TESTING CERT #3478.01

TEST REPORT

EUT Description	**WLAN and BT, 2x2 PCIe M.2 1216 SD adapter card**
Brand Name	**Intel® Dual Band Wireless-AC 8265**
Model Name	**8265D2W**
Serial Number	**TA#: J10070-002** **WF MAC: 34:13:E8:53:75:37 / 34:13:E8:53:75:05 / 34:13:E8:53:75:00** **BT MAC: 34:13:E8:53:75:3B / 34:13:E8:53:75:09 / 34:13:E8:53:75:04** (see section 4)
FCC ID / IC ID	**FCC ID: PD98265D2** **IC ID: 1000M-8265D2**
Antenna type	**SkyCross WIMAX/WLAN Reference Antenna**
Hardware/Software Version	**HW: WsP1216 cfg15.2SD** **Test SW: DRTU 1.8.7-03036** **Op SW: 19.0.0.3**
Date of Sample Receipt	**2016-04-27**
Date of Test Start/End	**2016-05-10 / 2016-06-09**
Features	**802.11 a/b/g/n/ac Wireless LAN + BT 4.2** (see section 5)

Applicant	**Intel Mobile Communications**
Address	**100 Center Point Circle, Suite 200** **Columbia, South Carolina 29210** **USA**
Contact Person	**Steven Hackett**
Telephone/Fax/ Email	**steven.c.hackett@intel.com**

Reference Standards	**FCC CFR Title 47 Part 15E** **RSS-247 issue 1, RSS-Gen issue 4** (see section 1)

Test Report number	**160321-02.TR02**
Revision Control	**Rev.00**

The test results relate only to the samples tested.
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Table of Contents

1. Standards, reference documents and applicable test methods 3
2. General conditions, competences and guarantees 3
3. Environmental Conditions 3
4. Test samples 4
5. EUT features 4
6. Remarks and comments 4
7. Test Verdicts summary 5
7.1. 802.11 a/n/ac – U-NII-2C 5
8. Document Revision History 5
Annex A. Test & System Description 6
A.1 Test Conditions 6
A.2 Measurement system 7
A.3 Test Equipment List 9
A.4 Measurement Uncertainty Evaluation 9
Annex B. Test Results U-NII-2C 10
B.1 26dB & 99% Bandwidth 10
B.2 Power Limits. Maximum Output power & Peak power spectral density 63
B.3 Undesirable emissions limits: Band Edge (conducted) 95
B.4 Radiated spurious emission 121
Annex C. Photographs 159

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1. Standards, reference documents and applicable test methods

1. FCC 47 CFR part 15 – Subpart E – Unlicensed National Information Infrastructure Devices.
2. FCC 47 CFR part 15 - Subpart C – §15.209 Radiated emission limits; general requirements.
3. FCC OET KDB 789033 D02 General UNII Test Procedures New Rules – Guidelines for compliance testing of Unlicensed National Information Infrastructure (U-NII) Devices.
4. FCC OET KDB 644545 D03 Guidance for IEEE 802.11ac v01 - GUIDANCE FOR IEEE Std 802.11ac™ DEVICES EMISSION TESTING.
5. ANSI C63.10-2013 American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.
6. RSS-247 Issue 1 - Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices.
7. RSS-Gen Issue 4 - General Requirements for Compliance of Radio Apparatus.

2. General conditions, competences and guarantees

- ✓ Intel Mobile Communications Wireless RF Lab (Intel WRF Lab) is a testing laboratory accredited by the American Association for Laboratory Accreditation (A2LA).
- ✓ Intel Mobile Communications Wireless RF Lab (Intel WRF Lab) is an Accredited Test Firm listed by the FCC, with Designation Number FR0011.
- ✓ Intel Mobile Communications Wireless RF Lab (Intel WRF Lab) is a Registered Test Site listed by IC, with IC Assigned Code 1000Y.
- ✓ Intel WRF Lab only provides testing services and is committed to providing reliable, unbiased test results and interpretations.
- ✓ Intel WRF Lab is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.
- ✓ Intel WRF Lab has developed calibration and proficiency programs for its measurement equipment to ensure correlated and reliable results to its customers.
- ✓ This report is only referred to the item that has undergone the test.
- ✓ This report does not imply an approval of the product by the Certification Bodies or competent Authorities.
- ✓ Complete or partial reproduction of the report cannot be made without written permission of Intel WRF Lab.

3. Environmental Conditions

- ✓ At the site where the measurements were performed the following limits were not exceeded during the tests:

Temperature	22ºC ± 4ºC
Humidity	50% ± 20%

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4. Test samples

Sample	Control #	Description	Model	Serial #	Date of reception	Note
#01	160321-02.S02	WiFi/BT Module	8265D2W	WF MAC: 34:13:E8:53:75:00, BT MAC: 34:13:E8:53:75:04	2016-04-27	Used for conducted tests
	160321-02.S12	Socket	D2W	8882-043	2016-04-27	
	160107-01.S13	Extender board	PCB00495	4955013-026	2016-01-07	
	15051101.S11	AC/DC Adapter	SPU60-102	07990499 1249	2015-05-12	
	15040201.S15	Laptop	DELL Latitude	9R8YN32	2015-04-30	
#02	160321-02.S03	WiFi/BT Module	8265D2W	WF MAC: 34:13:E8:53:75:05 BT MAC: 34:13:E8:53:75:09	2016-04-27	Used for radiated tests (from 30MHz to 1GHz and 26.5GHz to 40GHz)
	160321-02.S13	Socket	D2W	8882-031	2016-04-27	
	160107-01.S11	Extender board	PC00495	4955013-097	2016-01-07	
	160107-01.S28	Laptop	Latitude E5440	BJSYN32	2016-01-15	
#03	160321-02.S01	WiFi/BT Module	8265D2W	WF MAC: 34:13:E8:53:75:37 BT MAC: 34:13:E8:53:75:3B	2016-04-27	Used for radiated tests (from 1GHz to 26.5GHz)
	160321-02.S11	Socket	D2W	8880-017	2016-04-27	
	160107-01.S12	Extender board	PC00495	4955013-034	2016-01-07	
	15051101.S09	Laptop	Dell E5440	9FSYN32	2015-05-12	

NA: Not Applicable

5. EUT features

These are the detailed bands and modes supported by the Equipment Under Test:

802.11b/g/n	2.4GHz (2400.0 – 2483.5 MHz)
802.11a/n/ac	5.2GHz (5150.0 – 5250.0 MHz) 5.3GHz (5250.0 – 5350.0 MHz) 5.6GHz (5470.0 – 5725.0 MHz) 5.8GHz (5725.0 – 5850.0 MHz)
BDR/EDR/BLE 4.2	2.4GHz (2400.0 – 2483.5 MHz)

6. Remarks and comments

N/A

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7. Test Verdicts summary

7.1. 802.11 a/n/ac – U-NII-2C

FCC part	RSS part	Test name	Verdict
15.407 (a) (2)	RSS-247 Clause 6.2.3 (1)	Power Limits. Maximum output power	P
15.407 (a) (2)	RSS-247 Clause 6.2.3 (1)	Peak power spectral density	P
15.407 (b) (3) 15.209	RSS-247 Clause 6.2.3 (2)	Undesirable emissions limits: Band Edge (conducted)	P
15.407 (b) (3) 15.209	RSS-247 Clause 6.2.3 (2)	Undesirable emissions limits (radiated)	P

P: Pass
F: Fail
NM: Not Measured
NA: Not Applicable

8. Document Revision History

Revision #	Date	Modified by	Details
Rev. 00	2016-06-14	G.Gerbaud M. Lefebvre F. Sauvan	First Issue

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Annex A.Test & System Description

A.1 Test Conditions

For 802.11a mode the EUT can transmit at both CHAIN A and CHAIN B RF outputs individually, but not simultaneously.

For 802.11n20 (20 MHz channel bandwidth), 802.11n40 (40MHz channel bandwidth) and 802.11ac80 (80MHz channel bandwidth) modes the EUT can transmit at both CHAIN A and CHAIN B RF outputs individually, and also simultaneously.

The conducted RF output power at chain A was adjusted according to the client's supplied Target values (see following table) using the Intel DRTU tool and measuring the power by using a spectrum analyzer with the channel integration method according to point II) E) 2) e) (Method SA-2 Alternative) of Guidance 789033 D02.
Measured values for adjustment were within -0.25 dB/+0.25 dB from the declared Target values.

U-NII-2C					Conducted Power, Target Value (dBm)		
Mode	**BW (MHz)**	**Data Rate**	**CH #**	**Freq. (MHz)**	**SISO Chain A**	**SISO Chain B**	**MIMO at both ports A and B**
802.11a	20	6Mbps	100	5500	18	17	N/A
			120	5600	20.5	20.5	N/A
			136	5680	20	18	N/A
			140	5700	17	16.5	N/A
802.11n	20	HT0 HT8*	100	5500	16.5	17.5	16.5
			120	5600	20.5	20.5	19
			136	5680	19.5	18	17.5
			140	5700	16	16	14
	40	HT0 HT8*	102F	5510	17	16.5	12
			118F	5590	21	20.5	20.5
			134F	5670	17.5	17.5	16.5
802.11ac	80	VHT0	106ac80	5530	13.5	15	10.5
			122ac80	5610	17.5	19	17.5

Overlapped channels between UNII-2C and UNII-3					Conducted Power, Target Value (dBm)		
Mode	**BW (MHz)**	**Data Rate**	**CH #**	**Freq. (MHz)**	**SISO Chain A**	**SISO Chain B**	**MIMO at both ports A and B**
802.11n	20	HT0 HT8*	144	5720	20.0	20.0	19.5
	40	HT0 HT8*	142F	5710	20.5	20.0	19.5
802.11ac	80	VHT0	138ac80	5690	20.0	19.5	19.0

The following data rates were selected based on preliminary testing that identified those rates as the worst cases for output power and spurious levels at the band edges:

802.11a → 6Mbps
802.11n20 and 802.11n40 (SISO) → HT0
802.11n20 and 802.11n40 (MIMO) → HT8
802.11ac80 (SISO) → VHT0
802.11ac80 (MIMO) → VHT0

Alternative channels to the lowest and highest channels per band have been also tested for Band Edge compliance.

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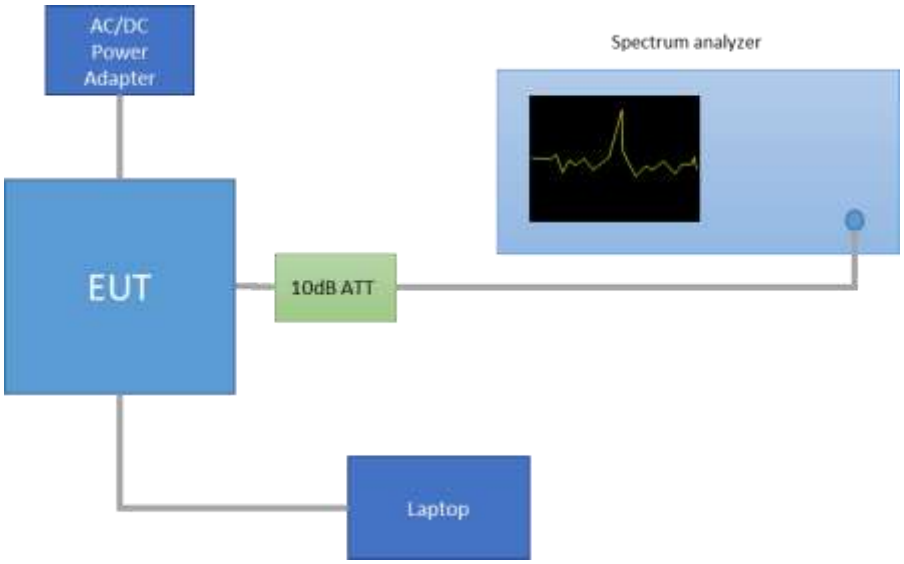
A.2 Measurement system

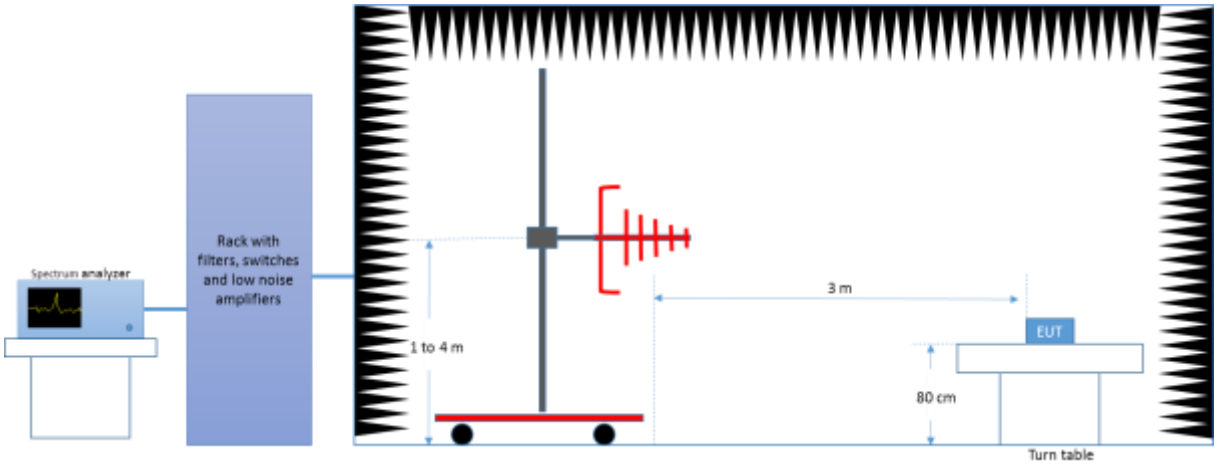
Measurements were performed using the following setups, made in accordance to the general provisions of FCC KDB 789033 D02 General UNII Test Procedures.

The DUT was installed in a test fixture and this test fixture is connected to a laptop computer and AC/DC power adapter. The laptop computer was used to configure the EUT to continuously transmit at a specified output power using all different modes and modulation schemes, using the Intel proprietary tool DRTU.

Conducted Setup



Radiated Setup < 1GHz



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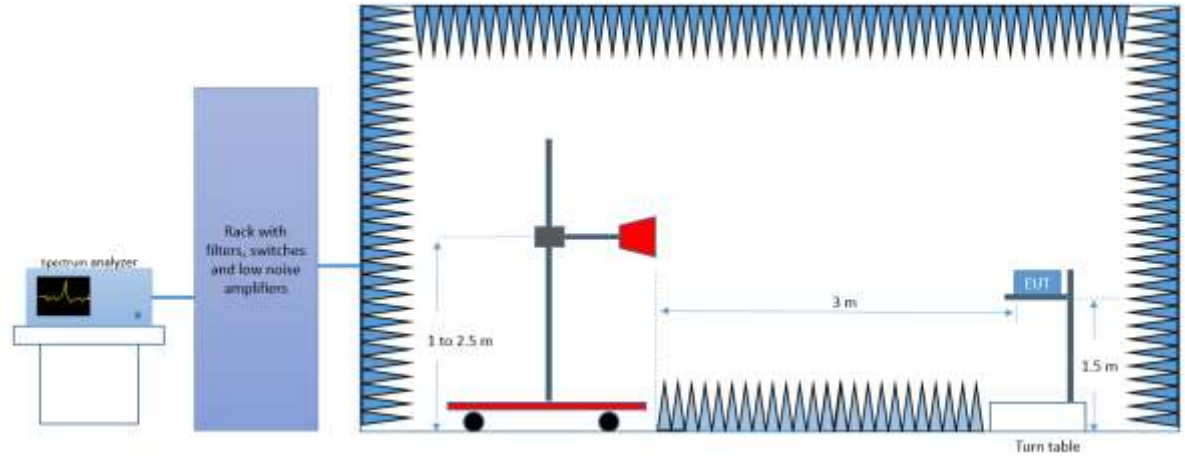
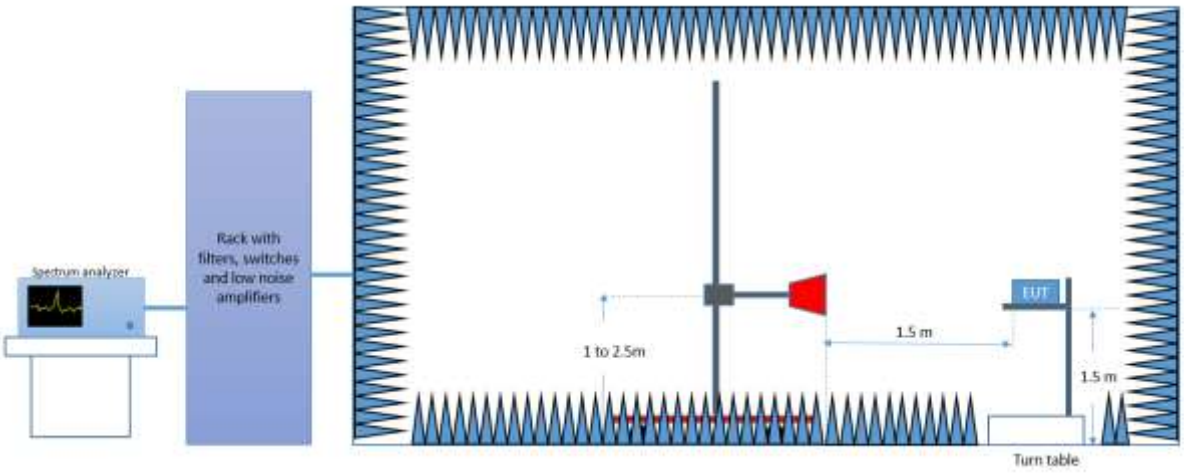
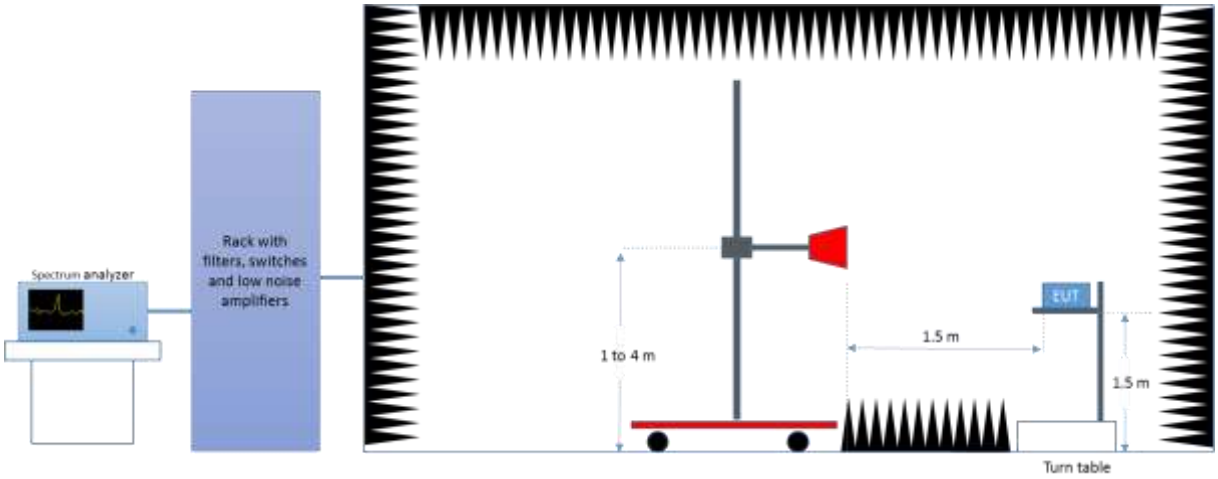
Radiated Setup 1 GHz - 18 GHz



Radiated Setup 18 GHz - 26.5 GHz



Radiated Setup > 26.5 GHz



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A.3 Test Equipment List

Conducted Setup

ID#	Device	Type/Model	Serial Number	Manufacturer	Cal. Date	Cal. Due Date
0310	Spectrum analyzer	FSV40	101425	Rohde & Schwarz	2015-03-25	2017-03-25

Radiated Setup

ID#	Device	Type/Model	Serial Number	Manufacturer	Cal. Date	Cal. Due Date
0133	Spectrum analyzer	FSV40	101358	Rohde & Schwarz	2016-04-15	2018-04-15
0258	Spectrum analyzer	FSV30	101318	Rohde & Schwarz	2016-04-27	2018-04-27
0137	Log antenna 30 MHz – 1 GHz	3142E	00156946	ETS Lindgren	2015-12-11	2017-12-11
0138	Horn antenna 1 GHz – 6.4 GHz	3117	00157734	ETS Lindgren	2016-03-14	2018-03-14
0343	Horn Antenna 6.4 GHz – 18 GHz	3117-PA	00201542	ETS Lindgren	2015-07-16	2017-07-16
0334	Horn Antenna 10 GHz – 40 GHz	3116C	00169308	ETS Lindgren	2015-07-15	2017-07-15
0139	Horn Antenna 18 GHz - 26.5 GHz	114514	00167100	ETS Lindgren	2014-08-14	2016-08-14
0140	Horn Antenna 26.5 GHz - 40 GHz	120722	00169638	ETS Lindgren	2016-03-16	2018-03-16
0135	Semi Anechoic chamber	FACT 3	5720	ETS Lindgren	2016-04-28	2018-04-28
0337	Full Anechoic chamber	RFD_FA_100	5996	ETS Lindgren	2016-04-28	2018-04-28
0329	Measurement Software	EMC32	1300.7027.00 (100401)	Rohde & Schwarz	N/A	N/A
N/A	Measurement Software	EMC32	012109650000013B (009977)	Rohde & Schwarz	N/A	N/A

A.4 Measurement Uncertainty Evaluation

The system uncertainty evaluation is shown in the below table:

Measurement type	Uncertainty [±dB]
Conducted Power	±1.0
Conducted Spurious Emission	±2.9
Radiated tests <1GHz	±3.8
Radiated tests 1GHz - 40 GHz	±4.7

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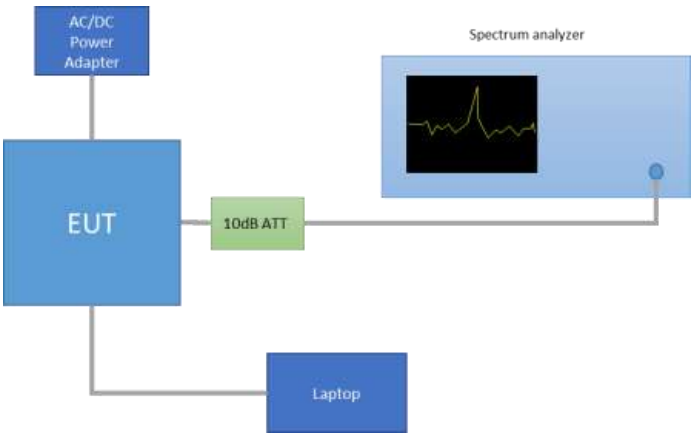
Annex B.Test Results U-NII-2C

B.1 26dB & 99% Bandwidth

Test procedure:

The setup below was used to measure the 26dB & 99% Bandwidth. The antenna terminal of the EUT is connected to the spectrum analyzer through an attenuator, and the spectrum analyzer reading is compensated to include the RF path loss.



For the overlapped channels between U-NII-2C and U-NII-3 bands, and according to FCC KDB 644545 D03, the boundary frequency between the bands is used as one edge for defining the portion of the 26dB BW that falls within a particular U-NII band. This rule is only applicable for the 26dB BW and for those channels marked as overlapped.

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Results tables:

U-NII-2C channels:

Mode	Rate	Antenna	Channel	Freq. [MHz]	26dB BW [MHz]	99% BW [MHz]
802.11a	6Mbps	SISO CHAIN A	100	5500	23.40	16.56
			120	5600	29.90	18.96
			140	5700	23.05	16.56
		SISO CHAIN B	100	5500	23.45	16.56
			120	5600	**36.05**	**23.68**
			140	5700	23.40	16.72
802.11n20	HT0	SISO CHAIN A	100	5500	24.90	17.72
			120	5600	39.30	25.28
			140	5700	23.45	17.68
		SISO CHAIN B	100	5500	24.40	17.72
			120	5600	36.80	25.12
			140	5700	23.80	17.68
	HT8	MIMO CHAIN A	100	5500	25.20	17.80
			120	5600	**42.90**	28.24
			140	5700	23.85	17.68
		MIMO CHAIN B	100	5500	23.65	17.80
			120	5600	41.80	**29.20**
			140	5700	24.35	17.68
802.11n40	HT0	SISO CHAIN A	102F	5510	46.08	36.32
			118F	5590	**87.39**	**56.40**
			134F	5670	46.26	36.40
		SISO CHAIN B	102F	5510	44.64	36.32
			118F	5590	83.70	48.64
			134F	5670	45.81	36.40
	HT8	MIMO CHAIN A	102F	5510	45.27	36.32
			118F	5590	84.06	52.64
			134F	5670	45.90	36.32
		MIMO CHAIN B	102F	5510	43.65	36.16
			118F	5590	81.54	50.88
			134F	5670	43.74	36.16
802.11ac80	VHT0	SISO CHAIN A	106ac80	5530	85.12	75.00
			122ac80	5610	**86.83**	75.00
		SISO CHAIN B	106ac80	5530	85.12	75.00
			122ac80	5610	86.45	**75.12**
		MIMO CHAIN A	106ac80	5530	84.36	75.00
			122ac80	5610	86.26	75.00
		MIMO CHAIN B	106ac80	5530	84.74	74.88
			122ac80	5610	85.69	75.00

Max Value

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Overlapped channels between U-NII-2C and U-NII-3

Mode	Rate	Antenna	Channel	Freq. [MHz]	26dB BW UNII-2C [MHz]	99% BW [MHz]
802.11n20	HT0	SISO CHAIN A	144	5720	23.67	21.76
		SISO CHAIN B			22.48	20.96
	HT8	MIMO CHAIN A			**24.92**	**22.20**
		MIMO CHAIN B			21.52	21.00
802.11n40	HT0	SISO CHAIN A	142F	5710	**55.99**	**46.96**
		SISO CHAIN B			50.33	40.40
	HT8	MIMO CHAIN A			47.80	37.68
		MIMO CHAIN B			40.87	36.40
802.11ac80	VHT0	SISO CHAIN A	138ac80	5690	87.53	75.84
		SISO CHAIN B			85.44	75.96
		MIMO CHAIN A			**99.31**	**76.68**
		MIMO CHAIN B			82.40	75.48

Max Value

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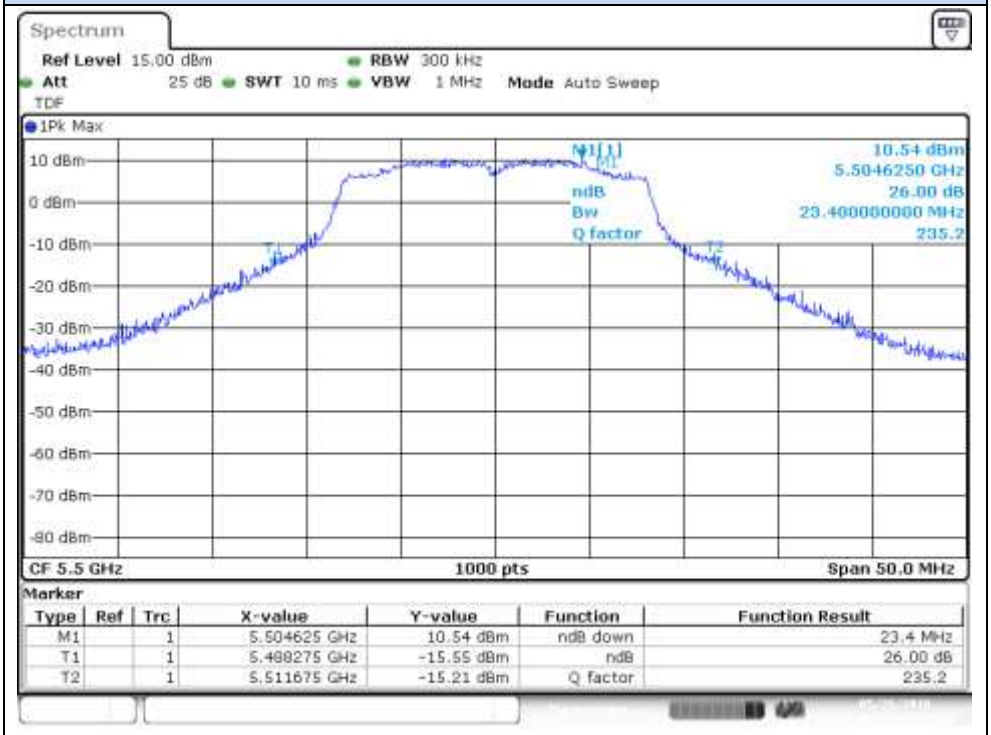
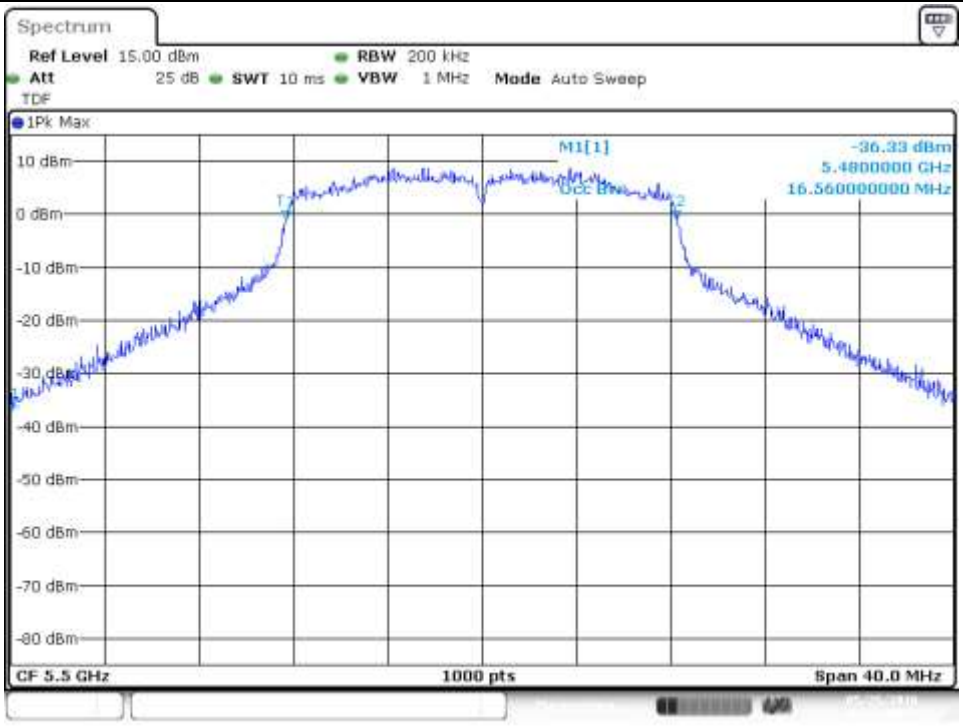
Results screenshot

802.11a, 6Mbps – Chain A

26dB BW – CH100



99% BW – CH100



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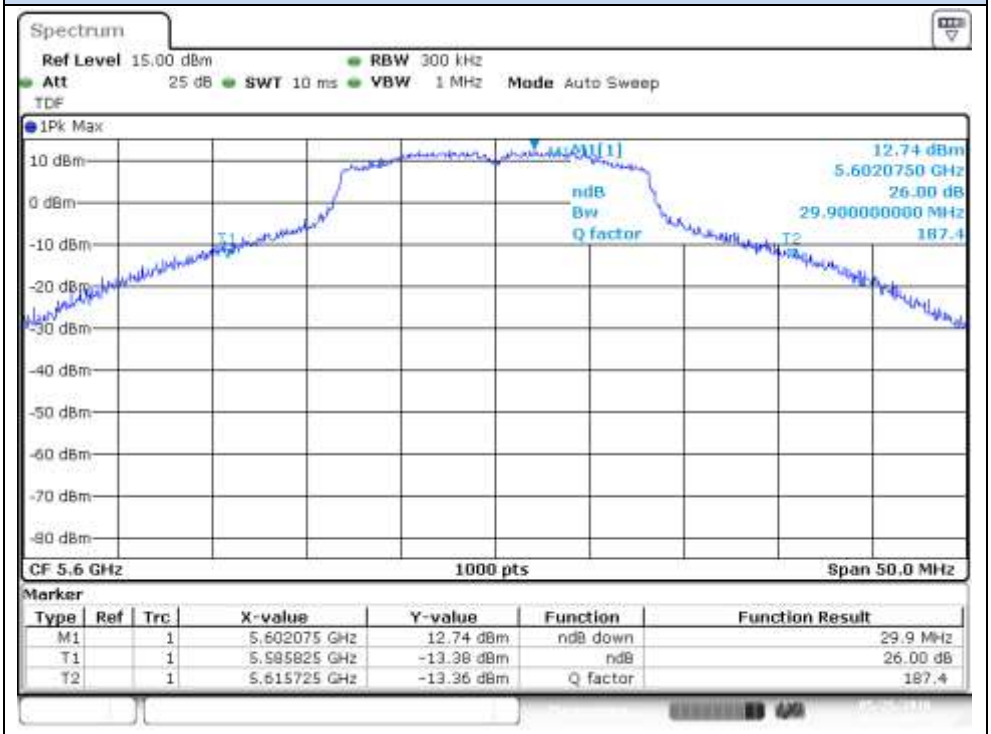
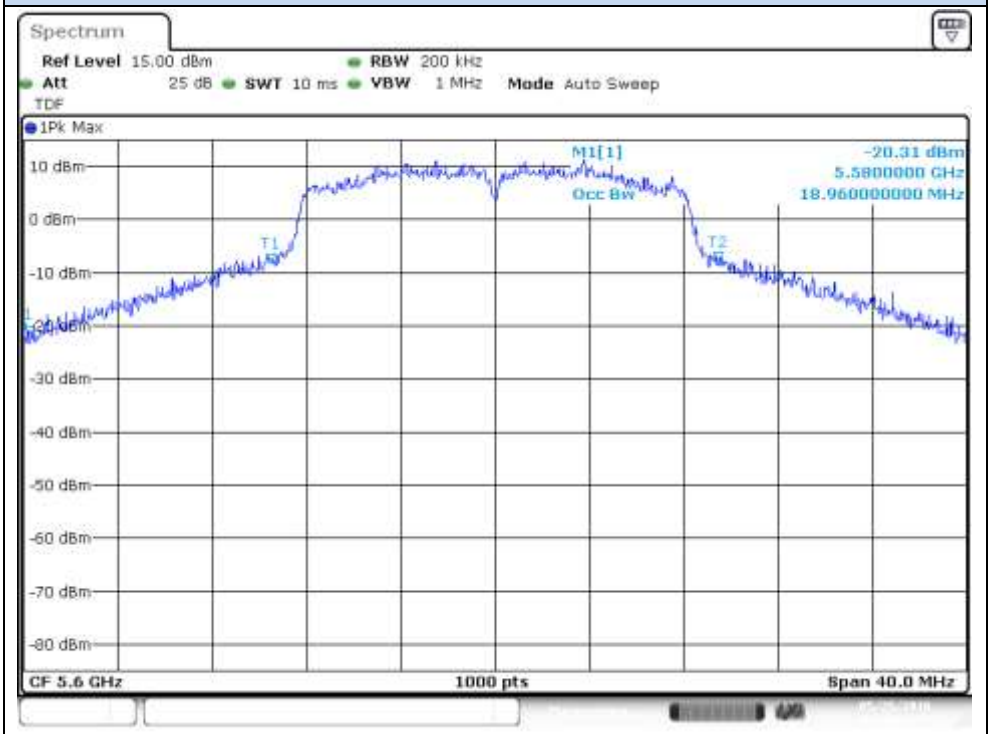
26dB BW – CH120



99% BW – CH120



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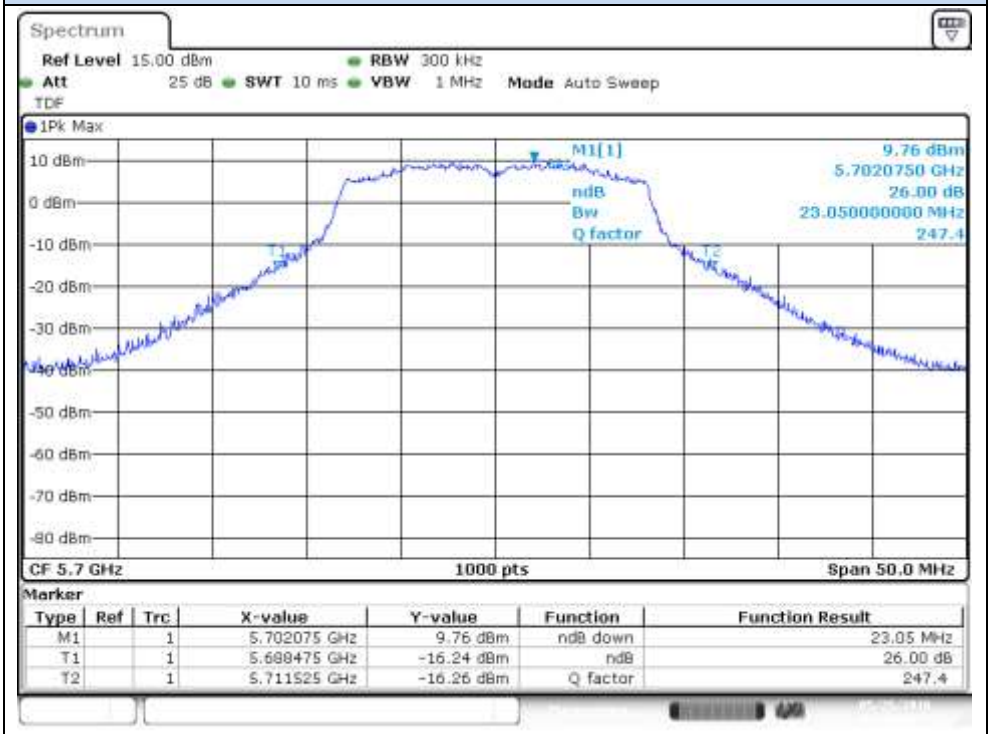
26dB BW – CH140



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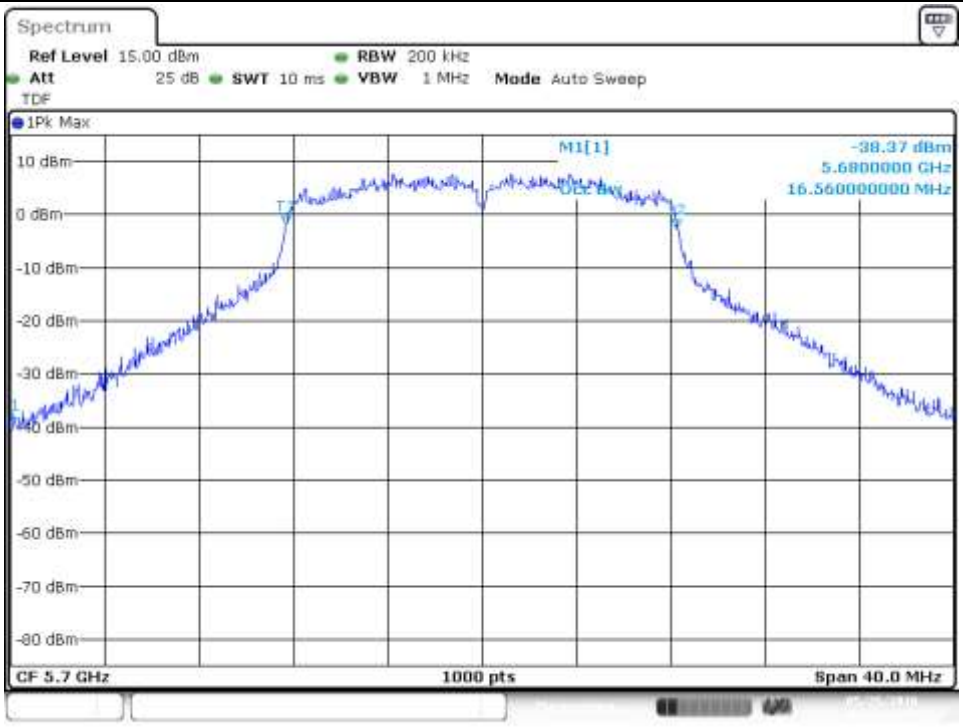
99% BW – CH140



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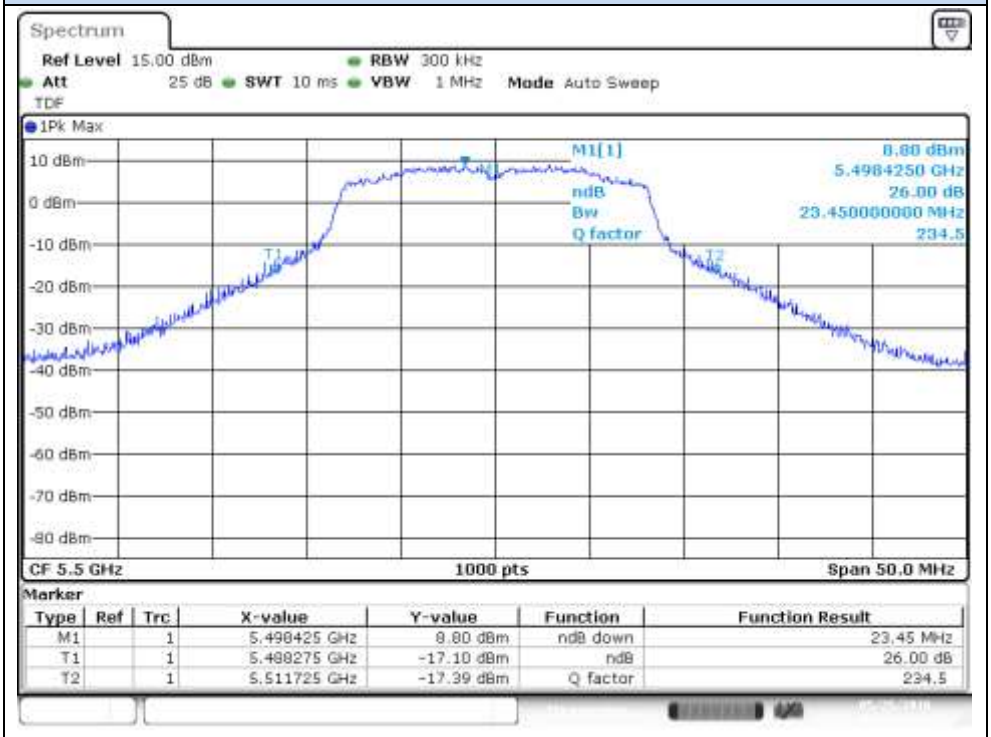
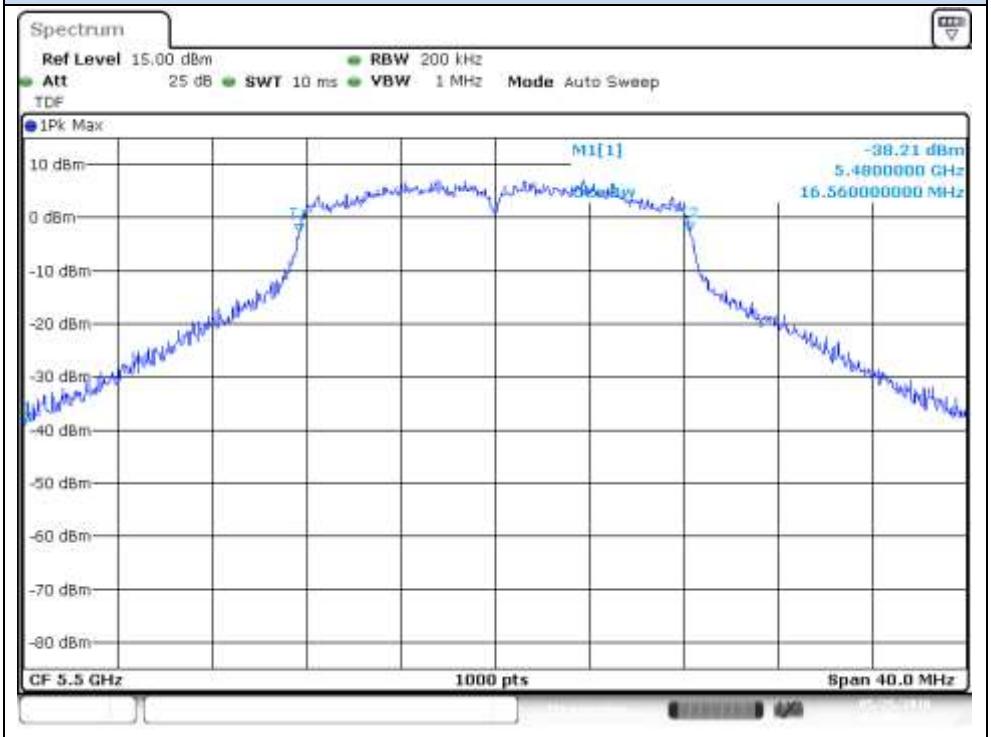
802.11a, 6Mbps – Chain B

26dB BW – CH100



99% BW – CH100



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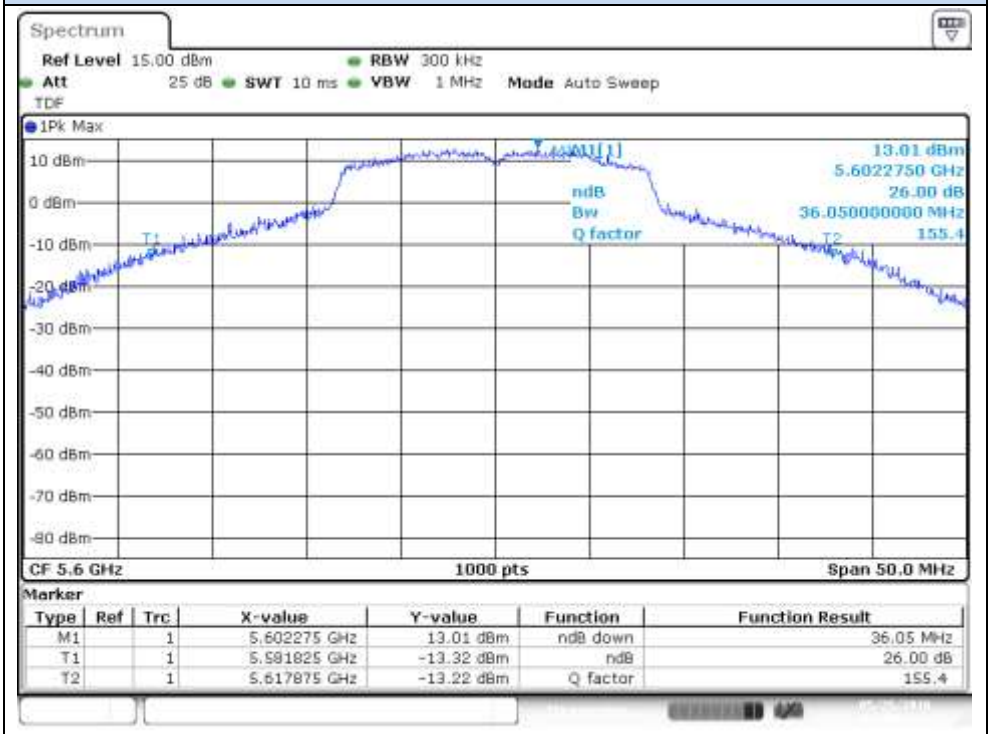
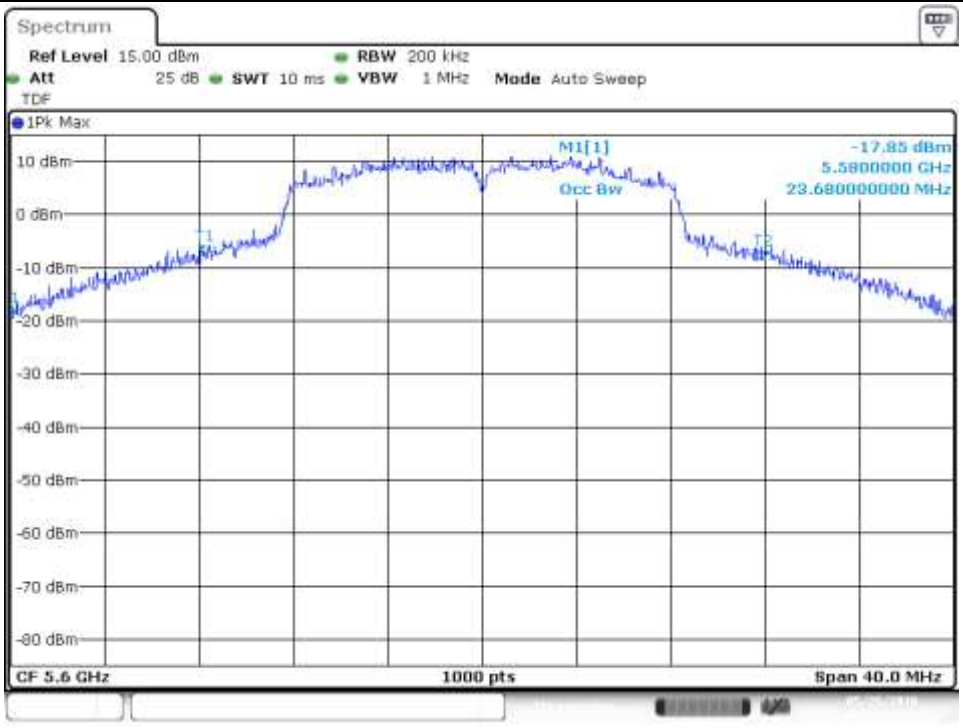
26dB BW – CH120



99% BW – CH120



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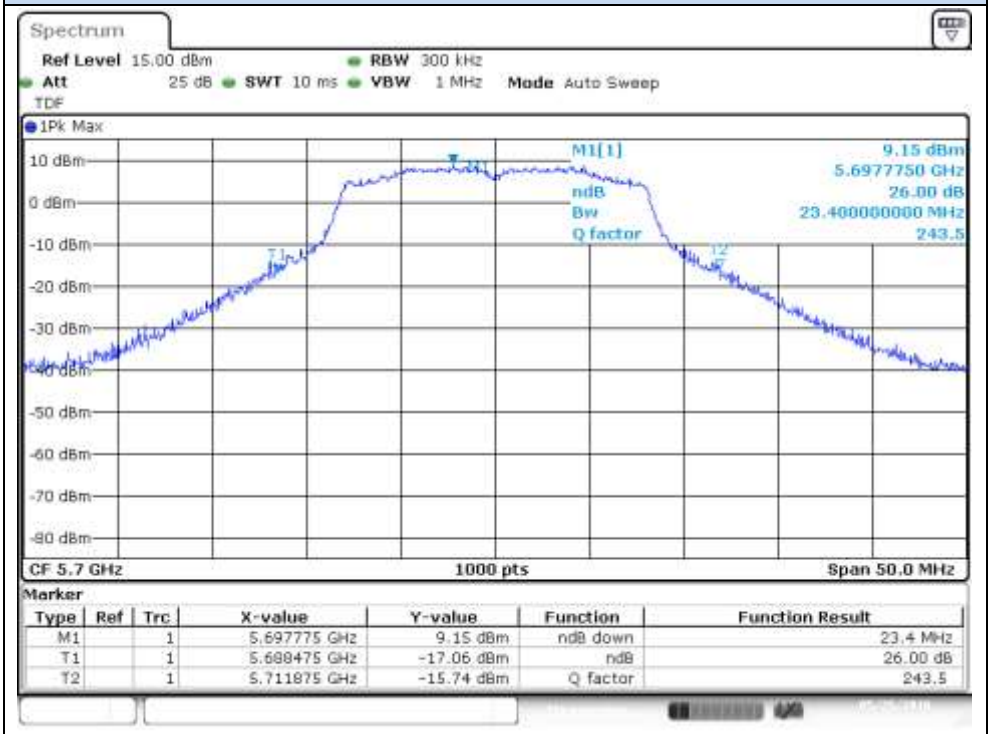
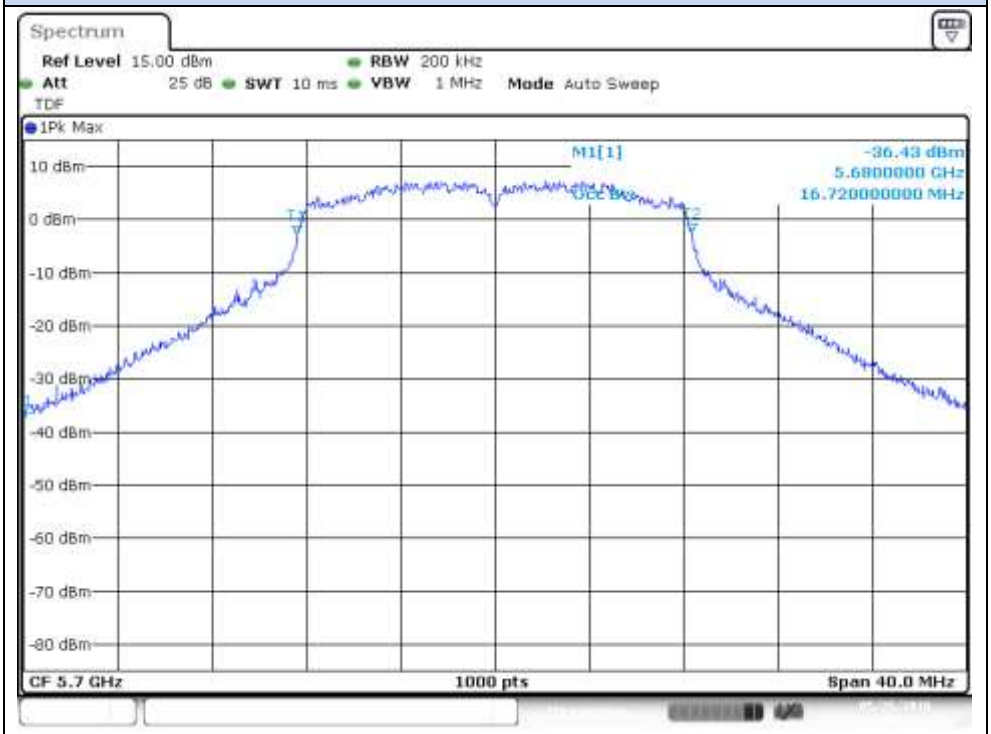
26dB BW – CH140



99% BW – CH140

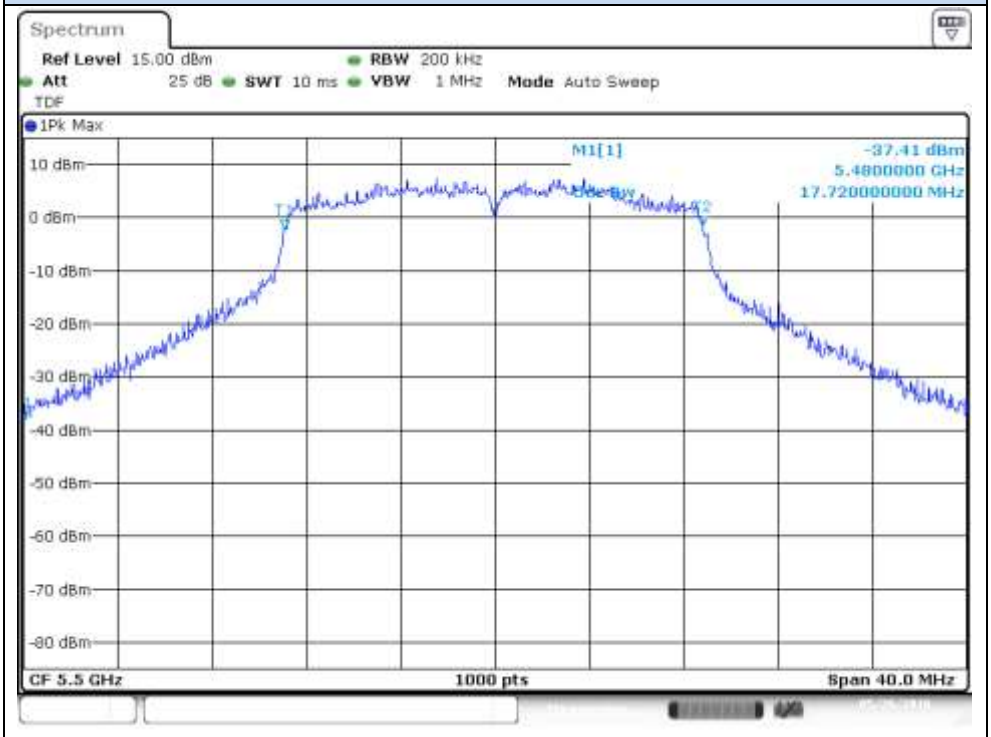


Printed copies are not controlled documents

802.11n20, HT0 (SISO) – Chain A

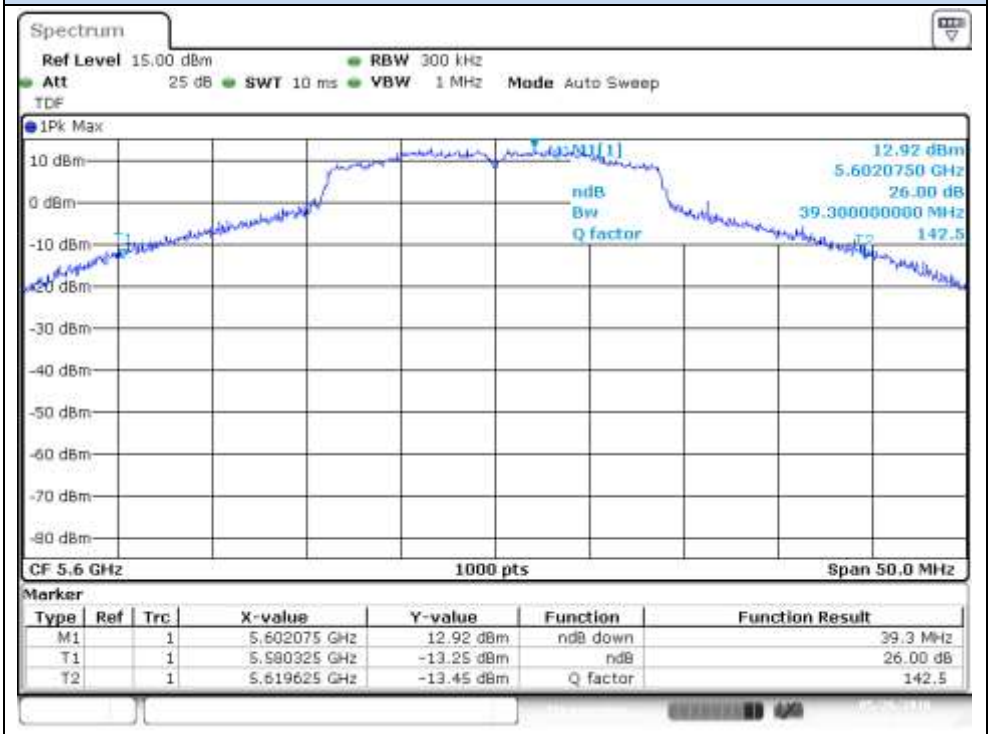
26dB BW – CH100

99% BW – CH100

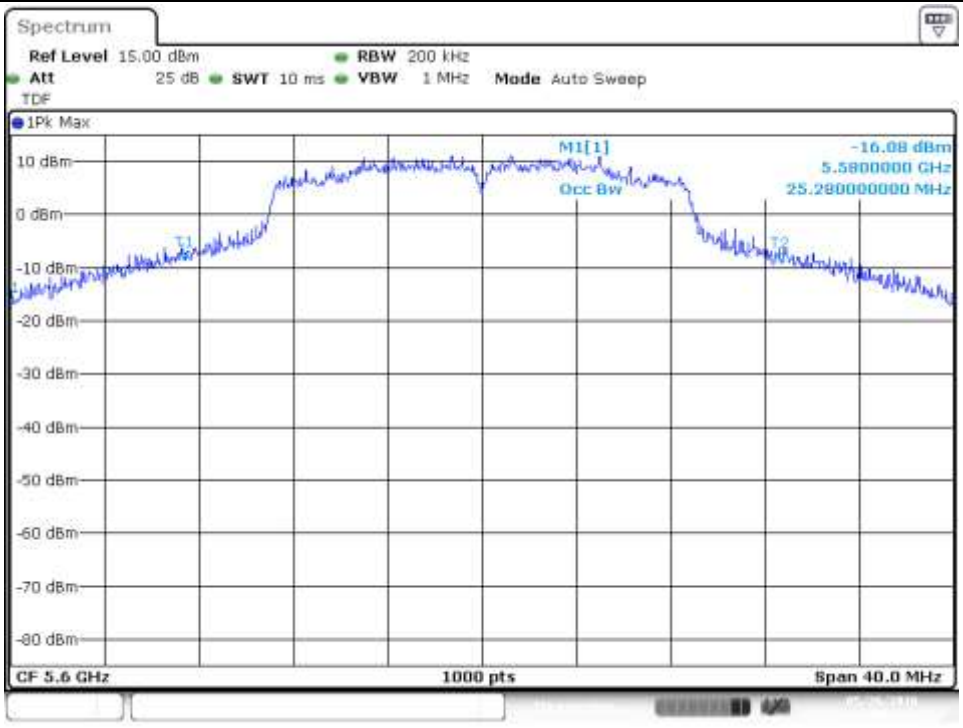


Printed copies are not controlled documents

26dB BW – CH120

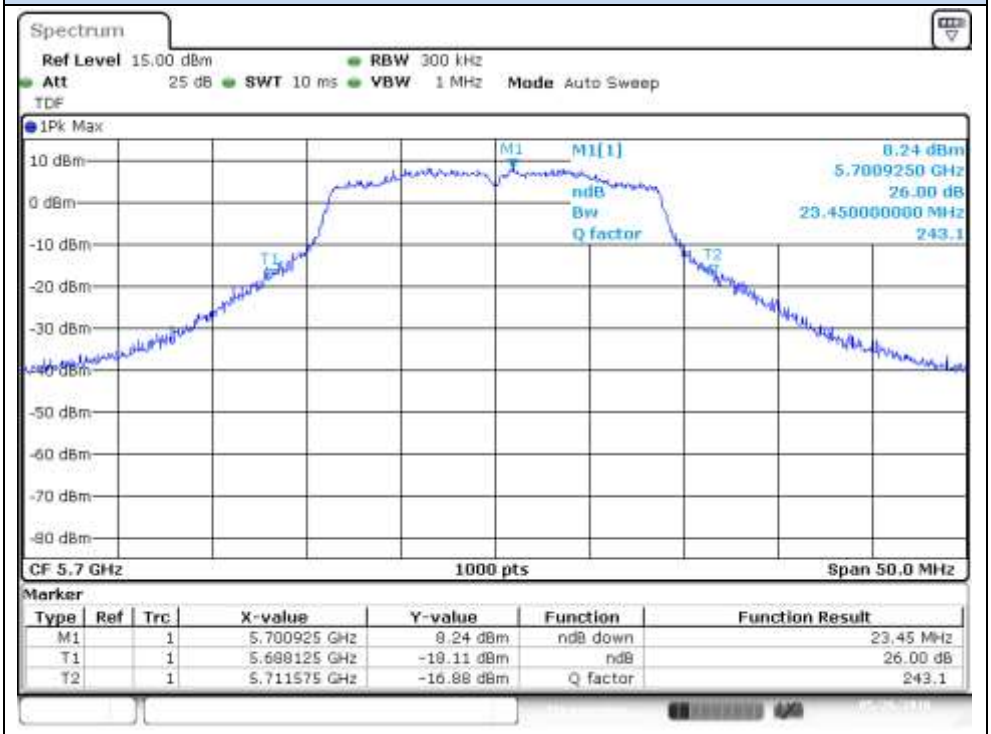


99% BW – CH120

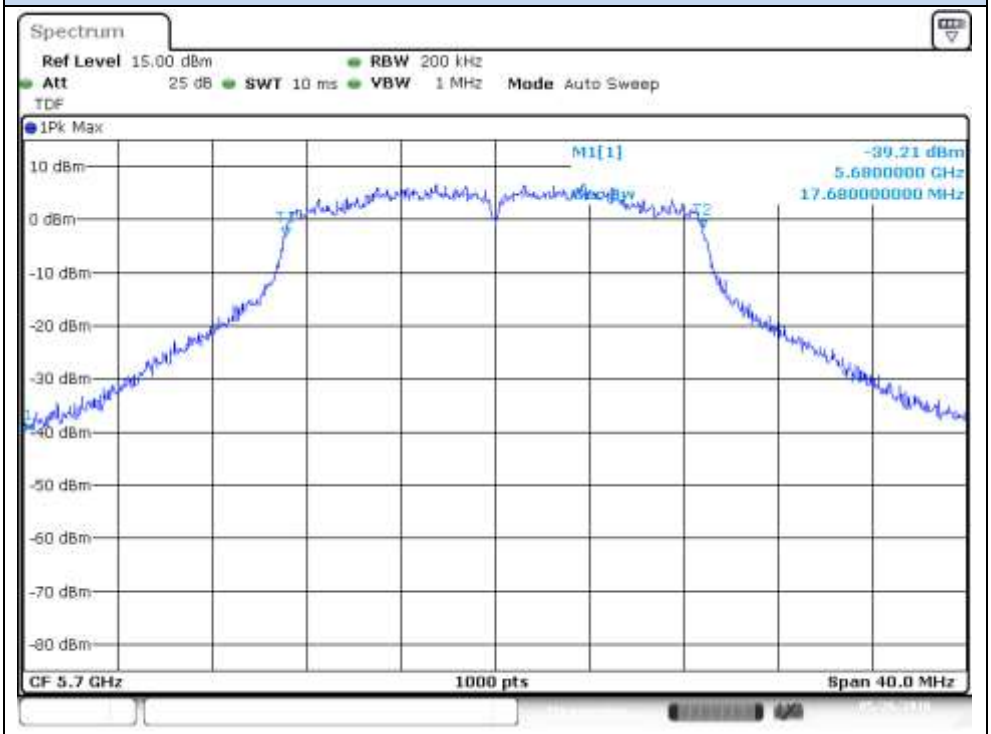


Printed copies are not controlled documents

26dB BW – CH140

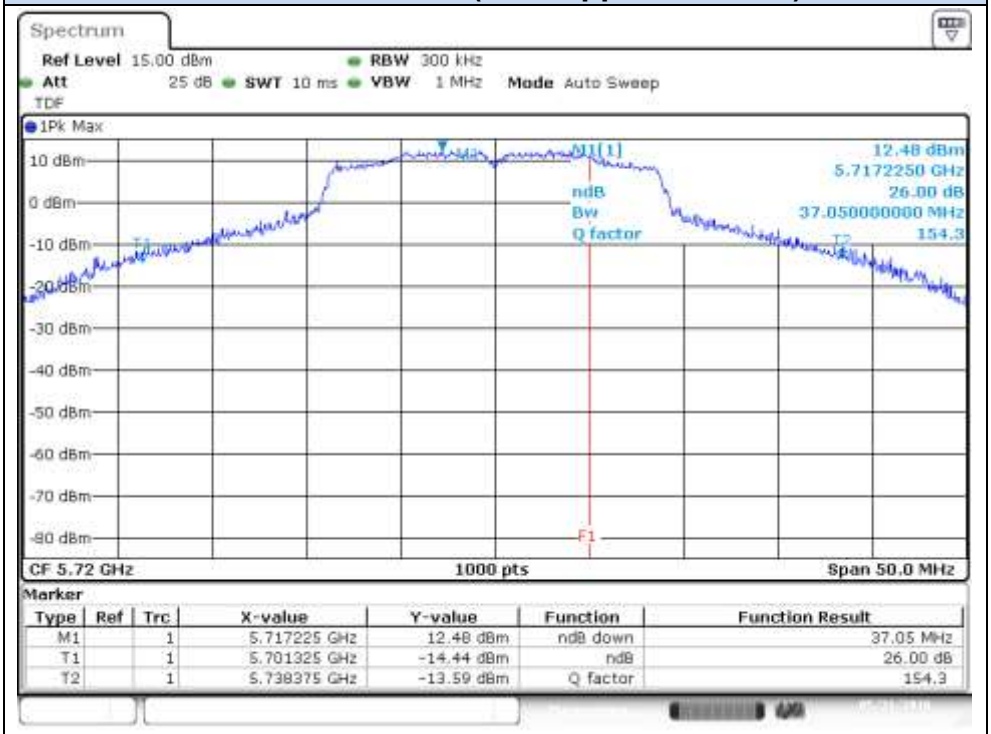


99% BW – CH140



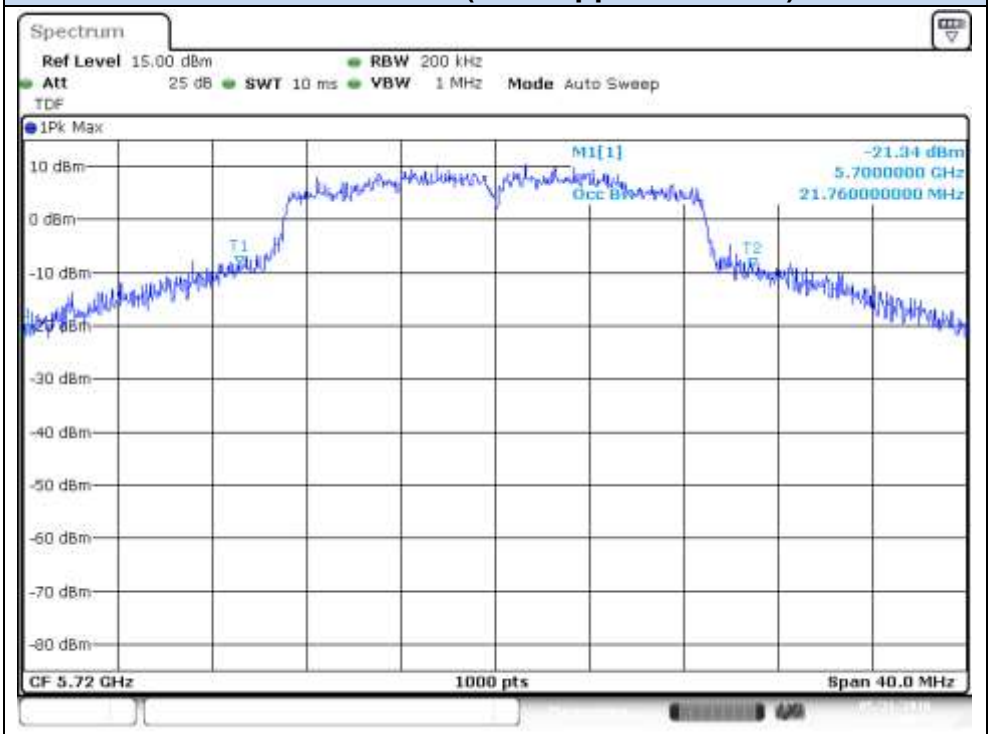
Printed copies are not controlled documents

26dB BW – CH144 (Overlapped Channel)



Date: 31.MAY.2016 12:24:18

99% BW – CH144 (Overlapped Channel)

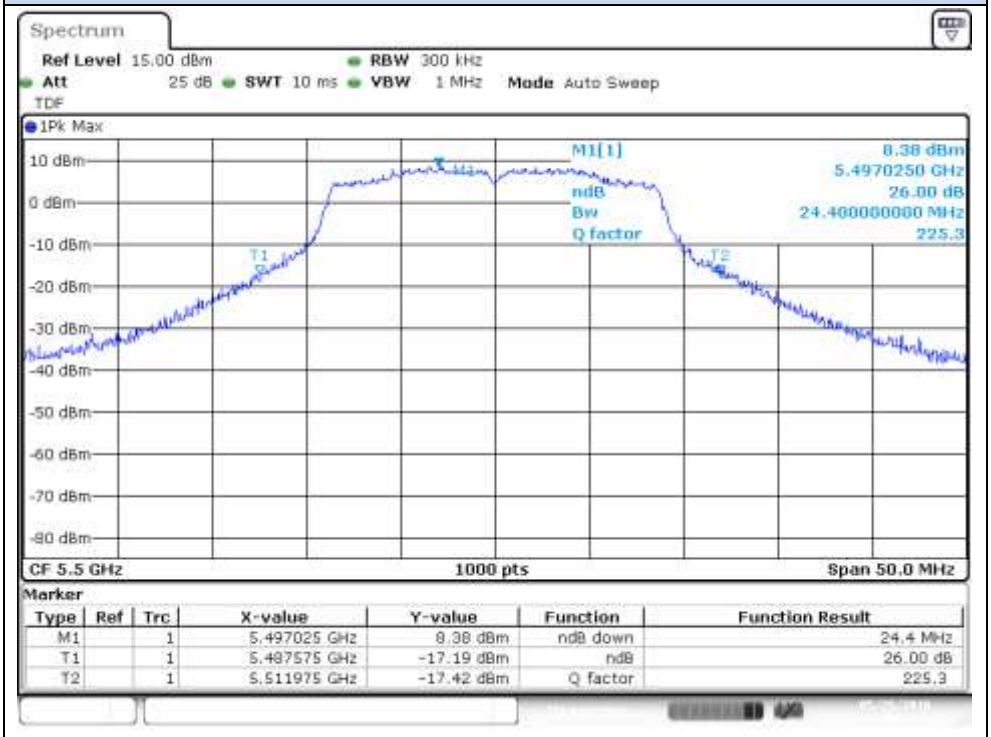


Date: 31.MAY.2016 12:23:49

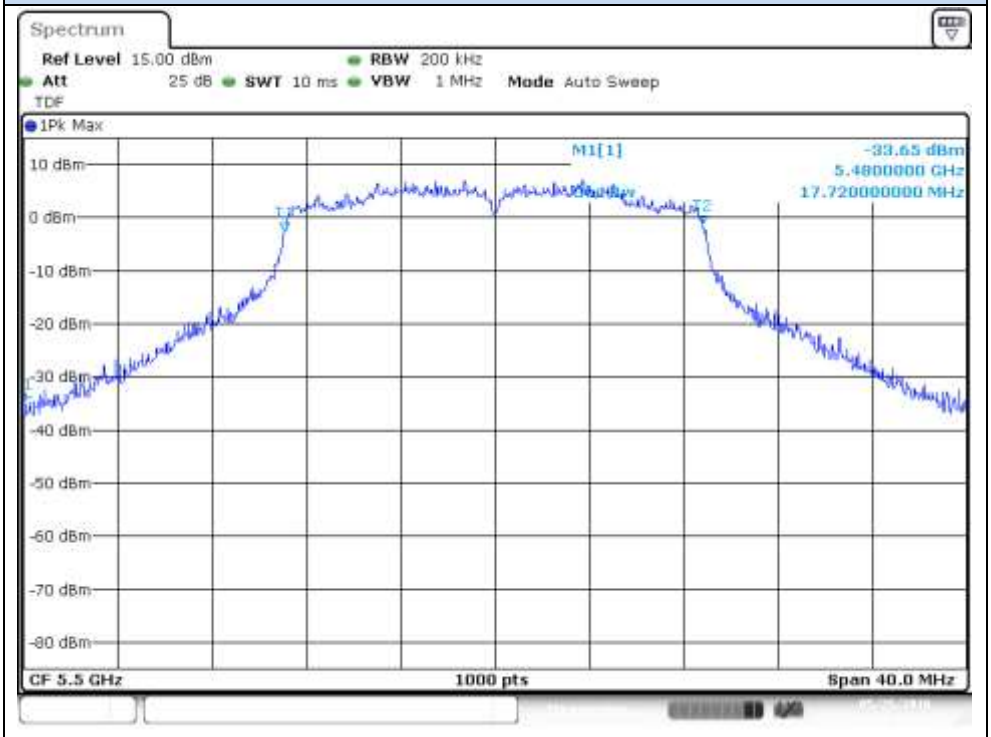
Printed copies are not controlled documents

802.11n20, HT0 (SISO) – Chain B

26dB BW – CH100

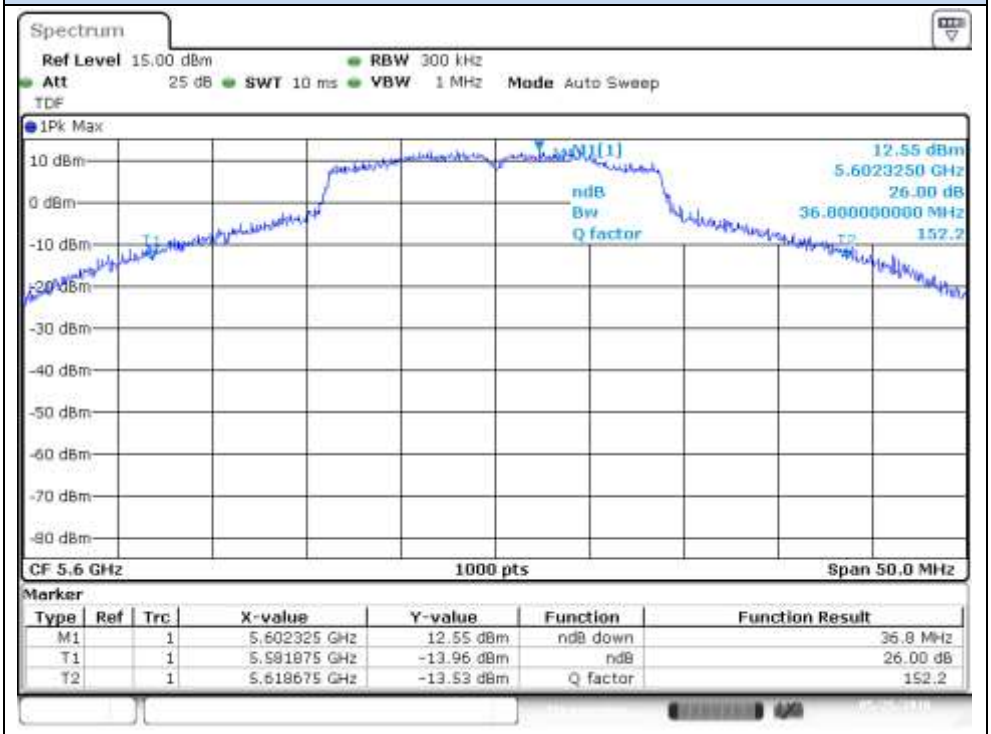


99% BW – CH100

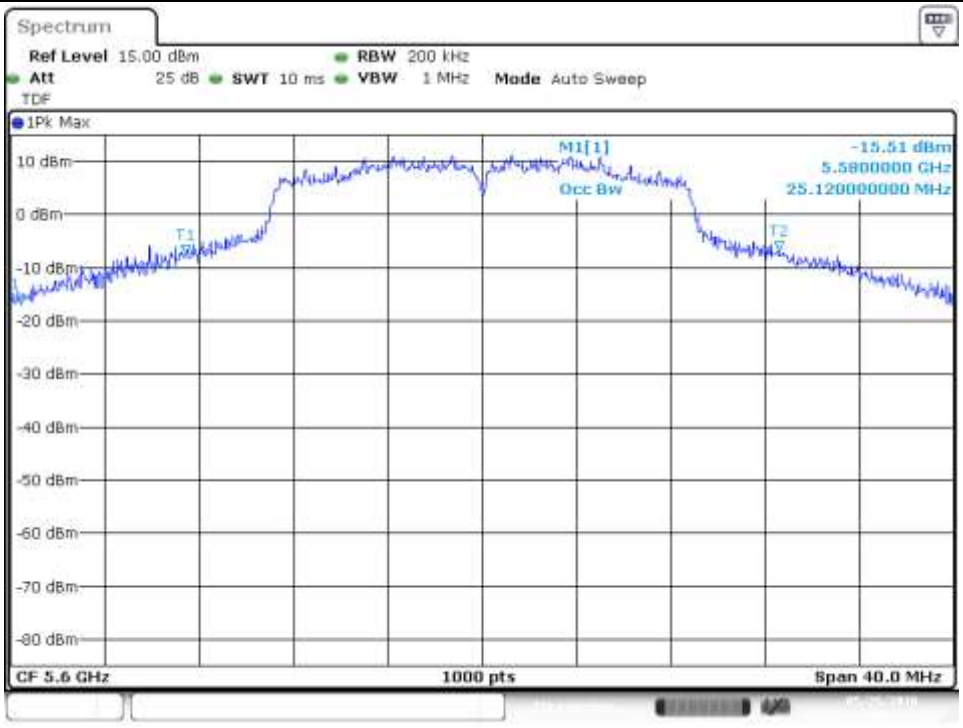


Printed copies are not controlled documents

26dB BW – CH120

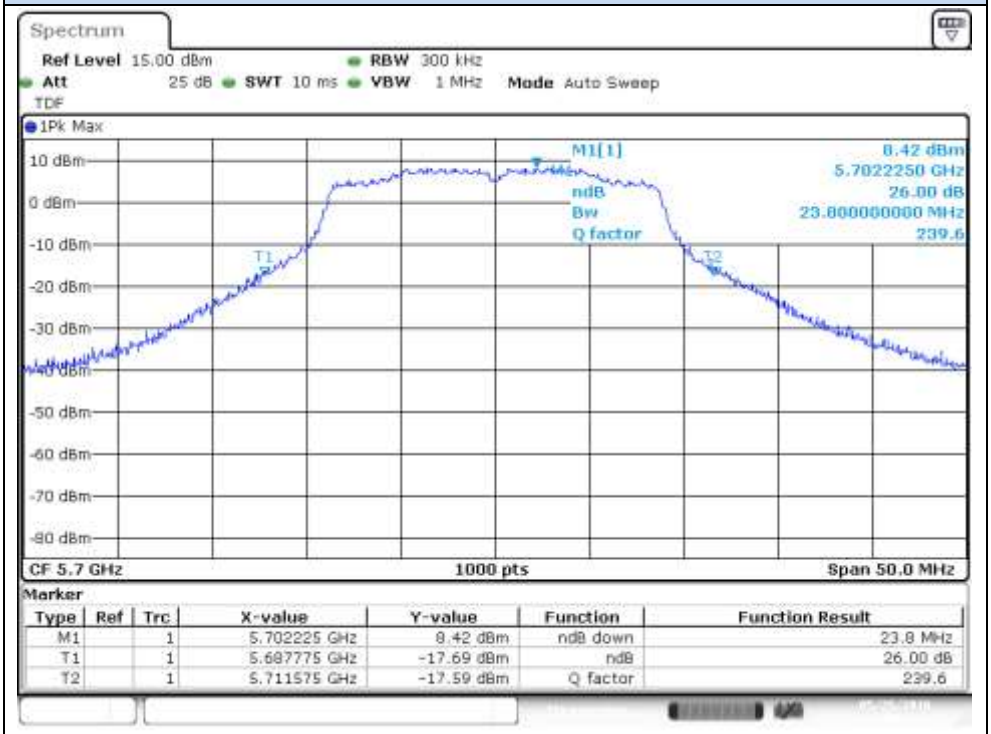


99% BW – CH120

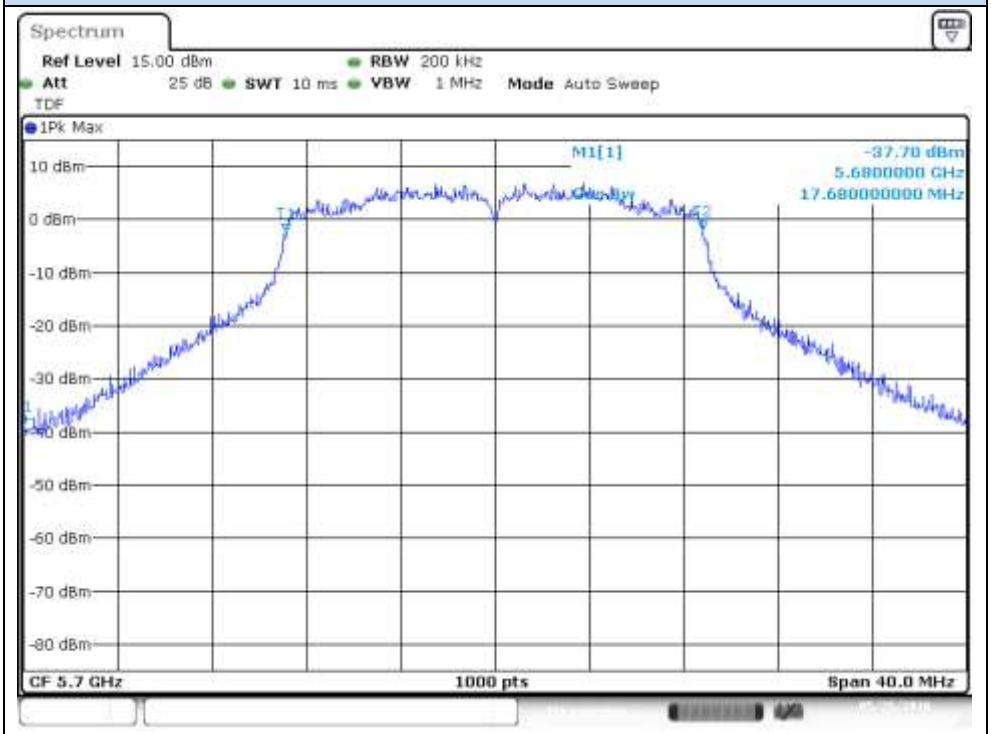


Printed copies are not controlled documents

26dB BW – CH140

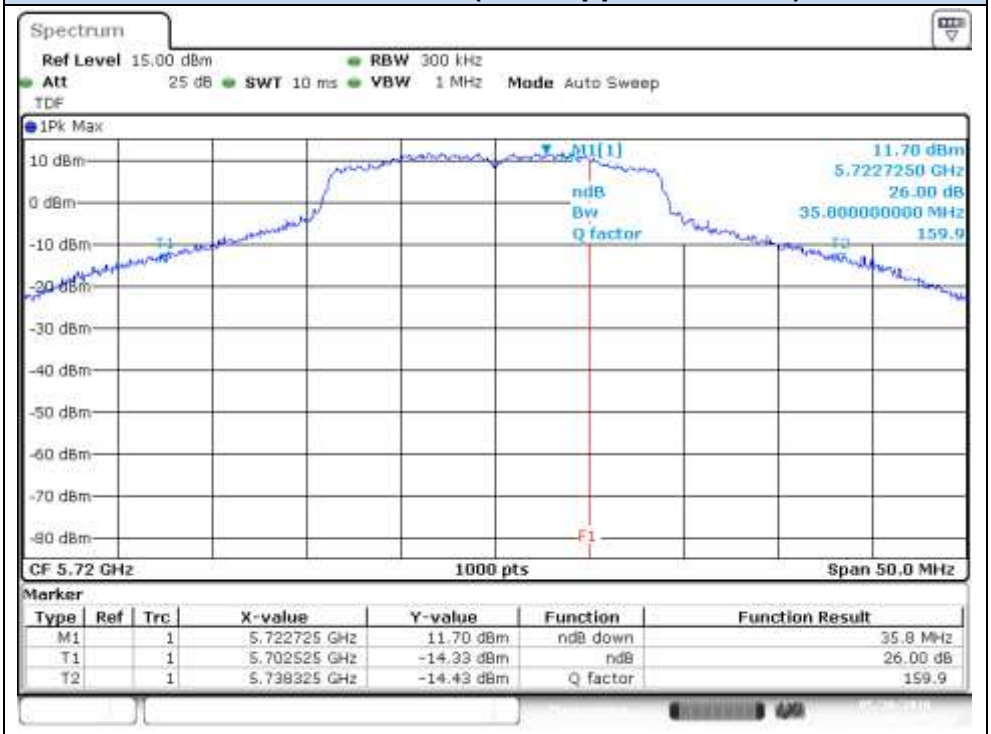


99% BW – CH140



Printed copies are not controlled documents

26dB BW – CH144 (Overlapped Channel)



Date: 30.MAY.2016 17:05:52

99% BW – CH144 (Overlapped Channel)

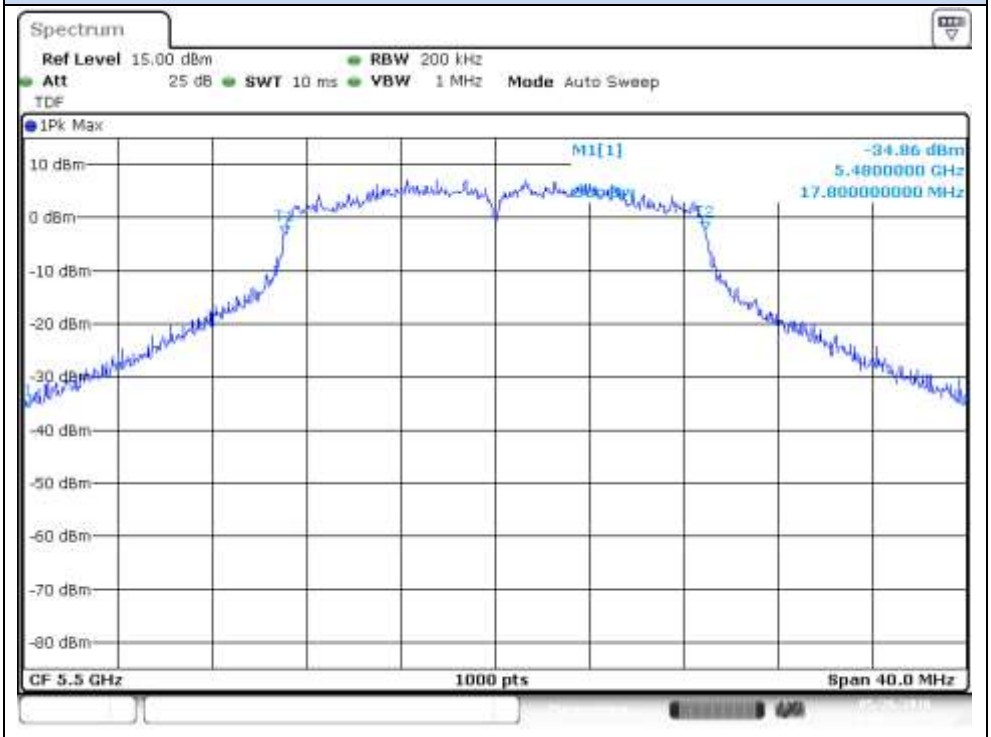
Date: 30.MAY.2016 17:17:35

Printed copies are not controlled documents

802.11n20, HT8 (MIMO) – Chain A

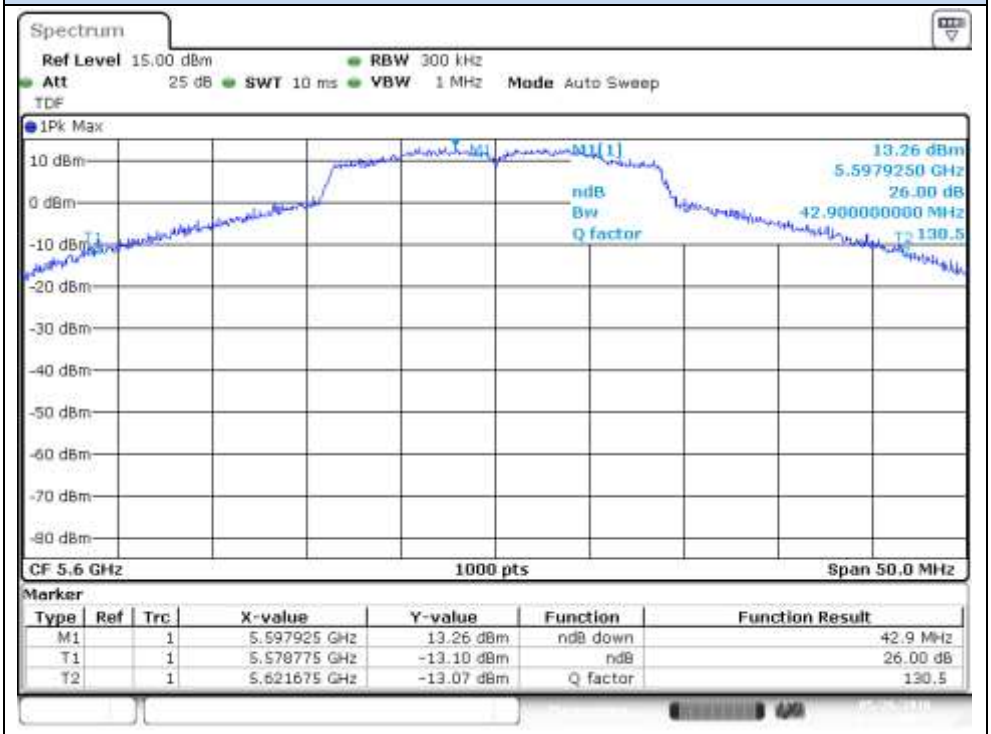
26dB BW – CH100

99% BW – CH100



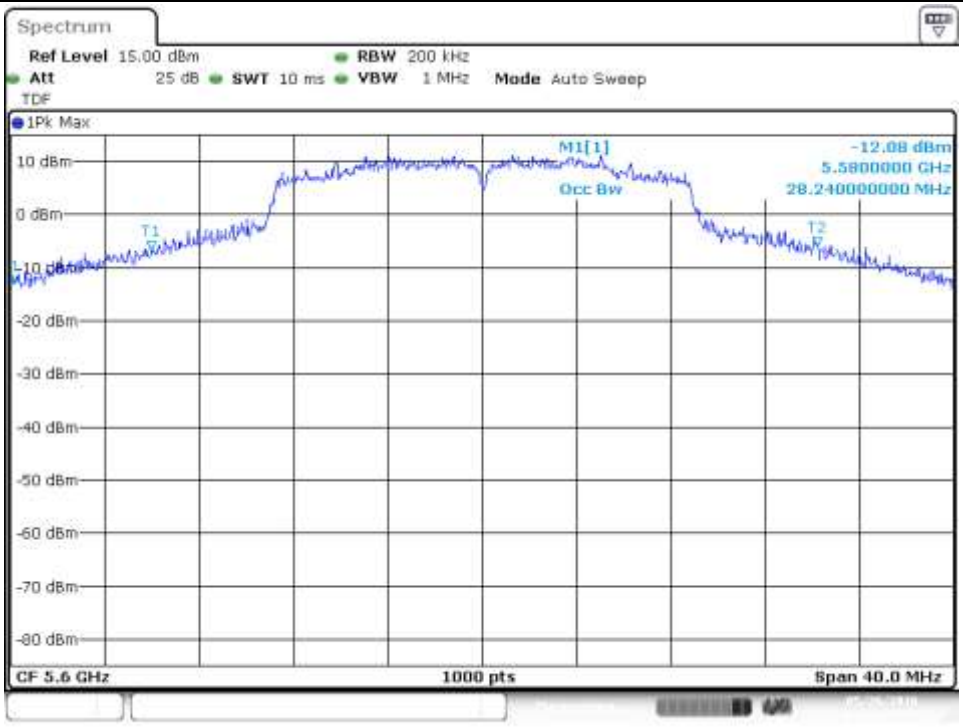
Printed copies are not controlled documents

26dB BW – CH120



Date: 26.MAY.2016 15:15:49

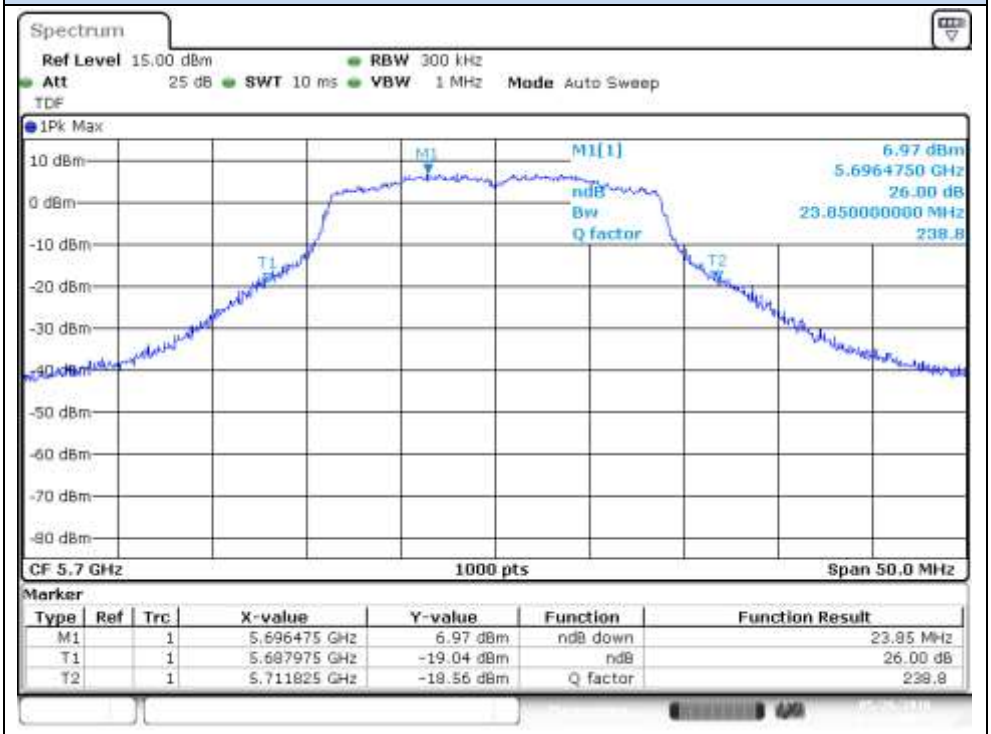
99% BW – CH120



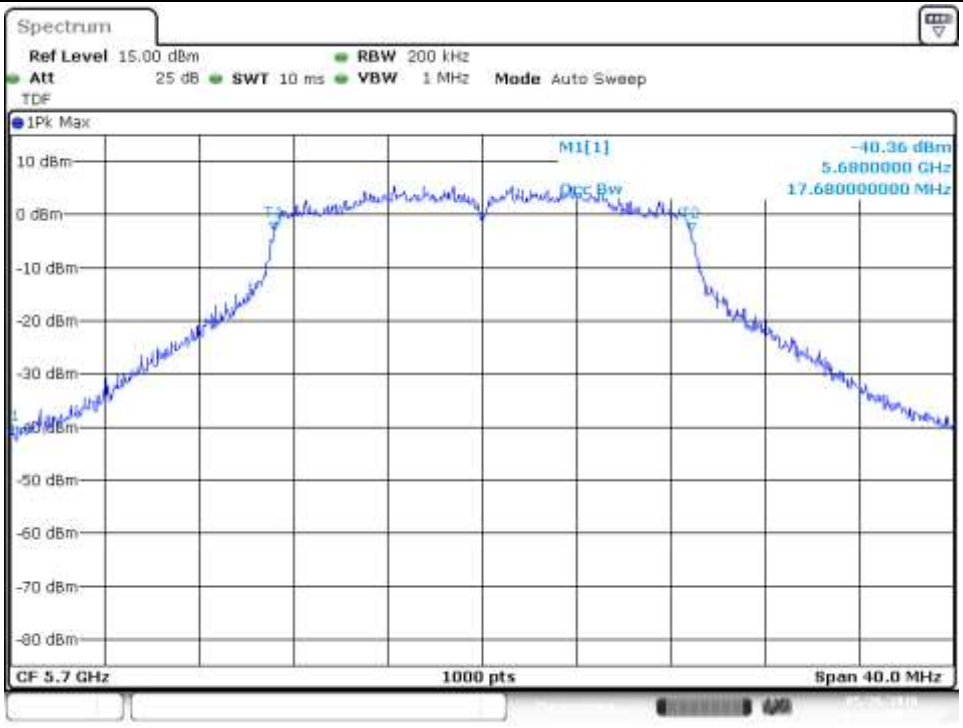
Date: 26.MAY.2016 15:15:17

Printed copies are not controlled documents

26dB BW – CH140

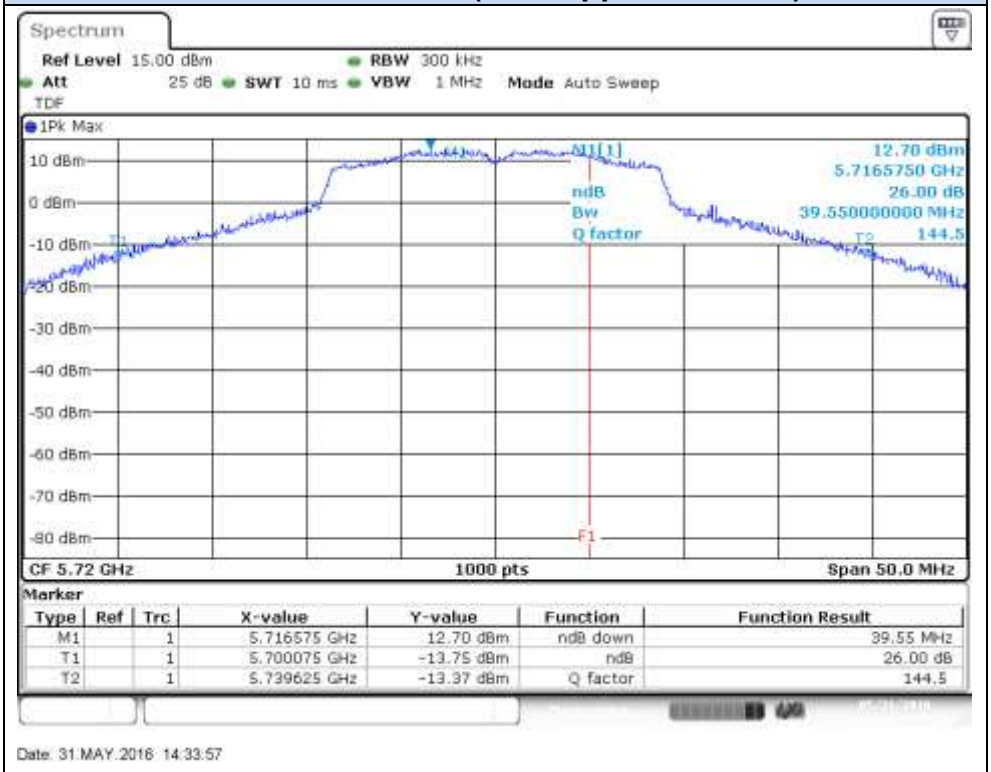


99% BW – CH140



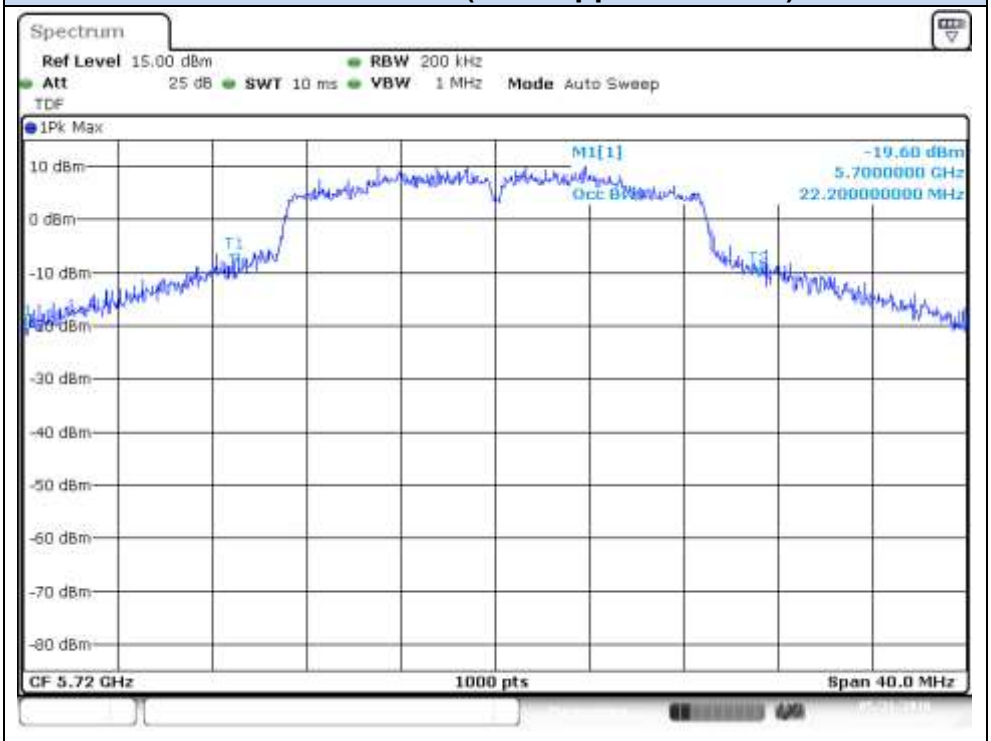
Printed copies are not controlled documents

26dB BW – CH144 (Overlapped Channel)



Date: 31.MAY.2016 14:33:57

99% BW – CH144 (Overlapped Channel)

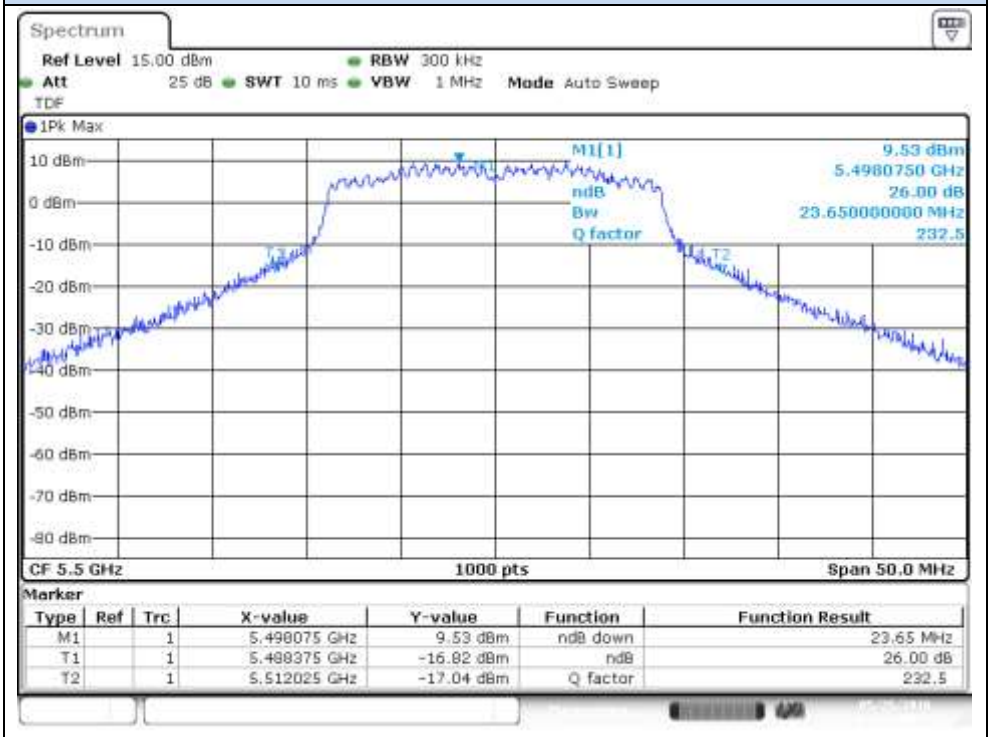


Date: 31.MAY.2016 14:38:15

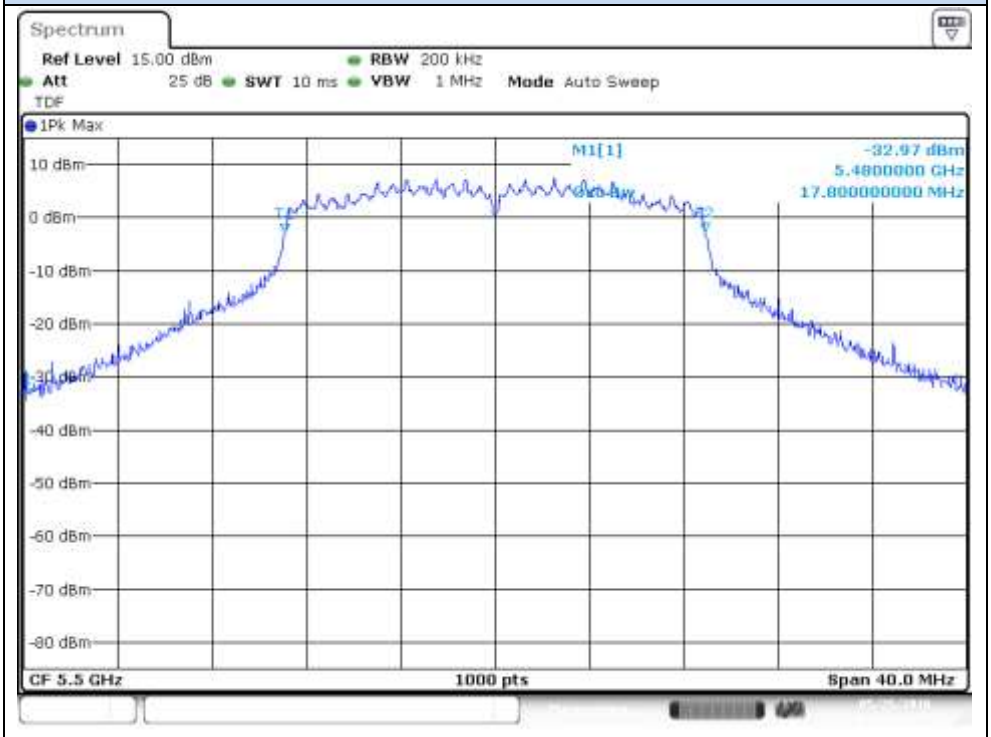
Printed copies are not controlled documents

802.11n20, HT8 (MIMO) – Chain B

26dB BW – CH100

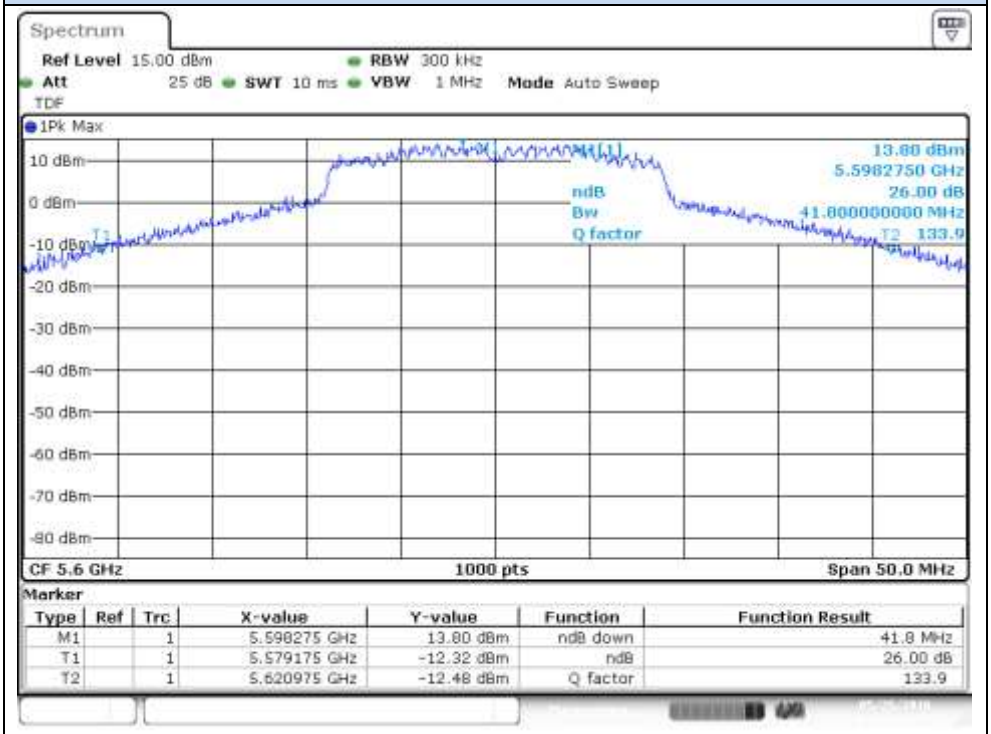


99% BW – CH100



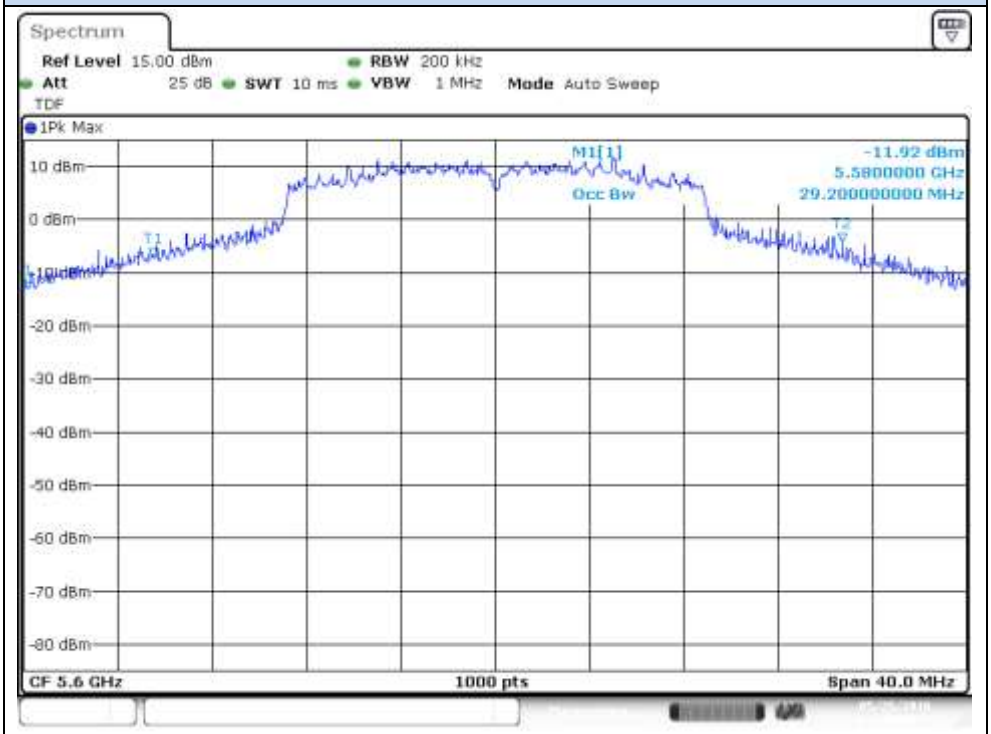
Printed copies are not controlled documents

26dB BW – CH120



Date: 25.MAY.2016 15:41:11

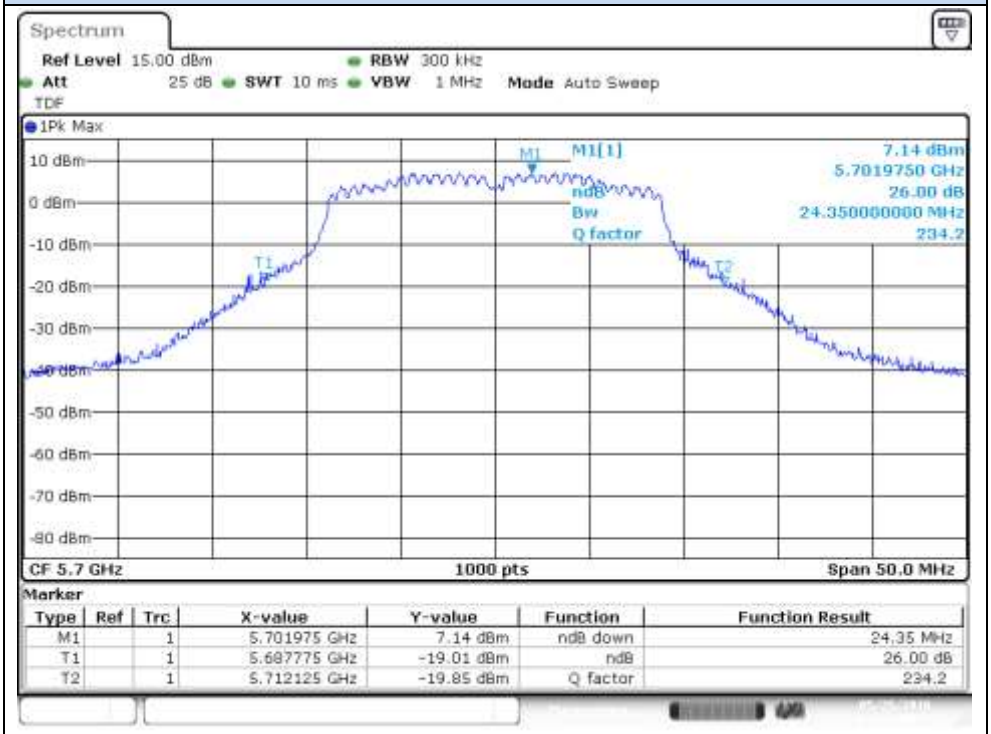
99% BW – CH120



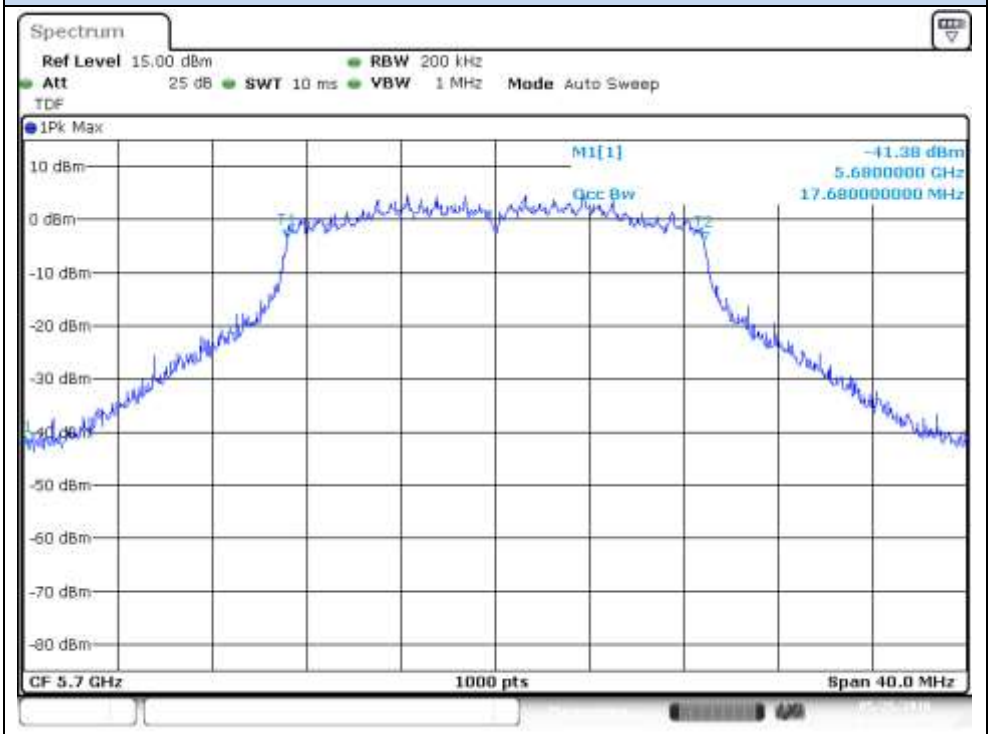
Date: 25.MAY.2016 15:39:51

Printed copies are not controlled documents

26dB BW – CH140

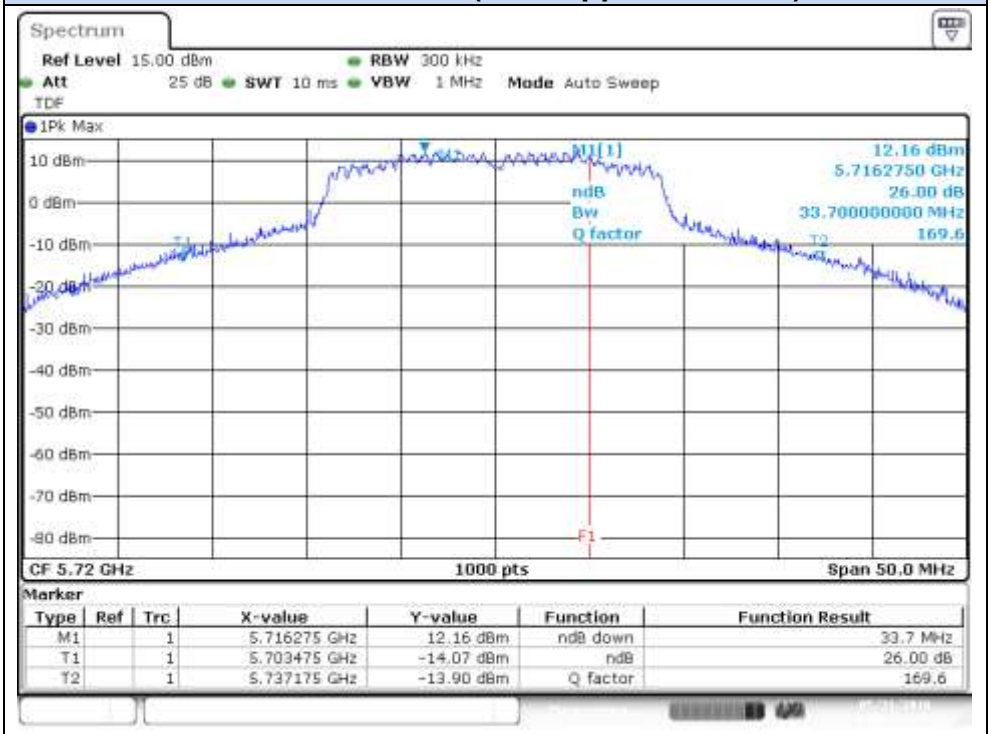


99% BW – CH140



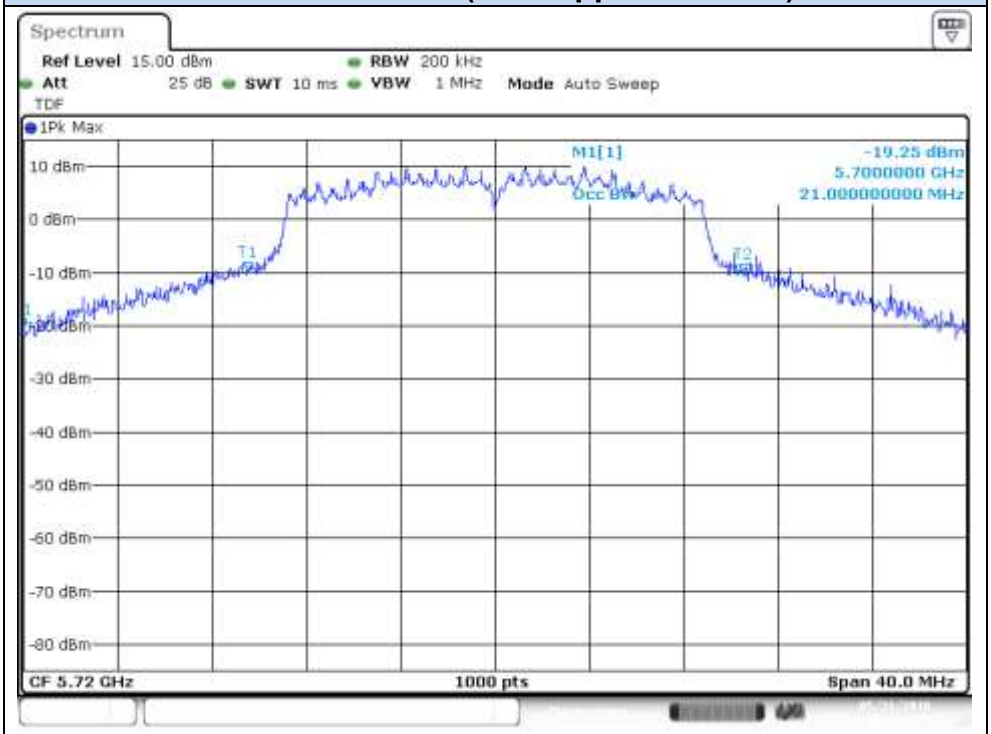
Printed copies are not controlled documents

26dB BW – CH144 (Overlapped Channel)



Date: 31.MAY.2016 15:09:11

99% BW – CH144 (Overlapped Channel)

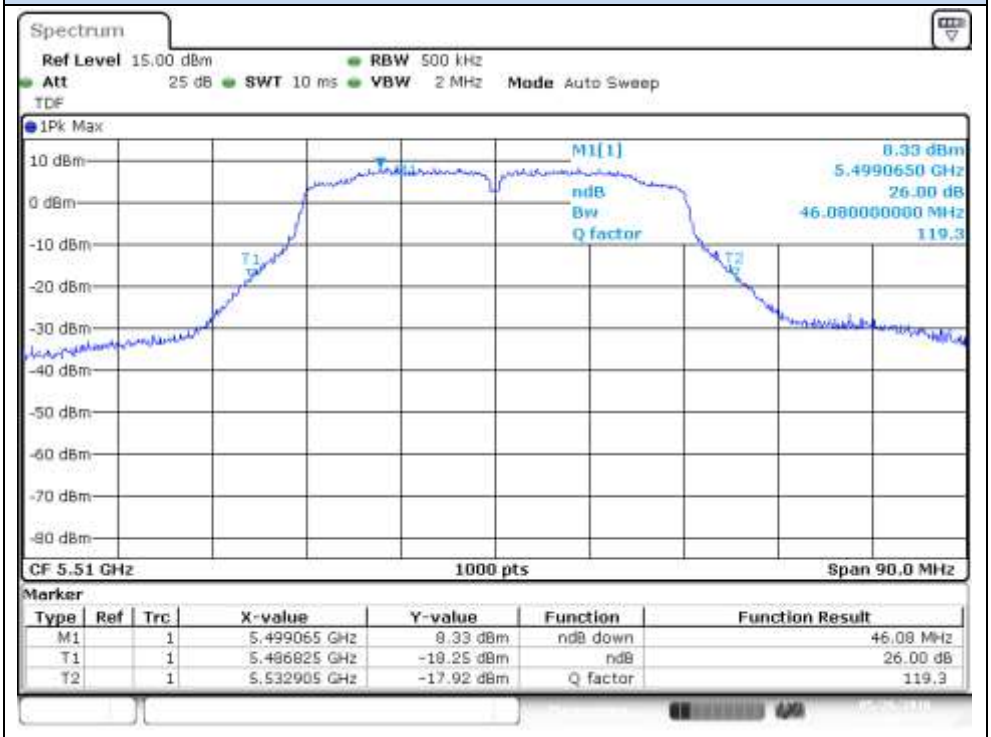


Date: 31.MAY.2016 15:05:43

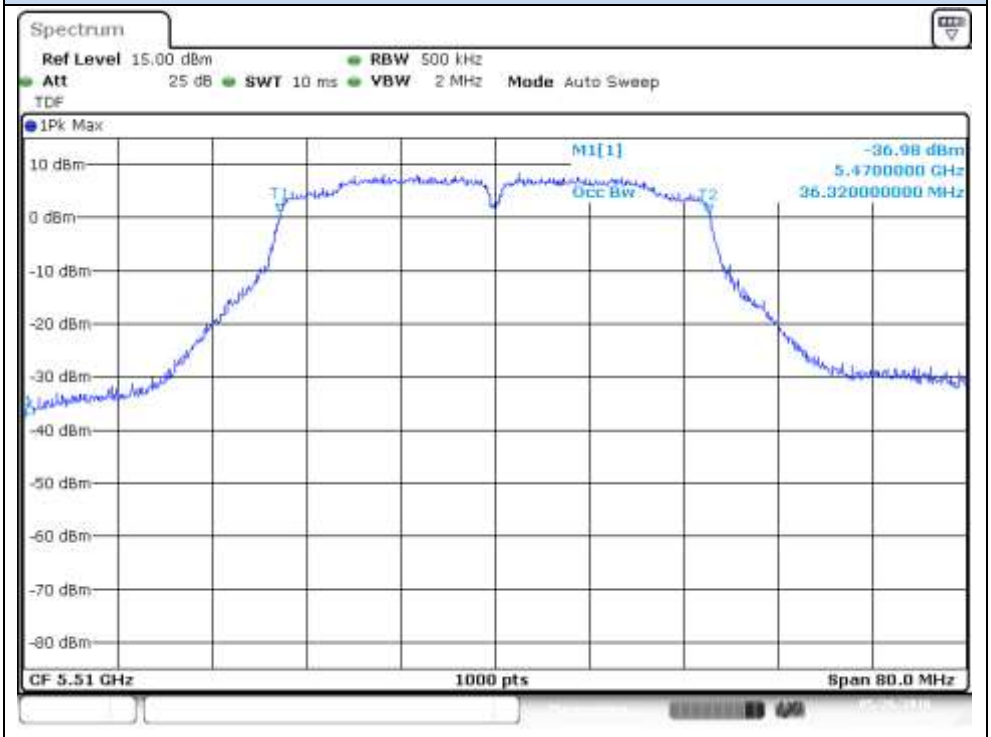
Printed copies are not controlled documents

802.11n40, HT0 (SISO) – Chain A

26dB BW – CH102F

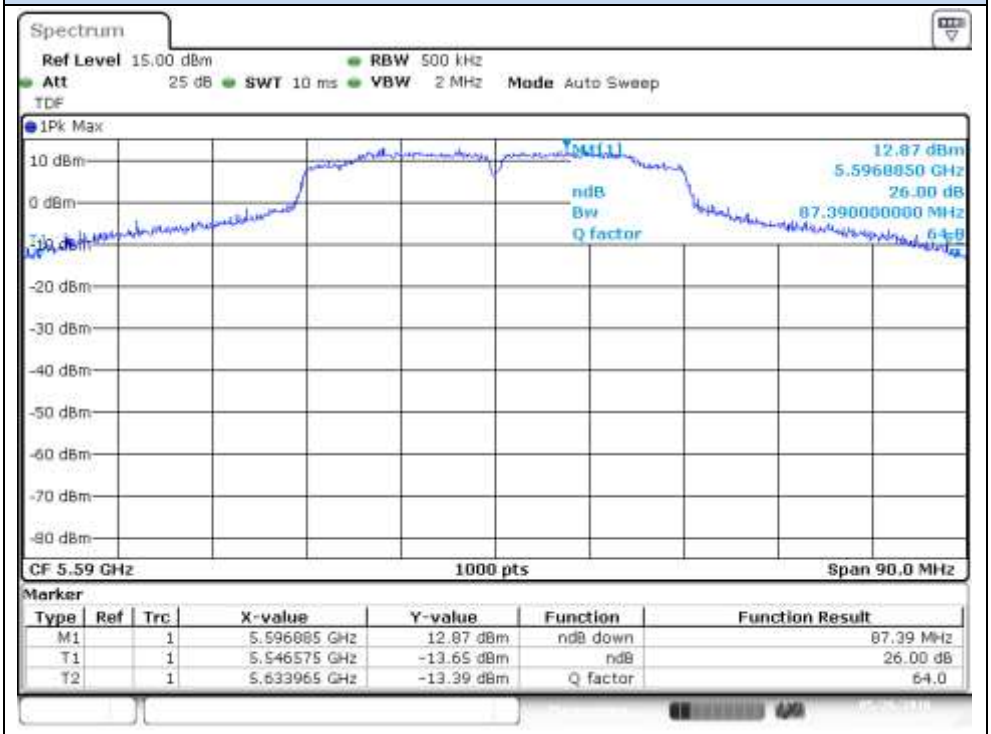


99% BW – CH102F



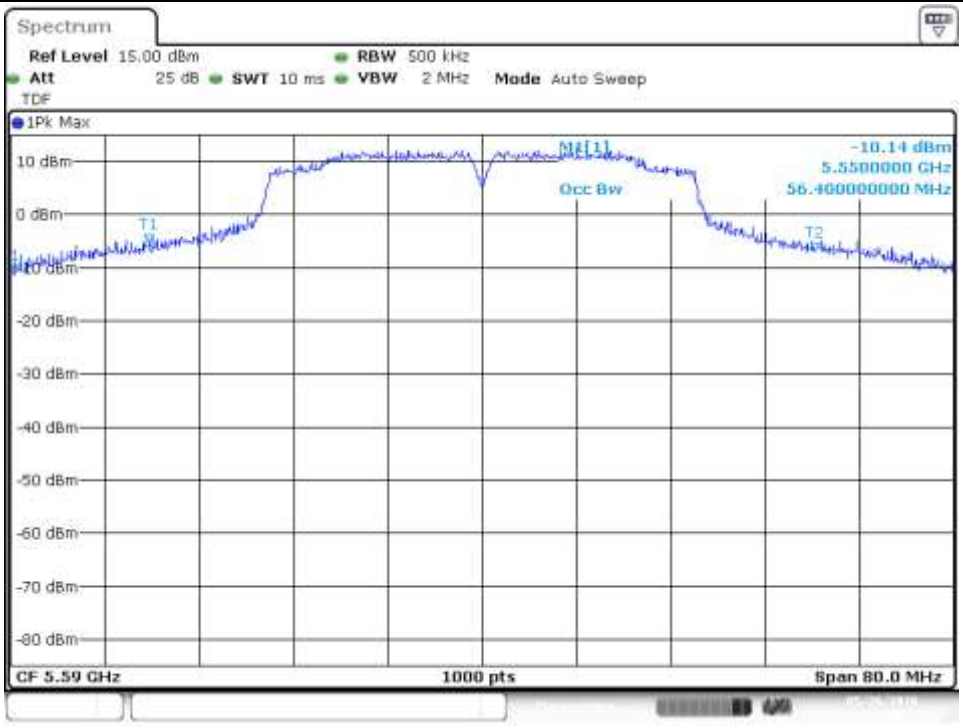
Printed copies are not controlled documents

26dB BW – CH118F



Date: 26.MAY.2016 12:15:26

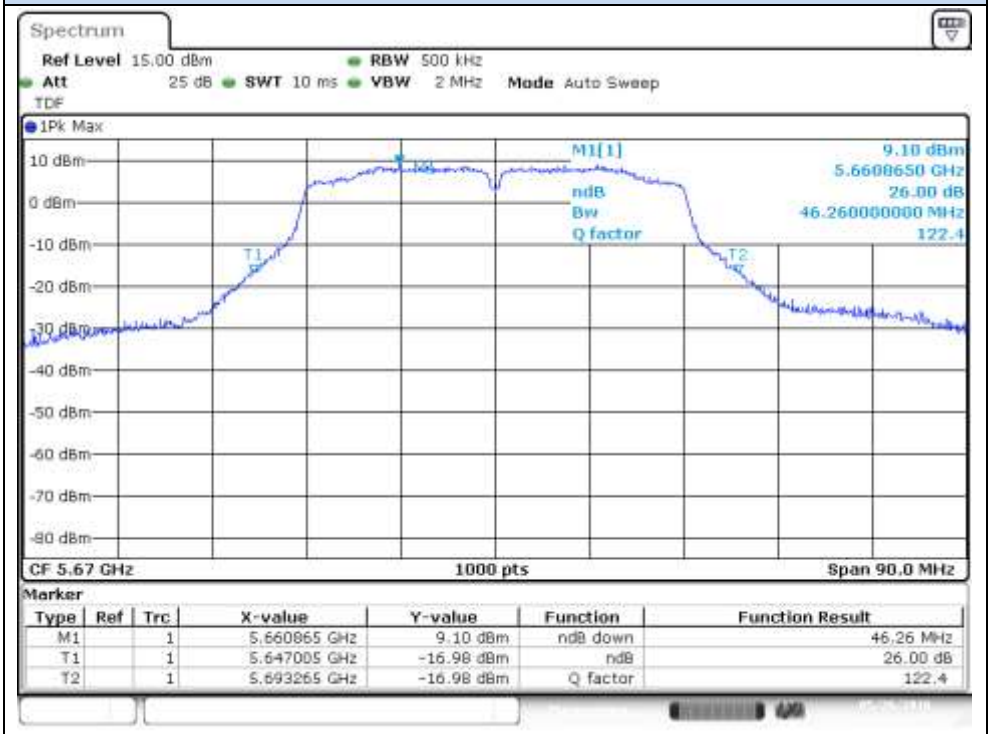
99% BW – CH118F



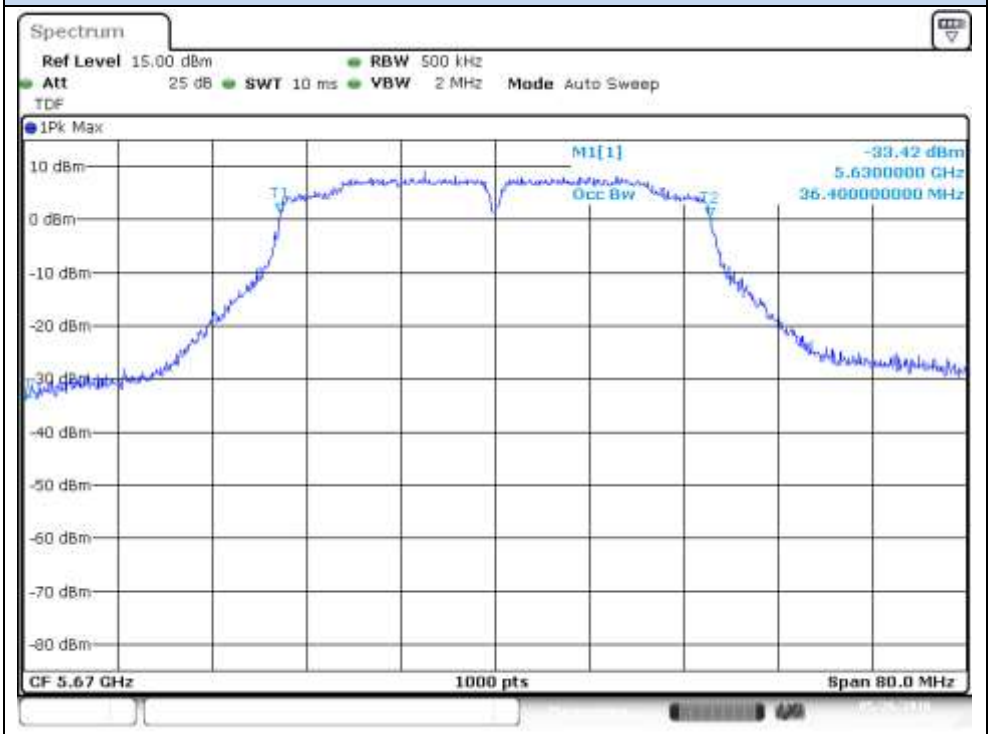
Date: 26.MAY.2016 12:10:48

Printed copies are not controlled documents

26dB BW – CH134F

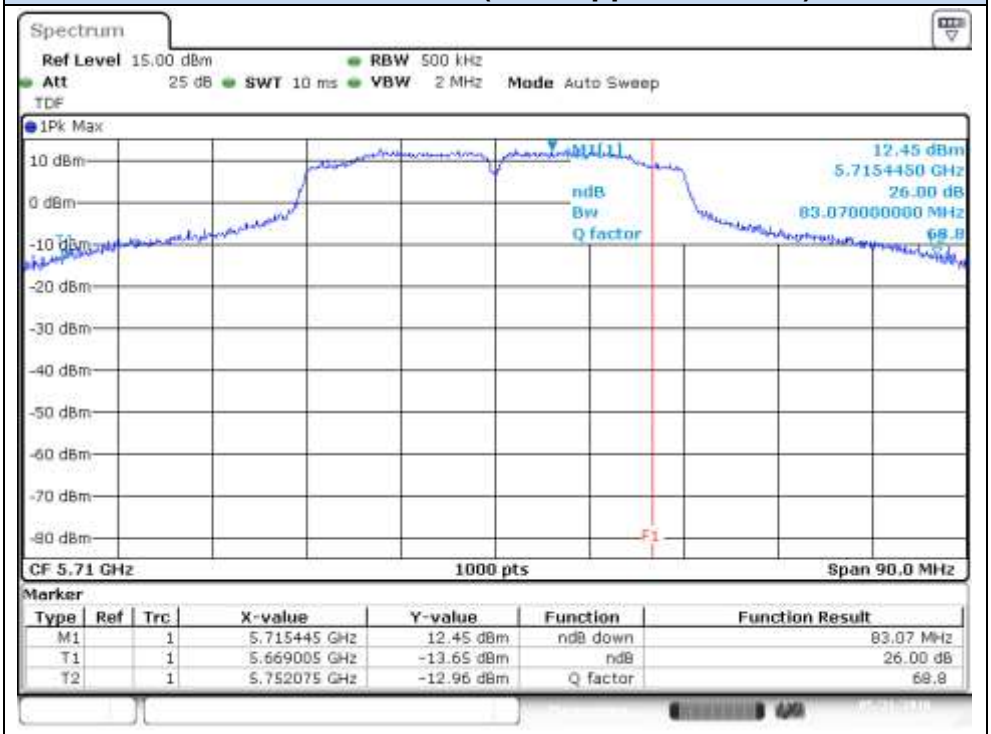


99% BW – CH134F



Printed copies are not controlled documents

26dB BW – CH142F (Overlapped Channel)



Date: 31.MAY.2016 14:15:31

99% BW – CH142F (Overlapped Channel)

Date: 31.MAY.2016 14:15:08

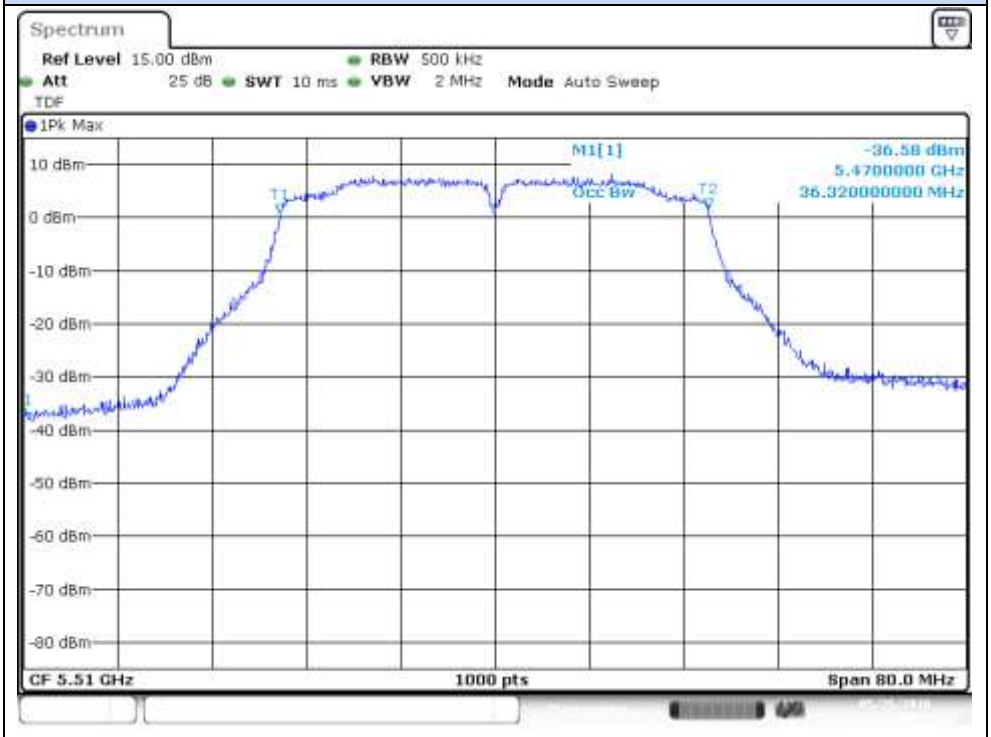
Printed copies are not controlled documents

802.11n40, HT0 (SISO) – Chain B

26dB BW – CH102F

Date: 25.MAY.2016 12:18:49

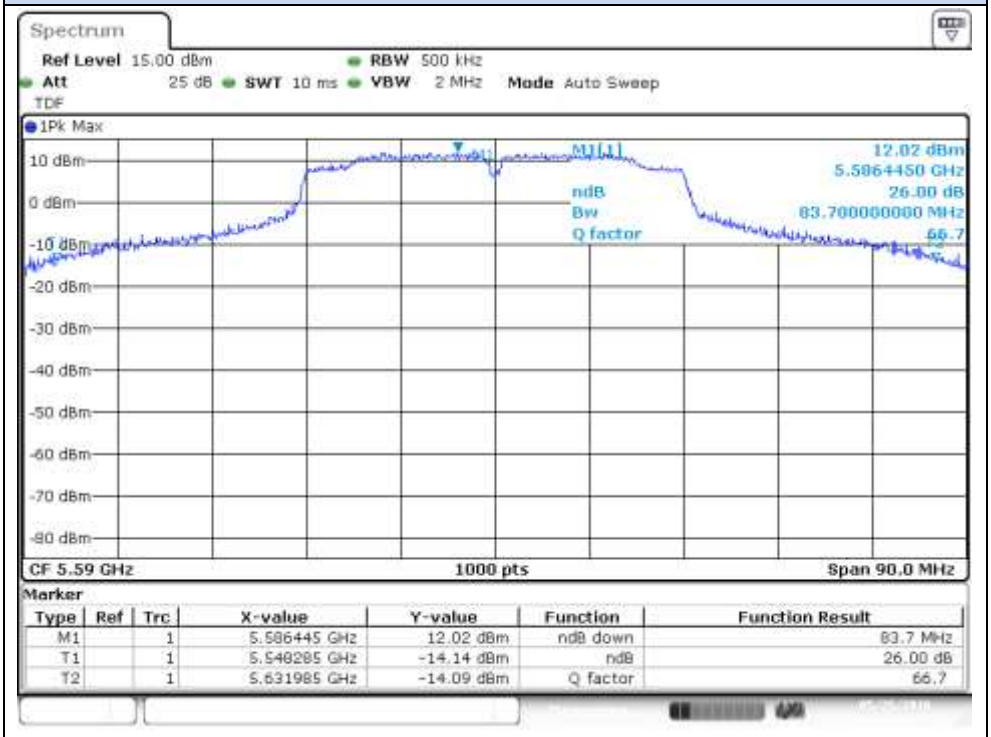
99% BW – CH102F



Date: 25.MAY.2016 12:17:44

Printed copies are not controlled documents

26dB BW – CH118F



Date: 25.MAY.2016 12:21:04

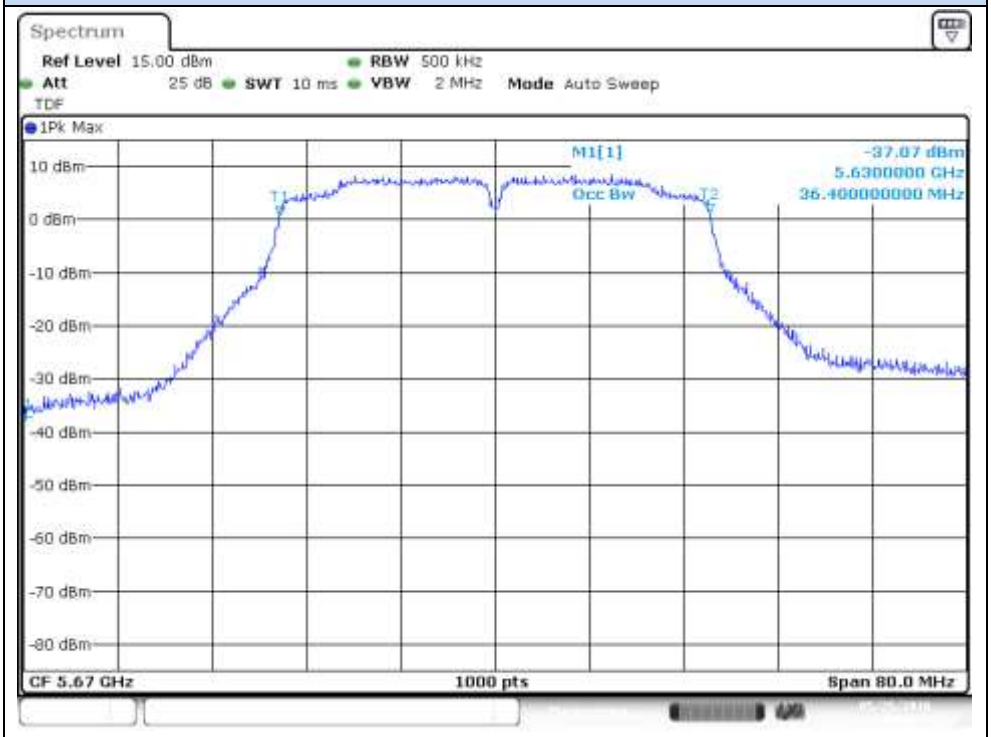
99% BW – CH118F

Date: 25.MAY.2016 12:19:47

Printed copies are not controlled documents

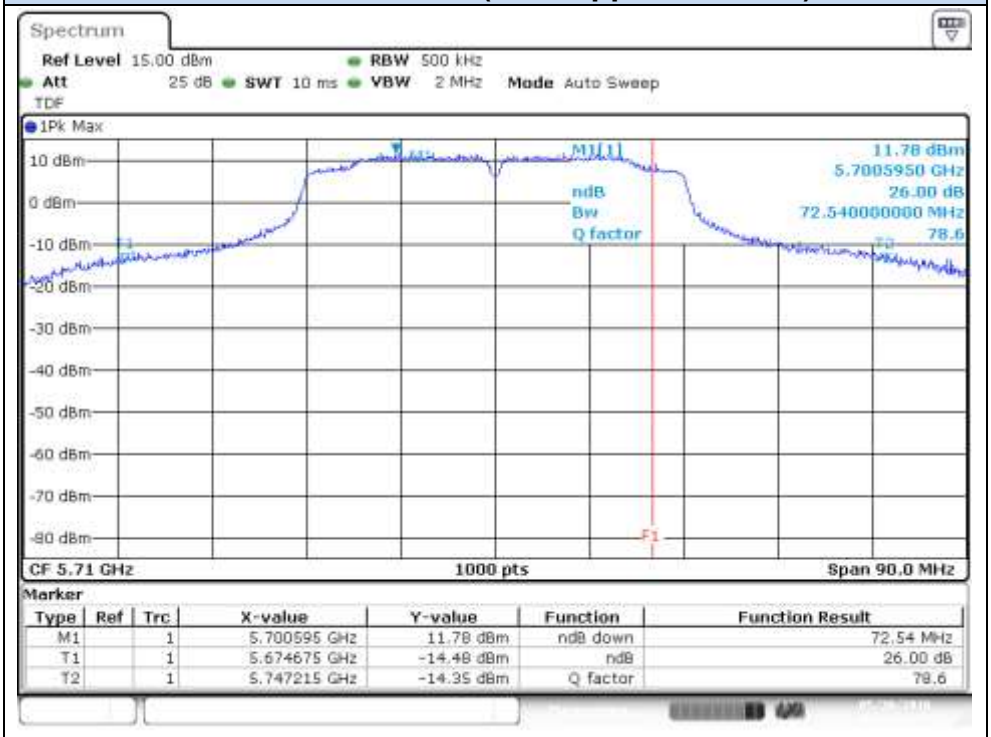
26dB BW – CH134F

99% BW – CH134F



Printed copies are not controlled documents

26dB BW – CH142F (Overlapped Channel)

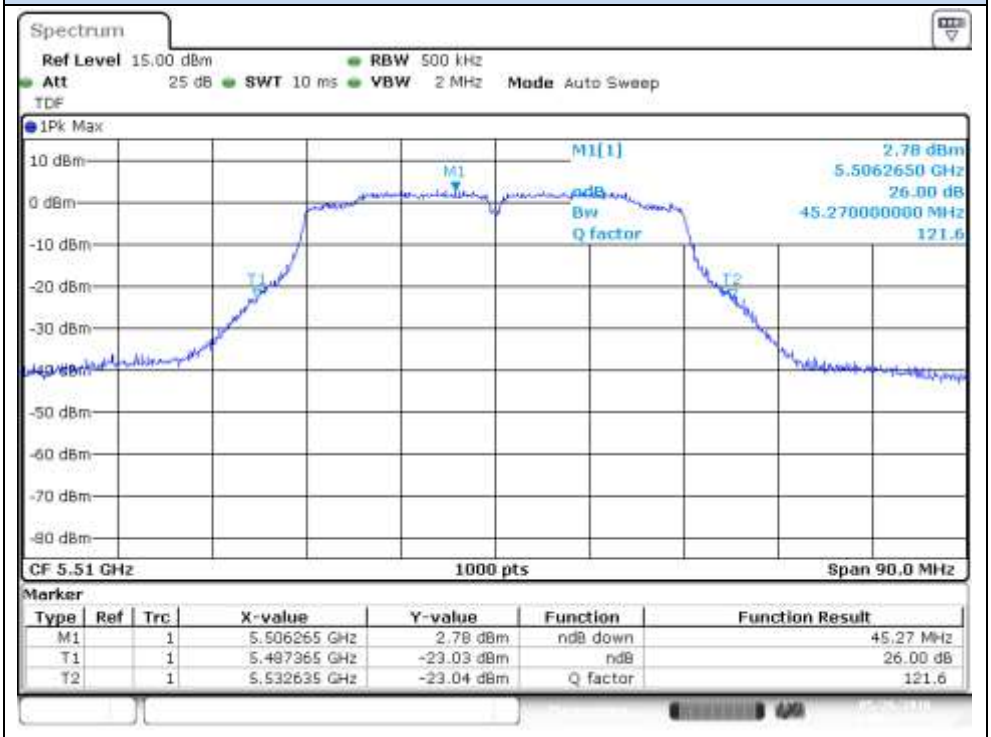


99% BW – CH142F (Overlapped Channel)

Printed copies are not controlled documents

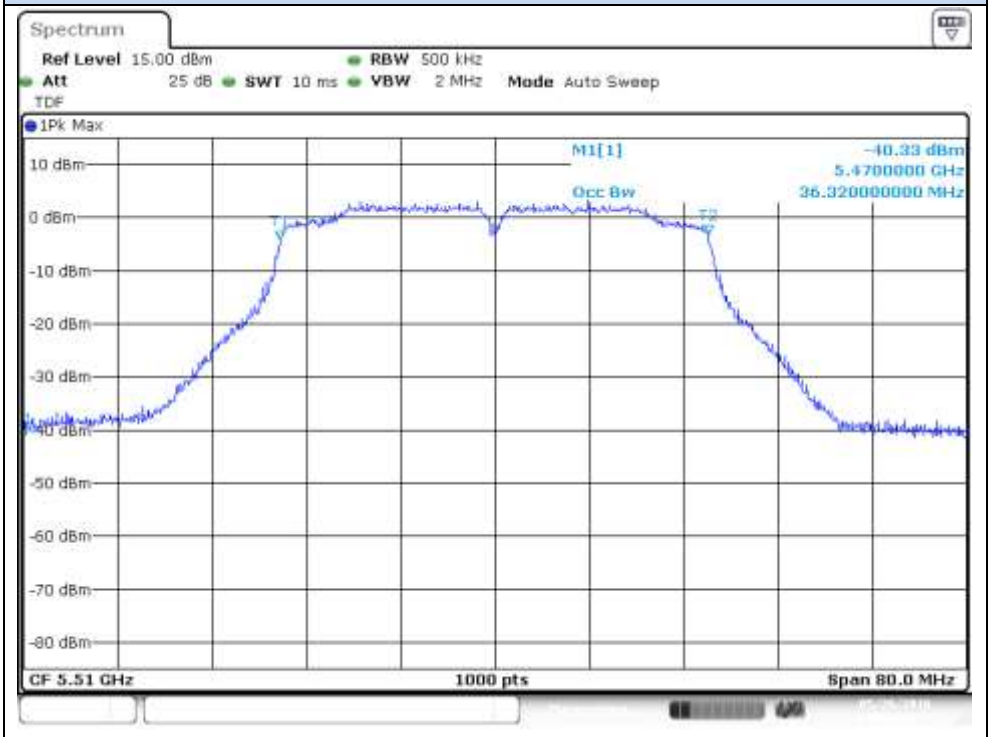
802.11n40, HT8 (MIMO) – Chain A

26dB BW – CH102F



Date: 26.MAY.2016 16:03:47

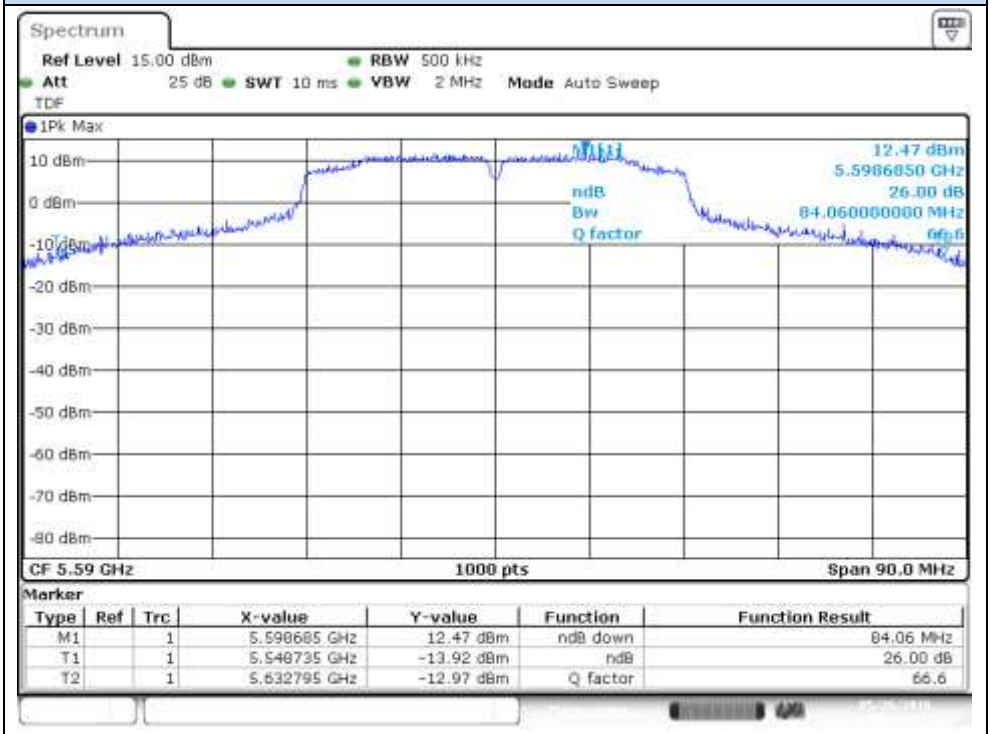
99% BW – CH102F



Date: 26.MAY.2016 16:04:08

Printed copies are not controlled documents

26dB BW – CH118F



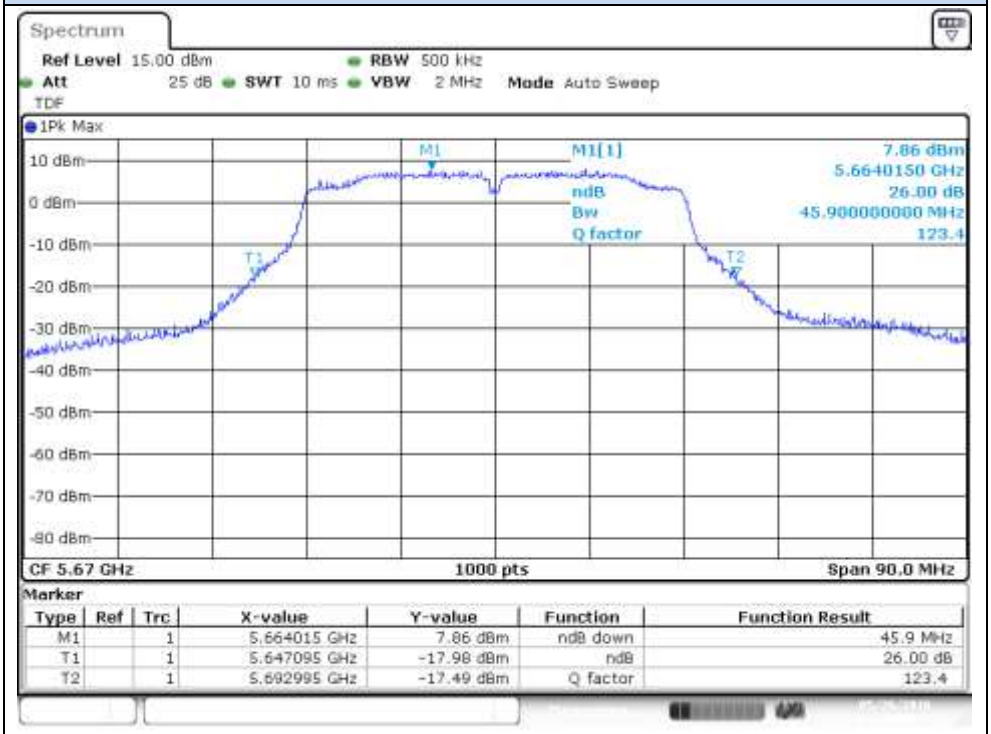
Date: 26.MAY.2016 16:08:34

99% BW – CH118F

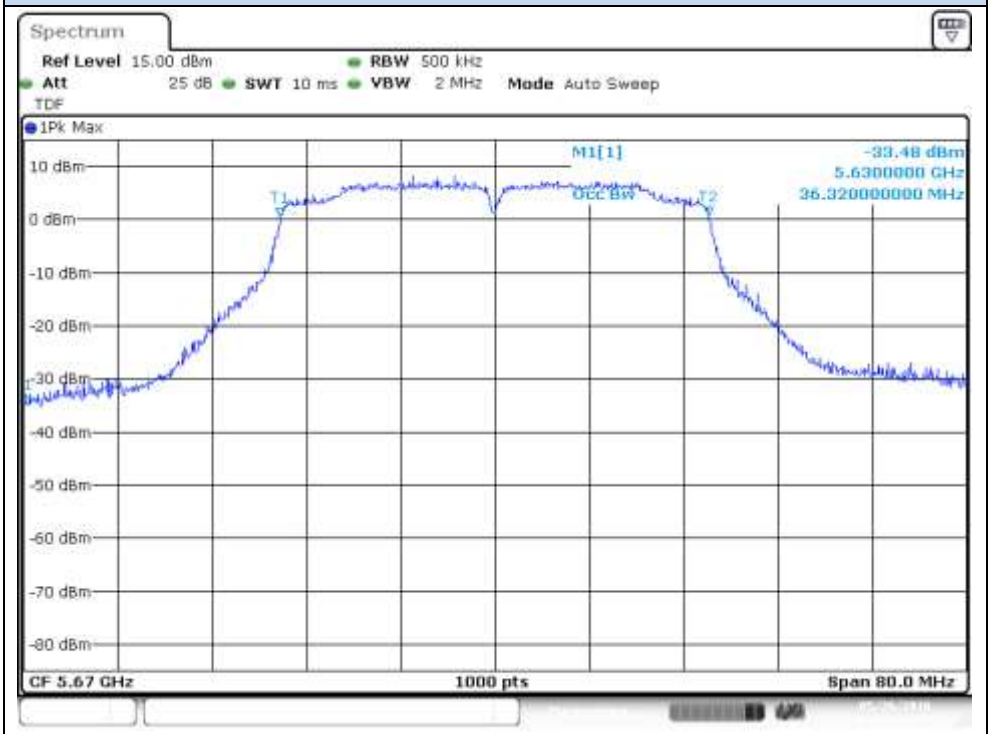
Date: 26.MAY.2016 16:08:10

Printed copies are not controlled documents

26dB BW – CH134F

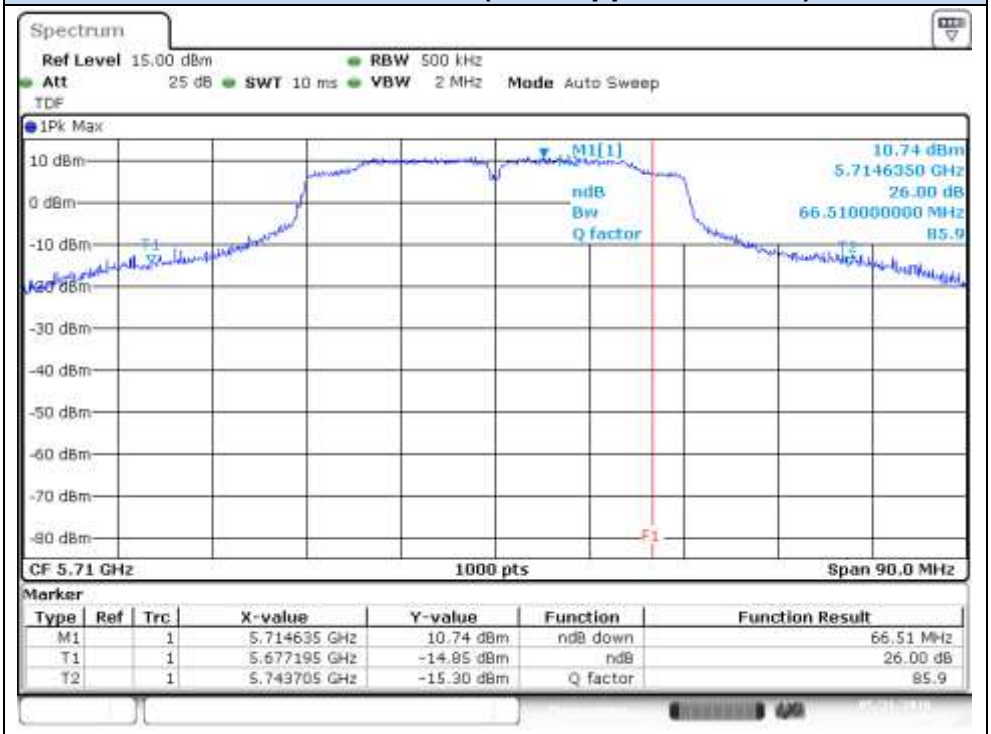


99% BW – CH134F



Printed copies are not controlled documents

26dB BW – CH142F (Overlapped Channel)

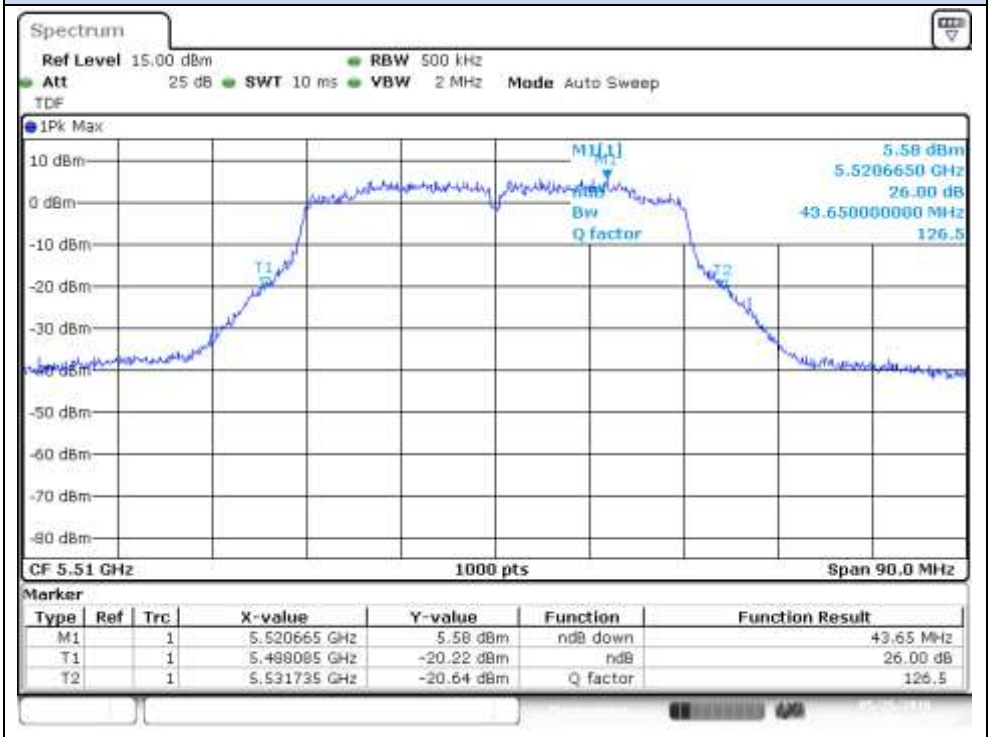


99% BW – CH142F (Overlapped Channel)

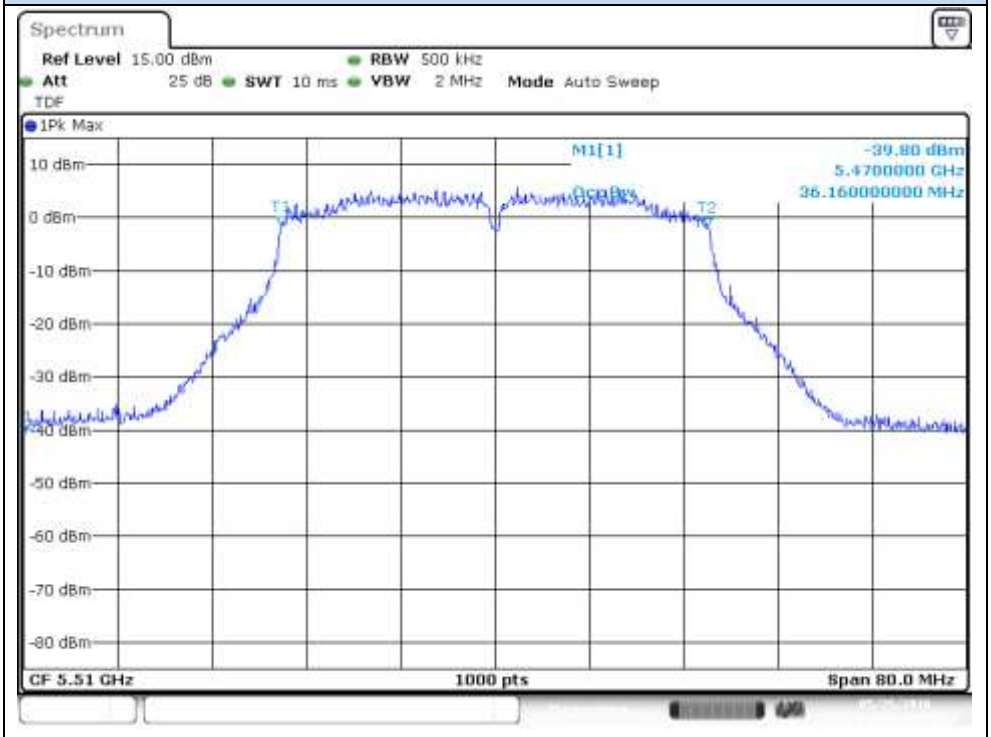
Printed copies are not controlled documents

802.11n40, HT8 (MIMO) – Chain B

26dB BW – CH102F



99% BW – CH102F



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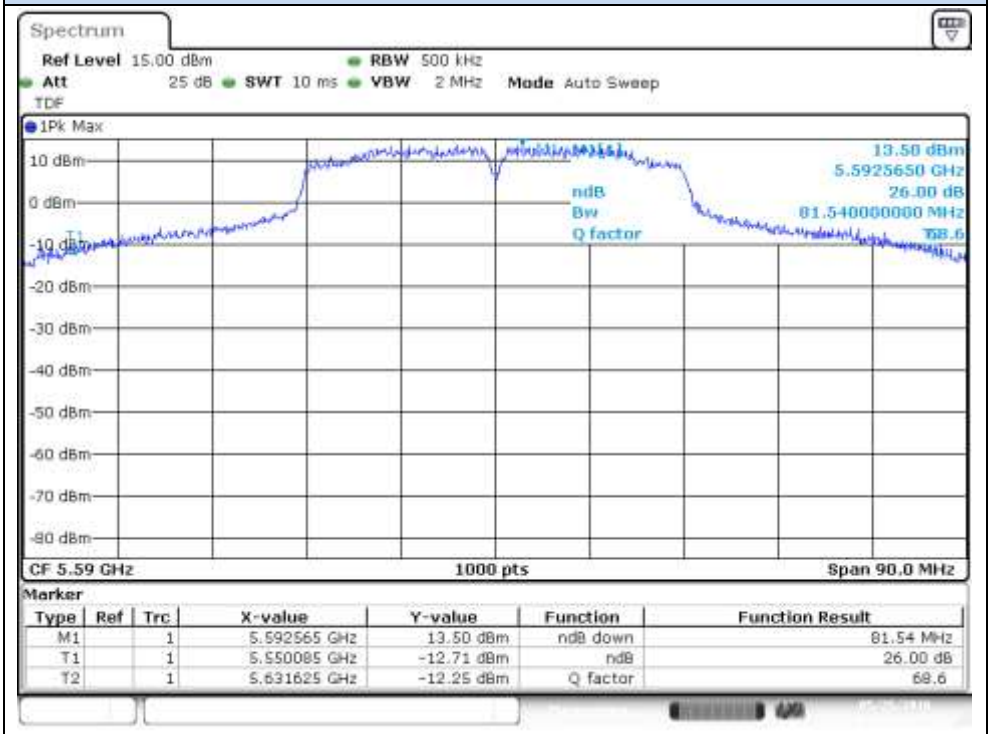
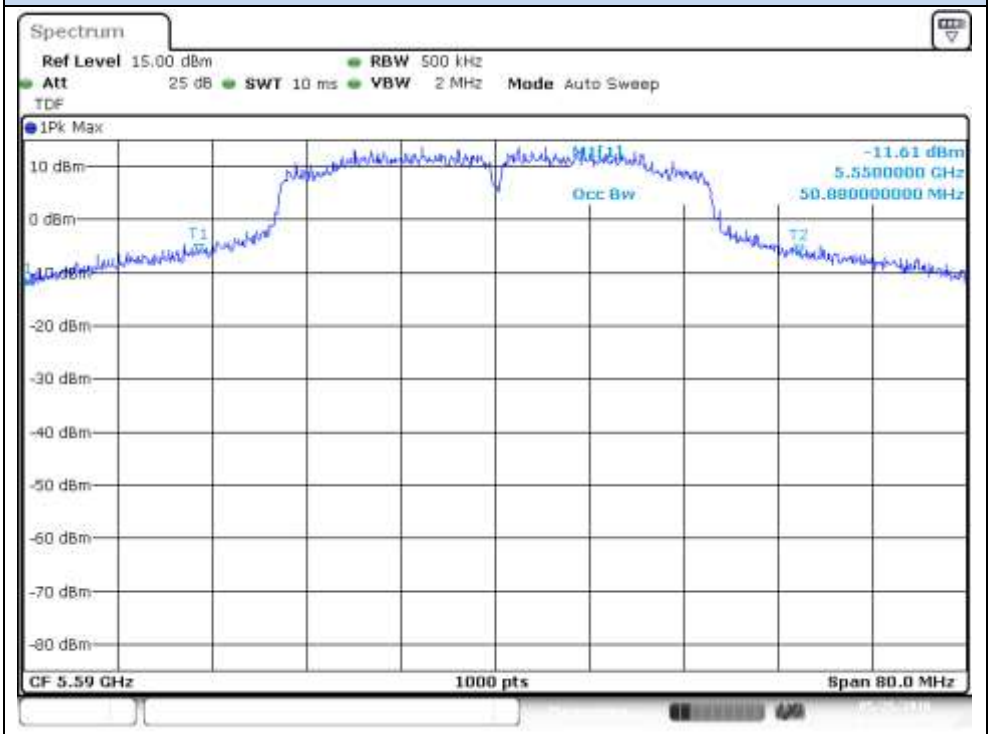
26dB BW – CH118F



Date: 25.MAY.2016 16:52:11

99% BW – CH118F



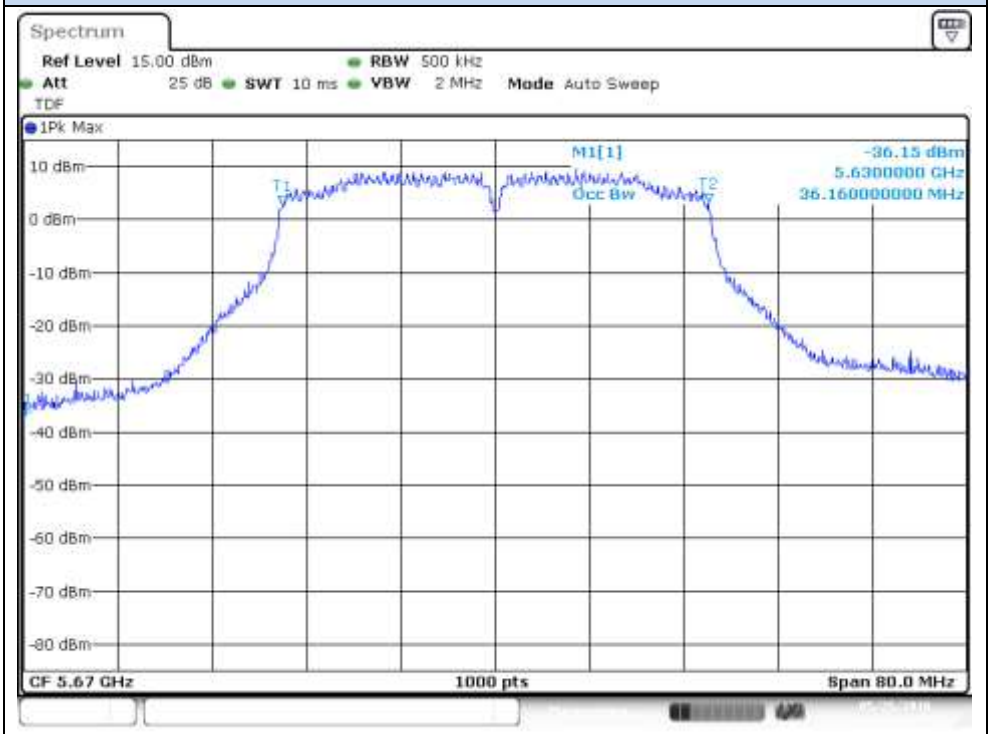
Date: 25.MAY.2016 16:53:24

Printed copies are not controlled documents

26dB BW – CH134F

Date: 25.MAY.2016 17:00:49

99% BW – CH134F



Date: 25.MAY.2016 17:01:12

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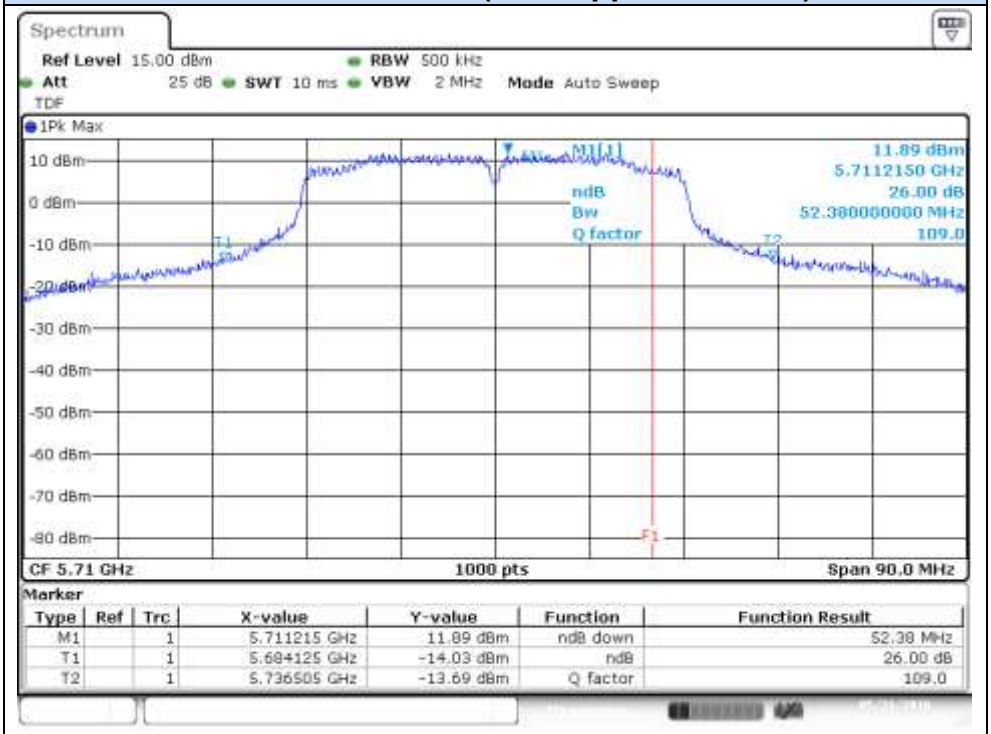
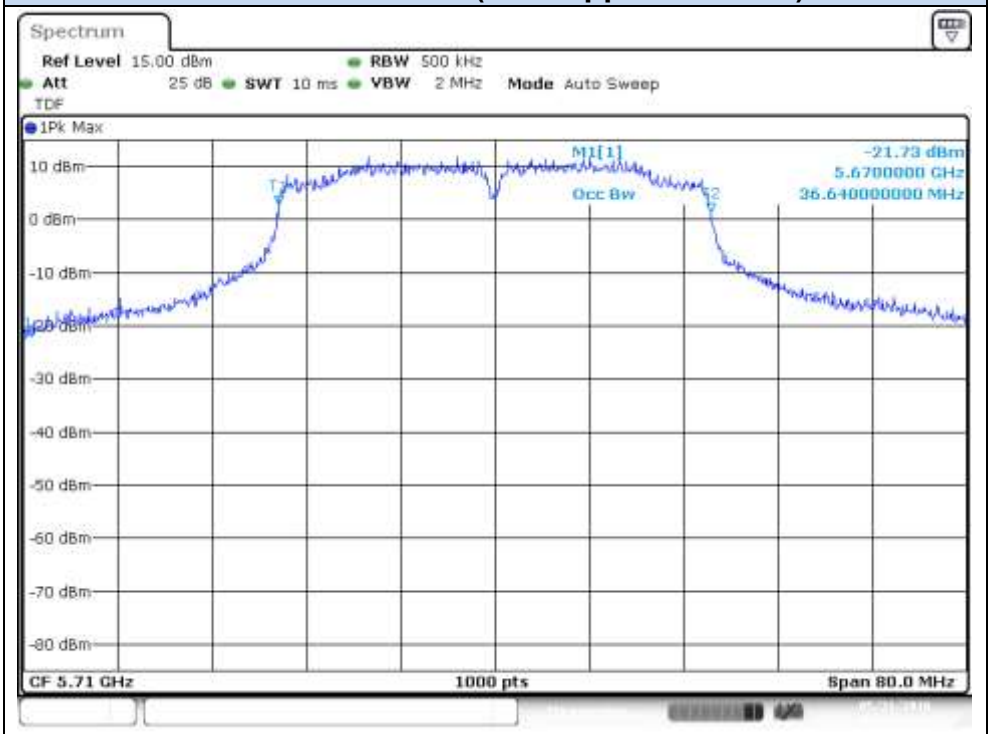
26dB BW – CH142F (Overlapped Channel)



Date: 31.MAY.2016 10:42:50

99% BW – CH142F (Overlapped Channel)



Date: 31.MAY.2016 10:41:58

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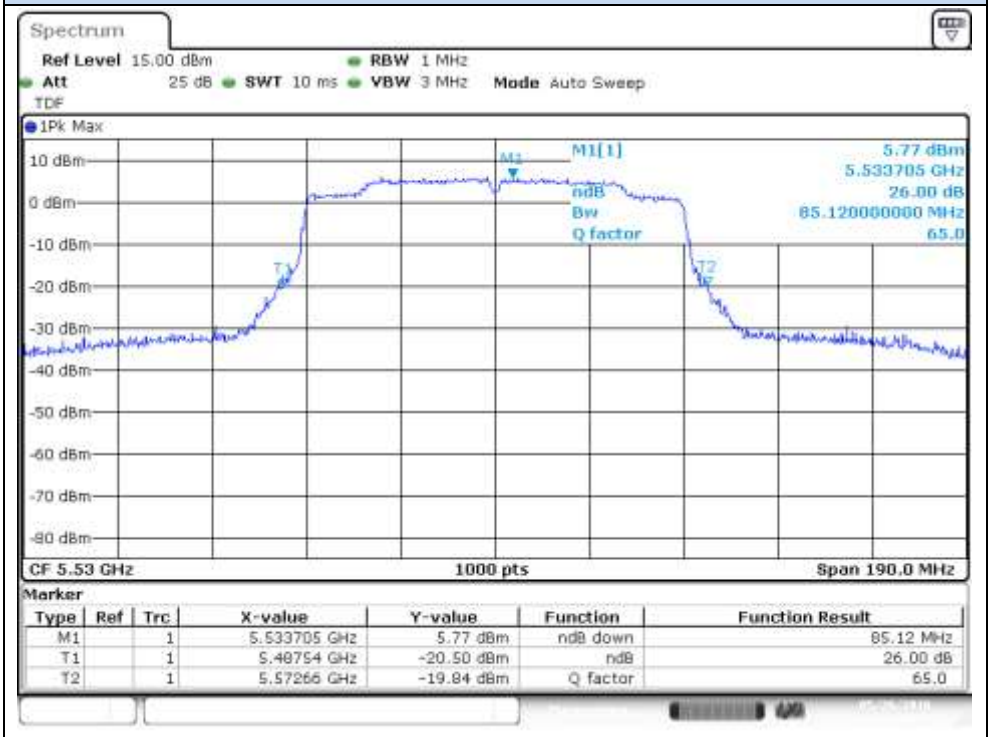
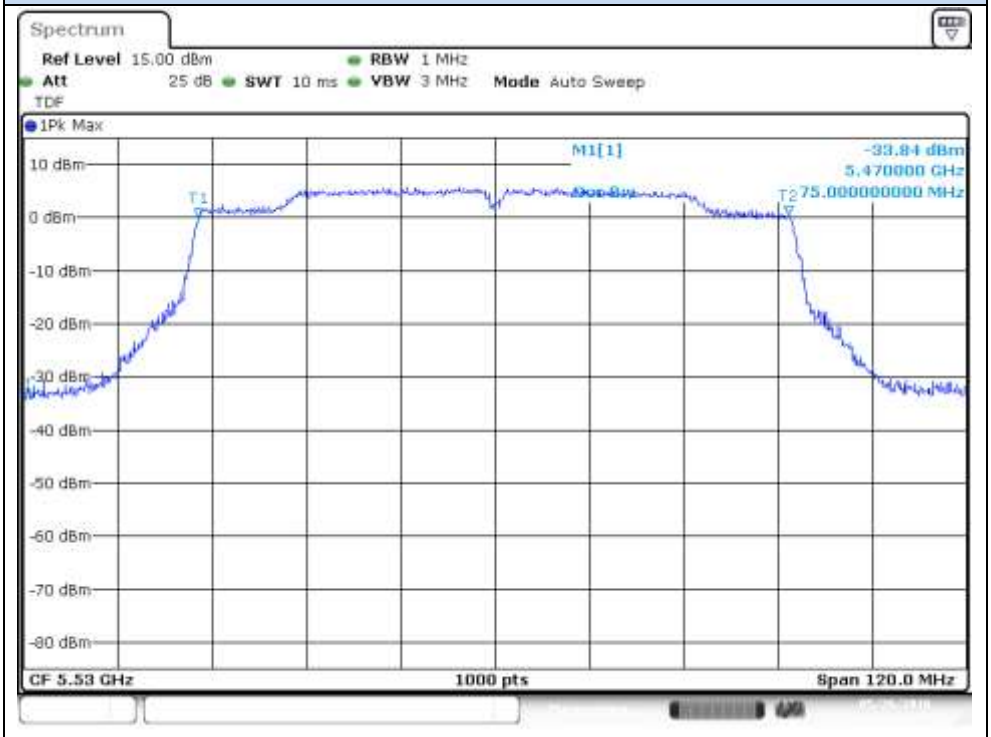
802.11ac80, VHT0 (SISO) – Chain A

26dB BW – CH106ac80

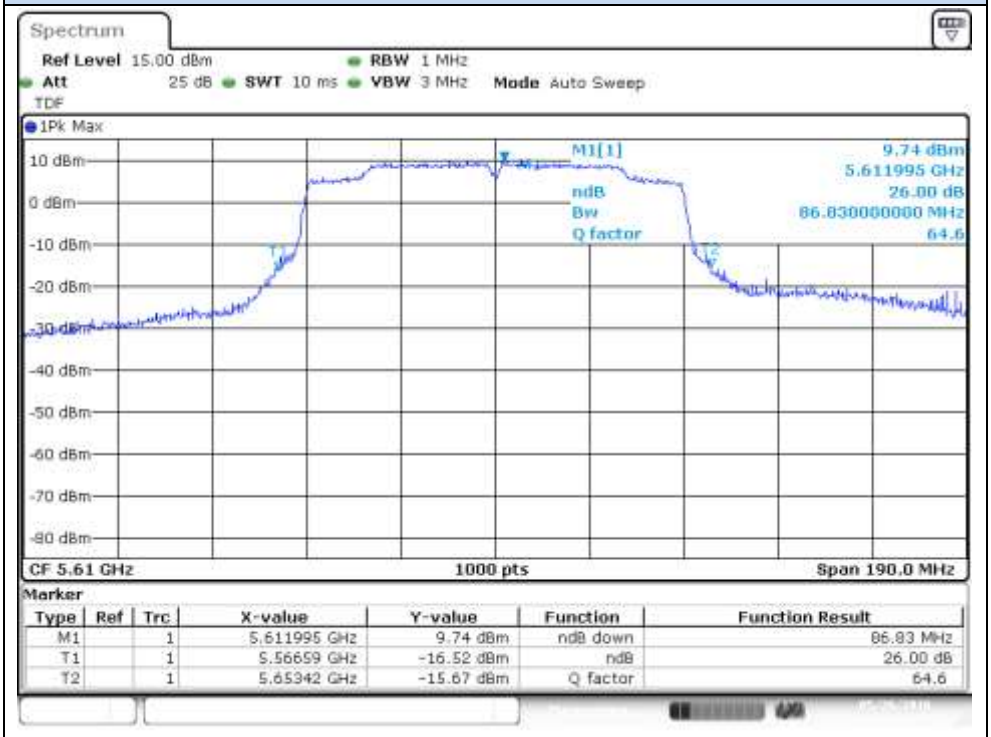


99% BW – CH106ac80



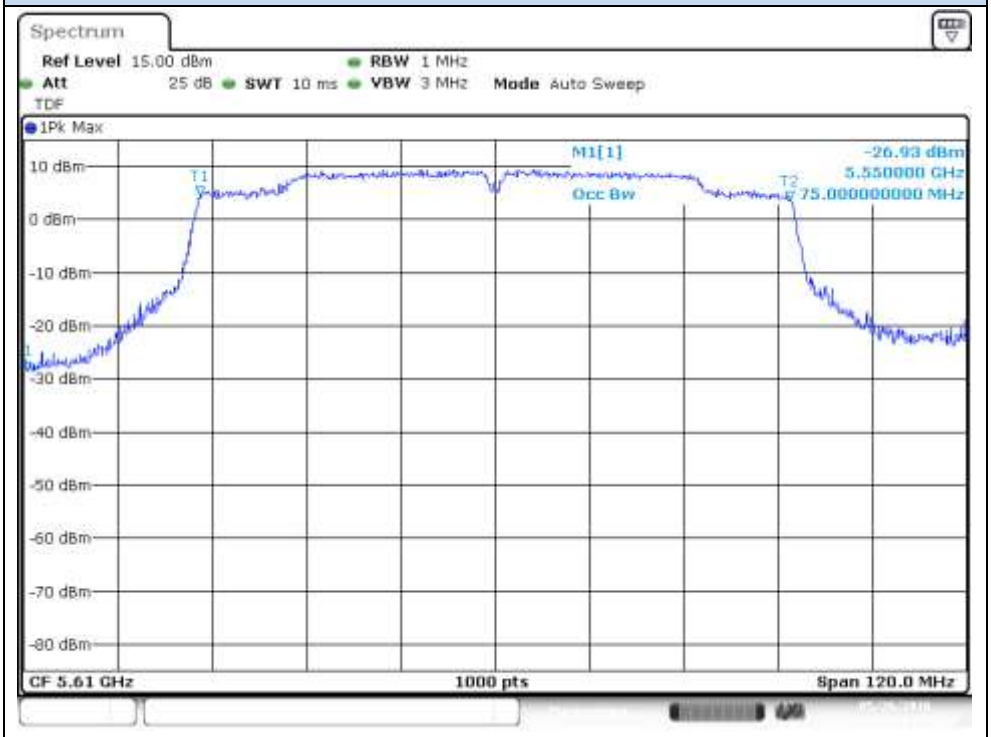
Printed copies are not controlled documents

26dB BW – CH122ac80



Date: 26.MAY.2016 14:14:36

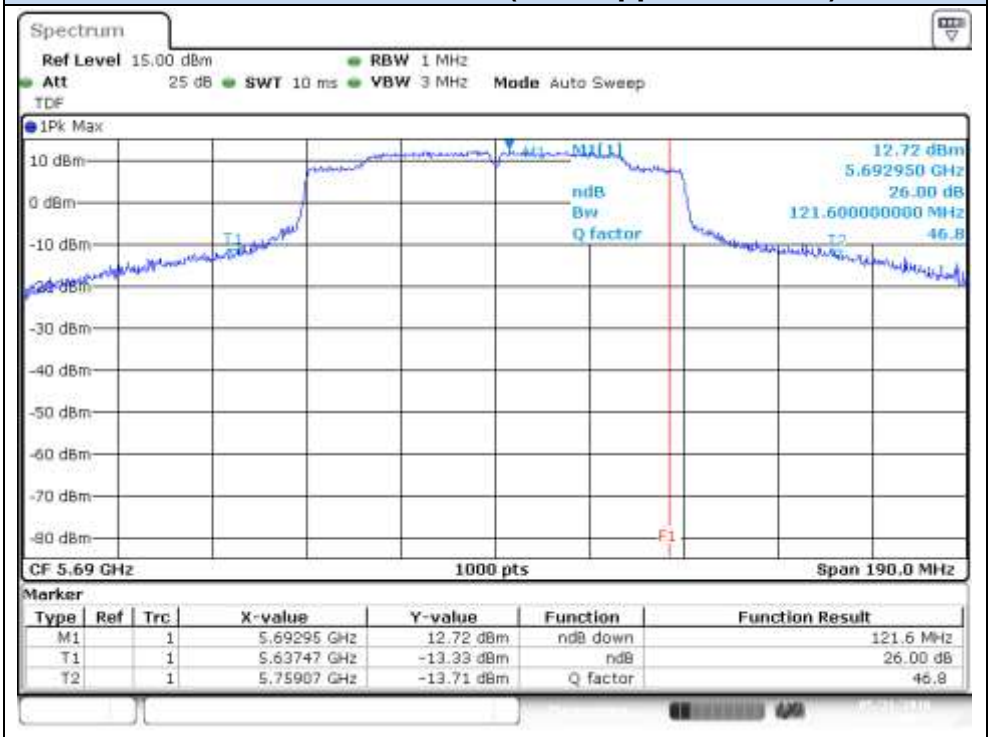
99% BW – CH122ac80



Date: 26.MAY.2016 14:15:19

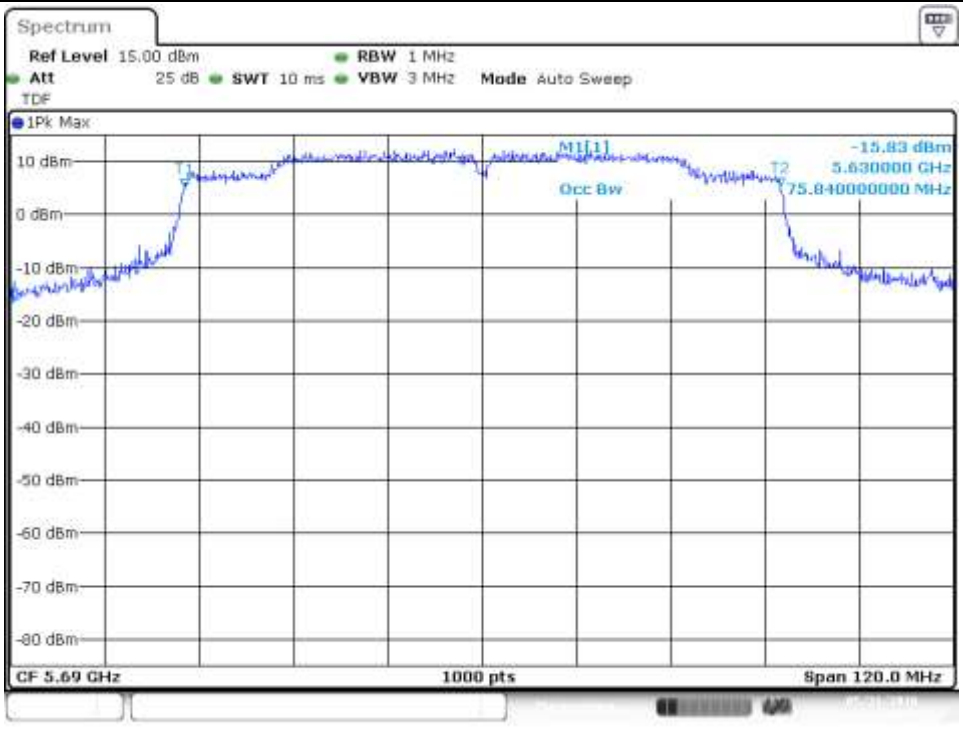
Printed copies are not controlled documents

26dB BW – CH138ac80 (Overlapped Channel)



Date: 31.MAY.2016 14:25:00

99% BW – CH138ac80 (Overlapped Channel)



Date: 31.MAY.2016 14:23:21

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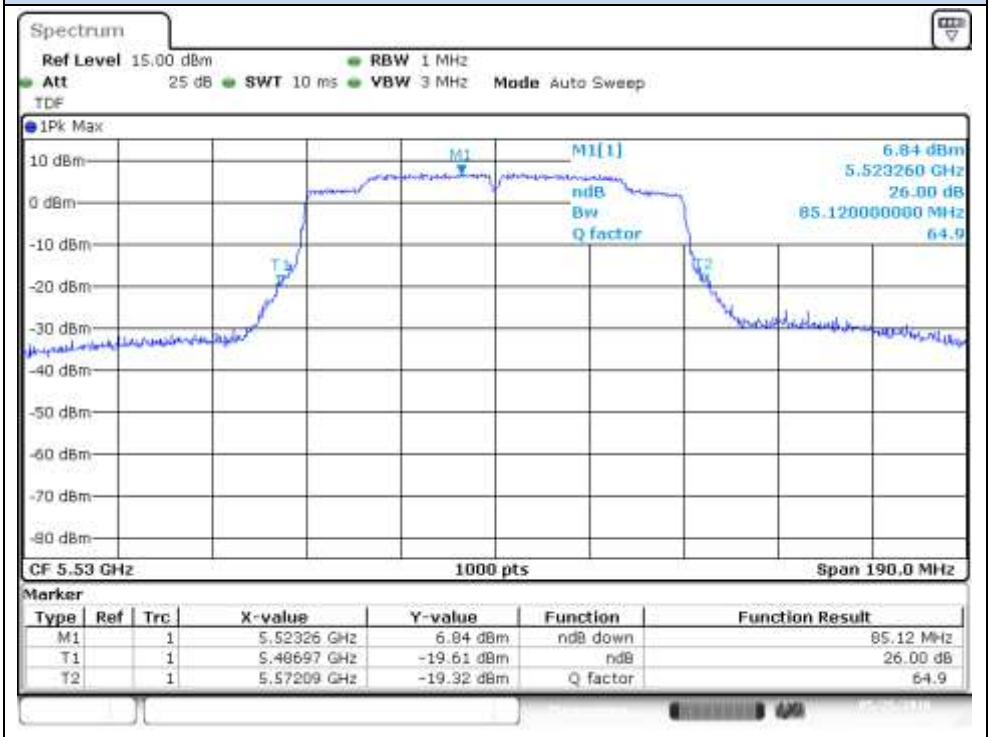
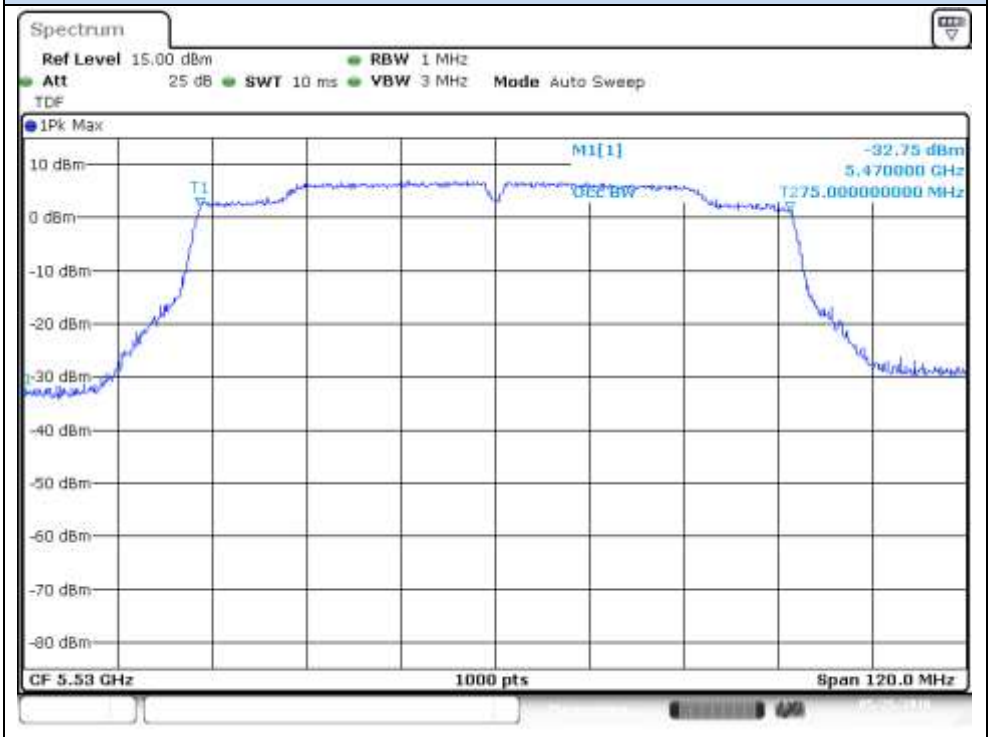
802.11ac80, VHT0 (SISO) – Chain B

26dB BW – CH106ac80

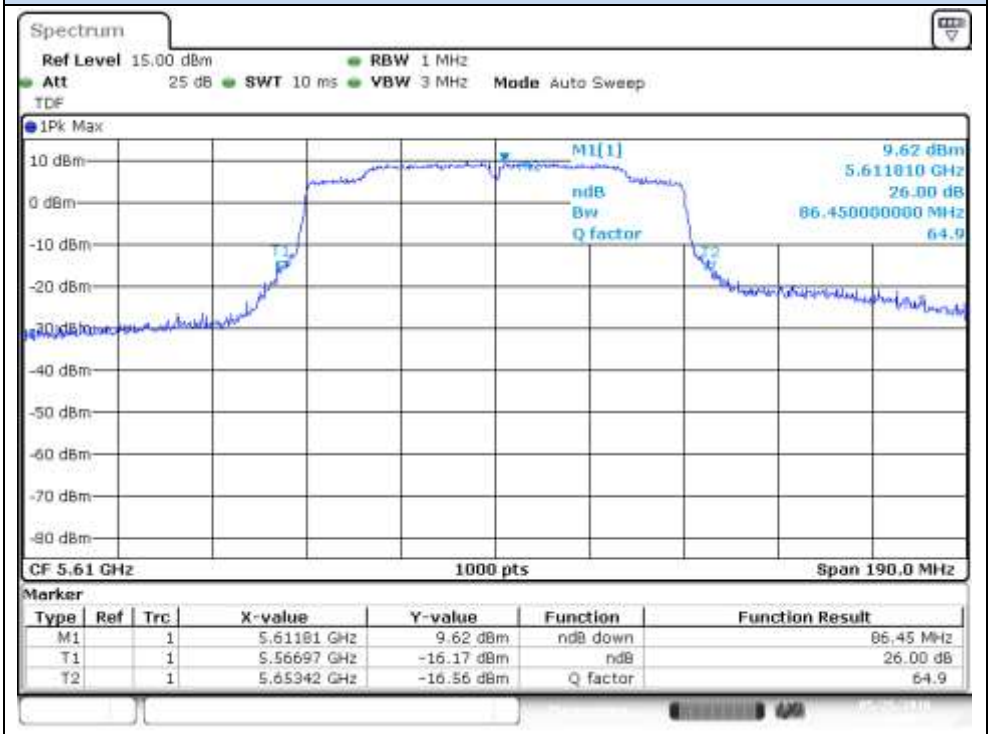


99% BW – CH106ac80

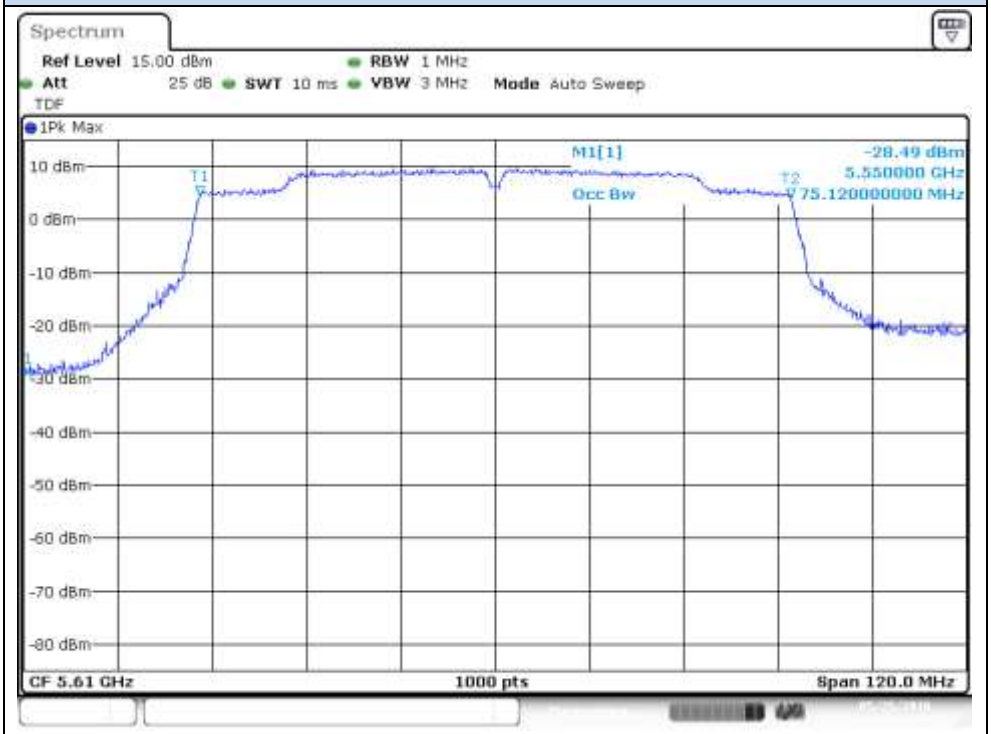


Printed copies are not controlled documents

26dB BW – CH122ac80

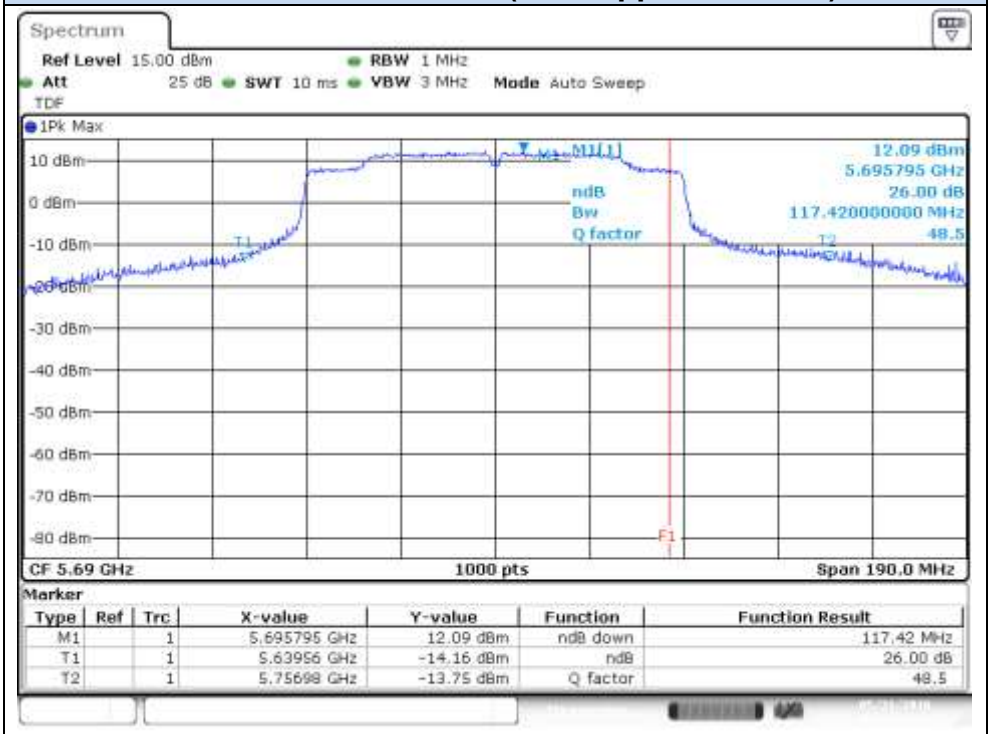


99% BW – CH122ac80



Printed copies are not controlled documents

26dB BW – CH138ac80 (Overlapped Channel)

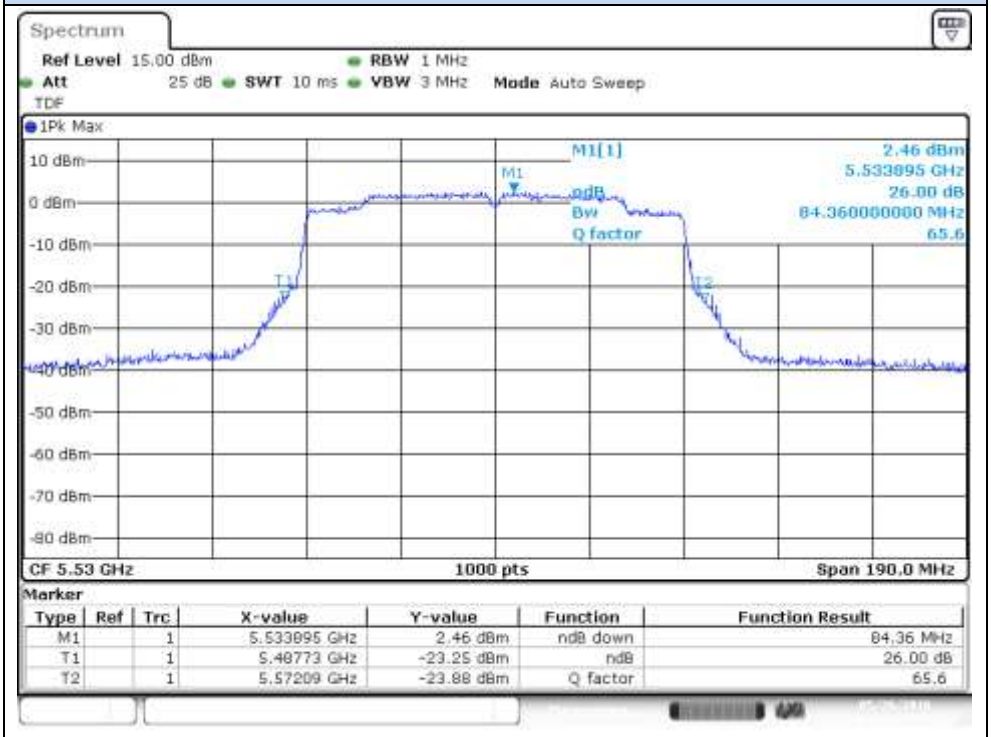


99% BW – CH138ac80 (Overlapped Channel)

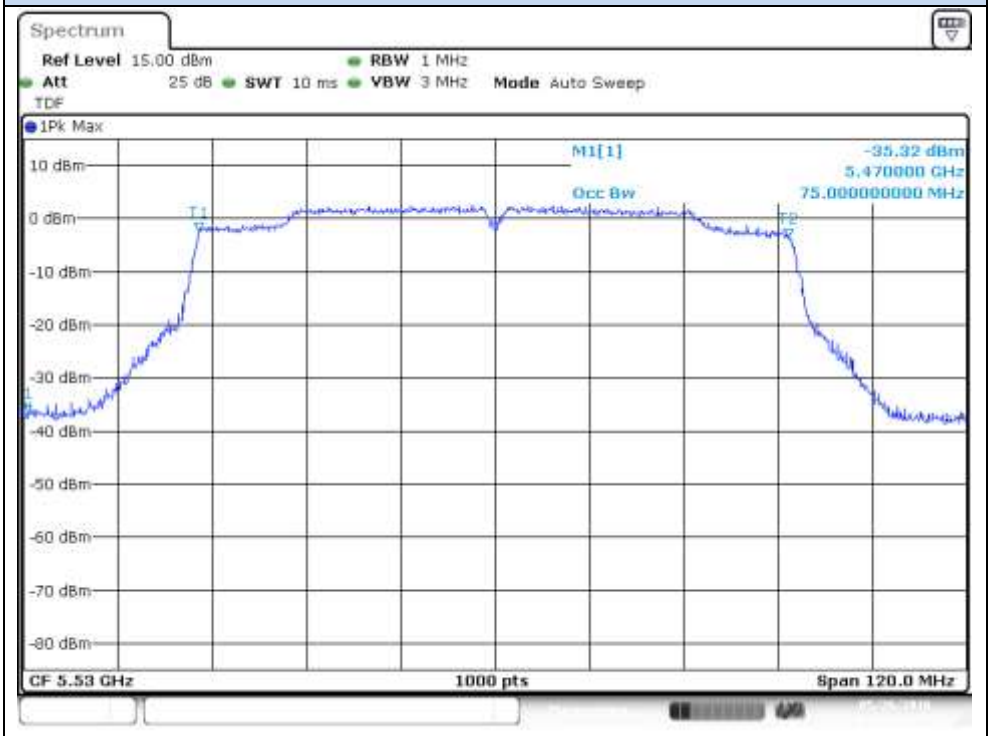
Printed copies are not controlled documents

802.11ac80, VHT0 (MIMO) – Chain A

26dB BW – CH106ac80

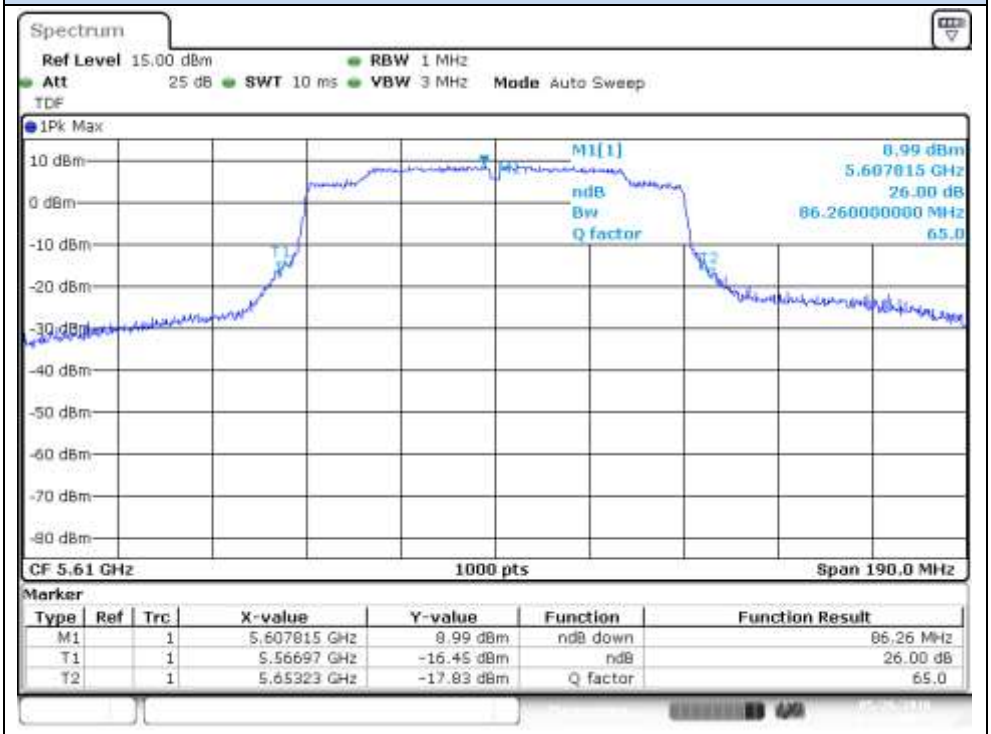


99% BW – CH106ac80

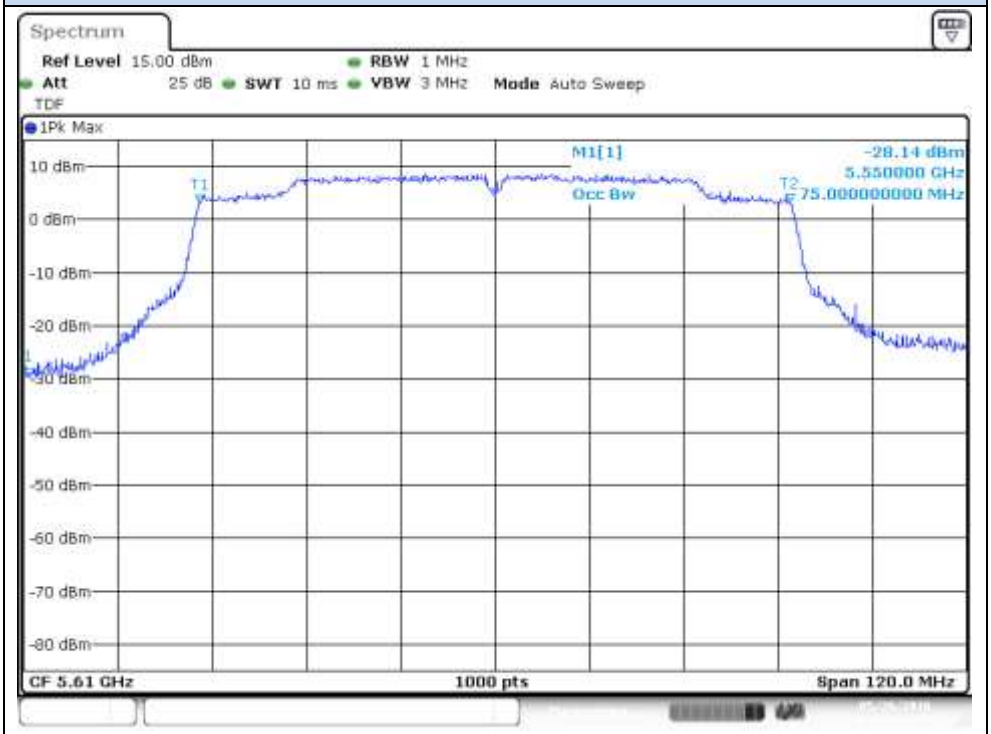


Printed copies are not controlled documents

26dB BW – CH122ac80

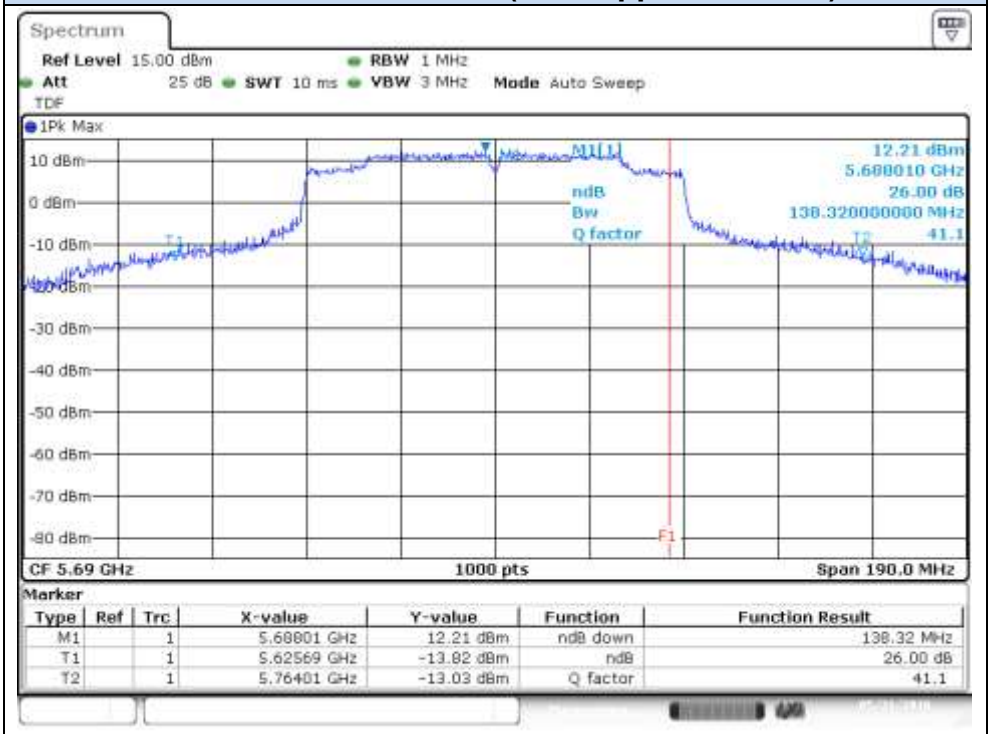


99% BW – CH122ac80

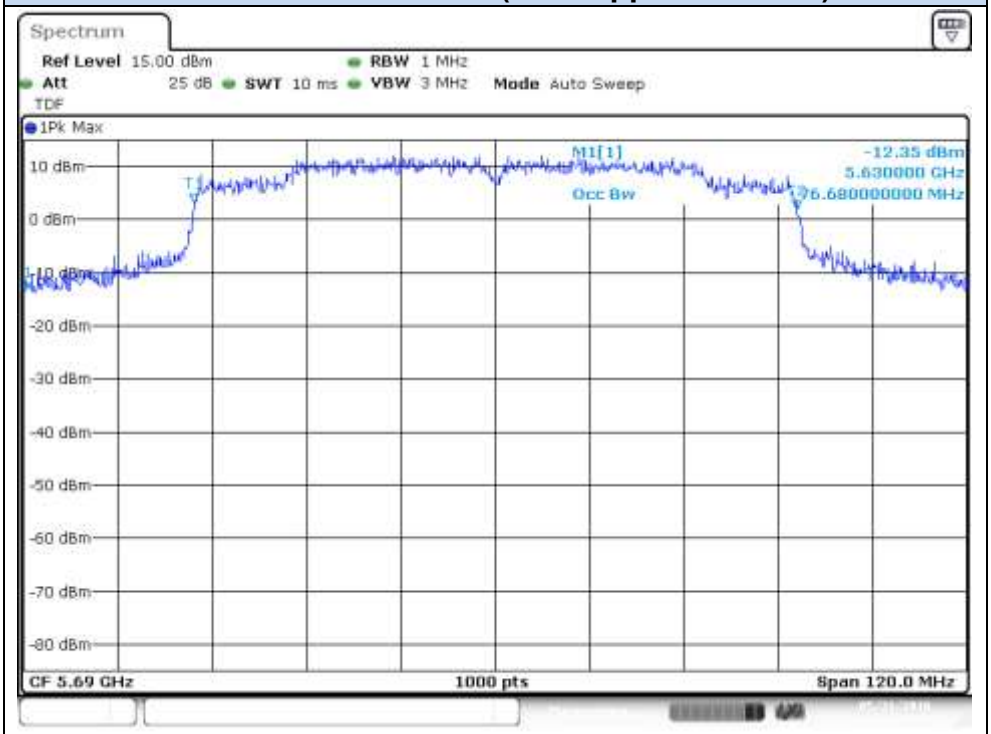


Printed copies are not controlled documents

26dB BW – CH138ac80 (Overlapped Channel)



99% BW – CH138ac80 (Overlapped Channel)



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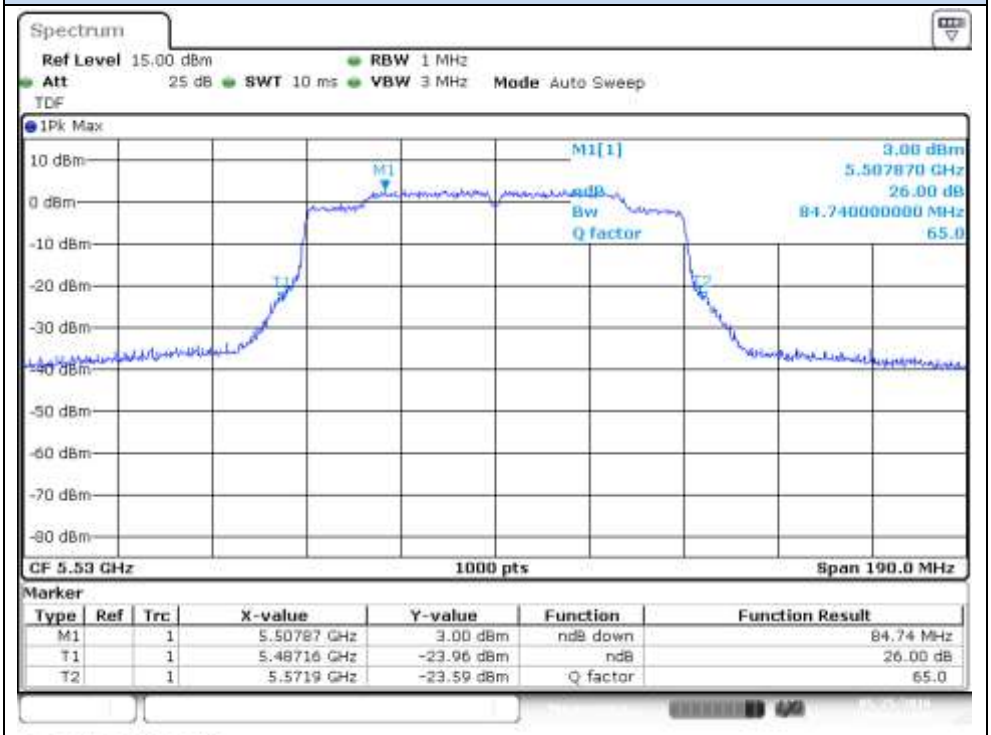
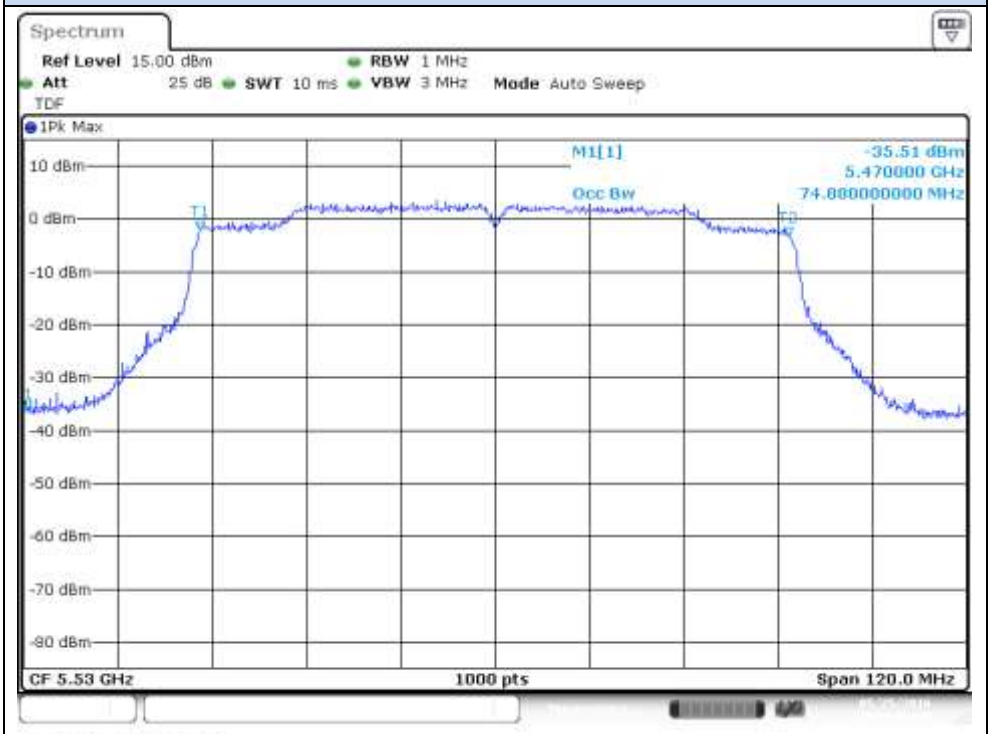
802.11ac80, VHT0 (MIMO) – Chain B

26dB BW – CH106ac80

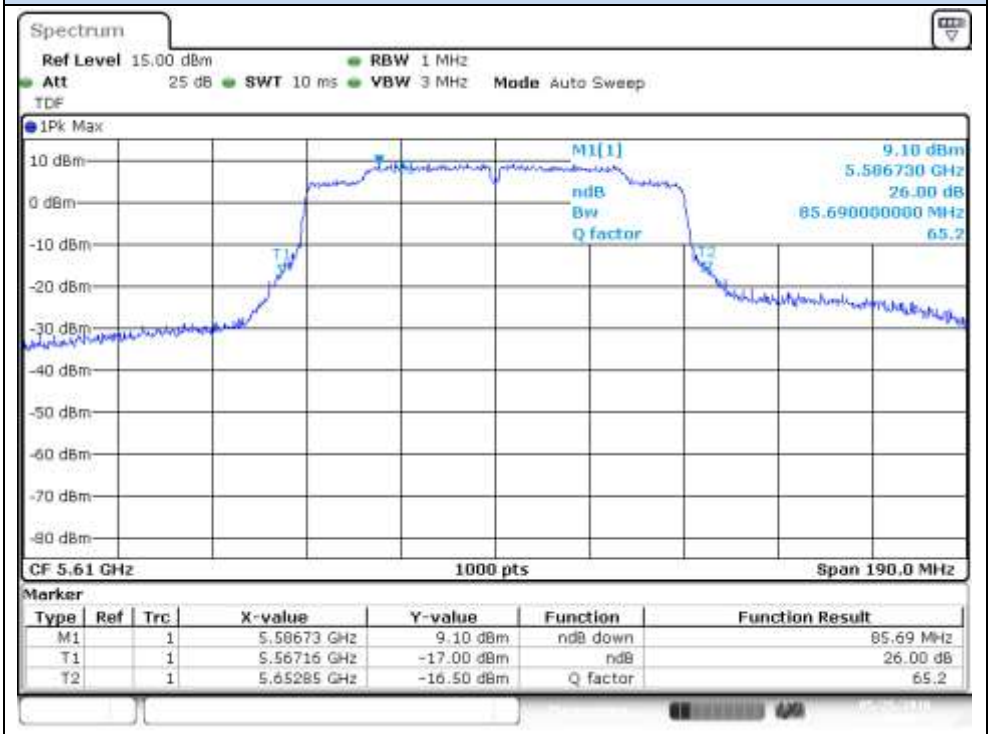


99% BW – CH106ac80



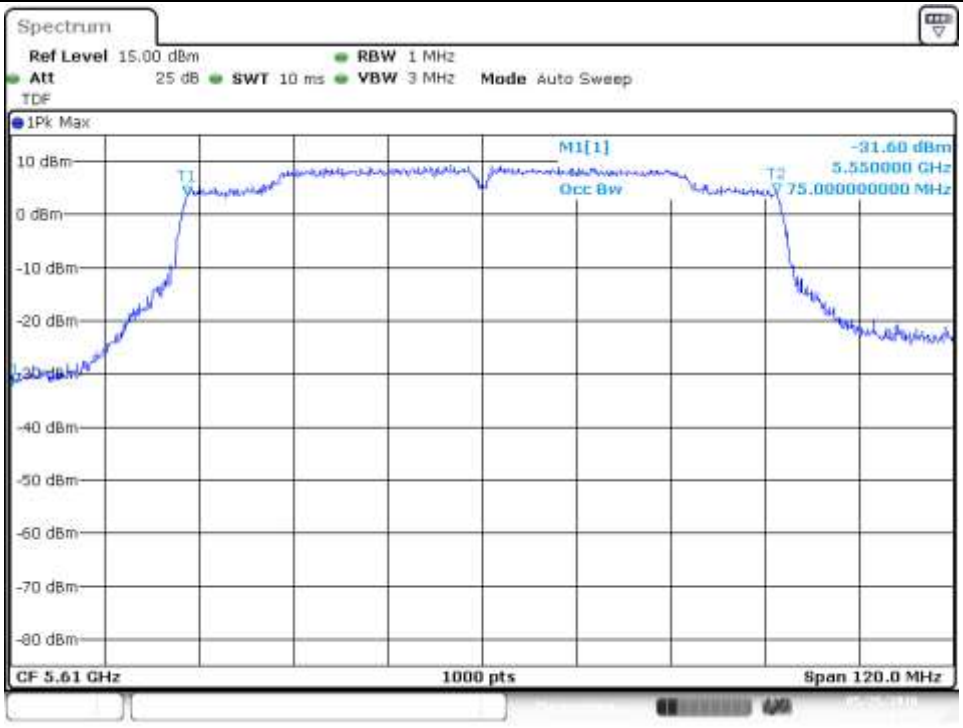
Printed copies are not controlled documents

26dB BW – CH122ac80



Date: 25.MAY.2016 17:10:59

99% BW – CH122ac80



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

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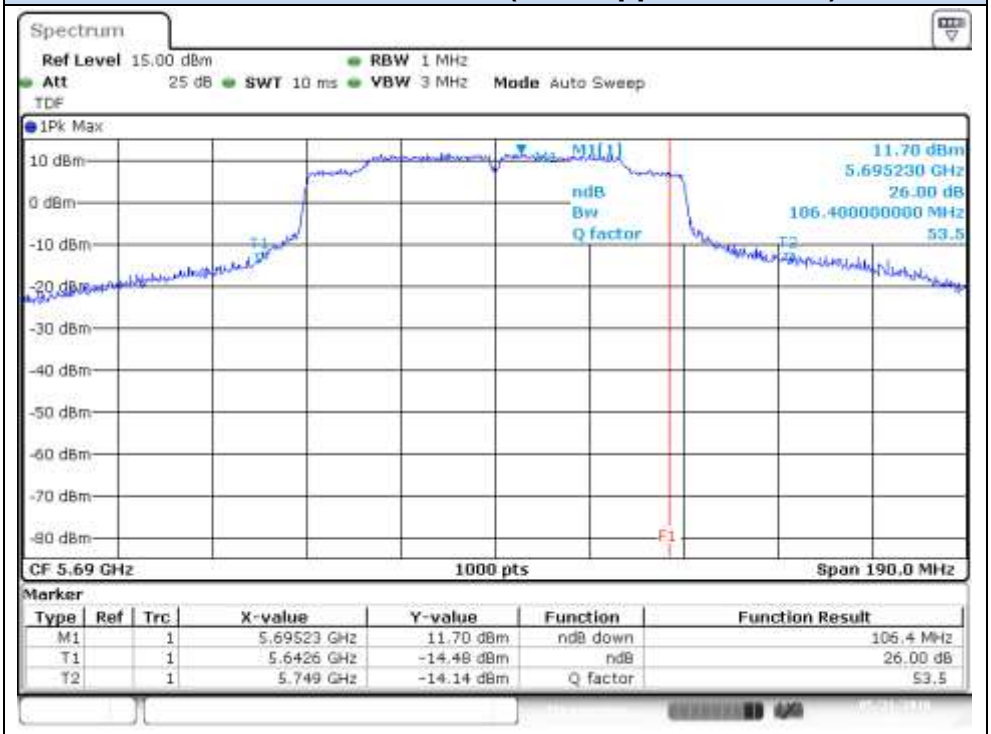
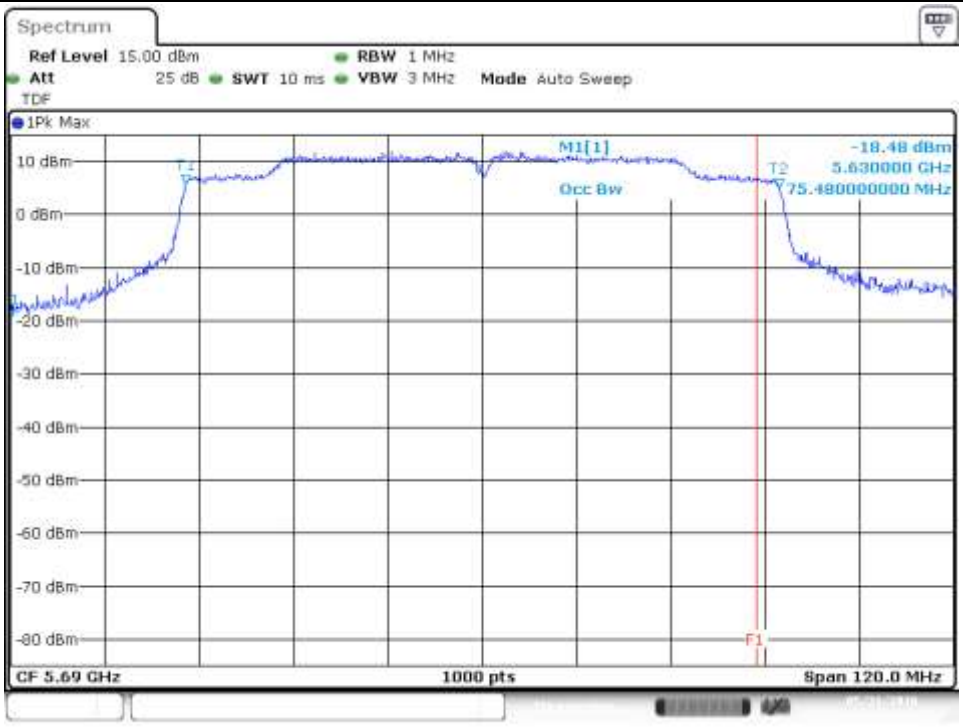
26dB BW – CH138ac80 (Overlapped Channel)



Date: 31.MAY.2016 11:22:05

99% BW – CH138ac80 (Overlapped Channel)



Date: 31.MAY.2016 11:21:26

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B.2 Power Limits. Maximum Output power & Peak power spectral density

Test limits:

Part	Limits
FCC 15.407 (a) (2)	For the 5.25–5.35 GHz and 5.47–5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the peak power spectral density shall not exceed 11 dBm in any 1 megahertz band.
RSS-247 Clause 6.2.2 (1)	The maximum conducted output power shall not exceed 250 mW or 11 + 10 log10B, dBm, whichever is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band. The maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log10B, dBm, whichever is less. B is the 99% emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

Test procedure:

The Maximum Conducted Output Power was measured using the channel integration method according to point E) 2) e) (Method SA-2 Alternative) of KDB 789033 D02.

The maximum power spectral density (PSD) was measured using the method according to point F) (Method SA-2 Alternative) of KDB 789033 D02.

In the measure-and-sum approach for MIMO mode, the conducted emission level (e.g., transmit power or power in specified bandwidth) is measured at each antenna port. The measured results at the various antenna ports are then summed mathematically in linear power units to determine the total emission level from the device.

The EIRP power (dBm) is calculated by adding the declared maximum antenna gain to the measured conducted power.

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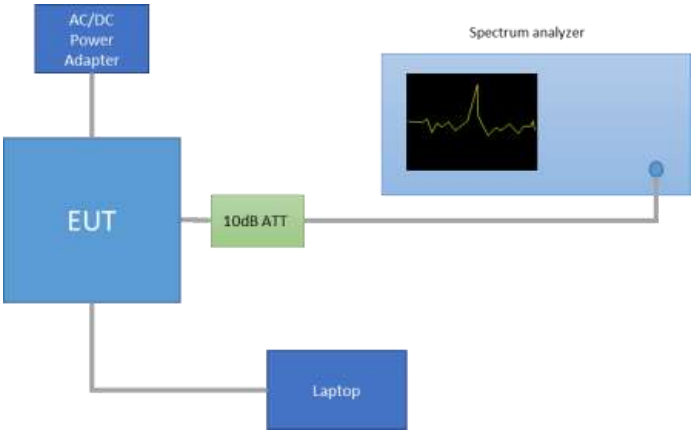
The setup below was used to measure the maximum conducted output power and power spectral density. The antenna terminal of the EUT is connected to the spectrum analyzer through an attenuator, and the spectrum analyzer reading is compensated to include the RF path loss.



The declared maximum antenna gain is 5dBi.

For the overlapped channels between U-NII-2C and U-NII-3, and according to FCC KDB 644545 D03, the power is computed based on the portion of the emission bandwidth contained within that band. This rule is only applicable for those channels marked as overlapped.

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Results tables:

Duty cycle

Mode	Rate	Antenna	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]
802.11a	6Mbps	SISO-A	1.45	1.48	98.2
		SISO-B	1.45	1.48	98.2
802.11n20	HT0	SISO-A	1.47	1.50	97.6
		SISO-B	1.47	1.50	97.6
	HT8	MIMO-A	1.47	1.51	97.5
		MIMO-B	1.47	1.51	97.5
802.11n40	HT0	SISO-A	1.46	1.49	98.1
		SISO-B	1.46	1.49	98.1
	HT8	MIMO-A	1.48	1.52	97.3
		MIMO-B	1.48	1.52	97.3
802.11ac80	VHT0	SISO-A	1.46	1.49	98.1
		SISO-B	1.46	1.49	98.1
		MIMO-A	1.48	1.52	97.2
		MIMO-B	1.48	1.52	97.2

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Maximum output power – U-NII-2C Channels

Mode	Rate	Channel	Freq. [MHz]	Antenna	Average Cond. Output Power [dBm]	Max.* Cond. Output Power [dBm]	Max.* Cond. Output Power [mW]	Max. EIRP [dBm]
802.11a	6Mbps	100	5500	SISO CHAIN A	18.12	18.20	66.05	23.20
				SISO CHAIN B	16.85	16.93	49.30	21.93
		120	5600	SISO CHAIN A	20.24	20.32	**107.61**	25.32
				SISO CHAIN B	20.20	20.28	106.63	25.28
		140	5700	SISO CHAIN A	17.14	17.22	52.71	22.22
				SISO CHAIN B	16.42	16.50	**44.65**	21.50
802.11n20	HT0	100	5500	SISO CHAIN A	16.51	16.61	45.86	21.61
				SISO CHAIN B	17.59	17.69	58.81	22.69
		120	5600	SISO CHAIN A	20.32	20.42	110.26	25.42
				SISO CHAIN B	20.26	20.36	108.75	25.36
		140	5700	SISO CHAIN A	15.96	16.06	**40.40**	21.06
				SISO CHAIN B	16.09	16.19	41.63	21.19
	HT8	100	5500	MIMO CHAIN A	16.34	16.45	44.15	21.45
				MIMO CHAIN B	16.44	16.55	45.17	21.55
				Combined A+B	19.40	19.51	89.32	24.51
		120	5600	MIMO CHAIN A	19.02	19.13	81.83	24.13
				MIMO CHAIN B	18.66	18.77	75.32	23.77
				Combined A+B	21.85	21.96	**157.14**	26.96
		140	5700	MIMO CHAIN A	14.68	14.79	30.12	19.79
				MIMO CHAIN B	13.81	13.92	24.65	18.92
				Combined A+B	17.28	17.39	54.78	22.39
802.11n40	HT0	102F	5510	SISO CHAIN A	16.68	16.76	47.45	21.76
				SISO CHAIN B	16.61	16.69	46.69	21.69
		118F	5590	SISO CHAIN A	20.95	21.03	126.84	26.03
				SISO CHAIN B	20.49	20.57	114.10	25.57
		134F	5670	SISO CHAIN A	17.36	17.44	55.50	22.44
				SISO CHAIN B	17.25	17.33	54.11	22.33
	HT8	102F	5510	MIMO CHAIN A	11.74	11.86	15.34	16.86
				MIMO CHAIN B	12.40	12.52	17.86	17.52
				Combined A+B	15.09	15.21	**33.20**	20.21
		118F	5590	MIMO CHAIN A	20.43	20.55	113.45	25.55
				MIMO CHAIN B	20.56	20.68	116.90	25.68
				Combined A+B	23.51	23.62	**230.34**	28.62
		134F	5670	MIMO CHAIN A	16.43	16.55	45.16	21.55
				MIMO CHAIN B	16.36	16.48	44.44	21.48
				Combined A+B	19.41	19.52	89.61	24.52

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Mode	Rate	Channel	Freq. [MHz]	Antenna	Average Cond. Output Power [dBm]	Max.* Cond. Output Power [dBm]	Max.* Cond. Output Power [mW]	Max. EIRP [dBm]
802.11ac80	VHT0	106ac80	5530	SISO CHAIN A	13.58	13.66	23.24	18.66
				SISO CHAIN B	14.79	14.87	30.71	19.87
				MIMO CHAIN A	10.21	10.33	10.80	15.33
				MIMO CHAIN B	10.28	10.40	10.98	15.40
				Combined A+B	13.26	13.38	**21.78**	18.38
		122ac80	5610	SISO CHAIN A	17.37	17.45	55.62	22.45
				SISO CHAIN B	18.68	18.76	75.21	23.76
				MIMO CHAIN A	18.10	18.22	66.45	23.22
				MIMO CHAIN B	17.49	17.61	57.74	22.61
				Combined A+B	20.82	20.94	**124.19**	25.94

* Maximum values are the duty cycle compensated values calculated from the average (measured) values

Max Value

Min Value

Maximum output power – Overlapped channels between U-NII-2C and U-NII-3

Mode	Rate	Channel	Freq. [MHz]	Antenna	Average Cond. Output Power - UNII-2C [dBm]	Max.* Cond. Output Power - UNII-2C [dBm]	Max.* Cond. Output Power - UNII-2C [mW]	Max.* EIRP UNII2C [dBm]
802.11n20	HT0	144	5720	SISO CHAIN A	19.34	19.44	87.99	24.44
				SISO CHAIN B	19.25	19.35	**86.18**	24.35
	HT8			MIMO CHAIN A	18.74	18.85	76.72	23.85
				MIMO CHAIN B	18.27	18.38	68.85	23.38
				Combined A+B	21.53	21.64	**145.74**	26.64
802.11n40	HT0	142F	5710	SISO CHAIN A	20.12	20.20	104.78	25.20
				SISO CHAIN B	19.59	19.67	**92.74**	24.67
	HT8			MIMO CHAIN A	19.15	19.27	84.49	24.27
				MIMO CHAIN B	19.94	20.06	101.34	25.06
				Combined A+B	22.57	22.69	**185.83**	27.69
802.11ac80	VHT0	138ac80	5690	SISO CHAIN A	19.81	19.89	97.56	24.89
				SISO CHAIN B	19.47	19.55	**90.21**	24.55
				MIMO CHAIN A	19.61	19.73	94.08	24.73
				MIMO CHAIN B	18.90	19.02	79.89	24.02
				Combined A+B	22.28	22.40	**173.97**	27.40

* Maximum values are the duty cycle compensated values calculated from the average (measured) values

Max Value

Min Value

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Maximum Power Spectral Density (PSD) – U-NII-2C channels

Mode	Rate	Channel	Freq. [MHz]	Antenna	Average conducted PSD [dBm/MHz]	Maximum* conducted PSD [dBm/MHz]
802.11a	6Mbps	100	5500	SISO CHAIN A	7.25	7.33
				SISO CHAIN B	5.97	6.05
		120	5600	SISO CHAIN A	9.29	9.37
				SISO CHAIN B	9.23	9.31
		140	5700	SISO CHAIN A	6.29	6.37
				SISO CHAIN B	5.54	5.62
802.11n20	HT0	100	5500	SISO CHAIN A	5.48	5.58
				SISO CHAIN B	6.50	6.60
		120	5600	SISO CHAIN A	9.14	9.24
				SISO CHAIN B	9.10	9.20
		140	5700	SISO CHAIN A	4.92	5.02
				SISO CHAIN B	5.05	5.15
	HT8	100	5500	MIMO CHAIN A	5.30	5.41
				MIMO CHAIN B	5.41	5.52
				Combined A+B	8.37	8.47
		120	5600	MIMO CHAIN A	7.87	7.98
				MIMO CHAIN B	7.56	7.67
				Combined A+B	10.73	10.84
		140	5700	MIMO CHAIN A	3.62	3.73
				MIMO CHAIN B	2.77	2.88
				Combined A+B	6.23	6.34
802.11n40	HT0	102F	5510	SISO CHAIN A	2.30	2.38
				SISO CHAIN B	2.22	2.30
		118F	5590	SISO CHAIN A	6.43	6.51
				SISO CHAIN B	6.00	6.08
		134F	5670	SISO CHAIN A	2.92	3.00
				SISO CHAIN B	2.78	2.86
	HT8	102F	5510	MIMO CHAIN A	-2.60	-2.48
				MIMO CHAIN B	-1.96	-1.84
				Combined A+B	0.74	0.86
		118F	5590	MIMO CHAIN A	5.93	6.05
				MIMO CHAIN B	6.10	6.22
				Combined A+B	9.03	9.14
		134F	5670	MIMO CHAIN A	1.98	2.04
				MIMO CHAIN B	1.92	2.04
				Combined A+B	4.96	5.08

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Mode	Rate	Channel	Freq. [MHz]	Antenna	Average conducted PSD [dBm/MHz]	Maximum* conducted PSD [dBm/MHz]
802.11ac80	VHT0	106ac80	5530	SISO CHAIN A	-3.66	-3.58
				SISO CHAIN B	-2.44	-2.36
				MIMO CHAIN A	-7.04	-6.92
				MIMO CHAIN B	-6.93	-6.81
				Combined A+B	-3.97	-3.85
		122ac80	5610	SISO CHAIN A	0.10	0.18
				SISO CHAIN B	1.37	1.45
				MIMO CHAIN A	0.82	0.94
				MIMO CHAIN B	0.18	0.30
				Combined A+B	3.52	3.65

* Maximum values are the duty cycle compensated values calculated from the average (measured) values

Maximum Power Spectral Density (PSD) – Overlapped channels between U-NII-2C and U-NII-3

Mode	Rate	Channel	Freq. [MHz]	Antenna	Average conducted PSD UNII-2C [dBm/MHz]	Maximum* conducted PSD UNII-2C [dBm/MHz]
802.11n20	HT0	144	5720	SISO CHAIN A	8.57	8.67
				SISO CHAIN B	9.28	9.38
	HT8			MIMO CHAIN A	7.74	7.85
				MIMO CHAIN B	7.86	7.97
				Combined A+B	10.81	10.92
802.11n40	HT0	142F	5710	SISO CHAIN A	5.87	5.95
				SISO CHAIN B	5.33	5.41
	HT8			MIMO CHAIN A	4.93	5.05
				MIMO CHAIN B	5.75	5.87
				Combined A+B	8.37	8.49
802.11ac80	VHT0	138ac80	5690	SISO CHAIN A	2.54	2.62
				SISO CHAIN B	2.23	2.31
				MIMO CHAIN A	2.04	2.16
				MIMO CHAIN B	1.68	1.80
				Combined A+B	4.87	5.00

* Maximum values are the duty cycle compensated values calculated from the average (measured) values

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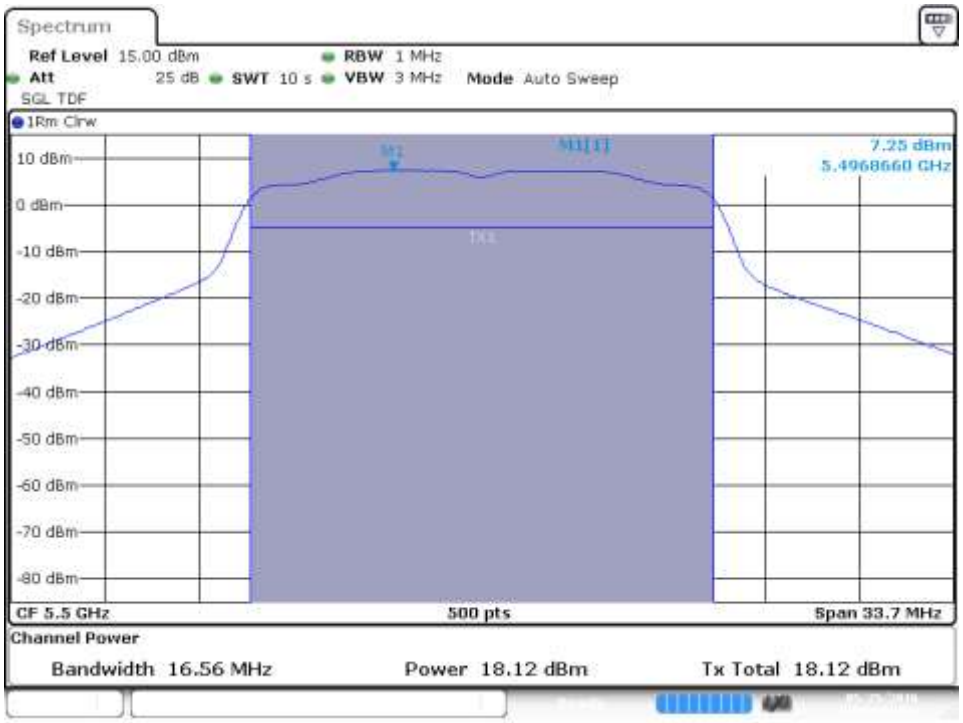
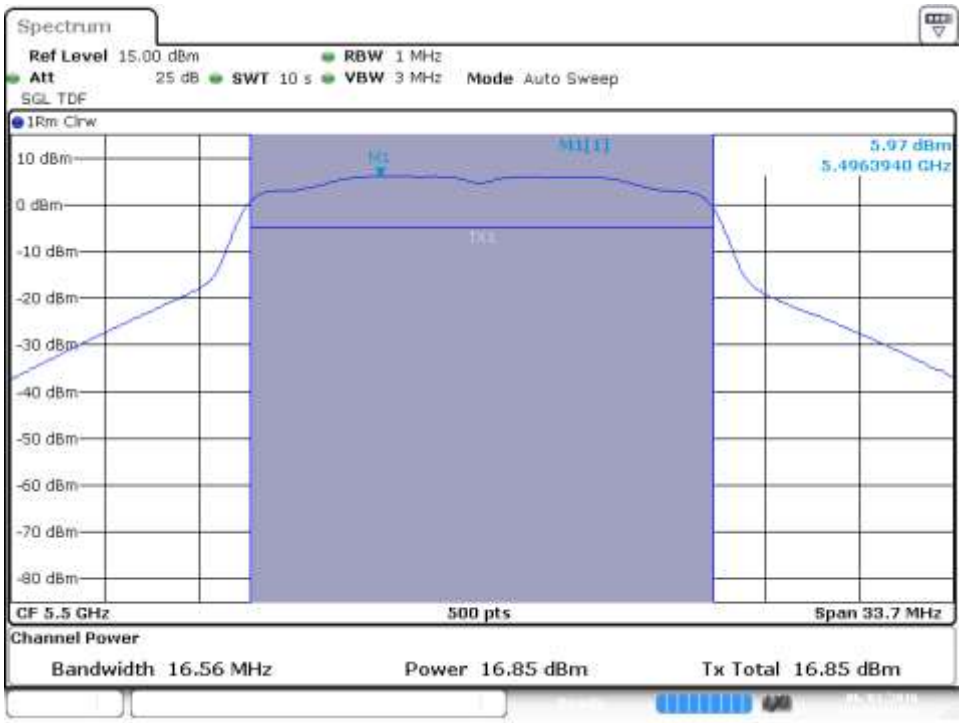
Results screenshot:

802.11a, 6Mbps

Max Power & PSD, Chain A – CH100



Max Power & PSD, Chain B – CH100



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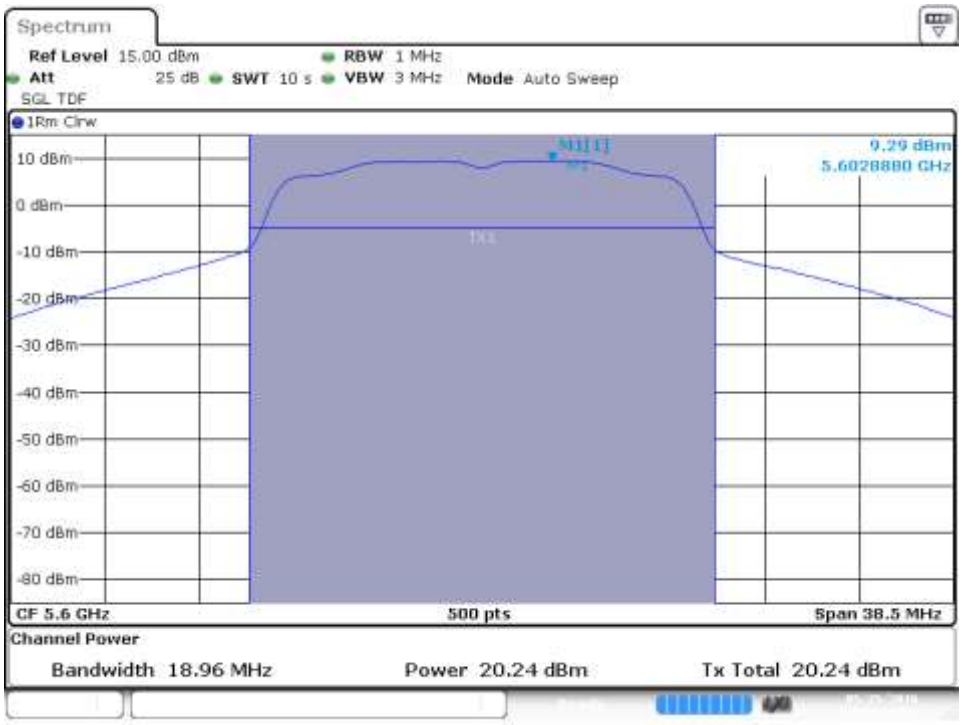
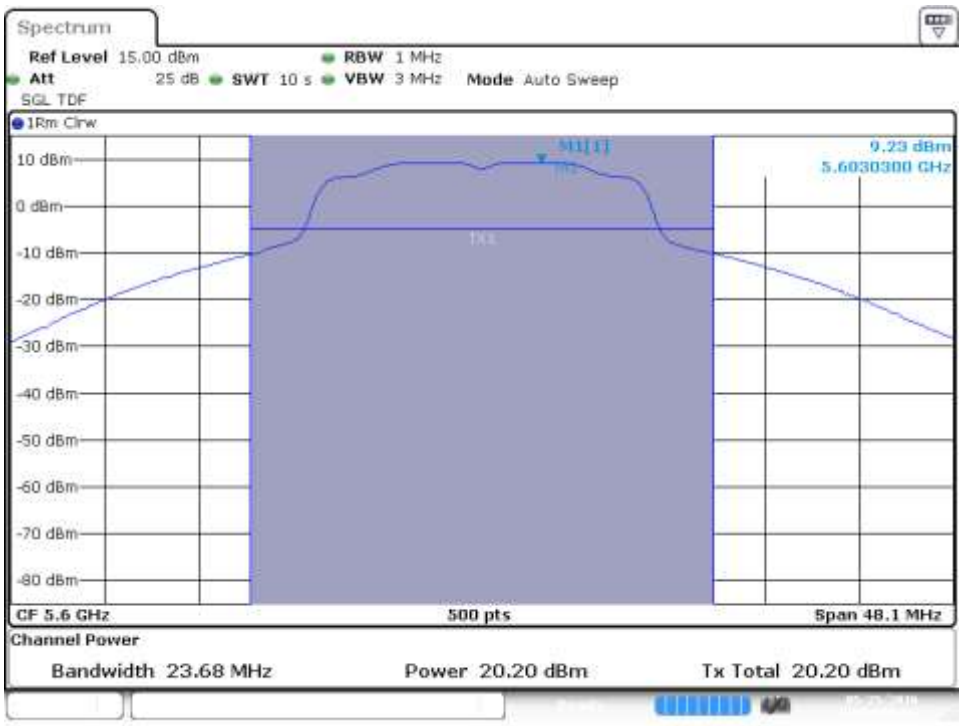
Max Power & PSD, Chain A – CH120



Max Power & PSD, Chain B – CH120



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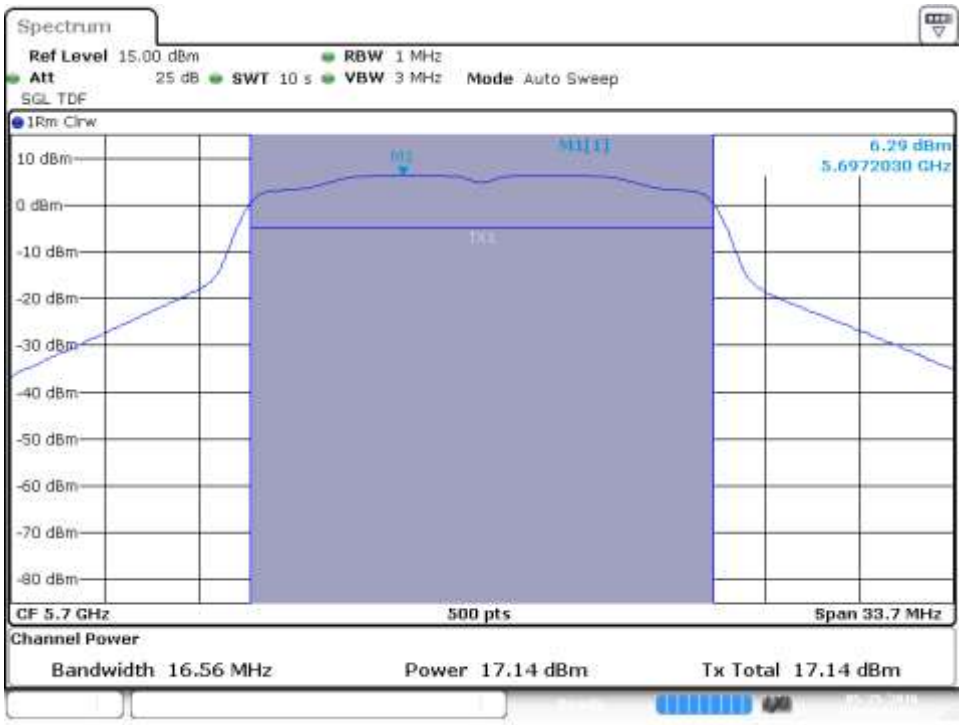
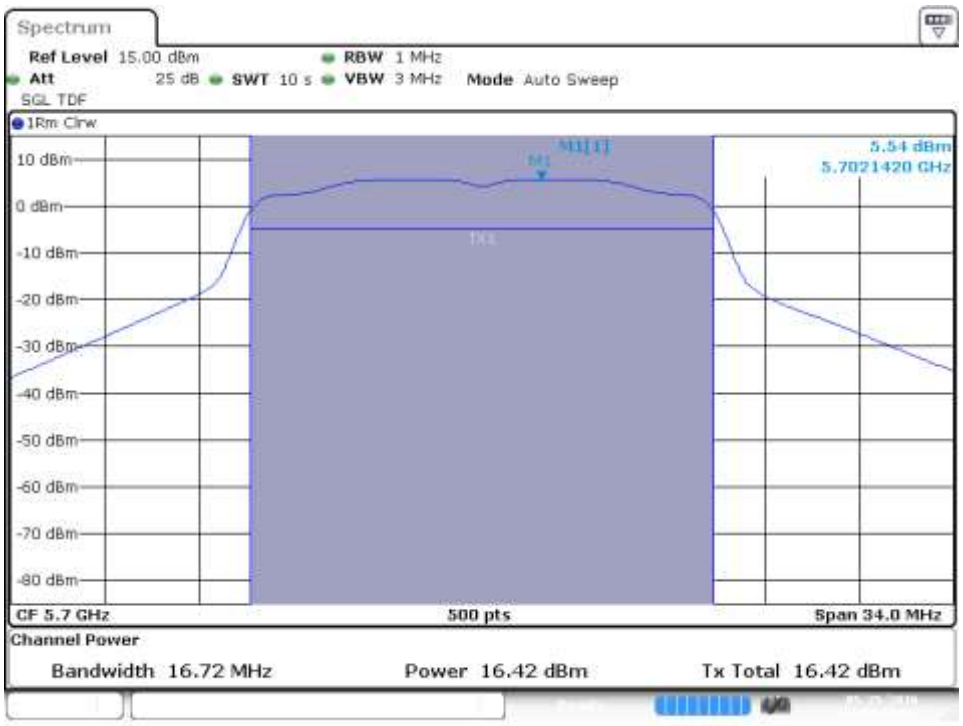
Max Power & PSD, Chain A – CH140



Max Power & PSD, Chain B – CH140



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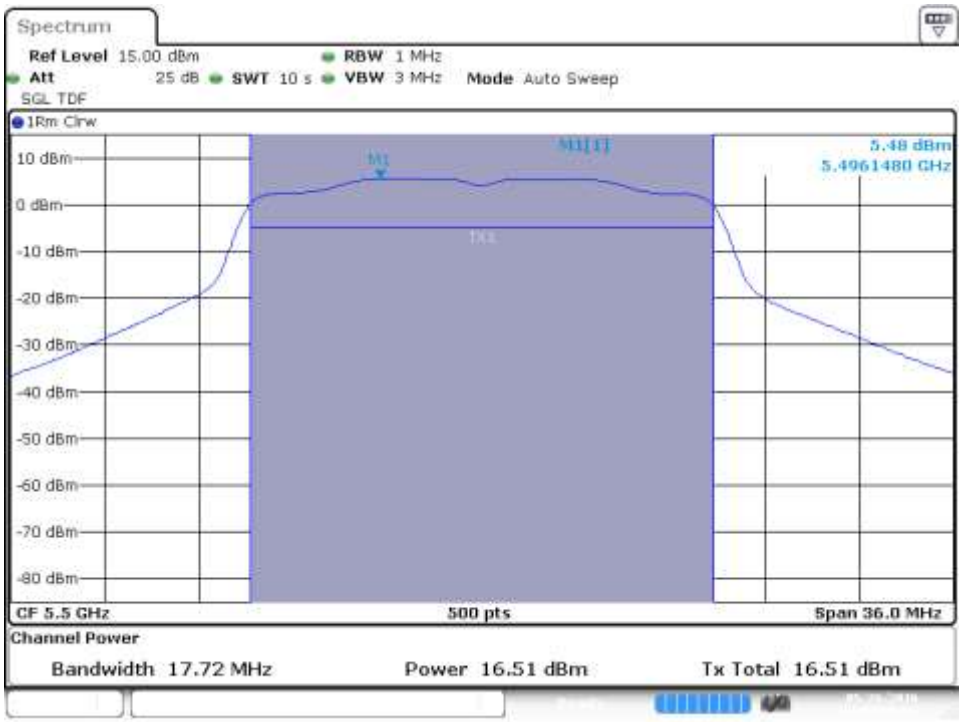
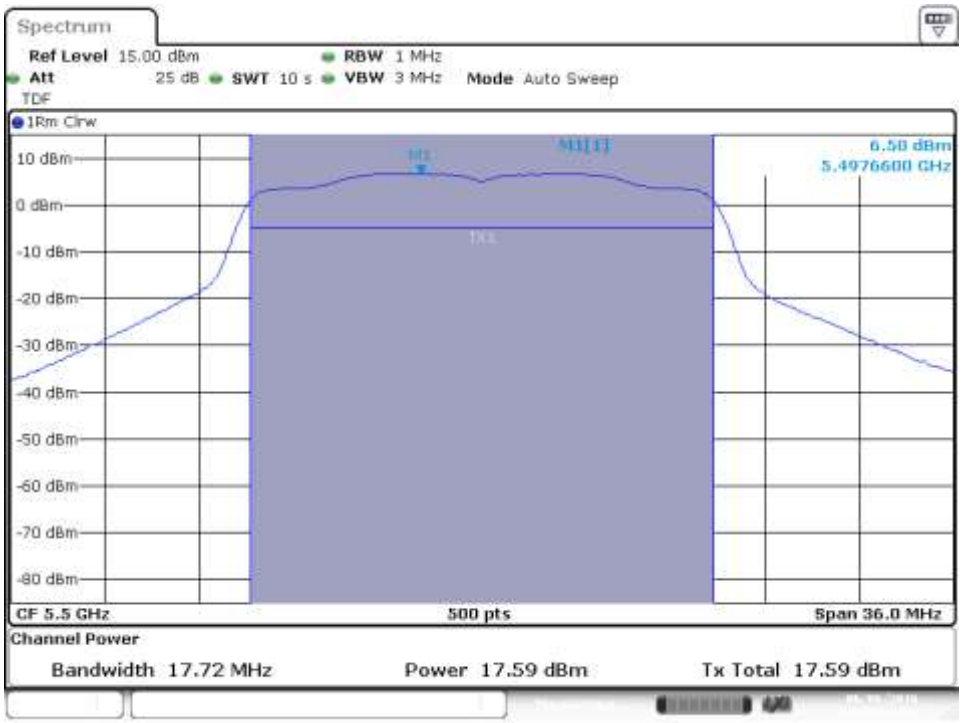
802.11n20, HT0 (SISO)

Max Power & PSD, Chain A – CH100



Max Power & PSD, Chain B – CH100



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