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FCC RADIO TEST REPORT

Applicant's company	**ASUSTeK COMPUTER INC.**
Applicant Address	4F, No. 150, Li-Te Rd., Peitou, Taipei 112, Taiwan
FCC ID	**MSQ-RTGZ00**
Manufacturer's company (1)	**ASKEY TECHNOLOGY (JIANG SU) LTD**
Manufacturer Address	NO1388, Jiao Tong Road, Wujiang Economic Technological Development Area Jiangsu Province 215200 China
Manufacturer's company (2)	**Compal Networking (KunShan) Co., LTD.**
Manufacturer Address	No. 520, Nabbang Rd., Economic & Technical Development Zone Kunshan, Jiangsu Province China

Product Name	Wireless-AC5300 Tri-band Gigabit Router
Brand Name	ASUS
Model No.	RT-AC5300, RT-AC5300R, RT-AC5300W, RT-AC5300P, RT-AC95U, RT-AC96U
Test Rule Part(s)	47 CFR FCC Part 15 Subpart E § 15.407
Test Freq. Range	5725 ~ 5850 MHz
Received Date	Apr. 28, 2015
Final Test Date	Mar. 29, 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 v01r01, 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.

Testing Laboratory
1190

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History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR532637-05	Rev. 01	Initial issue of report	May 05, 2016

1. VERIFICATION OF COMPLIANCE

Product Name	:	Wireless-AC5300 Tri-band Gigabit Router
Brand Name	:	ASUS
Model No.	:	RT-AC5300, RT-AC5300R, RT-AC5300W, RT-AC5300P, RT-AC95U, RT-AC96U
Applicant	:	ASUSTeK COMPUTER 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. 28, 2015 would like to declare that the tested sample has been evaluated and found to be in compliance with the tested rule parts. The data recorded as well as the test configuration specified is true and accurate for showing the sample's EMC nature.

Sam Chen
SPORTON INTERNATIONAL INC.

2. SUMMARY OF THE TEST RESULT

Applied Standard: 47 CFR FCC Part 15 Subpart E				
Part	**Rule Section**	**Description of Test**	**Result**	**Under Limit**
4.1	15.407(a)	26dB Spectrum Bandwidth and 99% Occupied Bandwidth	Complies	-
4.2	15.407(a)	Power Spectral Density	Complies	8.78 dB
4.3	15.407(g)	Frequency Stability	Complies	-
4.4	15.203	Antenna Requirements	Complies	-

3. GENERAL INFORMATION

3.1. Product Details

Items	Description
Product Type	WLAN (3TX/3RX, 4TX/4RX)
Radio Type	Intentional Transceiver
Power Type	From power adapter
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, 1024QAM)
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	5725 ~ 5850 MHz
Channel Number	5 for 20MHz bandwidth ; 2 for 40MHz bandwidth ; 1 for 80MHz bandwidth
Channel Band Width (99%)	<For Non-Beamforming Mode> IEEE 802.11a: 17.37 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 18.23 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 36.76 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 75.83 MHz <For Beamforming Mode> IEEE 802.11ac MCS0/Nss1 (VHT20): 18.06 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 36.90 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 76.12 MHz IEEE 802.11ac MCS0/Nss2 (VHT20): 18.23 MHz IEEE 802.11ac MCS0/Nss2 (VHT40): 37.19 MHz IEEE 802.11ac MCS0/Nss2 (VHT80): 76.12 MHz
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
Beamforming Function	☒ With beamforming	☐ Without beamforming
Operate Condition	☒ Indoor	☐ Outdoor

Note: The product has beamforming function for 802.11n and 802.11ac.

Antenna	Three (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.

Protocol	Number of Transmit Chains (NTX)	Data Rate / MCS
802.11n (HT20)	3, 4	MCS0-23, MCS0-31
802.11n (HT40)	3, 4	MCS0-23, MCS0-31
802.11ac (VHT20)	3, 4	MCS0-11/Nss1-3, MCS0-11/Nss1-4
802.11ac (VHT40)	3, 4	MCS0-11/Nss1-3, MCS0-11/Nss1-4
802.11ac (VHT80)	3, 4	MCS0-11/Nss1-3, MCS0-11/Nss1-4

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

Note 2: IEEE Std. 802.11ac modulation consists of VHT20, VHT40, VHT80 and VHT160 (VHT: Very High Throughput).
Then EUT supports VHT20, VHT40 for 2.4GHz, and supports VHT20, VHT40, VHT80 for 5GHz.

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 No.	Rating
Adapter 1	ASUS	ADP-65DW B	Input: 100-240Vac, 50-60Hz, 1.5A Output: 19Vdc, 3.42A
Adapter 2	ASUS	AD887320	Input: 100-240Vac, 50-60Hz, 1.5A Output: 19Vdc, 3.42A
Adapter 3	ASUS	PA-1650-93	Input: 100-240Vac, 50-60Hz, 1.7A Output: 19Vdc, 3.42A
Adapter 4	ASUS	ADP-65DW B	Input: 100-240Vac, 50-60Hz, 1.5A Output: 19Vdc, 3.42A
Adapter 5	ASUS	PA-1650-63	Input: 100-240Vac, 50-60Hz, 1.7A Output: 19Vdc, 3.42A
Adapter 6	ASUS	AD887320	Input: 100-240Vac, 50-60Hz, 1.5A Output: 19Vdc, 3.42A
Other			
RJ-45 cable*1: Shielded, 1.5m			

3.3. Table for Filed Antenna

Set	Brand	Part No.	Antenna Type	Connector
1	PSA	RFDPA131000SBLB805	Dipole Antenna	Reversed-SMA
2	PSA	RFDPA151000SBLB802	Dipole Antenna	Reversed-SMA
3	M.gear	C660-510368-A	Dipole Antenna	Reversed-SMA
4	M.gear	C660-510369-A	Dipole Antenna	Reversed-SMA
5	M.gear	C660-510370-A	Dipole Antenna	Reversed-SMA

Set	Gain (dBi)		Cable Loss		True Gain (dBi)	
	2.4GHz	5GHz	2.4GHz	5GHz	2.4GHz	5GHz
1	2.32	3.47	-	-	2.32	3.47
2	1.98	3.37	-	-	1.98	3.37
3	1.50	3.30	0.39	0.61	1.11	2.69
4	2.00	3.20	0.35	0.55	1.65	2.65
5	2.20	3.20	0.33	0.51	1.87	2.69

Note: 1. The EUT has five set of antenna, and each set contains eight antennas.

2. Both antennas above are the same type. Besides, only set 1 antenna was selected to perform the test and written in this report due to the highest gain.

For IEEE 802.11a/b/g/n/ac mode:

For 2.4GHz and 5GHz (3TX/3RX) function:

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

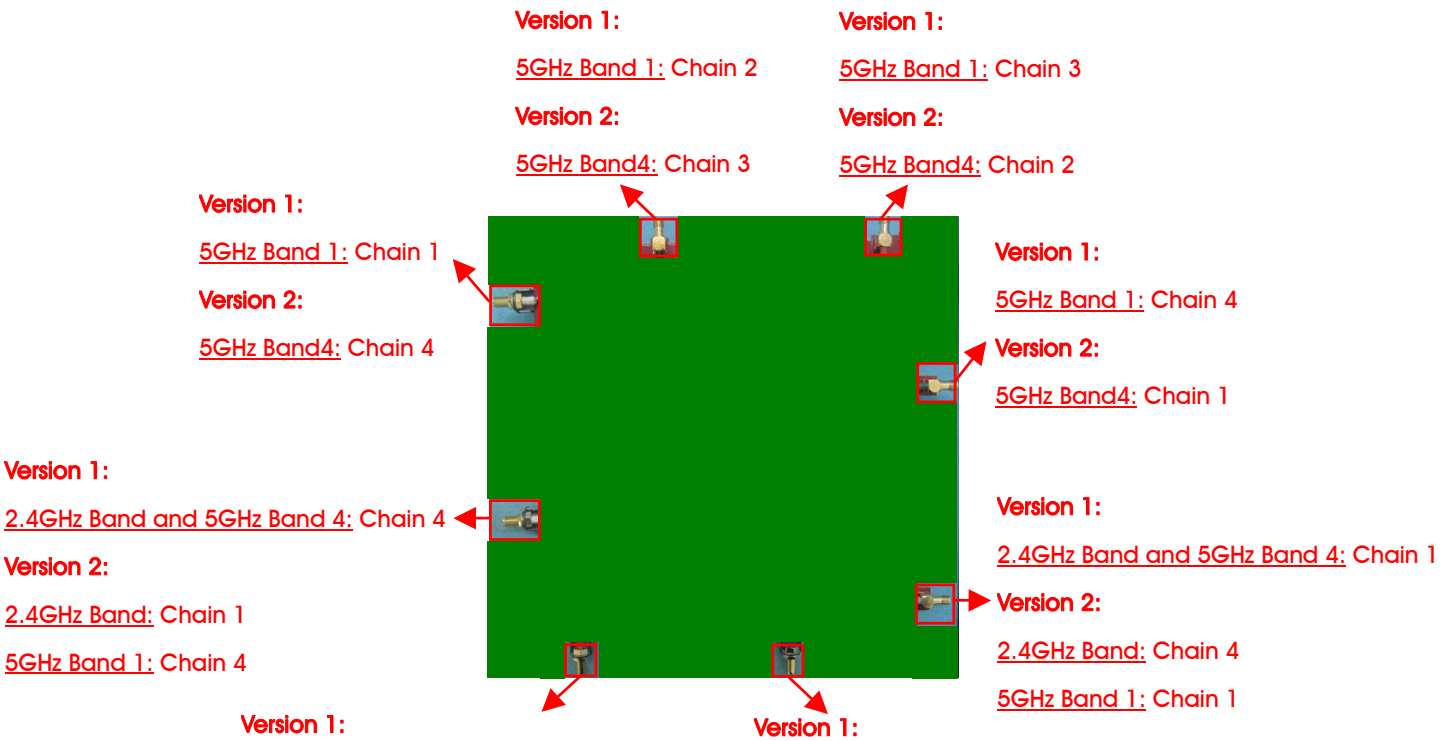
Chain 1, Chain 2 and Chain 3 could transmit/receive simultaneously.

For 2.4GHz and 5GHz (4TX/4RX) function:

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.

3. The EUT has two versions theirs measure information as below:


Version 1:
5GHz Band 1: Chain 2
Version 2:
5GHz Band4: Chain 3
Version 1:
5GHz Band 1: Chain 3
Version 2:
5GHz Band4: Chain 2
Version 1:
5GHz Band 1: Chain 1
Version 2:
5GHz Band4: Chain 4
Version 1:
5GHz Band 1: Chain 4
Version 2:
5GHz Band4: Chain 1
Version 1:
2.4GHz Band and 5GHz Band 4: Chain 4
Version 2:
2.4GHz Band: Chain 1
5GHz Band 1: Chain 4
Version 1:
2.4GHz Band and 5GHz Band 4: Chain 1
Version 2:
2.4GHz Band: Chain 4
5GHz Band 1: Chain 1
Version 1:
2.4GHz Band and 5GHz Band 4: Chain 3
Version 2:
2.4GHz Band: Chain 2
5GHz Band 1: Chain 3
Version 1:
2.4GHz Band and 5GHz Band 4: Chain 2
Version 2:
2.4GHz Band: Chain 3
5GHz Band 1: Chain 2

3.4. Table for Carrier Frequencies

There are three bandwidth systems.

For 20MHz bandwidth systems, use Channel 149, 153, 157, 161, 165.

For 40MHz bandwidth systems, use Channel 3151, 159.

For 80MHz bandwidth systems, use Channel 155.

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
5725~5850 MHz	149	5745 MHz	157	5785 MHz
	151	5755 MHz	159	5795 MHz
	153	5765 MHz	161	5805 MHz
	155	5775 MHz	165	5825 MHz

3.5. Table for Test Modes

Preliminary tests were performed in different data rate to find the worst radiated emission. The data rate shown in the table below is the worst-case rate with respect to the specific test item. Investigation has been done on all the possible configurations for searching the worst cases. The following table is a list of the test modes shown in this test report.

Test Items	Mode		Data Rate	Channel	Chain
Power Spectral Density	<For Non-Beamforming Mode>				
	11a/BPSK	Band 4	6Mbps	149/157/165	1+2+3+4
	11ac VHT20	Band 4	MCS0/Nss1	149/157/165	1+2+3+4
	11ac VHT40	Band 4	MCS0/Nss1	151/159	1+2+3+4
	11ac VHT80	Band 4	MCS0/Nss1	155	1+2+3+4
	<For Beamforming Mode>				
	11ac VHT20	Band 4	MCS0/Nss1	149/157/165	1+2+3+4
	11ac VHT40	Band 4	MCS0/Nss1	151/159	1+2+3+4
	11ac VHT80	Band 4	MCS0/Nss1	155	1+2+3+4
	11ac VHT20	Band 4	MCS0/Nss2	149/157/165	1+2+3+4
	11ac VHT40	Band 4	MCS0/Nss2	151/159	1+2+3+4
	11ac VHT80	Band 4	MCS0/Nss2	155	1+2+3+4
26dB Spectrum Bandwidth & 99% Occupied Bandwidth Measurement	<For Non-Beamforming Mode>				
	11a/BPSK	Band 4	6Mbps	149/157/165	1+2+3+4
	11ac VHT20	Band 4	MCS0/Nss1	149/157/165	1+2+3+4
	11ac VHT40	Band 4	MCS0/Nss1	151/159	1+2+3+4
	11ac VHT80	Band 4	MCS0/Nss1	155	1+2+3+4
	<For Beamforming Mode>				
	11ac VHT20	Band 4	MCS0/Nss1	149/157/165	1+2+3+4
	11ac VHT40	Band 4	MCS0/Nss1	151/159	1+2+3+4
	11ac VHT80	Band 4	MCS0/Nss1	155	1+2+3+4
	11ac VHT20	Band 4	MCS0/Nss2	149/157/165	1+2+3+4
	11ac VHT40	Band 4	MCS0/Nss2	151/159	1+2+3+4
	11ac VHT80	Band 4	MCS0/Nss2	155	1+2+3+4
Frequency Stability	20 MHz	Band 4	-	157	1
	40 MHz	Band 4	-	151	1
	80 MHz	Band 4	-	155	1

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 in 2.4GHz / 5GHz. Beamforming mode and non-beamforming mode has been test and record in this test report.

3.6. Table for Testing Locations

Test Site Location					
Address:	No.8, Lane 724, Bo-ai St., Jhubei City, Hsinchu County 302, Taiwan, R.O.C.				
TEL:	886-3-656-9065				
FAX:	886-3-656-9085				
Test Site No.	**Site Category**	**Location**	**FCC Designation No.**	**IC File No.**	**VCCI Reg. No**
TH01-CB	OVEN Room	Hsin Chu	-	-	-

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

3.7. Table for Multiple List

1. The model numbers in the following table are all refer to the identical product.

Model No.	Description
RT-AC5300	The models are identical except for the model numbers as marketing strategy.
RT-AC5300R	
RT-AC5300W	
RT-AC5300P	
RT-AC95U	
RT-AC96U	

2. The EUT has two types, which are identical to each other in all aspects except for the following table:

EUT	LAN Port	EUT Version	Transformer	Resistance (Size)	Thickness of Heat sink (mm)	Pad (mm)	Fan
EUT 1	8	Version 1, 2 (Rev 1.30)	SKU A	0402/0201	4.2mm/2mm	1mm/5mm	V
EUT 2	4	Version 1,2 (Rev 1.30)	SKU A	0402/0201	4.2mm/2mm	1mm/5mm	V / X
		Version 2 (Rev 1.30, Rev 1.31)	SKU A ~ SKU C	0402/0201	4.2mm/2mm	1mm/5mm	V / X

Note 1: All the specification of test configurations and test modes were based on customer's request.

Note 2: V : With X :Without

The transformer information as below:

Transformer	Brand	LAN	LAN	WAN
SKU A	Mingtek	HN8011VG	HN8011VG	HN18101CG
SKU B	Mingtek	HN8014VG	HN8015VG	HN18101CG
SKU C	FCE	NS777207	NS777208	NS771802

3.8. Table for Class II Change

This product is an extension of original one reported under Sporton project number: FR532637-04AA

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

Modifications	Performance Checking
Updating test rule of 5GHz band 4 to "15.407 (b)(4)(ii) of New Rules (ET Docket No. 13–49; FCC 16–24)" from "Old Rules" for version 2 of EUT.	1. 26dB Spectrum Bandwidth and 99% Occupied Bandwidth. 2. Power Spectral Density. 3. Frequency Stability.

Note: Above tests will be based on original output power to re-test.

3.9. Table for Supporting Units

Support Unit	Brand	Model	FCC ID
Notebook	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 4TX/4RX Function:

EUT: Version 2 / Non-beamforming function

Test Software Version	MTOOL 2.0.2.7					
Mode	Test Frequency (MHz)					
	NCB: 20MHz			NCB: 40MHz		NCB: 80MHz
	5745 MHz	5785 MHz	5825 MHz	5755 MHz	5795 MHz	5775 MHz
802.11a	103	102	101	-	-	-
802.11ac MCS0/Nss1 VHT20	103	102	100	-	-	-
802.11ac MCS0/Nss1 VHT40	-	-	-	99	100	-
802.11ac MCS0/Nss1 VHT80	-	-	-	-	-	94

EUT: Version 2 / Beamforming function

Test Software Version	MTOOL 2.0.2.7					
Mode	Test Frequency (MHz)					
	NCB: 20MHz			NCB: 40MHz		NCB: 80MHz
	5745 MHz	5785 MHz	5825 MHz	5755 MHz	5795 MHz	5775 MHz
802.11ac MCS0/Nss1 VHT20	87	86	84	-	-	-
802.11ac MCS0/Nss1 VHT40	-	-	-	87	86	-
802.11ac MCS0/Nss1 VHT80	-	-	-	-	-	87
802.11ac MCS0/Nss2 VHT20	99	98	98	-	-	-
802.11ac MCS0/Nss2 VHT40	-	-	-	99	98	-
802.11ac MCS0/Nss2 VHT80	-	-	-	-	-	95

3.11. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4. TEST RESULT

4.1. 26dB Bandwidth and 99% Occupied Bandwidth Measurement

4.1.1. Limit

No restriction limits.

4.1.2. Measuring Instruments and Setting

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

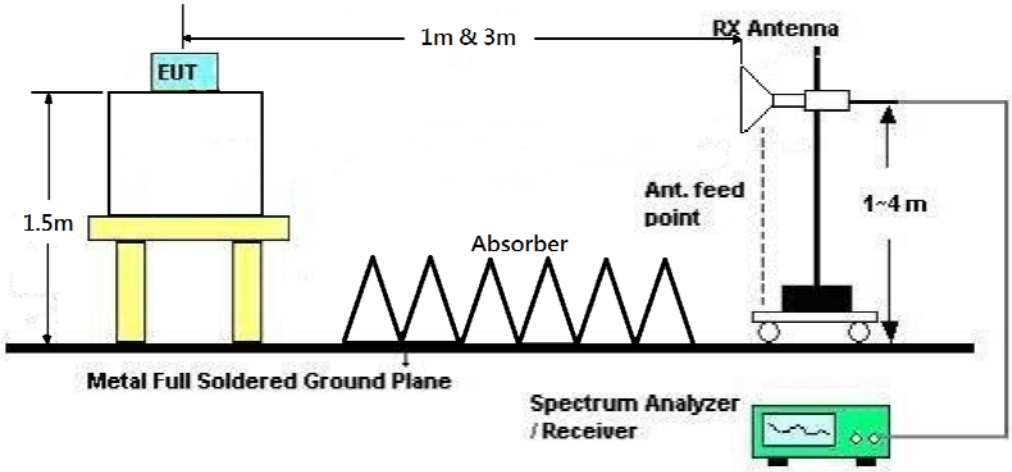
26dB Bandwidth	
Spectrum Parameters	**Setting**
Attenuation	Auto
Span Frequency	> 26dB Bandwidth
RBW	Approximately 1% of the emission bandwidth
VBW	VBW > RBW
Detector	Peak
Trace	Max Hold
Sweep Time	Auto
99% Occupied Bandwidth	
Spectrum Parameters	**Setting**
Span	1.5 times to 5.0 times the OBW
RBW	1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

4.1.3. Test Procedures

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

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

4.1.4. Test Setup Layout



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	20°C	Humidity	60%
Test Engineer	Peter Wu		

<For Non-Beamforming Mode>

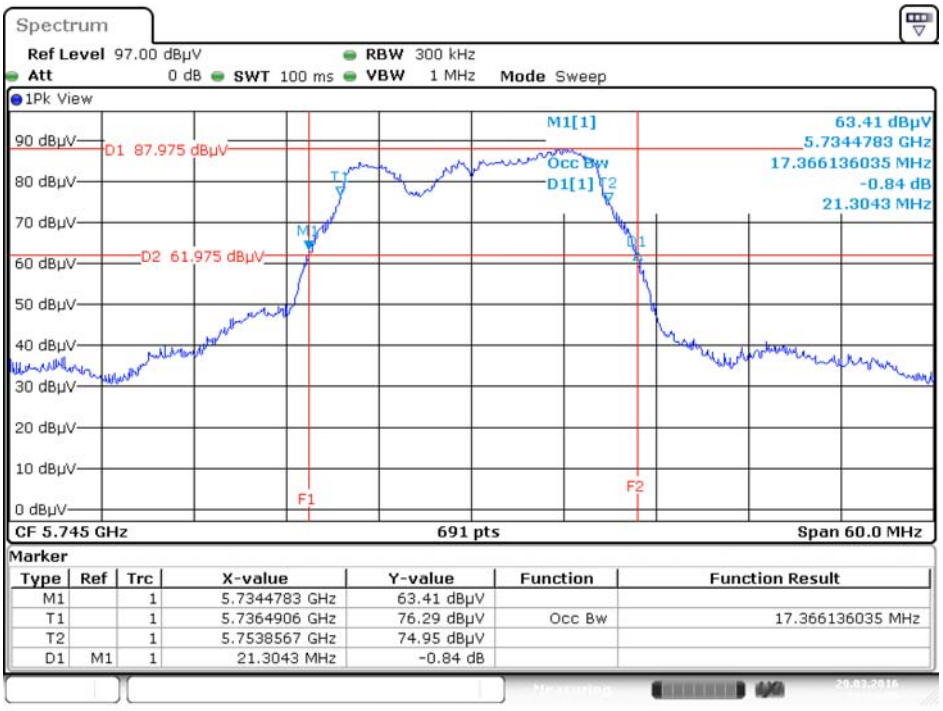
Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11a	5745 MHz	21.30	17.37
	5785 MHz	21.13	17.19
	5825 MHz	21.13	17.37
802.11ac MCS0/Nss1 VHT20	5745 MHz	21.39	18.15
	5785 MHz	21.57	18.15
	5825 MHz	21.65	18.23
802.11ac MCS0/Nss1 VHT40	5755 MHz	40.58	36.76
	5795 MHz	40.44	36.61
802.11ac MCS0/Nss1 VHT80	5775 MHz	81.74	75.83

<For Beamforming Mode>

Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11ac MCS0/Nss1 VHT20	5745 MHz	21.74	18.06
	5785 MHz	21.57	18.06
	5825 MHz	21.57	18.06
802.11ac MCS0/Nss1 VHT40	5755 MHz	40.87	36.90
	5795 MHz	41.16	36.76
802.11ac MCS0/Nss1 VHT80	5775 MHz	81.74	76.12
802.11ac MCS0/Nss2 VHT20	5745 MHz	21.91	18.23
	5785 MHz	22.08	18.23
	5825 MHz	21.73	18.14
802.11ac MCS0/Nss2 VHT40	5755 MHz	41.15	37.19
	5795 MHz	41.30	37.04
802.11ac MCS0/Nss2 VHT80	5775 MHz	82.31	76.12

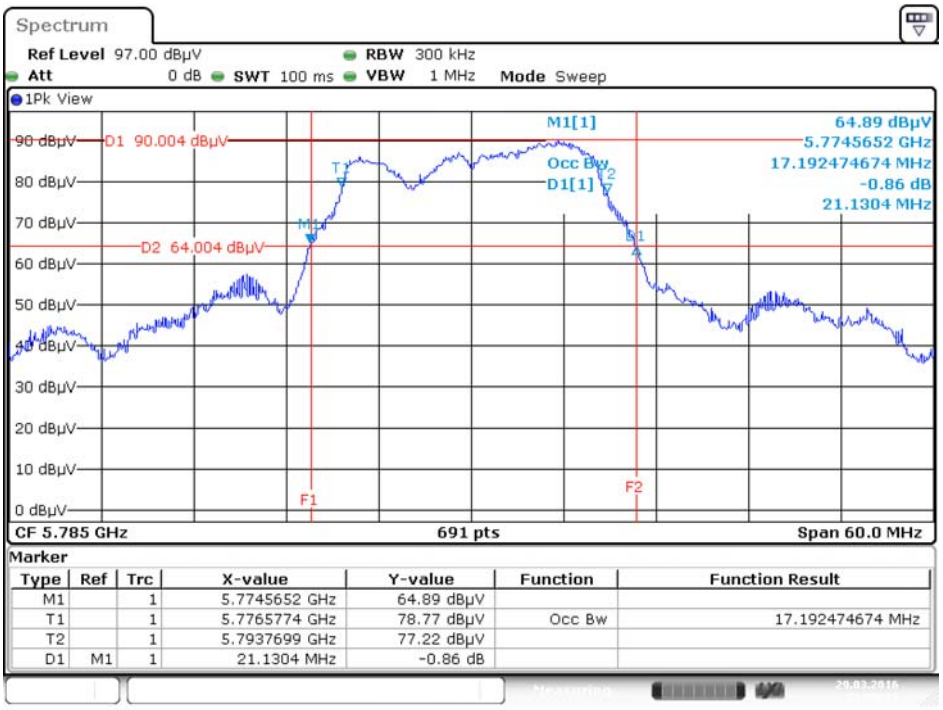
<For Non-Beamforming Mode>

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



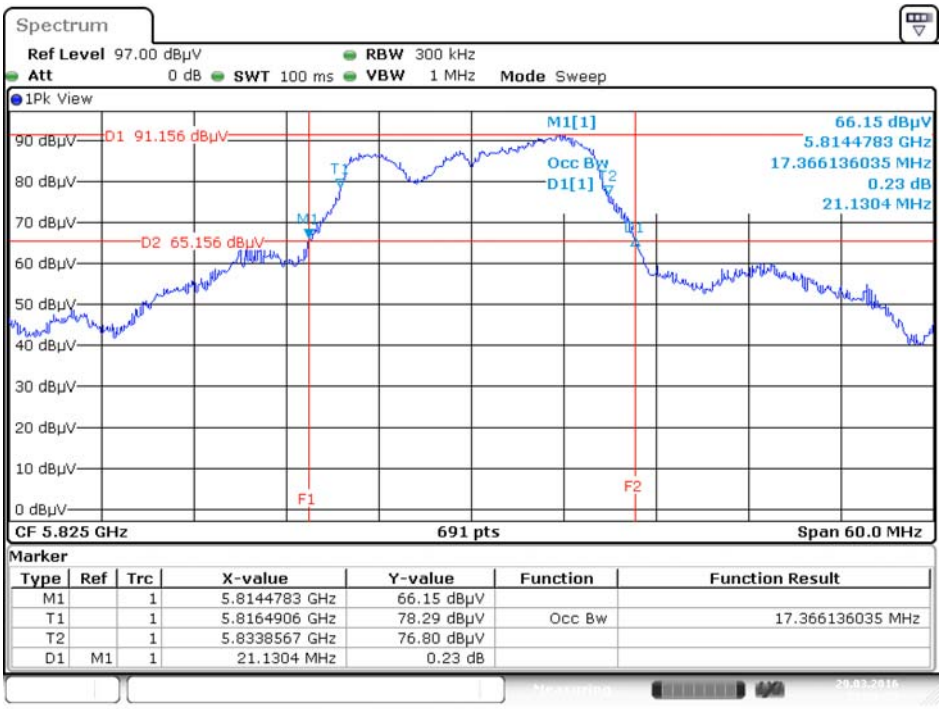
Date: 29.MAR.2016 23:24:50

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



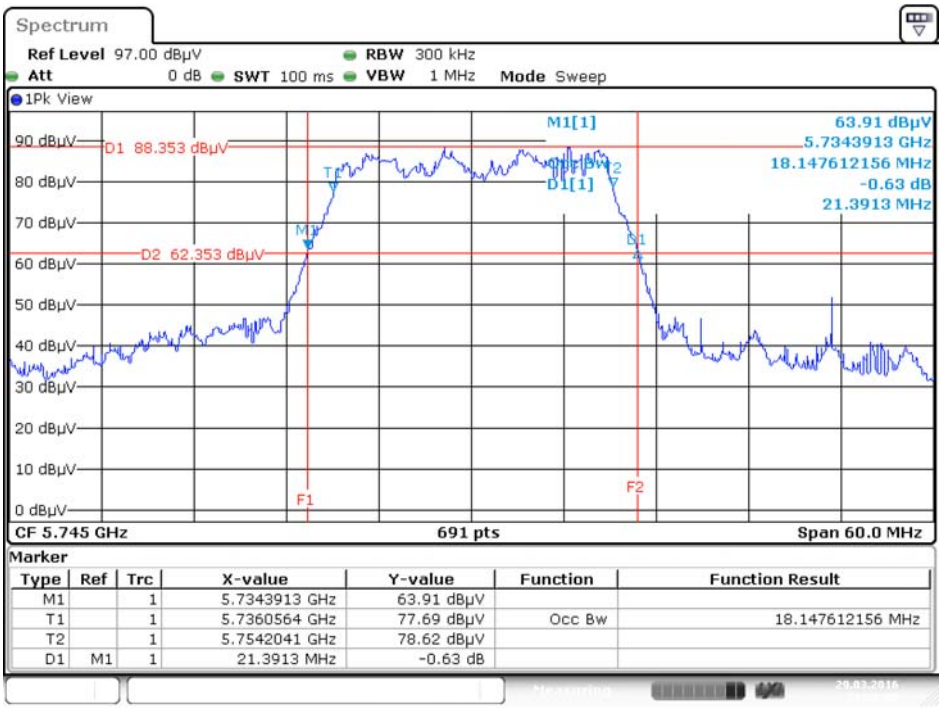
Date: 29.MAR.2016 23:25:52

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



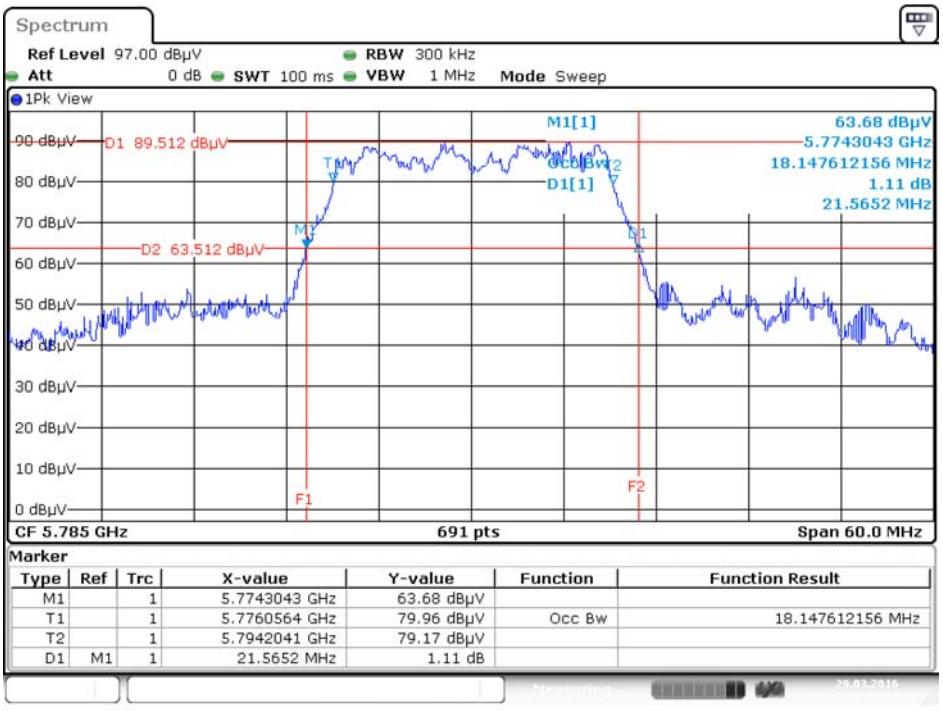
Date: 29.MAR.2016 23:26:22

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



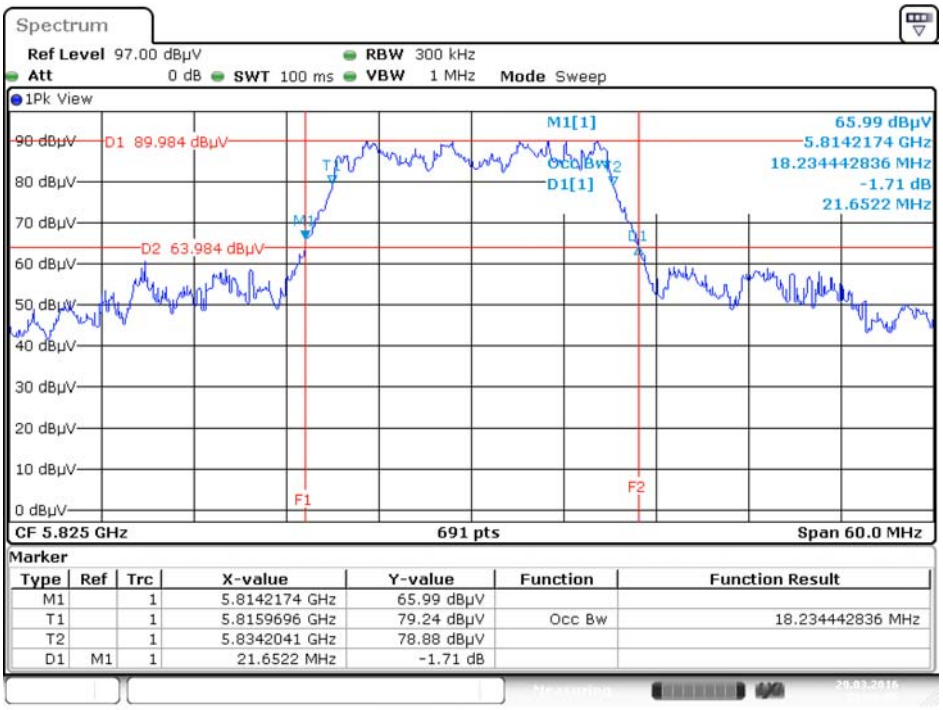
Date: 29.MAR.2016 23:28:09

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



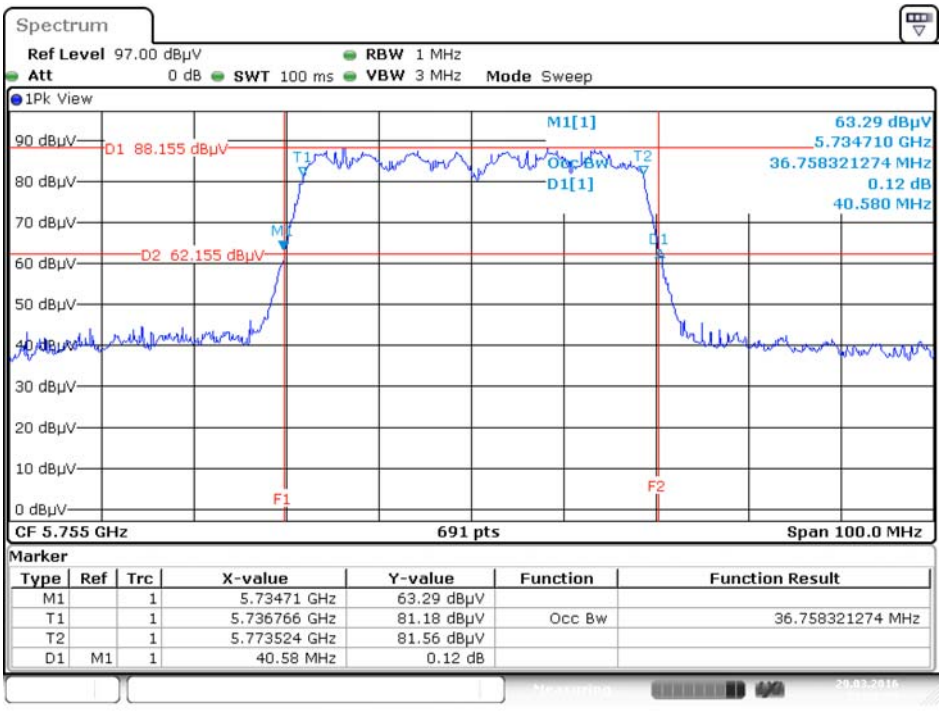
Date: 29.MAR.2016 23:27:39

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



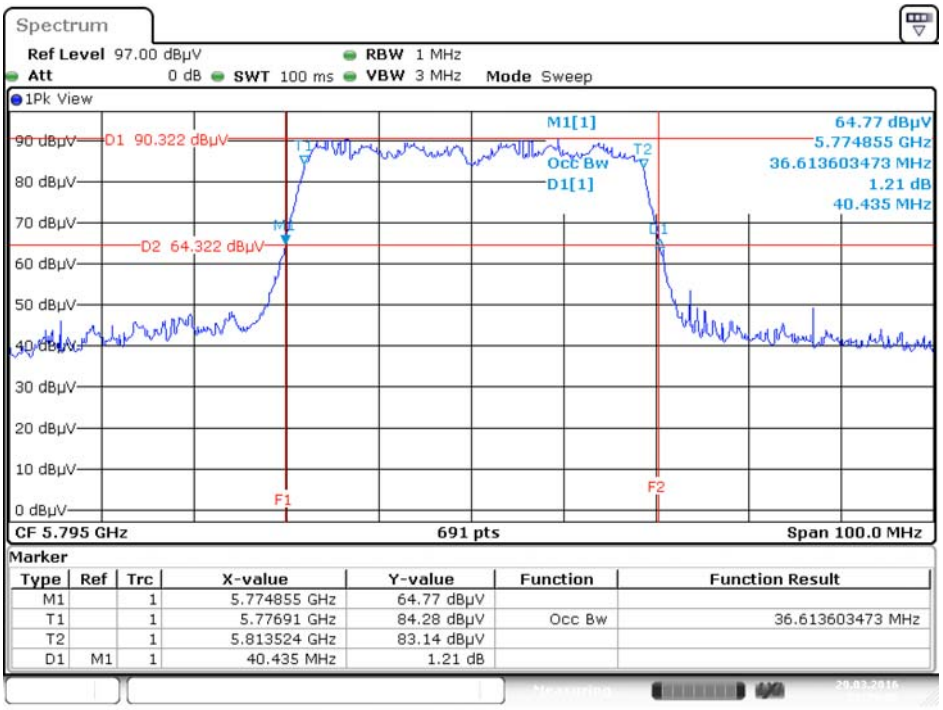
Date: 29.MAR.2016 23:26:56

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



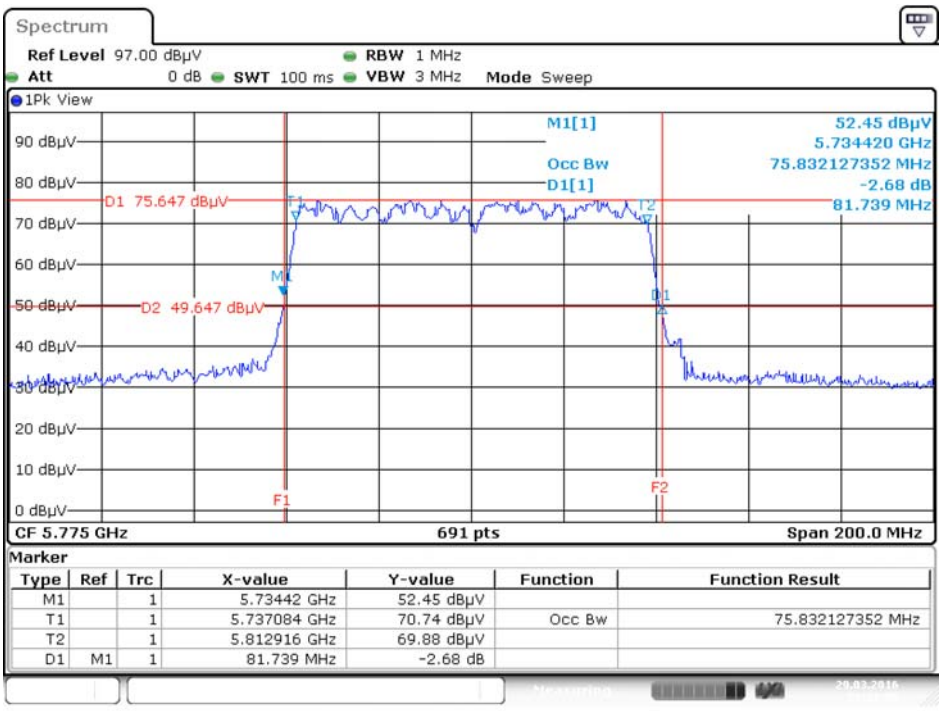
Date: 29.MAR.2016 23:28:53

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



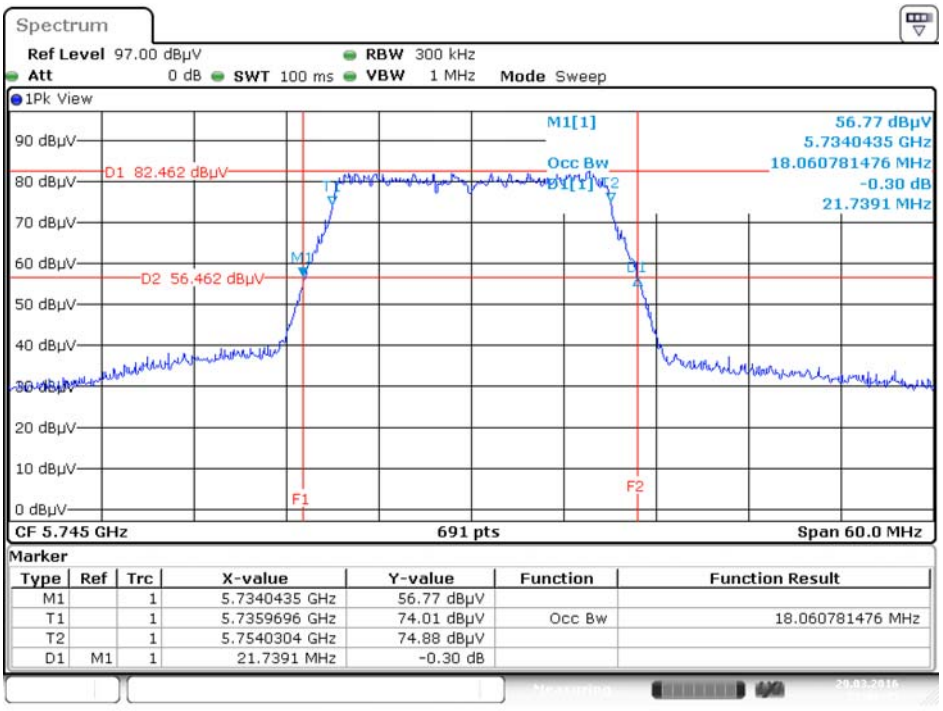
Date: 29.MAR.2016 23:29:36

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



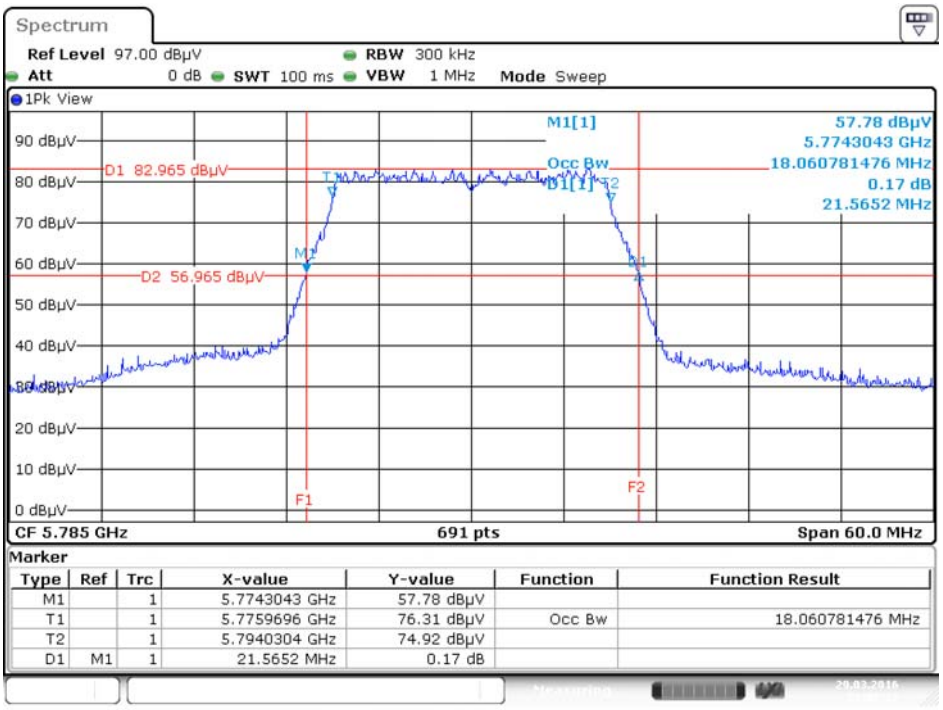
<For Beamforming Mode>

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



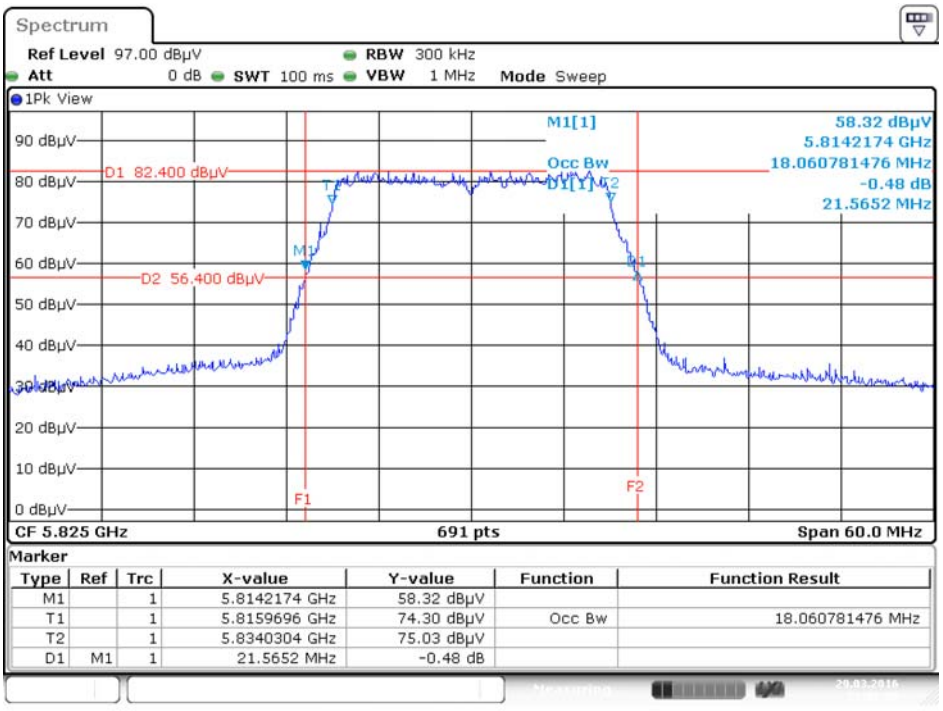
Date: 29.MAR.2016 23:06:46

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



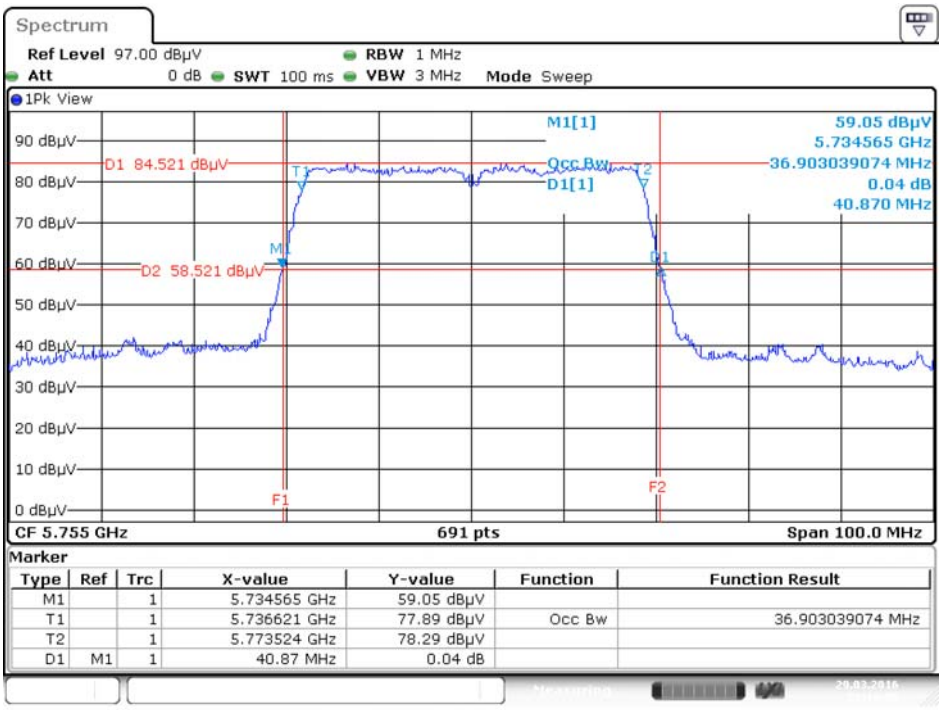
Date: 29.MAR.2016 23:07:38

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



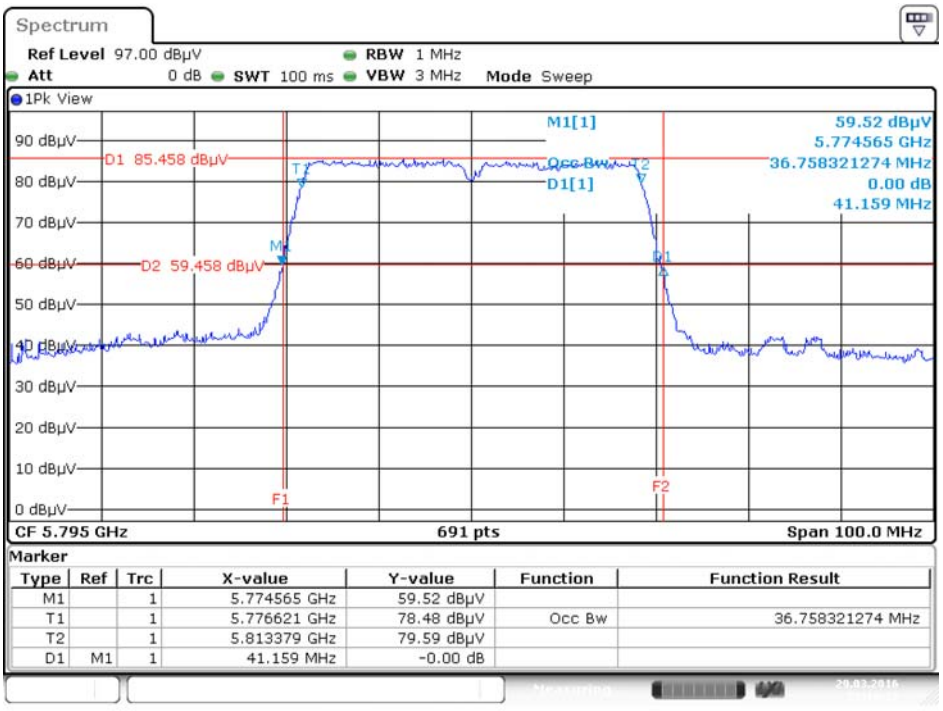
Date: 29.MAR.2016 23:08:20

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



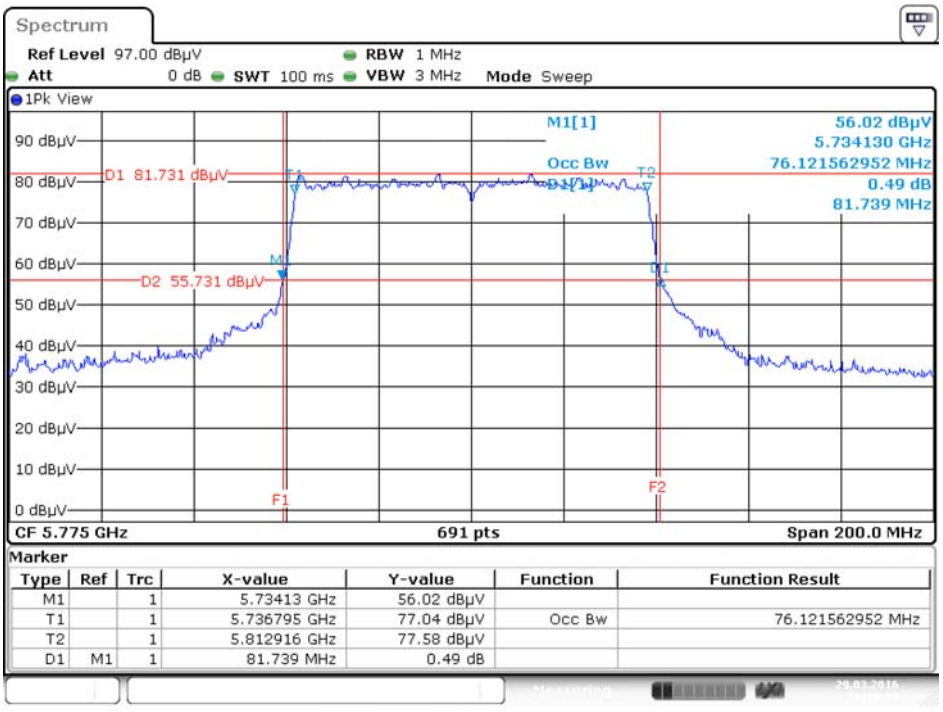
Date: 29.MAR.2016 23:14:04

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



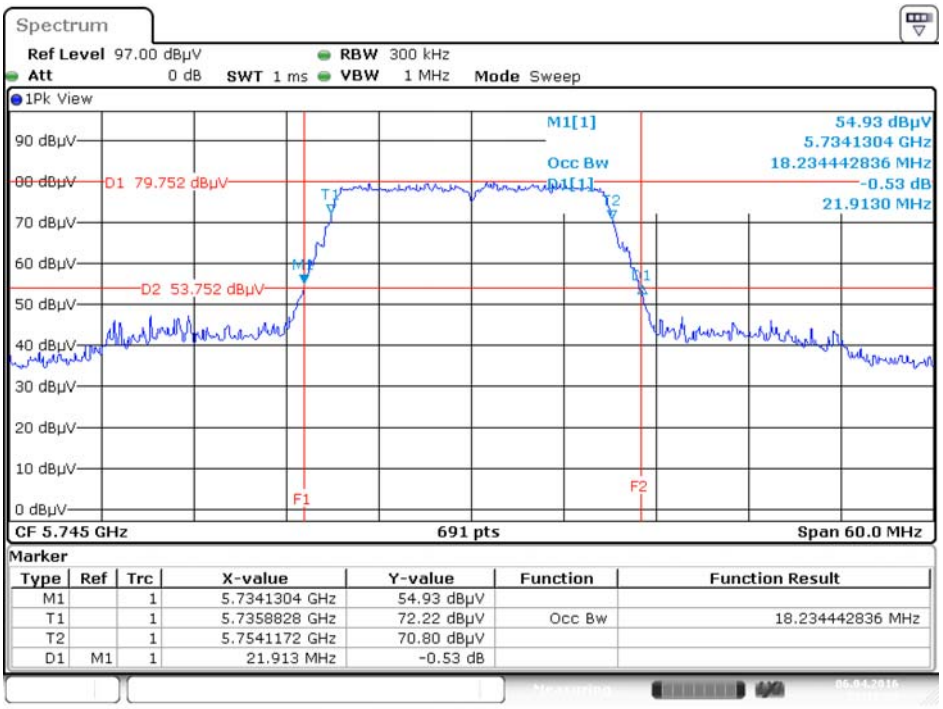
Date: 29.MAR.2016 23:14:37

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



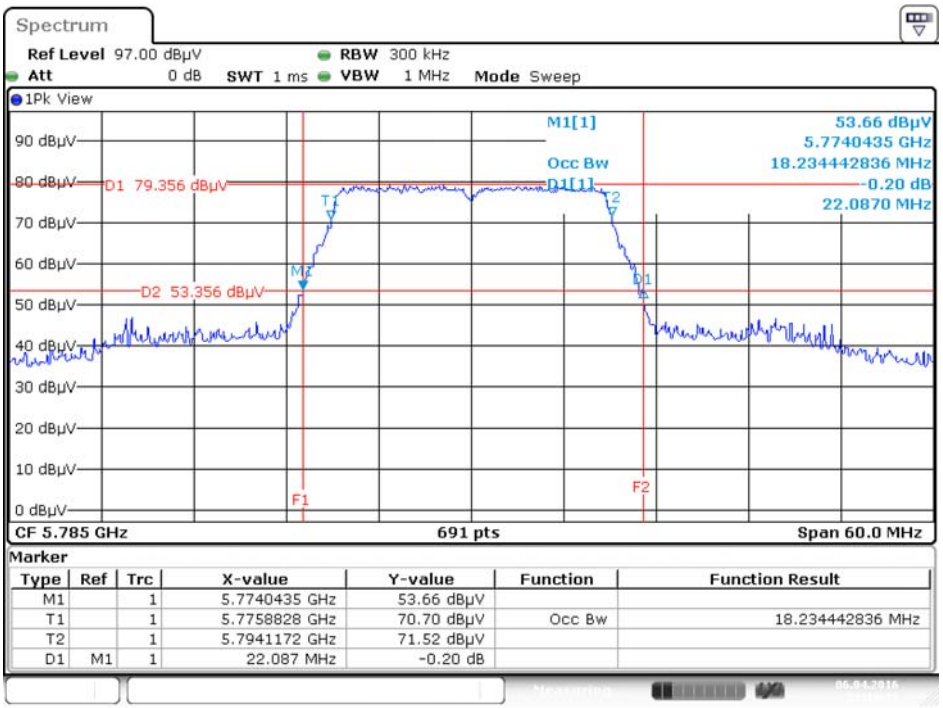
Date: 29.MAR.2016 23:15:33

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5745 MHz



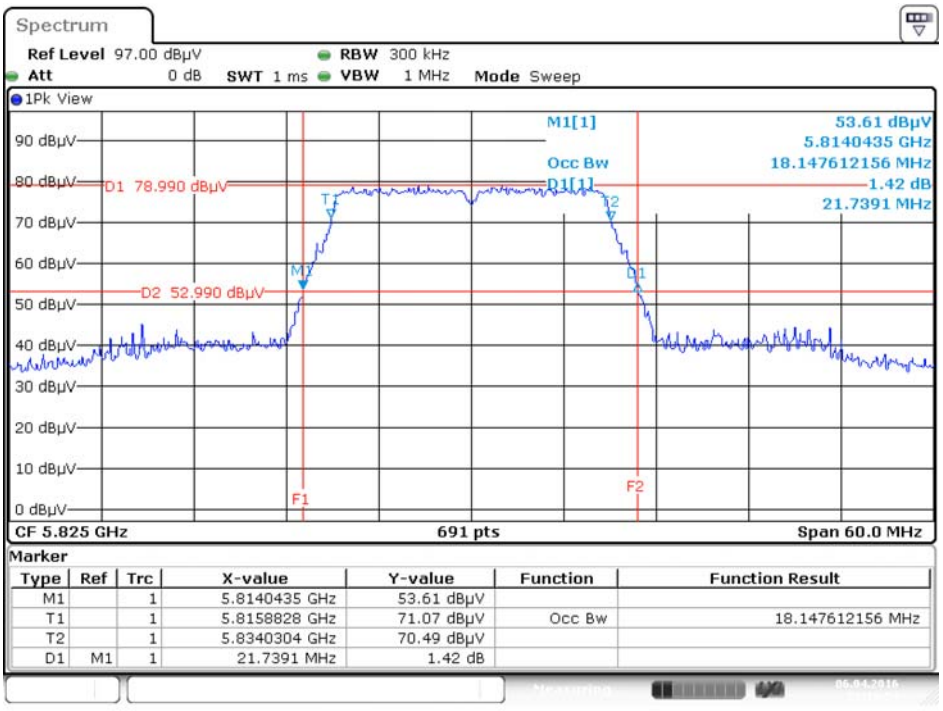
Date: 6.APR.2016 23:18:24

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT20 / Chain 1 + Chain 2 + Chain 3 / 5785 MHz



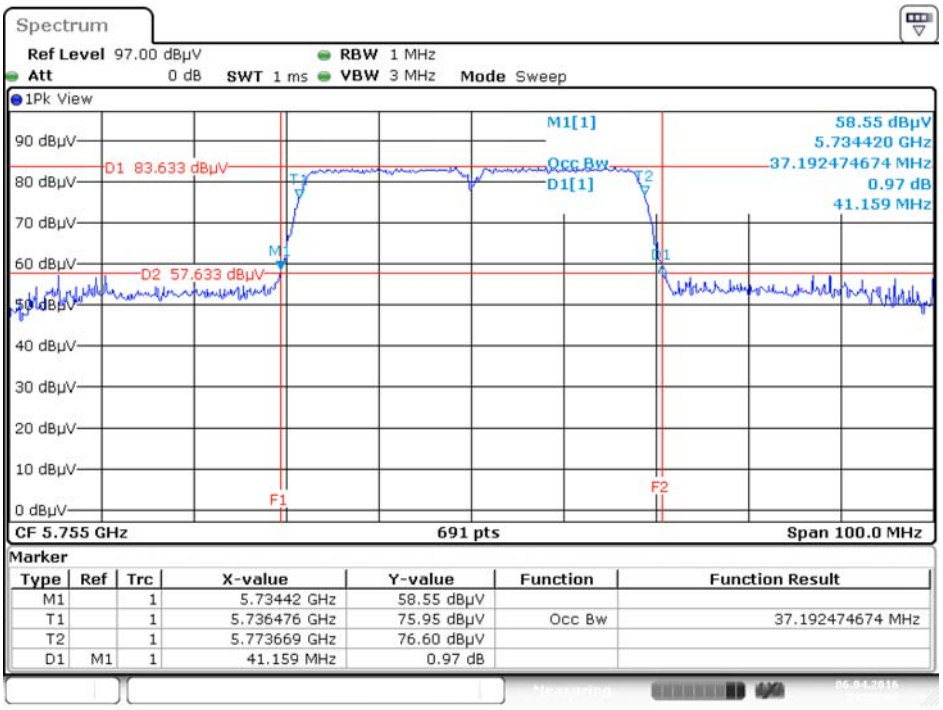
Date: 6.APR.2016 23:19:31

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5825 MHz



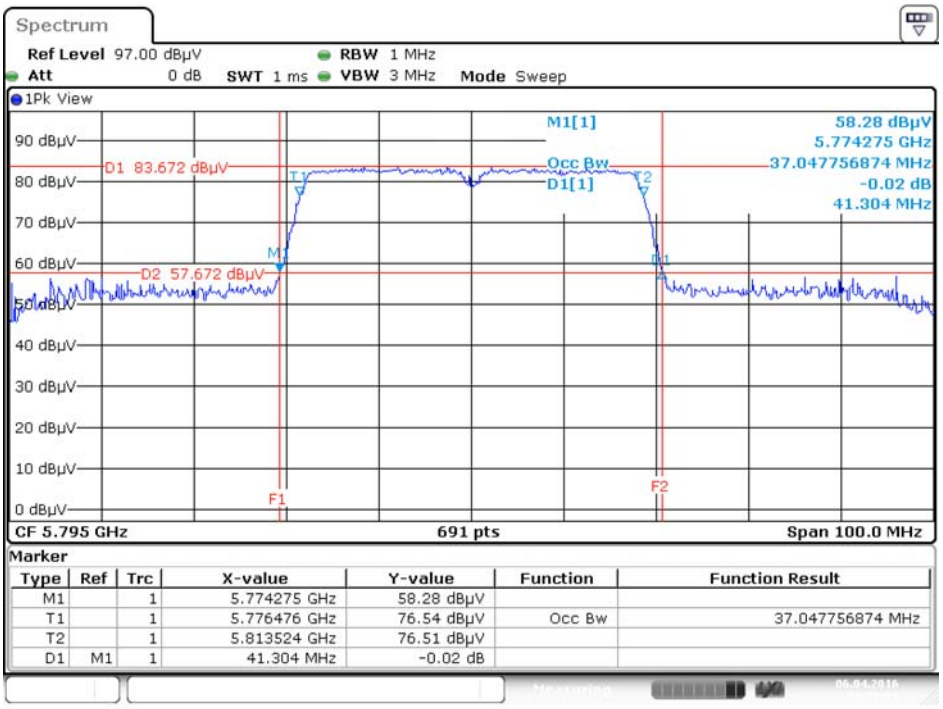
Date: 6.APR.2016 23:19:54

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5755 MHz



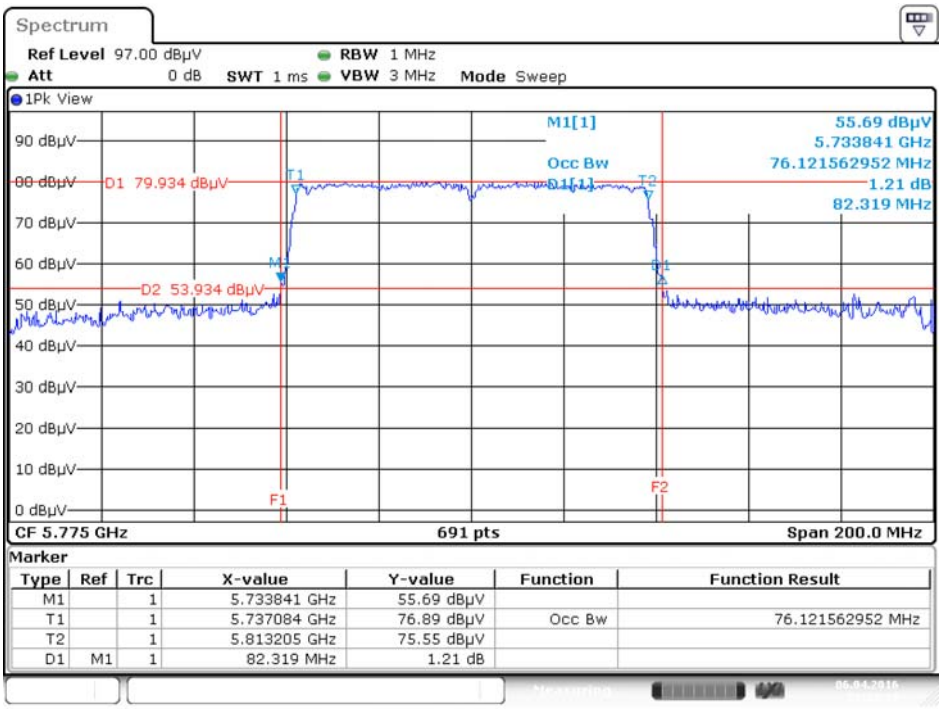
Date: 6.APR.2016 23:20:47

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5795 MHz



Date: 6.APR.2016 23:21:31

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5775 MHz



Date: 6.APR.2016 23:22:10

4.2. Power Spectral Density Measurement

4.2.1. Limit

Frequency Band		Limit
☒	5.725~5.85 GHz	30 dBm/500kHz

4.2.2. Measuring Instruments and Setting

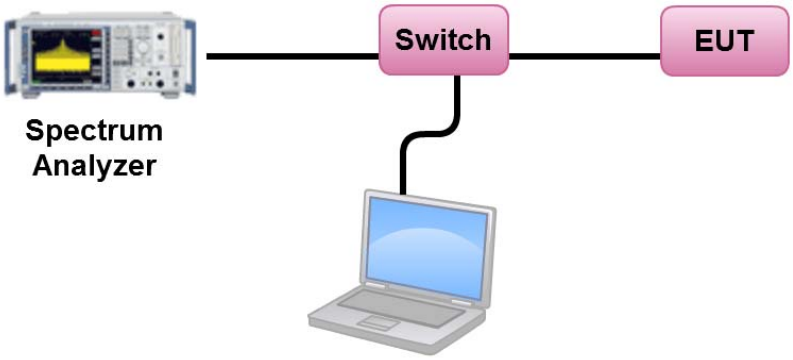
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Encompass the entire emissions bandwidth (EBW) of the signal
RBW	1000 kHz
VBW	3000 kHz
Detector	RMS
Trace	AVERAGE
Sweep Time	Auto
Trace Average	100 times
Note: If measurement bandwidth of Maximum PSD is specified in 500 kHz, add 10log(500kHz/RBW) to the measured result, whereas RBW (< 500 kHz) is the reduced resolution bandwidth of the spectrum analyzer set during measurement.	

4.2.3. Test Procedures

1. The transmitter output (antenna port) was connected RF switch to the spectrum analyzer.
2. Test was performed in accordance with KDB789033 D02 v01r01 for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - section (F) Maximum Power Spectral Density (PSD).
3. Multiple antenna systems was performed in accordance KDB662911 D01 v02r01 in-Band Power Spectral Density (PSD) Measurements and sum the spectra across the outputs.
4. For 5.725~5.85 GHz, the measured result of PSD level must add 10log(500kHz/RBW) and the final result should ≤ 30 dBm.

4.2.4. Test Setup Layout



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 Power Spectral Density

Temperature	20°C	Humidity	60%
Test Engineer	Peter Wu		

<For Non-Beamforming Mode>

Mode	Frequency	Power Density (dBm/3kHz)					10log(500kHz/RBW) Factor (dB)	Total Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total				
802.11a	5745 MHz	-11.14	-10.25	-11.09	-10.27	-4.65	22.22	17.57	26.51	Complies
	5785 MHz	-10.86	-10.64	-10.71	-10.96	-4.77	22.22	17.45	26.51	Complies
	5825 MHz	-10.25	-10.05	-10.27	-11.66	-4.49	22.22	17.73	26.51	Complies
802.11ac MCS0/Nss1 VHT20	5745 MHz	-11.70	-11.28	-11.76	-11.46	-5.53	22.22	16.69	26.51	Complies
	5785 MHz	-11.67	-11.51	-11.71	-11.65	-5.61	22.22	16.60	26.51	Complies
	5825 MHz	-11.29	-11.17	-11.66	-12.74	-5.65	22.22	16.57	26.51	Complies
802.11ac MCS0/Nss1 VHT40	5755 MHz	-15.51	-15.49	-15.29	-15.07	-9.32	22.22	12.90	26.51	Complies
	5795 MHz	-14.68	-14.49	-14.15	-14.63	-8.46	22.22	13.76	26.51	Complies
802.11ac MCS0/Nss1 VHT80	5775 MHz	-19.46	-19.24	-19.46	-19.39	-13.37	22.22	8.85	26.51	Complies

Note: $Directional\,Gain = 10\log\left[\frac{\sum_{j=1}^{Nss}\left\{\sum_{K=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =9.49dBi >6dBi, so Limit=30-(9.49-6)=26.51dBm/500kHz.

<For Beamforming Mode>

Mode	Frequency	Power Density (dBm/3kHz)					10log(500kHz/RBW) Factor (dB)	Total Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total				
802.11ac MCS0/Nss1 VHT20	5745 MHz	-15.21	-15.08	-15.90	-14.88	-9.23	22.22	12.99	26.51	Complies
	5785 MHz	-14.77	-15.29	-15.57	-15.28	-9.20	22.22	13.02	26.51	Complies
	5825 MHz	-14.78	-14.54	-15.43	-15.50	-9.02	22.22	13.20	26.51	Complies
802.11ac MCS0/Nss1 VHT40	5755 MHz	-17.64	-17.80	-17.93	-17.83	-11.78	22.22	10.44	26.51	Complies
	5795 MHz	-18.43	-17.61	-17.90	-17.64	-11.86	22.22	10.36	26.51	Complies
802.11ac MCS0/Nss1 VHT80	5775 MHz	-21.40	-20.79	-20.60	-20.85	-14.88	22.22	7.34	26.51	Complies
802.11ac MCS0/Nss2 VHT20	5745 MHz	-12.48	-12.30	-12.81	-12.47	-6.49	22.22	15.73	29.52	Complies
	5785 MHz	-12.15	-12.47	-11.97	-12.37	-6.22	22.22	16.00	29.52	Complies
	5825 MHz	-11.26	-11.55	-11.98	-12.20	-5.71	22.22	16.51	29.52	Complies
802.11ac MCS0/Nss2 5 VHT40	5755 MHz	-14.93	-14.67	-14.47	-14.63	-8.65	22.22	13.57	29.52	Complies
	5795 MHz	-14.43	-14.48	-14.18	-14.34	-8.34	22.22	13.88	29.52	Complies
802.11ac MCS0/Nss2 VHT80	5775 MHz	-19.04	-19.03	-19.04	-18.93	-12.99	22.22	9.23	29.52	Complies

Note:

1. 802.11ac MCS0/Nss1 VHT20/40/80 :

$$Directional\,Gain = 10\log\left[\frac{\sum_{j=1}^{Nss}\left\{\sum_{K=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$$ =9.49dBi >6dBi, so Limit=30-(9.49-6)=26.51dBm/500kHz.

2. 802.11ac MCS0/Nss2 VHT20/40/80 :

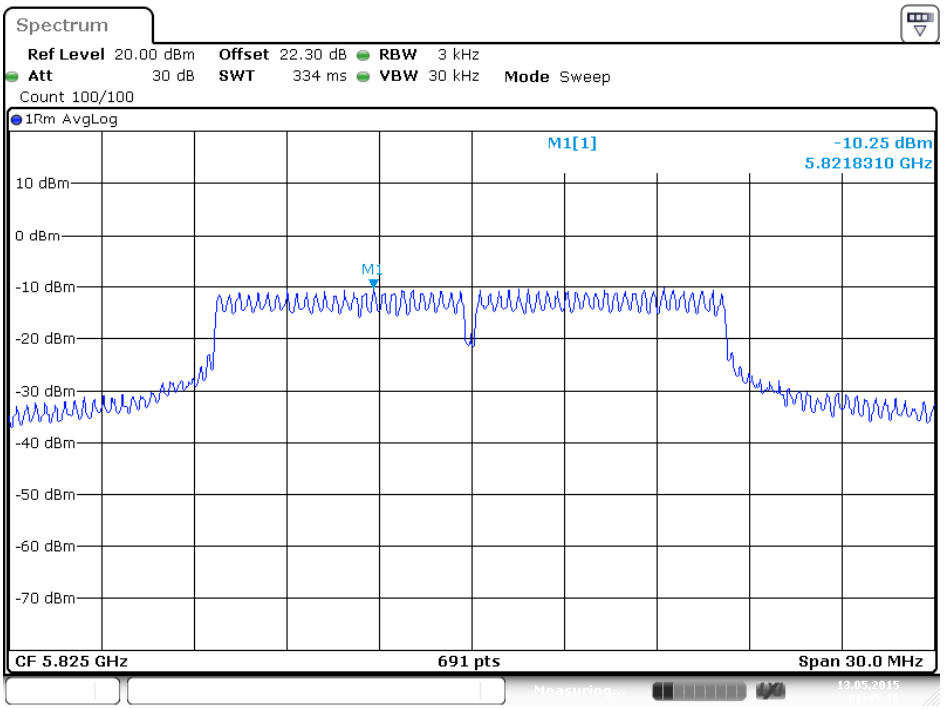
$$Directional\,Gain = 10\log\left[\frac{\sum_{j=1}^{Nss}\left\{\sum_{K=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$$ =6.48dBi >6dBi, so Limit=30-(6.48-6)=29.52dBm/500kHz.

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

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

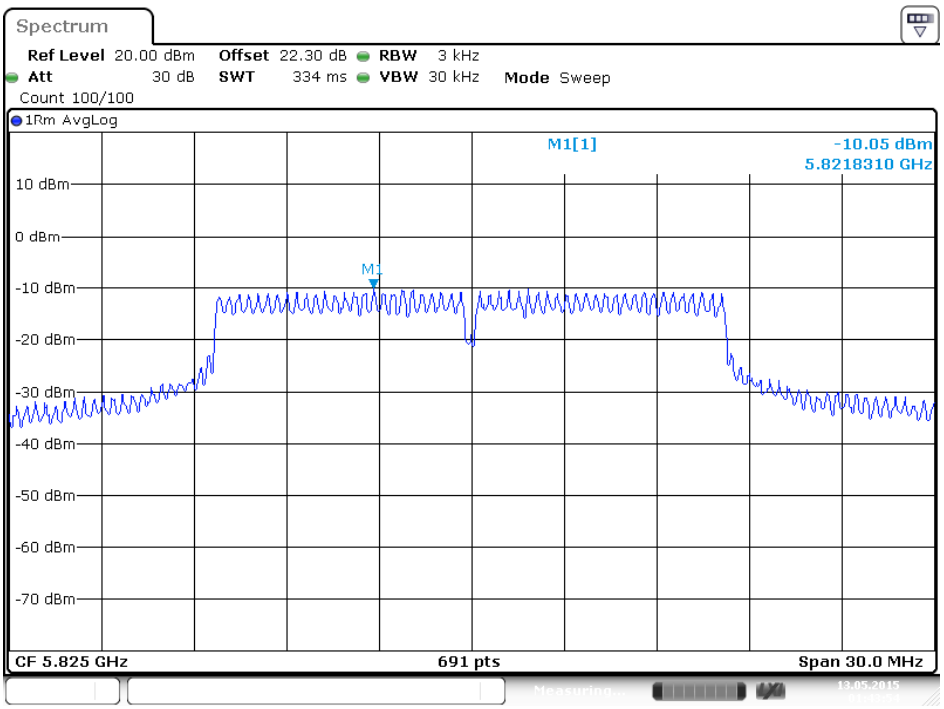
<For Non-Beamforming Mode>

Power Density Plot on Configuration IEEE 802.11a / 5825 MHz / Chain 1



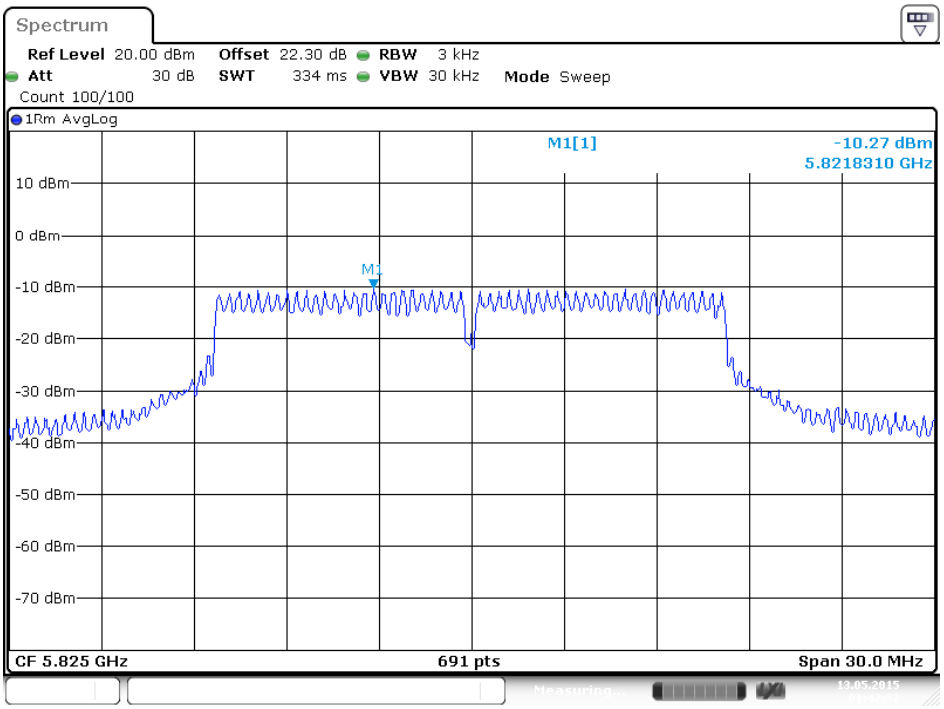
Date: 13.MAY.2015 01:45:17

Power Density Plot on Configuration IEEE 802.11a / 5825 MHz / Chain 2



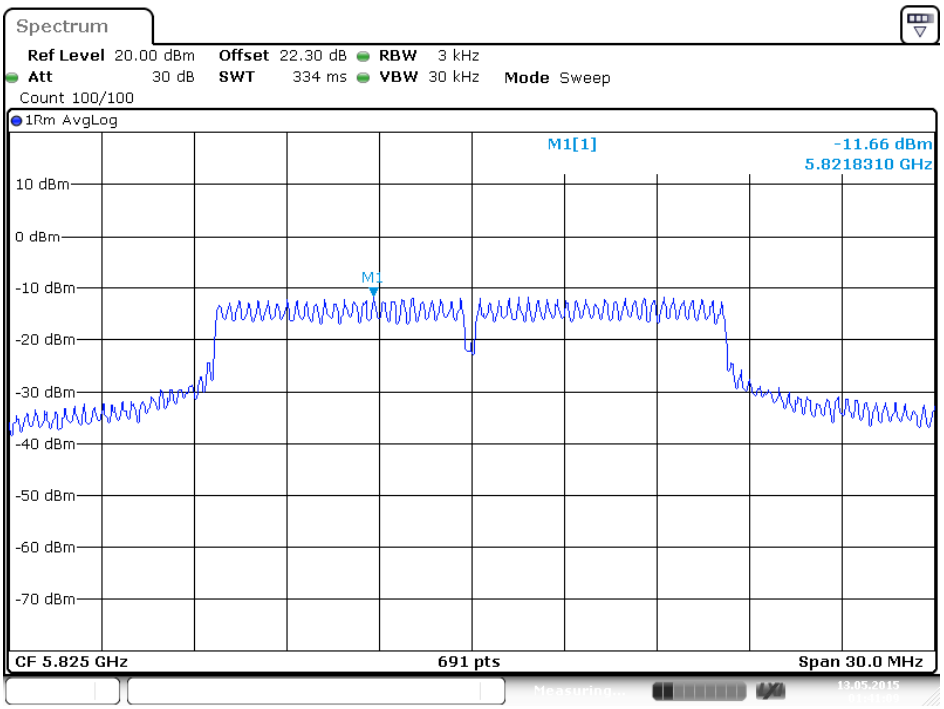
Date: 13.MAY.2015 01:43:54

Power Density Plot on Configuration IEEE 802.11a / 5825 MHz / Chain 3



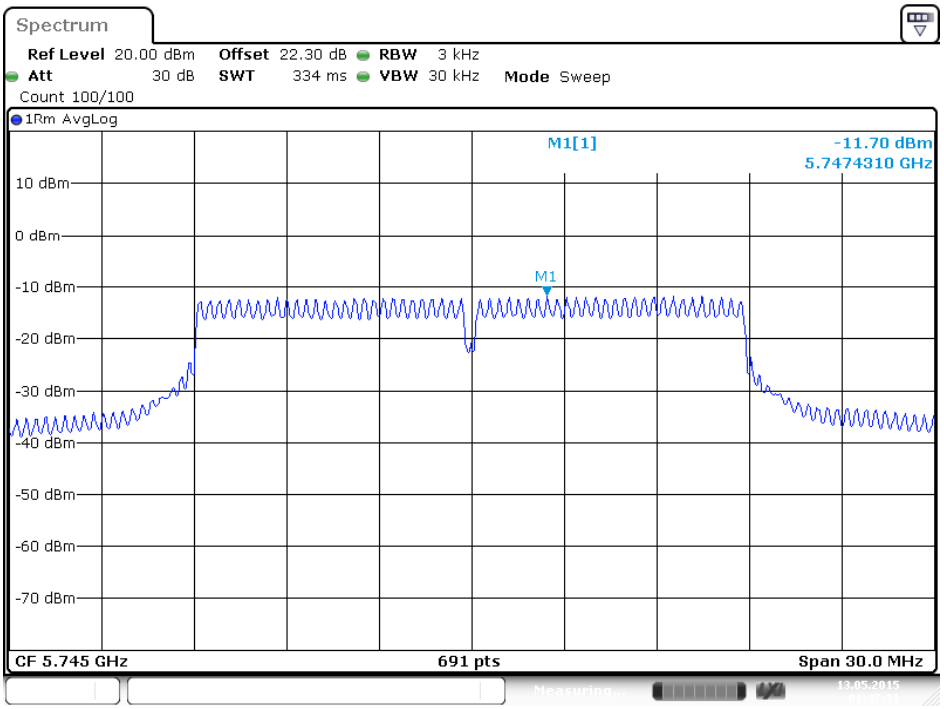
Date: 13.MAY.2015 01:42:32

Power Density Plot on Configuration IEEE 802.11a / 5825 MHz / Chain 4



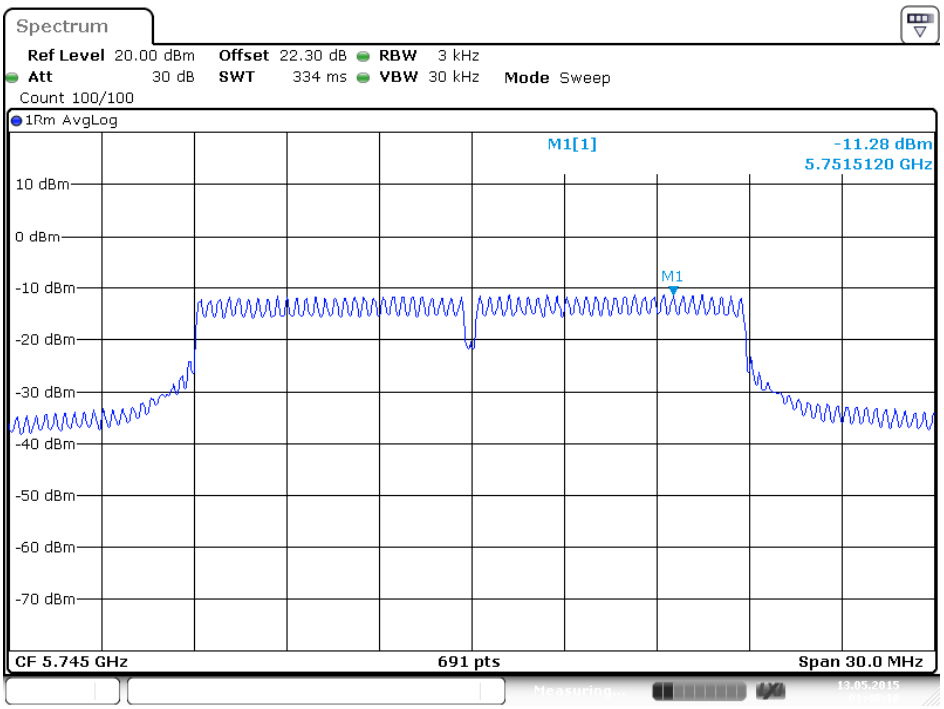
Date: 13.MAY.2015 01:41:09

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 5745 MHz / Chain 1



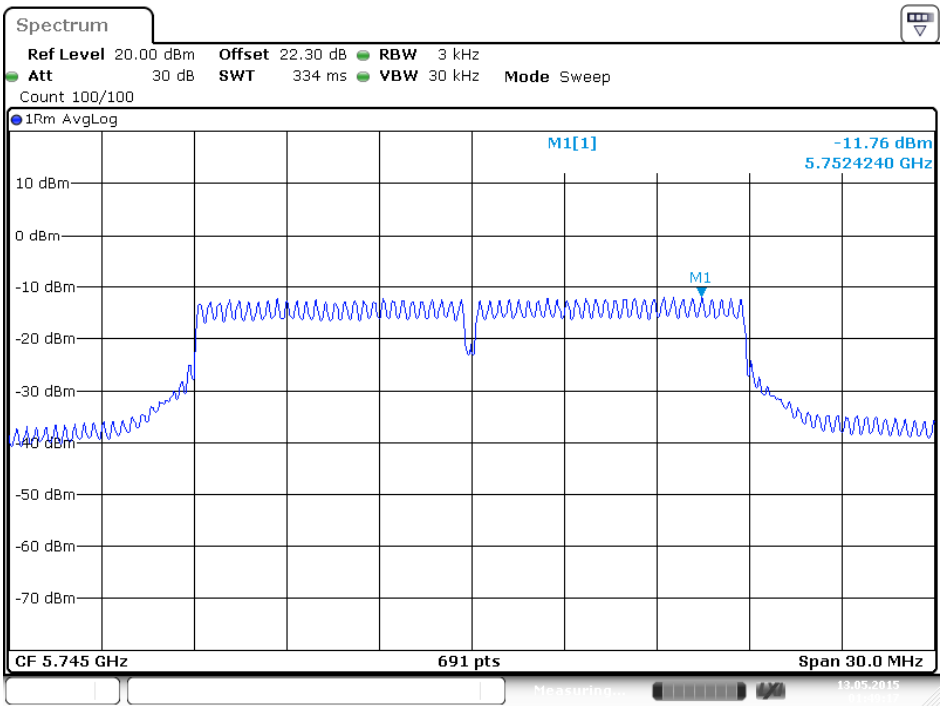
Date: 13.MAY.2015 01:47:11

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 5745 MHz / Chain 2



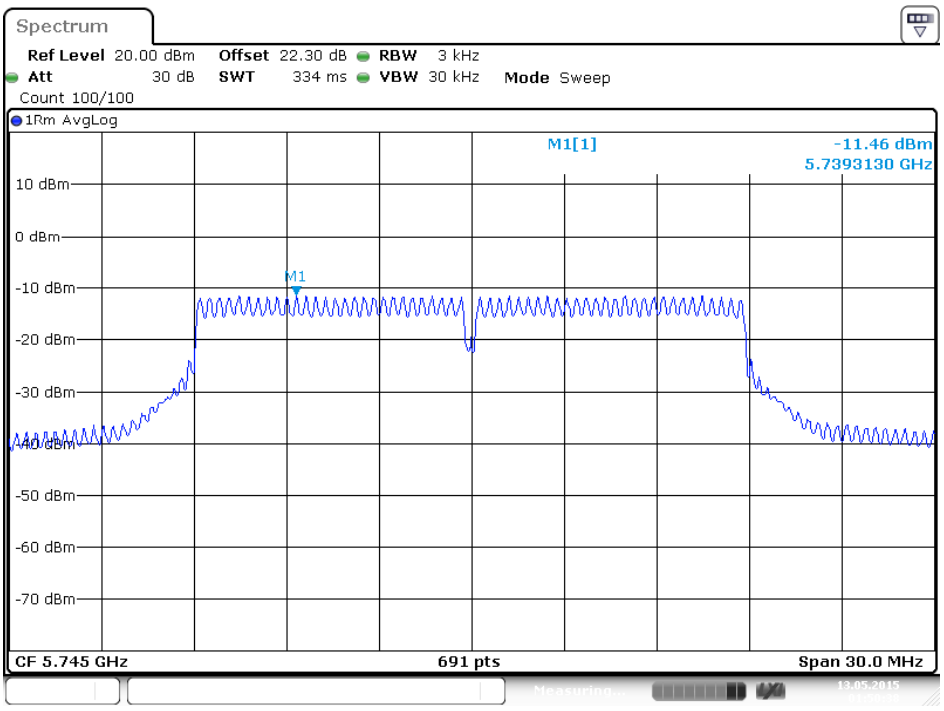
Date: 13.MAY.2015 01:48:17

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 5745 MHz / Chain 3



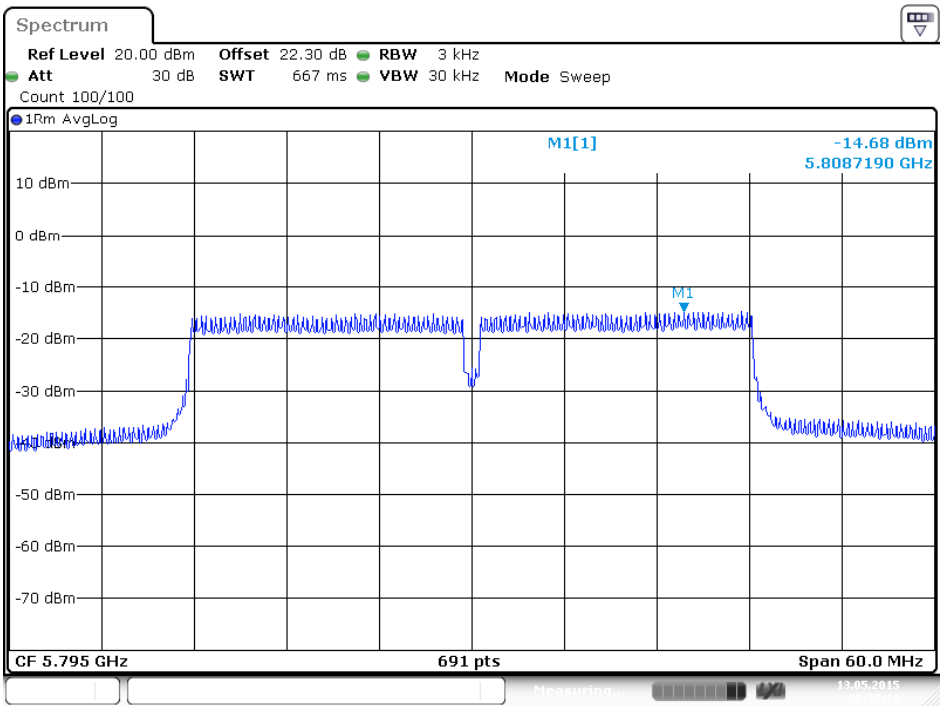
Date: 13.MAY.2015 01:49:18

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 5745 MHz / Chain 4



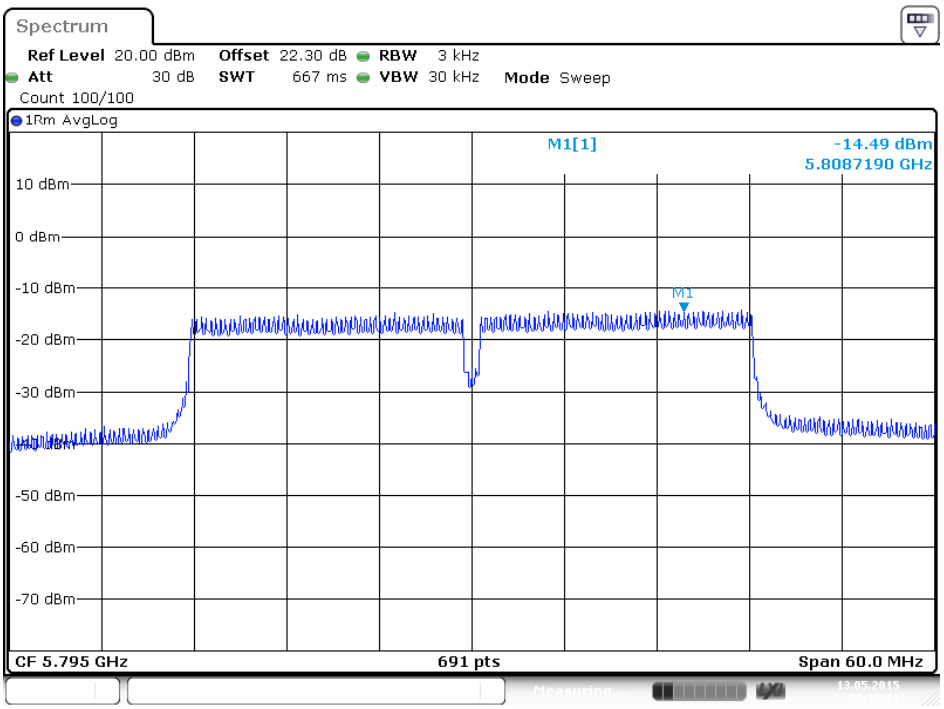
Date: 13.MAY.2015 01:50:38

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 5795 MHz / Chain 1



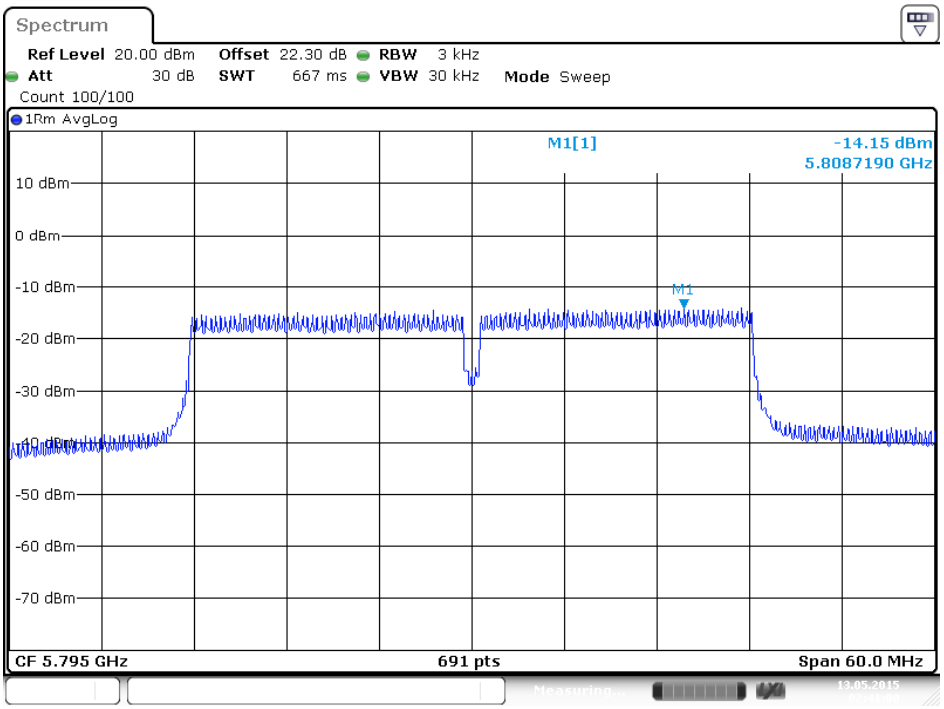
Date: 13.MAY.2015 02:37:19

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 5795 MHz / Chain 2



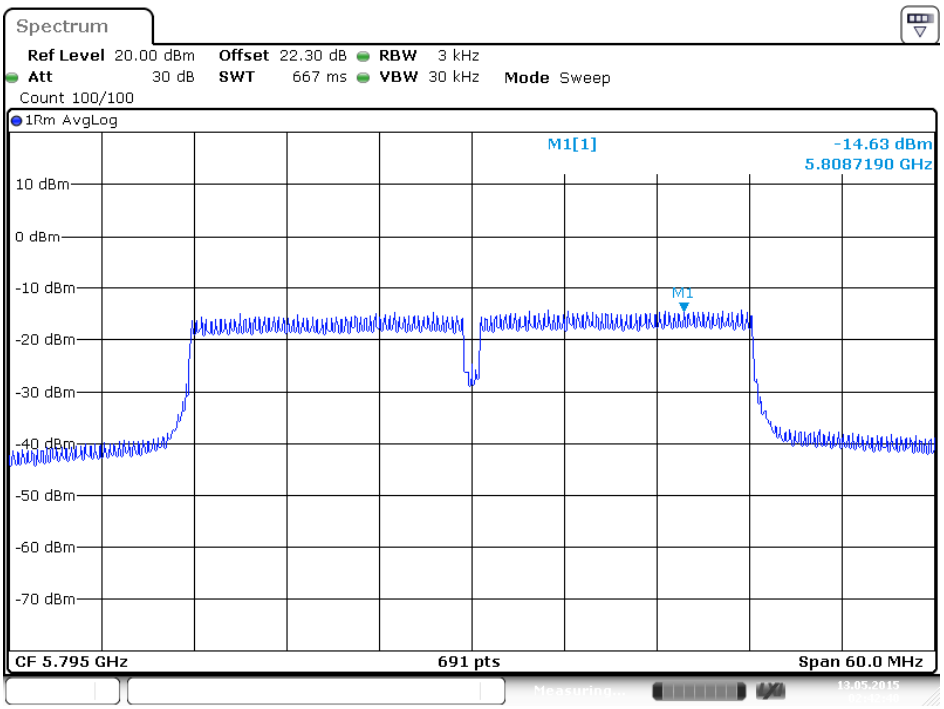
Date: 13.MAY.2015 02:39:11

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 5795 MHz / Chain 3



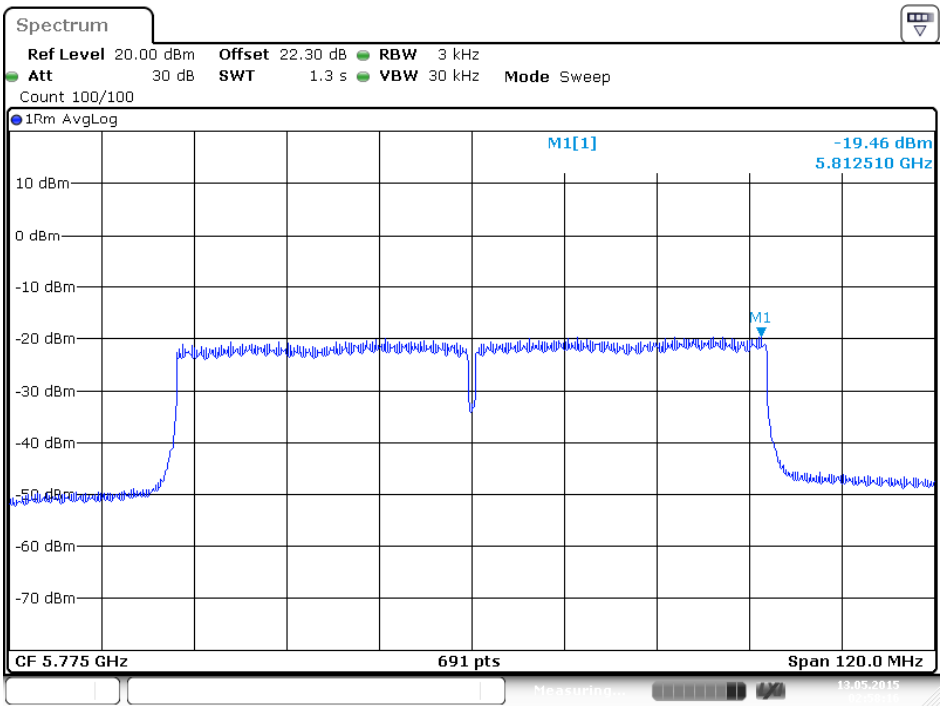
Date: 13.MAY.2015 02:41:00

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 5795 MHz / Chain 4



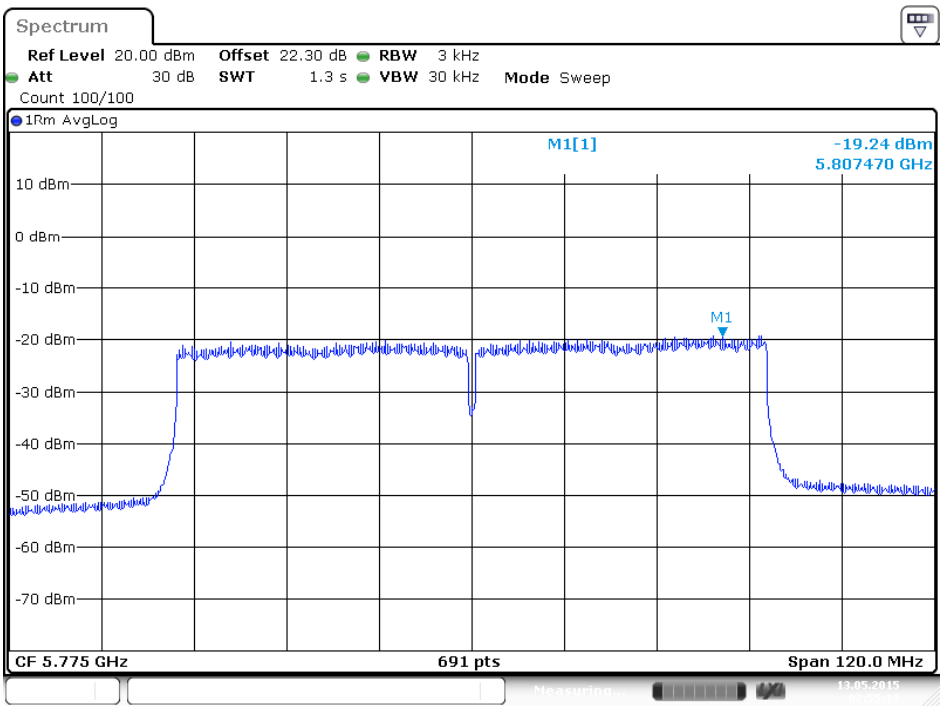
Date: 13.MAY.2015 02:42:40

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / 5775 MHz / Chain 1



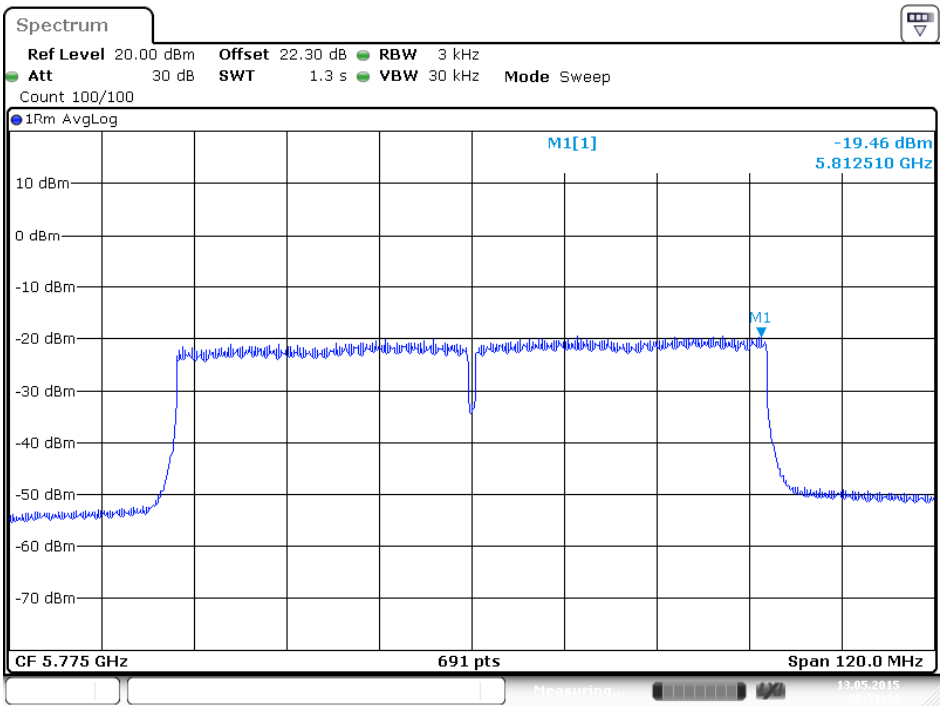
Date: 13.MAY.2015 02:58:15

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / 5775 MHz / Chain 2



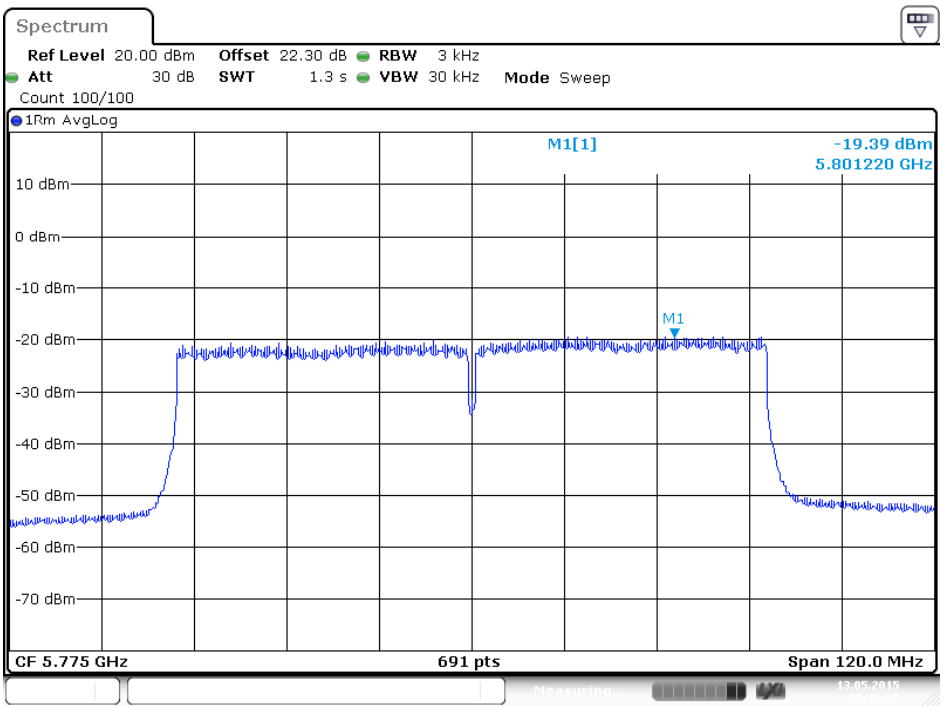
Date: 13.MAY.2015 02:55:13

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / 5775 MHz / Chain 3



Date: 13.MAY.2015 02:51:34

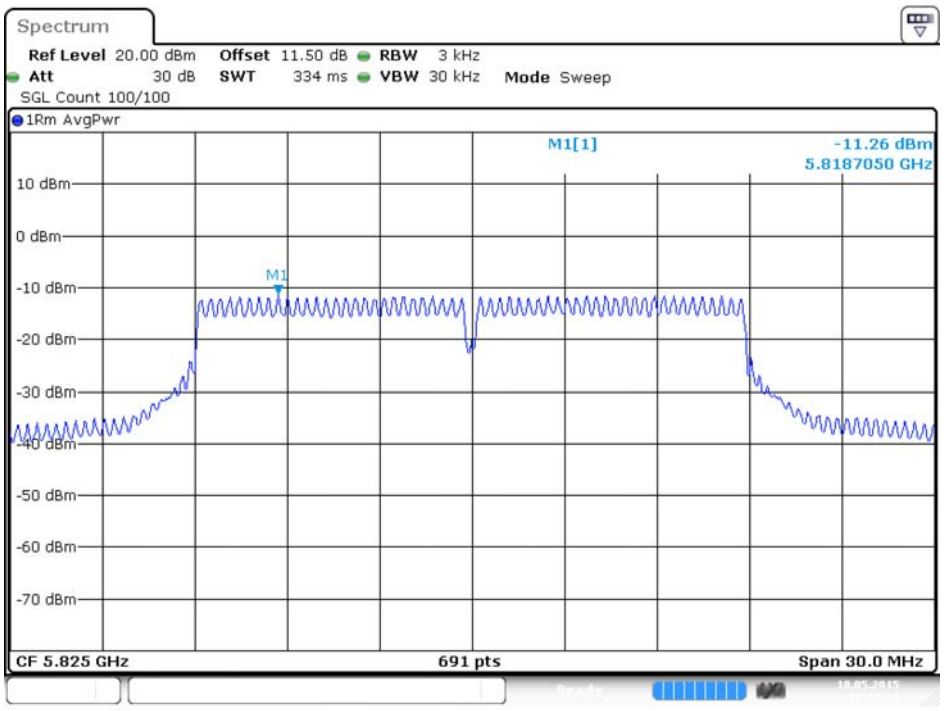
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / 5775 MHz / Chain 4



Date: 13.MAY.2015 02:48:37

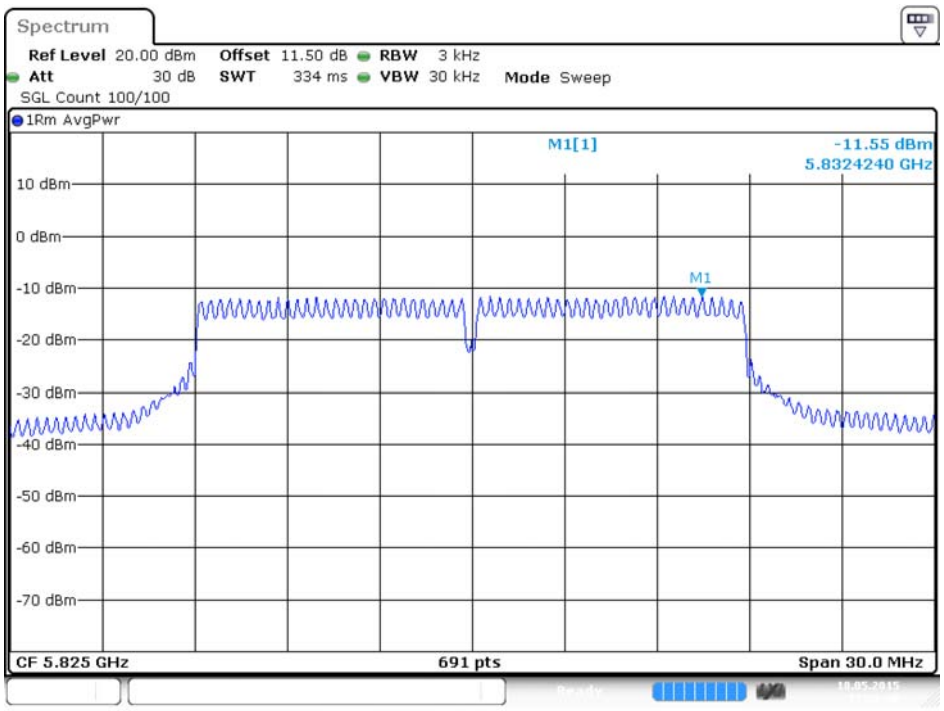
<For Beamforming Mode>

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 5825 MHz / Chain 1



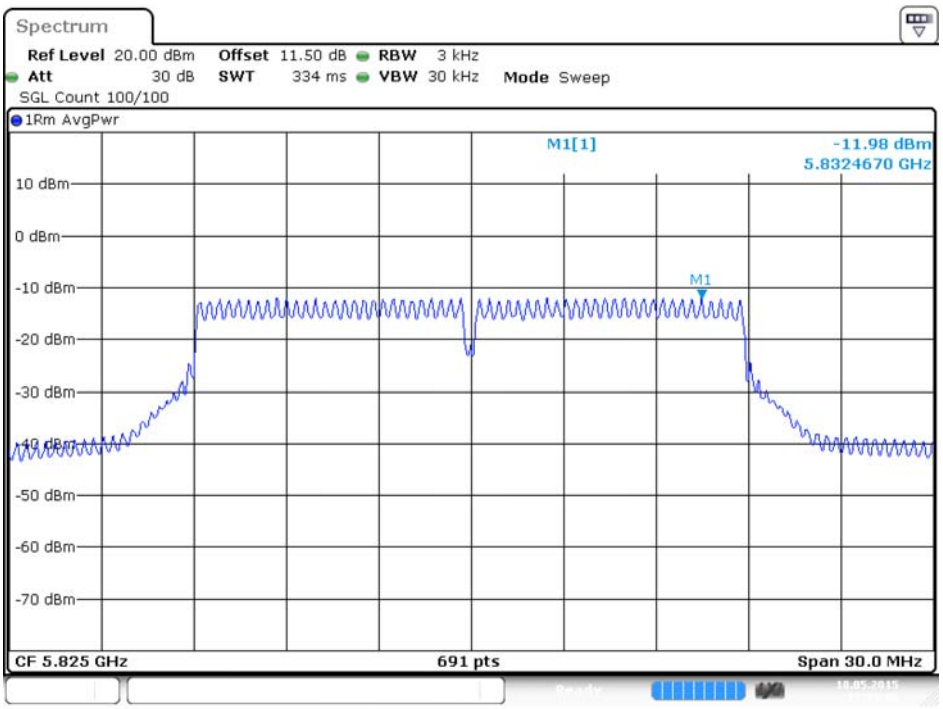
Date: 18.MAY.2015 17:38:32

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 5825 MHz / Chain 2



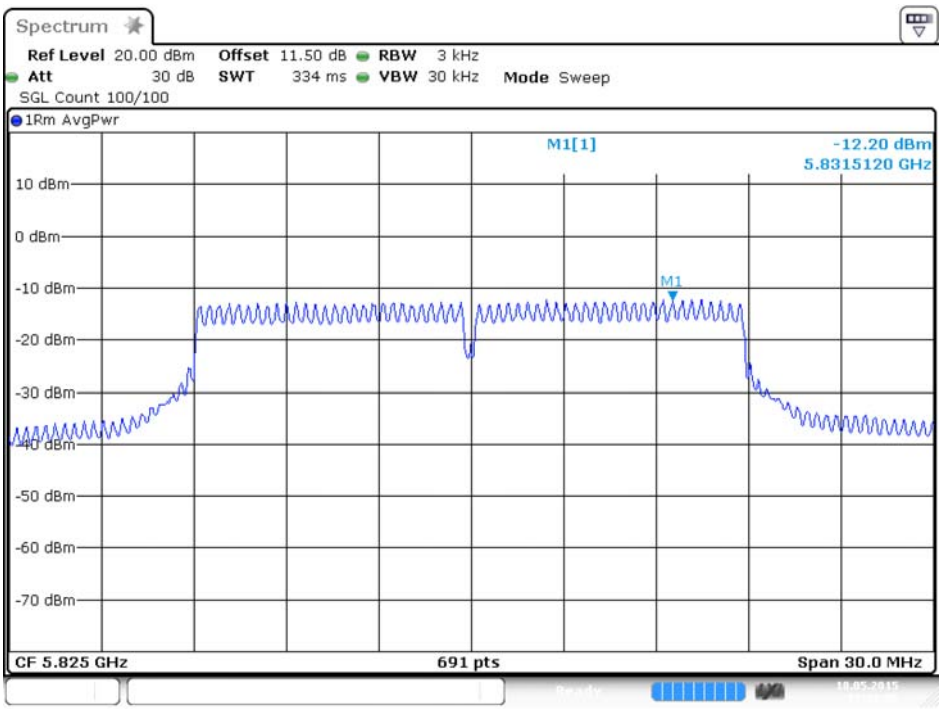
Date: 18.MAY.2015 17:36:48

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 5825 MHz / Chain 3



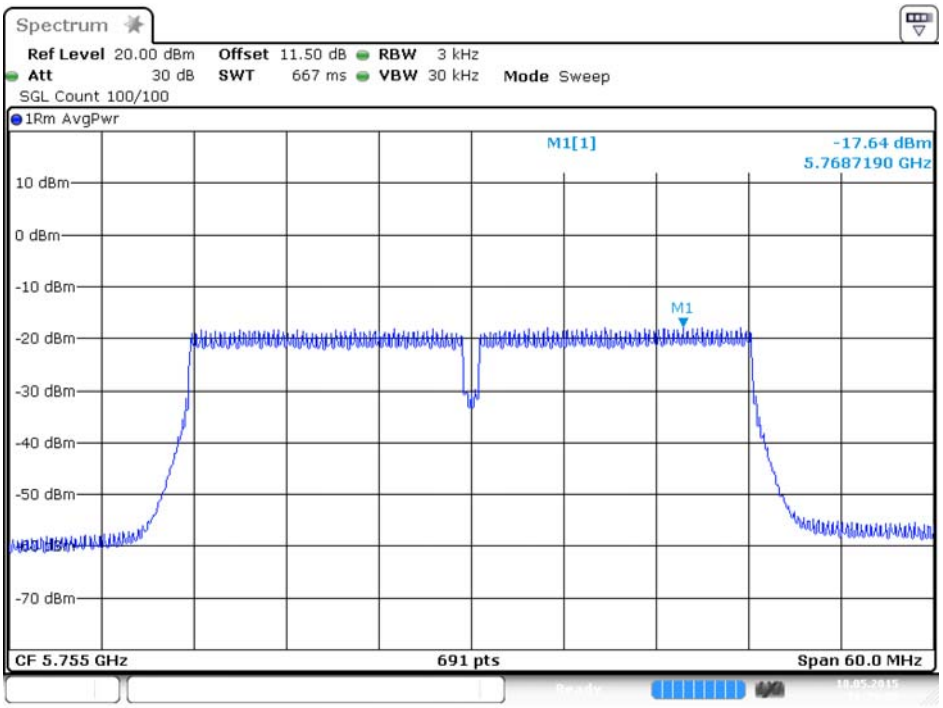
Date: 18.MAY.2015 17:35:06

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 5825 MHz / Chain 4



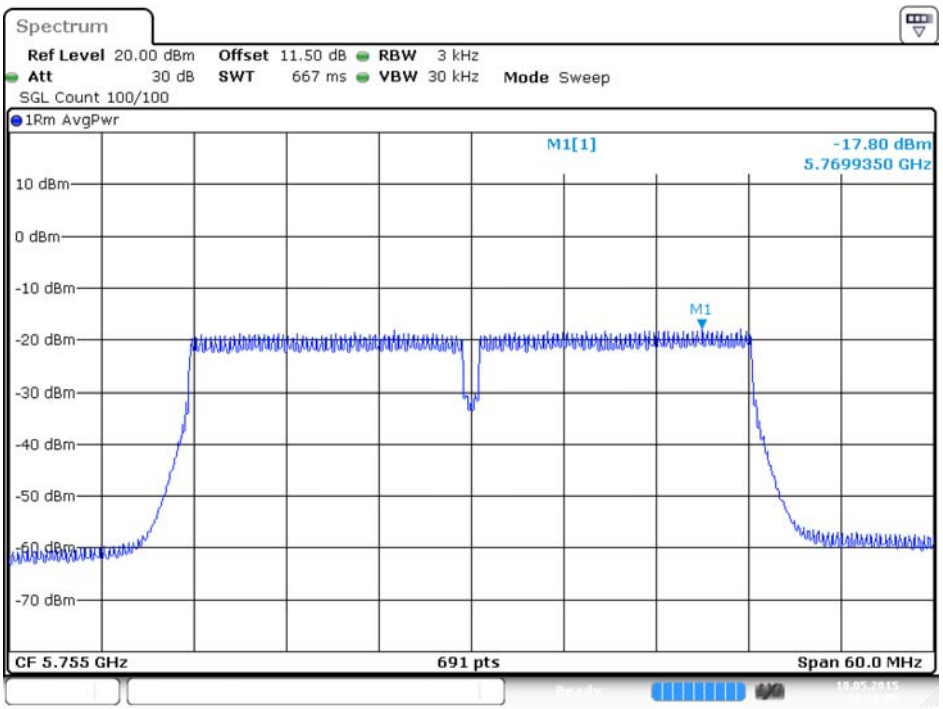
Date: 18.MAY.2015 17:32:57

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 5755 MHz / Chain 1



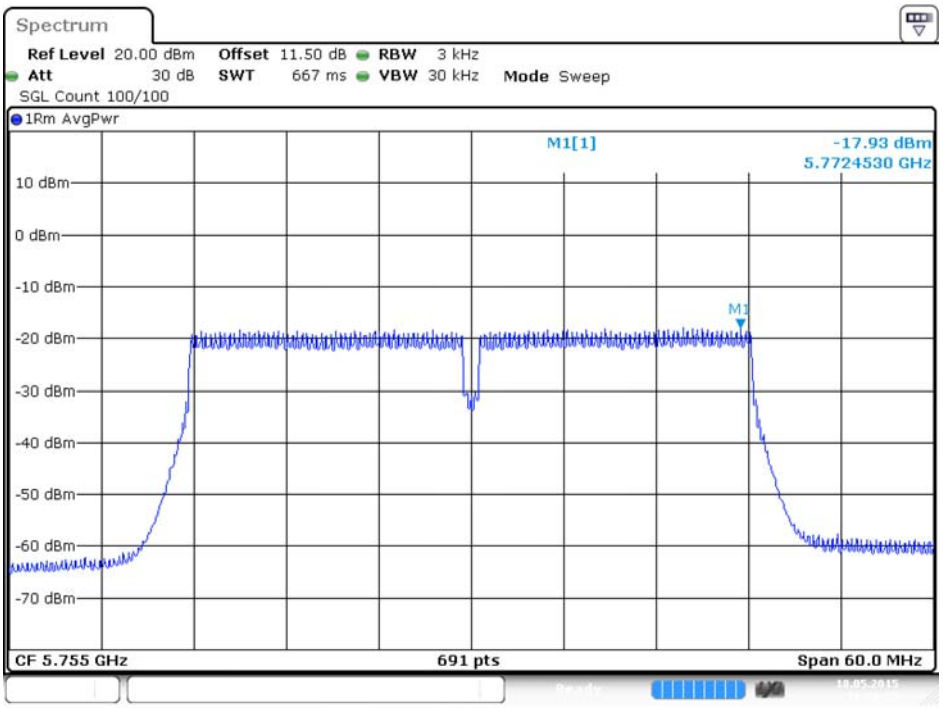
Date: 18.MAY.2015 16:29:09

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 5755 MHz / Chain 2



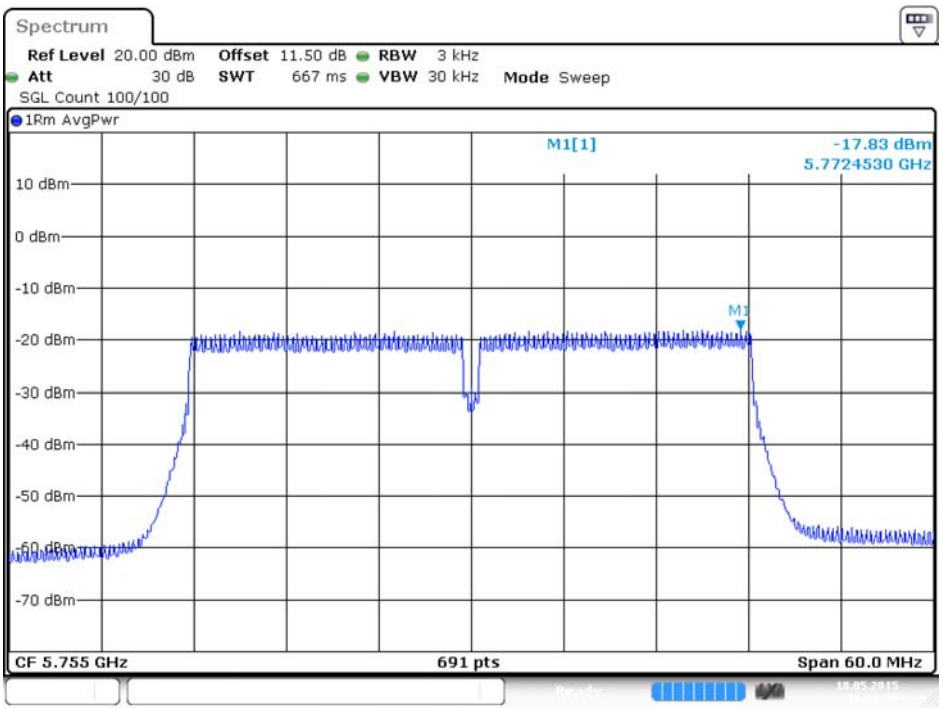
Date: 18.MAY.2015 16:31:57

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 5755 MHz / Chain 3



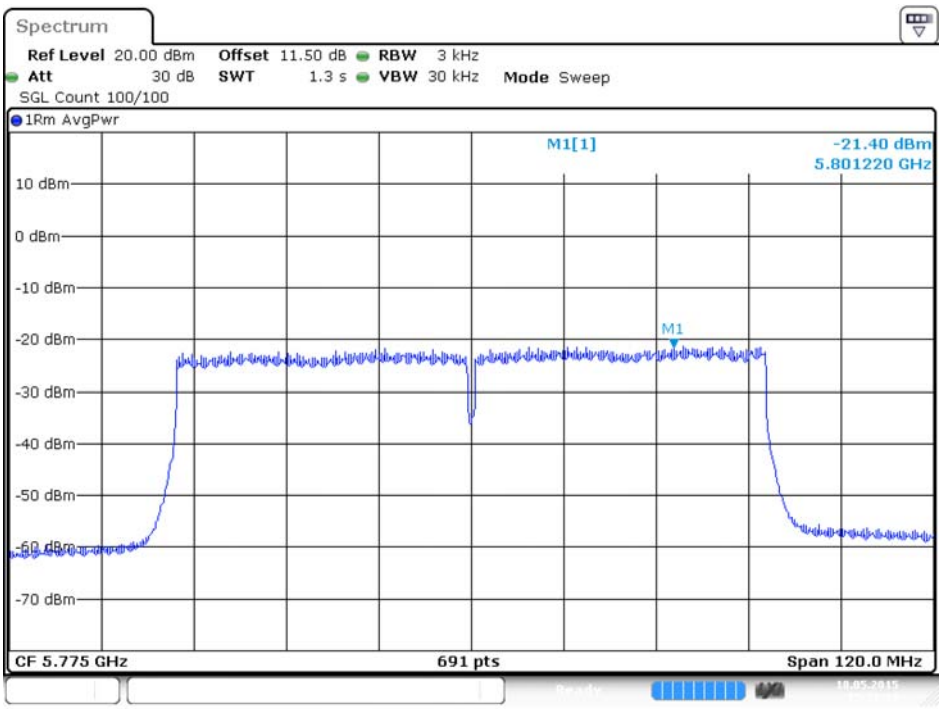
Date: 18.MAY.2015 16:36:24

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 5755 MHz / Chain 4



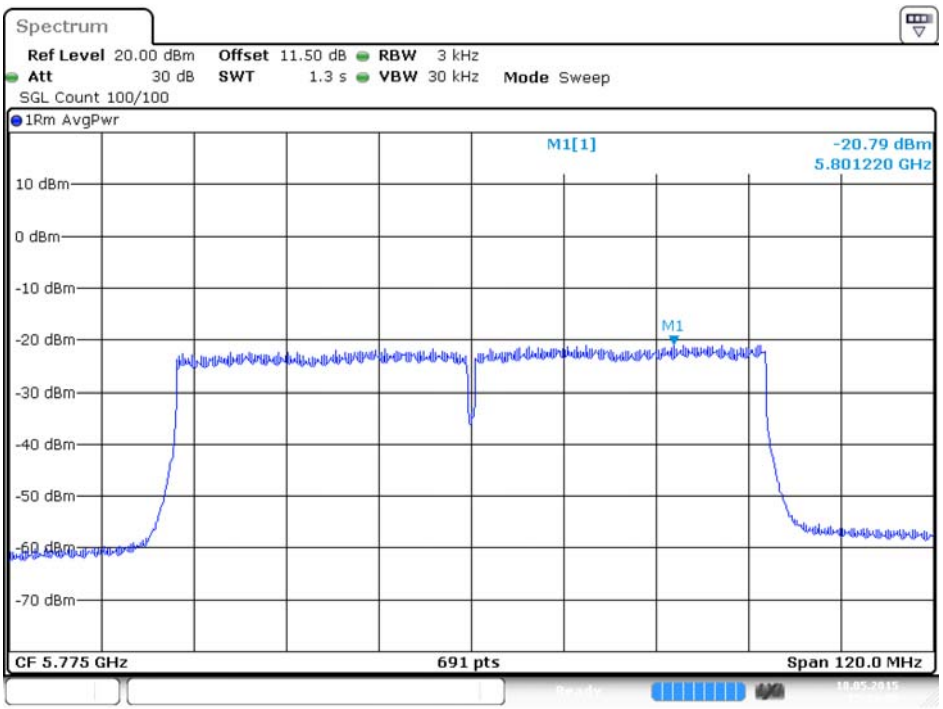
Date: 18.MAY.2015 16:38:30

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / 5775 MHz / Chain 1



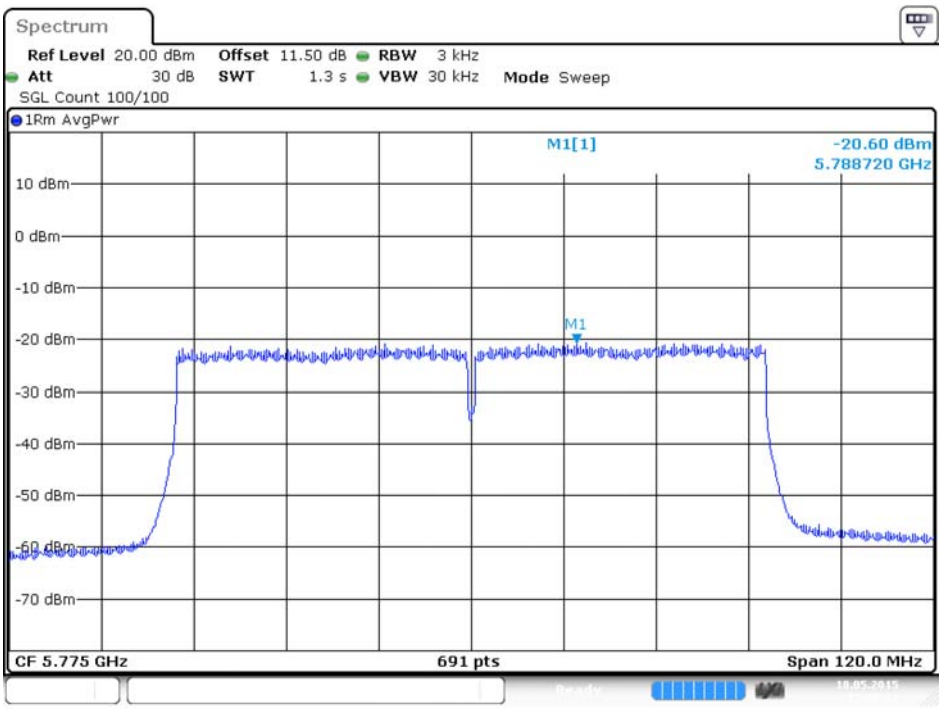
Date: 18.MAY.2015 15:21:10

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / 5775 MHz / Chain 2



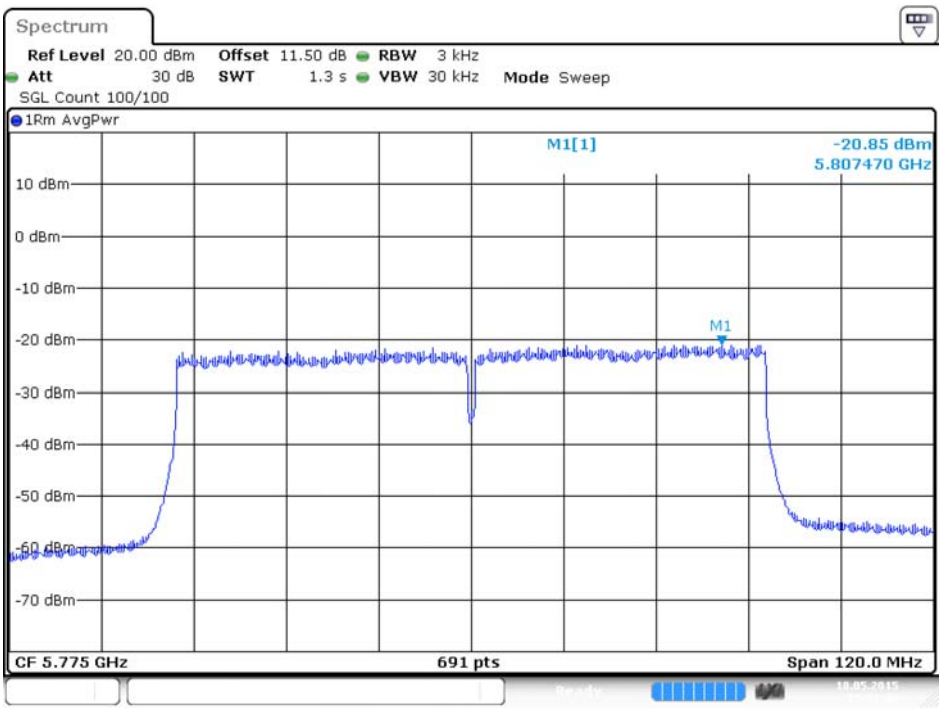
Date: 18.MAY.2015 15:24:58

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / 5775 MHz / Chain 3



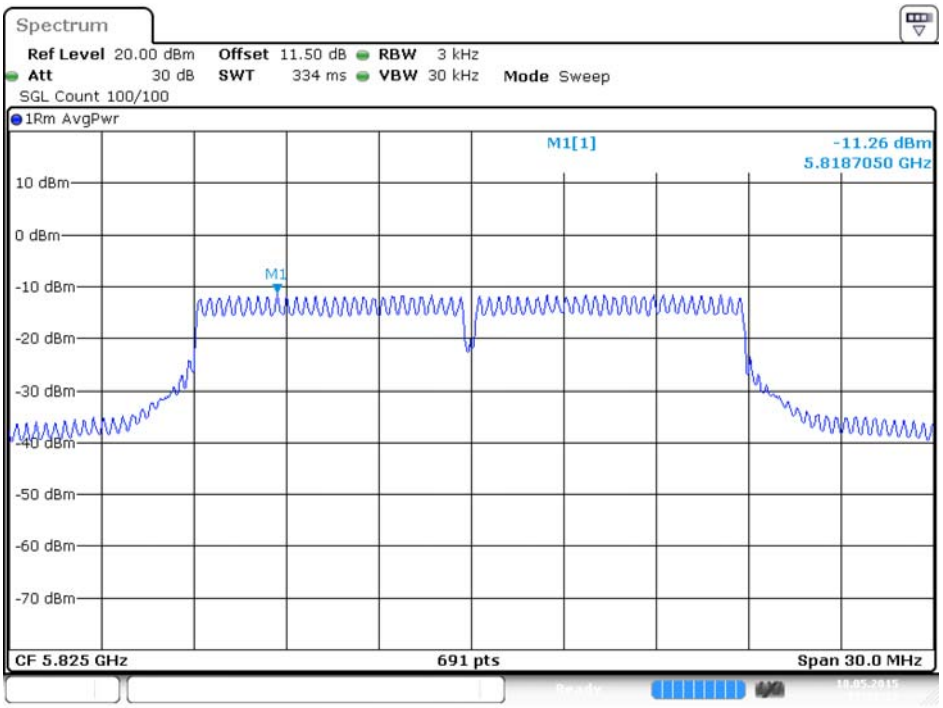
Date: 18.MAY.2015 15:28:32

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / 5775 MHz / Chain 4



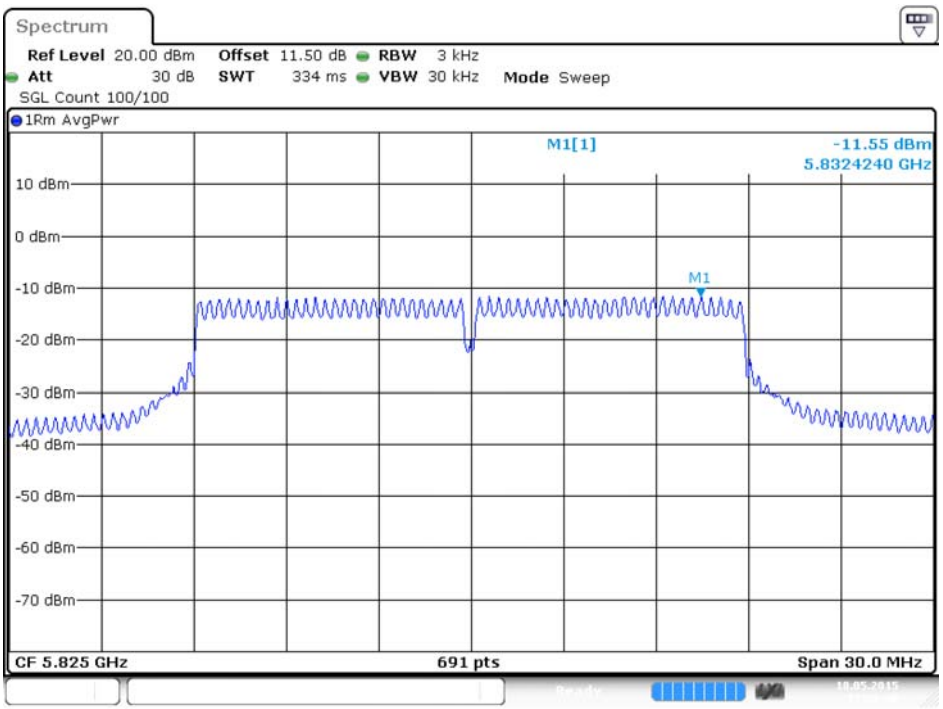
Date: 18.MAY.2015 15:31:49

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT20 / 5825 MHz / Chain 1



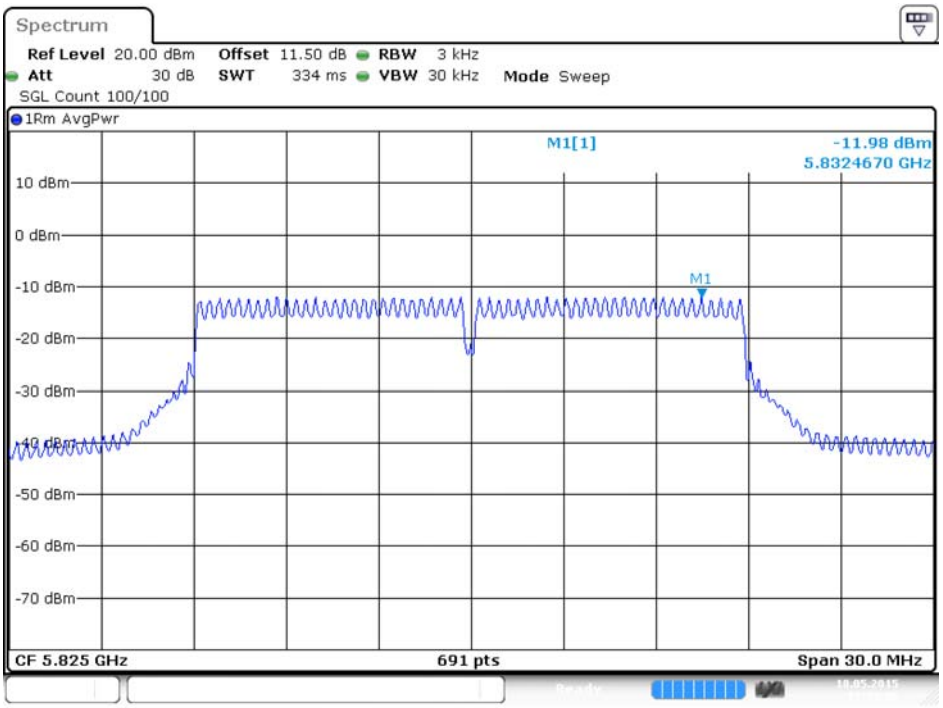
Date: 18.MAY.2015 17:38:32

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT20 / 5825 MHz / Chain 2



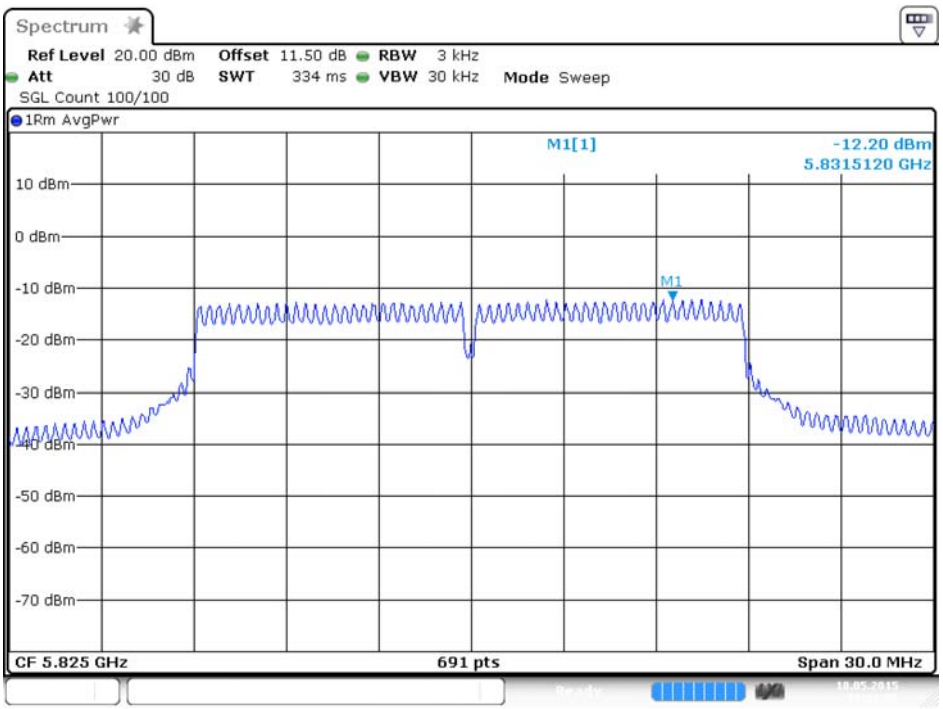
Date: 18.MAY.2015 17:36:48

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT20 / 5825 MHz / Chain 3



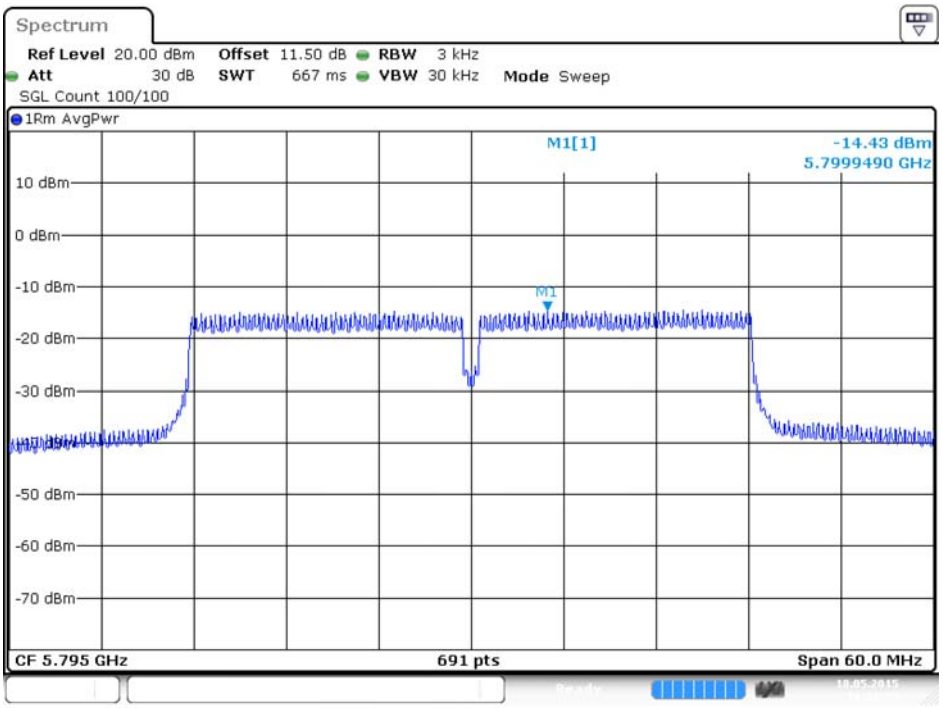
Date: 18.MAY.2015 17:35:06

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT20 / 5825 MHz / Chain 4



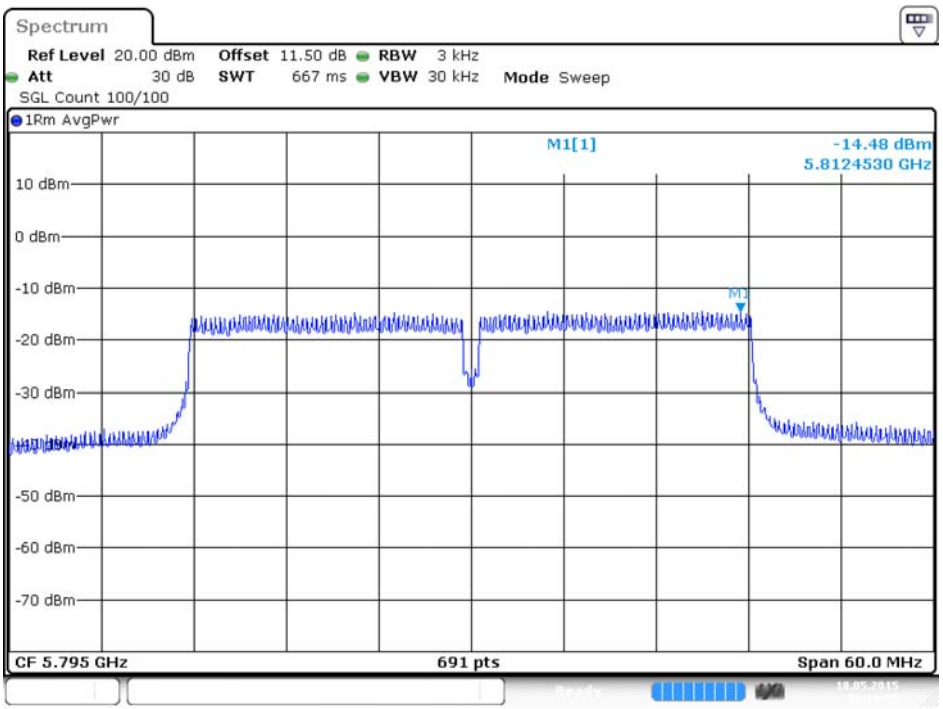
Date: 18.MAY.2015 17:32:57

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT40 / 5795 MHz / Chain 1



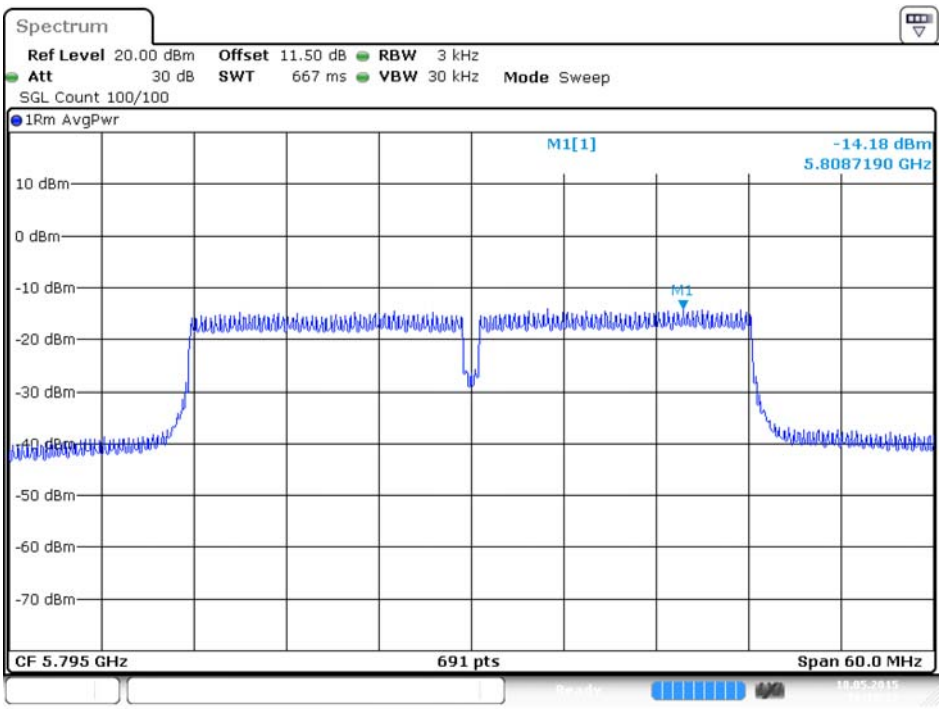
Date: 18.MAY.2015 16:22:29

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT40 / 5795 MHz / Chain 2



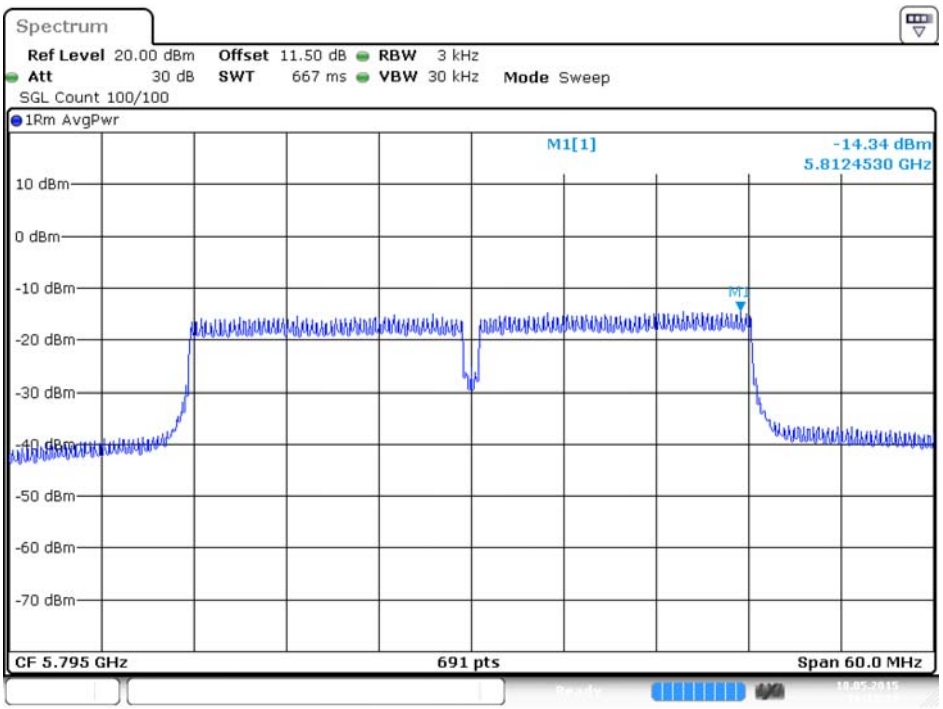
Date: 18.MAY.2015 16:19:53

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT40 / 5795 MHz / Chain 3



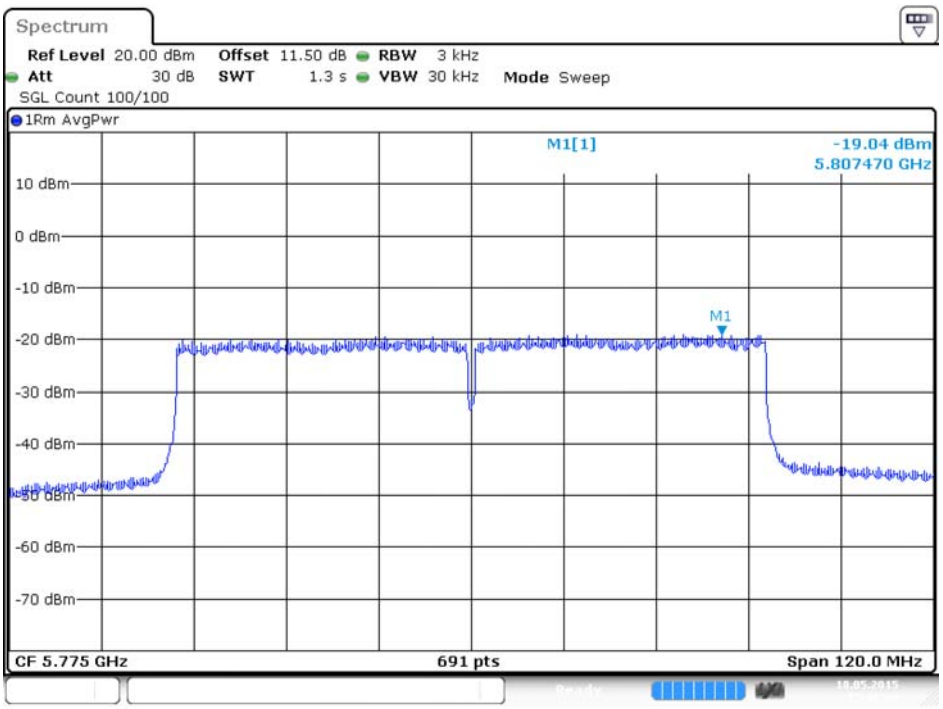
Date: 18.MAY.2015 16:15:22

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT40 / 5795 MHz / Chain 4



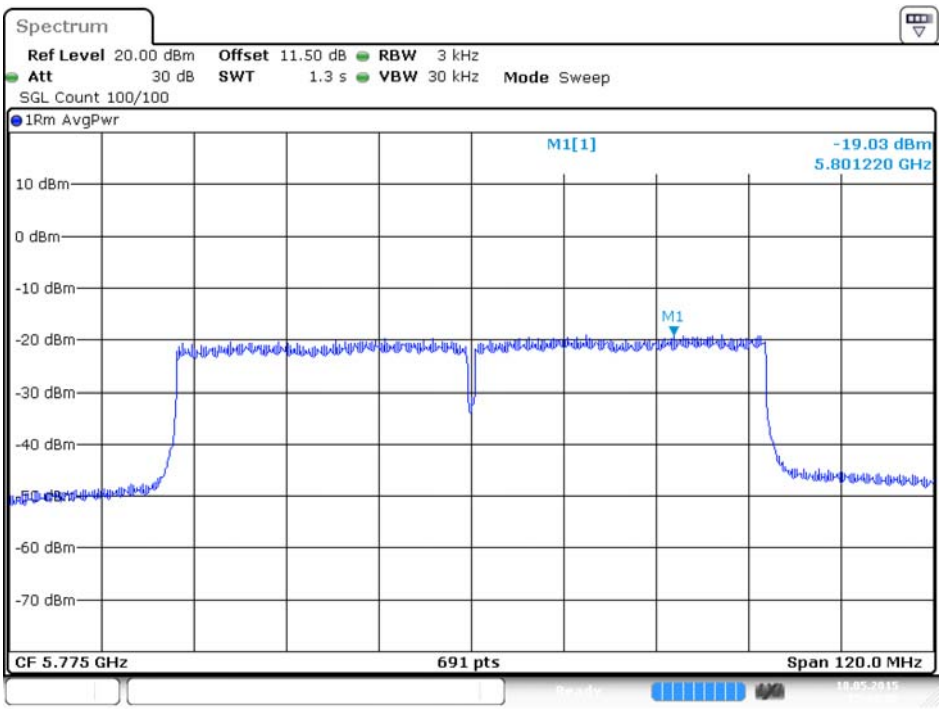
Date: 18.MAY.2015 16:12:10

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT80 / 5775 MHz / Chain 1



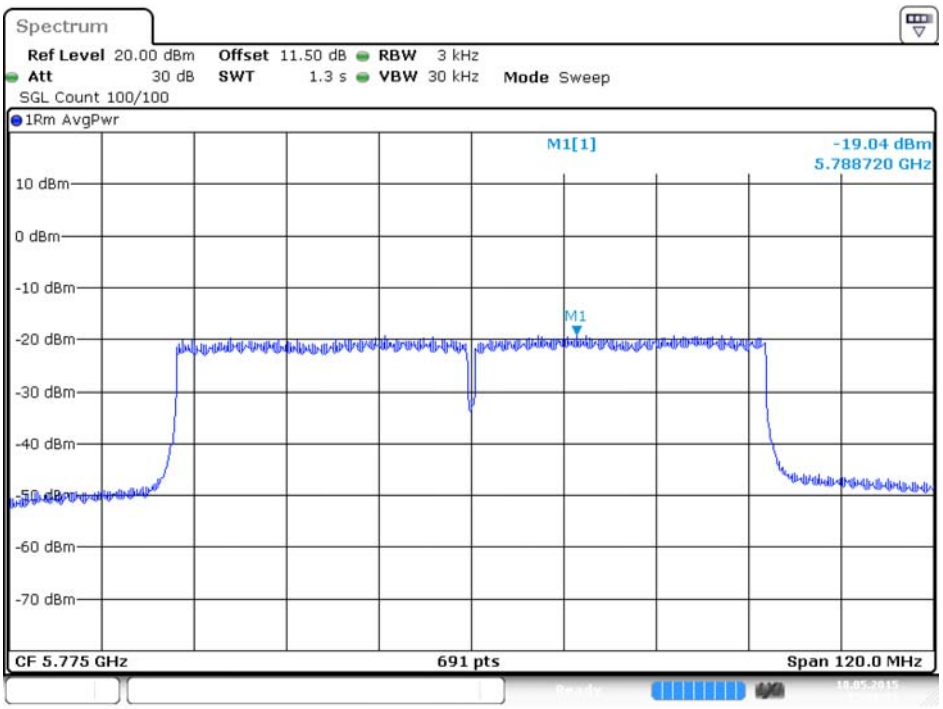
Date: 18.MAY.2015 15:47:34

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT80 / 5775 MHz / Chain 2



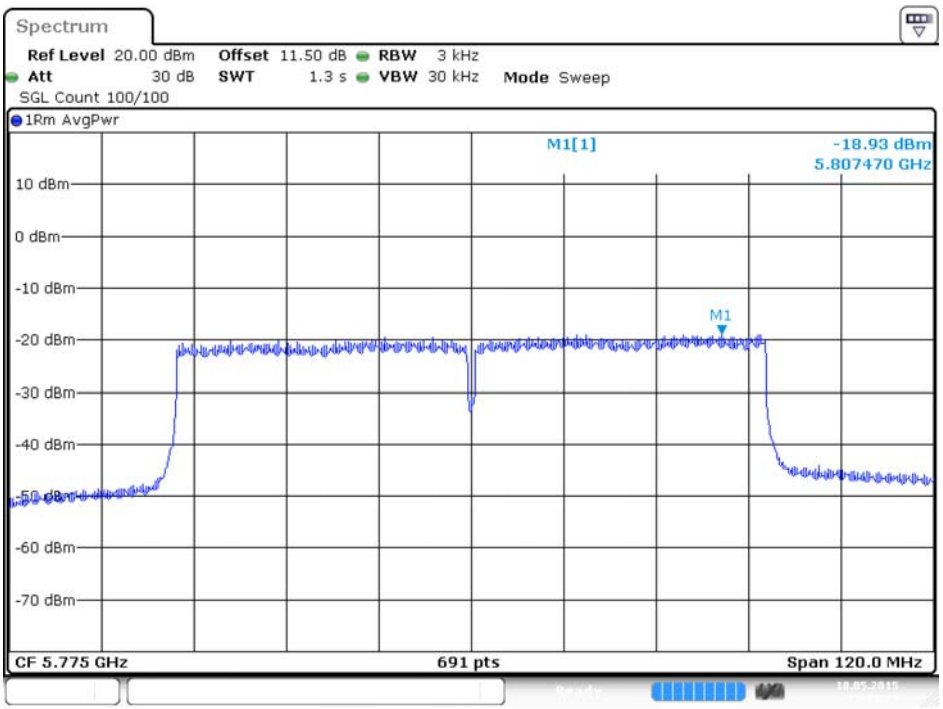
Date: 18.MAY.2015 15:43:07

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT80 / 5775 MHz / Chain 3



Date: 18.MAY.2015 15:38:51

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT80 / 5775 MHz / Chain 4



Date: 18.MAY.2015 15:35:13

4.3. Frequency Stability Measurement

4.3.1. Limit

In-band emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

The transmitter center frequency tolerance shall be ± 20 ppm maximum for the 5 GHz band (IEEE 802.11n specification).

4.3.2. Measuring Instruments and Setting

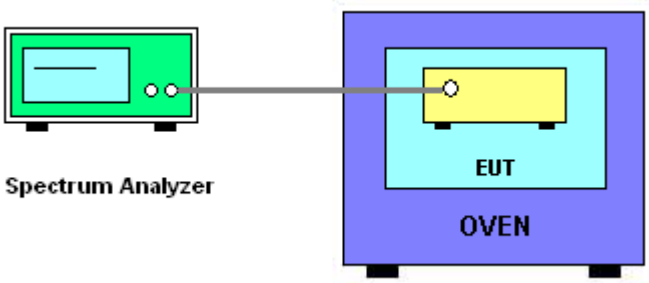
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Entire absence of modulation emissions bandwidth
RBW	10 kHz
VBW	10 kHz
Sweep Time	Auto

4.3.3. Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyzer.
2. EUT have transmitted absence of modulation signal and fixed channelize.
3. Set the spectrum analyzer span to view the entire absence of modulation emissions bandwidth.
4. Set RBW = 10 kHz, VBW = 10 kHz with peak detector and maxhold settings.
5. fc is declaring of channel frequency. Then the frequency error formula is (fc-f)/fc × 10^6 ppm and the limit is less than ±20ppm (IEEE 802.11nspecification).
6. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
7. The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value
8. Extreme temperature is 0°C~40°C.

4.3.4. Test Setup Layout



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 un-modulation transmitting mode.

4.3.7. Test Result of Frequency Stability

Temperature	20°C	Humidity	60%
Test Engineer	Peter Wu	Test Date	Mar. 29, 2016

Mode: 20 MHz / Chain 1

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5785 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5784.9966	5784.9962	5784.9959	5784.9950
110.00	5784.9963	5784.9954	5784.9952	5784.9944
93.50	5784.9957	5784.9951	5784.9943	5784.9941
Max. Deviation (MHz)	0.0043	0.0049	0.0057	0.0059
Max. Deviation (ppm)	0.74	0.85	0.99	1.02
Result	Complies			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5785 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
0	5785.0015	5785.0003	5784.9984	5784.9962
10	5785.0002	5784.9989	5784.9974	5784.9956
20	5784.9990	5784.9977	5784.9961	5784.9942
30	5784.9976	5784.9965	5784.9951	5784.9935
40	5784.9960	5784.9945	5784.9929	5784.9909
Max. Deviation (MHz)	0.0060	0.0069	0.0084	0.0111
Max. Deviation (ppm)	1.04	1.19	1.45	1.92
Result	Complies			

Mode: 40 MHz / Chain 1

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5755 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5754.9883	5754.9847	5754.9842	5754.9832
110.00	5754.9848	5754.9844	5754.9834	5754.9825
93.50	5754.9838	5754.9834	5754.9732	5754.9830
Max. Deviation (MHz)	0.0162	0.0166	0.0268	0.0175
Max. Deviation (ppm)	2.81	2.88	4.66	3.04
Result	Complies			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5755 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
0	5754.9678	5754.9618	5754.9611	5754.9603
10	5754.9661	5754.9601	5754.9596	5754.9592
20	5754.9648	5754.9594	5754.9585	5754.9579
30	5754.9631	5754.9573	5754.9571	5754.9567
40	5754.9624	5754.9573	5754.9567	5754.9564
Max. Deviation (MHz)	0.0377	0.0428	0.0437	0.0444
Max. Deviation (ppm)	6.55	7.44	7.59	7.72
Result	Complies			

Mode: 80 MHz / Chain 1

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5775 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5775.0045	5775.0040	5775.0034	5775.0032
110.00	5775.0037	5775.0031	5775.0025	5775.0021
93.50	5775.0028	5775.0018	5775.0017	5775.0016
Max. Deviation (MHz)	0.0045	0.0040	0.0034	0.0032
Max. Deviation (ppm)	0.78	0.69	0.59	0.55
Result	Complies			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5775 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
0	5775.0084	5775.0072	5775.0053	5775.0031
10	5775.0071	5775.0058	5775.0043	5775.0025
20	5775.0059	5775.0046	5775.0030	5775.0011
30	5775.0045	5775.0034	5775.0020	5775.0004
40	5775.0029	5775.0014	5774.9998	5774.9978
Max. Deviation (MHz)	0.0129	0.0115	0.0097	0.0074
Max. Deviation (ppm)	2.23	1.99	1.68	1.28
Result	Complies			

4.4. Antenna Requirements

4.4.1. Limit

Except for special regulations, the Low-power Radio-frequency Devices must not be equipped with any jacket for installing an antenna with extension cable. An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed.

4.4.2. Antenna Connector Construction

Please refer to section 3.3 in this test report; antenna connector complied with the requirements.

5. LIST OF MEASURING EQUIPMENTS

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	Dec. 12, 2014	Conducted (TH01-CB)
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	Dec. 09, 2015	Conducted (TH01-CB)
Temp. and Humidity Chamber	Ten Billion	TTH-D3SP	TBN-931011	-30~100 degree	Jun. 02, 2015	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-7	1 GHz – 26.5 GHz	Nov. 15, 2014	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-7	1 GHz – 26.5 GHz	Nov. 02, 2015	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-8	1 GHz – 26.5 GHz	Nov. 15, 2014	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-8	1 GHz – 26.5 GHz	Nov. 02, 2015	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-9	1 GHz – 26.5 GHz	Nov. 15, 2014	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-9	1 GHz – 26.5 GHz	Nov. 02, 2015	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz – 26.5 GHz	Nov. 15, 2014	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz – 26.5 GHz	Nov. 02, 2015	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-6	1 GHz – 26.5 GHz	Nov. 15, 2014	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-6	1 GHz – 26.5 GHz	Nov. 02, 2015	Conducted (TH01-CB)
Power Sensor	Agilent	U2021XA	MY53410001	50MHz~18GHz	Nov. 03, 2014	Conducted (TH01-CB)
Power Sensor	Agilent	U2021XA	MY53410001	50MHz~18GHz	Nov. 02, 2015	Conducted (TH01-CB)
Thermometer	HTC-1	HTC-1	TP-8	-50℃~70℃	Mar. 05, 2015	Conducted (TH01-CB)

Note: Calibration Interval of instruments listed above is one year.

6. MEASUREMENT UNCERTAINTY

Test Items	Uncertainty	Remark
Conducted Emission	1.7 dB	Confidence levels of 95%