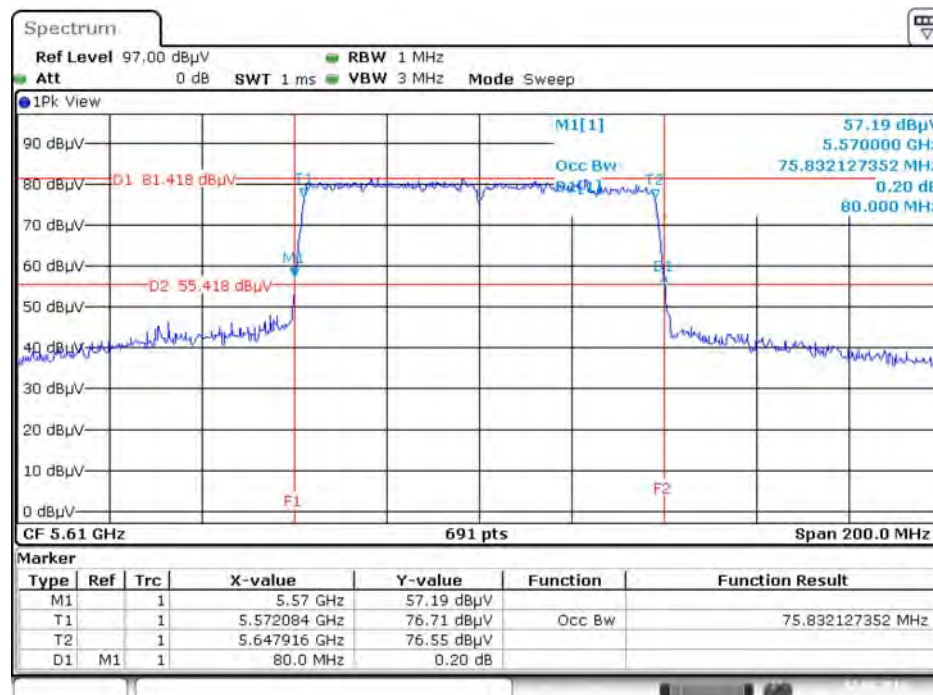
Type 2

26dB Bandwidth and 99% Occupied Bandwidth Plot on Chain 6 + Chain 7 / 5210 MHz



Date: 2.AUG.2016 02:04:56

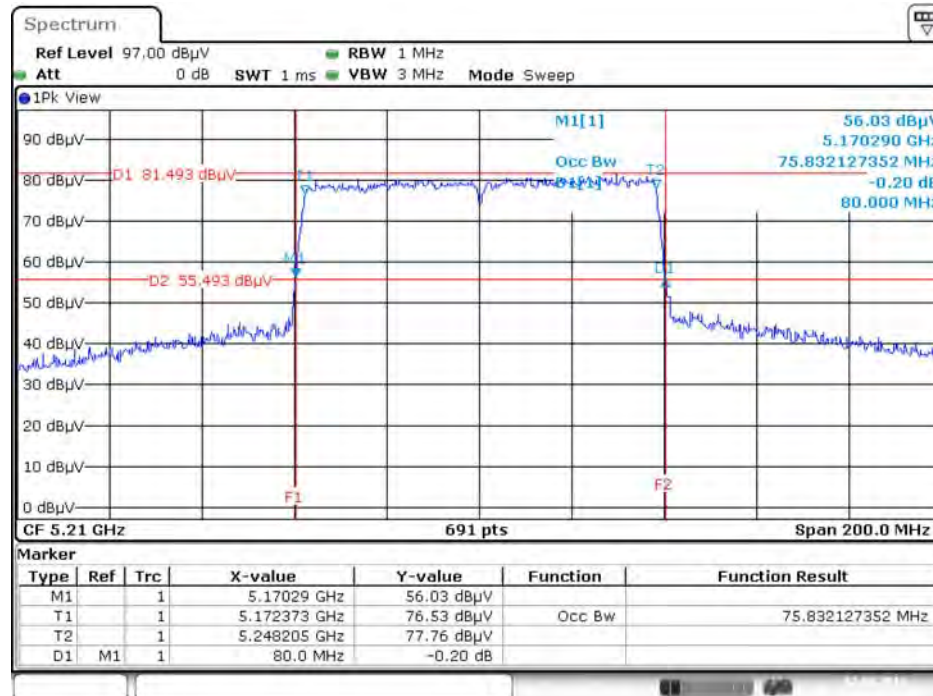
26dB Bandwidth and 99% Occupied Bandwidth Plot on Chain 5 + Chain 8 / 5610 MHz



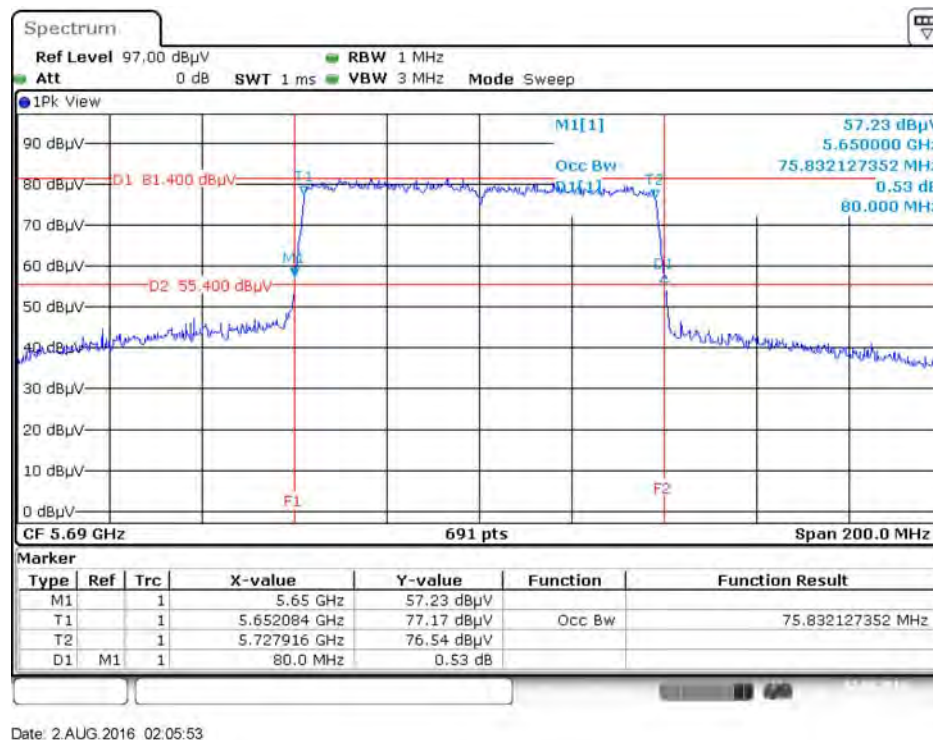
Date: 2.AUG.2016 02:05:11

Type 3

26dB Bandwidth and 99% Occupied Bandwidth Plot on Chain 6 + Chain 7 / 5210 MHz

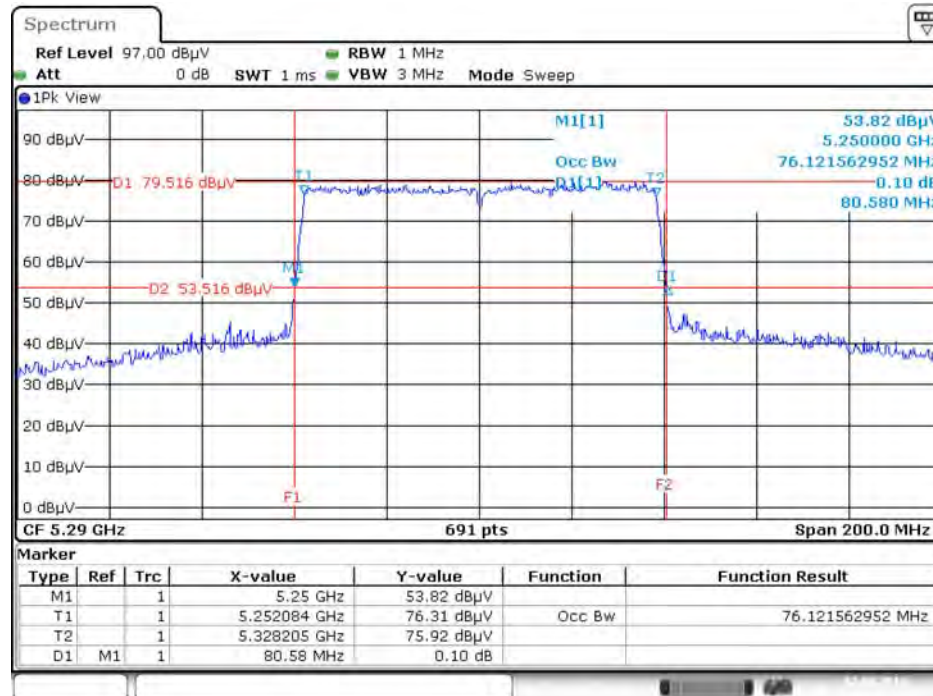


26dB Bandwidth and 99% Occupied Bandwidth Plot on Chain 5 + Chain 8 / 5690 MHz



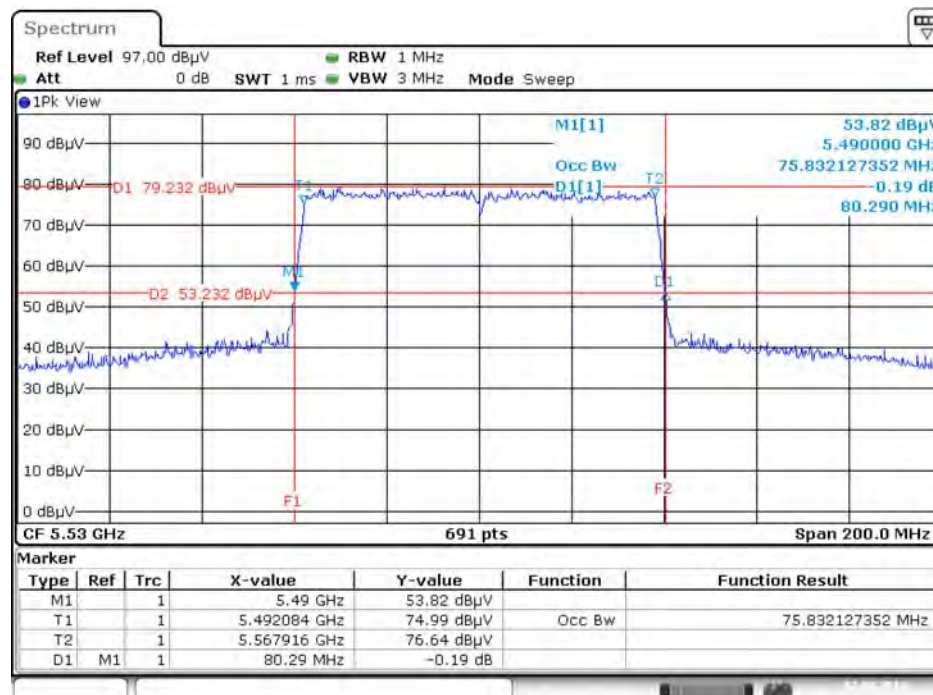
Type 4

26dB Bandwidth and 99% Occupied Bandwidth Plot on Chain 6 + Chain 7 / 5290 MHz



Date: 2.AUG.2016 02:07:28

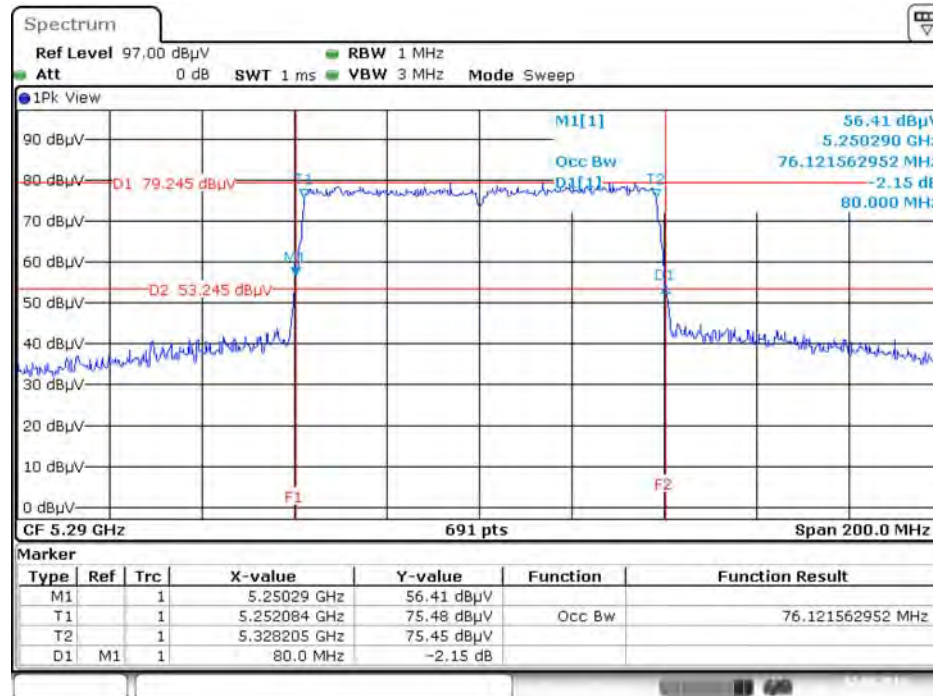
26dB Bandwidth and 99% Occupied Bandwidth Plot on Chain 5 + Chain 8 / 5530 MHz



Date: 2.AUG.2016 02:07:44

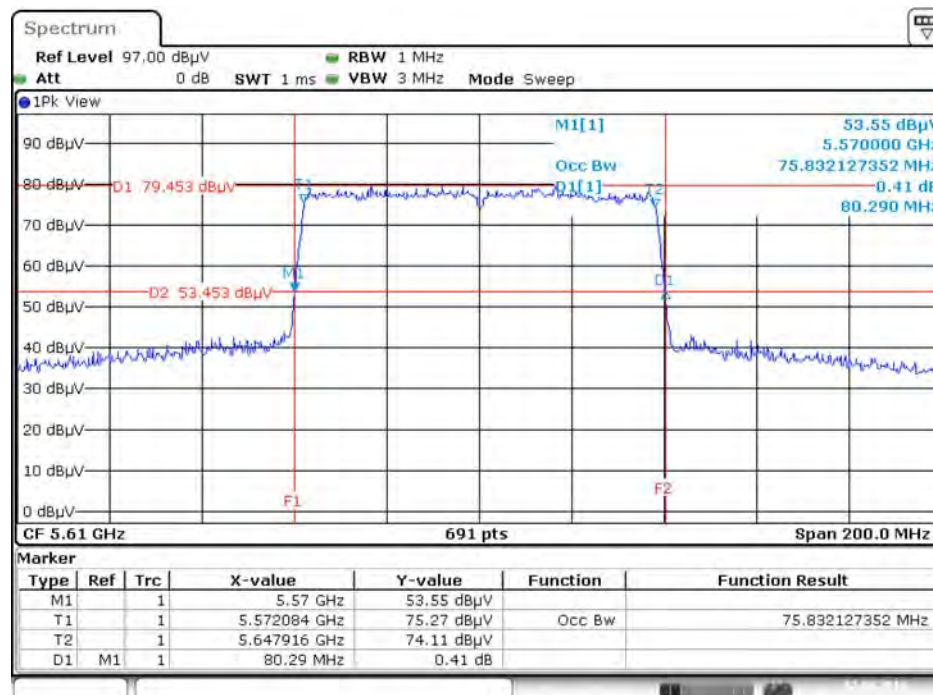
Type 5

26dB Bandwidth and 99% Occupied Bandwidth Plot on Chain 6 + Chain 7 / 5290 MHz



Date: 2.AUG.2016 02:08:09

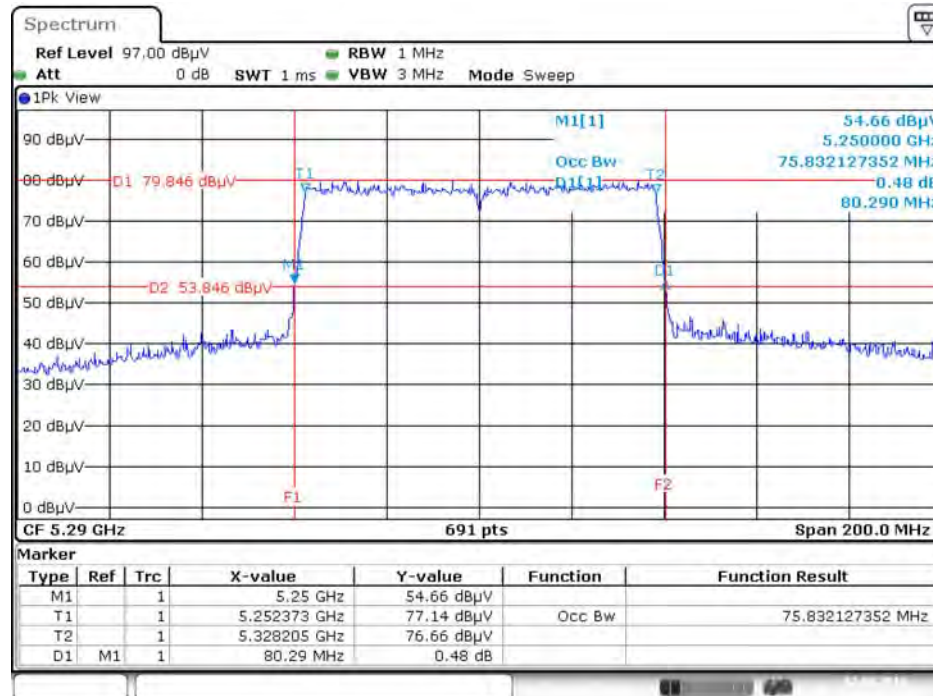
26dB Bandwidth and 99% Occupied Bandwidth Plot on Chain 5 + Chain 8 / 5610 MHz



Date: 2.AUG.2016 02:08:21

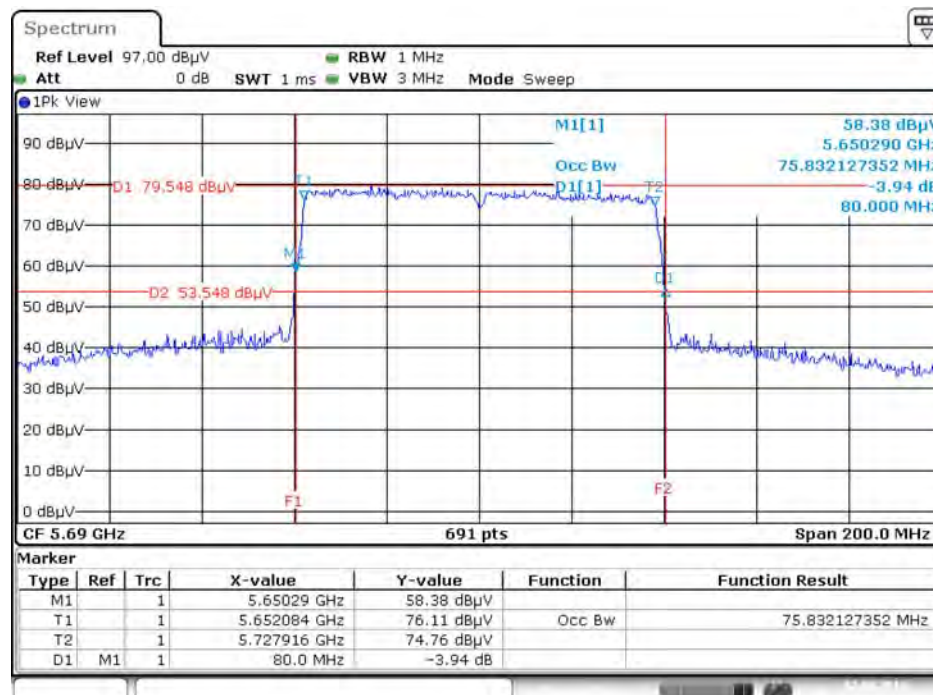
Type 6

26dB Bandwidth and 99% Occupied Bandwidth Plot on Chain 6 + Chain 7 / 5290 MHz



Date: 2.AUG.2016 02:08:49

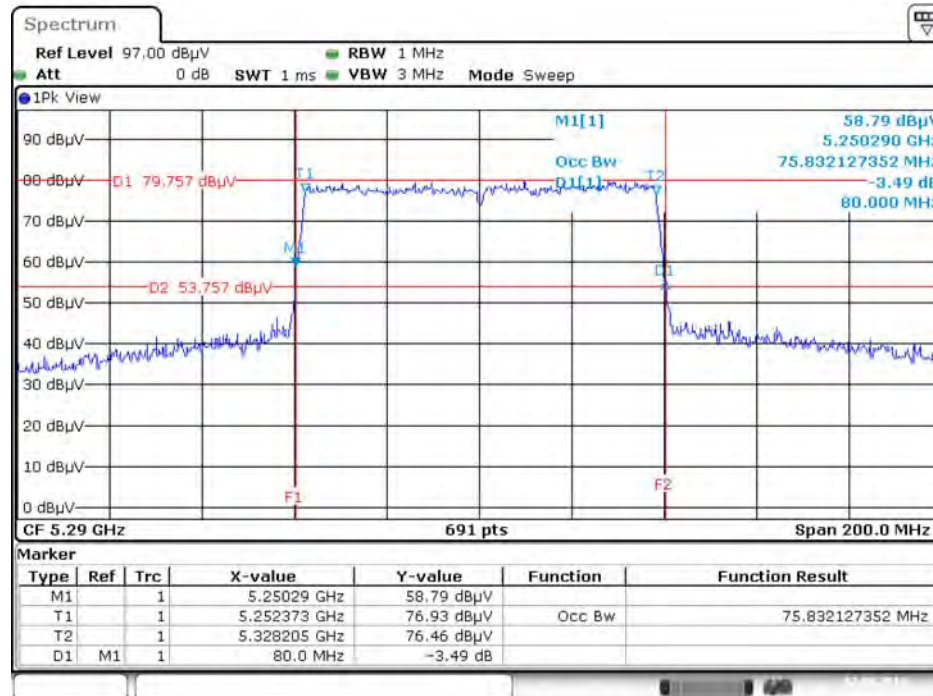
26dB Bandwidth and 99% Occupied Bandwidth Plot on Chain 5 + Chain 8 / 5690 MHz



Date: 2.AUG.2016 02:09:05

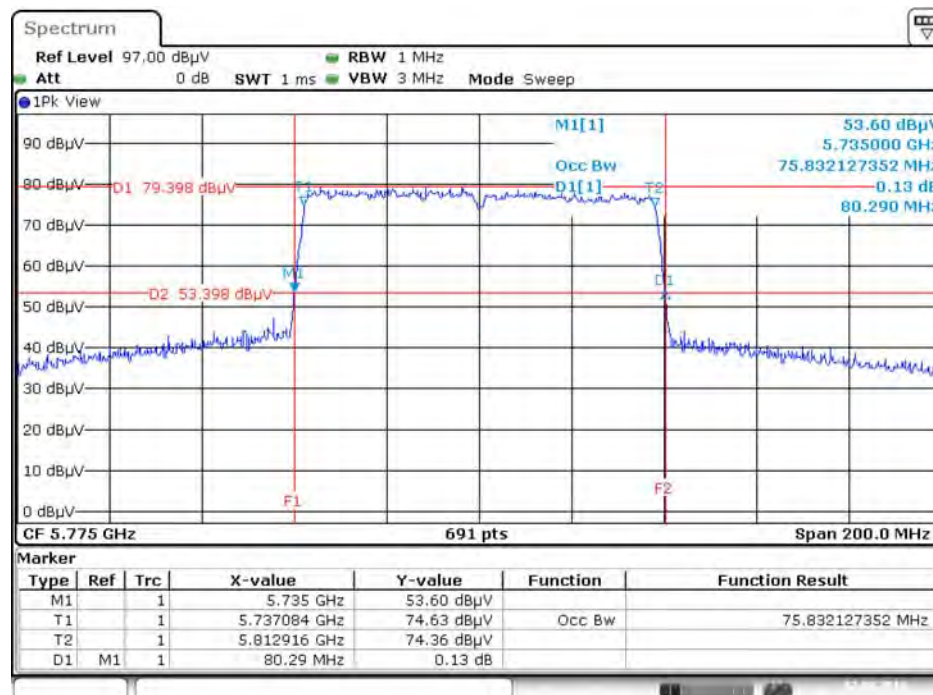
Type 7

26dB Bandwidth and 99% Occupied Bandwidth Plot on Chain 6 + Chain 7 / 5290 MHz



Date: 2.AUG.2016 02:09:29

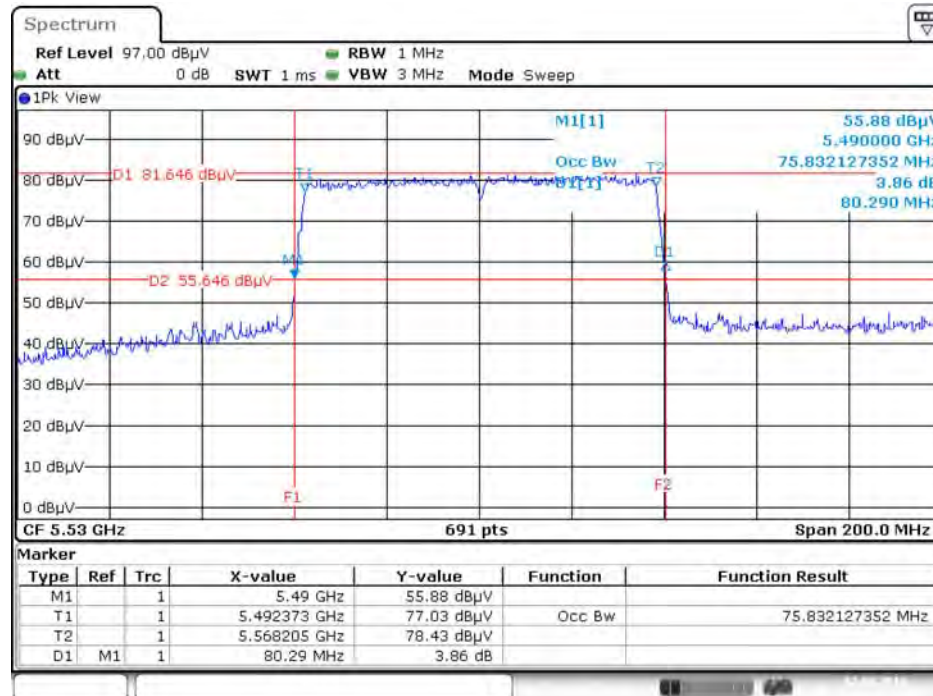
26dB Bandwidth and 99% Occupied Bandwidth Plot on Chain 5 + Chain 8 / 5775 MHz



Date: 2.AUG.2016 02:09:41

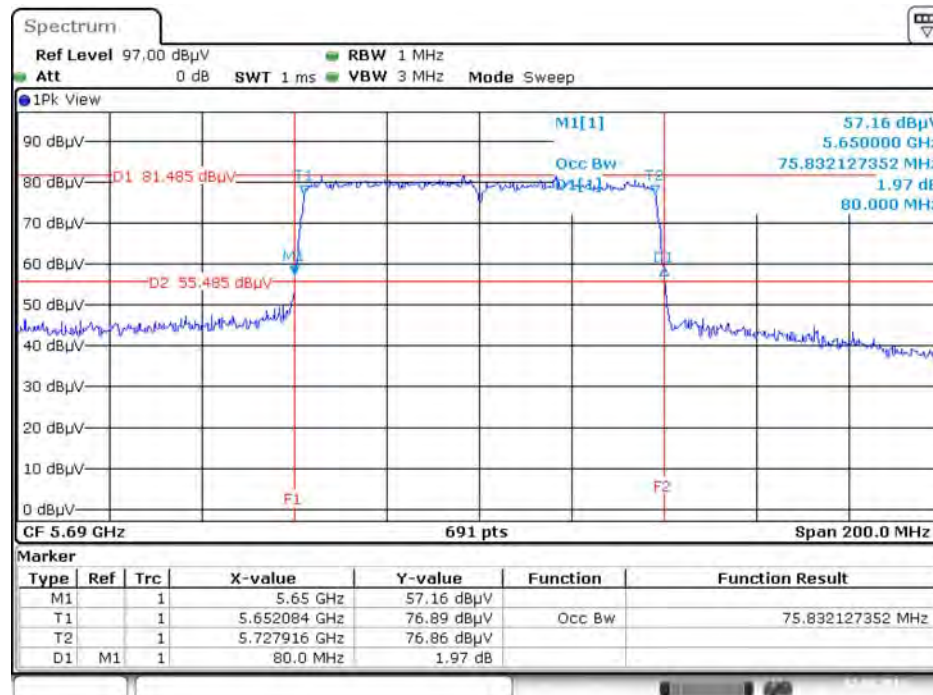
Type 8

26dB Bandwidth and 99% Occupied Bandwidth Plot on Chain 6 + Chain 7 / 5530 MHz



Date: 2.AUG.2016 02:10:24

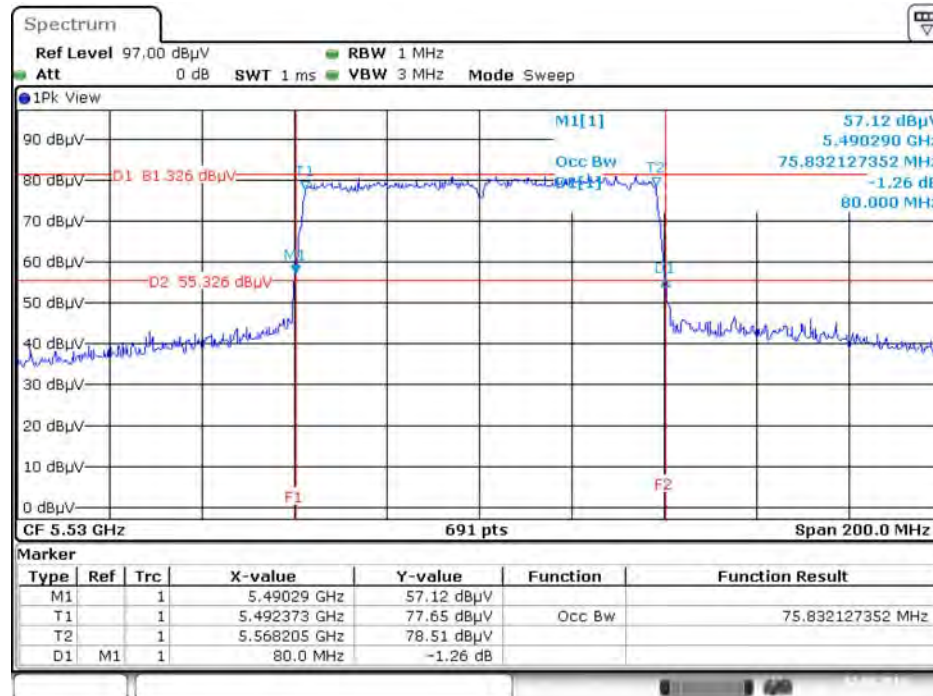
26dB Bandwidth and 99% Occupied Bandwidth Plot on Chain 5 + Chain 8 / 5690 MHz



Date: 2.AUG.2016 02:10:37

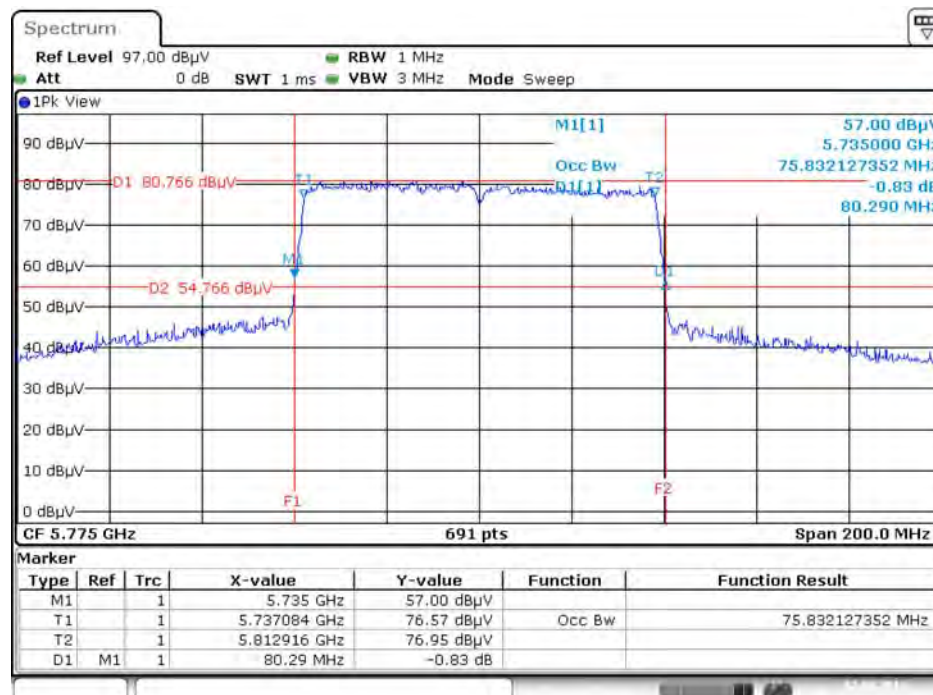
Type 9

26dB Bandwidth and 99% Occupied Bandwidth Plot on Chain 6 + Chain 7 / 5530 MHz



Date: 2.AUG.2016 02:11:14

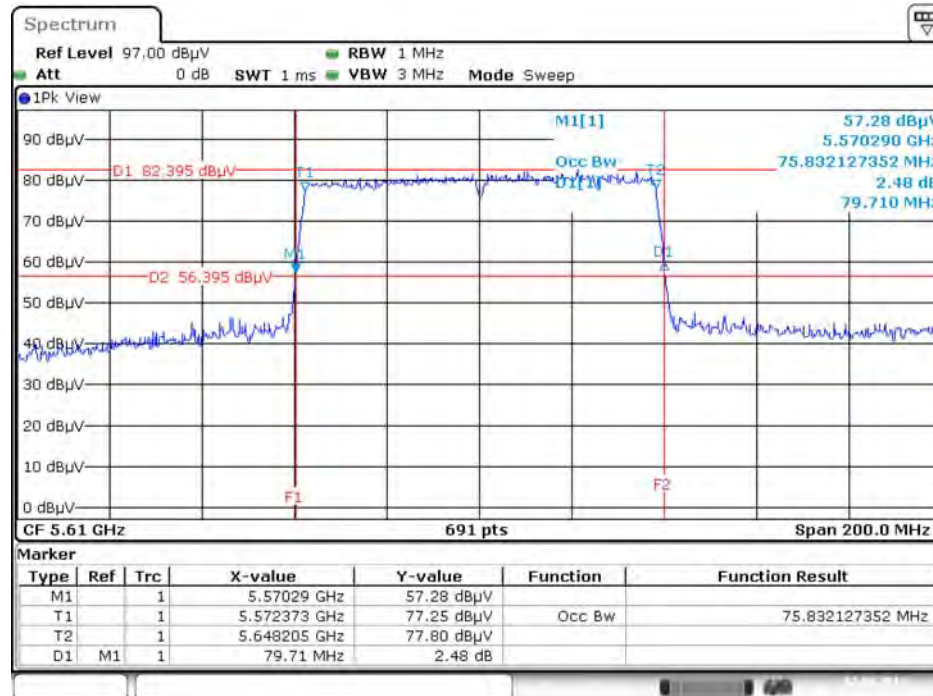
26dB Bandwidth and 99% Occupied Bandwidth Plot on Chain 5 + Chain 8 / 5775 MHz



Date: 2.AUG.2016 02:11:31

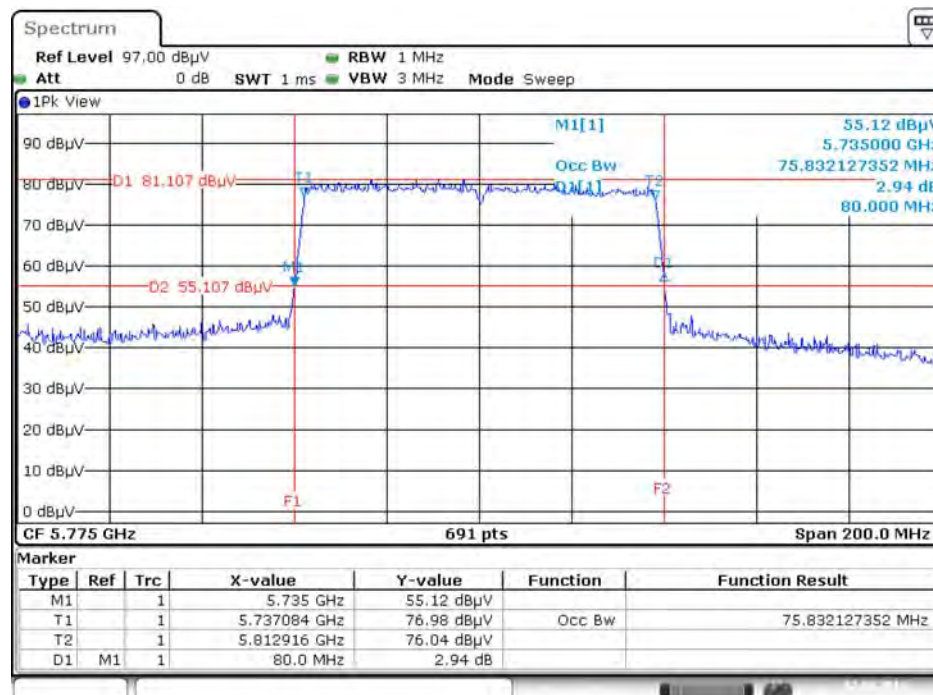
Type 10

26dB Bandwidth and 99% Occupied Bandwidth Plot on Chain 6 + Chain 7 / 5610 MHz



Date: 2.AUG.2016 02:12:04

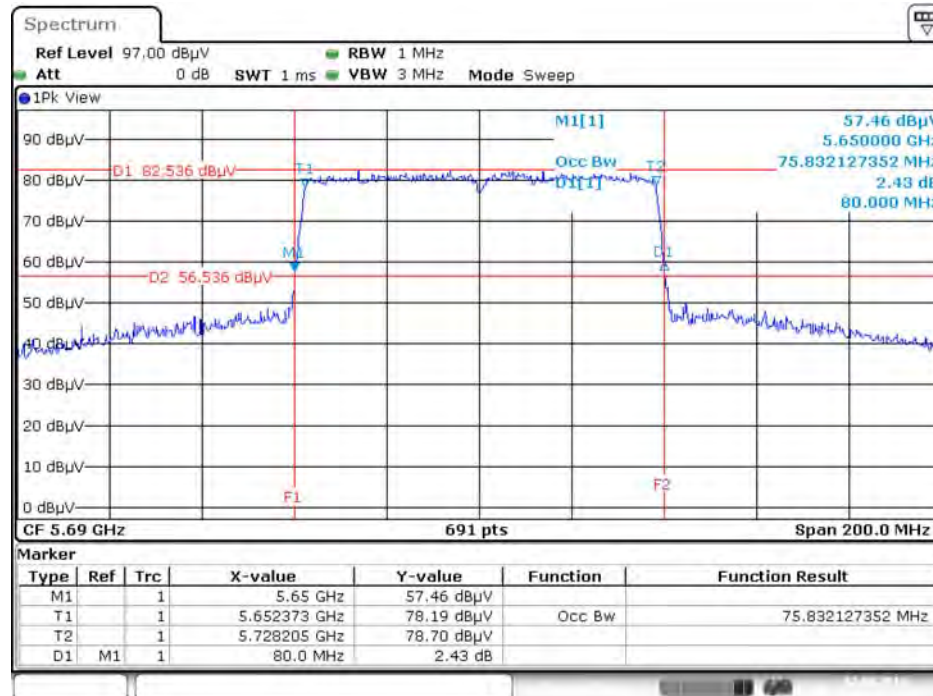
26dB Bandwidth and 99% Occupied Bandwidth Plot on Chain 5 + Chain 8 / 5775 MHz



Date: 2.AUG.2016 02:12:16

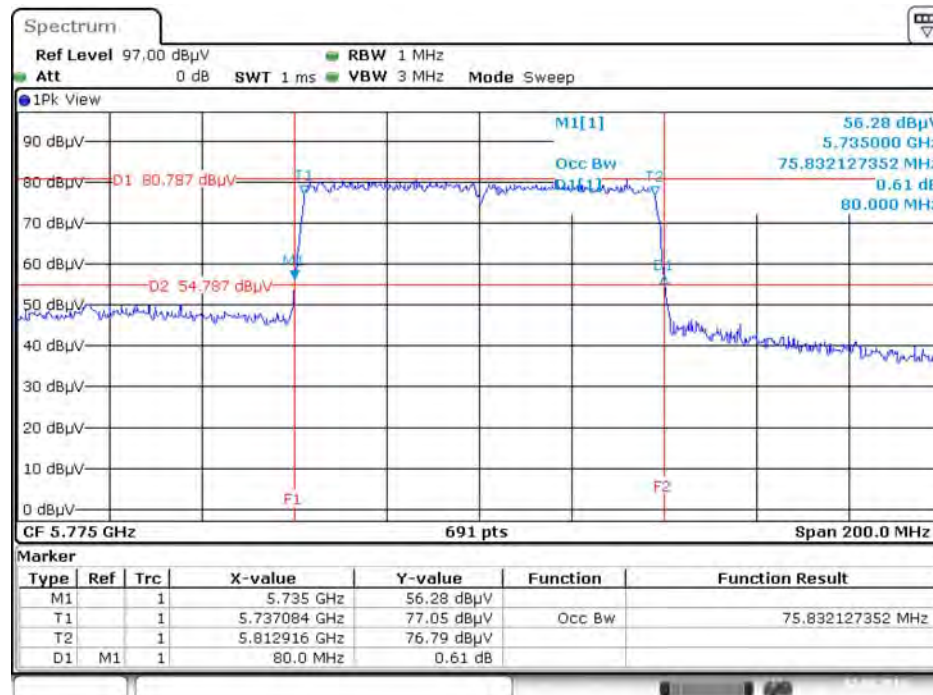
Type 11

26dB Bandwidth and 99% Occupied Bandwidth Plot on Chain 6 + Chain 7 / 5690 MHz



Date: 2.AUG.2016 02:20:20

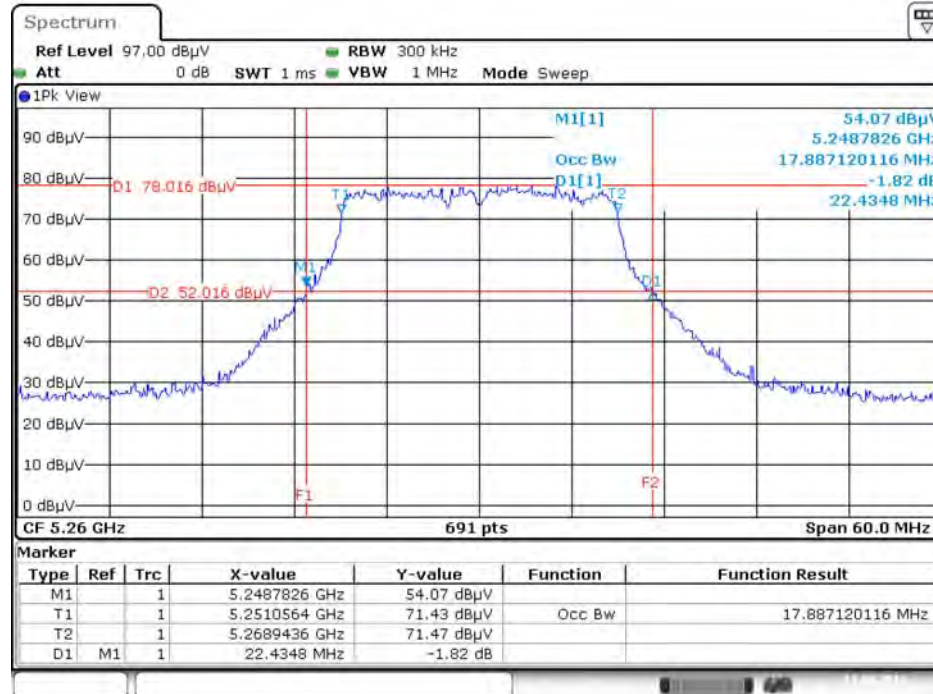
26dB Bandwidth and 99% Occupied Bandwidth Plot on Chain 5 + Chain 8 / 5775 MHz



Date: 2.AUG.2016 02:21:13

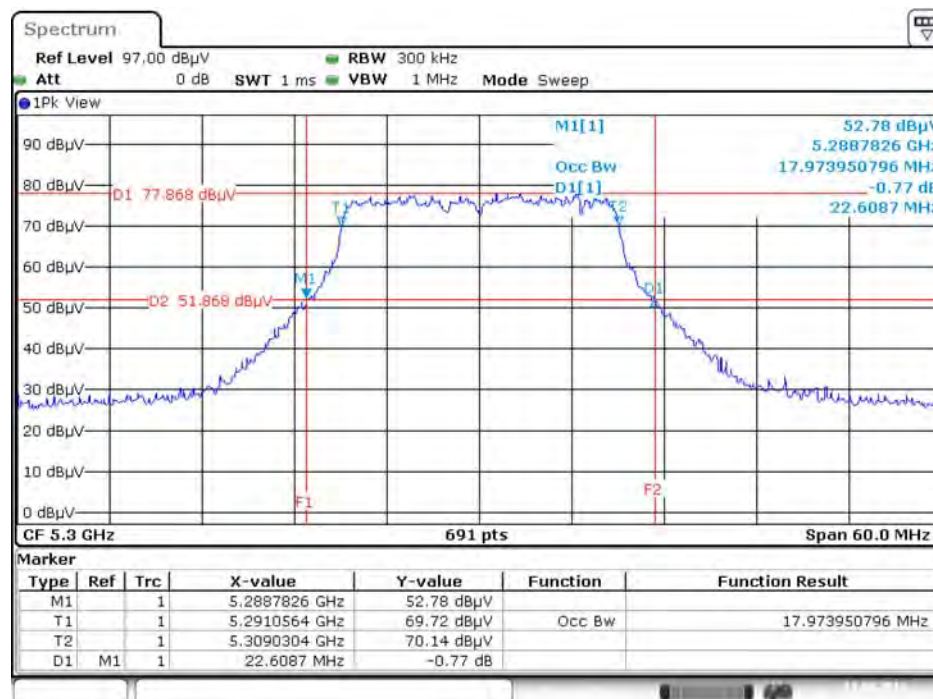
<For Beamforming Mode>

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5260 MHz



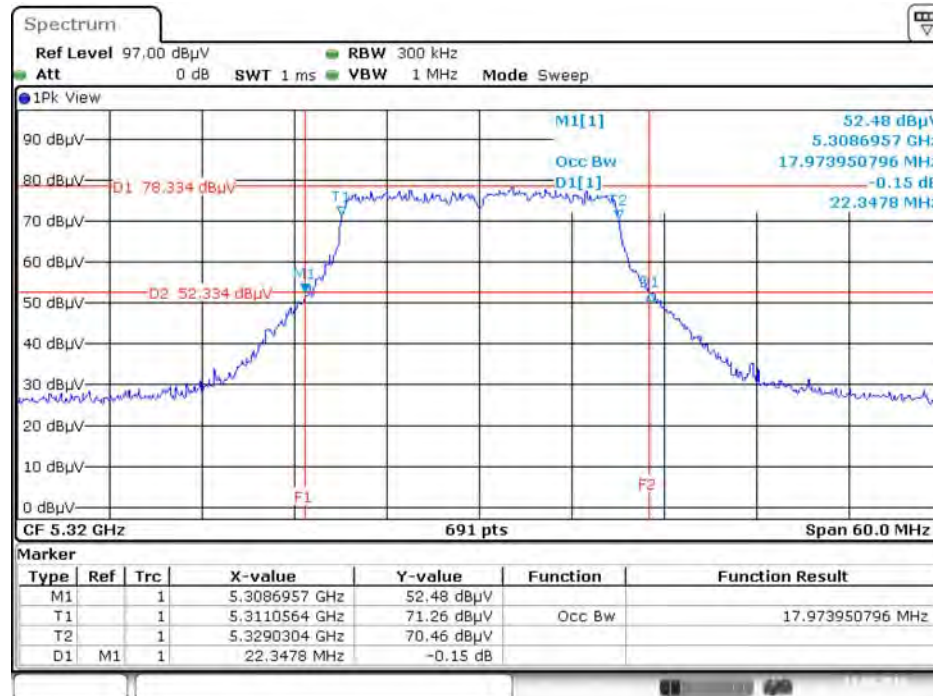
Date: 11.AUG.2016 20:31:32

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5300 MHz



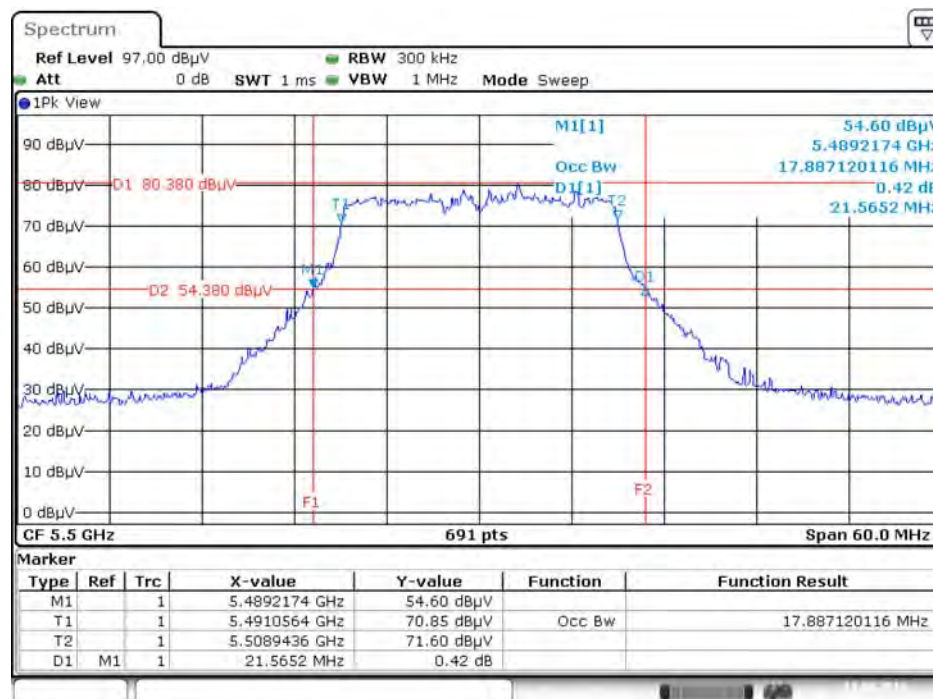
Date: 11.AUG.2016 20:32:41

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5320 MHz



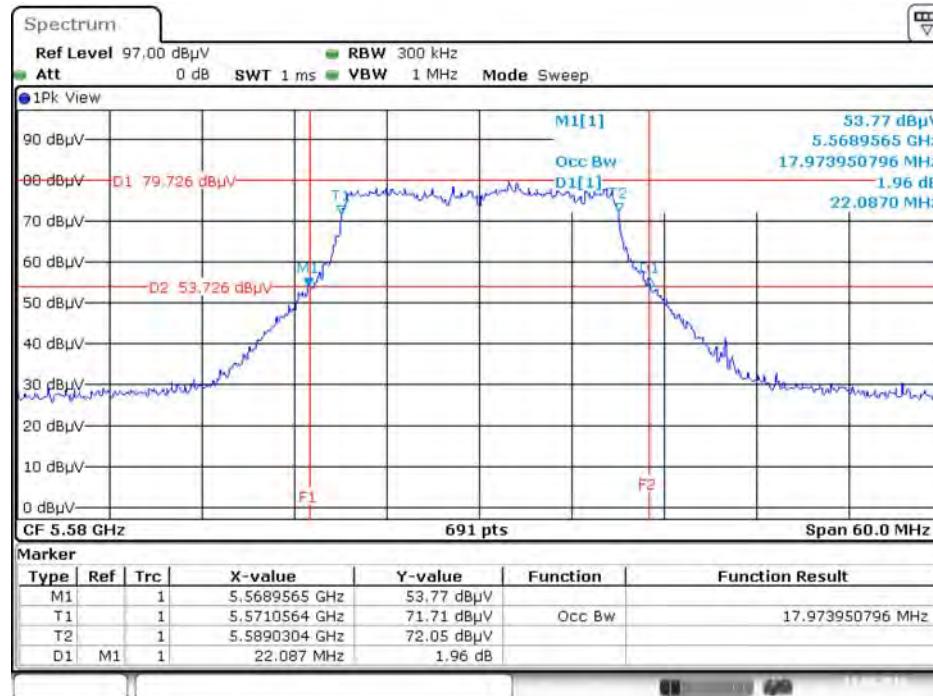
Date: 11.AUG.2016 20:33:36

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5500 MHz



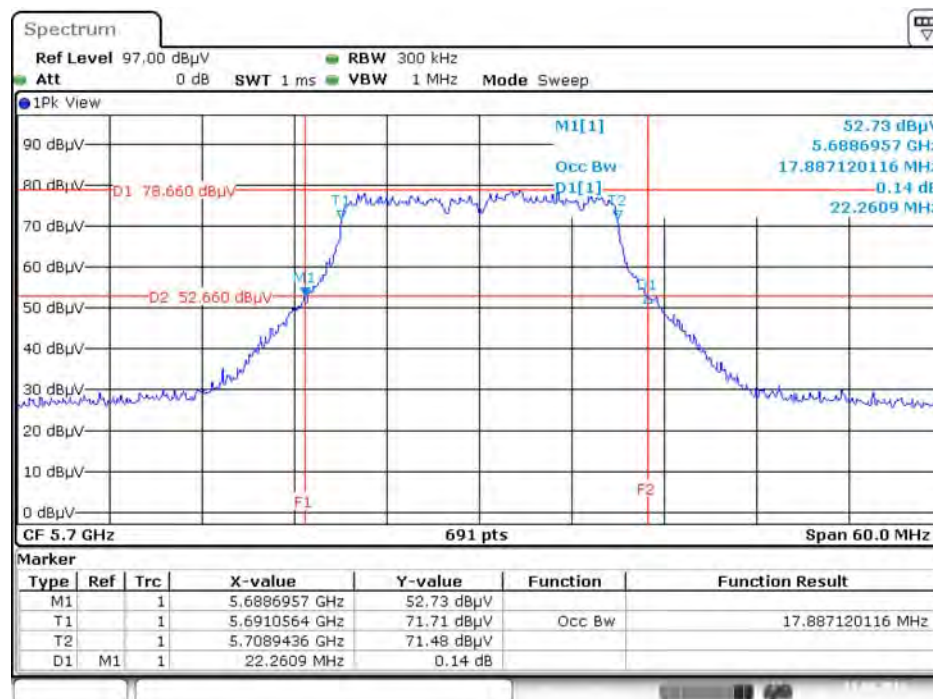
Date: 11.AUG.2016 20:34:48

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5580 MHz



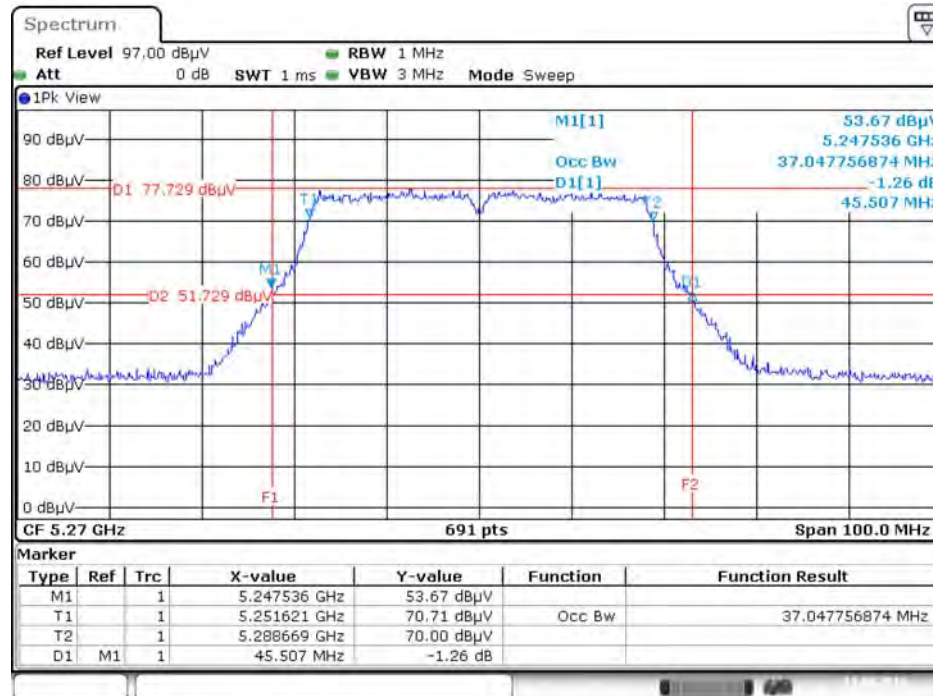
Date: 11.AUG.2016 20:35:51

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5700 MHz



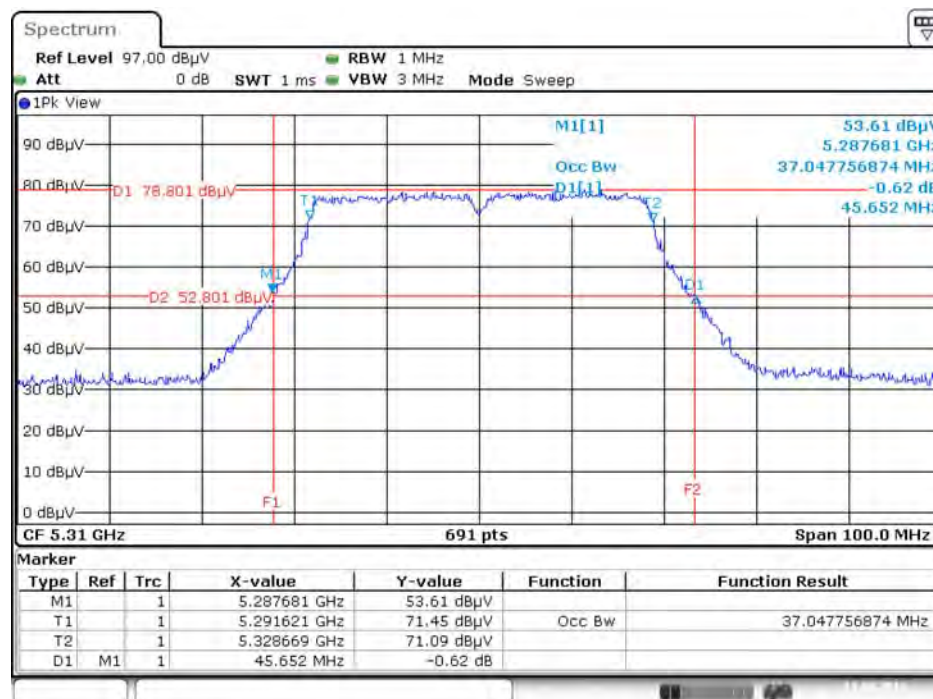
Date: 11.AUG.2016 20:37:02

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5270 MHz



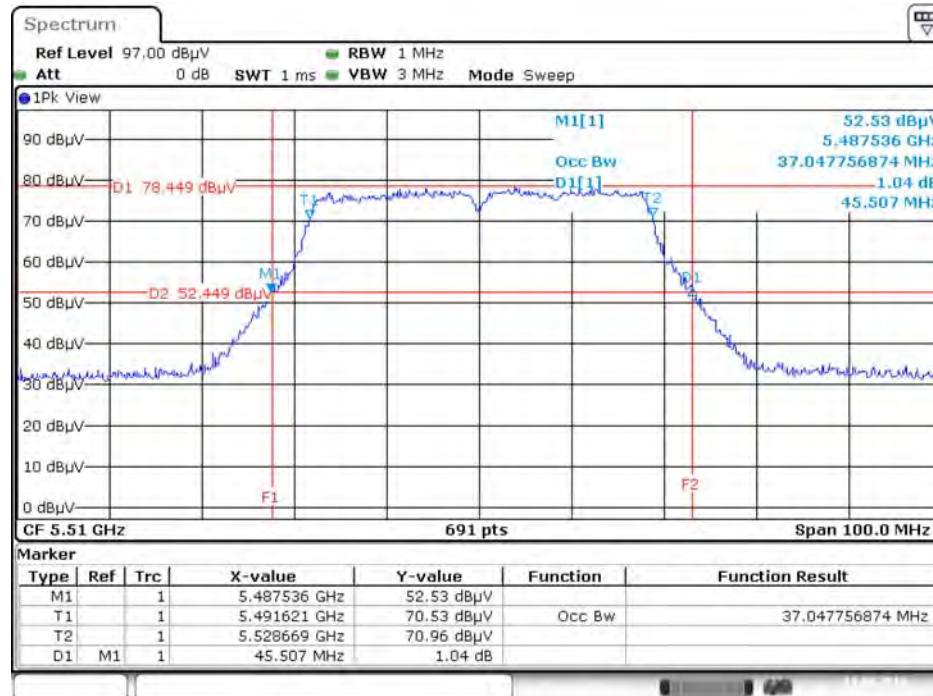
Date: 11.AUG.2016 20:38:59

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5310 MHz



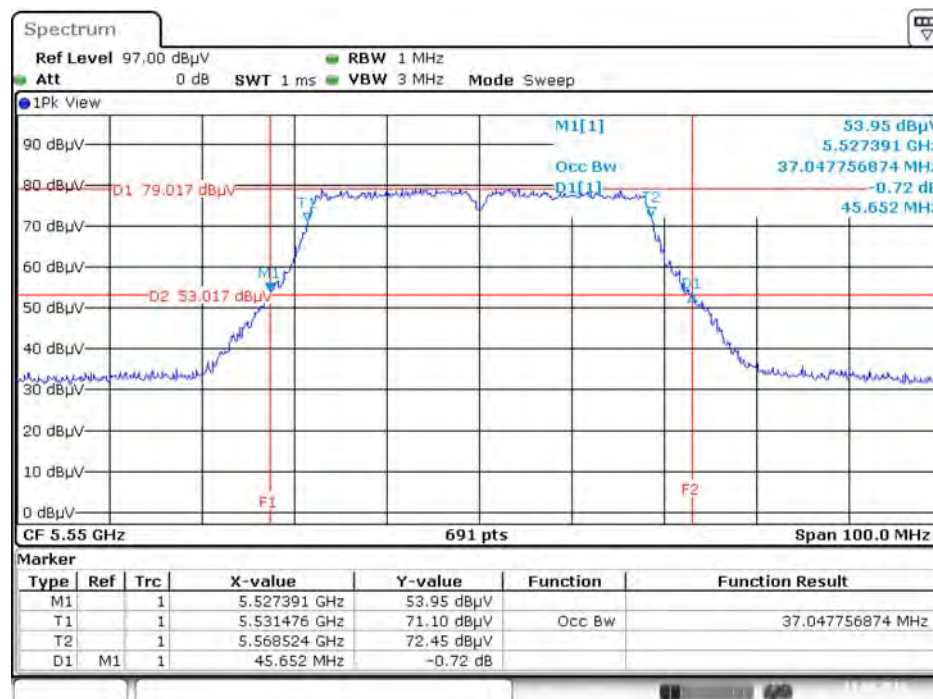
Date: 11.AUG.2016 20:39:57

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5510 MHz



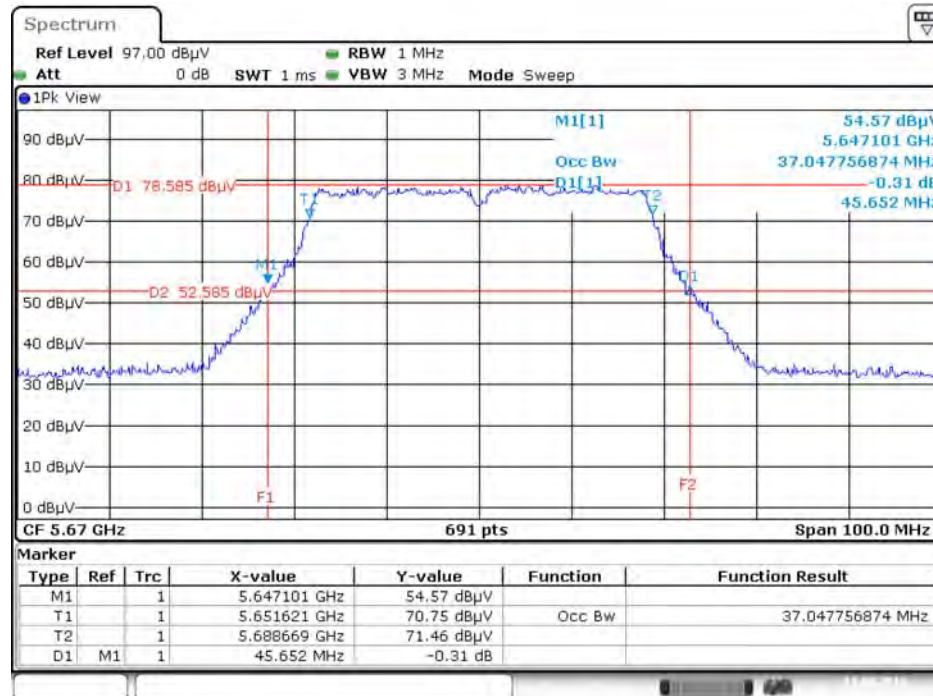
Date: 11.AUG.2016 20:41:01

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5550 MHz



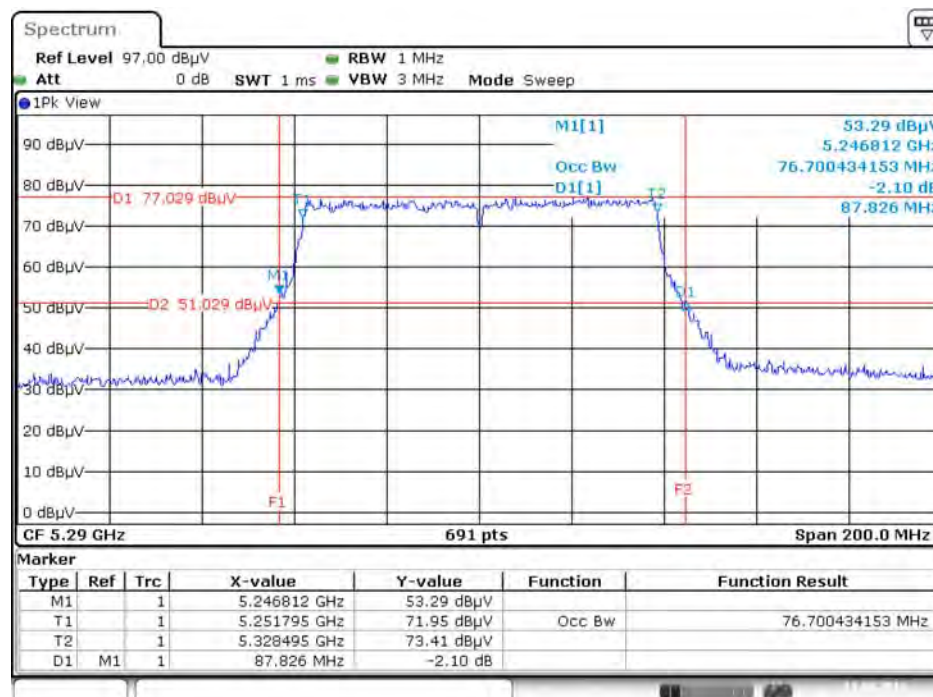
Date: 11.AUG.2016 20:41:54

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5670 MHz



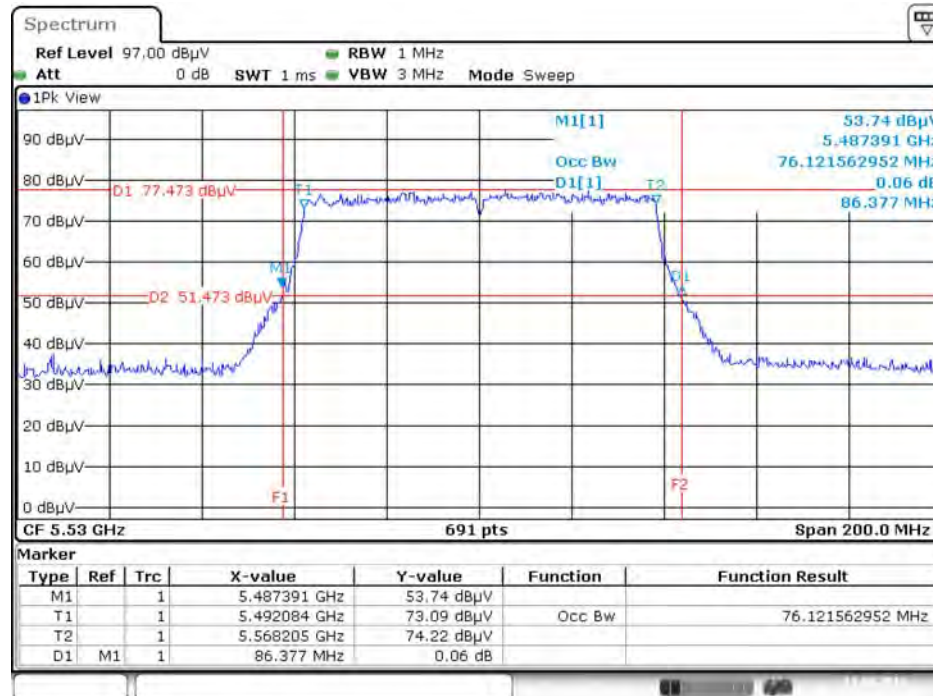
Date: 11.AUG.2016 20:42:49

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5290 MHz



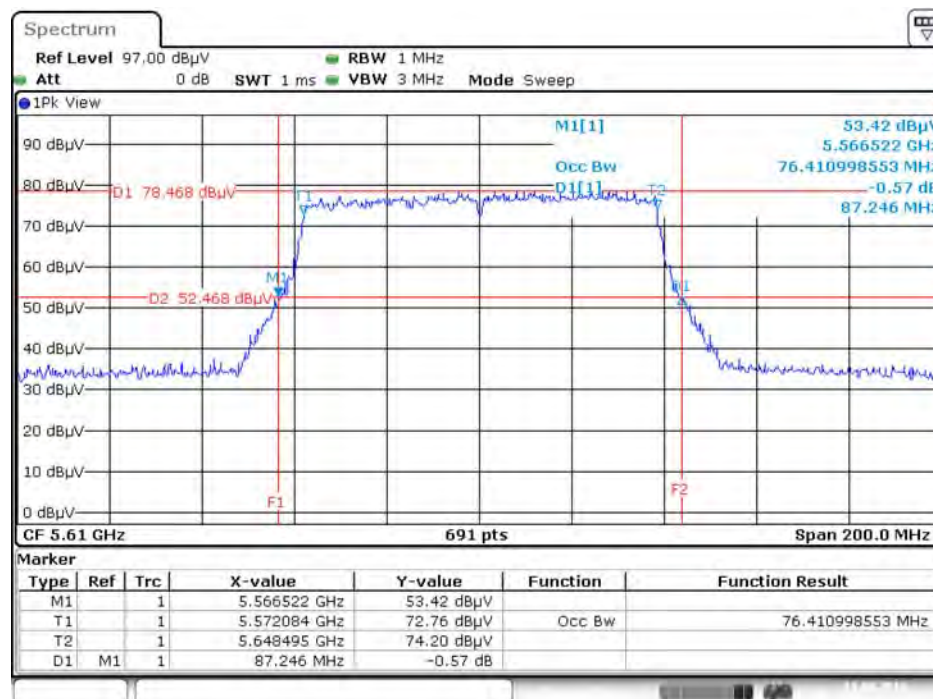
Date: 11.AUG.2016 20:44:36

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5530 MHz



Date: 11.AUG.2016 20:46:34

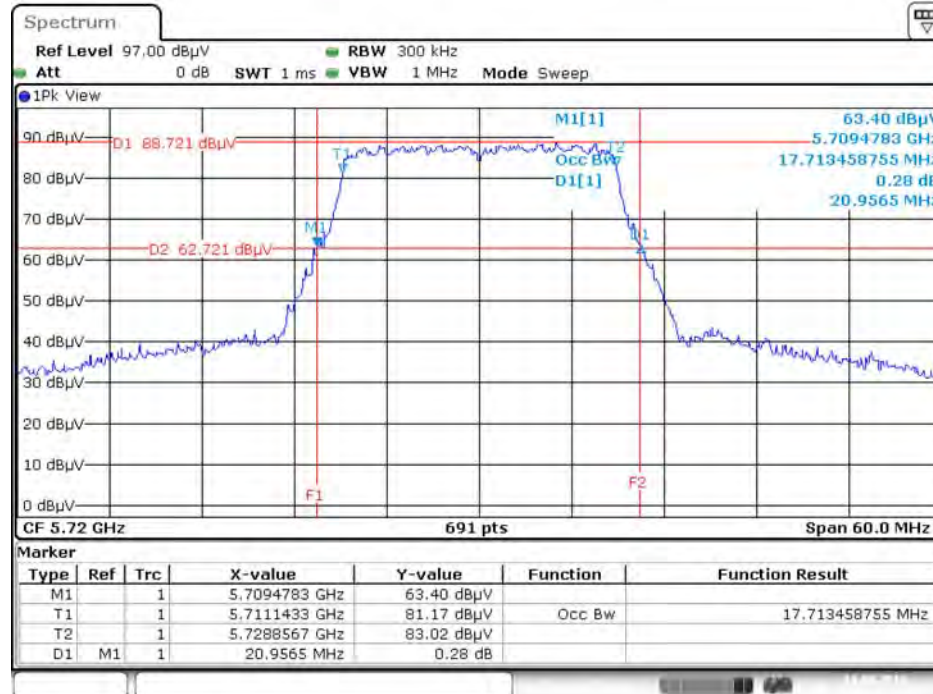
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5610 MHz



Date: 11.AUG.2016 20:47:54

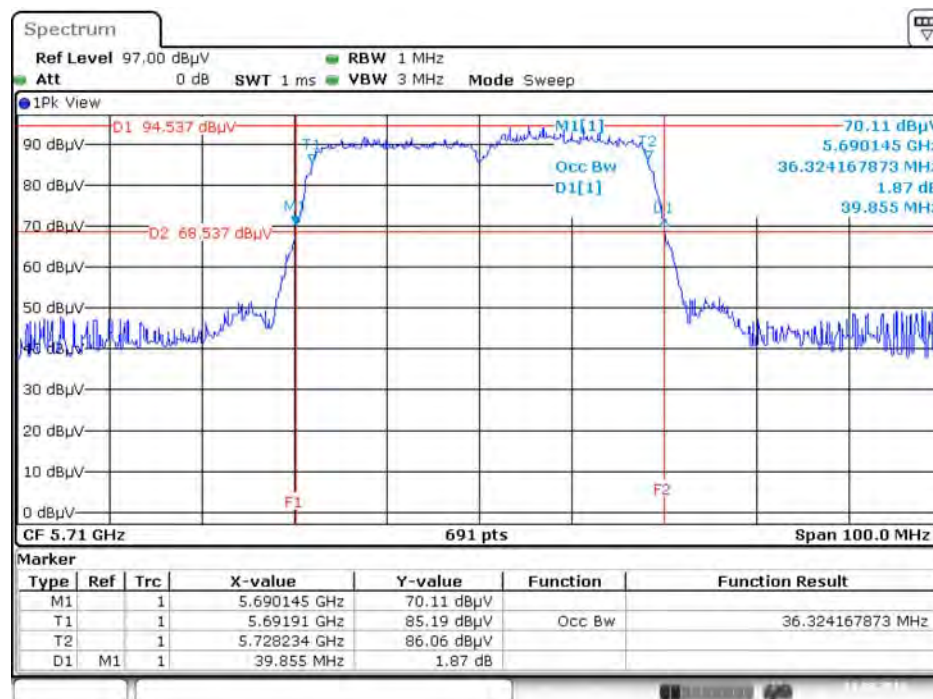
Straddle Channel

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5720 MHz



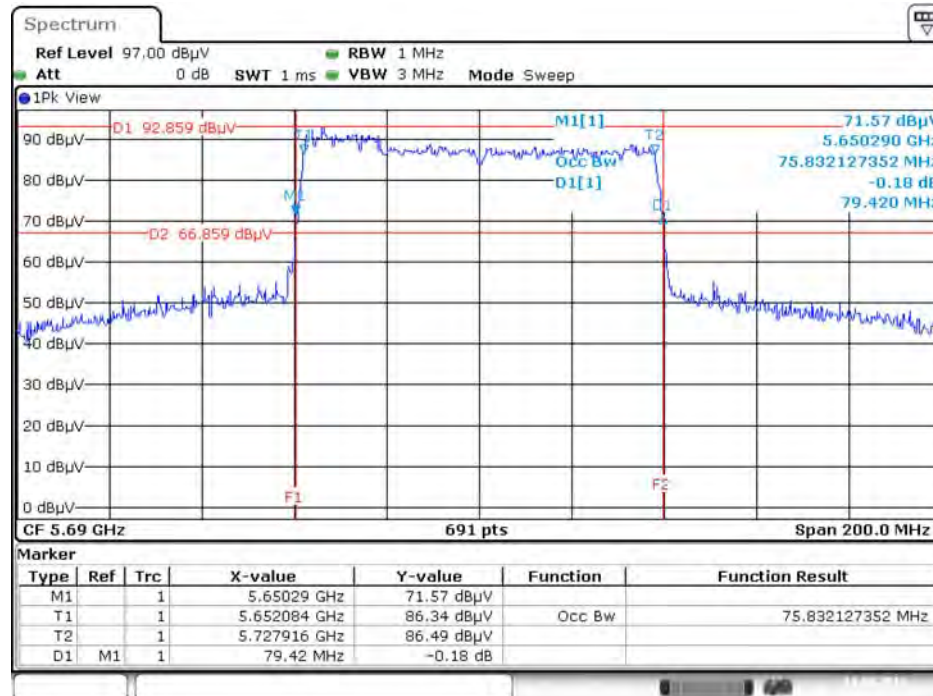
Date: 11.AUG.2016 04:12:23

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5710 MHz



Date: 11.AUG.2016 04:58:43

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5690 MHz

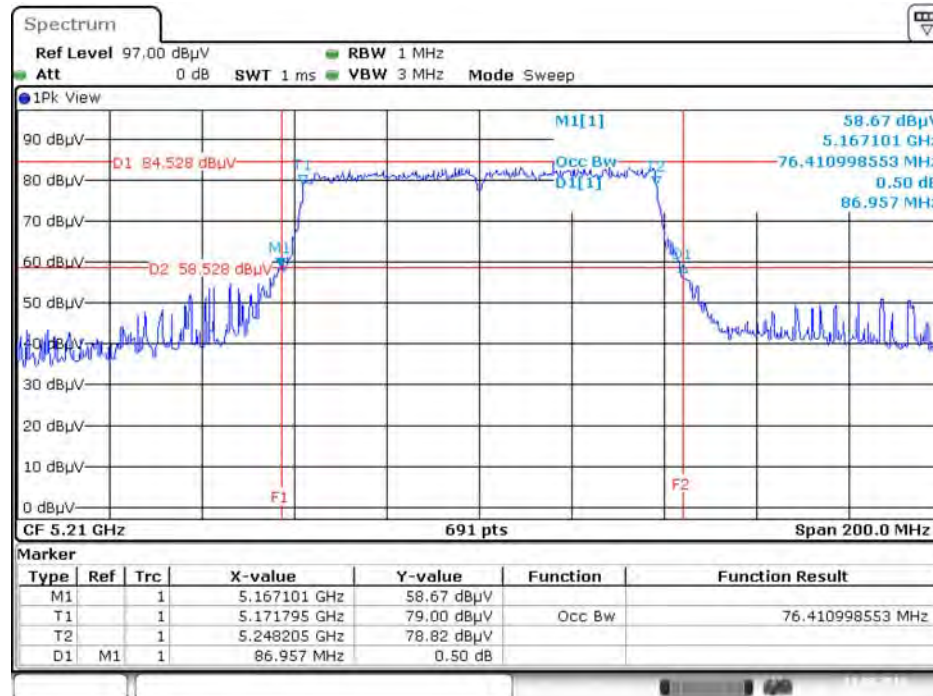


Date: 11.AUG.2016 05:28:34

802.11ac MCS0/Nss2 VHT80+80

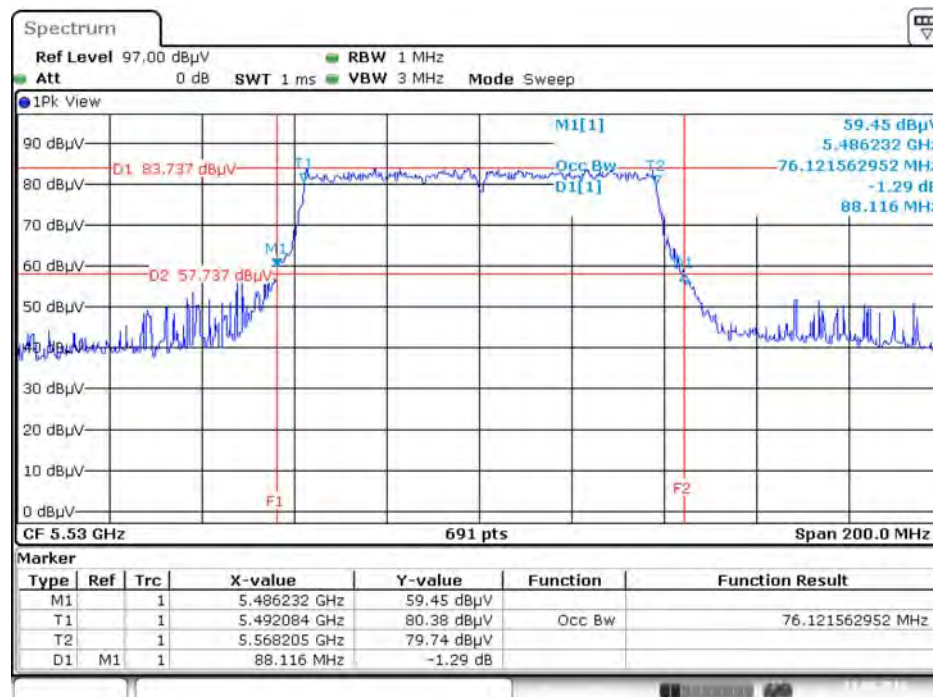
Type 1

26dB Bandwidth and 99% Occupied Bandwidth Plot on Chain 6 + Chain 7 / 5210 MHz



Date: 11.AUG.2016 17:11:54

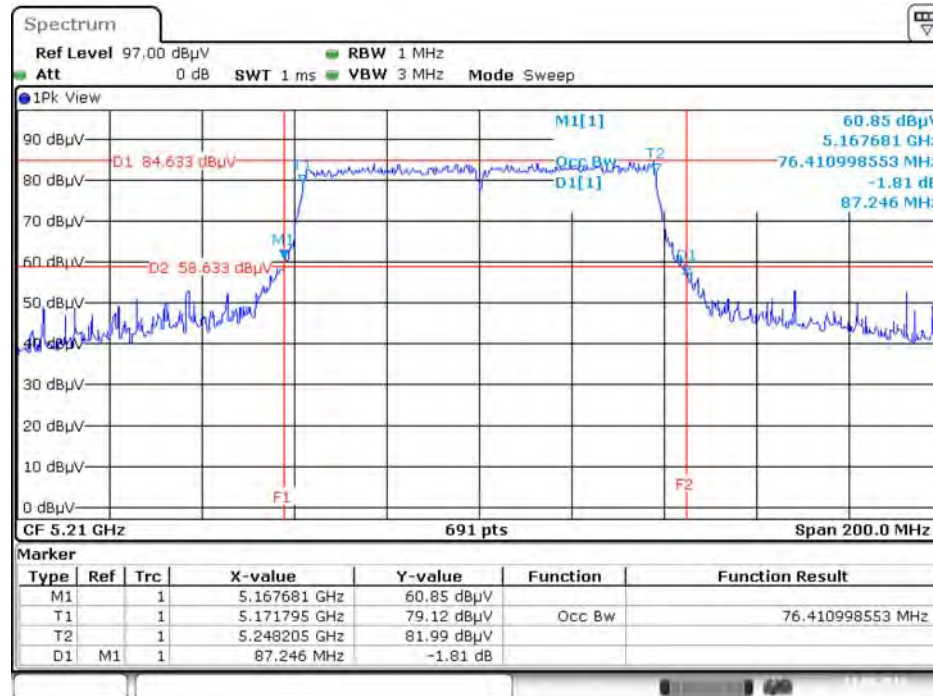
26dB Bandwidth and 99% Occupied Bandwidth Plot on Chain 5 + Chain 8 / 5530 MHz



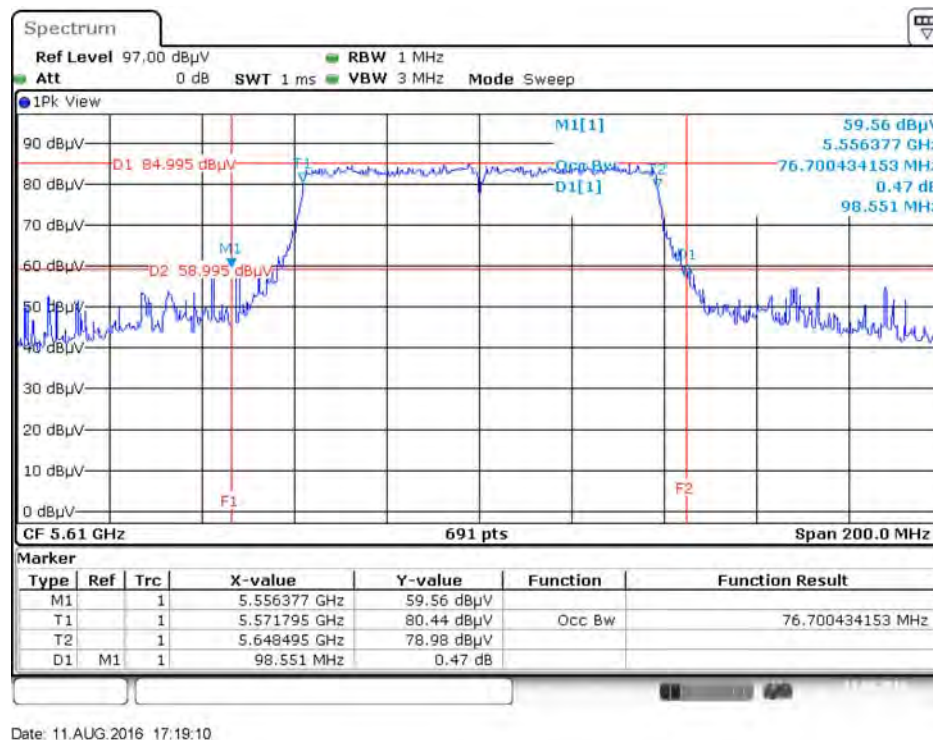
Date: 11.AUG.2016 17:15:08

Type 2

26dB Bandwidth and 99% Occupied Bandwidth Plot on Chain 6 + Chain 7 / 5210 MHz

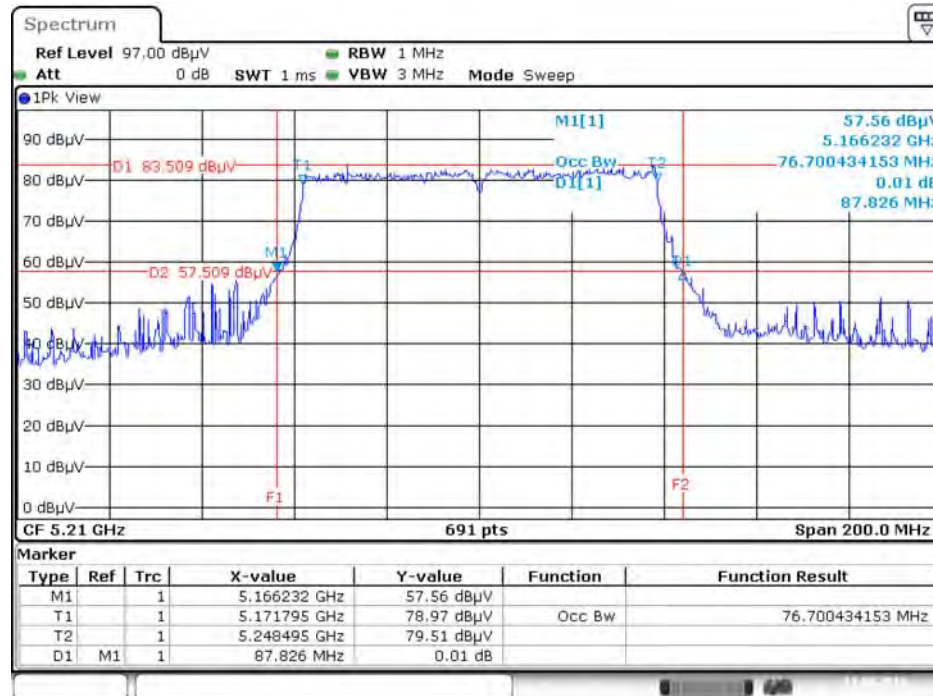


26dB Bandwidth and 99% Occupied Bandwidth Plot on Chain 5 + Chain 8 / 5610 MHz



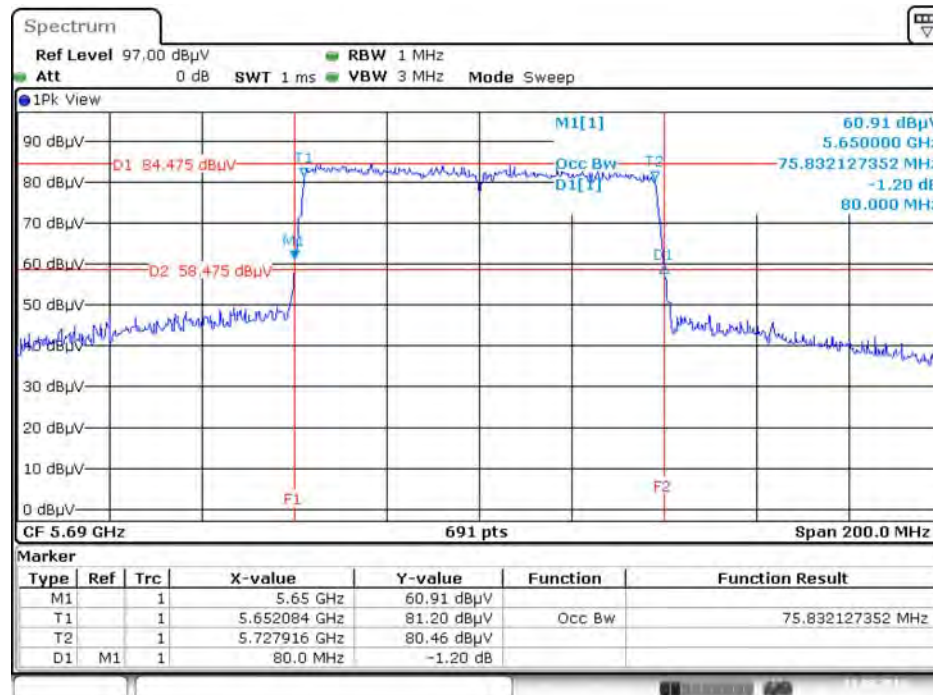
Type 3

26dB Bandwidth and 99% Occupied Bandwidth Plot on Chain 6 + Chain 7 / 5210 MHz



Date: 11.AUG.2016 17:13:45

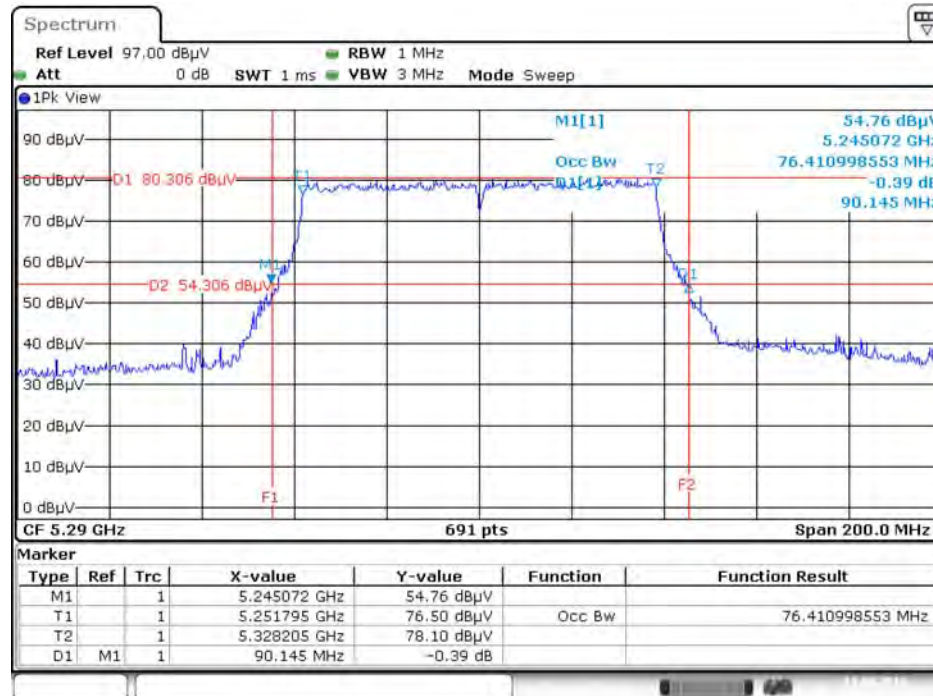
26dB Bandwidth and 99% Occupied Bandwidth Plot on Chain 5 + Chain 8 / 5690 MHz



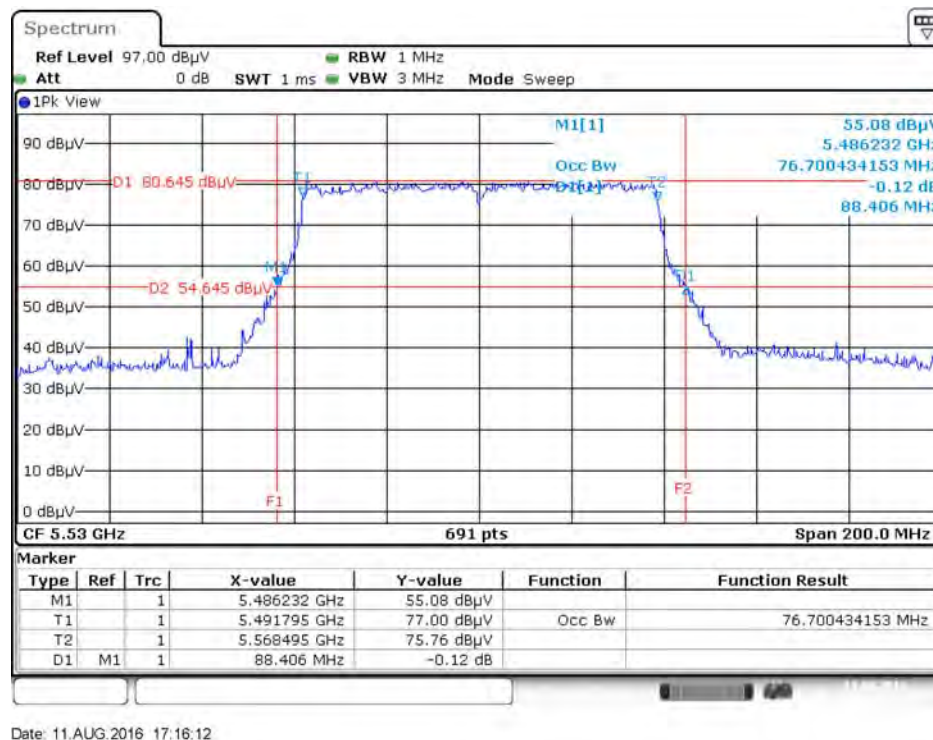
Date: 11.AUG.2016 14:09:35

Type 4

26dB Bandwidth and 99% Occupied Bandwidth Plot on Chain 6 + Chain 7 / 5290 MHz

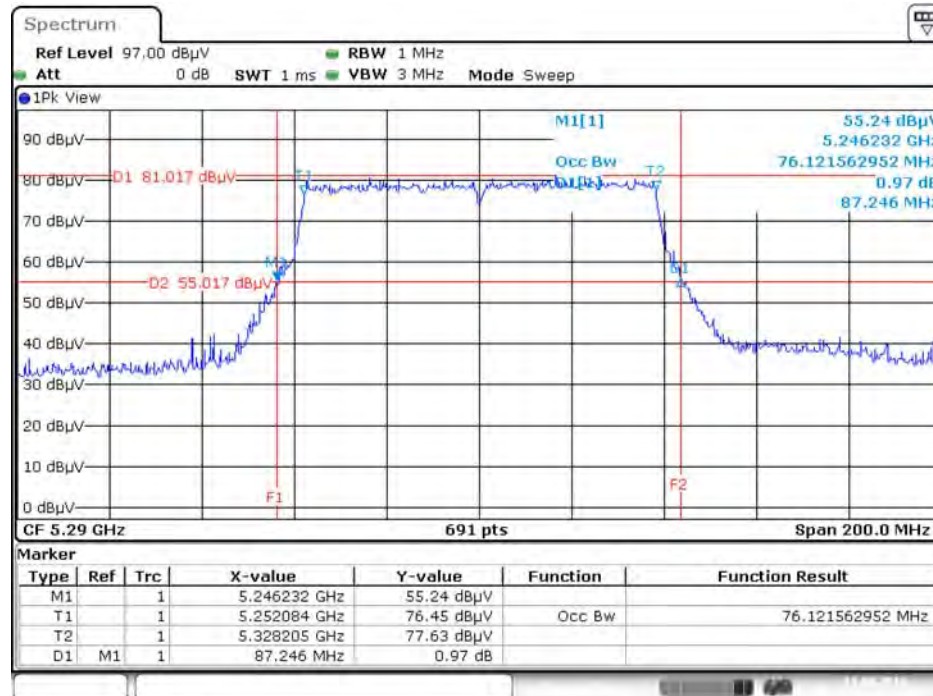


26dB Bandwidth and 99% Occupied Bandwidth Plot on Chain 5 + Chain 8 / 5530 MHz



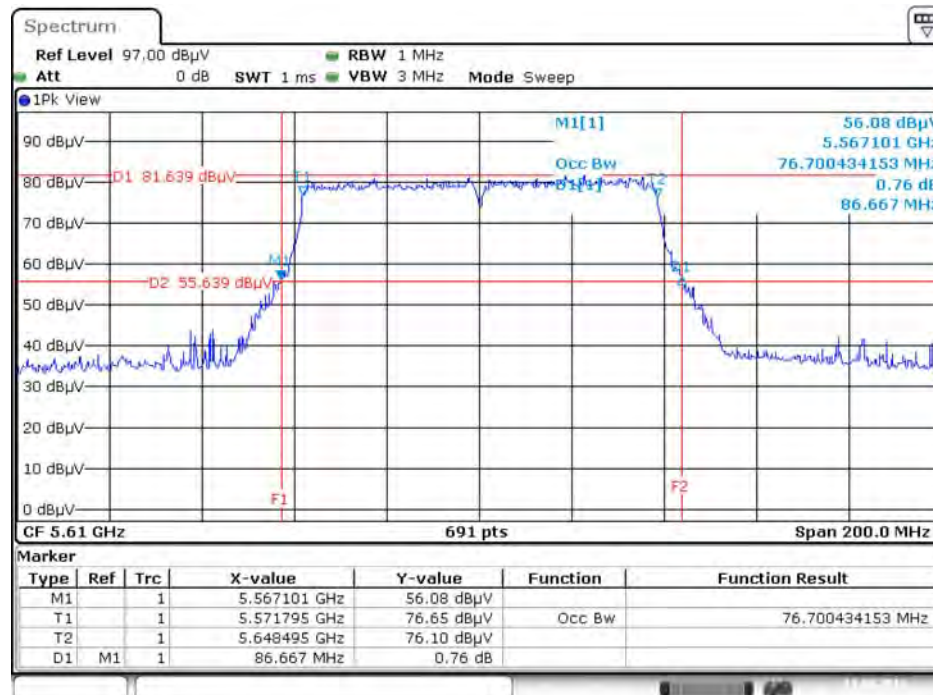
Type 5

26dB Bandwidth and 99% Occupied Bandwidth Plot on Chain 6 + Chain 7 / 5290 MHz



Date: 11.AUG.2016 17:22:45

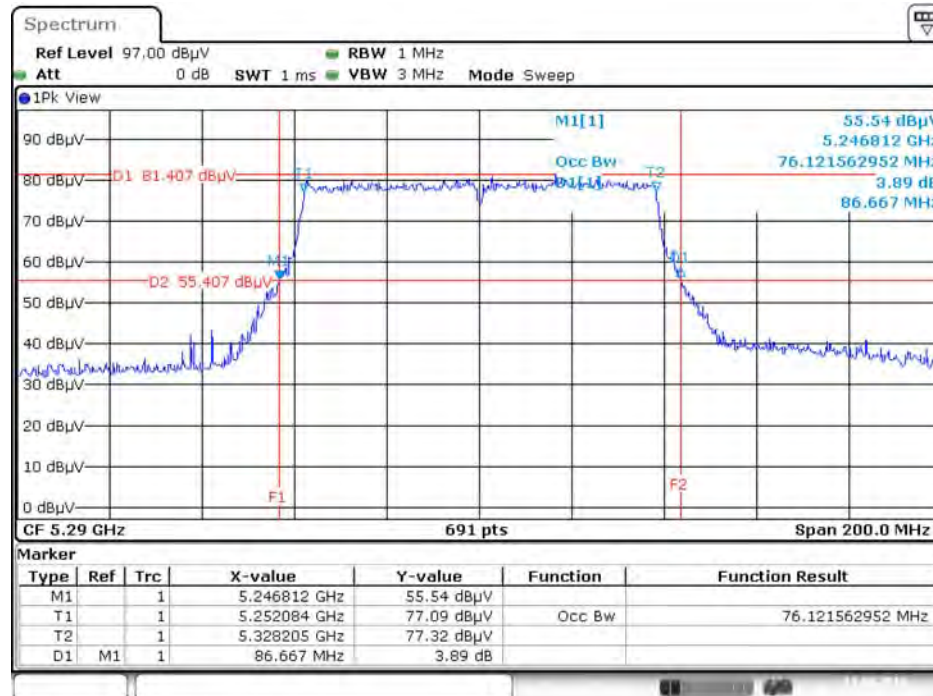
26dB Bandwidth and 99% Occupied Bandwidth Plot on Chain 5 + Chain 8 / 5610 MHz



Date: 11.AUG.2016 17:19:56

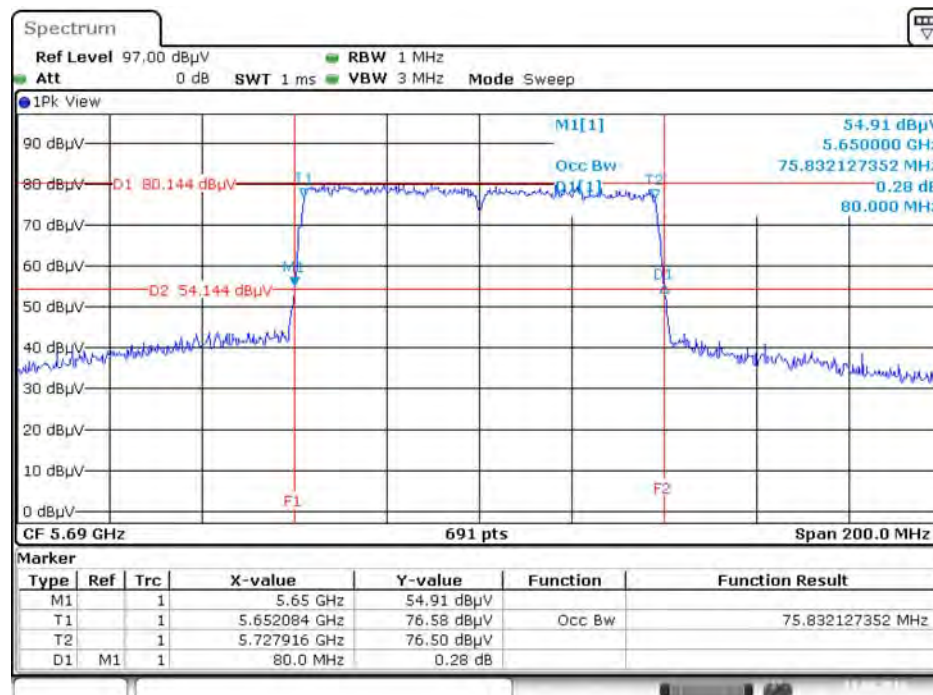
Type 6

26dB Bandwidth and 99% Occupied Bandwidth Plot on Chain 6 + Chain 7 / 5290 MHz



Date: 11.AUG.2016 17:23:13

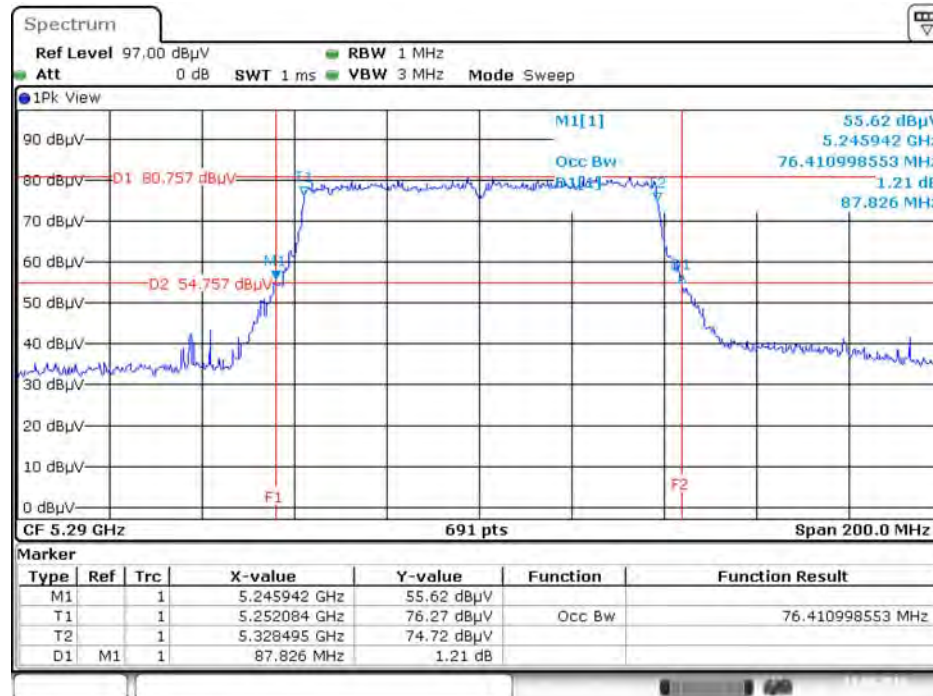
26dB Bandwidth and 99% Occupied Bandwidth Plot on Chain 5 + Chain 8 / 5690 MHz



Date: 11.AUG.2016 14:14:45

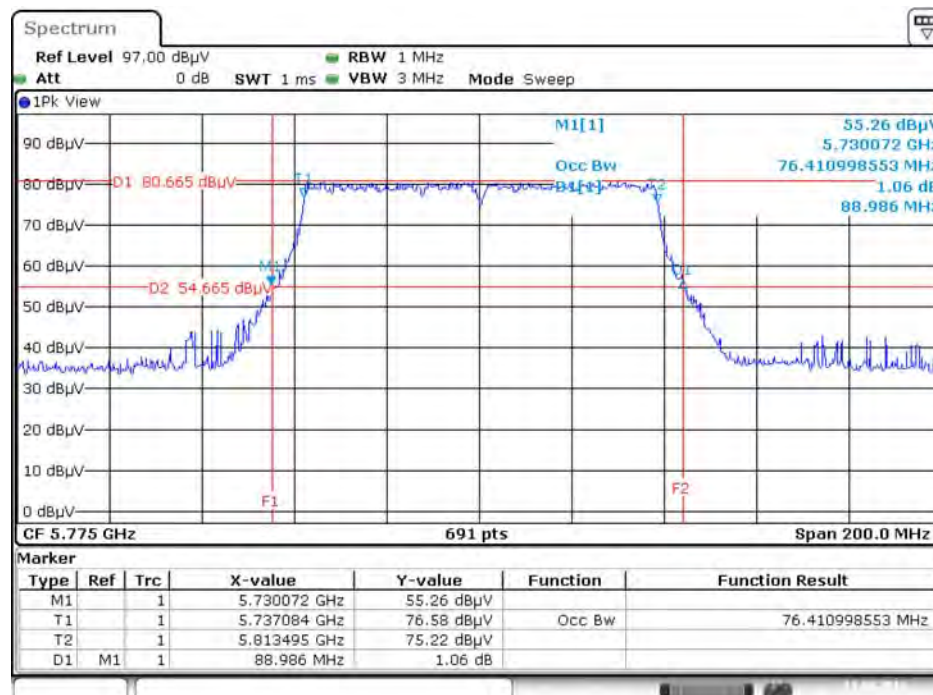
Type 7

26dB Bandwidth and 99% Occupied Bandwidth Plot on Chain 6 + Chain 7 / 5290 MHz



Date: 11.AUG.2016 17:23:57

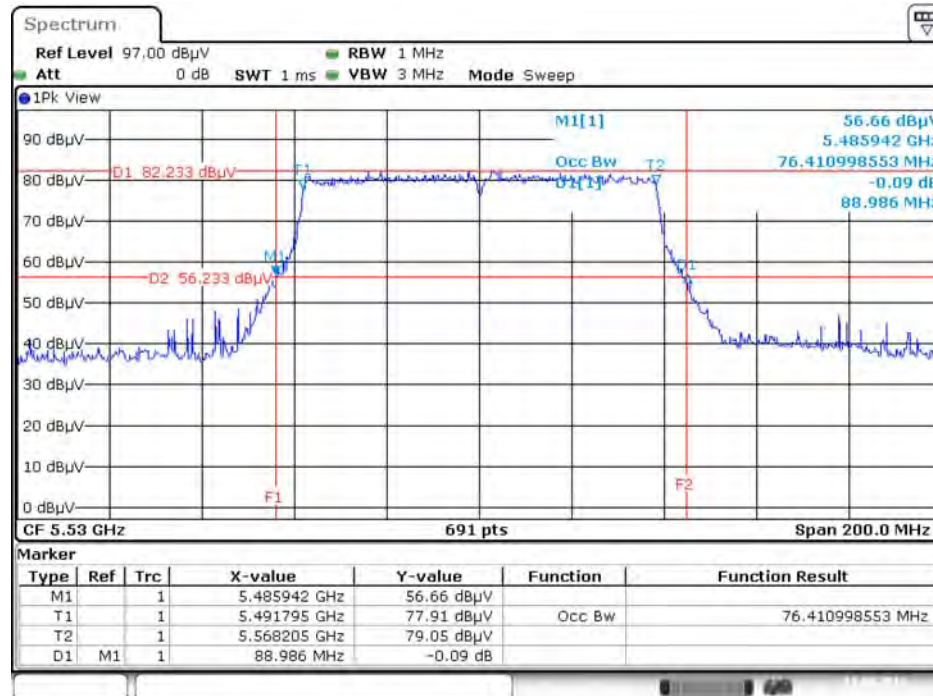
26dB Bandwidth and 99% Occupied Bandwidth Plot on Chain 5 + Chain 8 / 5775 MHz



Date: 11.AUG.2016 17:25:16

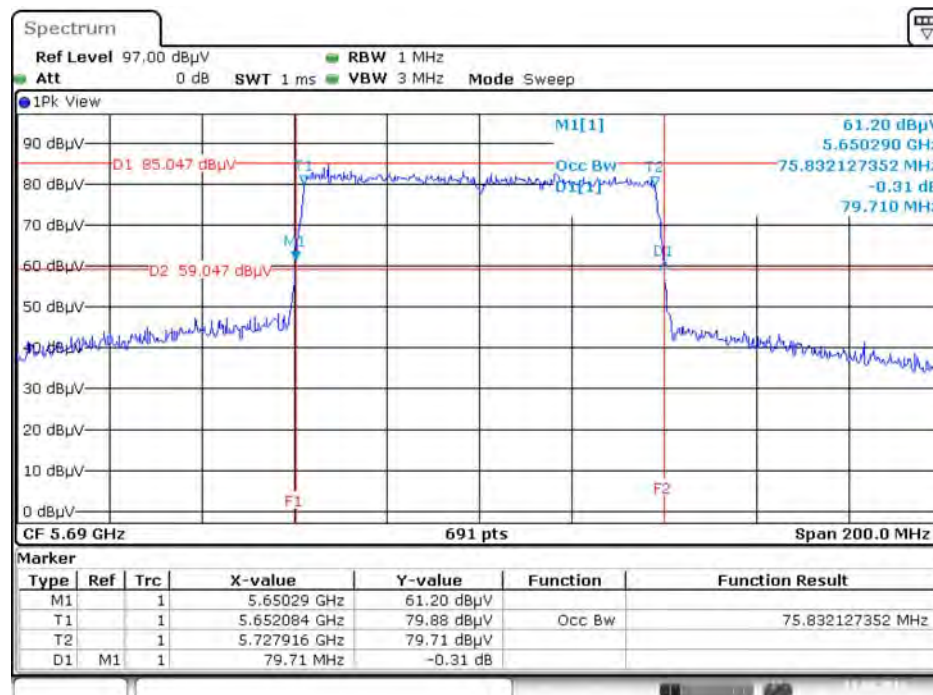
Type 8

26dB Bandwidth and 99% Occupied Bandwidth Plot on Chain 6 + Chain 7 / 5530 MHz



Date: 11.AUG.2016 17:16:57

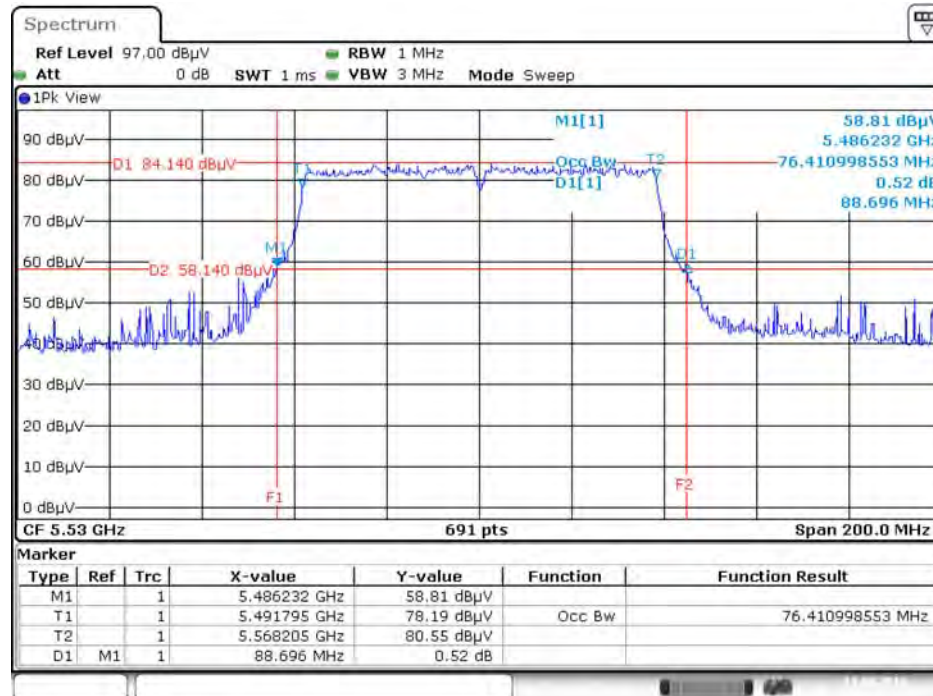
26dB Bandwidth and 99% Occupied Bandwidth Plot on Chain 5 + Chain 8 / 5690 MHz



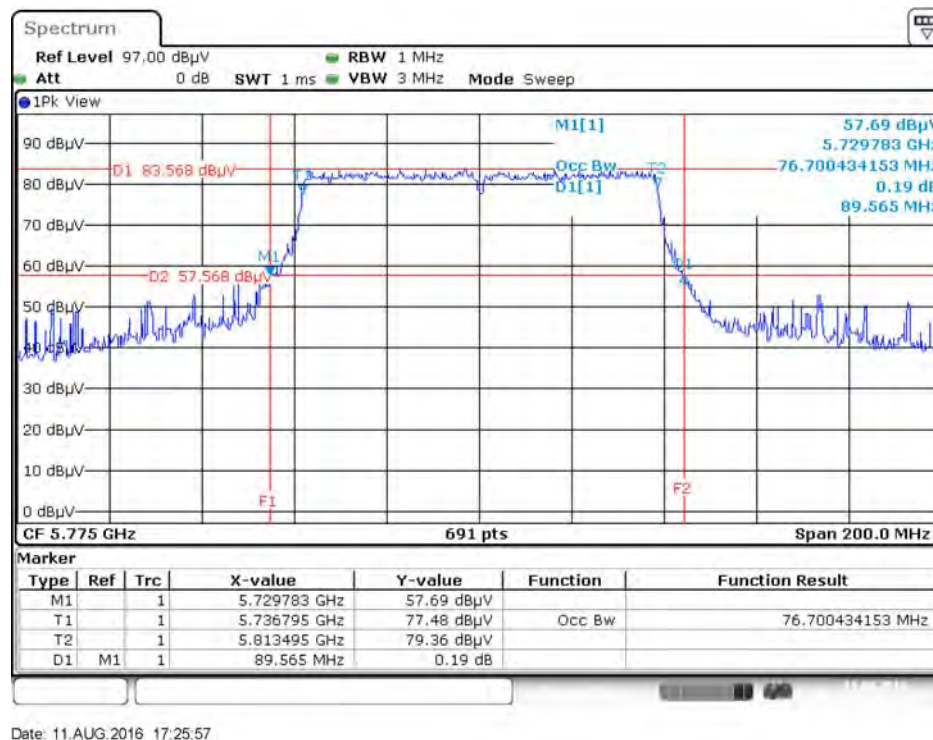
Date: 11.AUG.2016 14:18:04

Type 9

26dB Bandwidth and 99% Occupied Bandwidth Plot on Chain 6 + Chain 7 / 5530 MHz

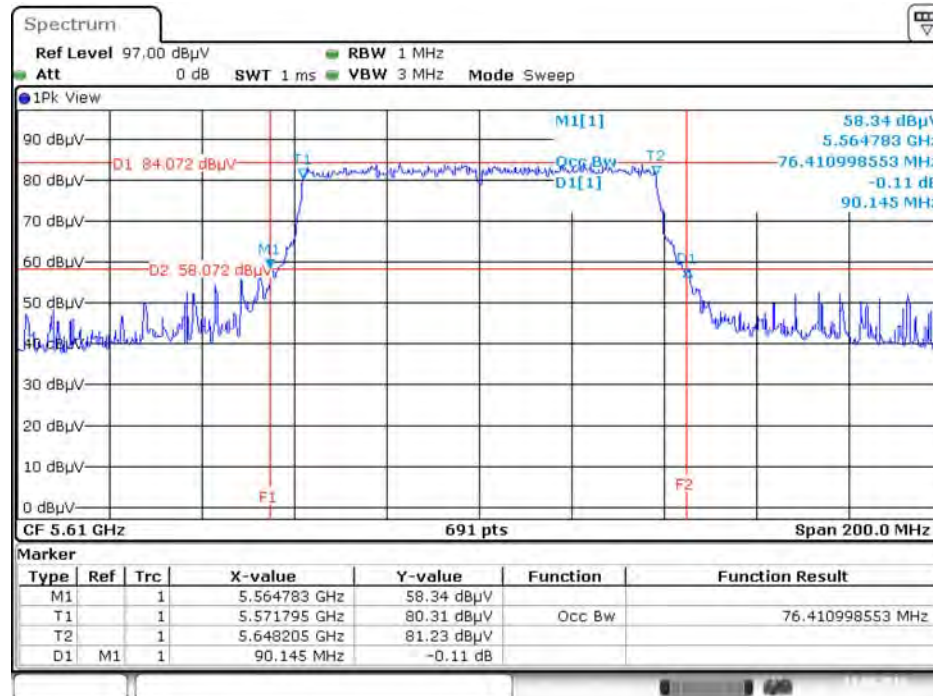


26dB Bandwidth and 99% Occupied Bandwidth Plot on Chain 5 + Chain 8 / 5775 MHz



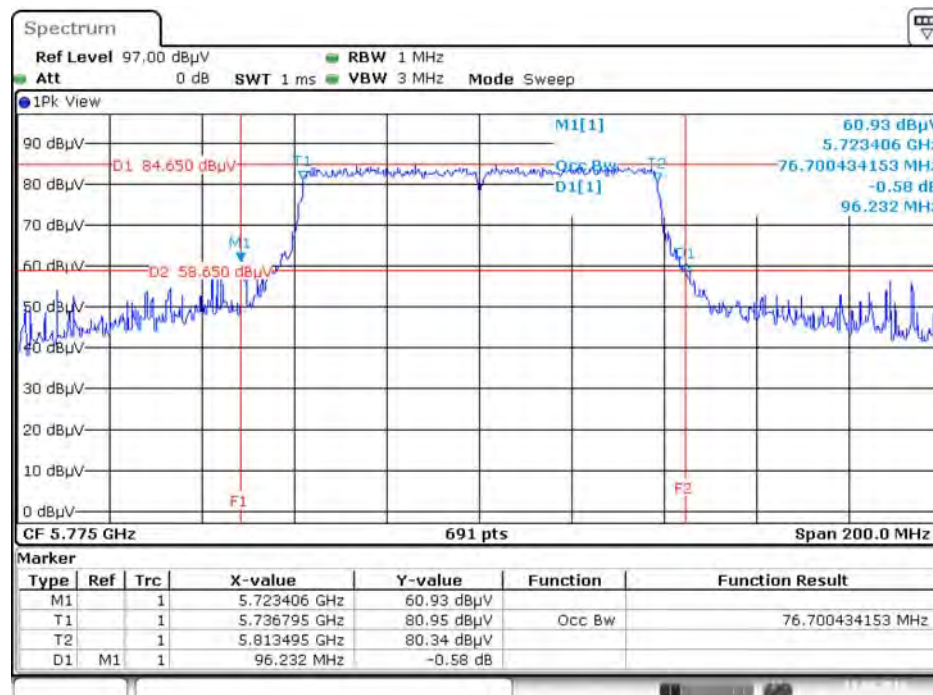
Type 10

26dB Bandwidth and 99% Occupied Bandwidth Plot on Chain 6 + Chain 7 / 5610 MHz



Date: 11.AUG.2016 17:20:38

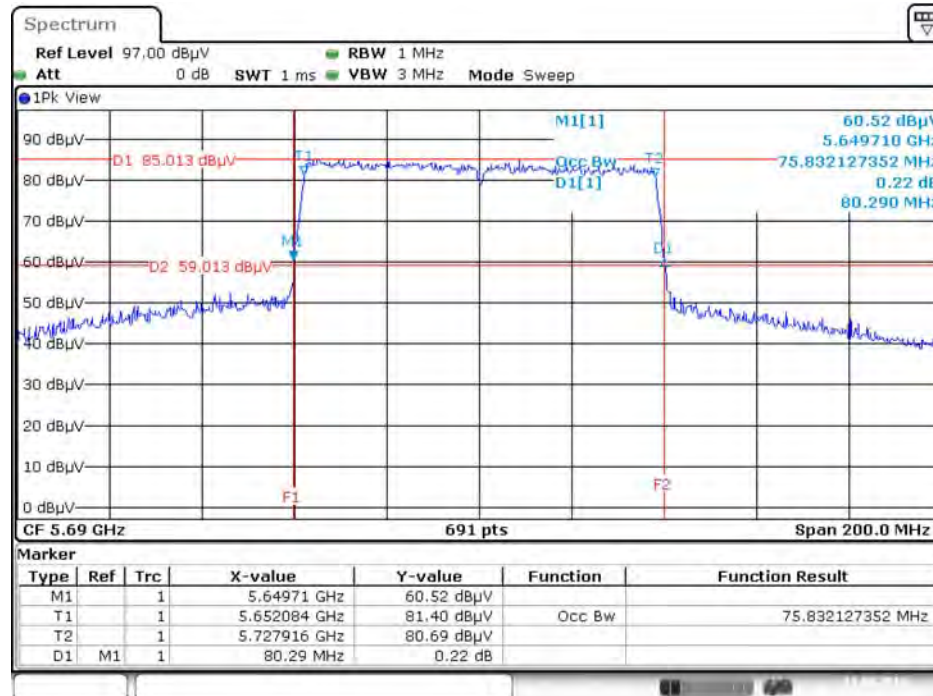
26dB Bandwidth and 99% Occupied Bandwidth Plot on Chain 5 + Chain 8 / 5775 MHz



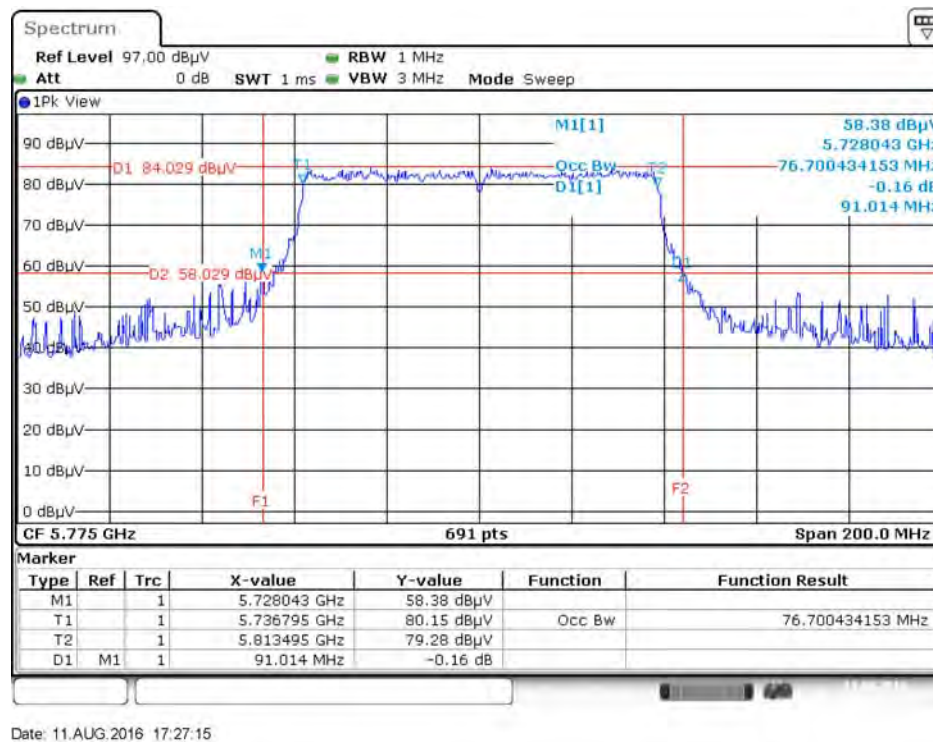
Date: 11.AUG.2016 17:26:39

Type 11

26dB Bandwidth and 99% Occupied Bandwidth Plot on Chain 6 + Chain 7 / 5690 MHz

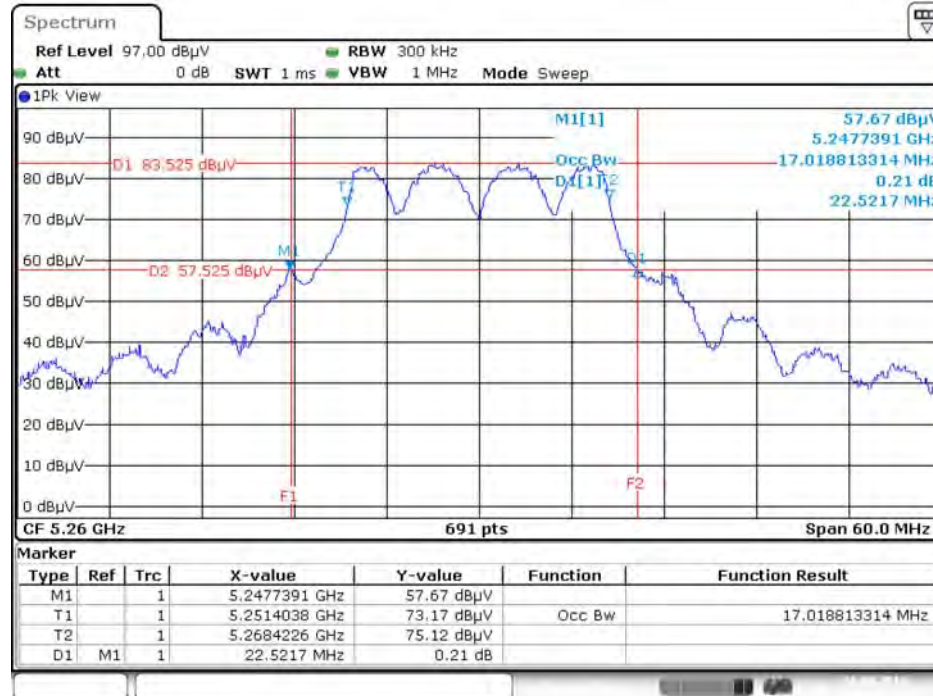


26dB Bandwidth and 99% Occupied Bandwidth Plot on Chain 5 + Chain 8 / 5775 MHz



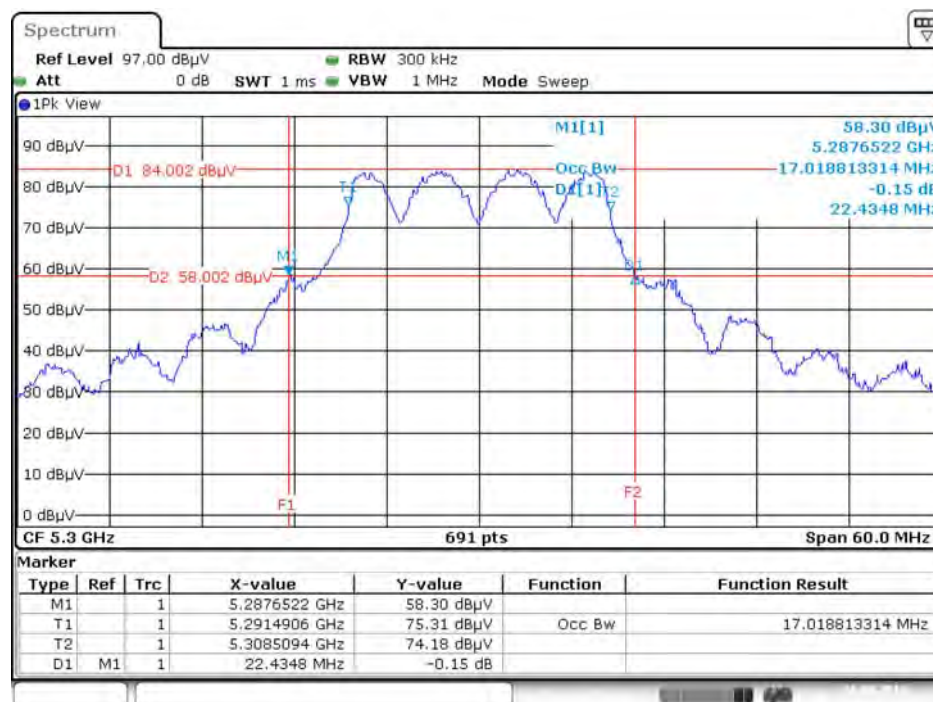
For radio 3

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 9 + Chain 10 / 5260 MHz



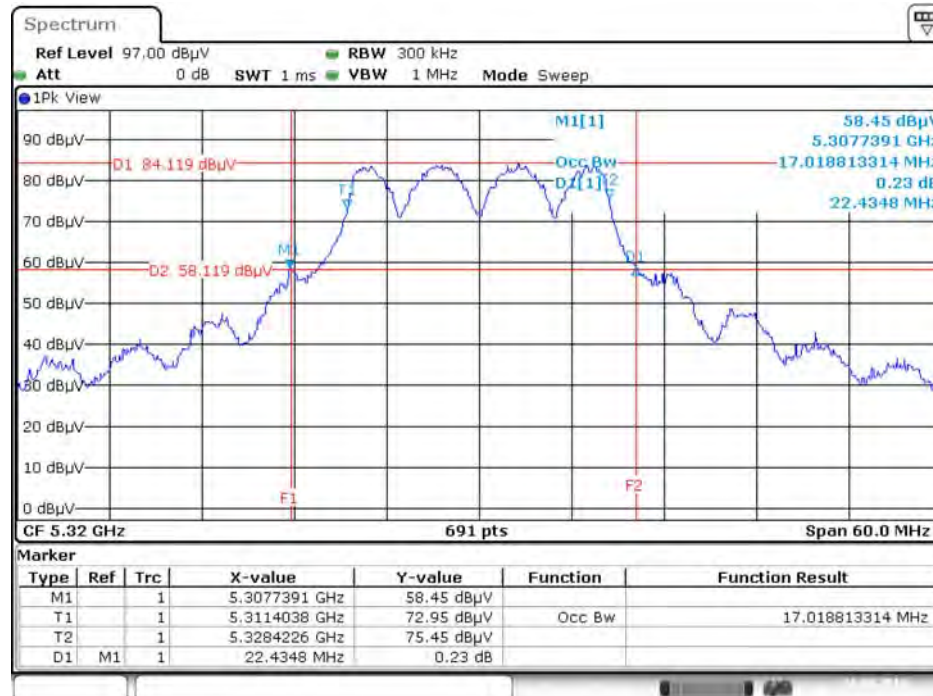
Date: 26.AUG.2016 00:02:08

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 9 + Chain 10 / 5300 MHz



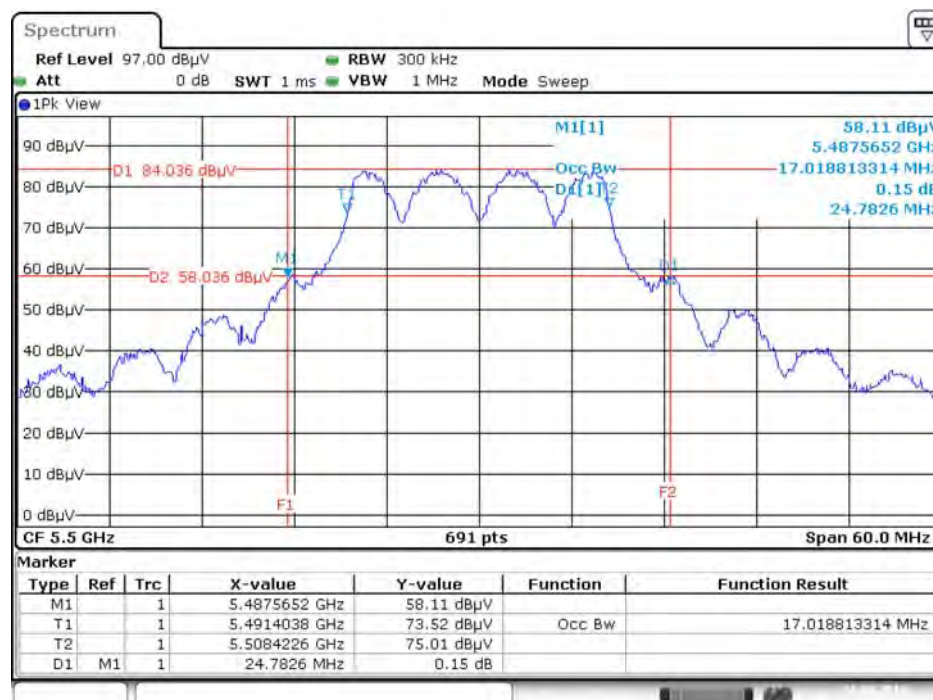
Date: 26.AUG.2016 00:01:09

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 9 + Chain 10 / 5320 MHz



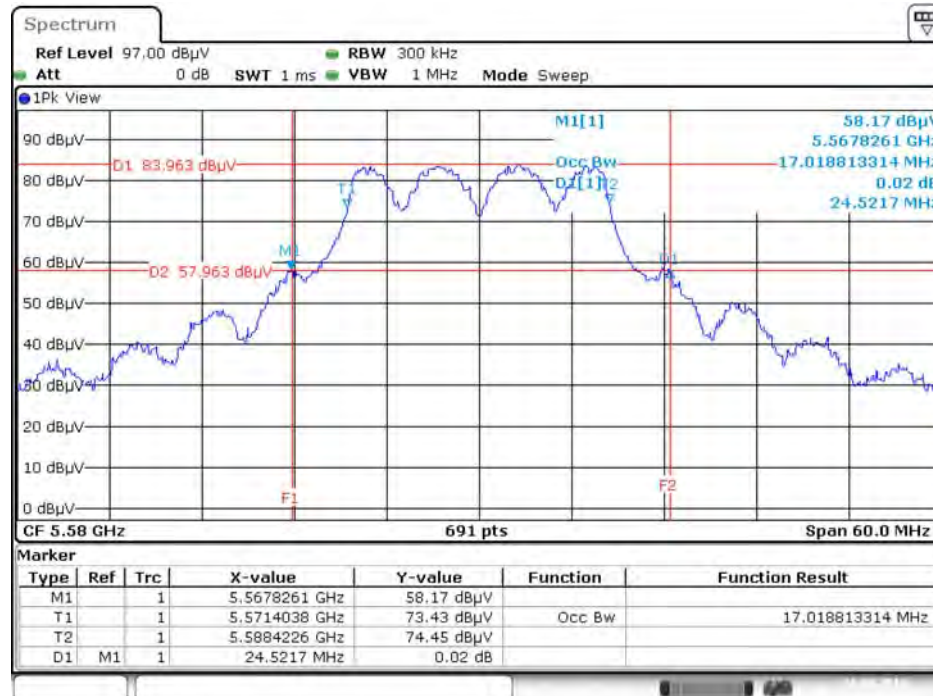
Date: 26.AUG.2016 00:04:51

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 9 + Chain 10 / 5500 MHz

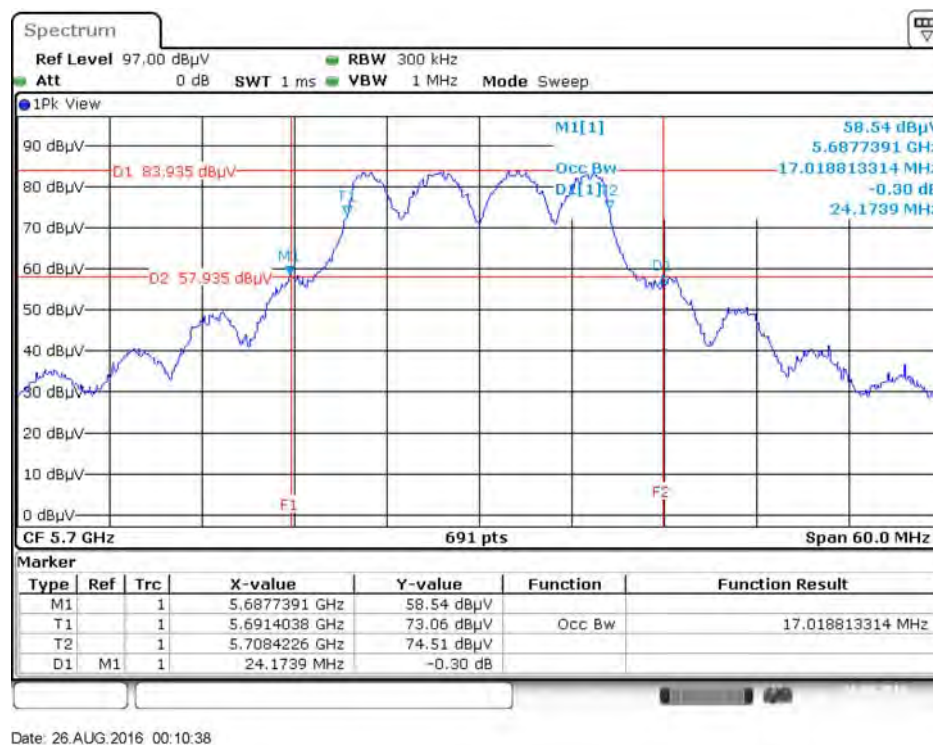


Date: 26.AUG.2016 00:06:18

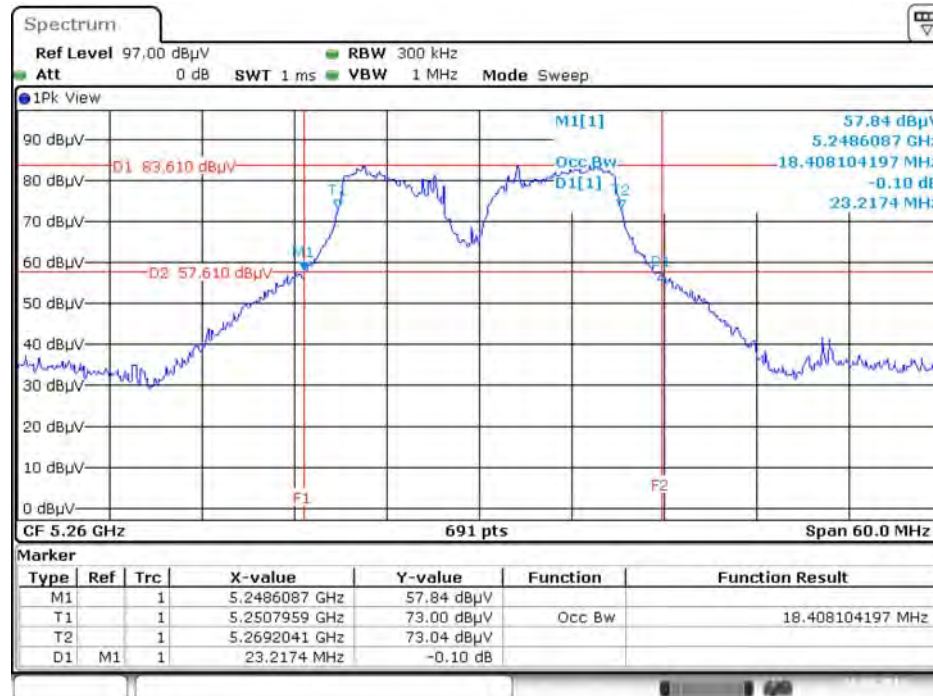
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 9 + Chain 10 / 5580 MHz



26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 9 + Chain 10 / 5700 MHz

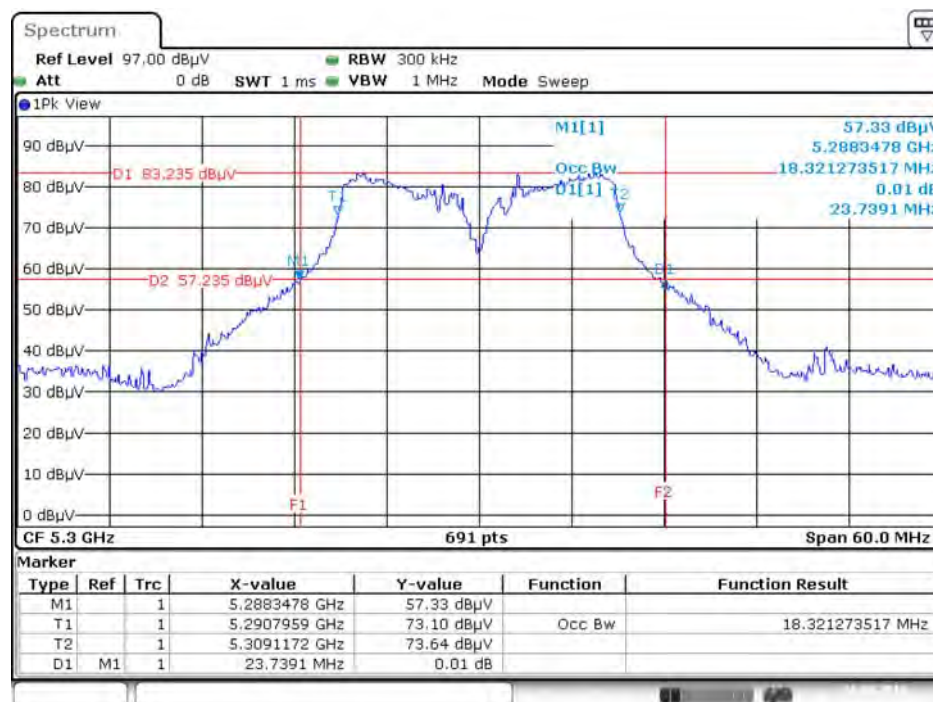


26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 9 + Chain 10 / 5260 MHz



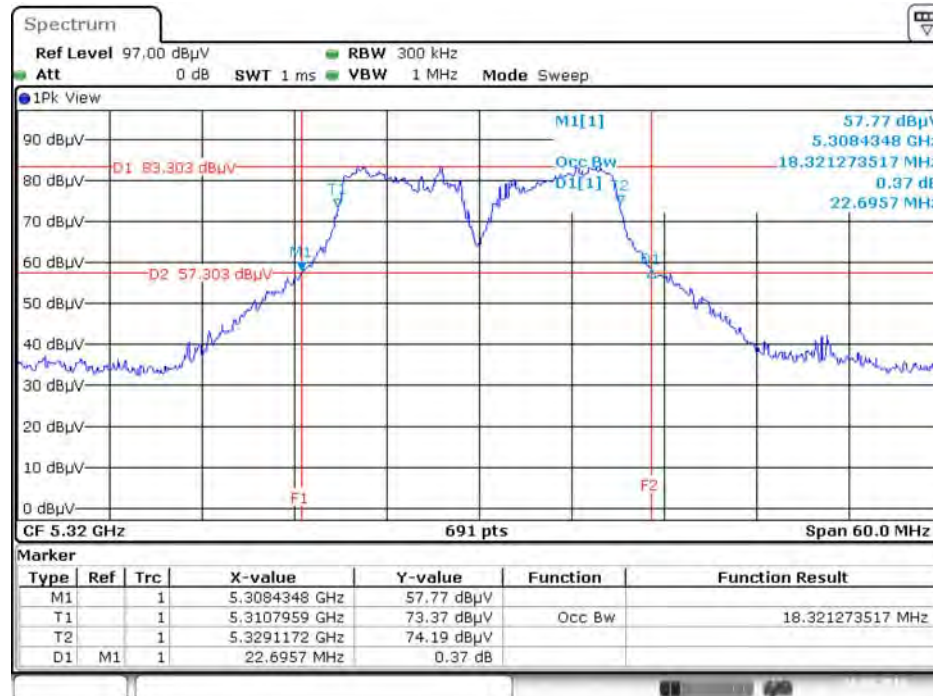
Date: 26.AUG.2016 00:12:52

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 9 + Chain 10 / 5300 MHz



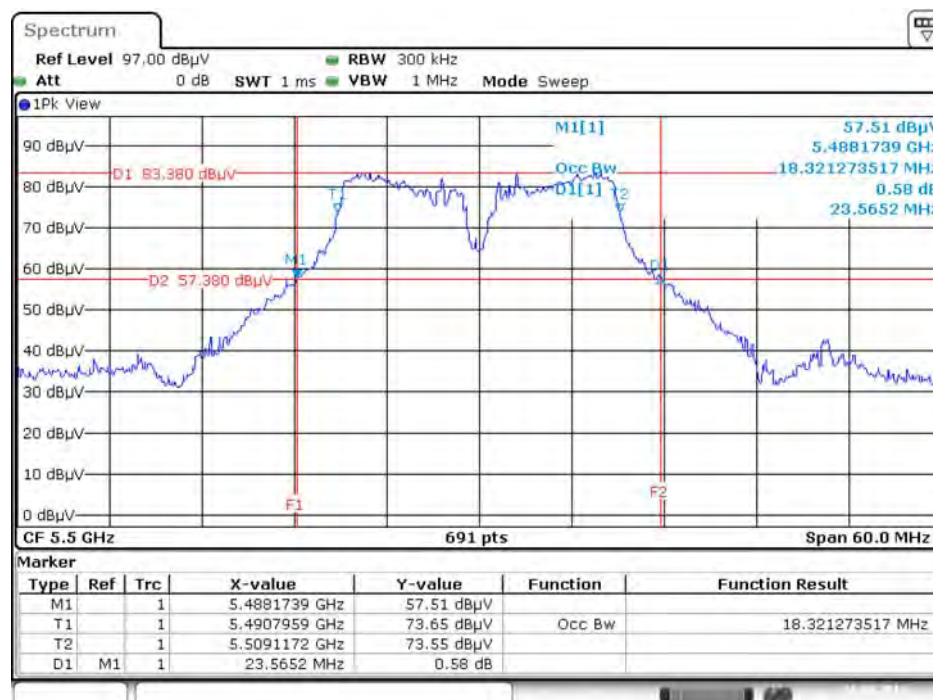
Date: 26.AUG.2016 00:14:49

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 9 + Chain 10 / 5320 MHz



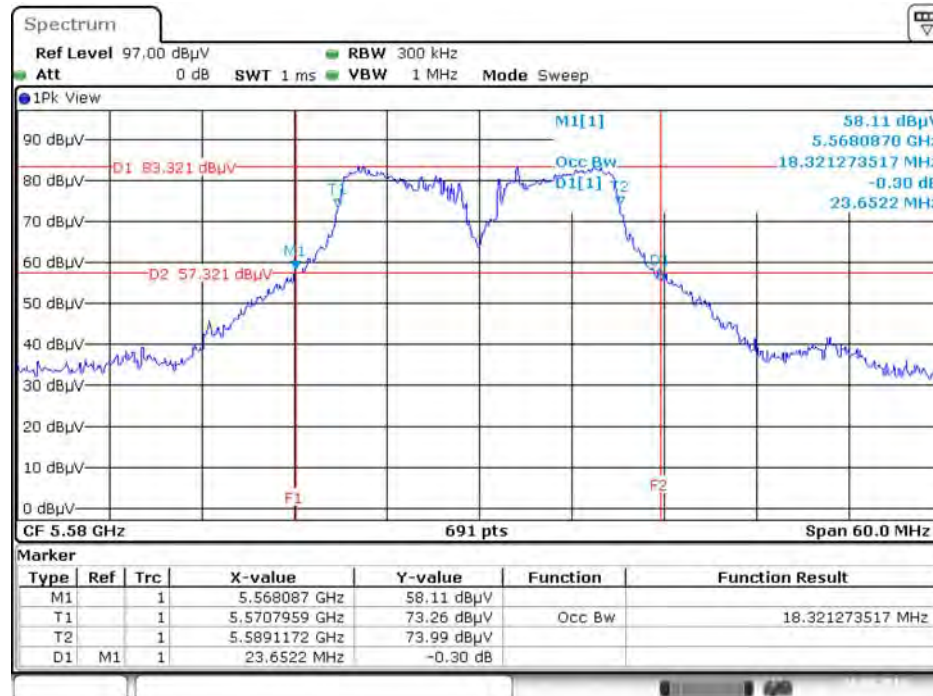
Date: 26.AUG.2016 00:16:16

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 9 + Chain 10 / 5500 MHz



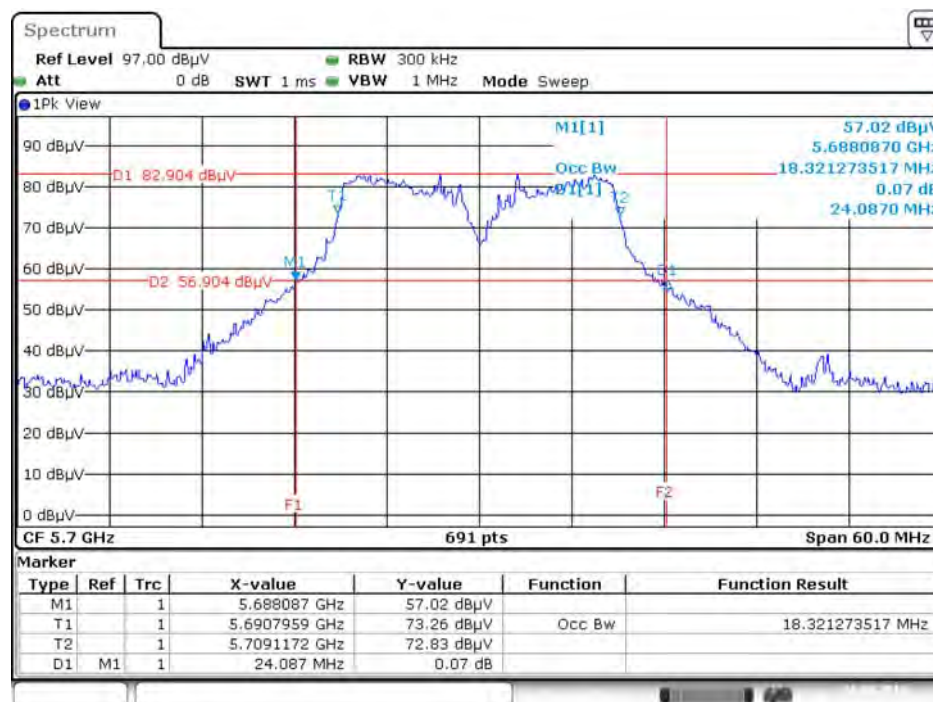
Date: 26.AUG.2016 00:18:05

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 9 + Chain 10 / 5580 MHz



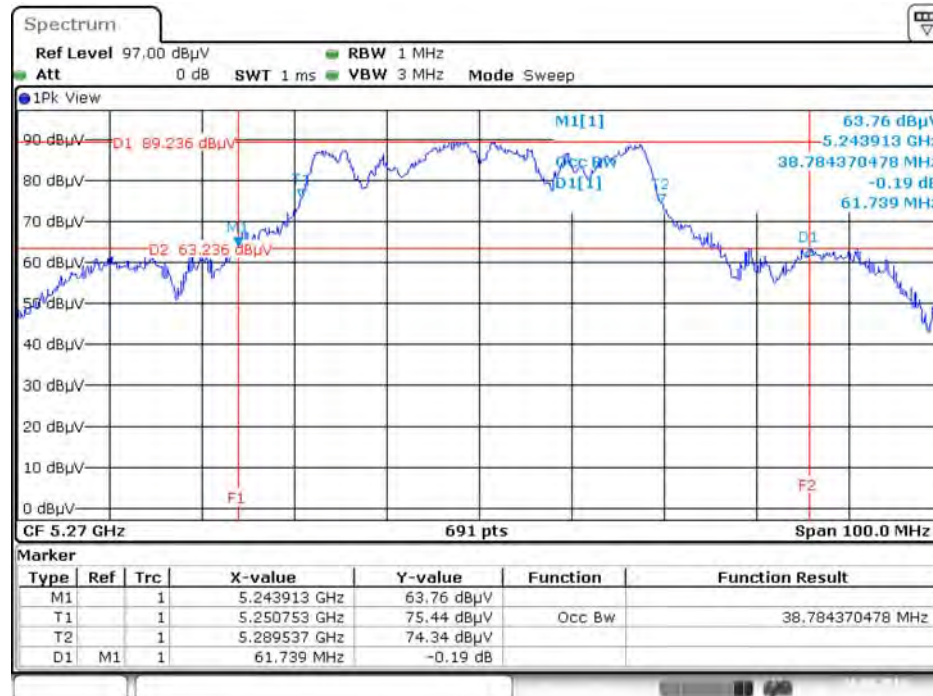
Date: 26.AUG.2016 00:20:08

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 9 + Chain 10 / 5700 MHz



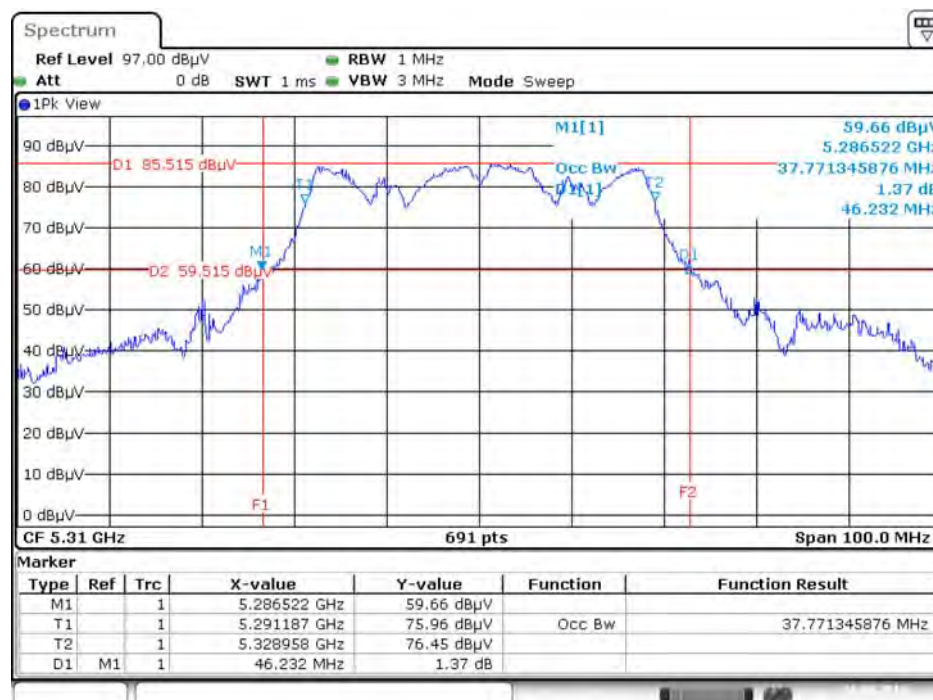
Date: 26.AUG.2016 00:21:43

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 9 + Chain 10 / 5270 MHz



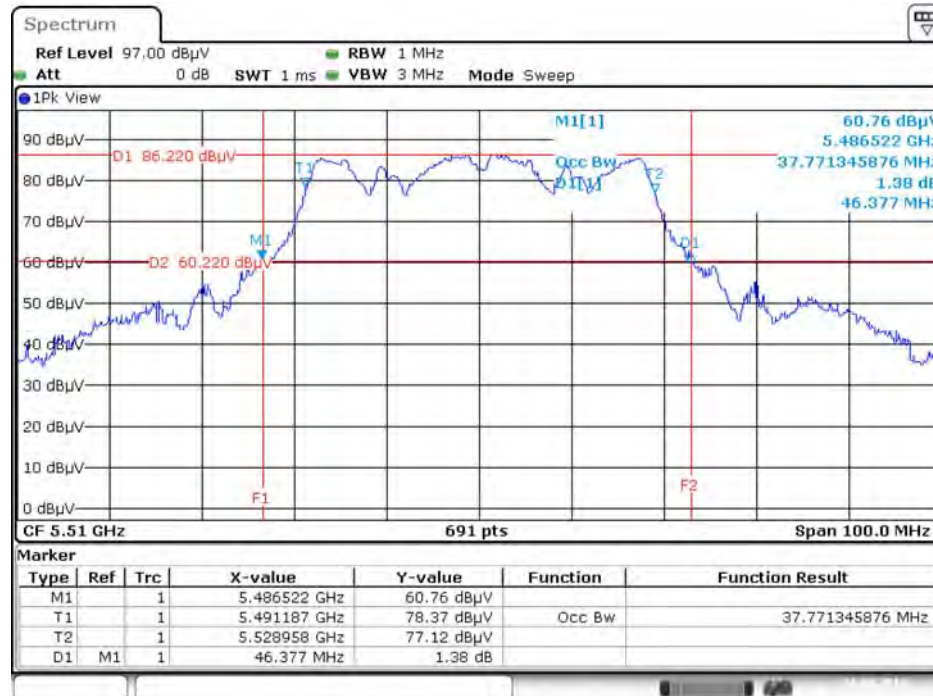
Date: 26.AUG.2016 00:24:21

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 9 + Chain 10 / 5310 MHz

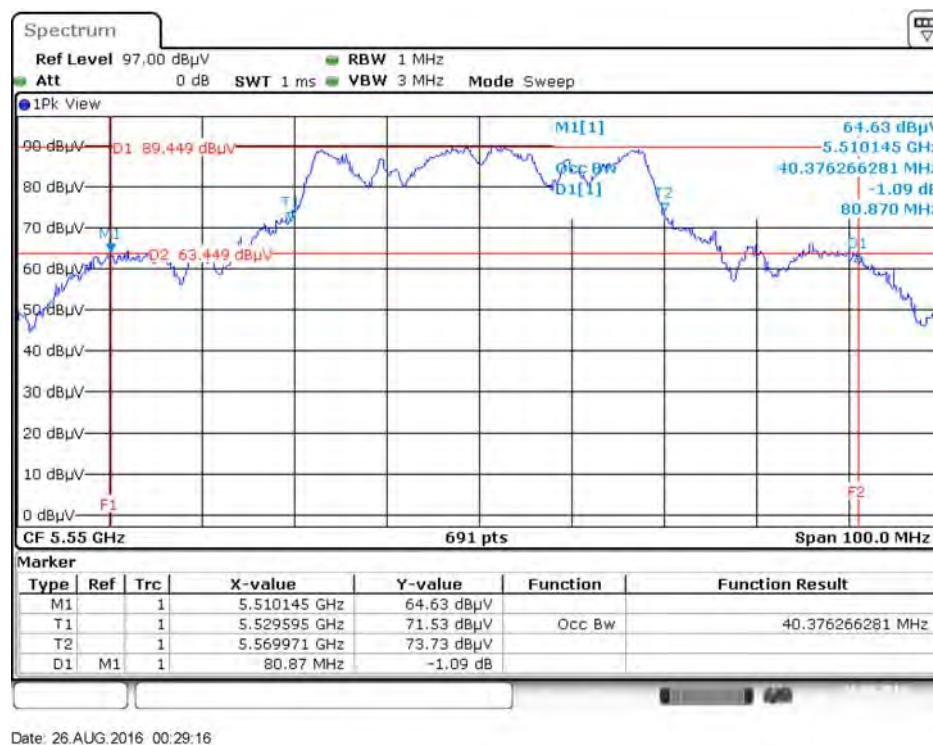


Date: 26.AUG.2016 00:26:00

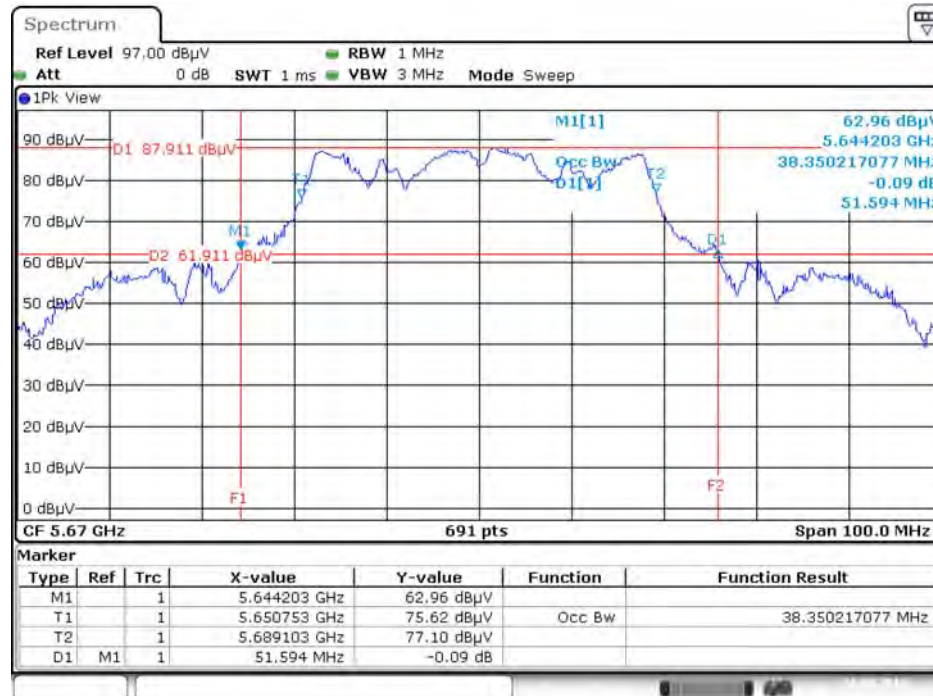
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 9 + Chain 10 / 5510 MHz



26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 9 + Chain 10 / 5550 MHz

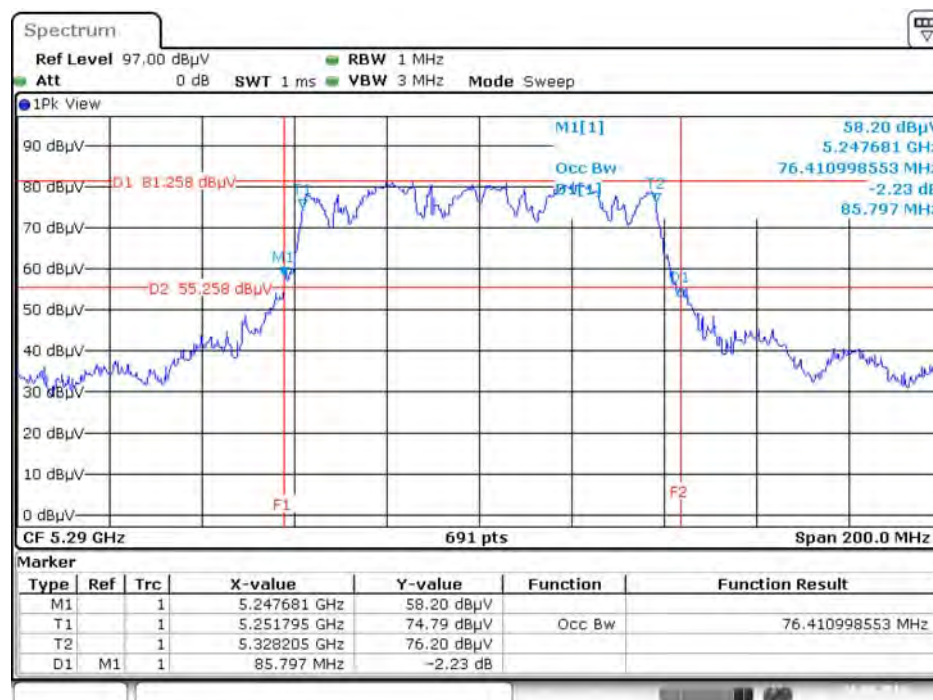


26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 9 + Chain 10 / 5670 MHz



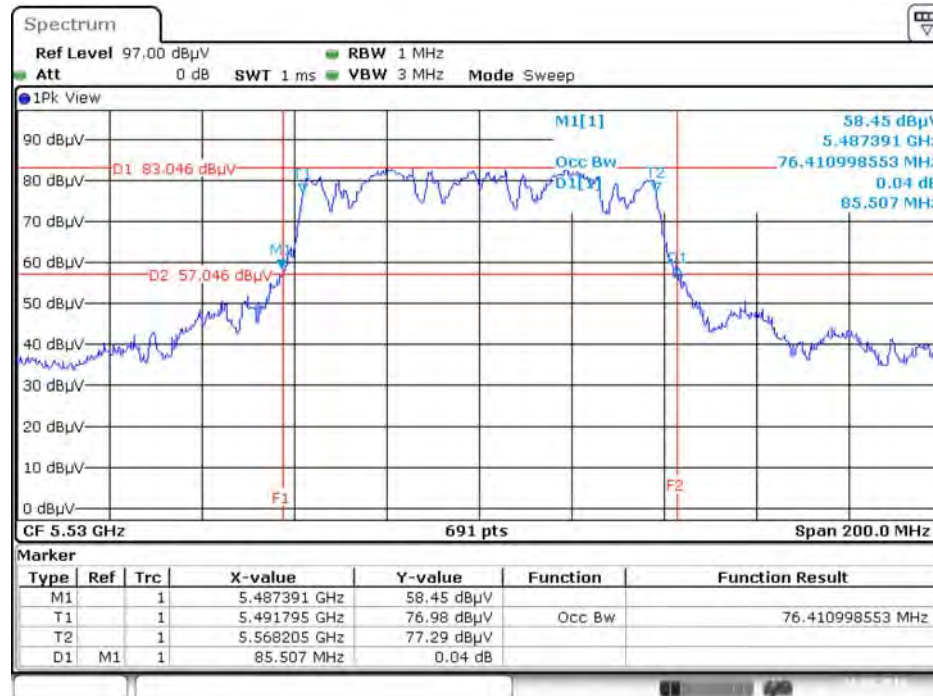
Date: 26.AUG.2016 00:31:10

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 9 + Chain 10 / 5290 MHz



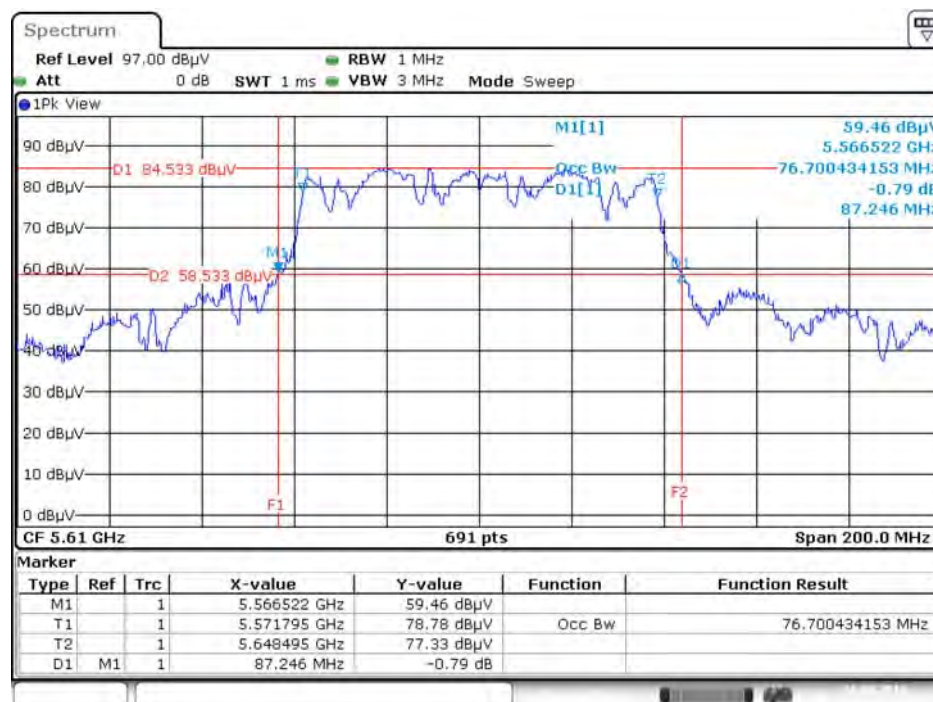
Date: 26.AUG.2016 00:33:27

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 9 + Chain 10 / 5530 MHz



Date: 26.AUG.2016 00:35:55

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 9 + Chain 10 / 5610 MHz



Date: 26.AUG.2016 00:38:29

4.2. 6dB Spectrum Bandwidth Measurement

4.2.1. Limit

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

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 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

4.2.3. 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 v01r04 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.

4.2.4. Test Setup Layout

For Radiated 6dB Bandwidth Measurement:

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

4.2.5. Test Deviation

There is no deviation with the original standard.

4.2.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.2.7. Test Result of 6dB Spectrum Bandwidth

Temperature	24°C	Humidity	60%
Test Engineer	Clemens Fang		

For radio 2

<For Non-Beamforming Mode>

Straddle Channel

Mode	Frequency	6dB BW (MHz)	6dB BW M1 (MHz)	UNII 3 BW (MHz)	Min. Limit (kHz)	Test Result
802.11a	5720 MHz	15.71	5711.83	2.54	500	Complies
802.11ac MCS0/Nss1 VHT20	5720 MHz	16.00	5711.19	2.19	500	Complies
802.11ac MCS0/Nss1 VHT40	5710 MHz	36.29	5691.91	3.20	500	Complies
802.11ac MCS0/Nss1 VHT80	5690 MHz	75.65	5652.61	3.26	500	Complies

802.11ac MCS0/Nss2 VHT80+80

Type	Frequency	6dB BW (MHz)	6dB BW M1 (MHz)	UNII 3 BW (MHz)	Min. Limit (kHz)	6dB Total BW (MHz)	Test Result
3	5210 MHz	-					
	5690 MHz	75.94	5651.74	2.68	500	-	Complies
6	5290 MHz	-					
	5690 MHz	75.94	5651.74	2.68	500	-	Complies
7	5290 MHz	-					
	5775 MHz	73.33	-	-	500	-	Complies
8	5530 MHz	-					
	5690 MHz	72.75	5654.93	2.68	500	-	Complies
9	5530 MHz	-					
	5775 MHz	74.20	-	-	500	-	Complies
10	5610 MHz	-					
	5775 MHz	74.20	-	-	500	-	Complies
11	5690 MHz	75.94	5652.32	3.26	500	77.75	Complies
	5775 MHz	74.49	-	-	500		Complies

<For Beamforming Mode>

Straddle Channel

Mode	Frequency	6dB BW (MHz)	6dB BW M1 (MHz)	UNII 3 BW (MHz)	Min. Limit (kHz)	Test Result
802.11ac MCS0/Nss1 VHT20	5720 MHz	17.68	5711.13	3.81	500	Complies
802.11ac MCS0/Nss1 VHT40	5710 MHz	36.41	5691.91	3.32	500	Complies
802.11ac MCS0/Nss1 VHT80	5690 MHz	76.52	5651.74	3.26	500	Complies

802.11ac MCS0/Nss2 VHT80+80

Type	Frequency	6dB BW (MHz)	6dB BW M1 (MHz)	UNII 3 BW (MHz)	Min. Limit (kHz)	6dB Total BW (MHz)	Test Result
3	5210 MHz	-					
	5690 MHz	75.94	5652.03	2.97	500	-	Complies
6	5290 MHz	-					
	5690 MHz	76.23	5652.03	3.26	500	-	Complies
7	5290 MHz	-					
	5775 MHz	76.52	-	-	500	-	Complies
8	5530 MHz	-					
	5690 MHz	75.65	5652.32	2.97	500	-	Complies
9	5530 MHz	-					
	5775 MHz	76.52	-	-	500	-	Complies
10	5610 MHz	-					
	5775 MHz	76.23	-	-	500	-	Complies
11	5690 MHz	75.94	5652.03	2.97	500	78.91	Complies
	5775 MHz	75.94	-	-	500		Complies

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

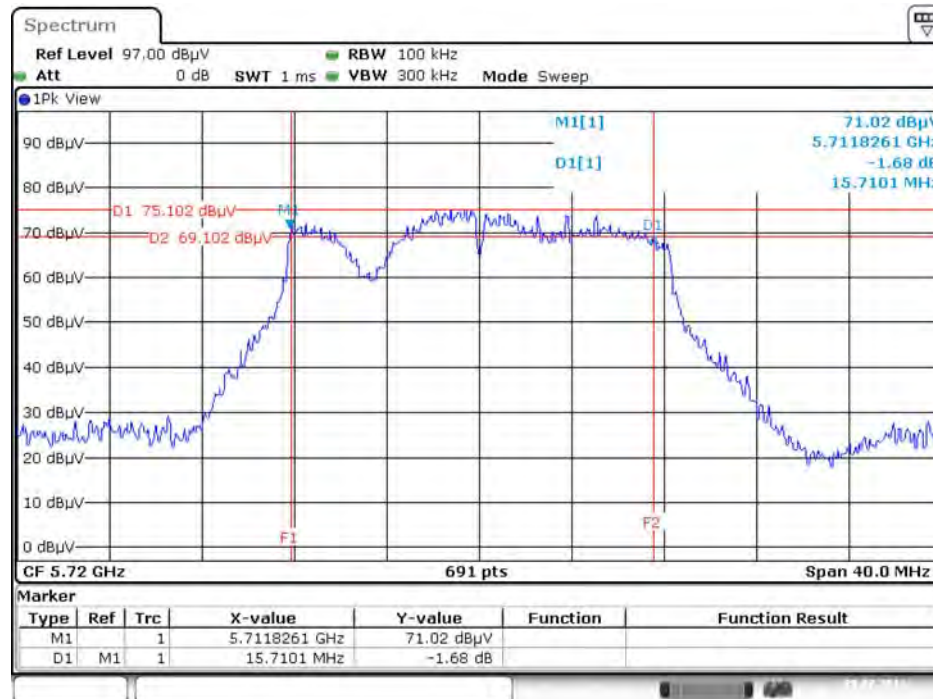
For plots, only the channel with worse result was shown.

For radio 2

<For Non-Beamforming Mode>

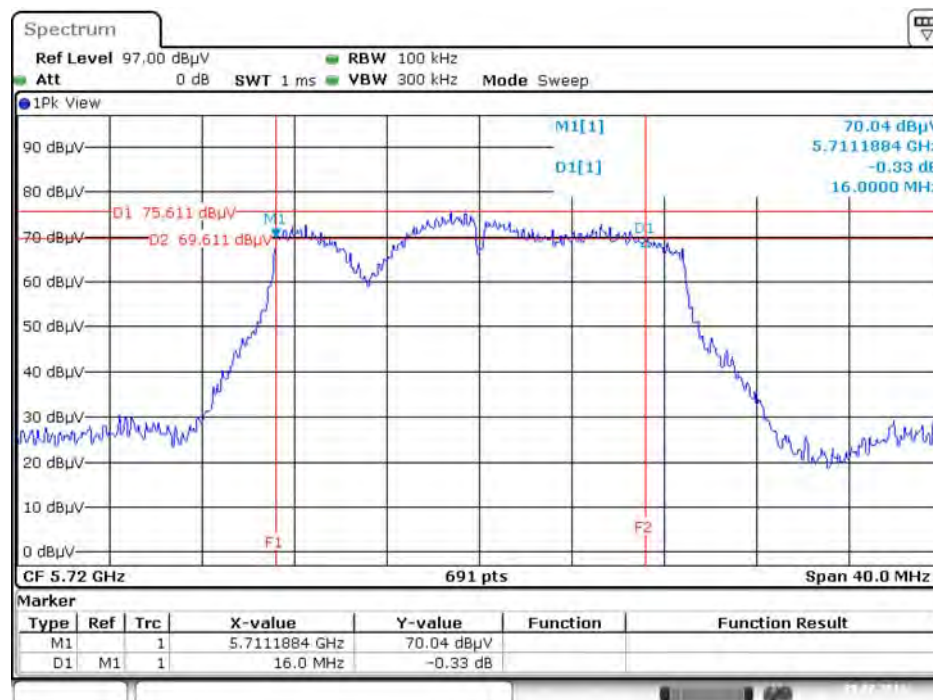
Straddle Channel

6 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5720 MHz



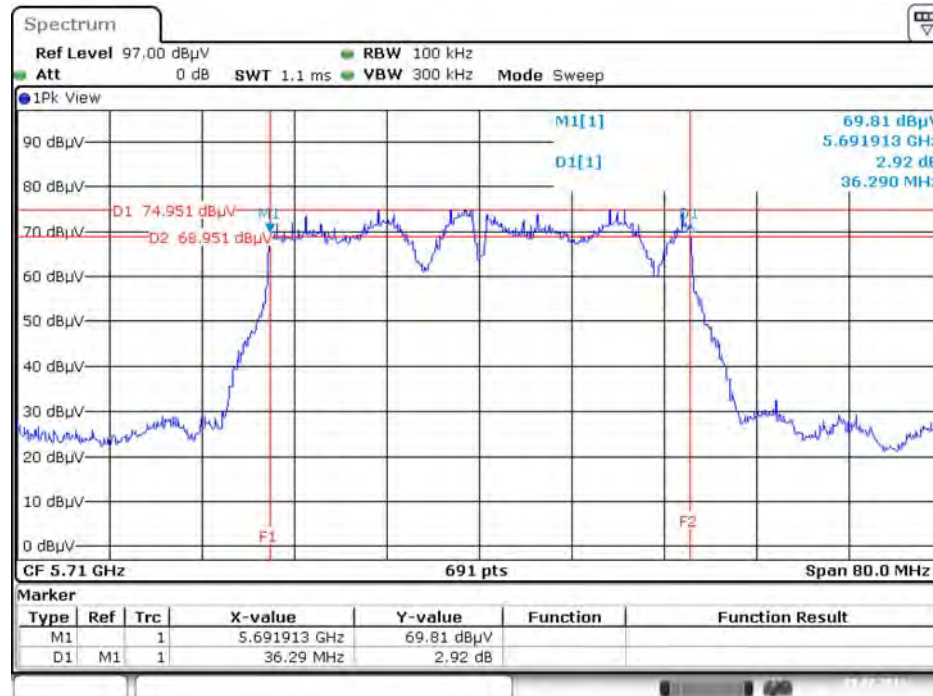
Date: 29 JUL 2016 22:58:55

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5720 MHz



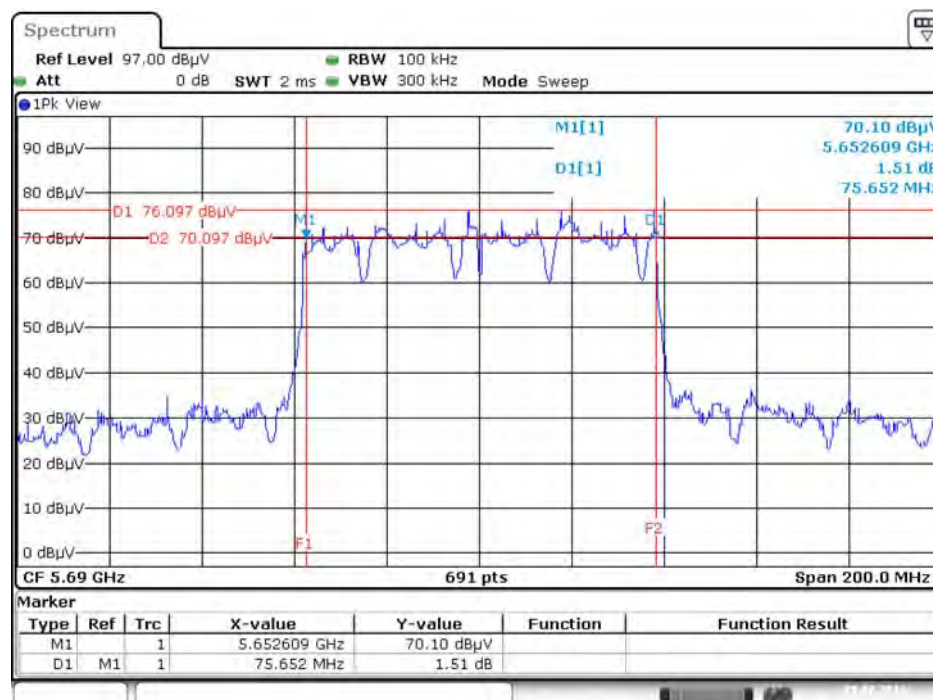
Date: 29 JUL 2016 23:01:14

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5710 MHz



Date: 29 JUL 2016 23:02:07

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5690 MHz

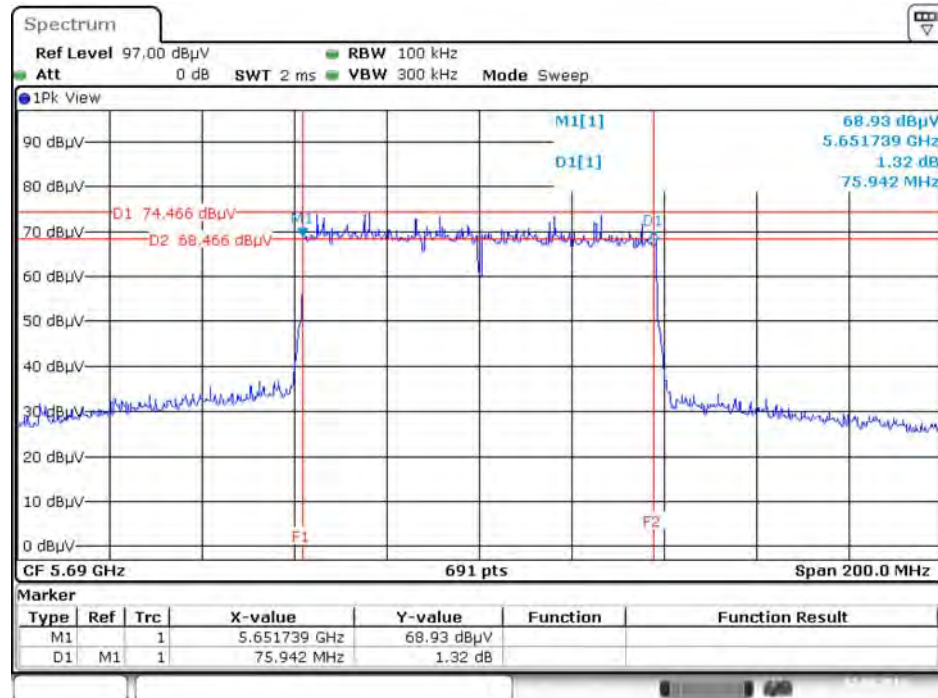


Date: 29 JUL 2016 23:03:06

802.11ac MCS0/Nss2 VHT80+80

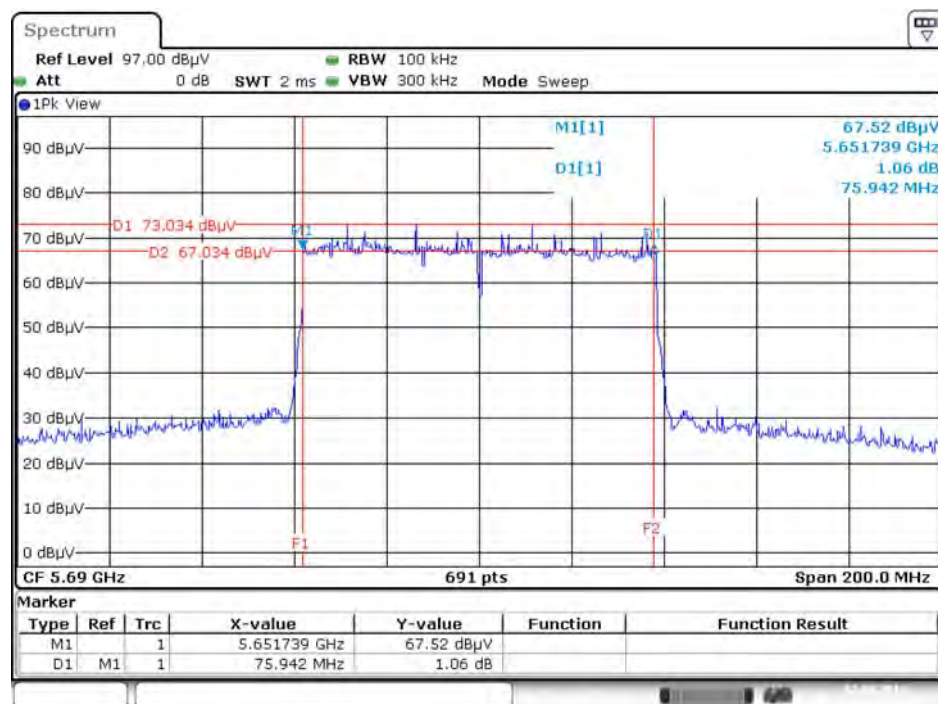
Type 3

6 dB Bandwidth Plot on Chain 5 + Chain 8 / 5690 MHz



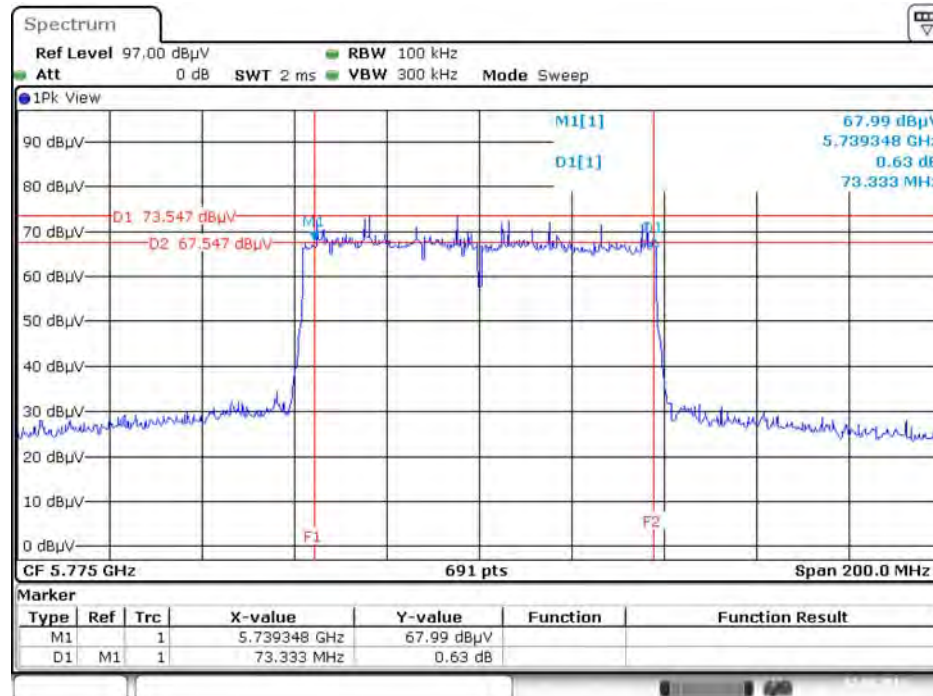
Type 6

6 dB Bandwidth Plot on Chain 5 + Chain 8 / 5690 MHz



Type 7

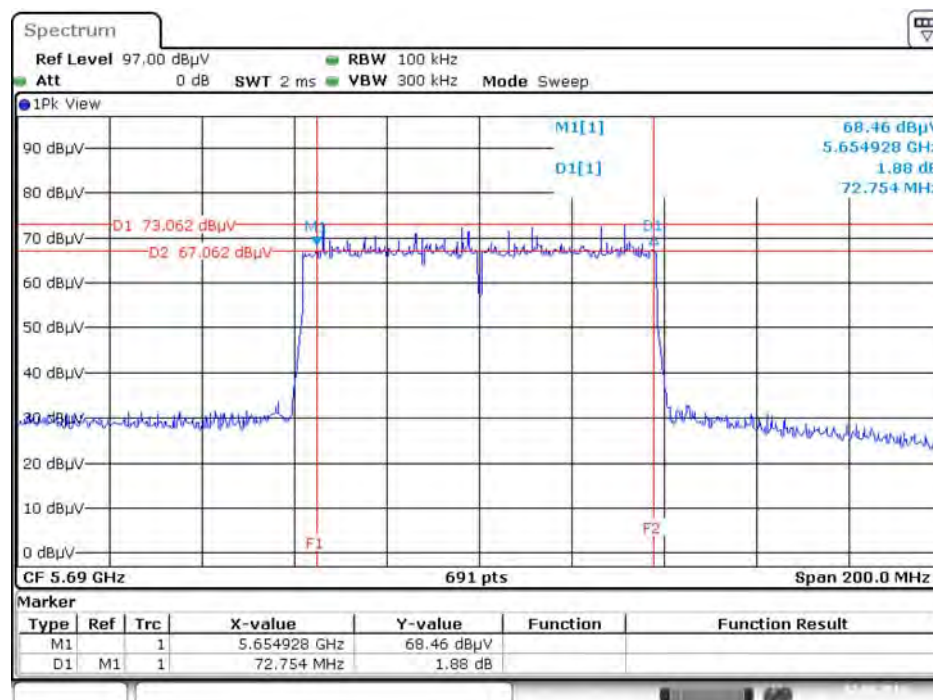
6 dB Bandwidth Plot on Chain 5 + Chain 8 / 5775 MHz



Date: 2.AUG.2016 03:47:47

Type 8

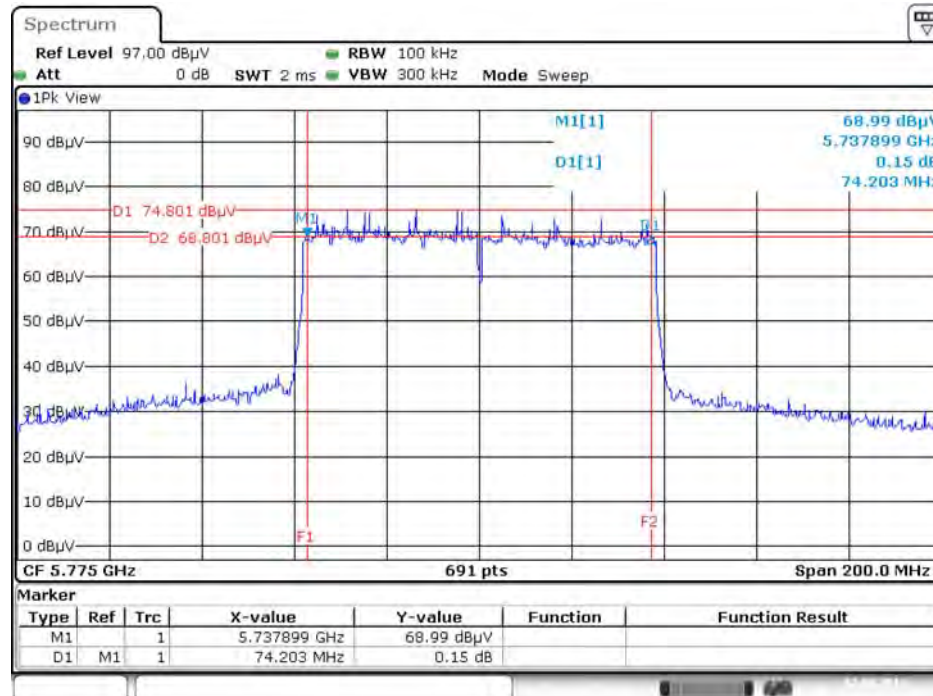
6 dB Bandwidth Plot on Chain 5 + Chain 8 / 5690 MHz



Date: 2.AUG.2016 03:49:43

Type 9

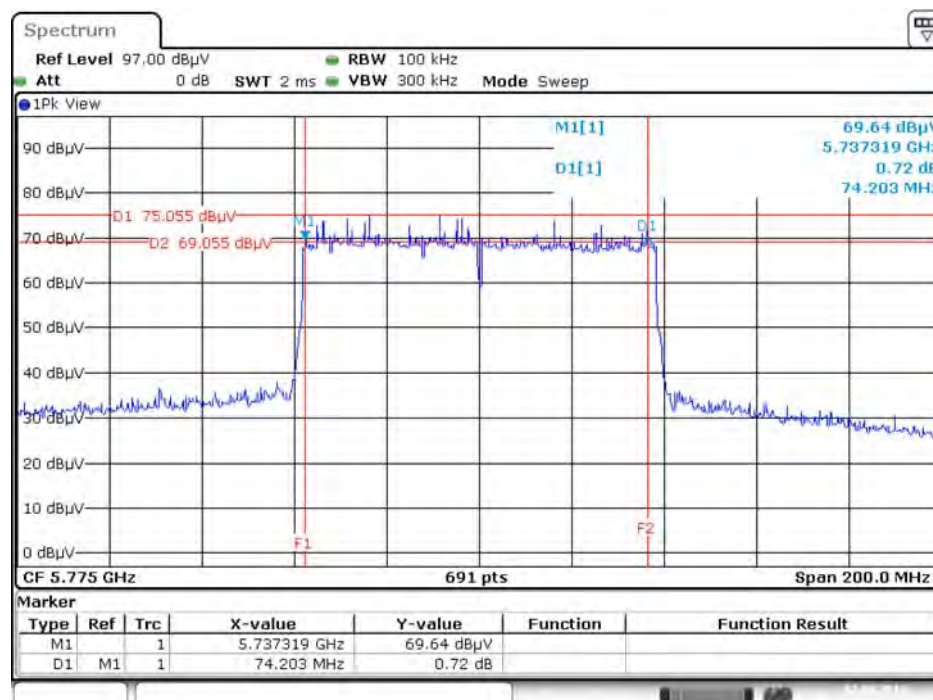
6 dB Bandwidth Plot on Chain 5+ Chain 8 / 5775 MHz



Date: 2.AUG.2016 03:50:29

Type 10

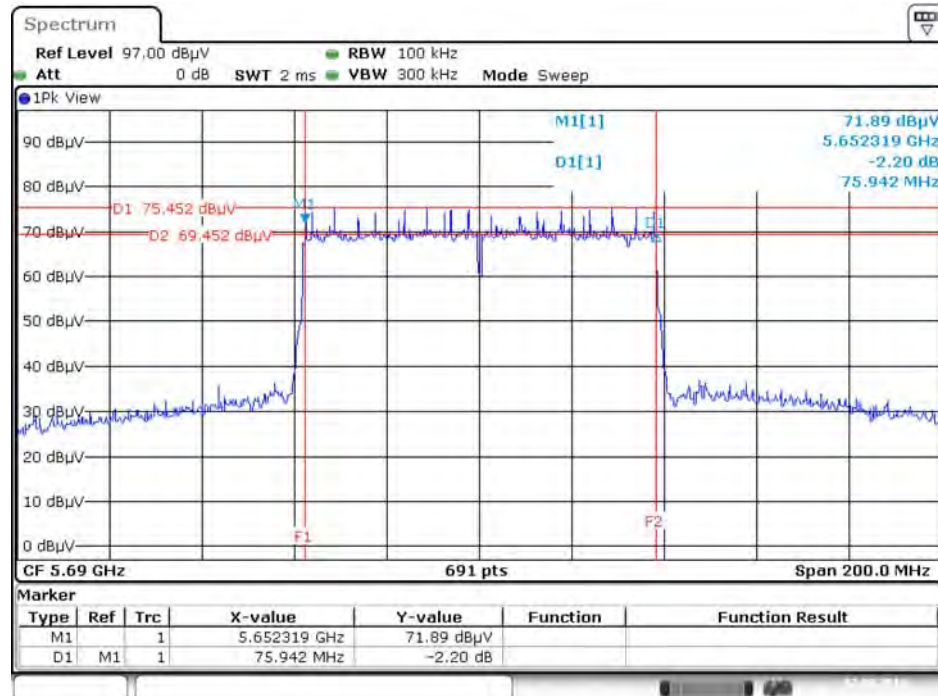
6 dB Bandwidth Plot on Chain 5 + Chain 8 / 5775 MHz



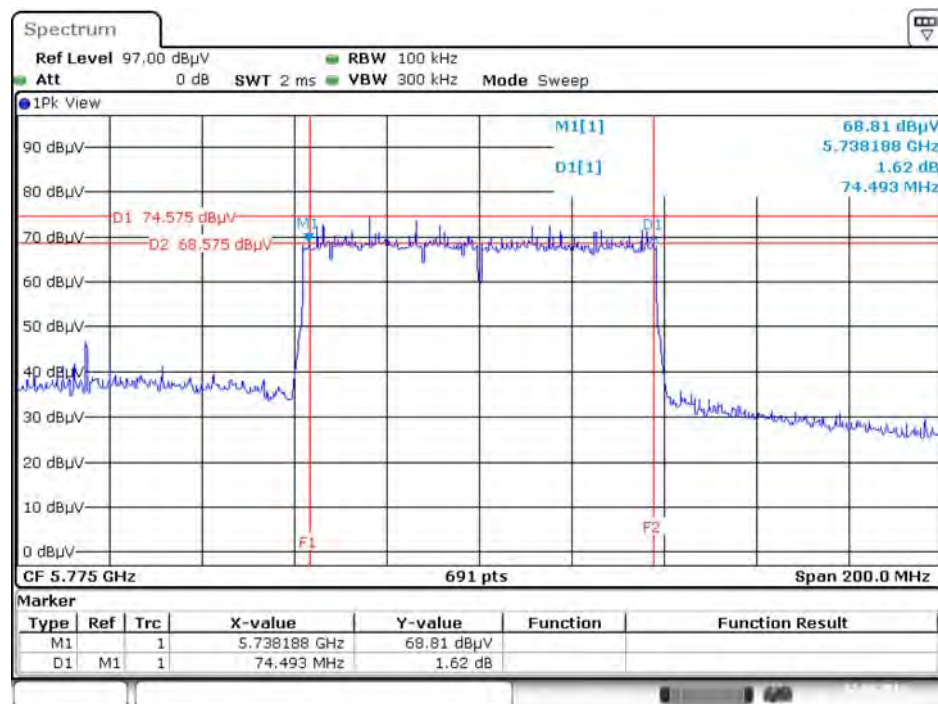
Date: 2.AUG.2016 03:51:48

Type 11

6 dB Bandwidth Plot on Chain 6 + Chain 7 / 5690 MHz



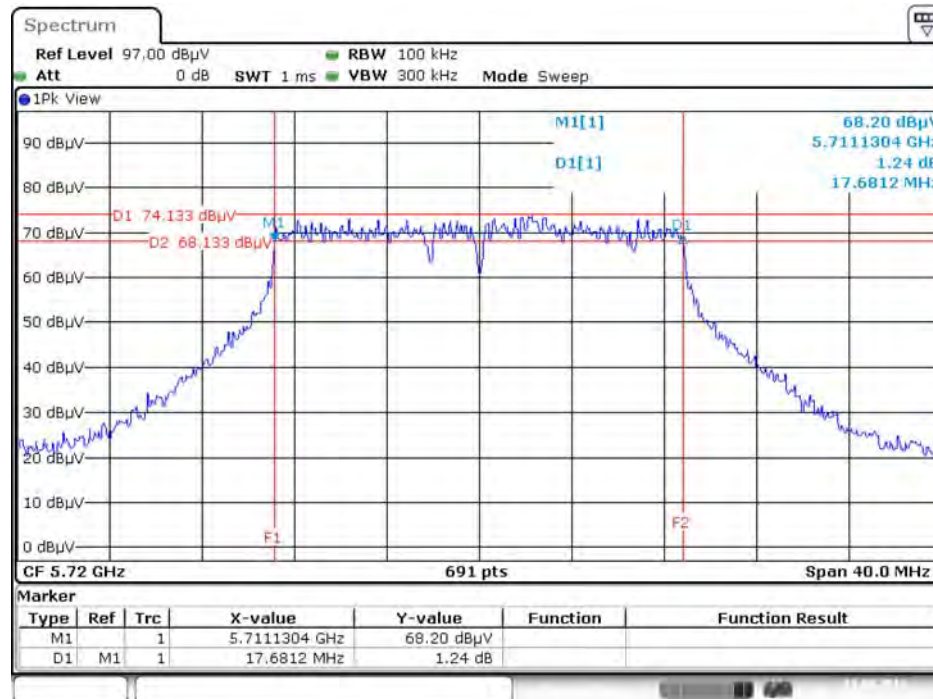
6 dB Bandwidth Plot on Chain 5 + Chain 8 / 5775 MHz



<For Beamforming Mode>

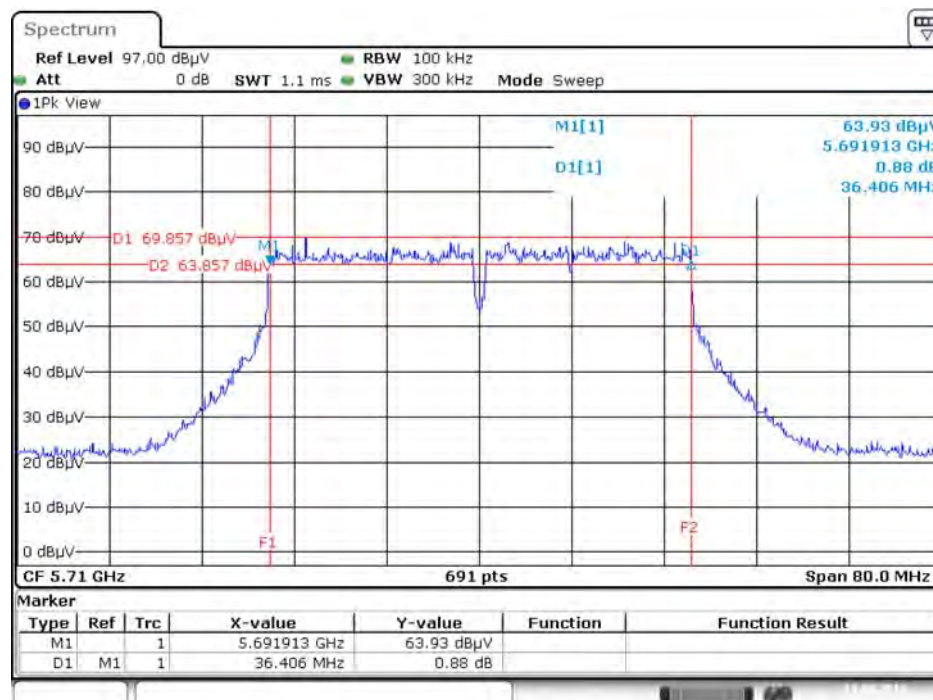
Straddle Channel

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5720 MHz



Date: 11.AUG.2016 20:51:03

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5710 MHz



Date: 11.AUG.2016 20:53:28



Spectrum

Ref Level 97.00 dBμV RBW 100 kHz
Att 0 dB SWT 2 ms VBW 300 kHz Mode Sweep

1Pk View

The plot shows a signal spectrum with a peak at 5.69 GHz. The y-axis represents power in dBμV, ranging from 0 to 90. The x-axis represents frequency in GHz, ranging from 5.68 to 5.70. Two markers are present: M1 at 5.651739 GHz (62.01 dBμV) and D1 at 5.651739 GHz (2.15 dB). Two frequency markers are also present: F1 at 5.6856 GHz and F2 at 5.7522 GHz. The signal is centered around 5.69 GHz, with a span of 200.0 MHz.

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

M1[1] 62.01 dBμV
D1[1] 2.15 dB

D1 67.856 dBμV
D2 61.856 dBμV

F1 F2

CF 5.69 GHz 691 pts Span 200.0 MHz

Marker

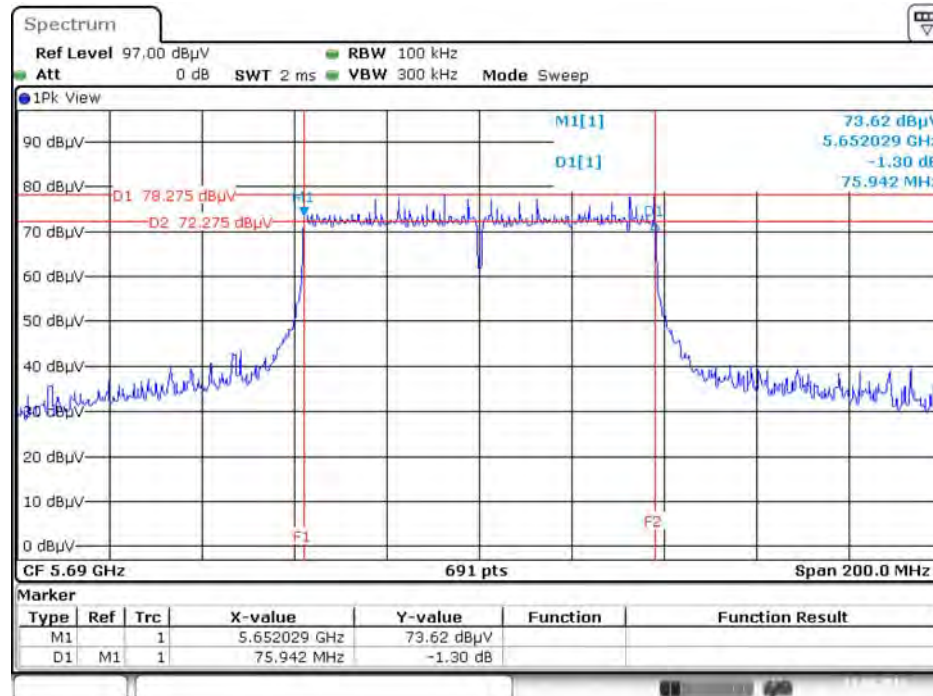
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.651739 GHz	62.01 dBμV		
D1	M1	1	76.522 MHz	2.15 dB		

Issued Date : May 18, 2017

802.11ac MCS0/Nss2 VHT80+80

Type 3

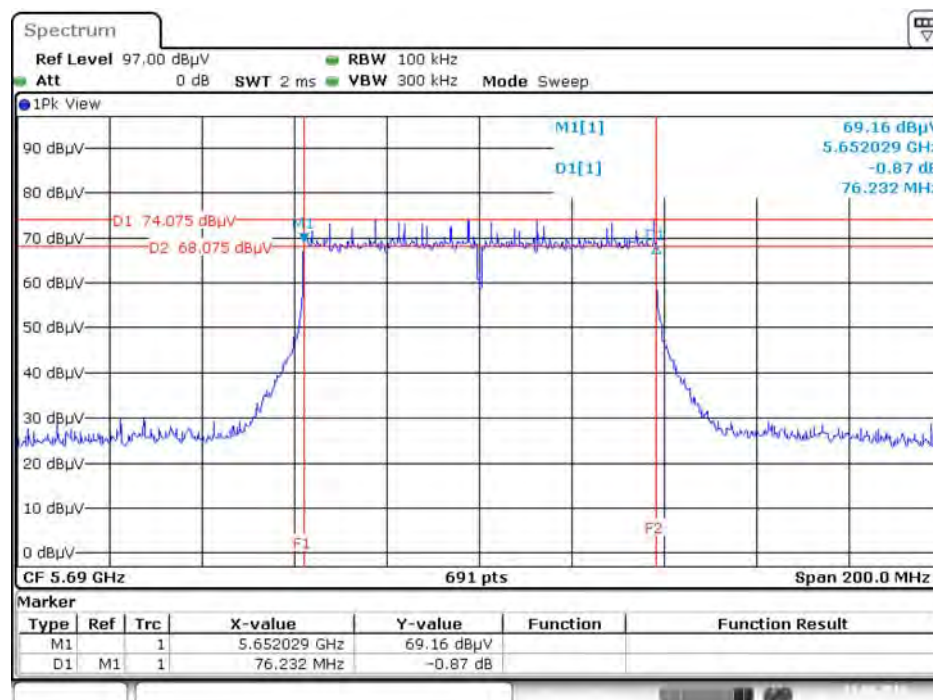
6 dB Bandwidth Plot on Chain 5 + Chain 8 / 5690 MHz



Date: 11.AUG.2016 17:29:51

Type 6

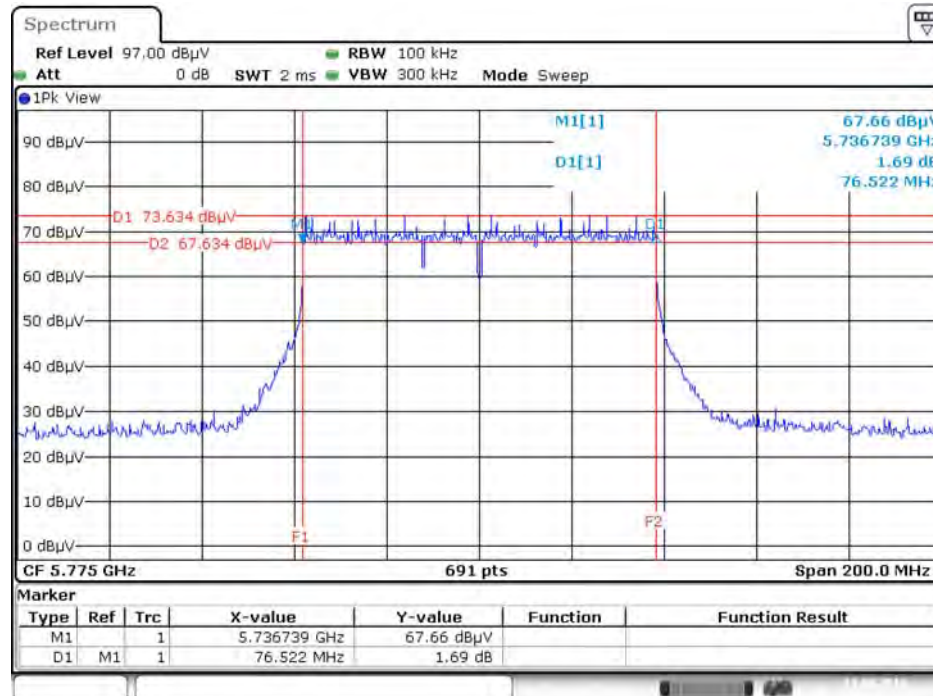
6 dB Bandwidth Plot on Chain 5 + Chain 8 / 5690 MHz



Date: 11.AUG.2016 17:31:21

Type 7

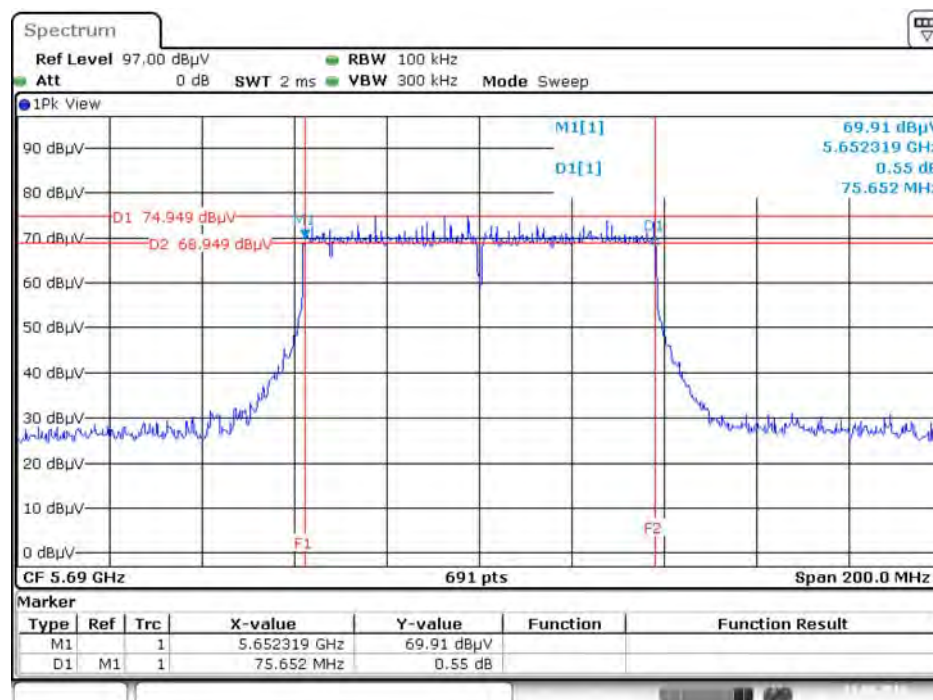
6 dB Bandwidth Plot on Chain 5 + Chain 8 / 5775 MHz



Date: 11.AUG.2016 17:37:06

Type 8

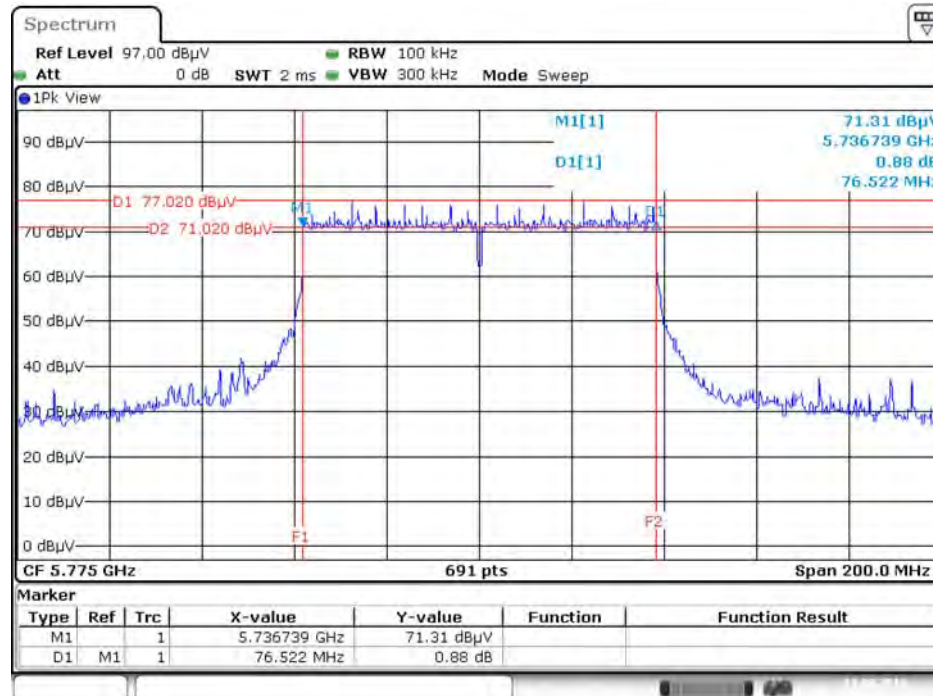
6 dB Bandwidth Plot on Chain 5 + Chain 8 / 5690 MHz



Date: 11.AUG.2016 17:32:18

Type 9

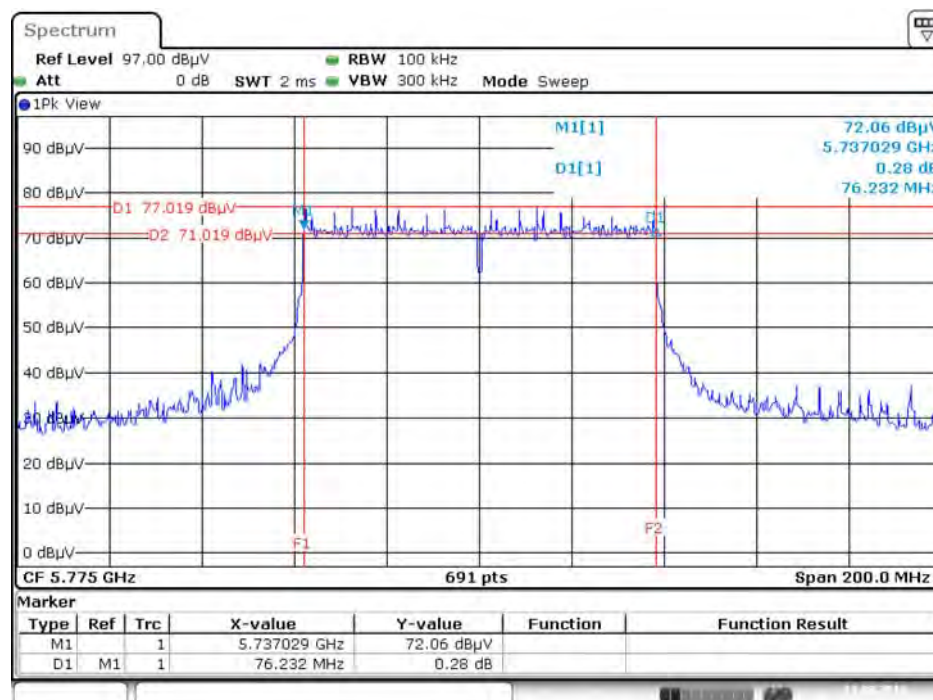
6 dB Bandwidth Plot on Chain 5+ Chain 8 / 5775 MHz



Date: 11.AUG.2016 17:37:44

Type 10

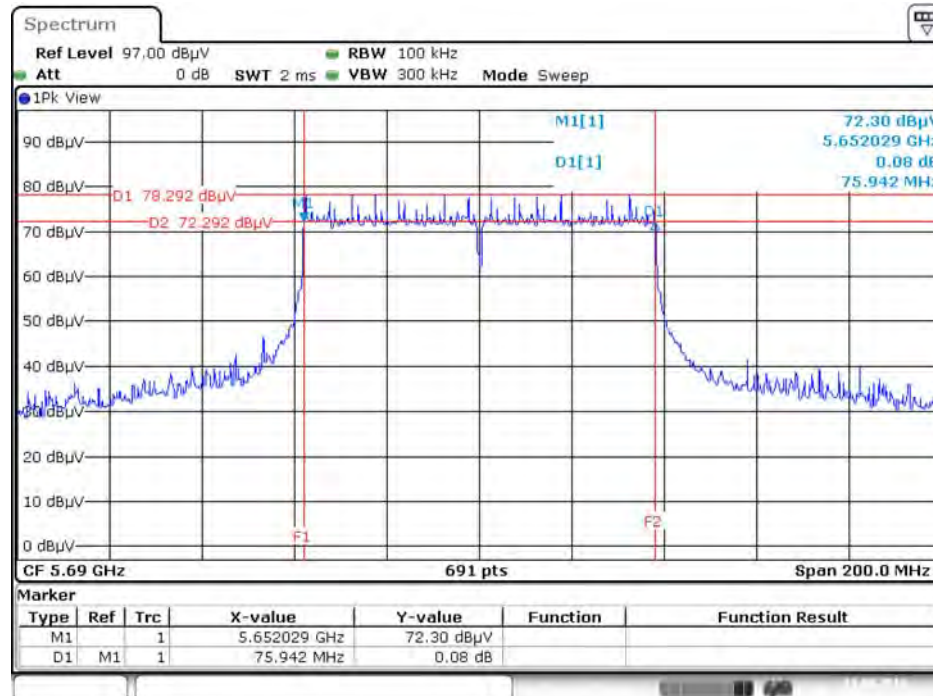
6 dB Bandwidth Plot on Chain 5 + Chain 8 / 5775 MHz



Date: 11.AUG.2016 17:38:22

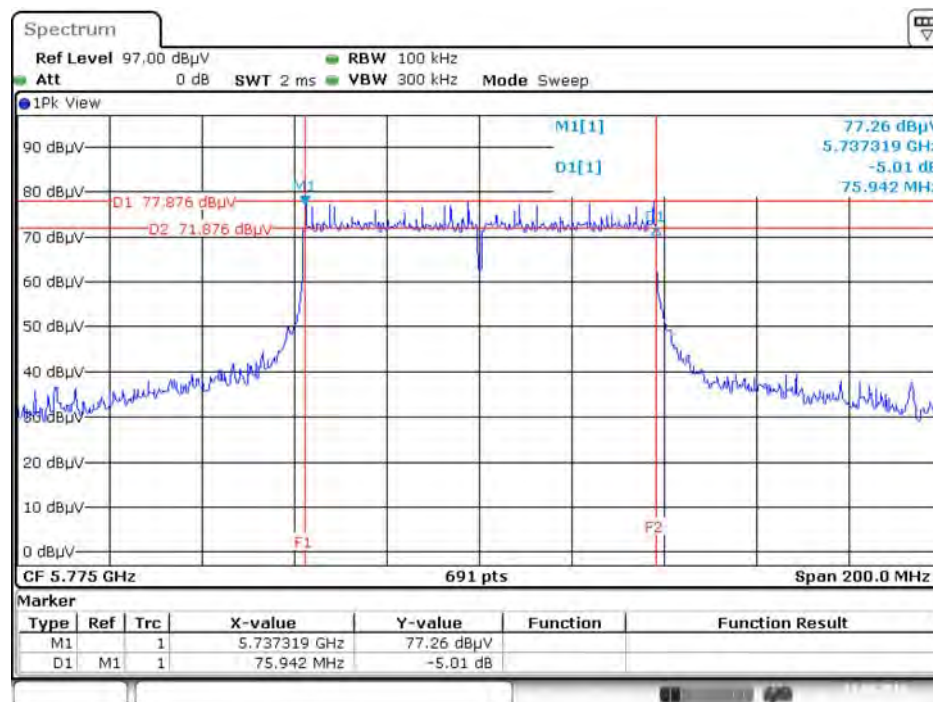
Type 11

6 dB Bandwidth Plot on Chain 6 + Chain 7 / 5690 MHz



Date: 11.AUG.2016 17:33:08

6 dB Bandwidth Plot on Chain 5 + Chain 8 / 5775 MHz



Date: 11.AUG.2016 17:34:25

4.3. Maximum Conducted Output Power Measurement

4.3.1. 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.
	☐ 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.

☒	5.25-5.35 GHz	The maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW (24dBm) or 11 dBm 10 log B, where B is the 26 dB emission bandwidth in megahertz. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
☒	5.470-5.725 GHz	
☒	5.725~5.85 GHz	The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm). If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power.

4.3.2. Measuring Instruments and Setting

For other channel:

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

For straddle channel:

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 count 100
Sweep Time	Auto

4.3.3. Test Procedures

For other channel:

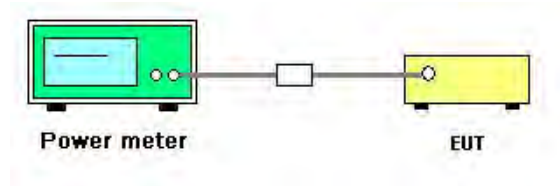
1. The transmitter output (antenna port) was connected to the power meter.
2. Test was performed in accordance with KDB789033 D02 v01r04 for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - section (E) Maximum conducted output power =>3. Measurement using a Power 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.

For straddle channel:

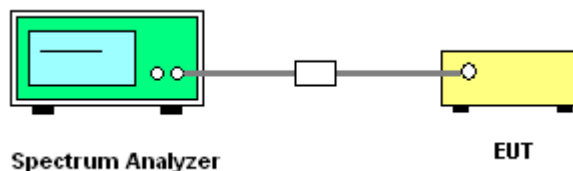
1. The transmitter output (antenna port) was connected to the spectrum analyzer.

4.3.4. Test Setup Layout

For other channel:



For straddle channel:



4.3.5. Test Deviation

There is no deviation with the original standard.

4.3.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.3.7. Test Result of Maximum Conducted Output Power

Temperature	24°C	Humidity	60%
Test Engineer	Clemens Fang	Test Date	May 03, 2016 ~ Aug. 20, 2016

Radio 2

<For Non-beamforming Mode>

Mode	Frequency	Conducted Power (dBm)					Max. Limit (dBm)	Result
		Chain 5	Chain 6	Chain 7	Chain 8	Total		
802.11a	5260 MHz	12.78	12.10	12.45	12.72	18.54	23.66	Complies
	5300 MHz	12.63	11.84	12.33	12.29	18.30	23.70	Complies
	5320 MHz	12.92	11.71	12.31	12.52	18.41	23.64	Complies
	5500 MHz	12.34	11.96	12.36	12.85	18.41	23.78	Complies
	5580 MHz	12.41	11.55	12.32	12.53	18.24	23.76	Complies
	5700 MHz	12.65	11.72	12.25	12.44	18.30	23.76	Complies
802.11ac MCS0/Nss1 VHT20	5260 MHz	12.52	11.98	12.31	12.66	18.40	23.90	Complies
	5300 MHz	12.42	11.73	12.05	12.28	18.15	23.91	Complies
	5320 MHz	12.73	11.51	12.13	12.36	18.23	23.88	Complies
	5500 MHz	12.01	11.72	12.17	12.69	18.18	23.98	Complies
	5580 MHz	12.29	11.43	12.21	12.36	18.11	23.98	Complies
	5700 MHz	12.49	11.63	12.31	12.41	18.24	23.97	Complies
802.11ac MCS0/Nss1 VHT40	5270 MHz	15.76	15.13	15.36	15.64	21.50	23.98	Complies
	5310 MHz	15.37	14.76	15.06	15.14	21.11	23.98	Complies
	5510 MHz	15.29	14.72	15.34	15.73	21.31	23.98	Complies
	5550 MHz	15.79	14.71	15.37	15.76	21.45	23.98	Complies
	5670 MHz	15.39	14.53	15.25	15.16	21.12	23.98	Complies
802.11ac MCS0/Nss1 VHT80	5290 MHz	13.92	13.21	13.34	13.58	19.54	23.98	Complies
	5530 MHz	15.41	14.52	15.38	15.79	21.32	23.98	Complies
	5610 MHz	18.08	17.20	17.62	17.61	23.66	23.98	Complies

Note:

For 802.11a:

5260 MHz Power limit= 23.98dBm or $11 + 10\log(B)$; $11 + 10\log(18.44) = 23.66\text{dBm} < 23.98\text{dBm}$, so power limit=23.66dBm.

5300 MHz Power limit=23.98dBm or $11 + 10\log(B)$; $11 + 10\log(18.61) = 23.70\text{dBm} < 23.98\text{dBm}$, so power limit=23.70dBm.

5320 MHz Power limit=23.98dBm or $11 + 10\log(B)$; $11 + 10\log(18.35) = 23.64\text{dBm} < 23.98\text{dBm}$, so power limit=23.64dBm.

5500 MHz Power limit=23.98dBm or $11 + 10\log(B)$; $11 + 10\log(18.96) = 23.78\text{dBm} < 23.98\text{dBm}$, so power limit=23.78dBm.

5580 MHz Power limit=23.98dBm or $11 + 10\log(B)$; $11 + 10\log(18.87) = 23.76\text{dBm} < 23.98\text{dBm}$, so power limit=23.76dBm.

5700 MHz Power limit=23.98dBm or $11 + 10\log(B)$; $11 + 10\log(18.87) = 23.76\text{dBm} < 23.98\text{dBm}$, so power limit=23.76dBm.

For 802.11ac VHT20:

5260 MHz Power limit=23.98dBm or $11 + 10\log(B)$; $11 + 10\log(19.48) = 23.90\text{dBm} < 23.98\text{dBm}$, so power limit=23.90dBm.

5300 MHz Power limit=23.98dBm or $11 + 10\log(B)$; $11 + 10\log(19.57) = 23.91\text{dBm} < 23.98\text{dBm}$, so power limit=23.91dBm.

5320 MHz Power limit=23.98dBm or $11 + 10\log(B)$; $11 + 10\log(19.39) = 23.88\text{dBm} < 23.98\text{dBm}$, so power limit=23.88dBm.

5700 MHz Power limit=23.98dBm or $11 + 10\log(B)$; $11 + 10\log(19.83) = 23.97\text{dBm} < 23.98\text{dBm}$, so power limit=23.97dBm.

Straddle Channel

Mode	Frequency	Conducted Power (dBm)					Max. Limit (dBm)	Result
		Chain 5	Chain 6	Chain 7	Chain 8	Total		
802.11a	5720 MHz (UNII 2C)	11.91	11.86	12.22	12.49	18.15	22.66	Complies
	5720 MHz (UNII 3)	5.82	5.42	6.37	6.41	12.04	30.00	Complies
802.11ac MCS0/Nss1 VHT20	5720 MHz (UNII 2C)	12.18	12.12	12.44	12.74	18.40	22.76	Complies
	5720 MHz (UNII 3)	6.58	6.14	7.10	7.19	12.79	30.00	Complies
802.11ac MCS0/Nss1 VHT40	5710 MHz (UNII 2C)	15.06	14.80	16.06	15.35	21.36	23.98	Complies
	5710 MHz (UNII 3)	5.22	4.42	5.12	5.60	11.13	30.00	Complies
802.11ac MCS0/Nss1 VHT80	5690 MHz (UNII 2C)	17.82	17.01	17.41	17.60	23.49	23.98	Complies
	5690 MHz (UNII 3)	4.97	3.73	4.97	5.18	10.77	30.00	Complies

Note:

For 802.11a:

5720 MHz (UNII 2C): Power limit=23.98dBm or $11 + 10\log(B)$; $11 + 10\log(14.65) = 22.66\text{dBm} < 23.98\text{dBm}$, so power limit=22.66dBm.

For 802.11ac VHT20:

5720 MHz (UNII 2C): Power limit=23.98dBm or $11 + 10\log(B)$; $11 + 10\log(15.00) = 22.76\text{dBm} < 23.98\text{dBm}$, so power limit=22.76dBm.

802.11ac MCS0/Nss2 VHT80+80

Type	Frequency	Conducted Power (dBm)						Max. Limit (dBm)	Result
		Chain 6	Chain 7	Chain 5	Chain 8	Total	Band Total		
1	5210 MHz	18.96	18.45	-	-	21.72	-	30.00	Complies
	5530 MHz	-	-	18.32	19.01	21.69	-	23.98	Complies
2	5210 MHz	19.45	18.87	-	-	22.18	-	30.00	Complies
	5610 MHz	-	-	19.54	19.85	22.71	-	23.98	Complies
3	5210 MHz	19.46	18.88	-	-	22.19	-	30.00	Complies
	5690 MHz (UNII 2C)	-	-	18.81	19.55	22.21	-	23.98	Complies
	5690 MHz (UNII 3)	-	-	4.28	5.25	7.80	-	30.00	Complies
4	5290 MHz	18.55	17.63	-	-	21.12	-	23.98	Complies
	5530 MHz	-	-	17.42	18.22	20.85	-	23.98	Complies
5	5290 MHz	17.98	17.23	-	-	20.63	-	23.98	Complies
	5610 MHz	-	-	17.24	17.69	20.48	-	23.98	Complies
6	5290 MHz	18.56	17.75	-	-	21.18	-	23.98	Complies
	5690 MHz (UNII 2C)	-	-	17.22	17.93	20.60	-	23.98	Complies
	5690 MHz (UNII 3)	-	-	2.77	3.63	6.23	-	30.00	Complies
7	5290 MHz	18.56	17.84	-	-	21.23	-	23.98	Complies
	5775 MHz	-	-	17.71	18.45	21.11	-	30.00	Complies
8	5530 MHz	18.01	17.25	-	-	20.66	23.62	23.98	Complies
	5690 MHz (UNII 2C)	-	-	17.15	17.92	20.56			
	5690 MHz (UNII 3)	-	-	3.97	4.08	7.04	-	30.00	Complies
9	5530 MHz	19.75	18.79	-	-	22.31	-	23.98	Complies
	5775 MHz	-	-	19.34	19.91	22.64	-	30.00	Complies
10	5610 MHz	20.17	19.03	-	-	22.65	-	23.98	Complies
	5775 MHz	-	-	19.27	19.96	22.64	-	30.00	Complies

11	5690 MHz (UNII 2C)	19.57	18.62	-	-	22.13	-	23.98	Complies
	5690 MHz (UNII 3)	6.55	5.19	-	-	8.93	22.82	30.00	Complies
	5775 MHz	-	-	19.35	19.89	22.64			

<For beamforming Mode>

Mode	Frequency	Conducted Power (dBm)					Max. Limit (dBm)	Result
		Chain 5	Chain 6	Chain 7	Chain 8	Total		
802.11ac MCS0/Nss1 VHT20	5260 MHz	11.47	12.60	12.29	11.96	18.12	18.28	Complies
	5300 MHz	13.49	12.35	12.60	9.76	18.27	18.28	Complies
	5320 MHz	13.24	11.82	11.95	11.22	18.14	18.28	Complies
	5500 MHz	13.81	12.17	11.30	10.32	18.11	18.28	Complies
	5580 MHz	13.57	11.48	11.37	11.54	18.11	18.28	Complies
	5700 MHz	13.85	12.05	10.98	10.72	18.10	18.28	Complies
802.11ac MCS0/Nss1 VHT40	5270 MHz	13.25	11.94	11.59	11.34	18.12	18.28	Complies
	5310 MHz	12.92	12.12	12.08	11.12	18.13	18.28	Complies
	5510 MHz	13.57	12.07	11.67	11.17	18.24	18.28	Complies
	5550 MHz	13.41	12.46	12.32	10.24	18.27	18.28	Complies
	5670 MHz	13.09	12.57	12.16	10.26	18.16	18.28	Complies
802.11ac MCS0/Nss1 VHT80	5290 MHz	12.62	12.15	12.23	11.55	18.17	18.28	Complies
	5530 MHz	13.85	11.42	11.41	11.35	18.17	18.28	Complies
	5610 MHz	13.52	11.68	11.68	11.44	18.19	18.28	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 11.70\text{dBi} > 6\text{dBi}$, so limit = $23.98 - (11.70 - 6) = 18.28\text{dBm}$.

Straddle Channel

Mode	Frequency	Conducted Power (dBm)					Max. Limit (dBm)	Result
		Chain 5	Chain 6	Chain 7	Chain 8	Total		
802.11ac MCS0/Nss1 VHT20	5720 MHz (UNII 2C)	11.29	12.14	10.42	10.67	17.20	17.21	Complies
	5720 MHz (UNII 3)	5.56	6.48	4.91	5.25	11.61	24.30	Complies
802.11ac MCS0/Nss1 VHT40	5710 MHz (UNII 2C)	11.92	12.79	10.47	10.75	17.60	18.28	Complies
	5710 MHz (UNII 3)	1.77	2.32	0.69	0.99	7.51	24.30	Complies
802.11ac MCS0/Nss1 VHT80	5690 MHz (UNII 2C)	11.61	12.68	10.99	11.27	17.71	18.28	Complies
	5690 MHz (UNII 3)	-1.66	-0.98	-1.41	-1.31	4.69	24.30	Complies

Note:

For 802.11ac VHT20:

5720 MHz (UNII 2C): Power limit=23.98dBm or $11 + 10\log(B)$; $11 + 10\log(15.52) - (11.70 - 6) = 17.21\text{dBm} < 23.98\text{dBm}$,
so power limit=17.21dBm.

$$\text{For (UNII 2C): } \text{DirectionalGain} = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 11.70\text{dBi} > 6\text{dBi}, \text{ so limit} = 23.98 - (11.70 - 6) = 18.28\text{dBm}.$$

$$\text{For (UNII 3): } \text{DirectionalGain} = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 11.70\text{dBi} > 6\text{dBi}, \text{ so limit} = 30 - (11.70 - 6) = 24.30\text{dBm}.$$

802.11ac MCS0/Nss2 VHT80+80

Type	Frequency	Conducted Power (dBm)						Max. Limit (dBm)	Result
		Chain 6	Chain 7	Chain 5	Chain 8	Total	Band Total		
1	5210 MHz	16.85	17.81	-	-	20.37	-	27.31	Complies
	5530 MHz	-	-	16.86	17.43	20.16	-	21.29	Complies
2	5210 MHz	18.38	18.86	-	-	21.64	-	27.31	Complies
	5610 MHz	-	-	18.25	18.23	21.25	-	21.29	Complies
3	5210 MHz	18.42	18.88	-	-	21.67	-	27.31	Complies
	5690 MHz (UNII 2C)	-	-	17.81	17.73	20.78	-	21.29	Complies
	5690 MHz (UNII 3)	-	-	3.41	3.36	6.40	-	27.31	Complies
4	5290 MHz	14.15	15.68	-	-	17.99	-	21.29	Complies
	5530 MHz	-	-	13.55	13.88	16.73	-	21.29	Complies
5	5290 MHz	14.07	15.63	-	-	17.93	-	21.29	Complies
	5610 MHz	-	-	14.11	14.37	17.25	-	21.29	Complies
6	5290 MHz	14.03	15.51	-	-	17.84	-	21.29	Complies
	5690 MHz (UNII 2C)	-	-	13.86	13.78	16.83	-	21.29	Complies
	5690 MHz (UNII 3)	-	-	-0.61	-0.74	2.34	-	27.31	Complies
7	5290 MHz	14.23	15.66	-	-	18.01	-	21.29	Complies
	5775 MHz	-	-	14.19	14.36	17.29	-	27.31	Complies
8	5530 MHz	14.94	15.16	-	-	18.06	20.95	21.29	Complies
	5690 MHz (UNII 2C)	-	-	14.78	14.81	17.81			
	5690 MHz (UNII 3)	-	-	0.32	0.47	3.41	-	27.31	Complies
9	5530 MHz	17.53	18.34	-	-	20.96	-	21.29	Complies
	5775 MHz	-	-	17.15	17.29	20.23	-	27.31	Complies
10	5610 MHz	17.54	18.72	-	-	21.18	-	21.29	Complies
	5775 MHz	-	-	17.31	17.29	20.31	-	27.31	Complies

11	5690 MHz (UNII 2C)	17.91	17.72	-	-	20.83	-	21.29	Complies
	5690 MHz (UNII 3)	3.24	3.41	-	-	6.34	21.55	27.31	Complies
	5775 MHz	-	-	18.38	18.44	21.42			

For (UNII 2C): $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 8.69\text{dBi} > 6\text{dBi}$, so limit = $23.98 - (8.69 - 6) = 21.29\text{dBm}$.

For (UNII 3): $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 8.69\text{dBi} > 6\text{dBi}$, so limit = $30 - (8.69 - 6) = 27.31\text{dBm}$.

Radio 3

Mode	Frequency	Conducted Power (dBm)			Max. Limit (dBm)	Result
		Chain 9	Chain 10	Total		
802.11a	5260 MHz	18.48	17.46	21.01	23.98	Complies
	5300 MHz	18.56	17.67	21.15	23.98	Complies
	5320 MHz	18.65	17.53	21.14	23.98	Complies
	5500 MHz	18.17	17.87	21.03	23.98	Complies
	5580 MHz	18.15	17.58	20.88	23.98	Complies
	5700 MHz	18.45	17.57	21.04	23.98	Complies
802.11ac MCS0/Nss1 VHT20	5260 MHz	18.63	17.51	21.12	23.98	Complies
	5300 MHz	18.46	17.57	21.05	23.98	Complies
	5320 MHz	18.57	17.33	21.00	23.98	Complies
	5500 MHz	17.97	17.73	20.86	23.98	Complies
	5580 MHz	18.21	17.56	20.91	23.98	Complies
	5700 MHz	18.42	17.56	21.02	23.98	Complies
802.11ac MCS0/Nss1 VHT40	5270 MHz	21.11	20.51	23.83	23.98	Complies
	5310 MHz	17.40	17.38	20.40	23.98	Complies
	5510 MHz	17.87	17.54	20.72	23.98	Complies
	5550 MHz	21.28	20.56	23.95	23.98	Complies
	5670 MHz	19.57	19.09	22.35	23.98	Complies
802.11ac MCS0/Nss1 VHT80	5290 MHz	14.94	15.08	18.02	23.98	Complies
	5530 MHz	16.69	16.02	19.38	23.98	Complies
	5610 MHz	18.39	17.73	21.08	23.98	Complies

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

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

Radio 2

<For Non-beamforming Mode>

Straddle Channel

Conducted Output Power Plot on Configuration IEEE 802.11a / Chain 5 / 5720 MHz (UNII 2C)



Date: 3.MAY.2016 23:34:08

Conducted Output Power Plot on Configuration IEEE 802.11a / Chain 6 / 5720 MHz (UNII 2C)



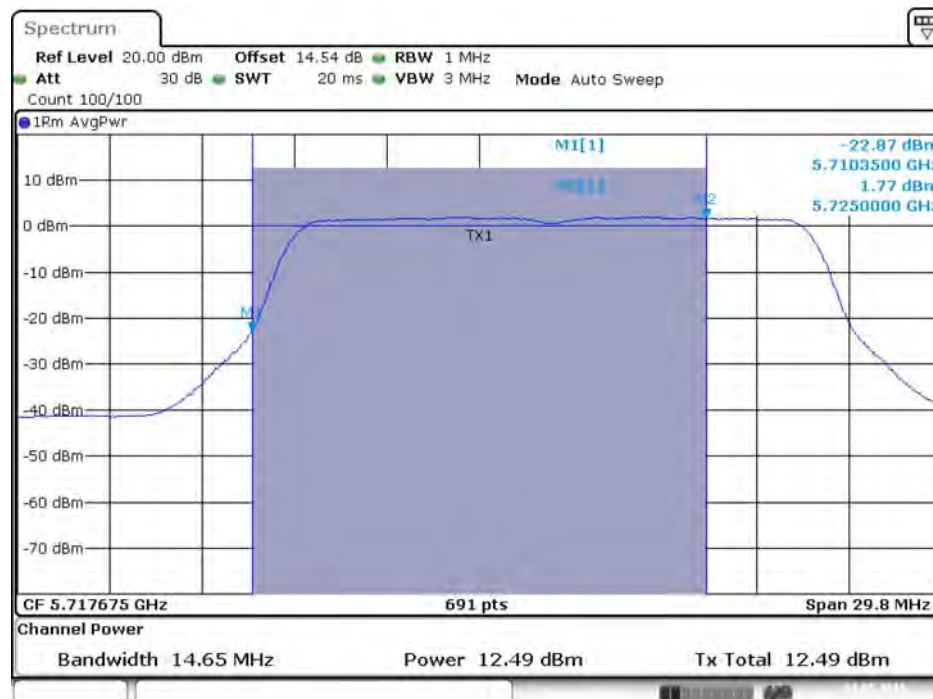
Date: 3.MAY.2016 23:34:15

Conducted Output Power Plot on Configuration IEEE 802.11a / Chain 7 / 5720 MHz (UNII 2C)



Date: 3.MAY.2016 23:34:22

Conducted Output Power Plot on Configuration IEEE 802.11a / Chain 8 / 5720 MHz (UNII 2C)



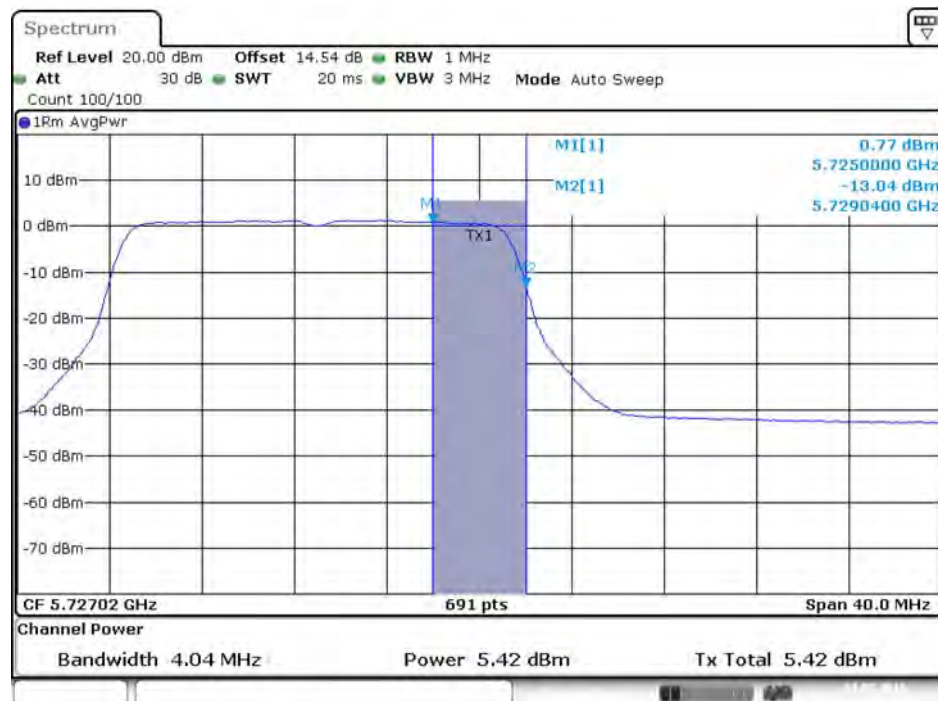
Date: 3.MAY.2016 23:34:29

Conducted Output Power Plot on Configuration IEEE 802.11a / Chain 5 / 5720 MHz (UNII 3)



Date: 3.MAY.2016 23:34:11

Conducted Output Power Plot on Configuration IEEE 802.11a / Chain 6 / 5720 MHz (UNII 3)



Date: 3.MAY.2016 23:34:18



Spectrum

Ref Level 20.00 dBm Offset 14.54 dB RBW 1 MHz
Att 30 dB SWT 20 ms VBW 3 MHz Mode Auto Sweep
Count 100/100

1Rm AvgPwr

10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm

CF 5.72702 GHz 691 pts Span 40.0 MHz

Channel Power

Bandwidth 4.04 MHz Power 6.37 dBm Tx Total 6.37 dBm

M1[1] 1.54 dBm 5.7250000 GHz
M2[1] -11.96 dBm 5.7290400 GHz

Spectrum

Ref Level 20.00 dBm Offset 14.54 dB RBW 1 MHz
Att 30 dB SWT 20 ms VBW 3 MHz Mode Auto Sweep
Count 100/100

1Rm AvgPwr

10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm

CF 5.72702 GHz 691 pts Span 40.0 MHz

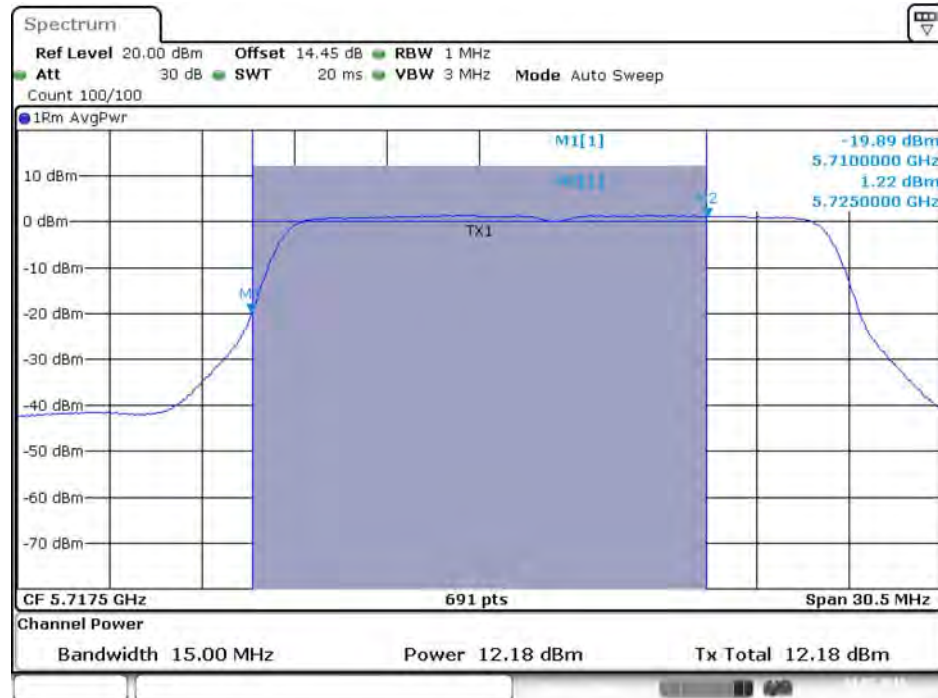
Channel Power

Bandwidth 4.04 MHz Power 6.41 dBm Tx Total 6.41 dBm

M1[1] 1.61 dBm 5.7250000 GHz
M2[1] -11.81 dBm 5.7290400 GHz
TX1
M2

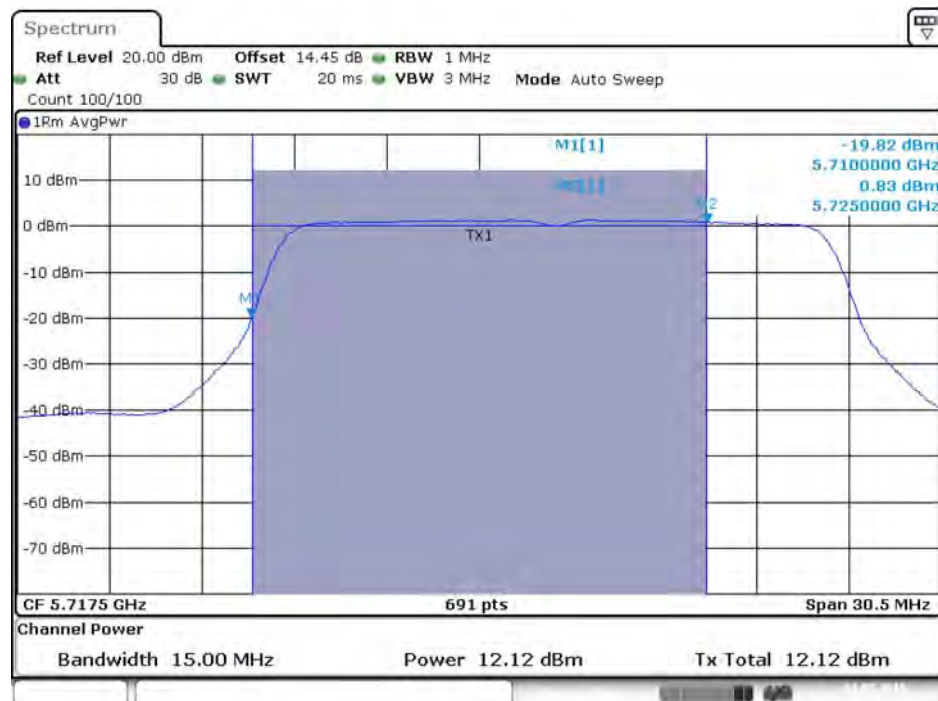
Issued Date : May 18, 2017

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 / 5720 MHz (UNII 2C)



Date: 3.MAY.2016 23:29:11

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 6 / 5720 MHz (UNII 2C)



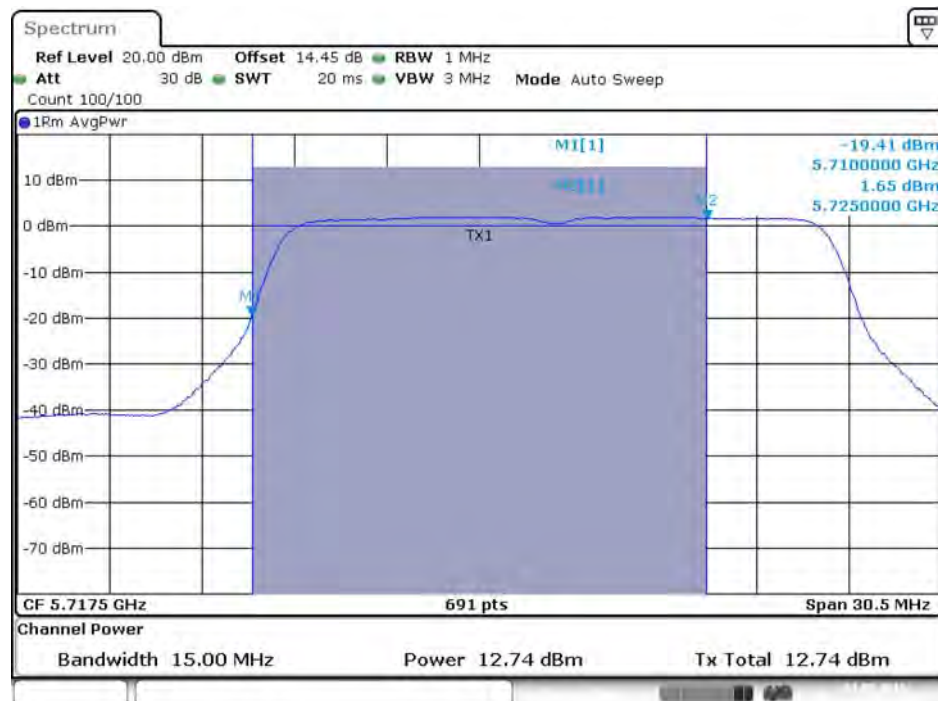
Date: 3.MAY.2016 23:29:19

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 7 / 5720 MHz (UNII 2C)



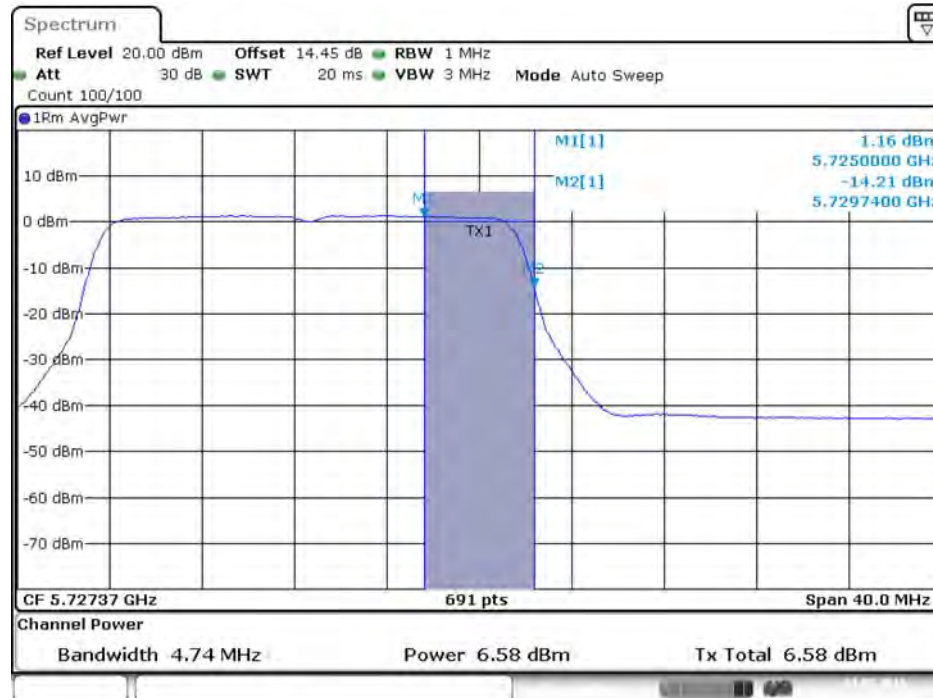
Date: 3.MAY.2016 23:29:26

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 8 / 5720 MHz (UNII 2C)



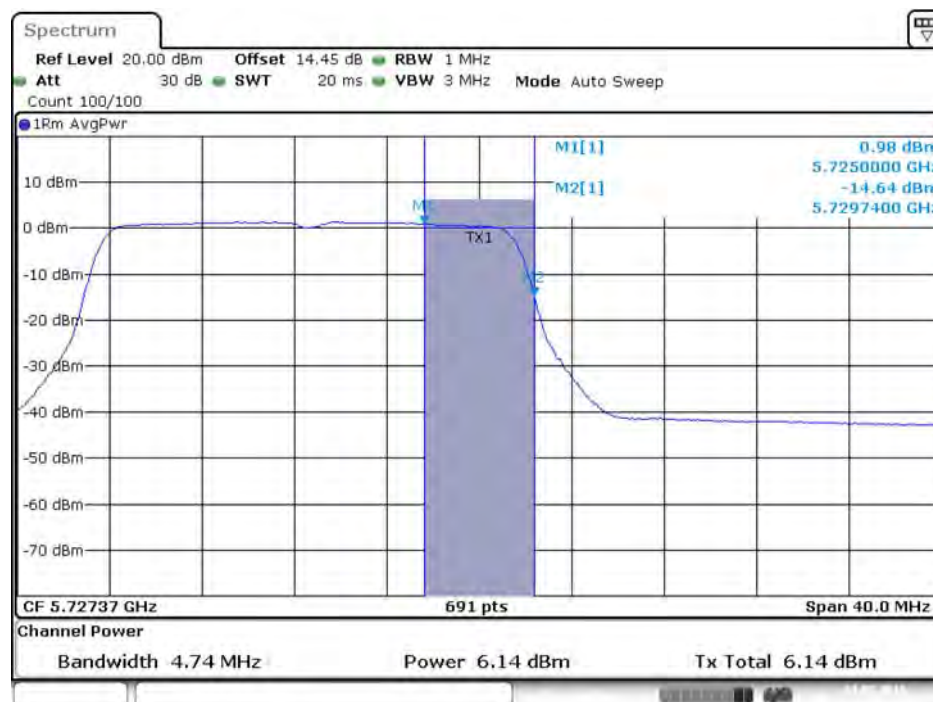
Date: 3.MAY.2016 23:29:33

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 / 5720 MHz (UNII 3)



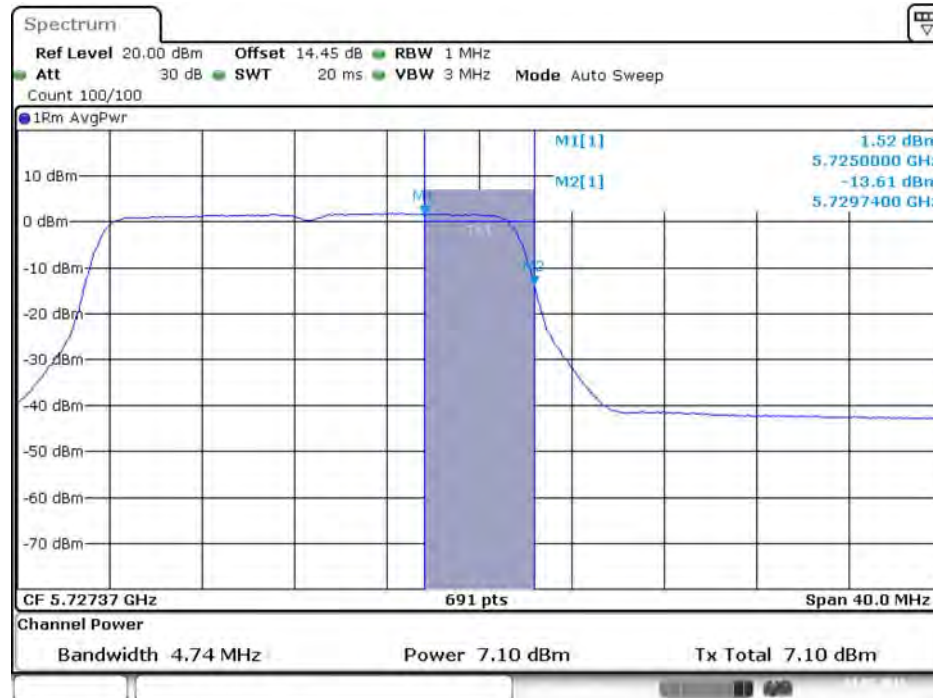
Date: 3.MAY.2016 23:29:15

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 6 / 5720 MHz (UNII 3)



Date: 3.MAY.2016 23:29:22

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 7 / 5720 MHz (UNII 3)



Date: 3.MAY.2016 23:29:29

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 8 / 5720 MHz (UNII 3)



Date: 3.MAY.2016 23:29:36

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 / 5710 MHz (UNII 2C)



Date: 3.MAY.2016 23:23:59

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 6 / 5710 MHz (UNII 2C)



Date: 3.MAY.2016 23:24:06



Spectrum

Ref Level 20.00 dBm Offset 14.53 dB RBW 1 MHz
Att 30 dB SWT 20 ms VBW 3 MHz Mode Auto Sweep
Count 100/100

1Rm AvgPwr

10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm

CF 5.7075 GHz 691 pts Span 71.1 MHz

Channel Power

Bandwidth 35.00 MHz Power 15.06 dBm Tx Total 15.06 dBm

M1[1] -27.43 dBm
M1[1] 5.690000 GHz
M2 0.28 dBm
M2 5.725000 GHz

Spectrum

Ref Level 20.00 dBm Offset 14.53 dB RBW 1 MHz
Att 30 dB SWT 20 ms VBW 3 MHz Mode Auto Sweep
Count 100/100

1Rm AvgPwr

10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm

MI[1]
M[1]
TX1
V2

-27.56 dBm
5.690000 GHz
0.89 dBm
5.725000 GHz

CF 5.7075 GHz 691 pts Span 71.1 MHz

Channel Power

Bandwidth 35.00 MHz Power 15.35 dBm Tx Total 15.35 dBm

Date: 3.MAY.2016 23:24:21

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 / 5710 MHz (UNII 3)



Date: 3.MAY.2016 23:24:03

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 6 / 5710 MHz (UNII 3)



Date: 3.MAY.2016 23:24:10

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 7 / 5710 MHz (UNII 3)



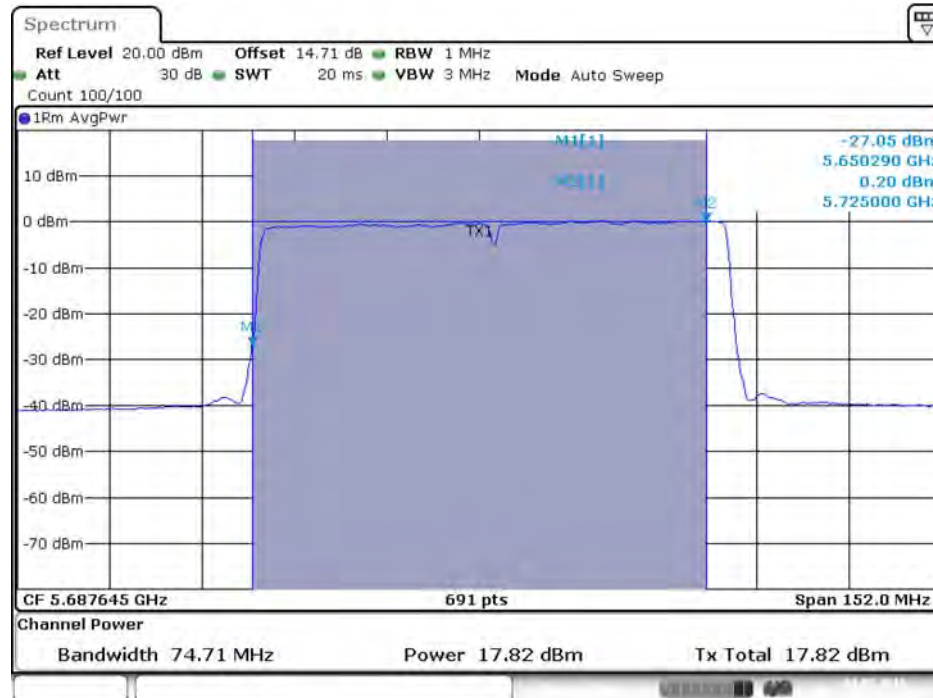
Date: 3.MAY.2016 23:24:17

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 8 / 5710 MHz (UNII 3)



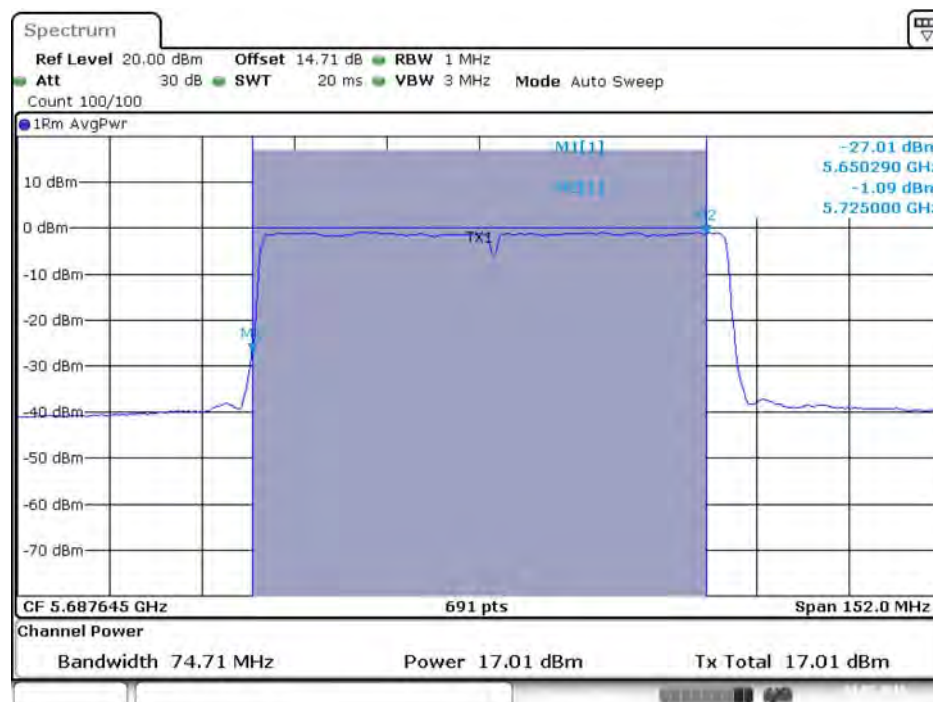
Date: 3.MAY.2016 23:24:24

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 5 / 5690 MHz (UNII 2C)



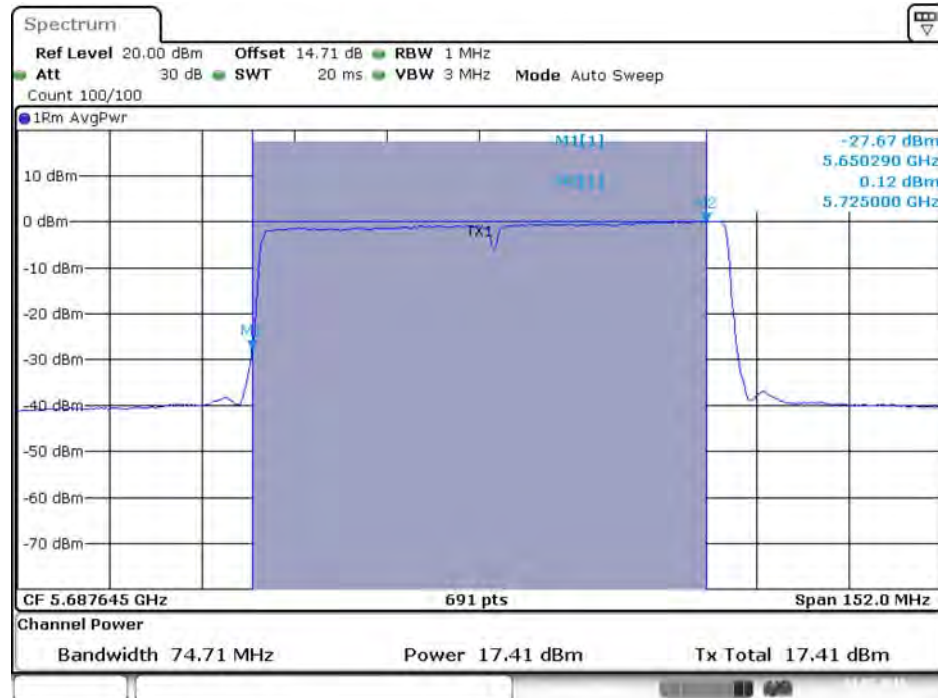
Date: 3.MAY.2016 23:18:53

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 6 / 5690 MHz (UNII 2C)



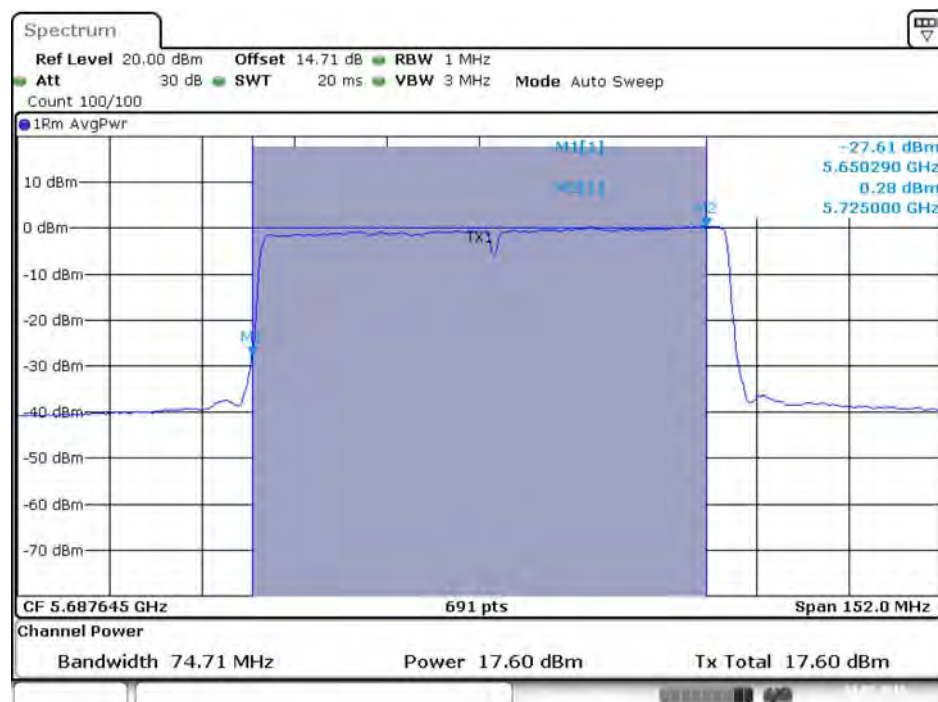
Date: 3.MAY.2016 23:19:00

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 7 / 5690 MHz (UNII 2C)



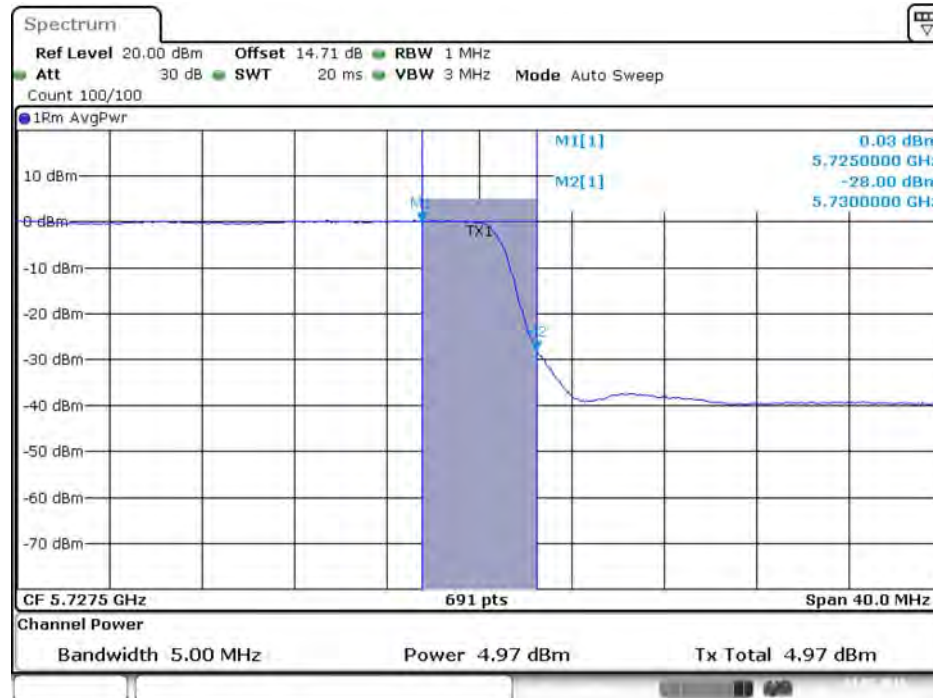
Date: 3.MAY.2016 23:19:07

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 8 / 5690 MHz (UNII 2C)



Date: 3.MAY.2016 23:19:14

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 5 / 5690 MHz (UNII 3)



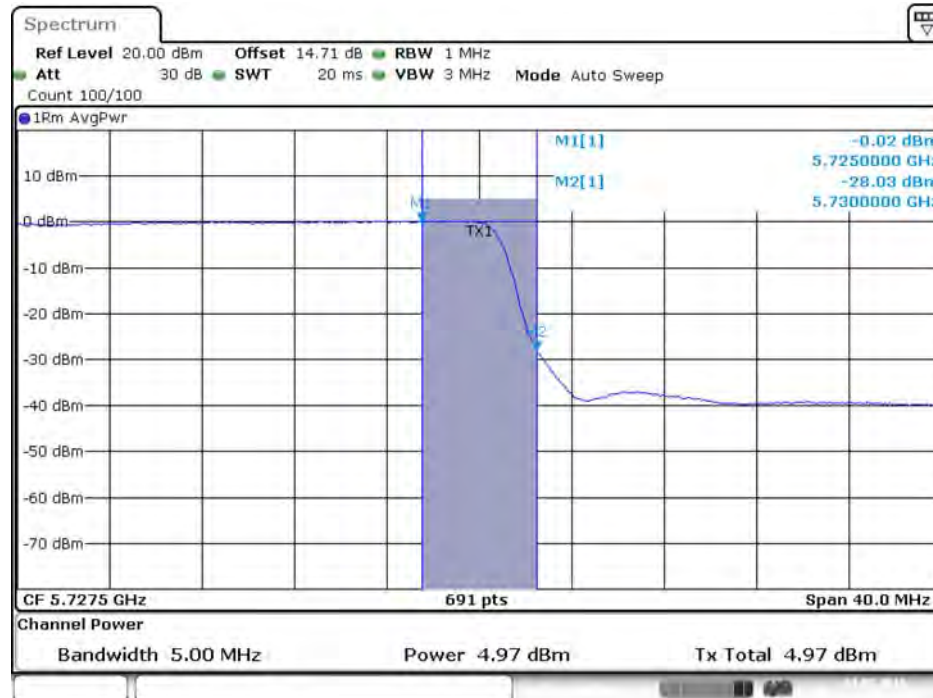
Date: 3.MAY.2016 23:18:56

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 6 / 5690 MHz (UNII 3)



Date: 3.MAY.2016 23:19:03

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 7 / 5690 MHz (UNII 3)



Date: 3.MAY.2016 23:19:10

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 8 / 5690 MHz (UNII 3)



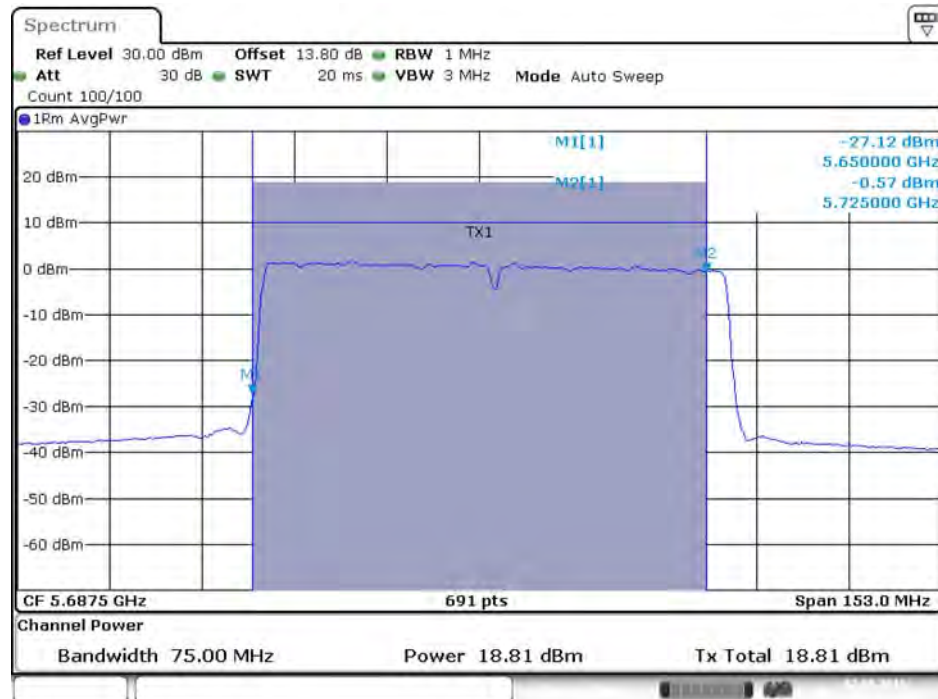
Date: 3.MAY.2016 23:19:17

802.11ac MCS0/Nss2 VHT80+80

Straddle Channel

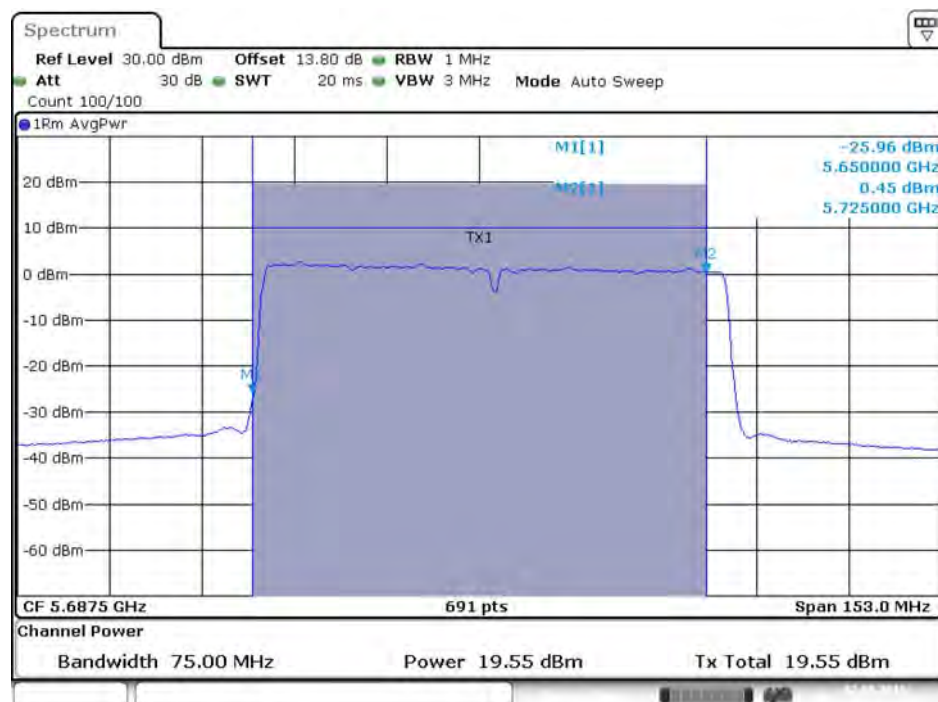
Type 3

Conducted Output Power Plot on Chain 5 / 5690 MHz (UNII 2C)



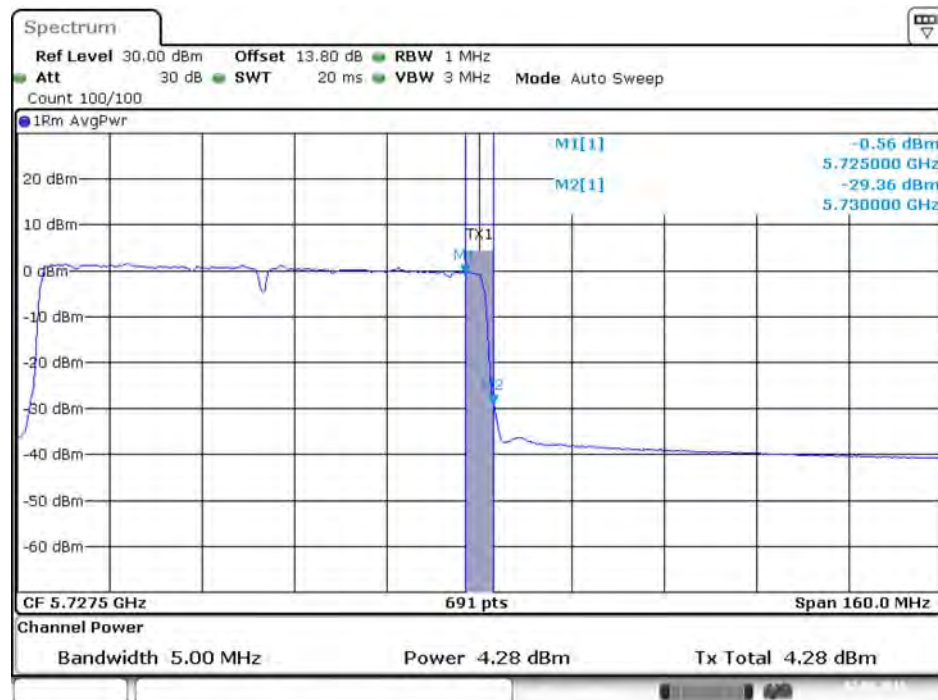
Date: 2.AUG.2016 02:35:39

Conducted Output Power Plot on Chain 8 / 5690 MHz (UNII 2C)



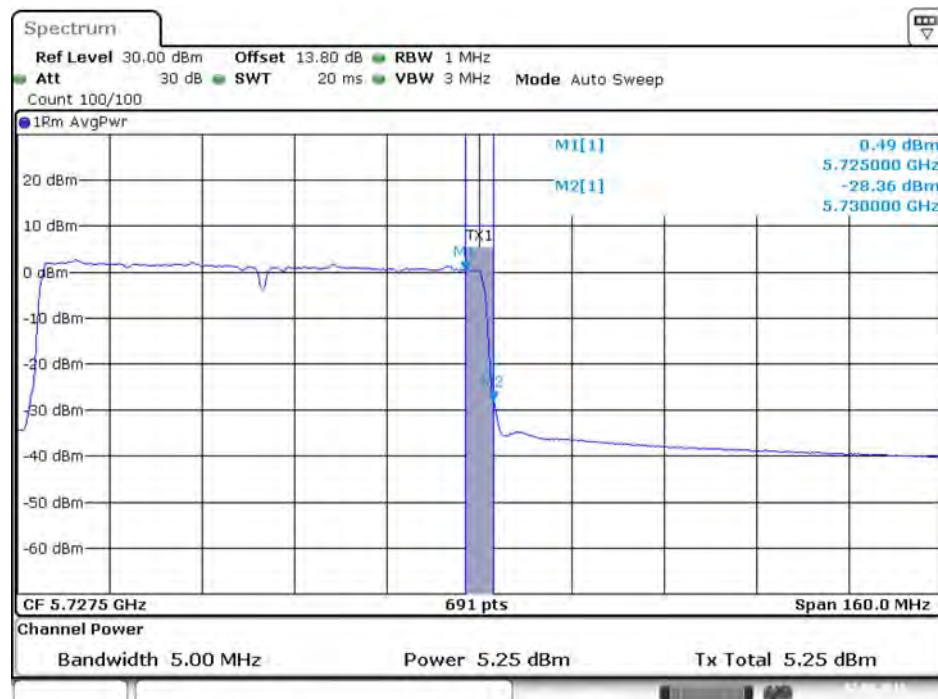
Date: 2.AUG.2016 02:35:46

Conducted Output Power Plot on Chain 5 / 5690 MHz (UNII 3)



Date: 2.AUG.2016 02:35:42

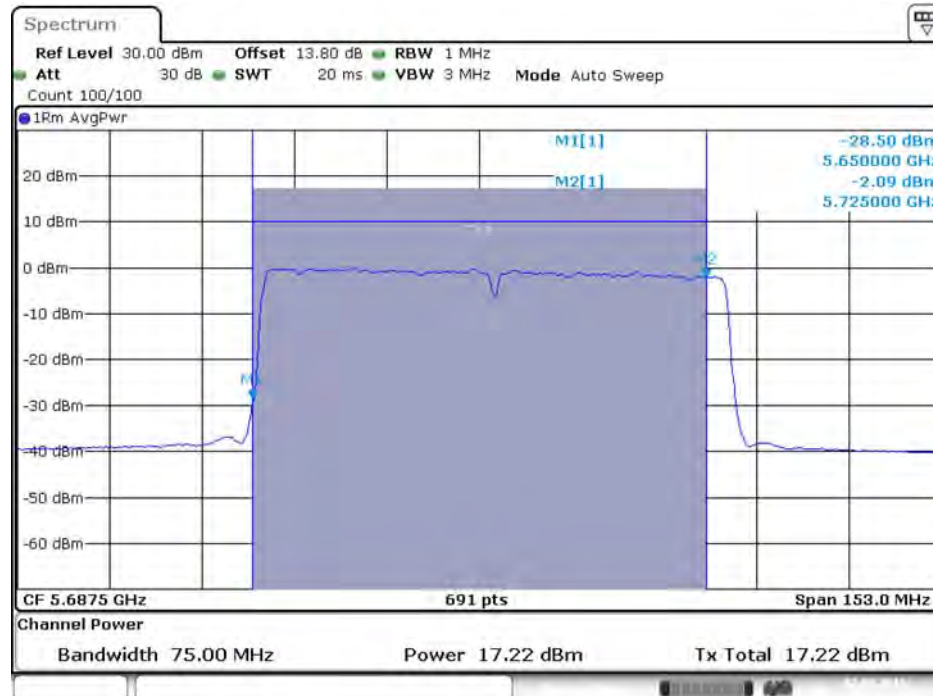
Conducted Output Power Plot on Chain 8 / 5690 MHz (UNII 3)



Date: 2.AUG.2016 02:35:50

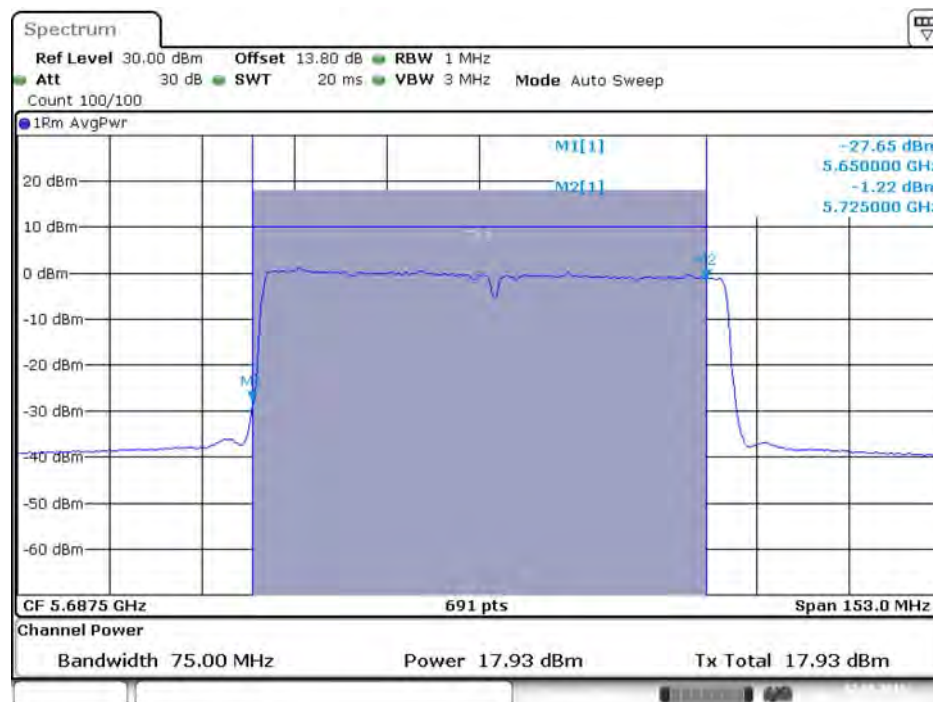
Type 6

Conducted Output Power Plot on Chain 5 / 5690 MHz (UNII 2C)



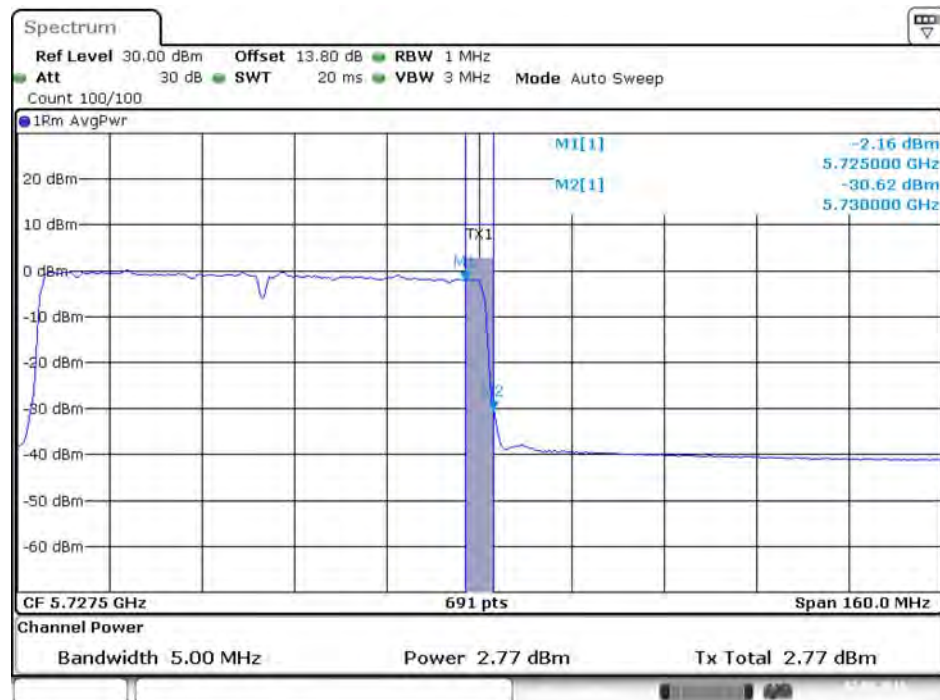
Date: 2.AUG.2016 02:40:53

Conducted Output Power Plot on Chain 8 / 5690 MHz (UNII 2C)



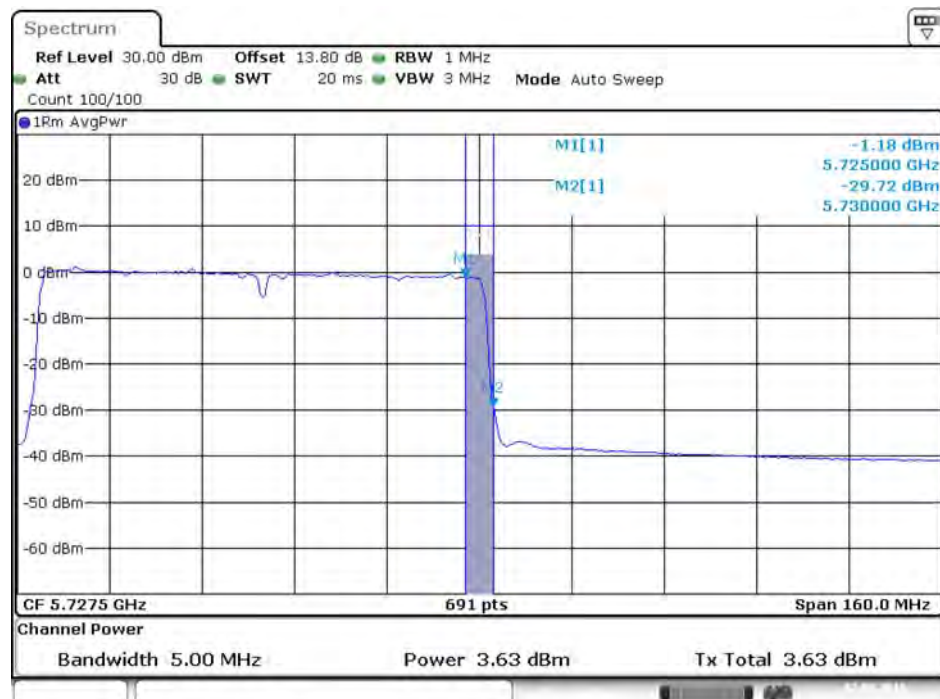
Date: 2.AUG.2016 02:41:01

Conducted Output Power Plot on Chain 5 / 5690 MHz (UNII 3)



Date: 2.AUG.2016 02:40:57

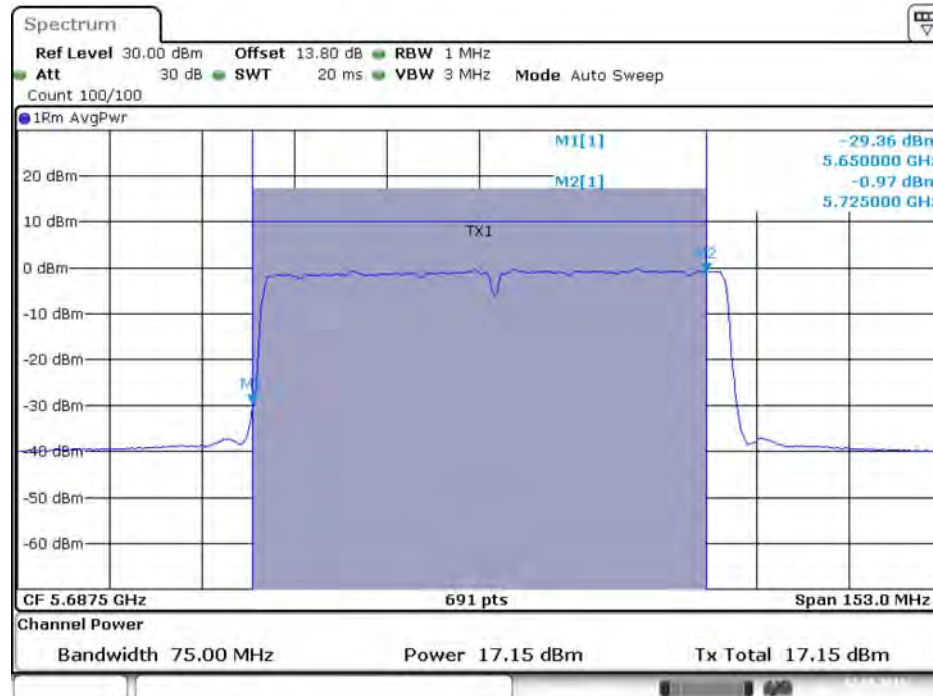
Conducted Output Power Plot on Chain 8 / 5690 MHz (UNII 3)



Date: 2.AUG.2016 02:41:04

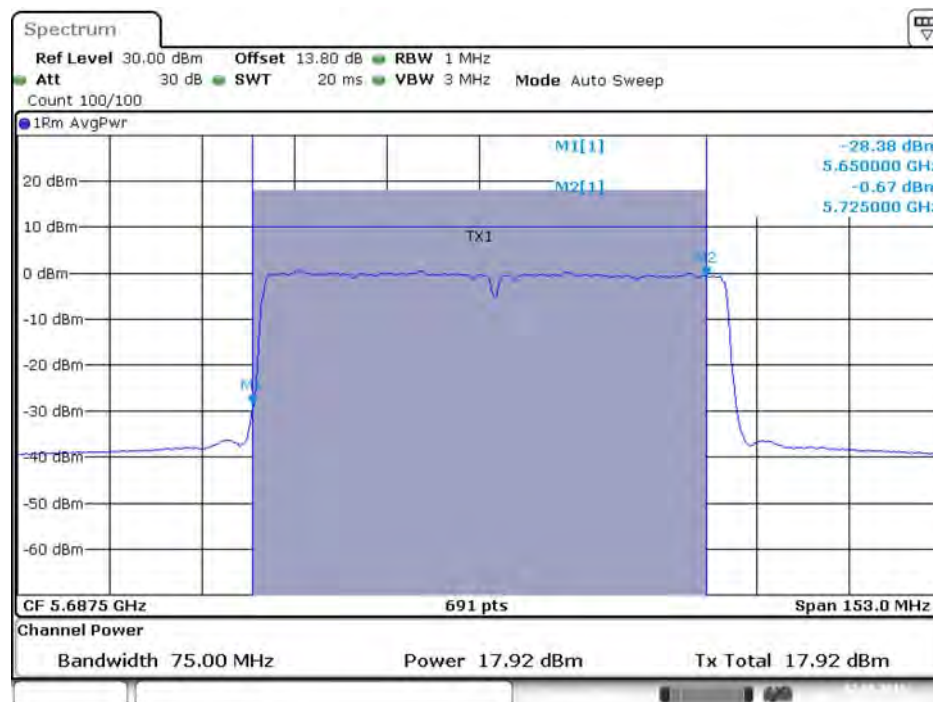
Type 8

Conducted Output Power Plot on Chain 5 / 5690 MHz (UNII 2C)



Date: 2.AUG.2016 02:46:06

Conducted Output Power Plot on Chain 8 / 5690 MHz (UNII 2C)



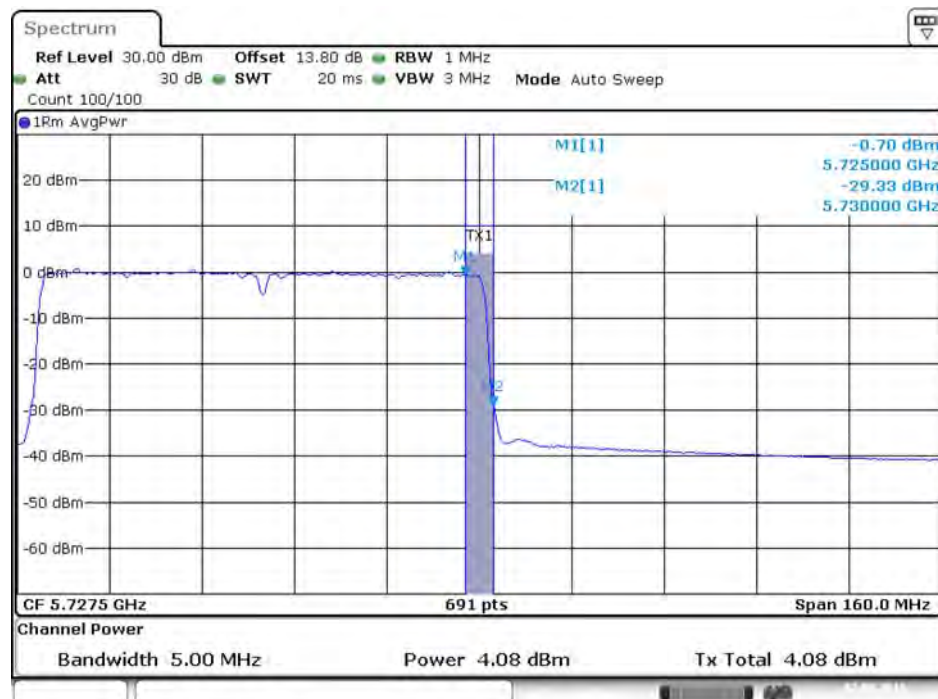
Date: 2.AUG.2016 02:46:14

Conducted Output Power Plot on Chain 5 / 5690 MHz (UNII 3)



Date: 2.AUG.2016 02:46:10

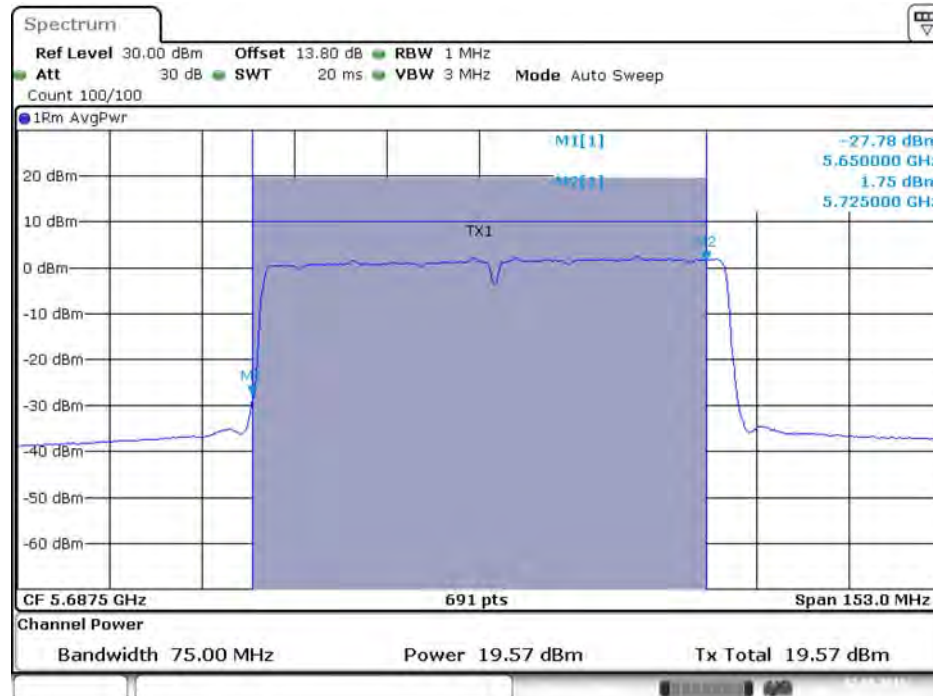
Conducted Output Power Plot on Chain 8 / 5690 MHz (UNII 3)



Date: 2.AUG.2016 02:46:17

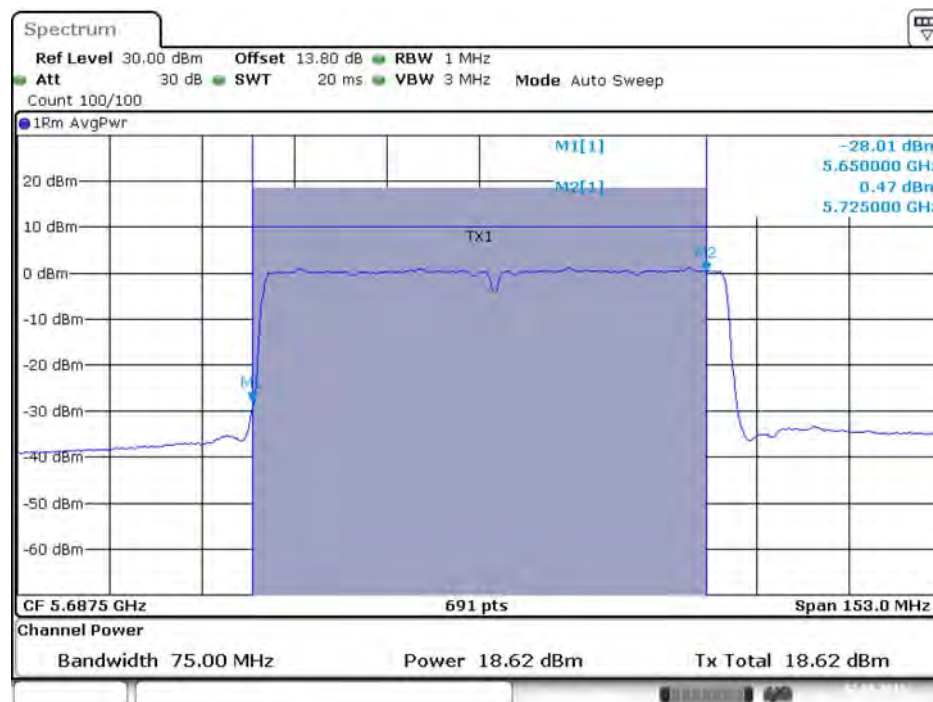
Type 11

Conducted Output Power Plot on Chain 6 / 5690 MHz (UNII 2C)



Date: 2.AUG.2016 02:51:36

Conducted Output Power Plot on Chain 7 / 5690 MHz (UNII 2C)



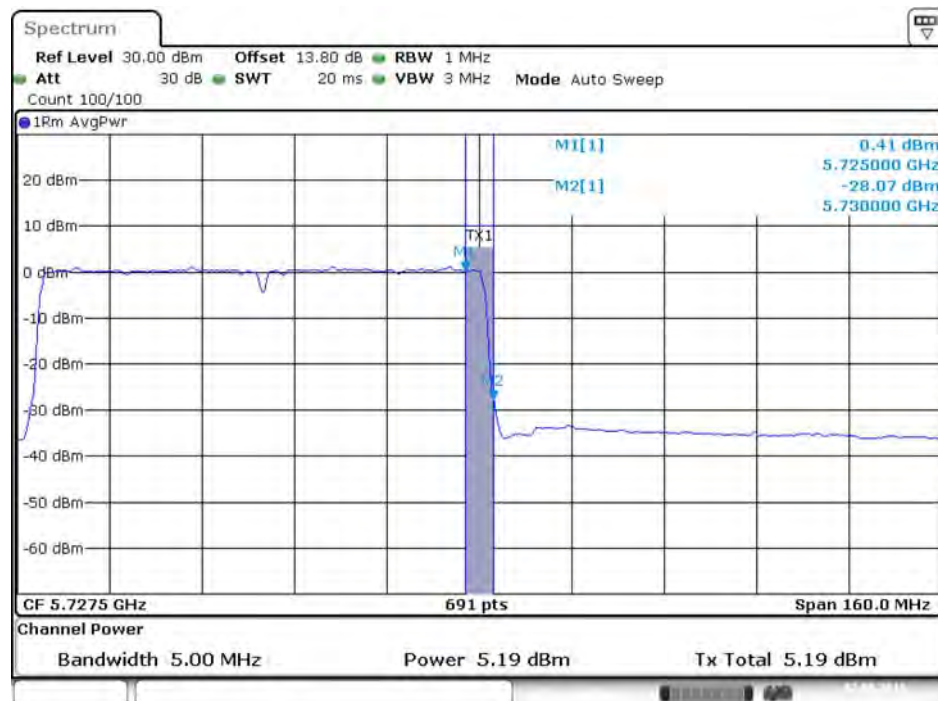
Date: 2.AUG.2016 02:51:44

Conducted Output Power Plot on Chain 6 / 5690 MHz (UNII 3)



Date: 2.AUG.2016 02:51:40

Conducted Output Power Plot on Chain 7 / 5690 MHz (UNII 3)



Date: 2.AUG.2016 02:51:47