TESTING CERT #3478.01

TEST REPORT

EUT Description	**WLAN and BT, 2x2 PCIe M.2 adapter card**
Brand Name	**Intel**
Model Name	**Intel® Dual-Band Wireless-AC 8260**
Serial Number	**TA#: H76739-001 / H76739-001** **WF MAC: 34:13:E8:42:D2:BD / 34:13:E8:42:D1:B4** **BT MAC: 34:13:E8:42:D2:C1 / 34:13:E8:42:D1:B8** (see section 4)
FCC/IC ID	**FCC ID: PD98260NGH / PD98260NGHU** **IC ID: 1000M-8260NGH**
Antenna type	**SkyCross WIMAX/WLAN Reference Antenna**
Hardware/Software Version	**HW: TF5 – cfg20.1HE** **Test SW: DRTU version 1.8.3** **Op SW: 18.10.0.19 / 18.11.0.8**
Date of Sample Receipt	**2015-06-01**
Date of Test Start/End	**2015-06-18 / 2015-08-17**
Features	**802.11 a/b/g/n/ac Wireless LAN + BDR/EDR 2.1 + BLE 4.0** (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 15C** **RSS-247 issue 1, RSS-Gen issue 4** (see section 1)

Test Report number	**15051101.TR05**
Revision Control	**Rev. 00**

The test results relate only to the samples tested.
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Issued by	Reviewed by	Approved by
Digitally signed by Olivier FARGANT DN: cn=Olivier FARGANT, o=Intel Mobile Communications, ou=WRF Lab, email=olivier.fargant@intel.com, c=FR Date: 2015.08.19 18:10:43 +02'00'	Digitally signed by Jose M. FORTES DN: cn=Jose M. FORTES, o=Intel Mobile Communications, ou=WRF Lab, email=jose.m.fortes.lopez@intel.com, c=FR Date: 2015.09.09 10:49:41 +02'00'	Digitally signed by Nawfal ASRIH DN: cn=Nawfal ASRIH, o=Intel Mobile Communications, ou=Wireless RF Lab, email=nawfal.asrih@intel.com, c=FR Date: 2015.09.09 18:36:44 +02'00' Adobe Acrobat DC version: 2015.006.30060
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1. Standards, reference documents and applicable test methods

1. FCC 47 CFR part 15 - Subpart C – §15.247 Operation within the bands 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz.
2. FCC 47 CFR part 15 - Subpart C – §15.209 Radiated emission limits; general requirements.
3. FCC OET KDB 558074 D01 DTS Meas Guidance v03r03 – Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247
4. FCC OET KDB 662911 D01 Multiple Output v02r01 – Emissions Testing of Transmitters with Multiple Outputs in the Same Band.
5. RSS-247 Issue 1 – Licence-exempt Radio Apparatus (All Frequency Bands): Category I Equipment.
6. RSS-Gen Issue 4 – General Requirements for Compliance of Radio Apparatus.
7. ANSI C63.10-2009 American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

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.
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- ✓ 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	23ºC ± 2ºC
Humidity	52% ± 5%

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4. Test samples

Sample	Control #	Description	Model	Serial #	Date of reception	Note
#01	15051101.S21	WiFi/BT High End Module	8260NGW H	WF MAC: 34:13:E8:36:93:E5	2015-06-01	Used for conducted tests
	15051101.S12	Extender board	PCB00495	ASS0495-001, 4950414-064	2015-05-12	
	15051101.S11	Switching power supply SINPRO 5V 6A	SPU60-102	07990499 1249	2015-05-12	
	15051101.S15	Laptop	DELL E5440	BJSYN32	2015-05-20	
#02	15051101.S22	WiFi/BT High End Module	8260NGW H	WF MAC: 3413E8369322	2015-06-01	Used for radiated tests
	15051101.S05	Switching power supply SINPRO 5V 6A	SPU60-102	07990495-1249	2015-05-12	
	15051101.S06	Extender board	PCB00495	ASS0495-001, 4950414-019	2015-05-12	
	15051101.S07	USB Cable	E154336	NA	2015-05-12	
	15051101.S08	PCI Cable	Blue cable 1 meter	NA	2015-05-12	
	15051101.S09	Laptop	Dell E5440	9FSYN32	2015-05-12	
	15051101.S10	AC/DC Adapter	90W 19.5V 4.62A	CN-OJCF3V-48661-51S-OPIC-A02	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 2.1 BLE 4.0	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 b/g/n – DTS

FCC part	RSS part	Test name	Verdict
15.247 (a) (2)	RSS-247 Clause 5.2 (1)	6dB Bandwidth	P
15.247 (b) (3)	RSS-247 Clause 5.4 (4)	Maximum output power and antenna gain	P
15.247 (d)	RSS-247 Clause 5.5	Out-of-band Emissions (conducted)	P
15.247 (e)	RSS-247 Clause 5.2 (2)	Power spectral density	P
15.247 (d) 15.209	RSS-247 Clause 5.5	Out-of-band Emissions (radiated)	P

7.2. BLE – DTS

FCC part	RSS part	Test name	Verdict
15.247 (a) (2)	RSS-247 Clause 5.2 (1)	6dB Bandwidth	P
15.247 (b) (3)	RSS-247 Clause 5.4 (4)	Maximum output power and antenna gain	P
15.247 (d)	RSS-247 Clause 5.5	Out-of-band Emissions (conducted)	P
15.247 (e)	RSS-247 Clause 5.2 (2)	Power spectral density	P
15.247 (d) 15.209	RSS-247 Clause 5.5	Out-of-band Emissions (radiated)	P

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

8. Document Revision History

Revision #	Date	Modified by	Details
Rev. 00	2015-08-19	O. Fargant	First Issue

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Annex A. Test & System Description

A.1 Test Conditions

For 802.11b/g modes 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) modes the EUT can transmit at both CHAIN A and CHAIN B RF outputs individually, and also simultaneously.

For Bluetooth Low Energy mode the EUT can transmit only at CHAIN B RF output.

The conducted RF output power at each chain 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 calibrated average power meter. Measured values for adjustment were within -0.2 dB/+0.3 dB from the declared Target values.

					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**
802.11b	20	1Mbps	1	2412	21.0	19.5	-
			6	2437	21.0	20.0	-
			11	2462	18.0	16.0	-
			12	2467	14.0	13.0	-
			13	2472	8.0	8.0	-
802.11g	20	6Mbps	1	2412	18.0	15.5	-
			6	2437	21.0	20.5	-
			11	2462	18.0	17.0	-
			12	2467	10.0	10.0	-
			13	2472	-5.0	-4.0	-
802.11n	20	HT0 HT8*	1	2412	16.5	15.0	15.5
			6	2437	21.0	20.0	18.0
			11	2462	18.0	17.5	16.0
			12	2467	9.0	8.0	8.0
			13	2472	-5.5	-4.5	-5.0
802.11n	40	HT0 HT8*	3F	2422	16.0	15.0	12.5
			6F	2437	21.0	21.0	17.5
			9F	2452	17.5	14.0	14.0
			10F	2457	8.0	7.0	7.0
			11F	2462	-4.0	-4.0	-4.0
Bluetooth Low Energy	2	1Mbps	0	2412	-	8.0	-
			19	2437	-	8.0	-
			39	2462	-	6.5	-

* Note: HT8 for MIMO modes only.

Alternative channels to the highest channel have been also tested for Band Edge compliance.

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:

802.11b → 1Mbps
802.11g → 6Mbps
802.11n20 and 802.11n40 (SISO) → HT0
802.11n20 and 802.11n40 (MIMO) → HT8

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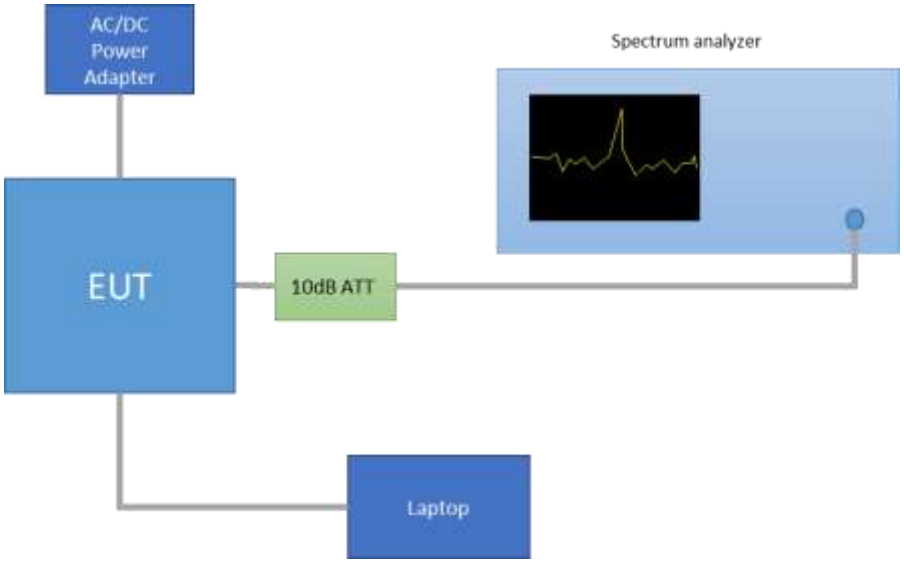
A.2 Measurement system

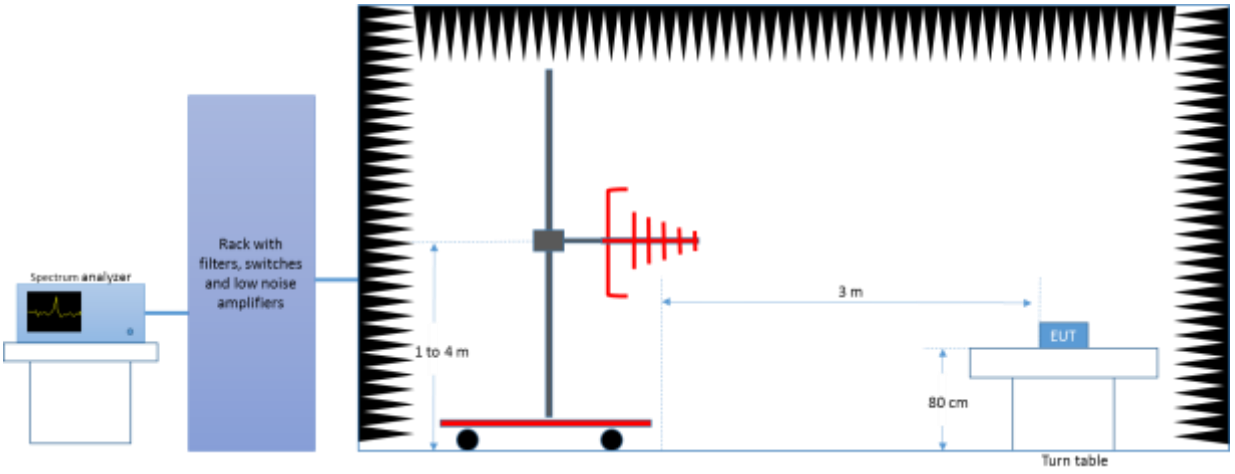
Measurements were performed using the following setups, made in accordance to the general provisions of FCC DTS Measurement KDB 558074 D01 DTS Meas Guidance v03r03.

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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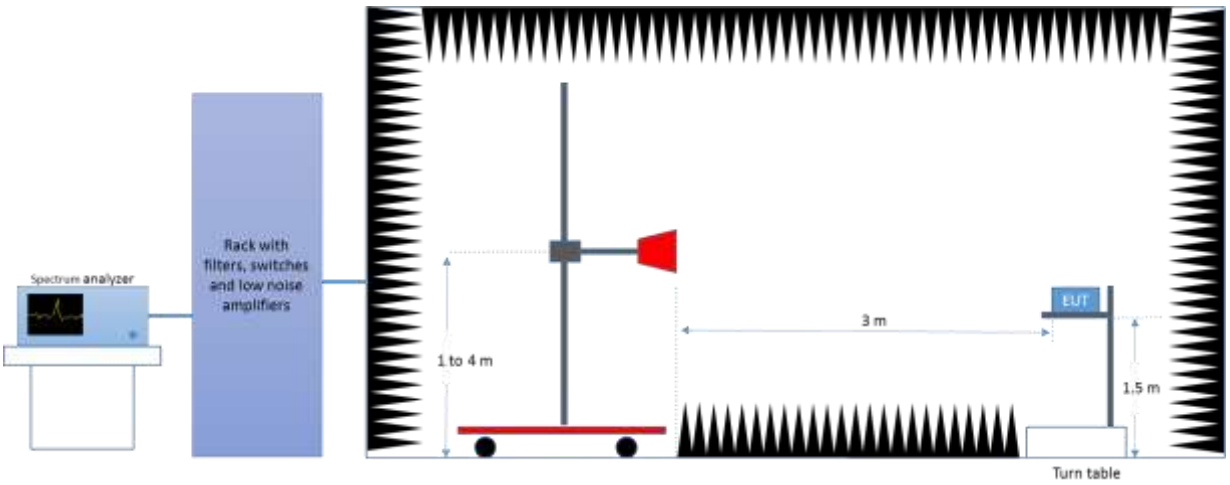
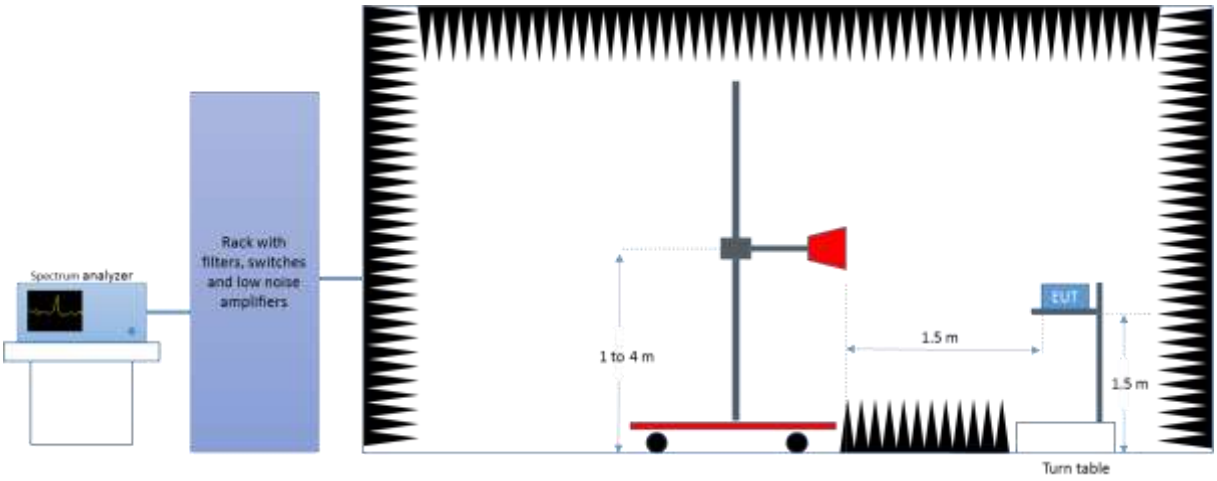
Radiated Setup 1GHz - 18GHz



Radiated Setup > 18GHz



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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	2014-05-09	2016-05-09
0137	Log antenna 30 MHz – 1 GHz	3142E	00156946	ETS Lindgren	2014-03-05	2016-03-05
0138	Hors antenna 1 GHz – 6.4 GHz	3117	00152266	ETS Lindgren	2014-03-04	2016-03-04
0141	Horn Antenna 6.4 GHz – 18 GHz	3117-PA	00157736	ETS Lindgren	2014-06-03	2016-06-03
0248	Horn Antenna 1 GHz – 18 GHz	3117-PA	00167062	ETS Lindgren	2014-08-13	2016-08-13
0139	Horn Antenna 18GHz – 26GHz	114514	00167100	ETS Lindgren	2014-04-25	2016-04-25
0140	Horn Antenna 26GHz – 40GHz	120722	00169638	ETS Lindgren	2014-08-14	2016-08-14
0135	Anechoic chamber	FACT 3	RFD_FA_100	ETS Lindgren	2014-05-06	2016-05-06
0329	Measurement Software	EMC32	1300.7027.00 (100401)	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 test < 1GHz	± 3.8
Radiated test 1GHz - 40 GHz	± 4.7

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Annex B. Test Results DTS

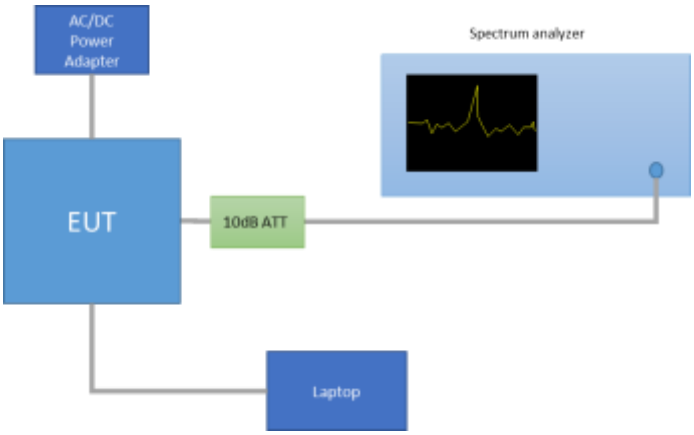
B.1 6dB & 99% Bandwidth

Test limits:

FCC part	RSS part	Limits
15.247 (a) (2)	RSS-247 Clause 5.2 (1)	Systems using digital modulation techniques may operate in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

Test procedure:

The setup below was used to measure the 6dB & 99% Bandwidth. The antenna terminal of the EUT is connected to the spectrum through an attenuator, and the spectrum analyzer reading is compensated to include the RF path loss.



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Results tables:

Mode	Rate	Antenna	Channel	Frequency [MHz]	6dB BW [MHz]	99% BW [MHz]
802.11b	6Mbps	SISO CHAIN A	1	2412	10.05	15.06
			6	2437	10.05	14.99
			11	2462	10.05	14.80
			12	2467	9.07	14.68
			13	2472	10.05	15.09
		SISO CHAIN B	1	2412	10.05	14.91
			6	2437	10.06	15.10
			11	2462	10.05	14.98
			12	2467	10.06	15.18
			13	2472	10.05	14.82
802.11g	6Mbps	SISO CHAIN A	1	2412	15.42	16.64
			6	2437	15.12	19.59
			11	2462	15.11	16.54
			12	2467	15.67	16.49
			13	2472	15.67	16.68
		SISO CHAIN B	1	2412	15.08	16.41
			6	2437	15.45	19.53
			11	2462	15.65	16.55
			12	2467	15.91	16.56
			13	2472	15.10	16.43
802.11n20	HT0	SISO CHAIN A	1	2412	15.93	17.70
			6	2437	16.32	23.76
			11	2462	15.10	17.59
			12	2467	15.68	17.59
			13	2472	16.32	17.74
		SISO CHAIN B	1	2412	15.09	17.53
			6	2437	16.16	20.11
			11	2462	15.12	17.66
			12	2467	16.78	17.75
			13	2472	15.10	17.59
	HT8	MIMO CHAIN A	1	2412	16.06	17.73
			6	2437	15.69	17.75
			11	2462	15.11	17.63
			12	2467	15.93	17.61
			13	2472	16.06	17.77
		MIMO CHAIN B	1	2412	15.09	17.61
			6	2437	16.30	17.76
			11	2462	16.29	17.75
			12	2467	17.53	17.69
			13	2472	15.08	17.58

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Mode	Rate	Antenna	Channel	Frequency [MHz]	6dB BW [MHz]	99% BW [MHz]
802.11n40	HT0	SISO CHAIN A	3F	2422	32.55	36.07
			6F	2437	33.81	38.98
			9F	2452	35.07	36.09
			10F	2457	32.56	36.01
			11F	2462	32.54	36.07
		SISO CHAIN B	3F	2422	33.82	36.07
			6F	2437	36.03	38.41
			9F	2452	33.83	36.21
			10F	2457	33.84	36.21
			11F	2462	33.84	36.02
	HT8	MIMO CHAIN A	3F	2422	32.55	36.07
			6F	2437	35.06	36.25
			9F	2452	35.06	36.08
			10F	2457	32.56	35.96
			11F	2462	35.72	36.10
		MIMO CHAIN B	3F	2422	33.82	35.86
			6F	2437	35.70	36.46
			9F	2452	33.81	36.18
			10F	2457	33.83	36.18
			11F	2462	36.42	35.95

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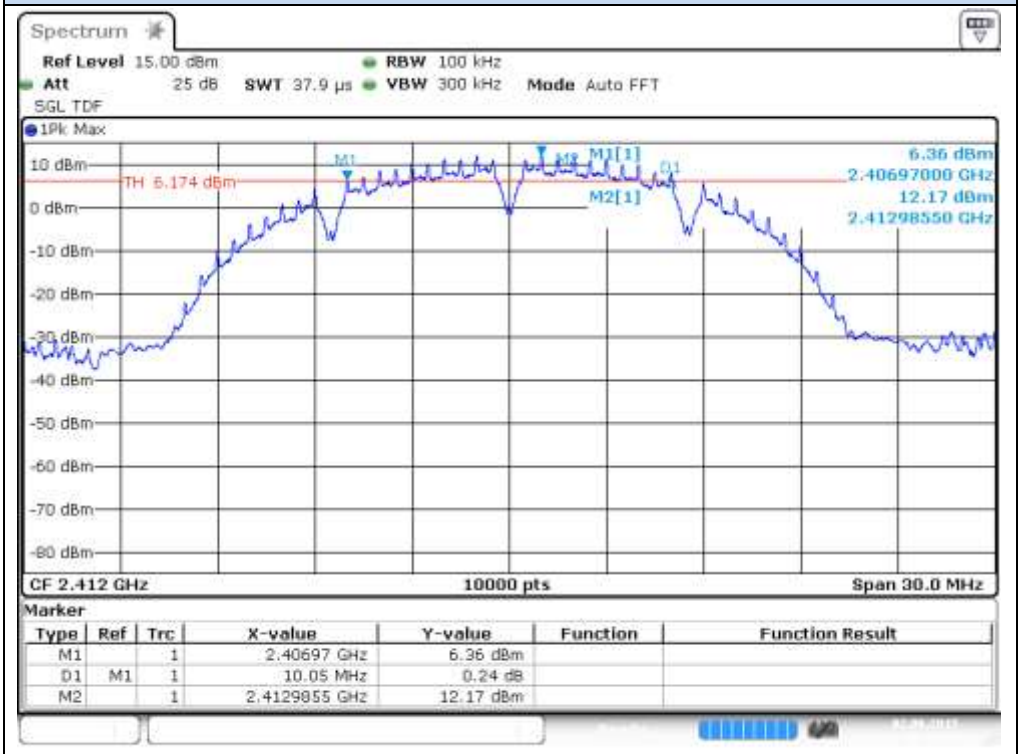
Results screenshot:

802.11b, 1Mbps – Chain A

6dB BW – CH1



99% BW – CH1

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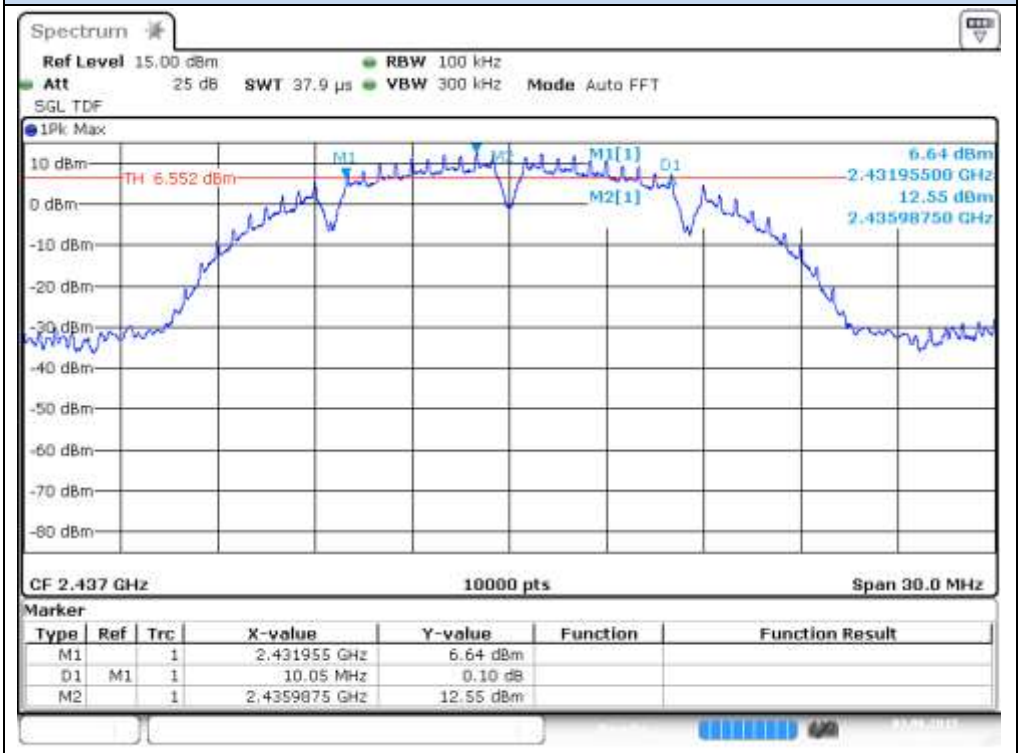
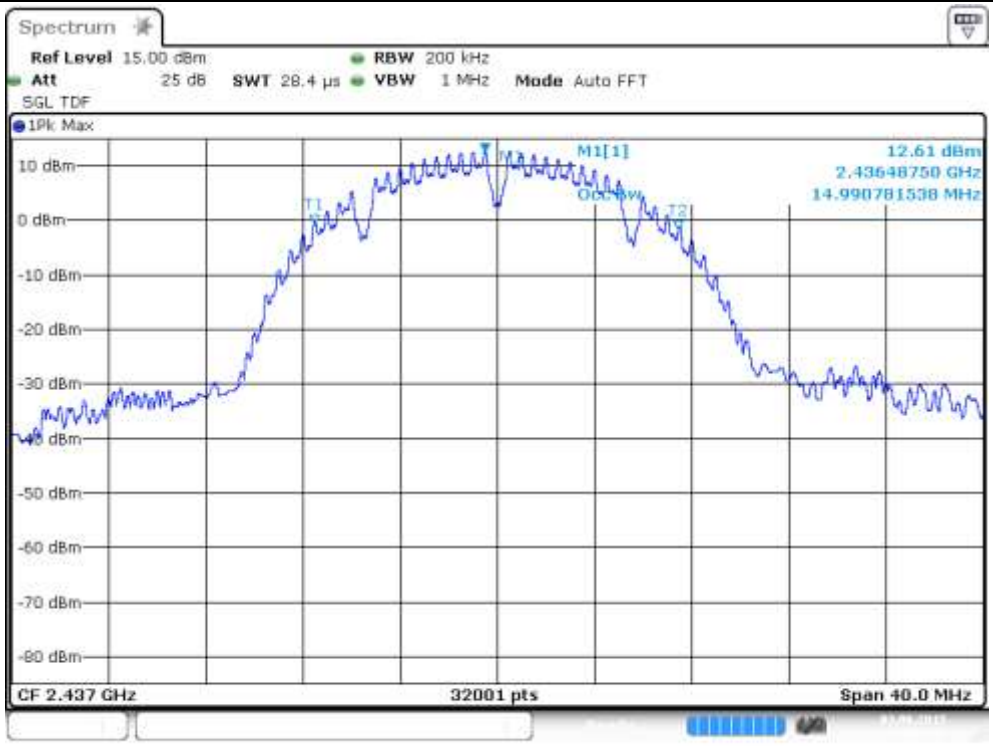
6dB BW – CH6



99% BW – CH6



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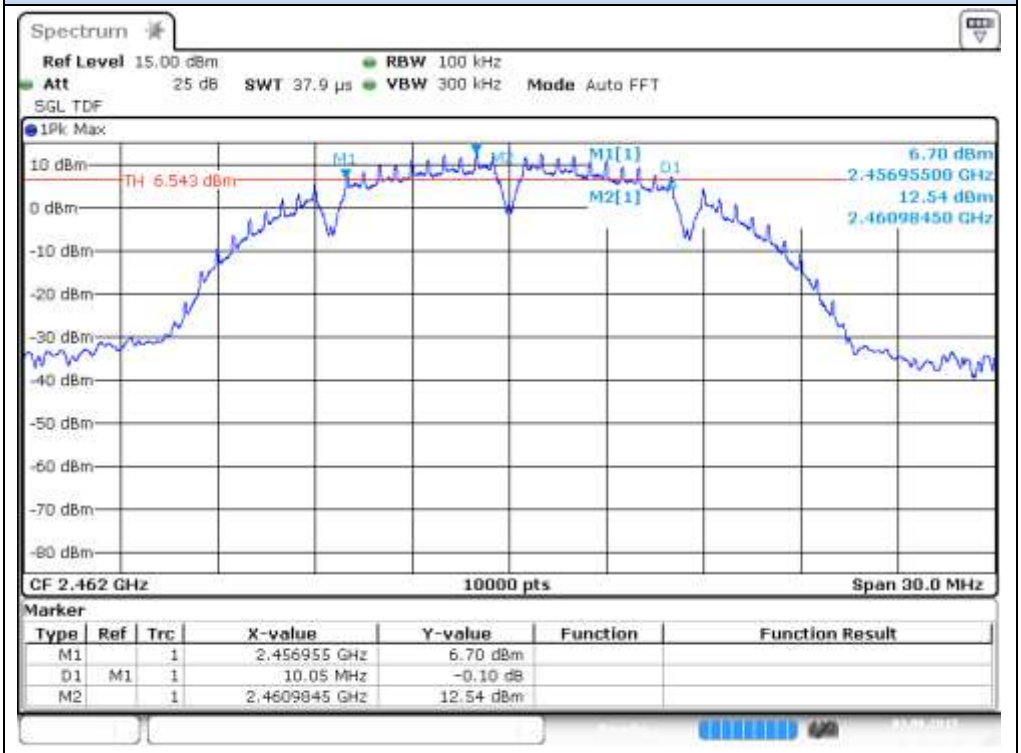
6dB BW – CH11



99% BW – CH11

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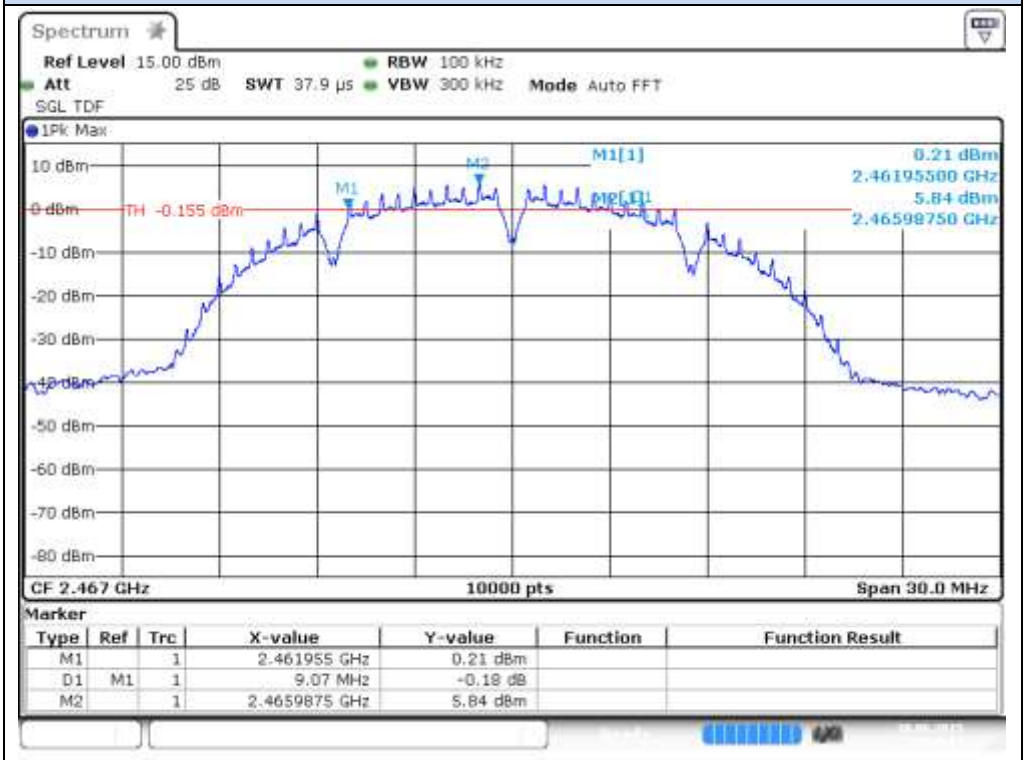
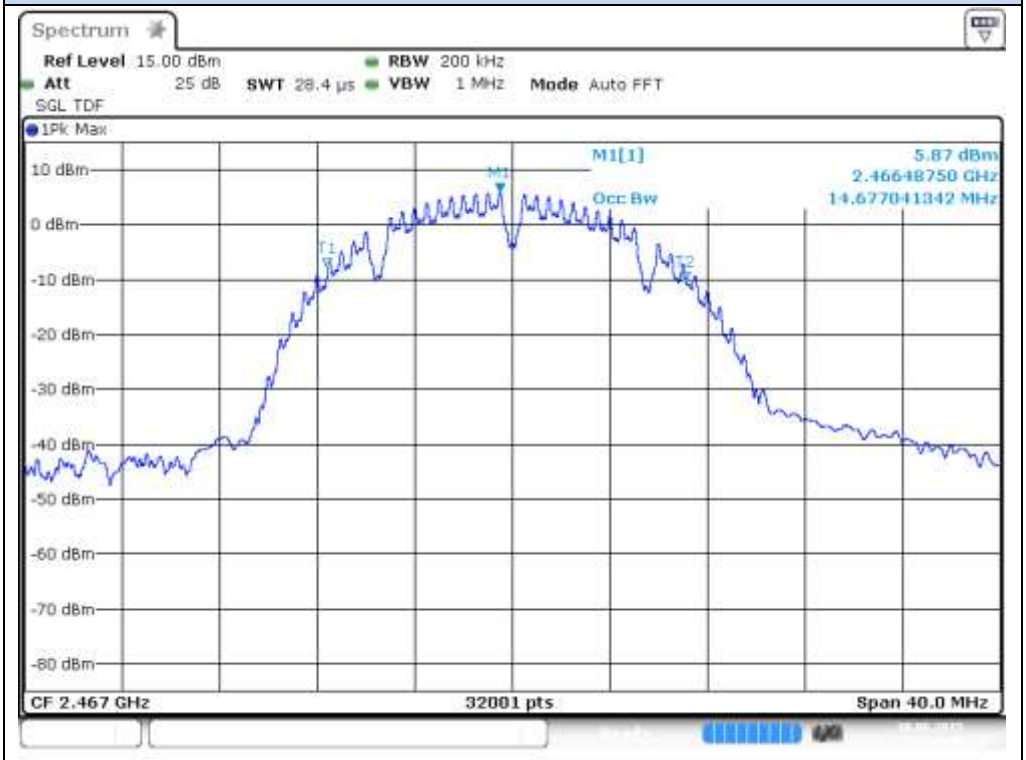
6dB BW – CH12



99% BW – CH12



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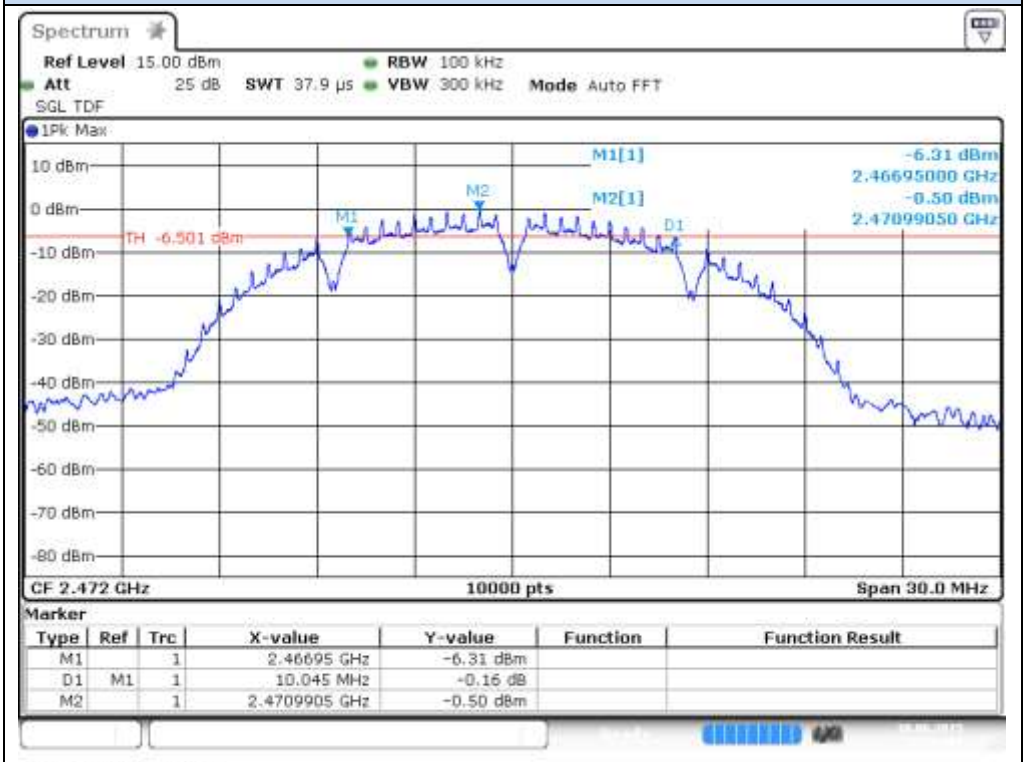
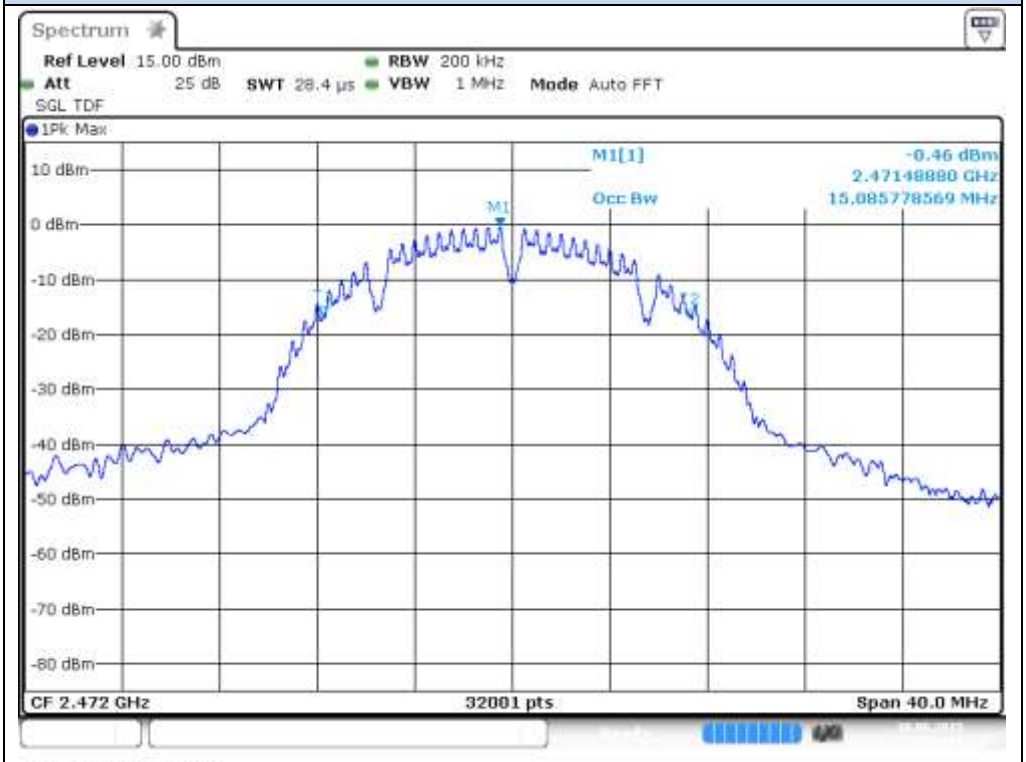
6dB BW – CH13



99% BW – CH13



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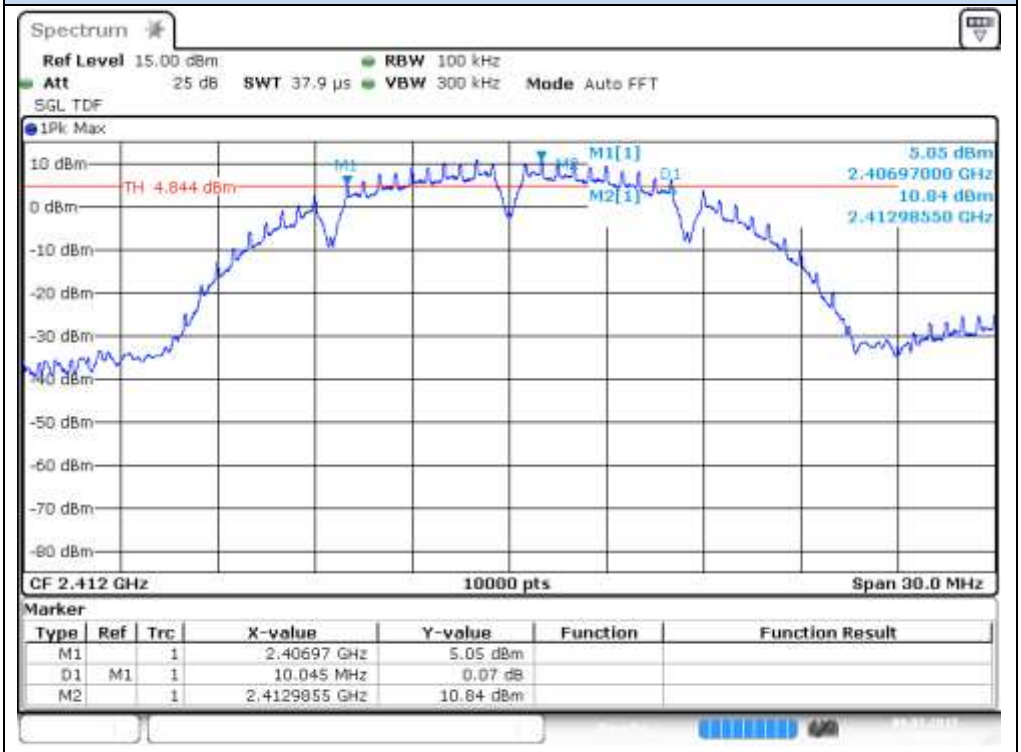
802.11b, 1Mbps – Chain B

6dB BW – CH1



99% BW – CH1

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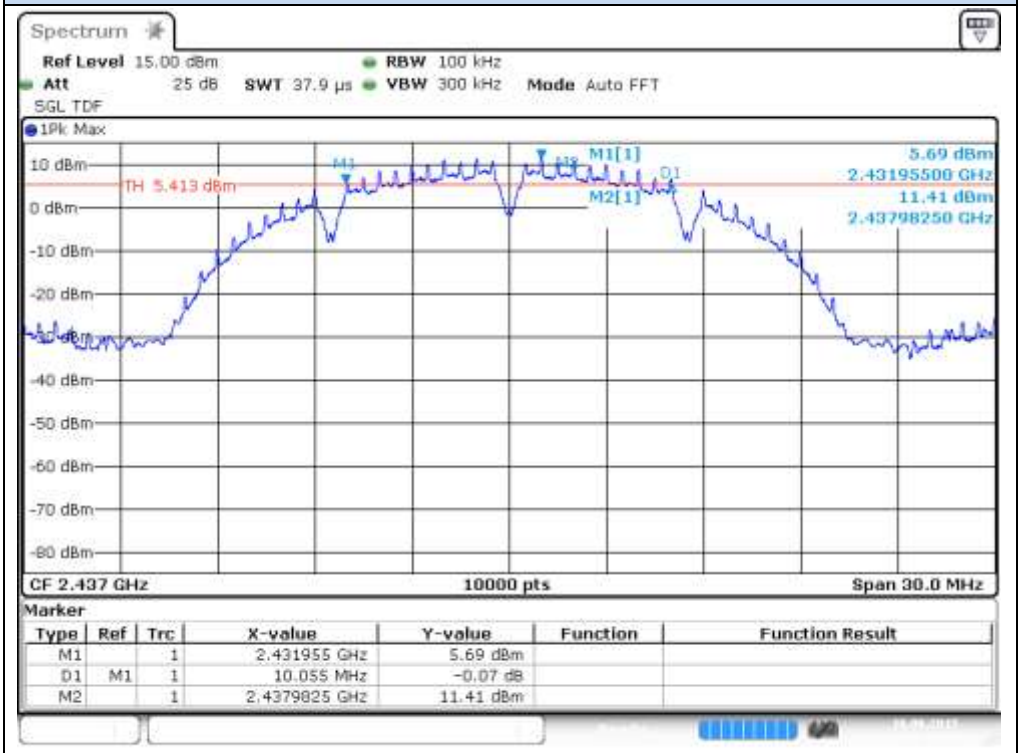
6dB BW – CH6



Date: 16.JUN.2015 11:17:07

99% BW – CH6

Date: 16.JUN.2015 11:17:23

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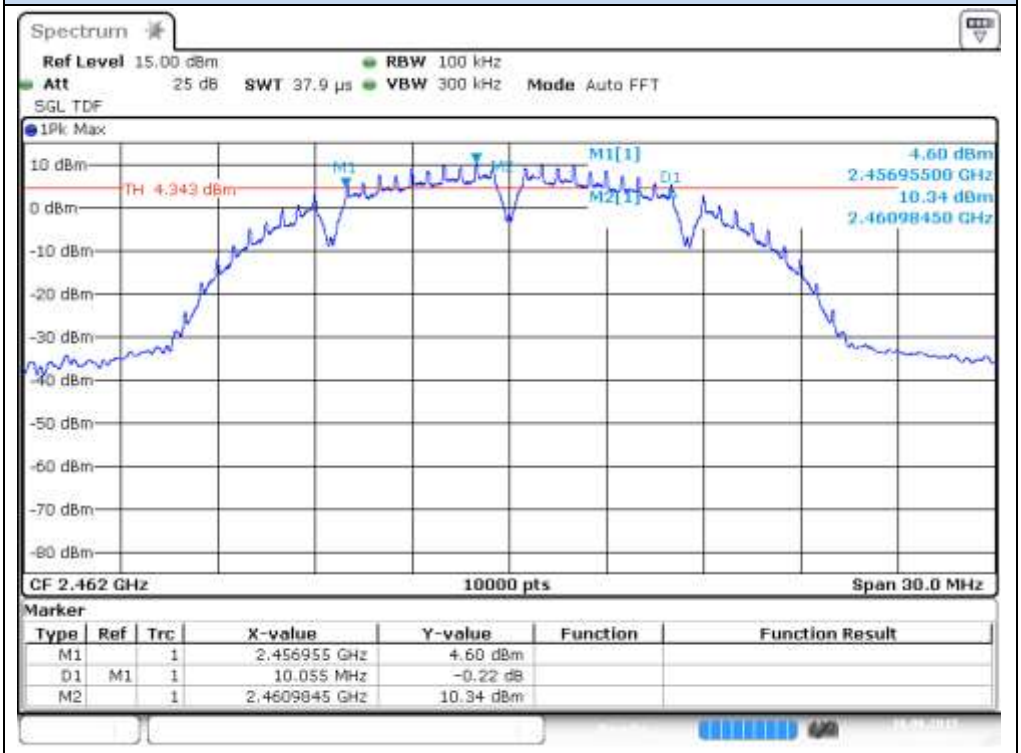
6dB BW – CH11



99% BW – CH11

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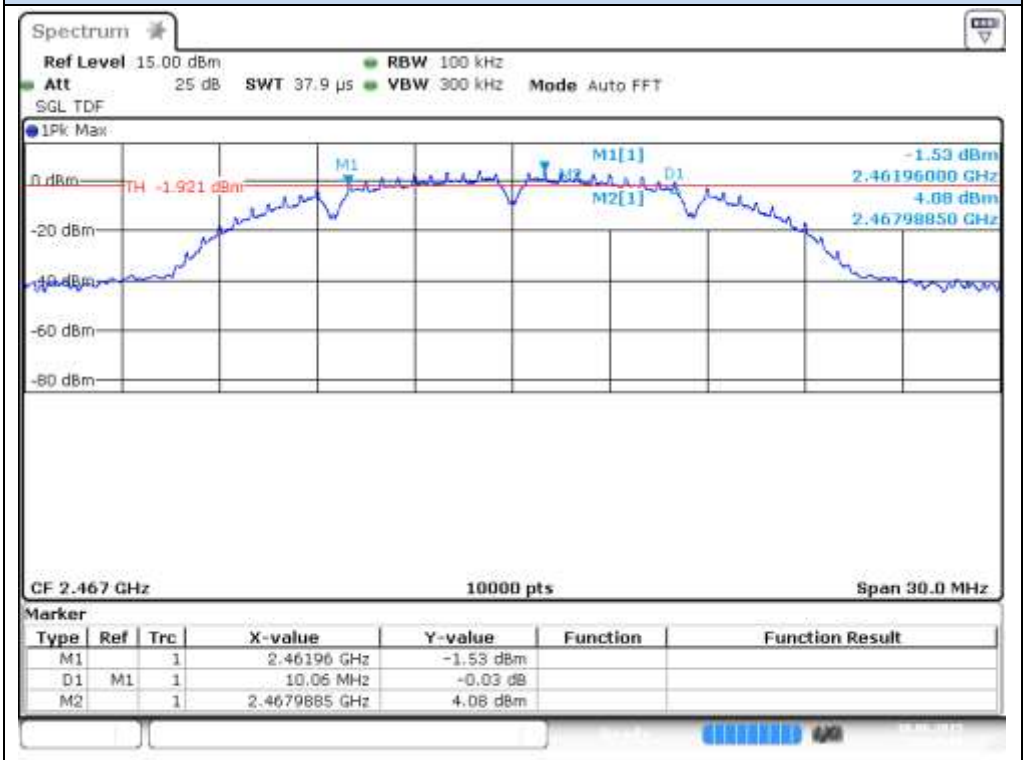
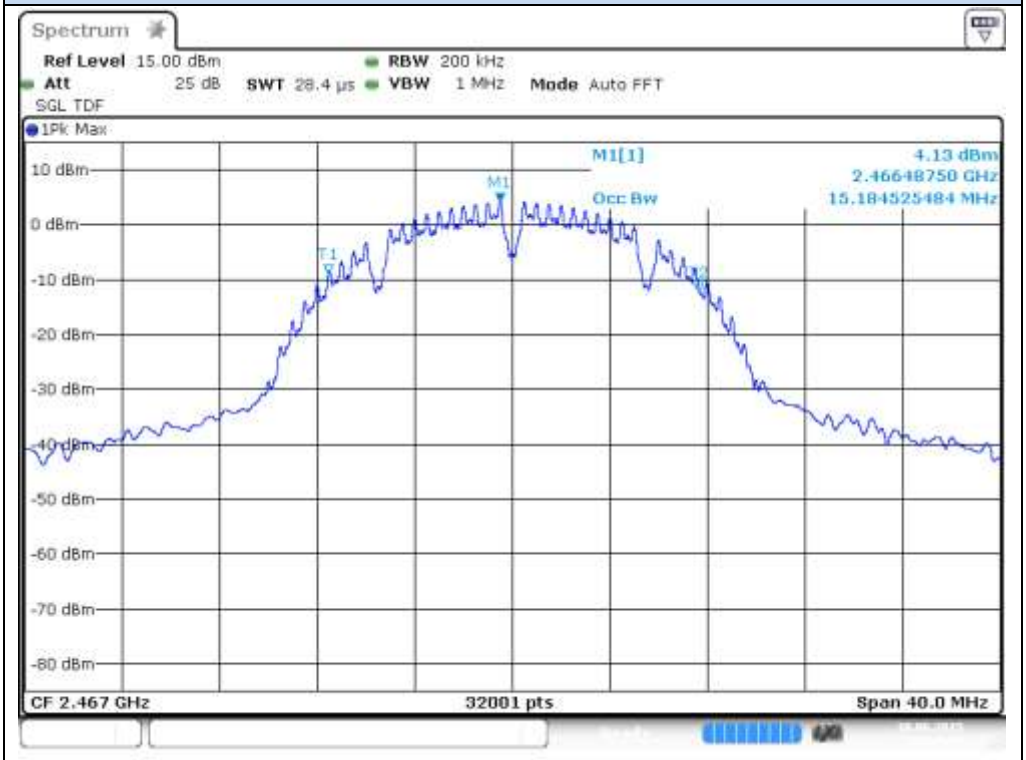
6dB BW – CH12



99% BW – CH12



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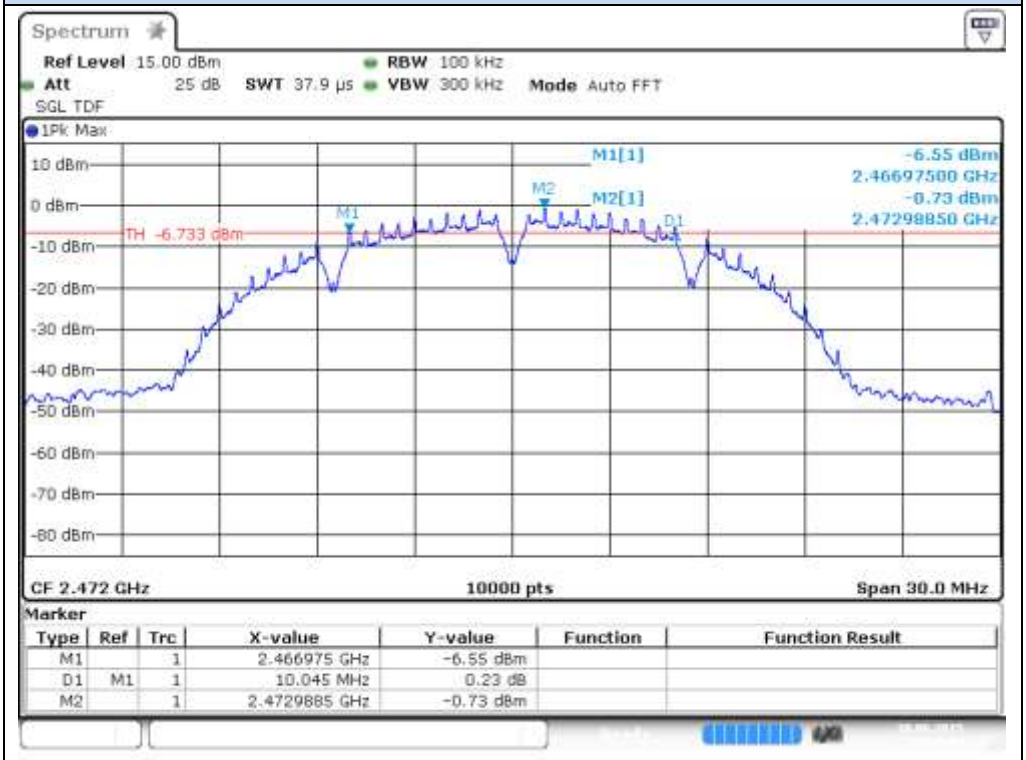
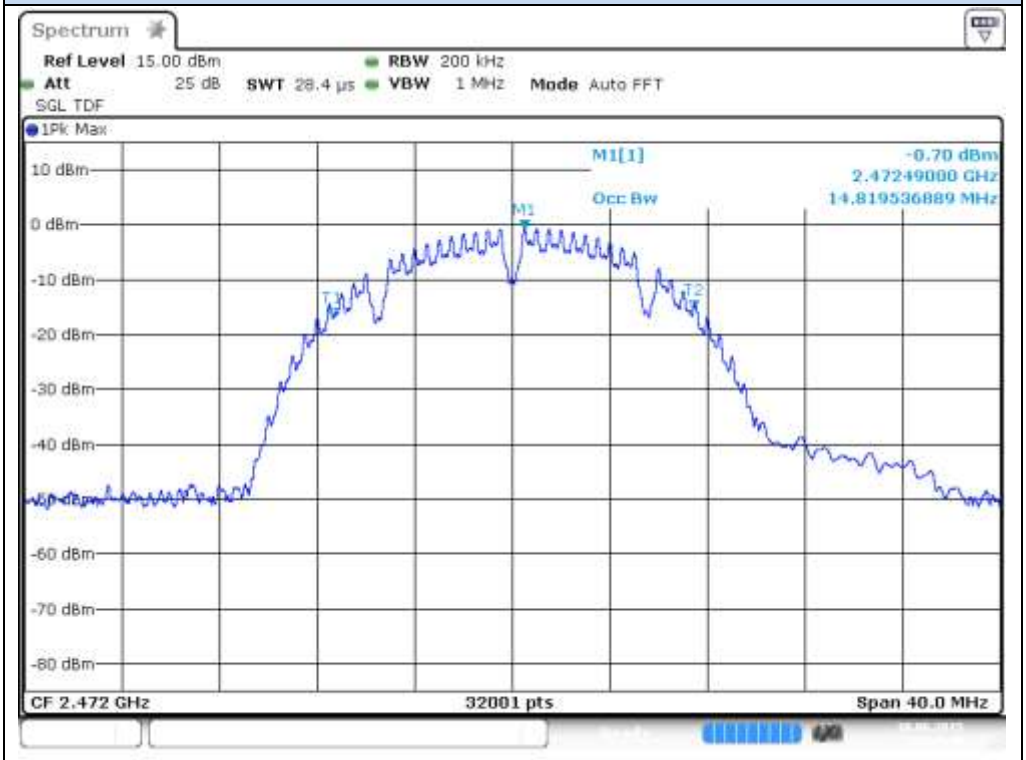
6dB BW – CH13



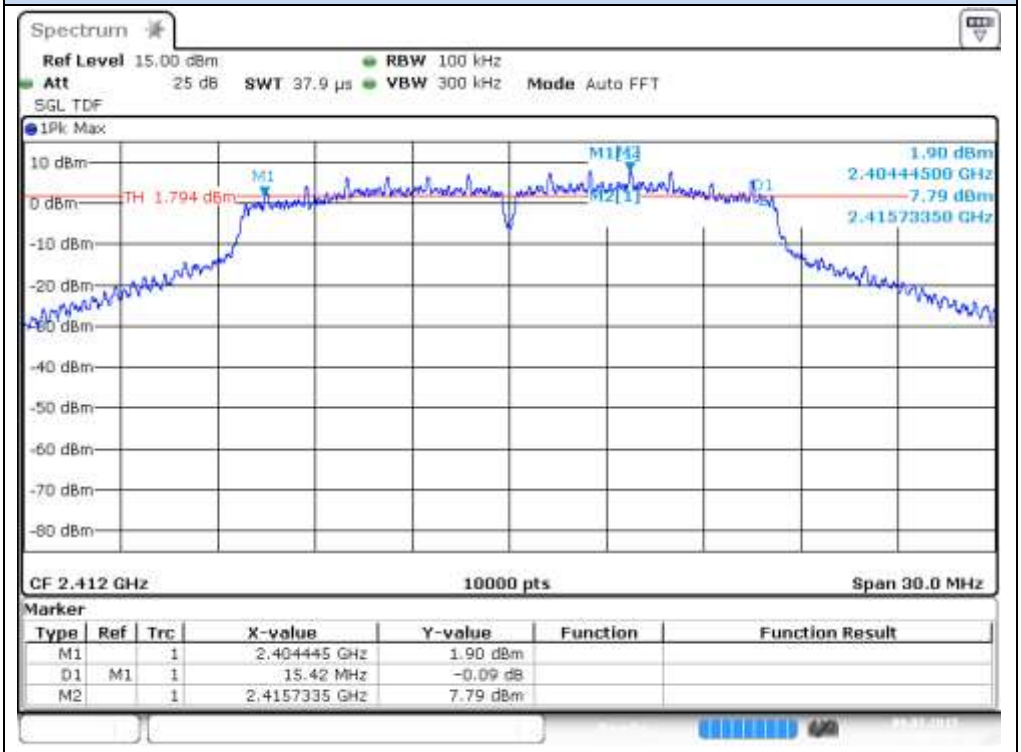
99% BW – CH13



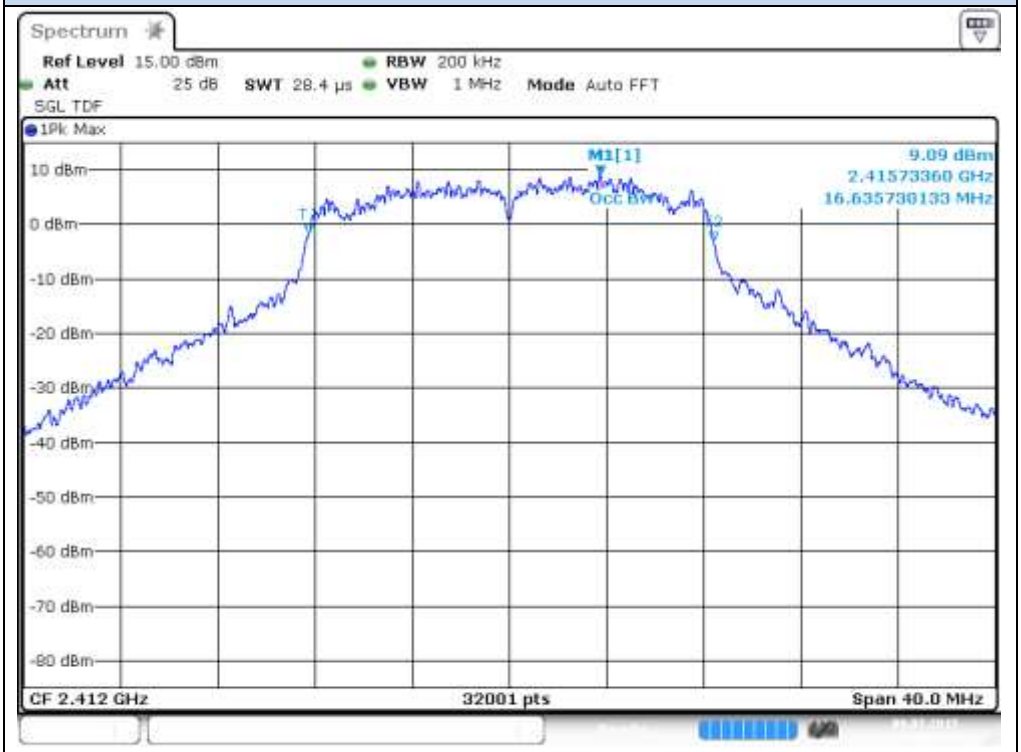
Printed copies are not controlled documents

802.11g, 6Mbps (SISO) – Chain A

6dB BW – CH1

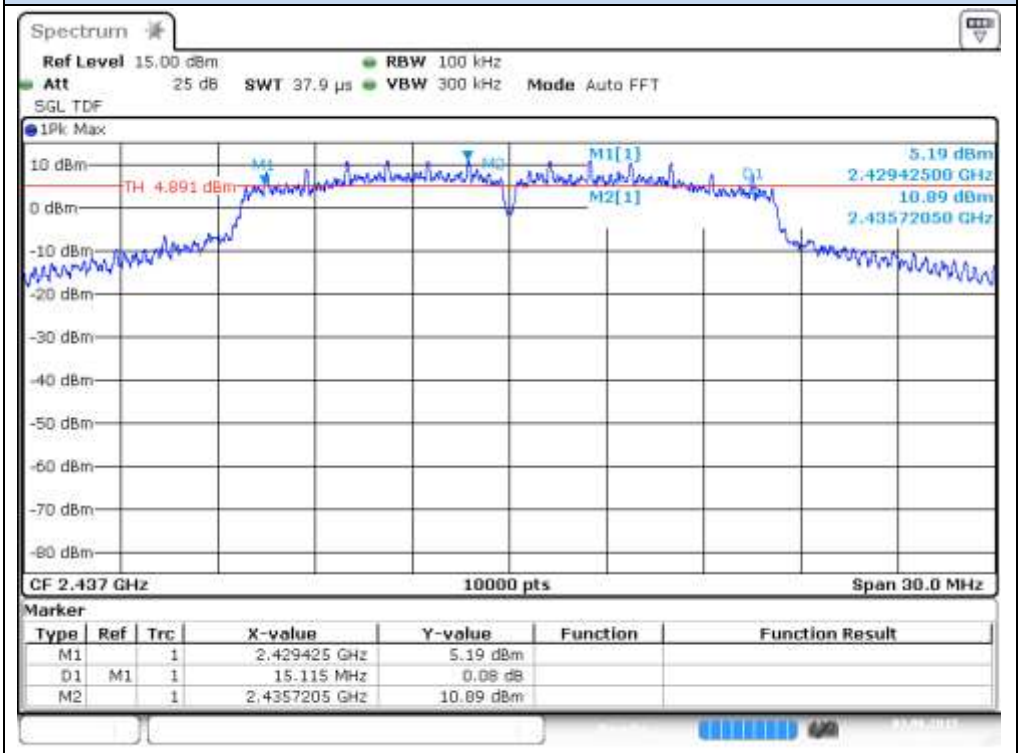


99% BW – CH1



Printed copies are not controlled documents

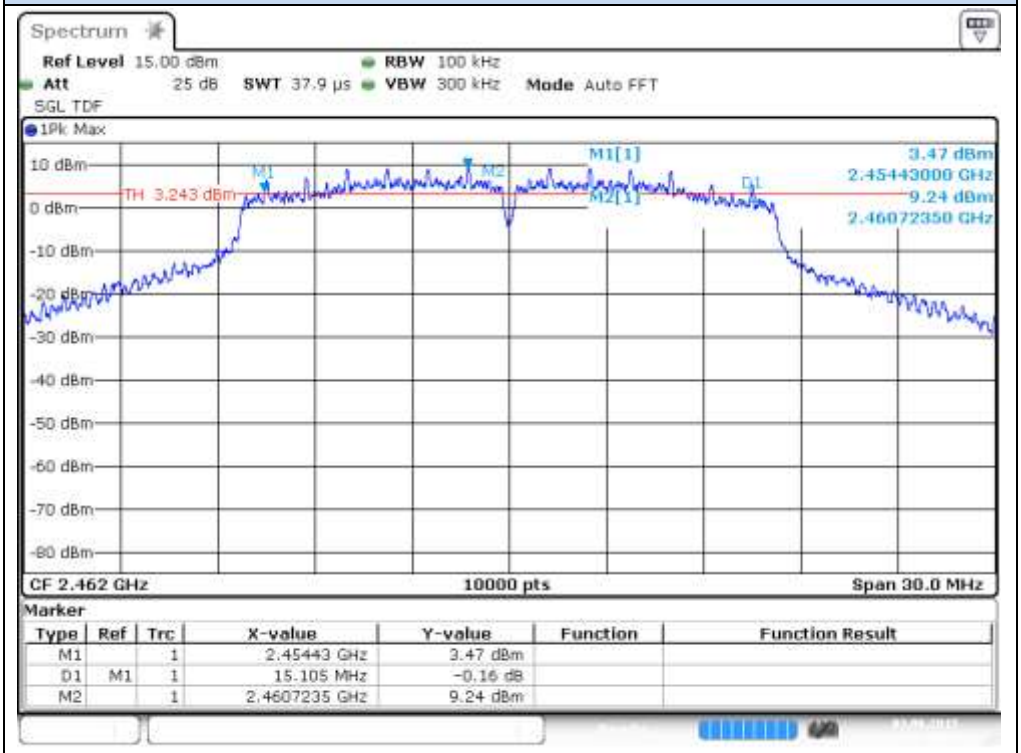
6dB BW – CH6



99% BW – CH6

Printed copies are not controlled documents

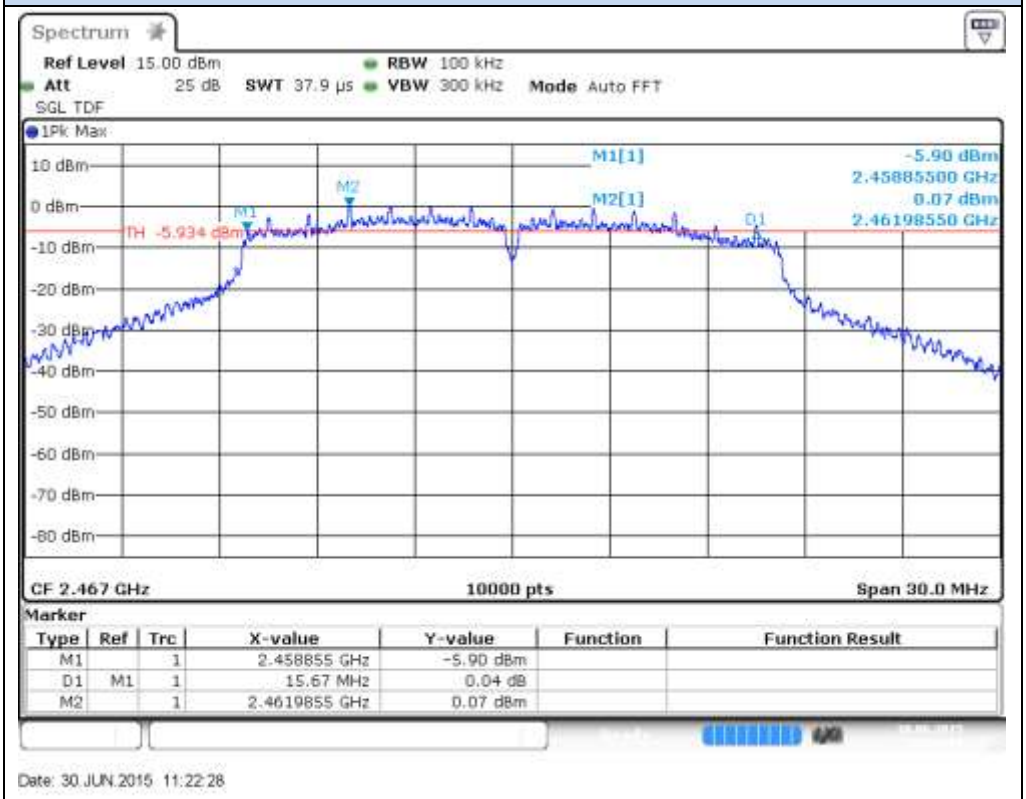
6dB BW – CH11



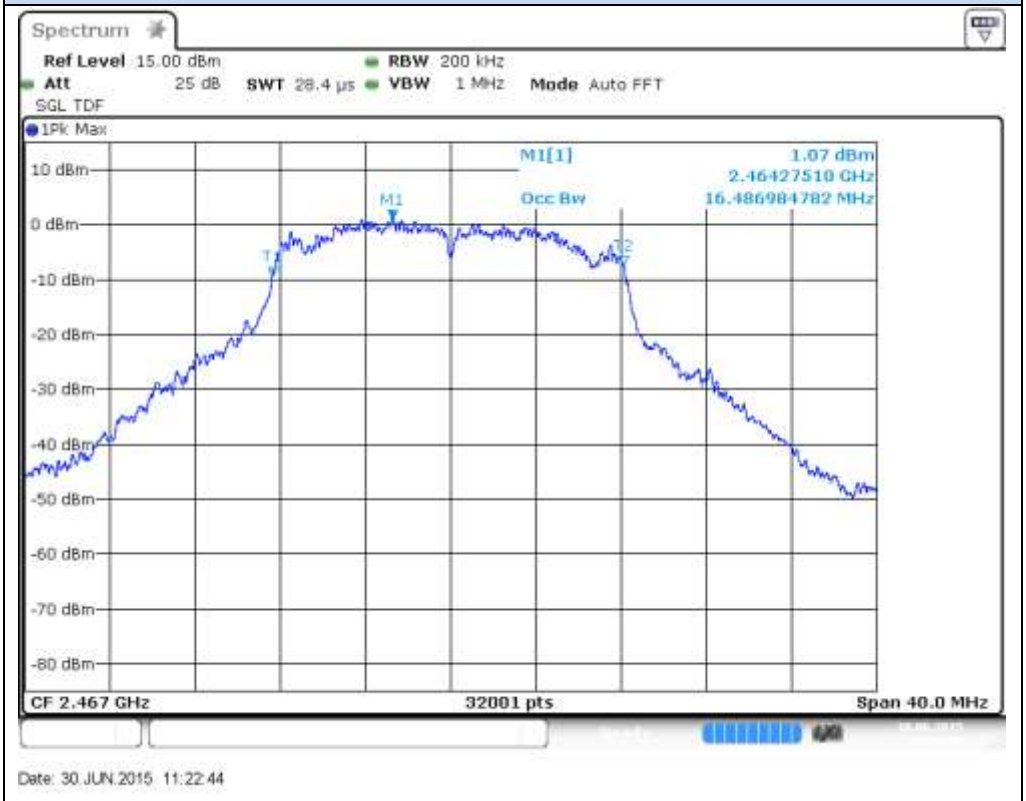
99% BW – CH11

Printed copies are not controlled documents

6dB BW – CH12

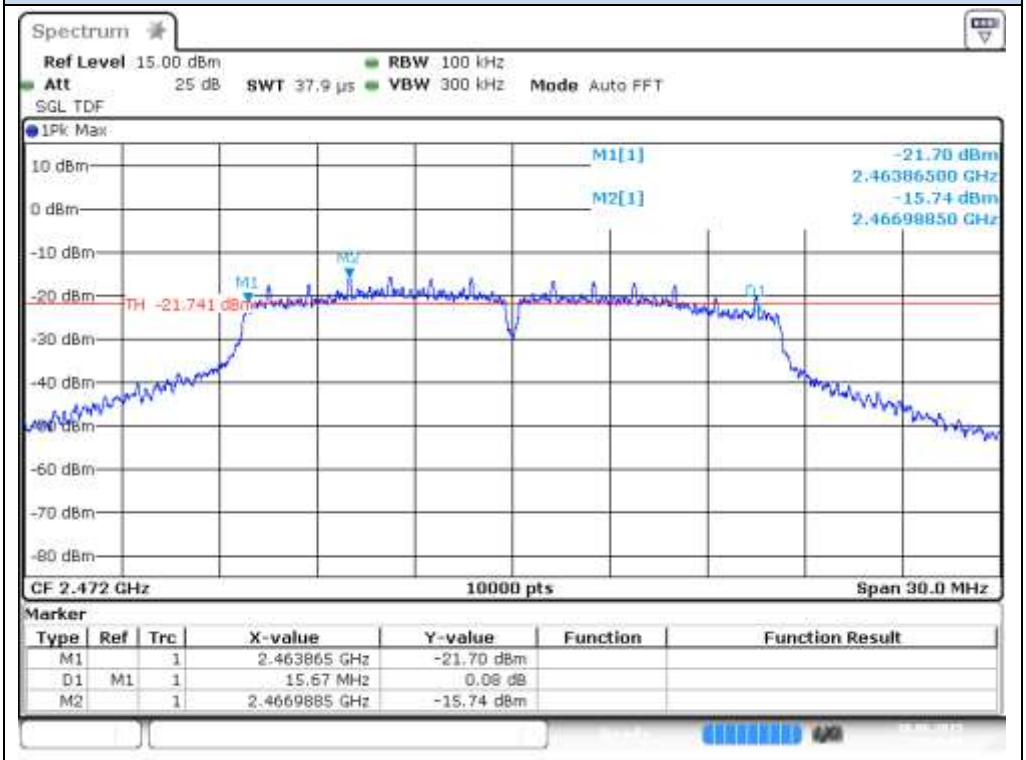


99% BW – CH12

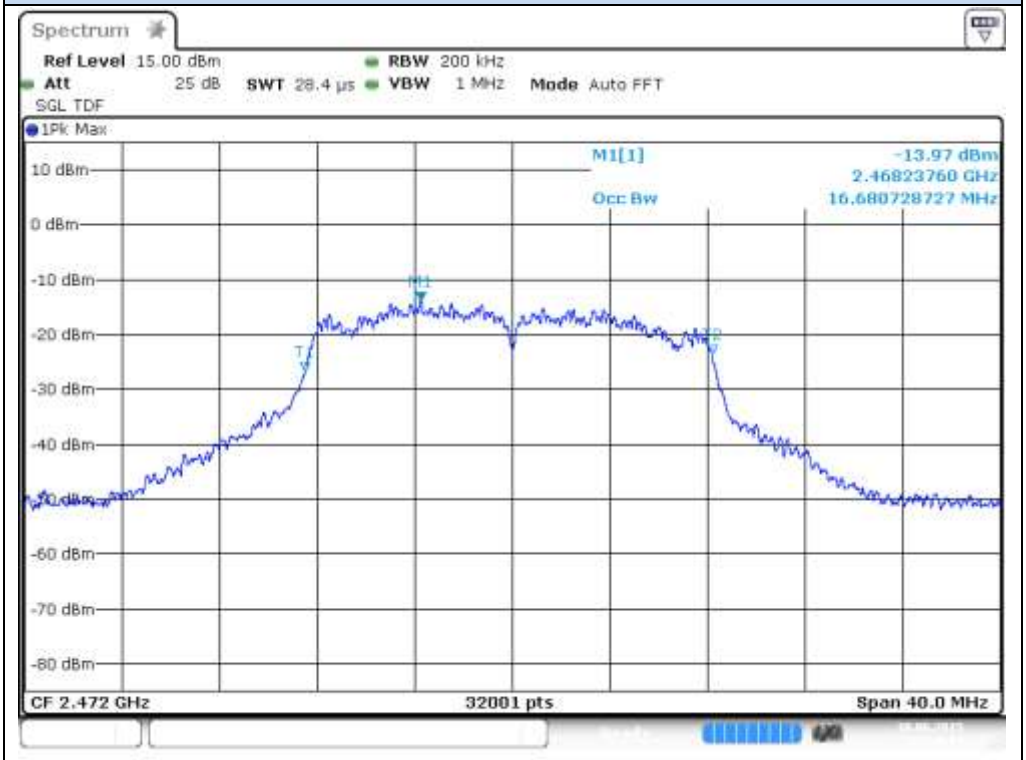


Printed copies are not controlled documents

6dB BW – CH13



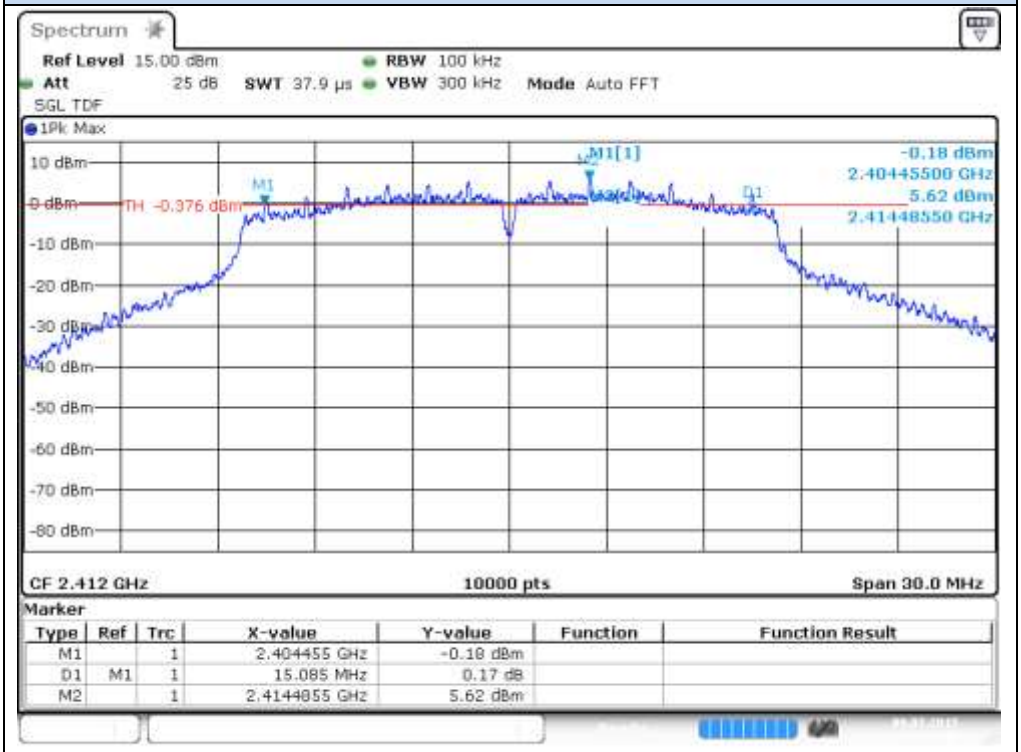
99% BW – CH13



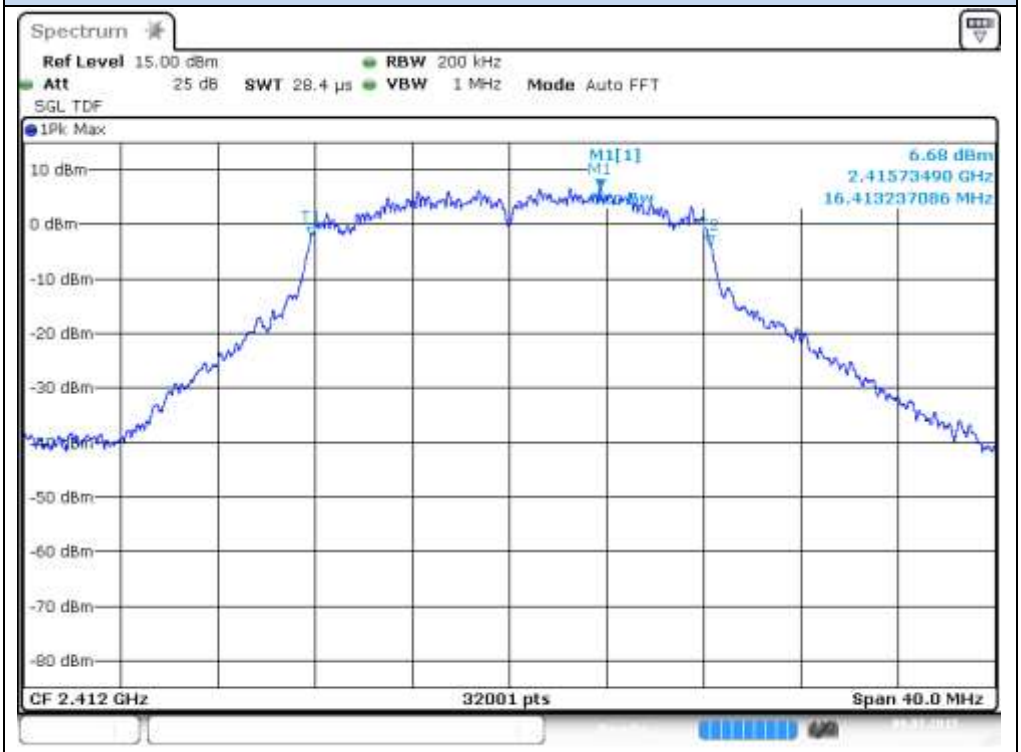
Printed copies are not controlled documents

802.11g, 6Mbps (SISO) – Chain B

6dB BW – CH1

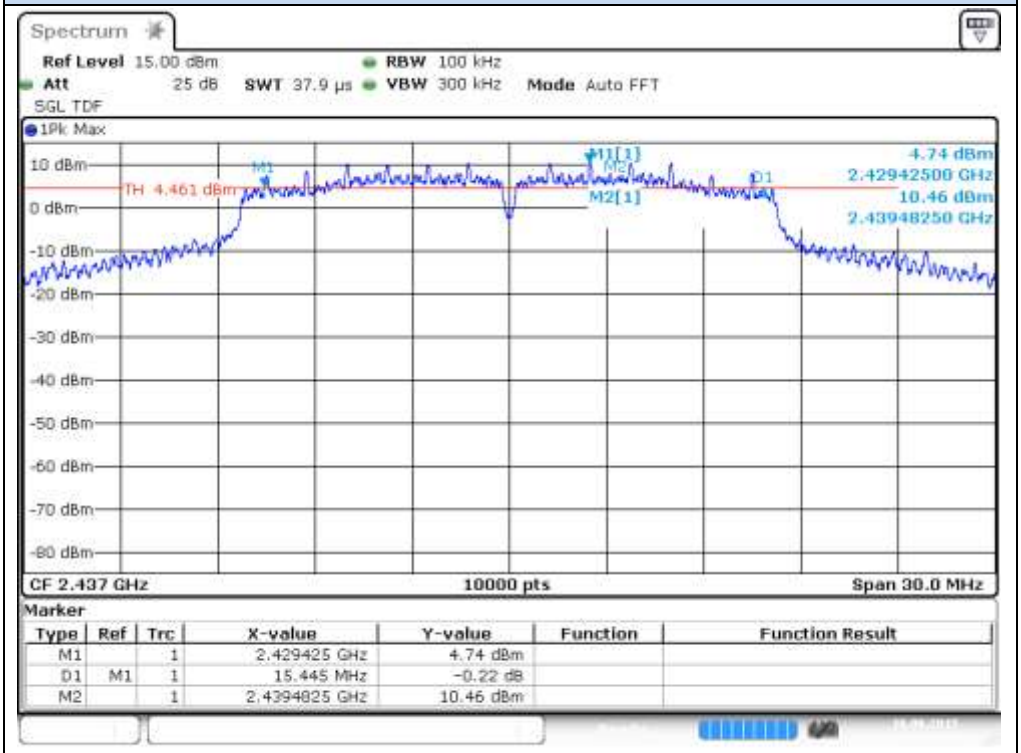


99% BW – CH1



Printed copies are not controlled documents

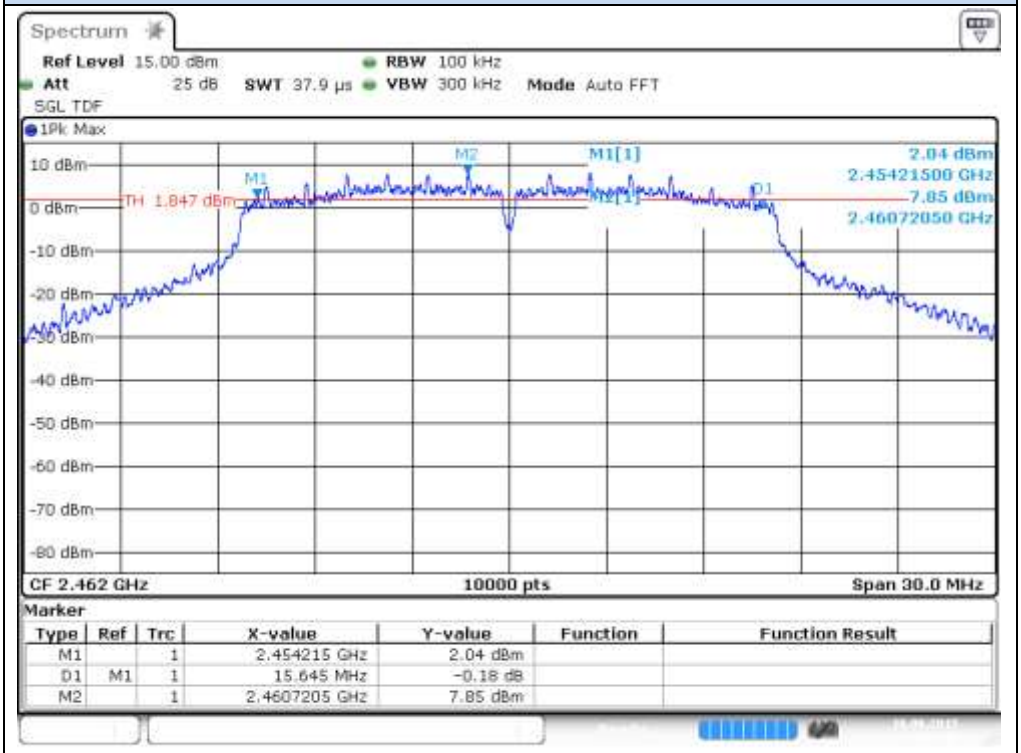
6dB BW – CH6



99% BW – CH6

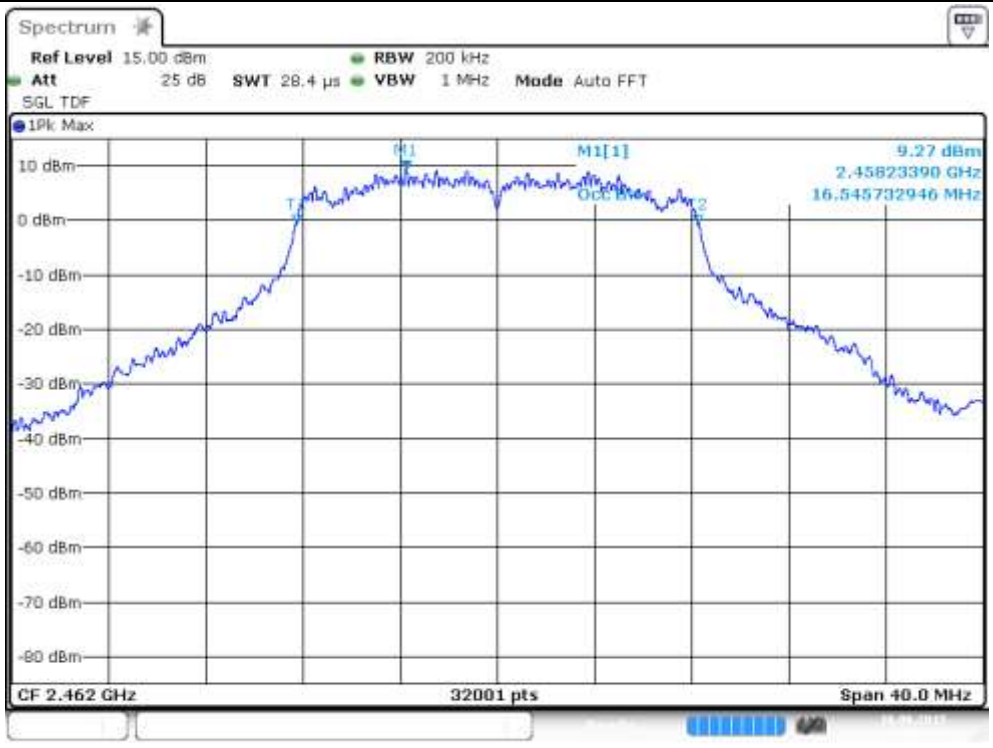
Printed copies are not controlled documents

6dB BW – CH11



Date: 16.JUN.2015 17:06:40

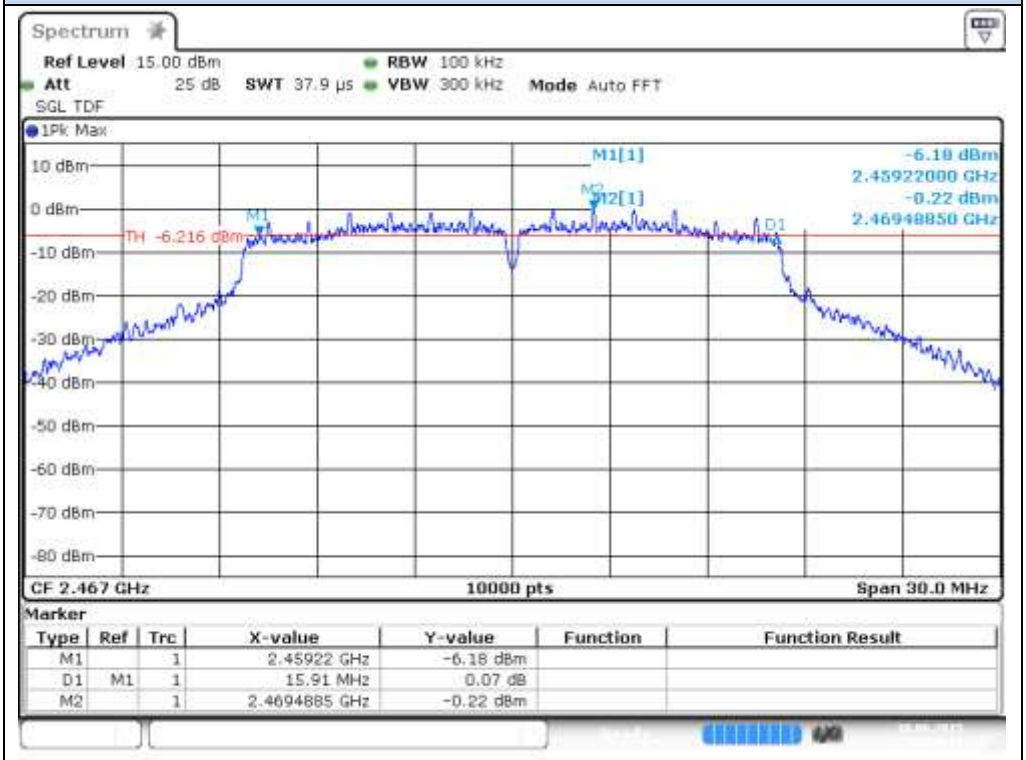
99% BW – CH11



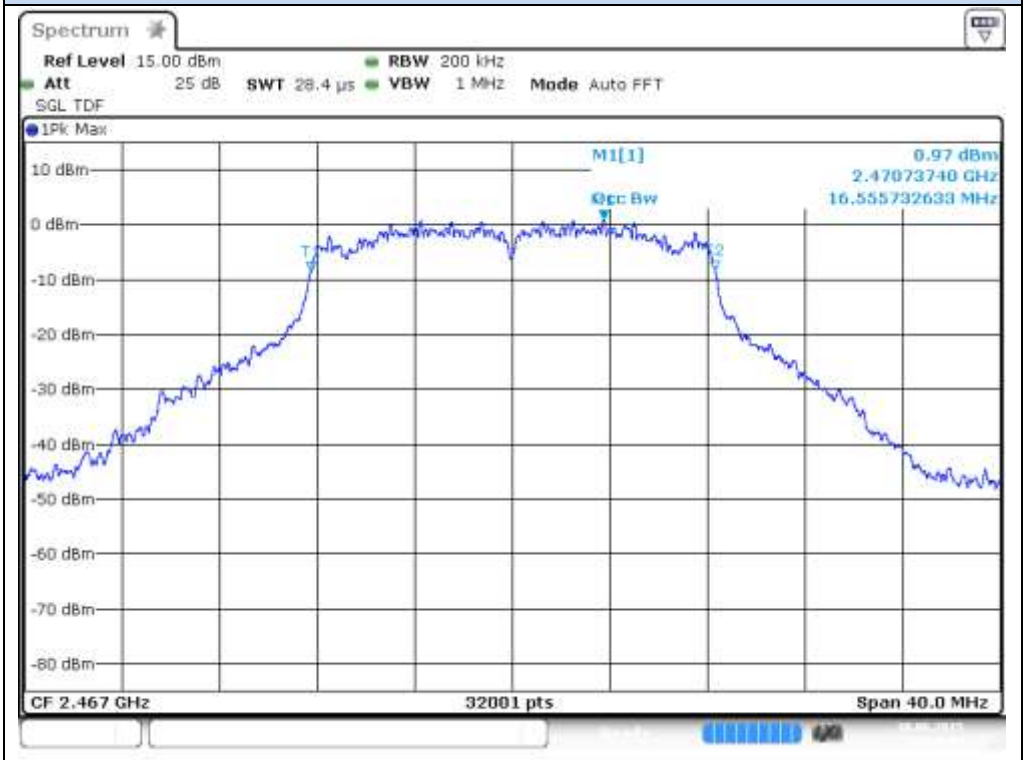
Date: 16.JUN.2015 17:06:56

Printed copies are not controlled documents

6dB BW – CH12

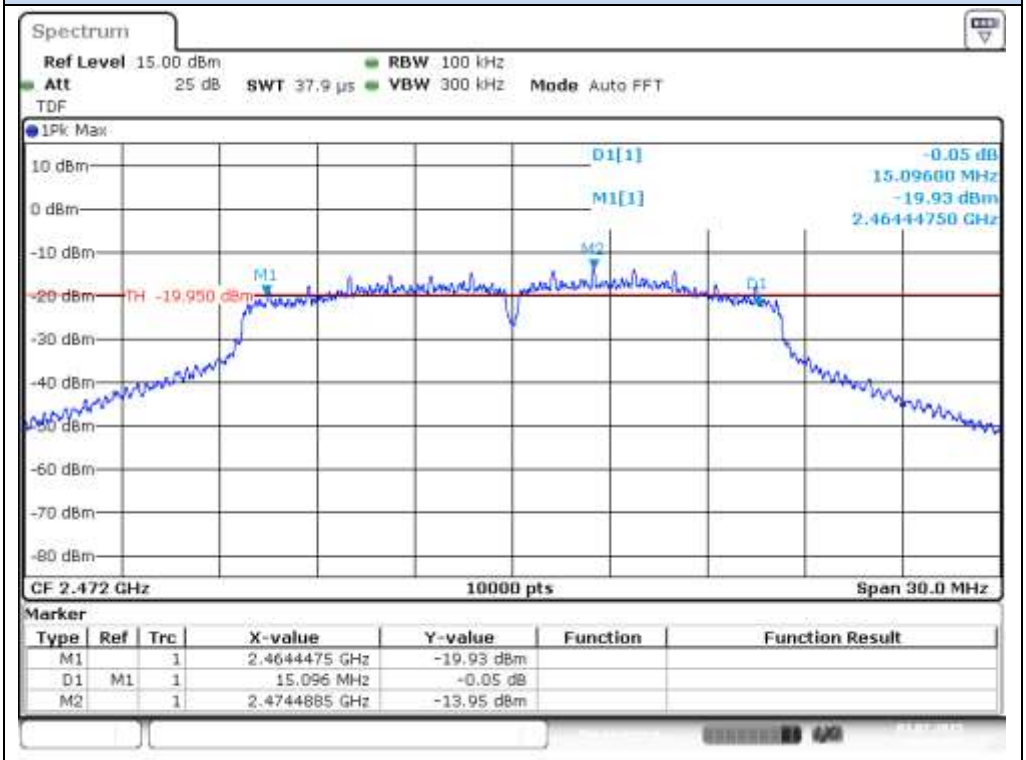


99% BW – CH12

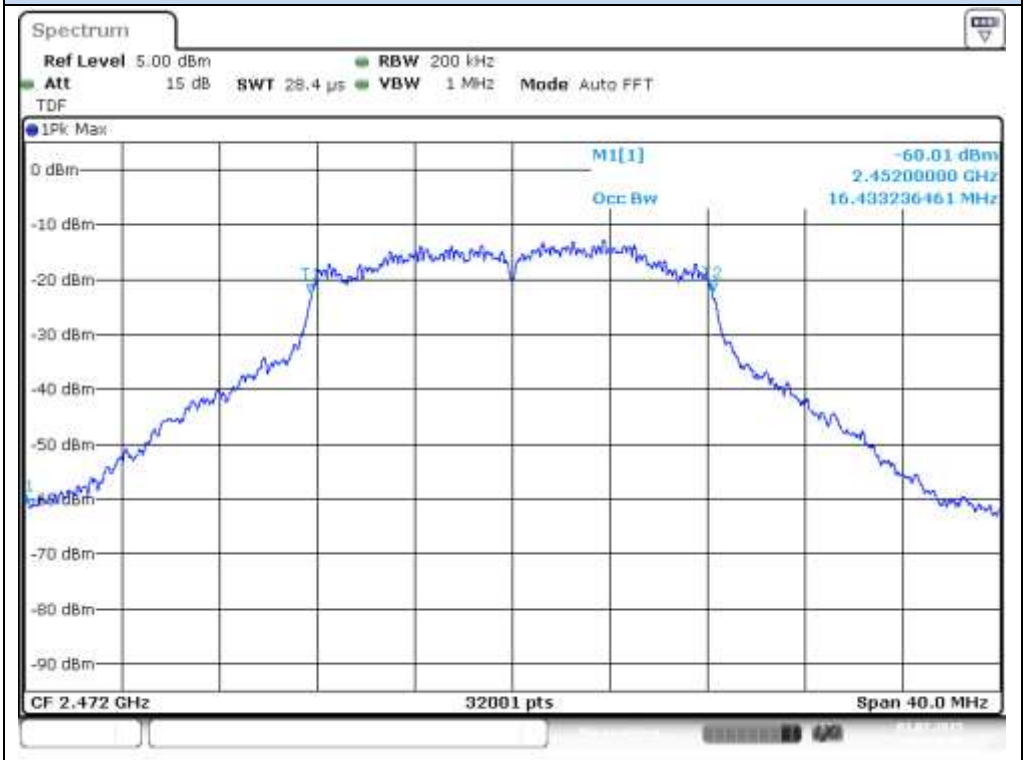


Printed copies are not controlled documents

6dB BW – CH13



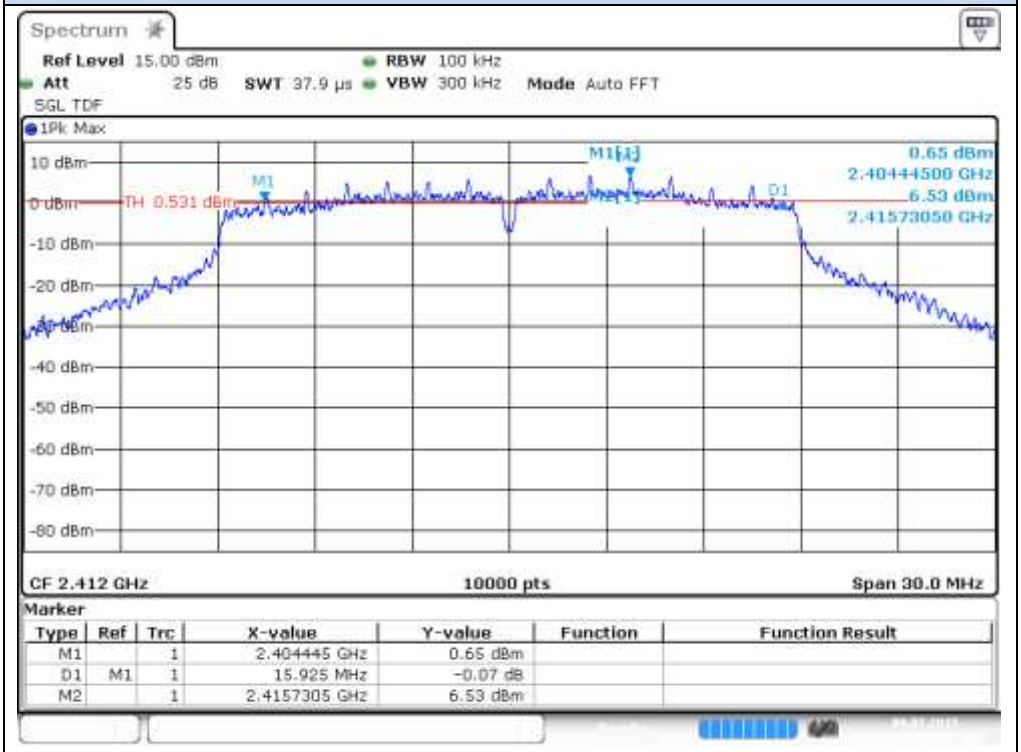
99% BW – CH13



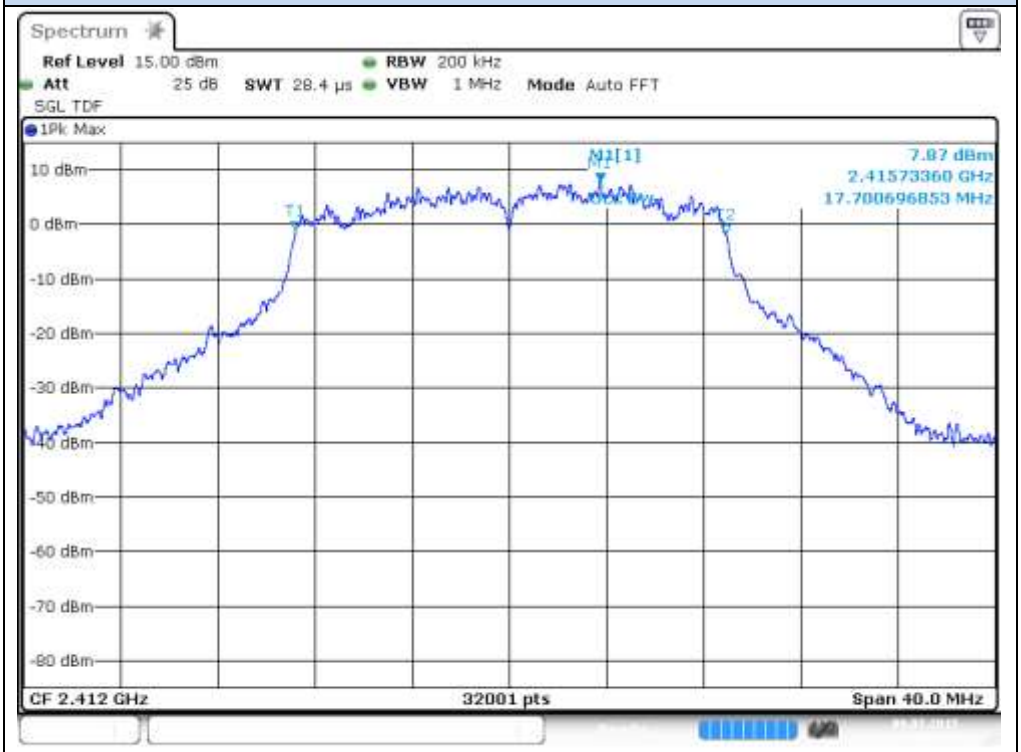
Printed copies are not controlled documents

802.11n20, HT0 (SISO) – Chain A

6dB BW – CH1

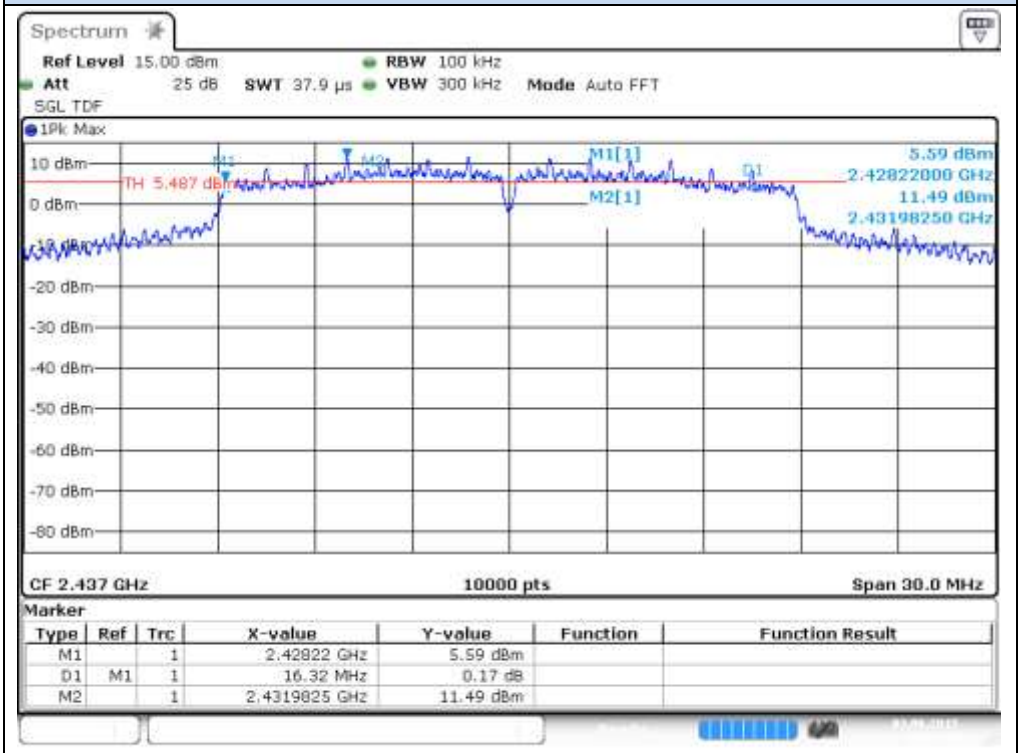


99% BW – CH1



Printed copies are not controlled documents

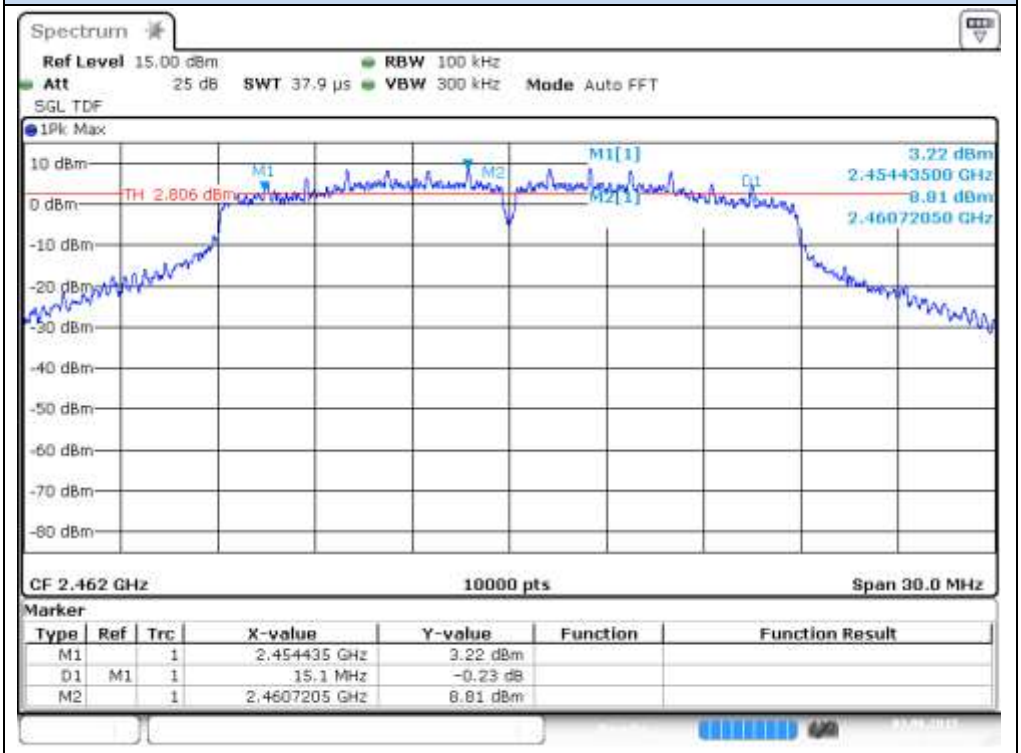
6dB BW – CH6



99% BW – CH6

Printed copies are not controlled documents

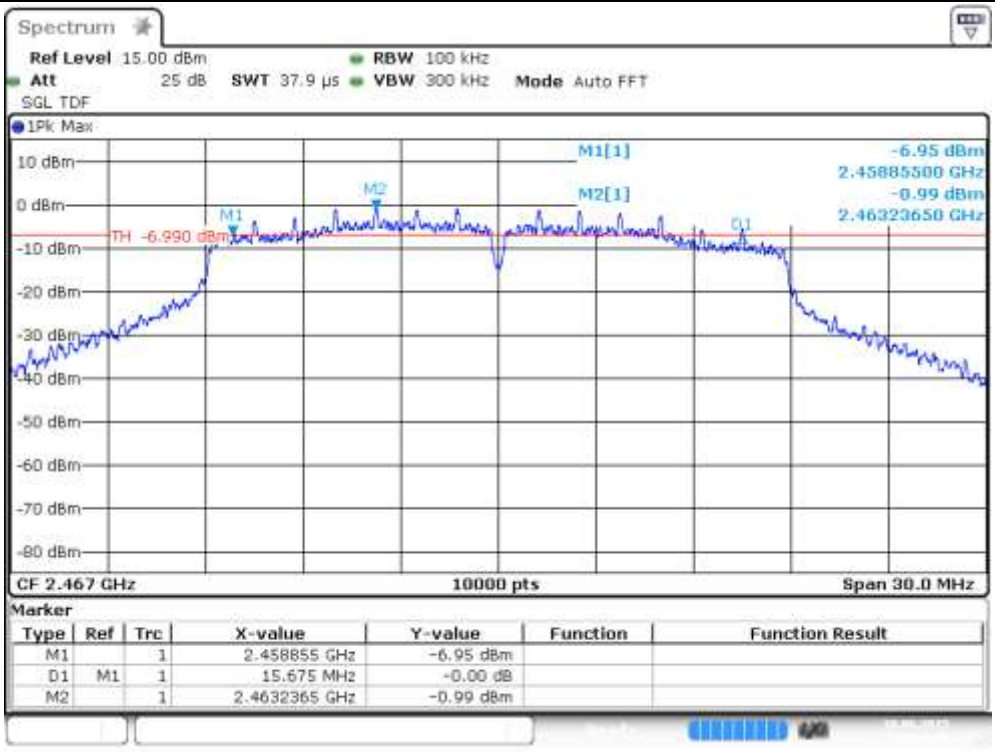
6dB BW – CH11



99% BW – CH11

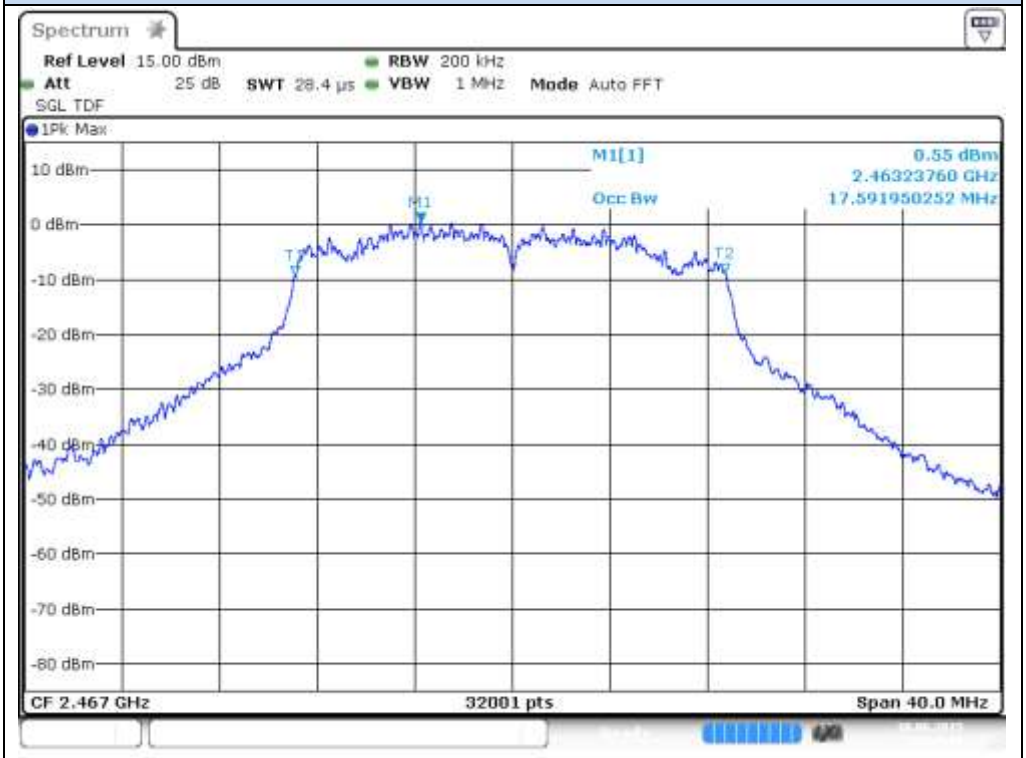
Printed copies are not controlled documents

6dB BW – CH12



Date: 30.JUN.2015 13:42:51

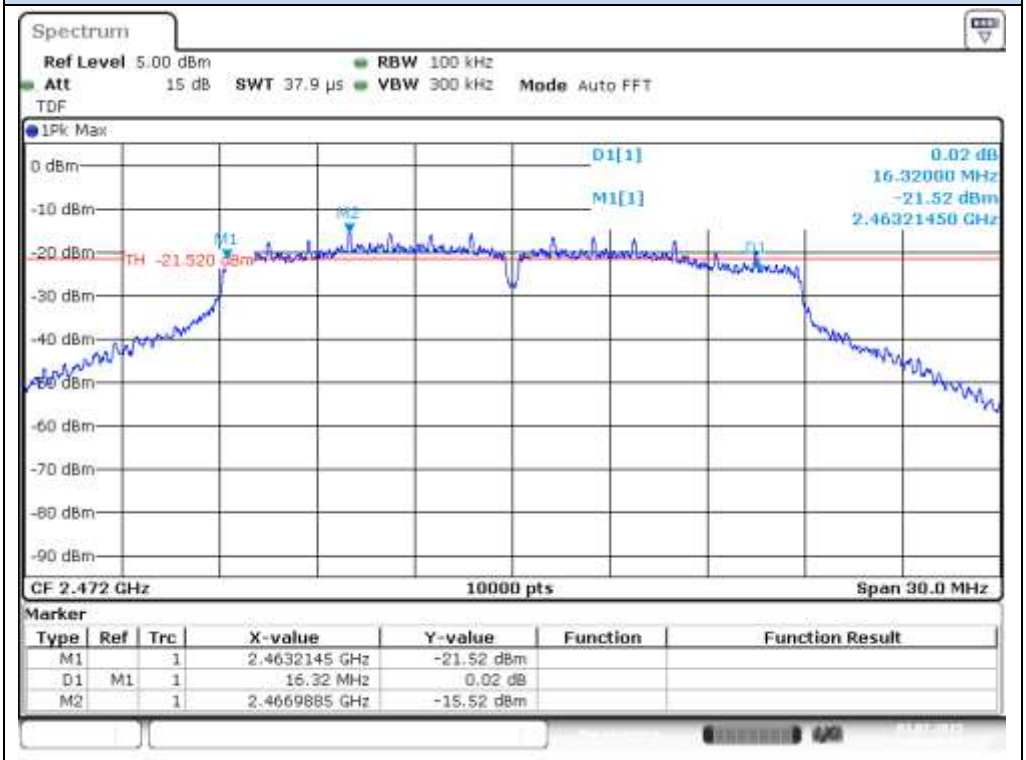
99% BW – CH12



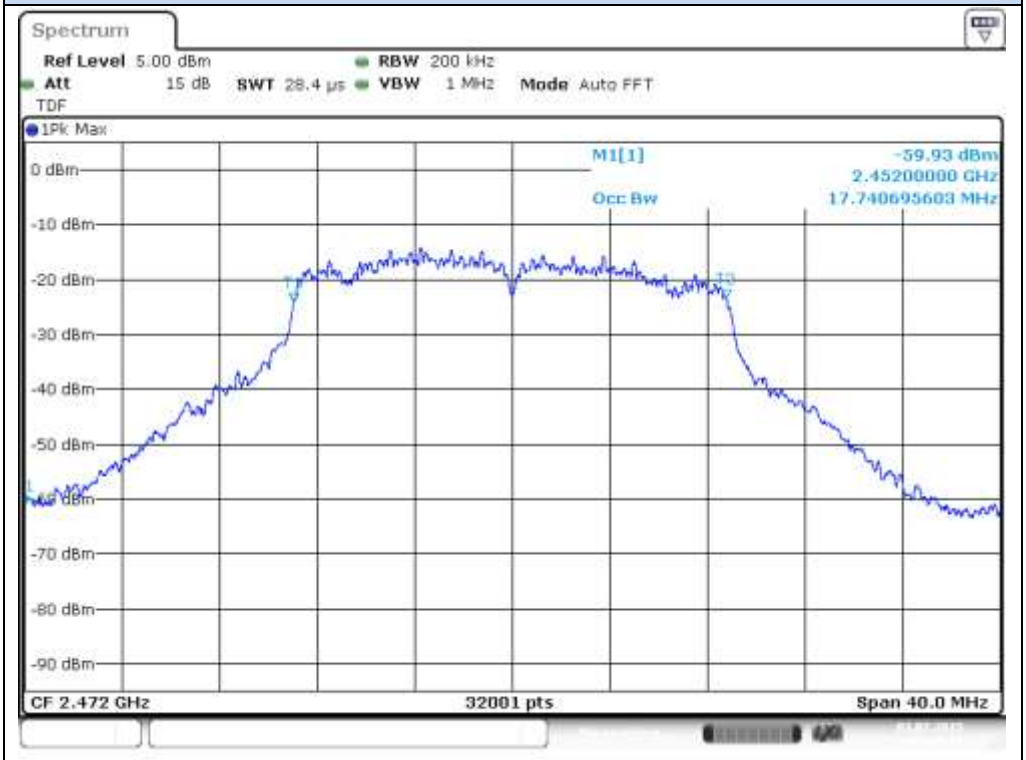
Date: 30.JUN.2015 13:43:06

Printed copies are not controlled documents

6dB BW – CH13



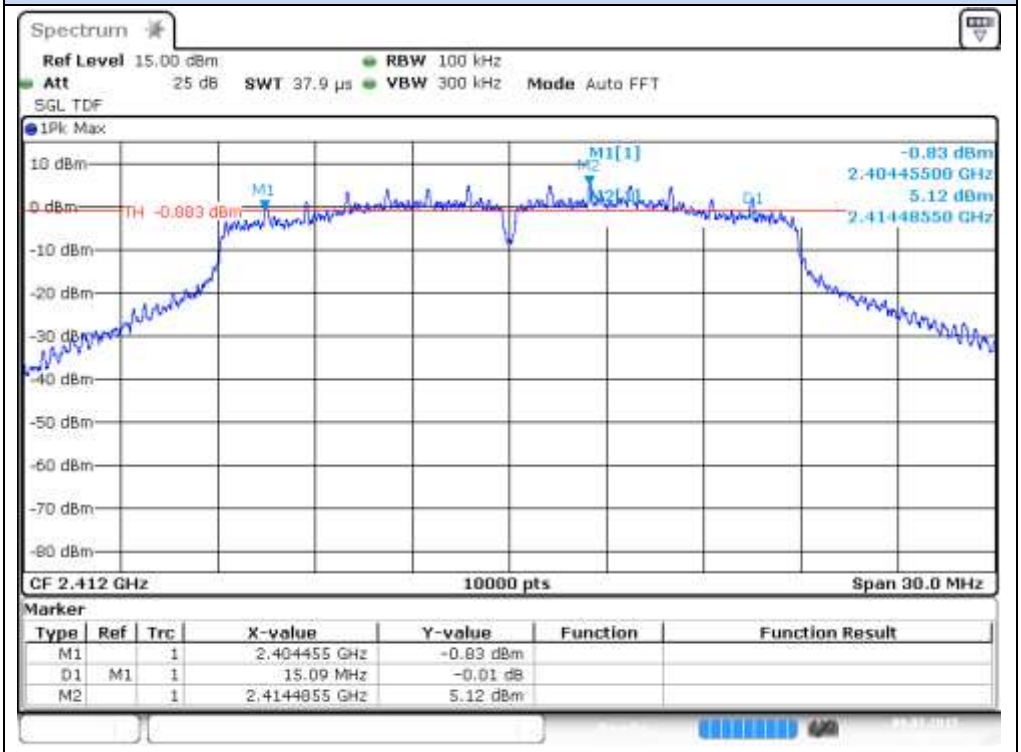
99% BW – CH13



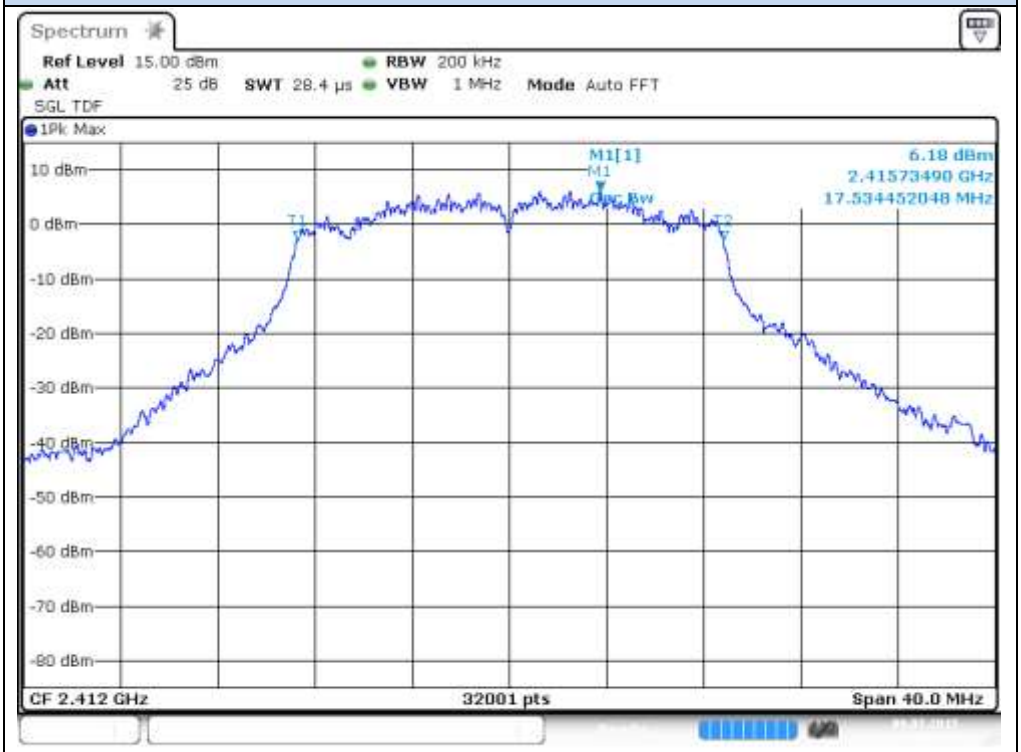
Printed copies are not controlled documents

802.11n20, HT0 (SISO) – Chain B

6dB BW – CH1

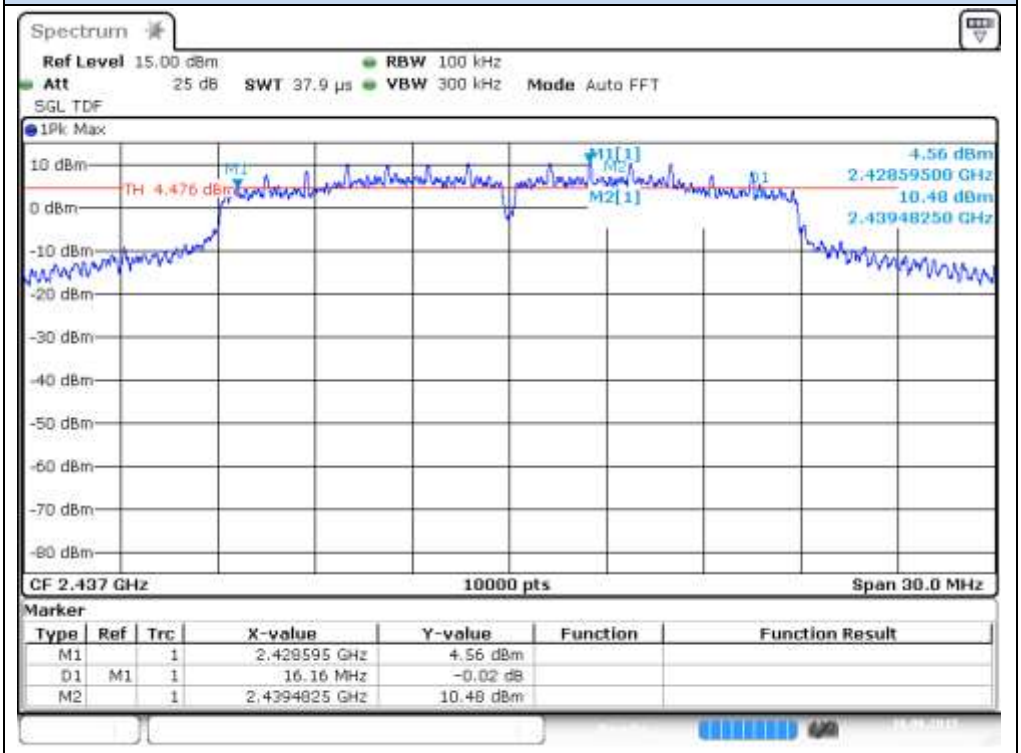


99% BW – CH1



Printed copies are not controlled documents

6dB BW – CH6



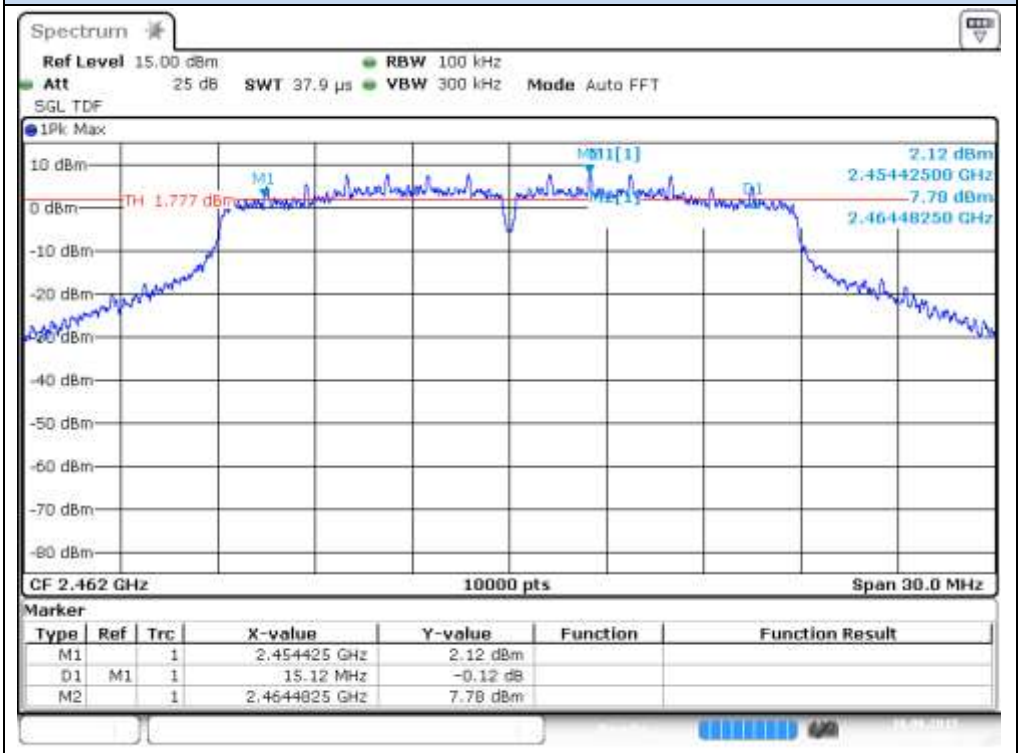
Date: 16.JUN.2015 14:19:53

99% BW – CH6

Date: 16.JUN.2015 11:40:14

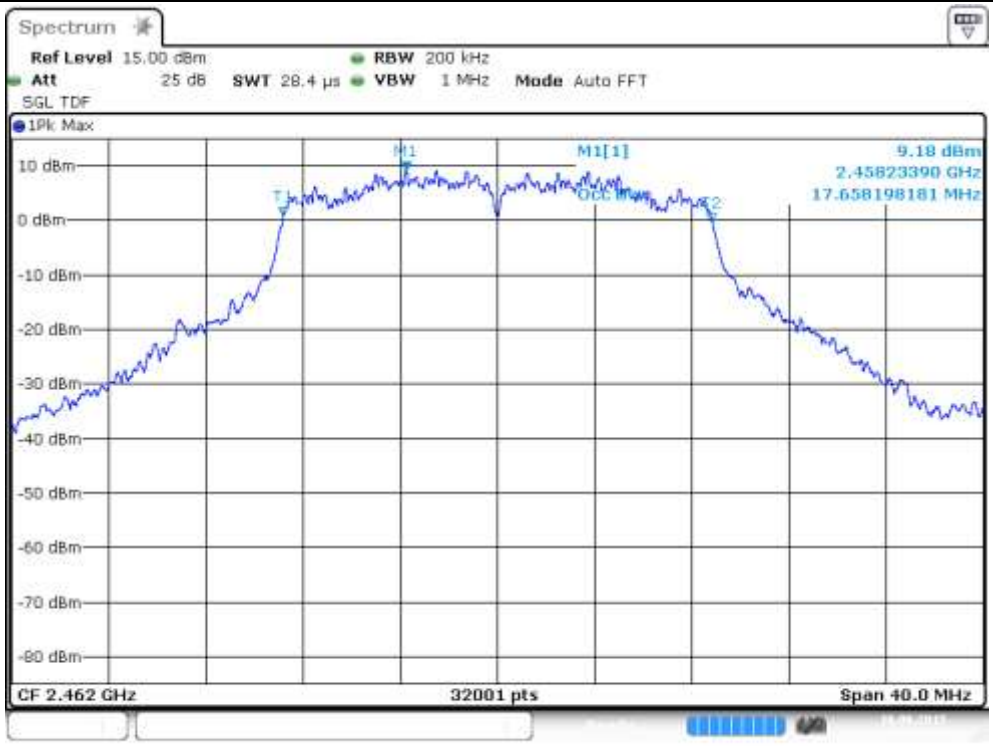
Printed copies are not controlled documents

6dB BW – CH11



Date: 16.JUN.2015 17:10:08

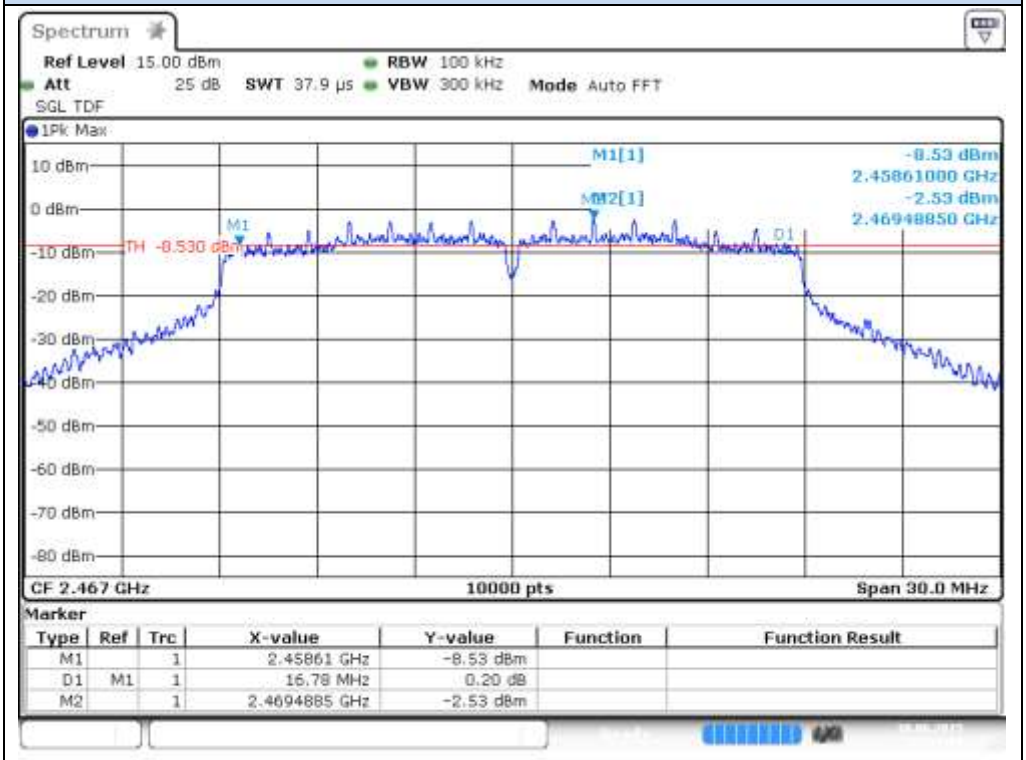
99% BW – CH11



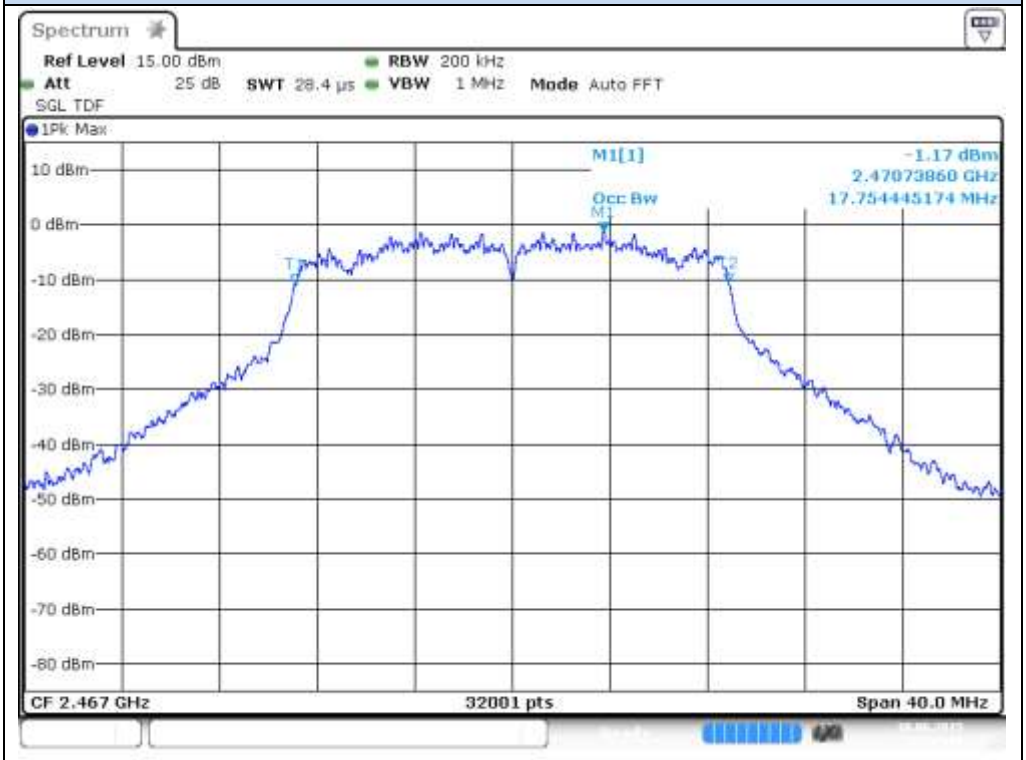
Date: 16.JUN.2015 17:10:22

Printed copies are not controlled documents

6dB BW – CH12

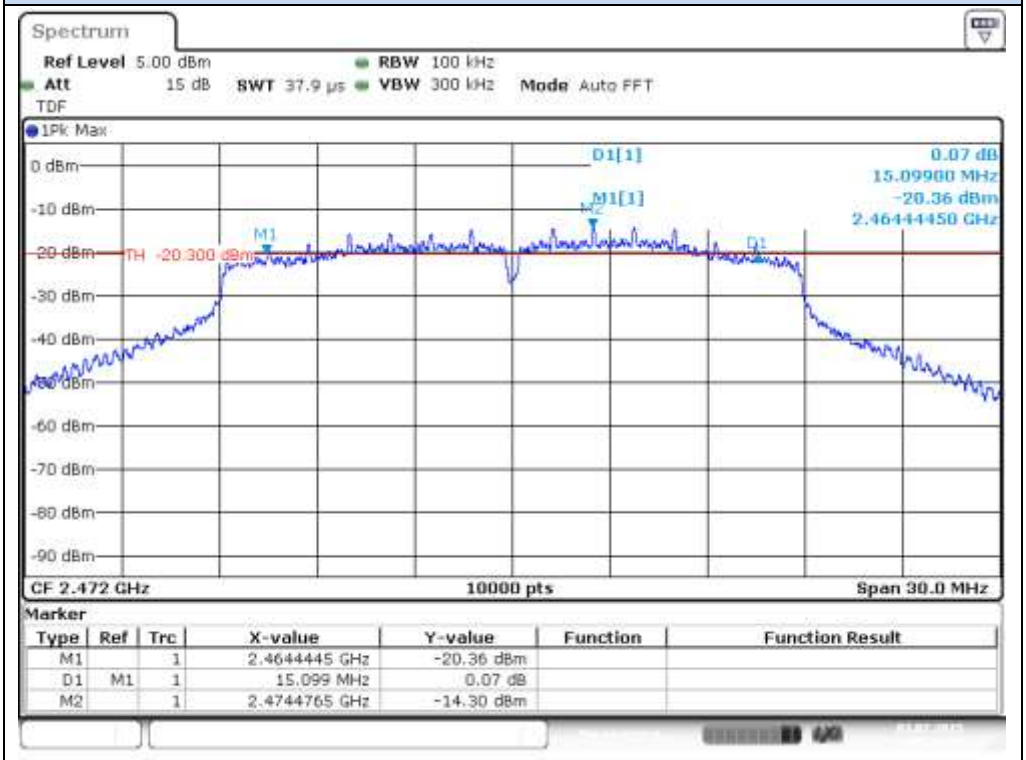


99% BW – CH12



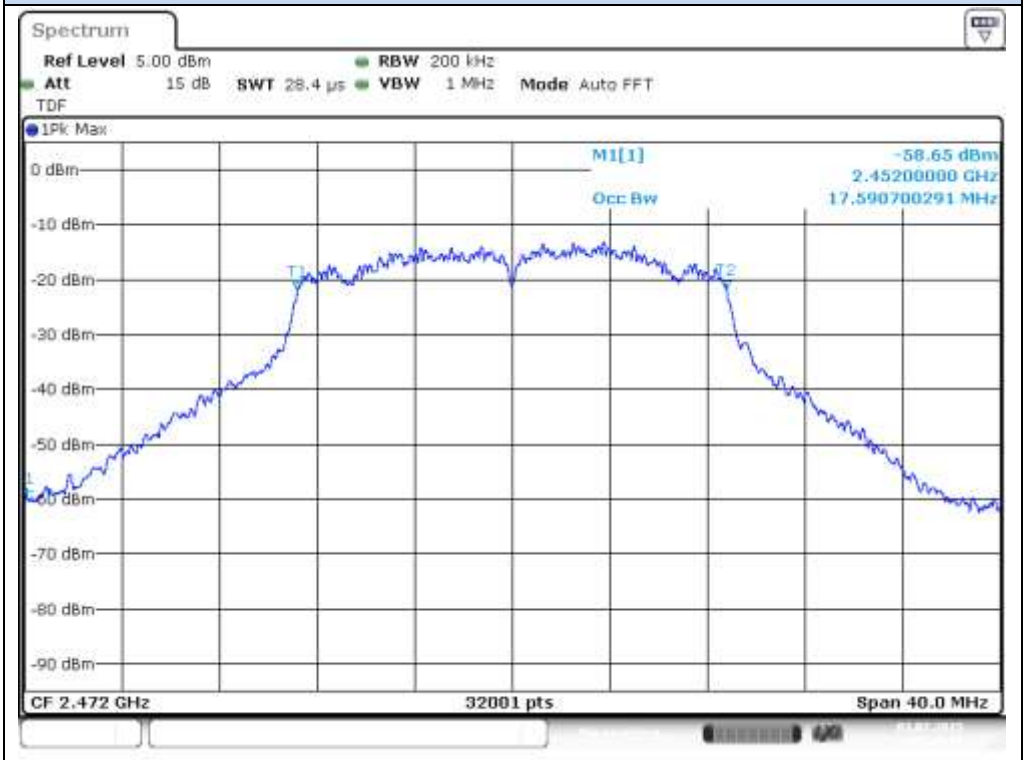
Printed copies are not controlled documents

6dB BW – CH13



Date: 3.JUL.2015 15:23:53

99% BW – CH13

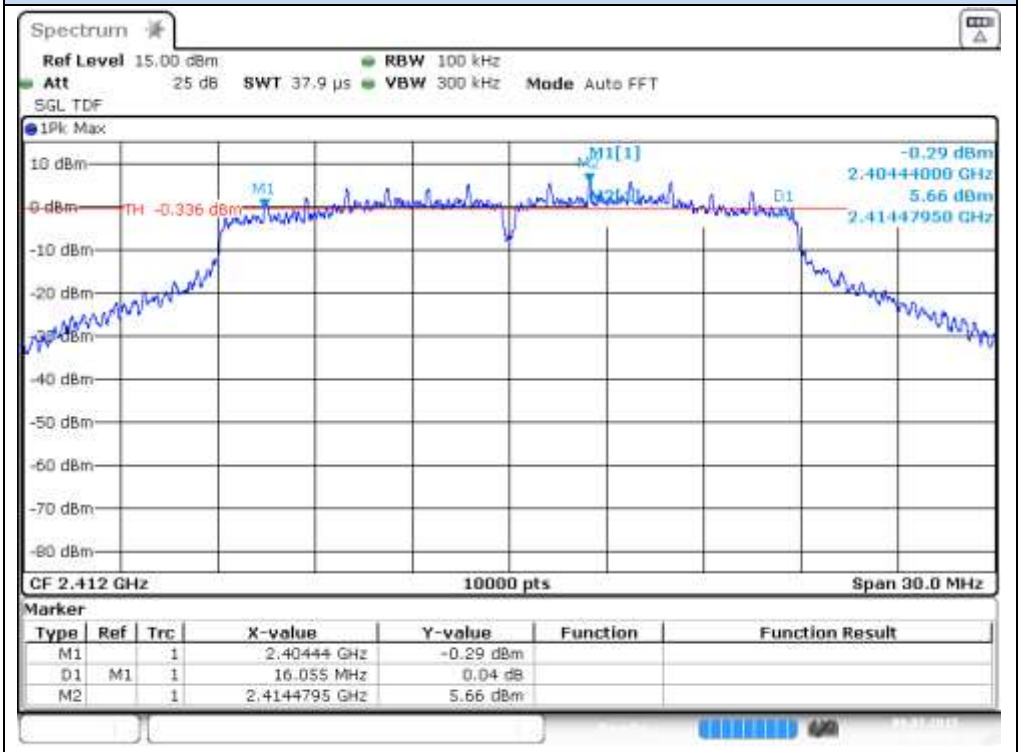


Date: 3.JUL.2015 15:25:37

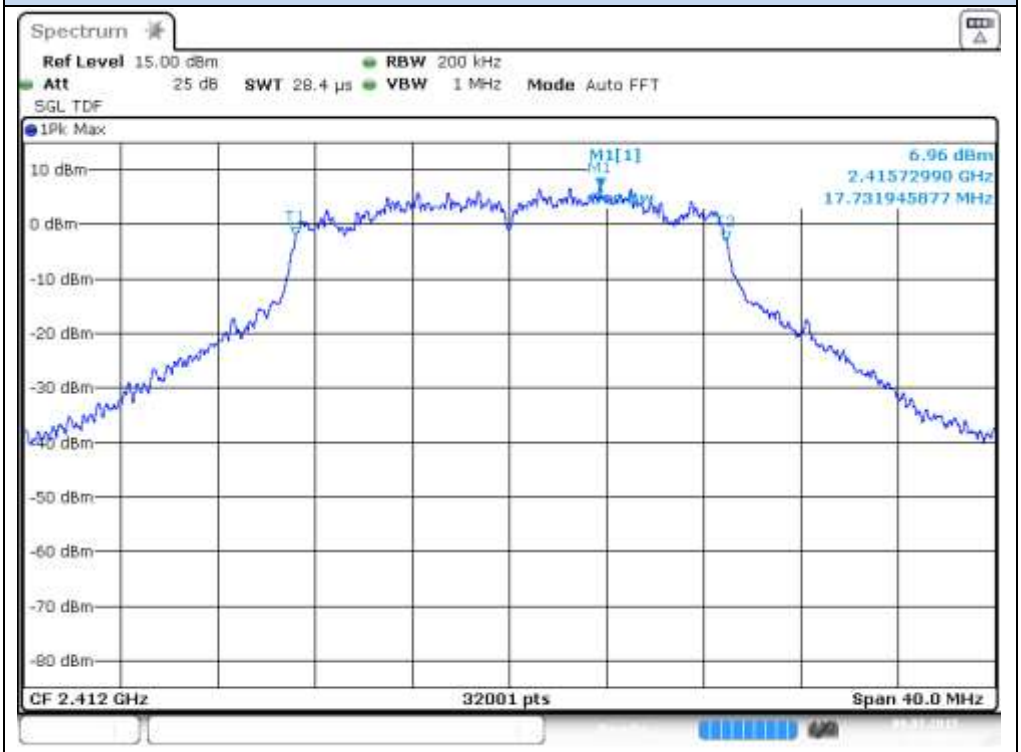
Printed copies are not controlled documents

802.11n20, HT8 (MIMO) – Chain A

6dB BW – CH1

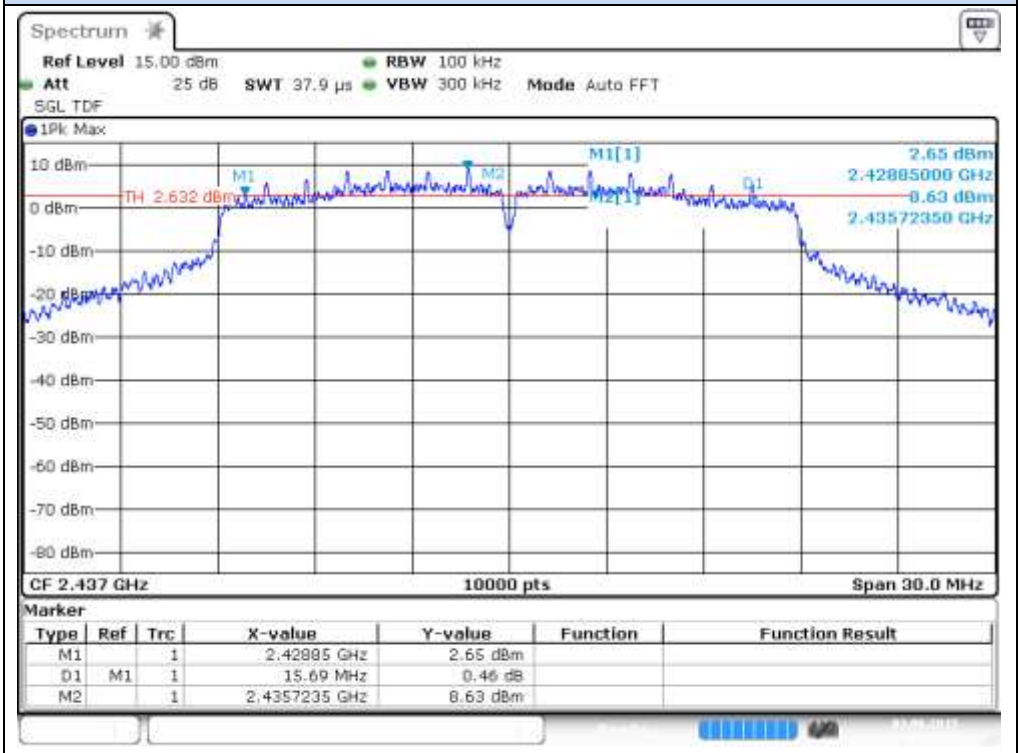


99% BW – CH1



Printed copies are not controlled documents

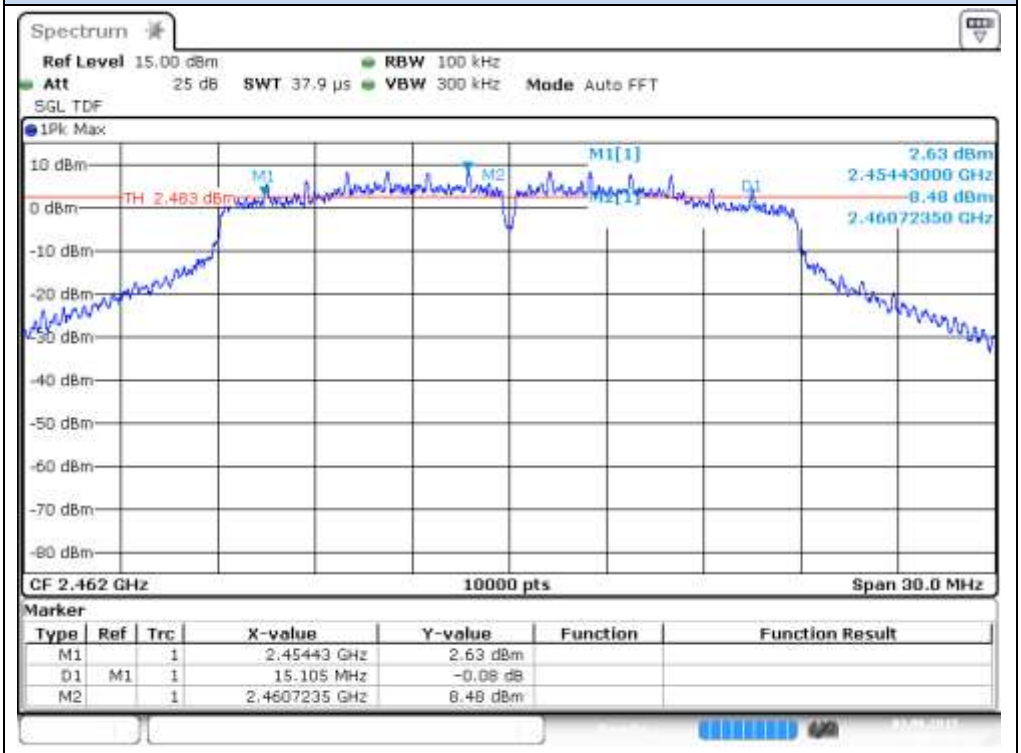
6dB BW – CH6



99% BW – CH6

Printed copies are not controlled documents

6dB BW – CH11



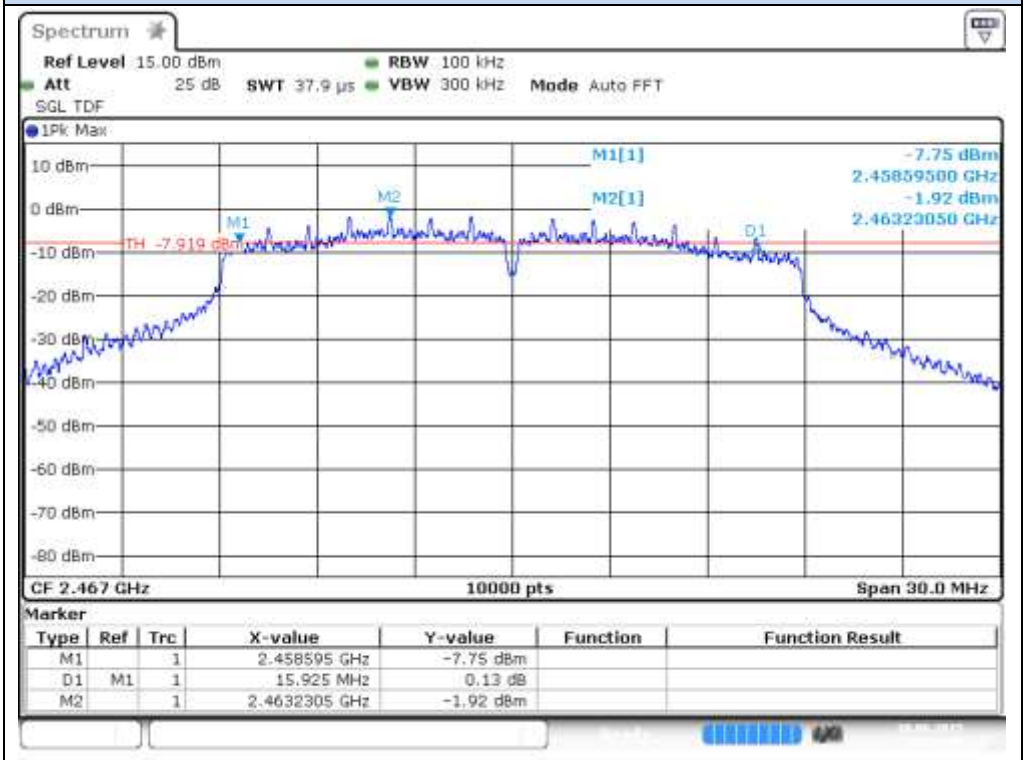
Date: 3.JUN.2015 17:05:17

99% BW – CH11

Date: 3.JUN.2015 17:05:33

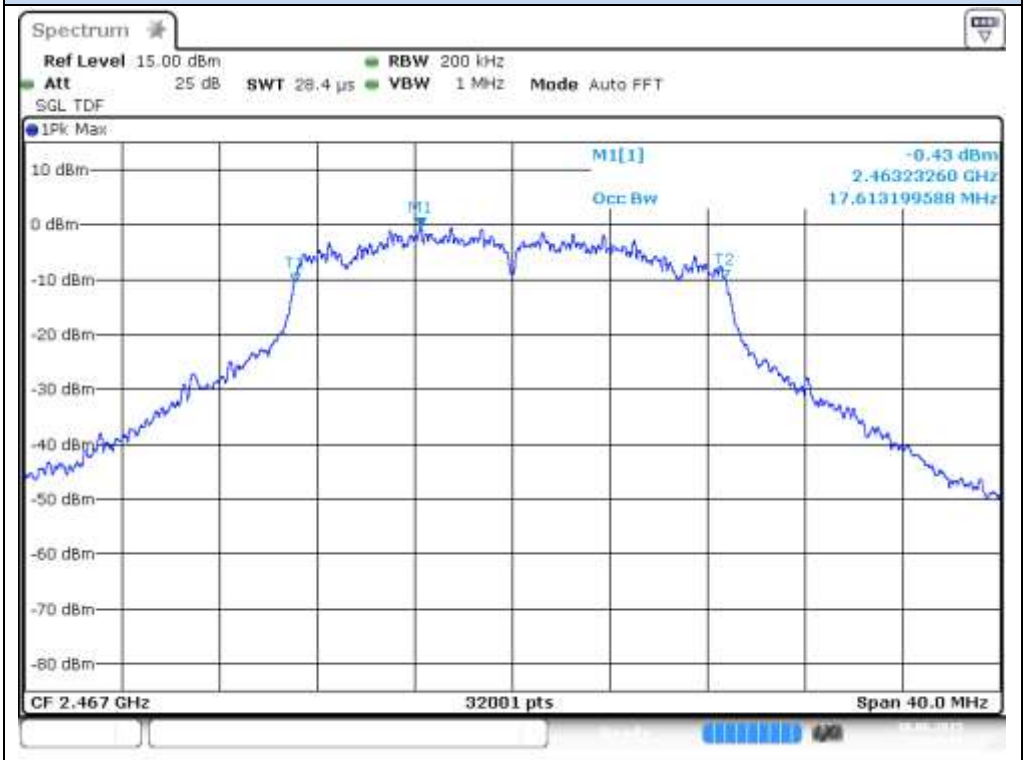
Printed copies are not controlled documents

6dB BW – CH12



Date: 30.JUN.2015 16:04:57

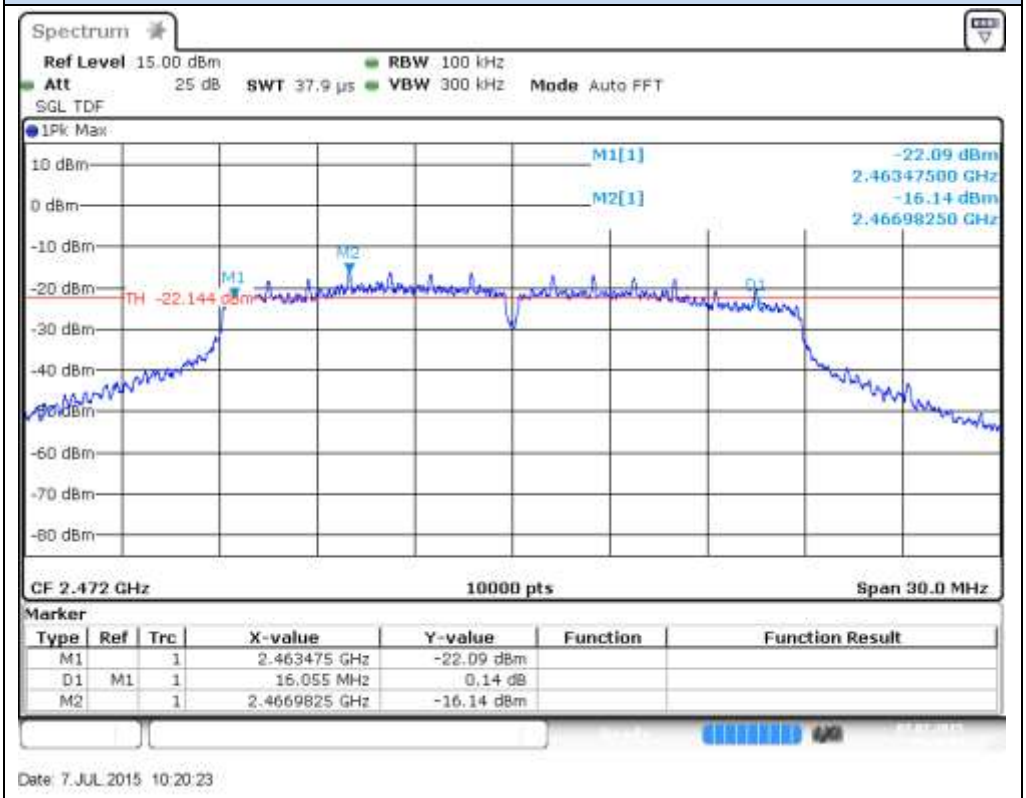
99% BW – CH12



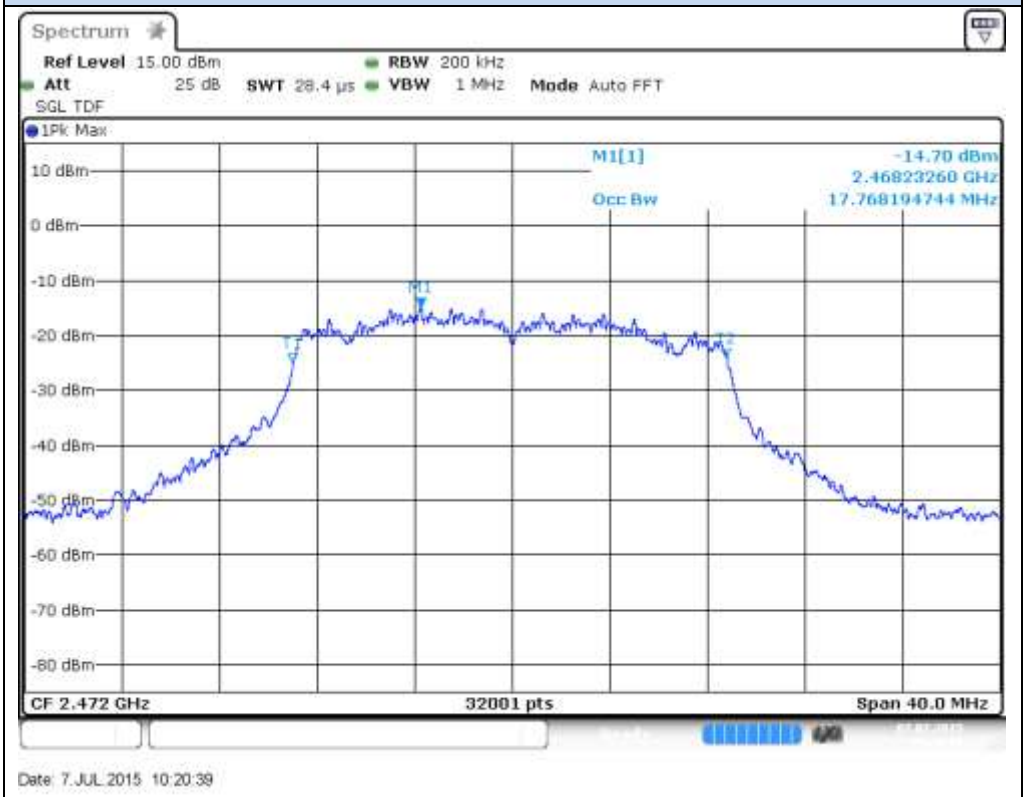
Date: 30.JUN.2015 16:05:12

Printed copies are not controlled documents

6dB BW – CH13



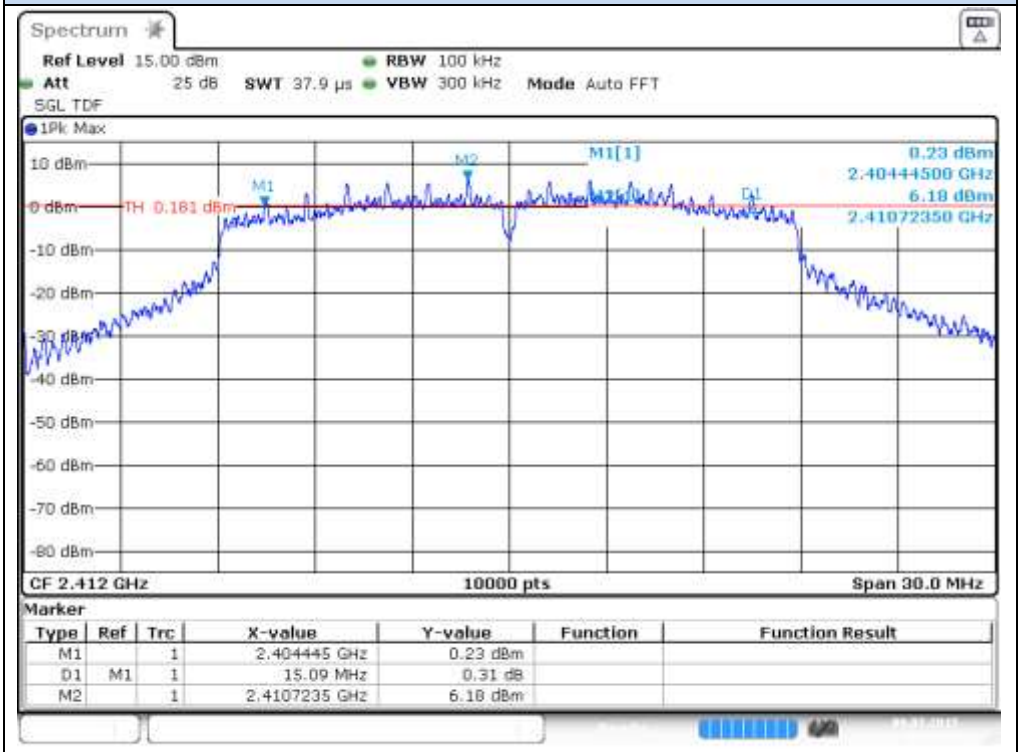
99% BW – CH13



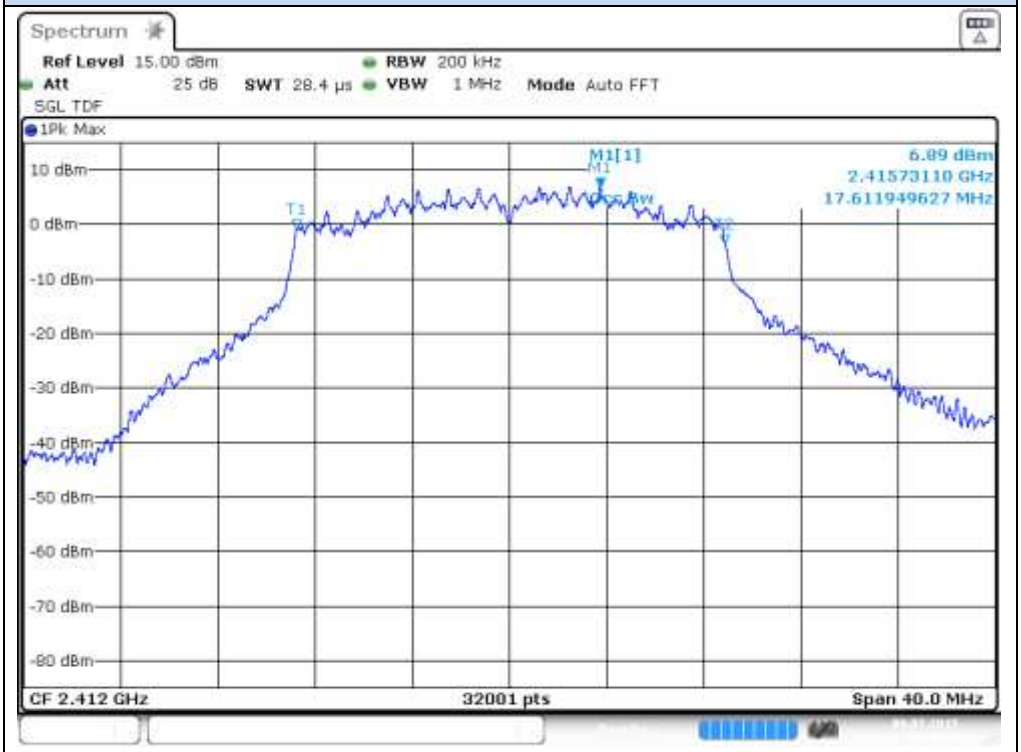
Printed copies are not controlled documents

802.11n20, HT8 (MIMO) – Chain B

6dB BW – CH1

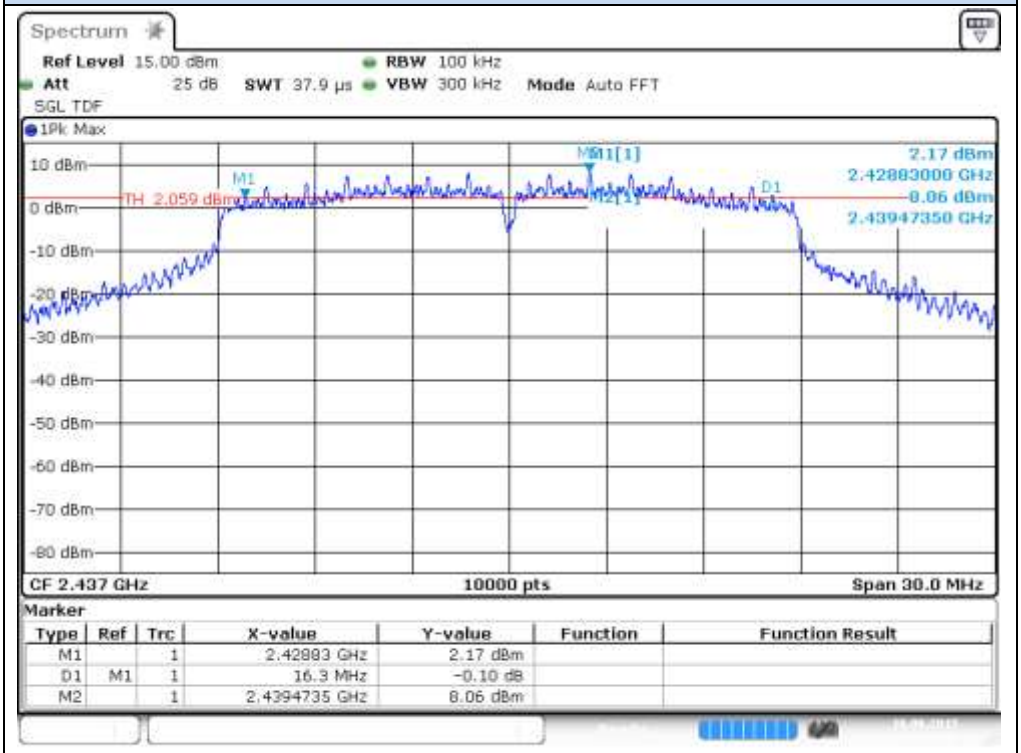


99% BW – CH1



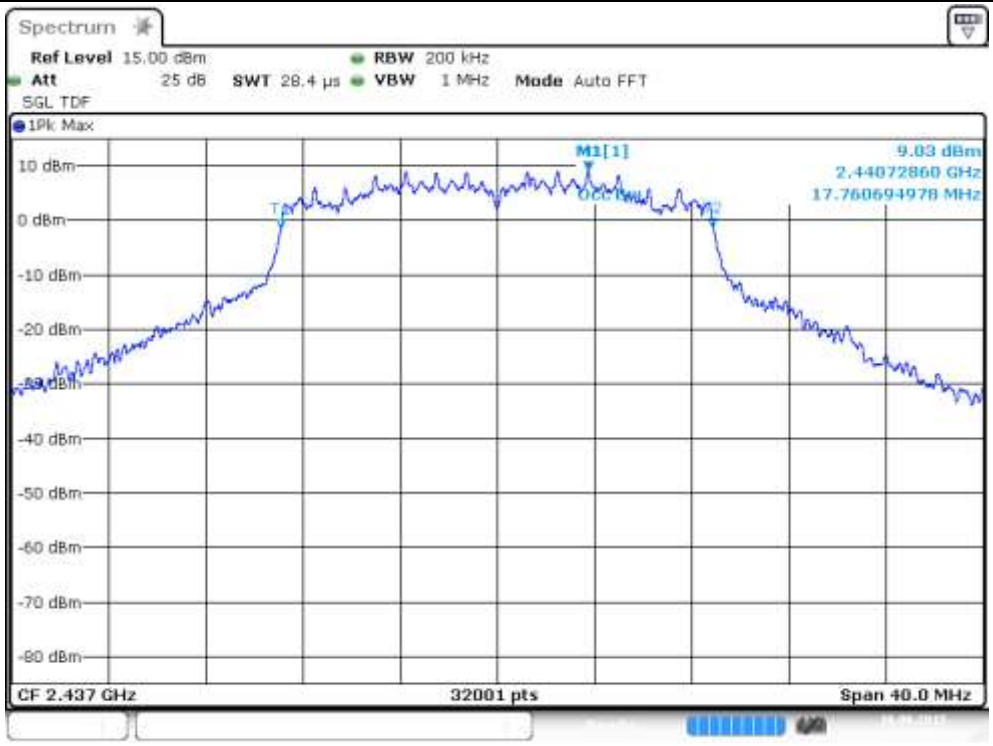
Printed copies are not controlled documents

6dB BW – CH6



Date: 16.JUN.2015 12:15:45

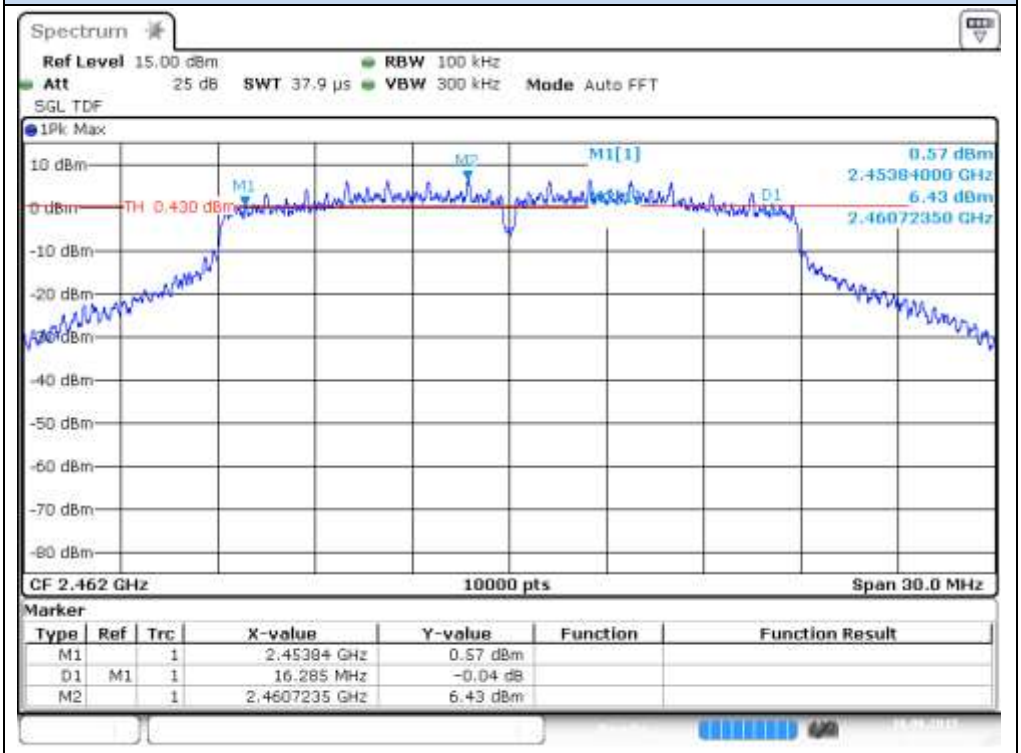
99% BW – CH6



Date: 16.JUN.2015 12:16:01

Printed copies are not controlled documents

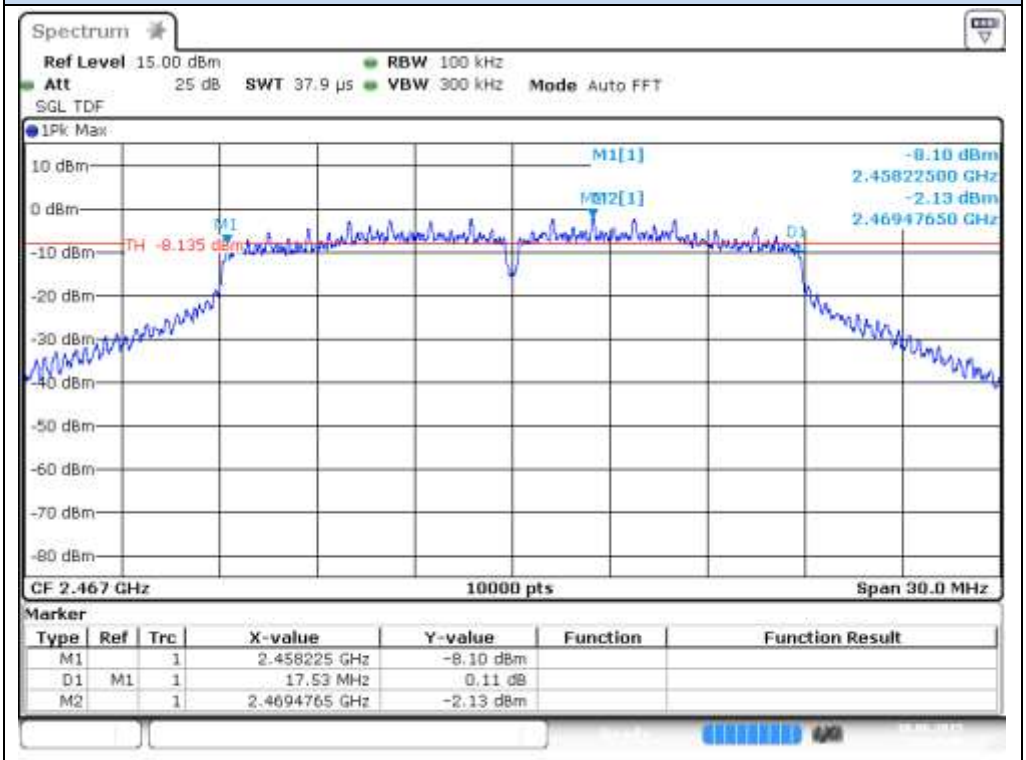
6dB BW – CH11



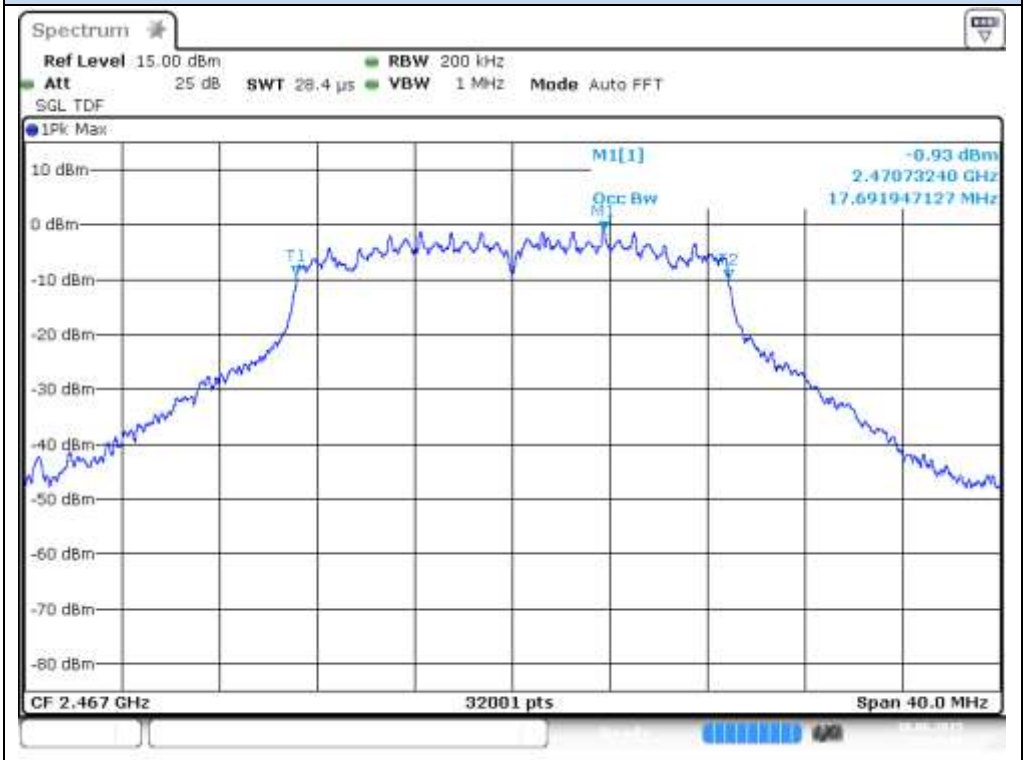
99% BW – CH11

Printed copies are not controlled documents

6dB BW – CH12

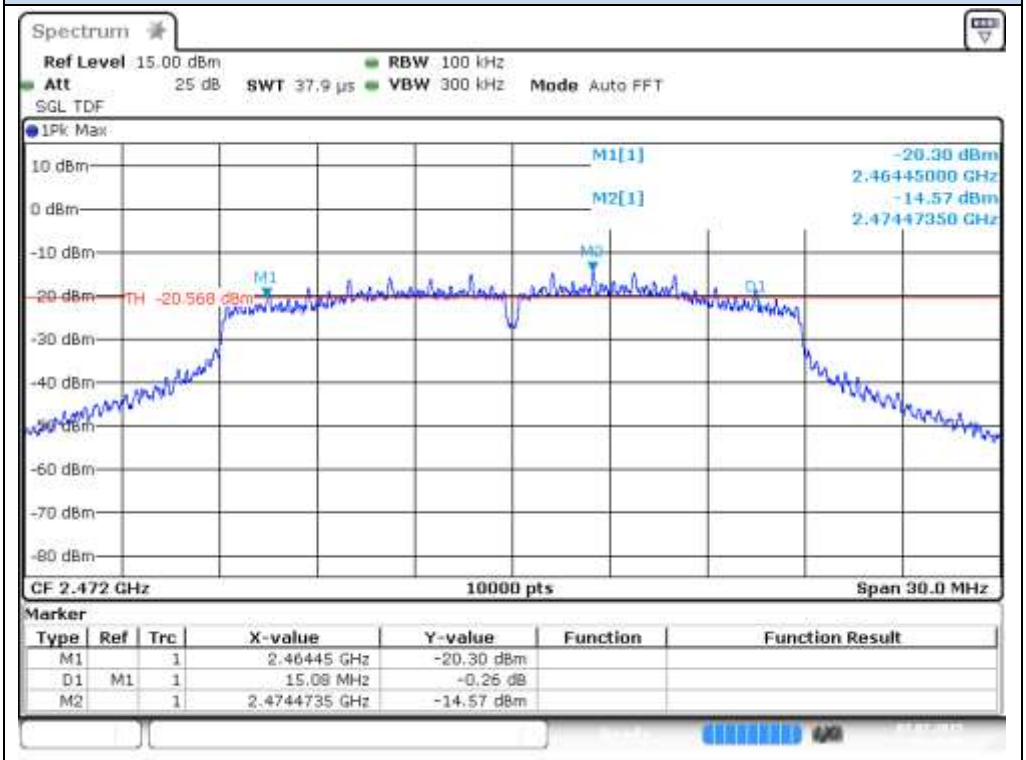


99% BW – CH12

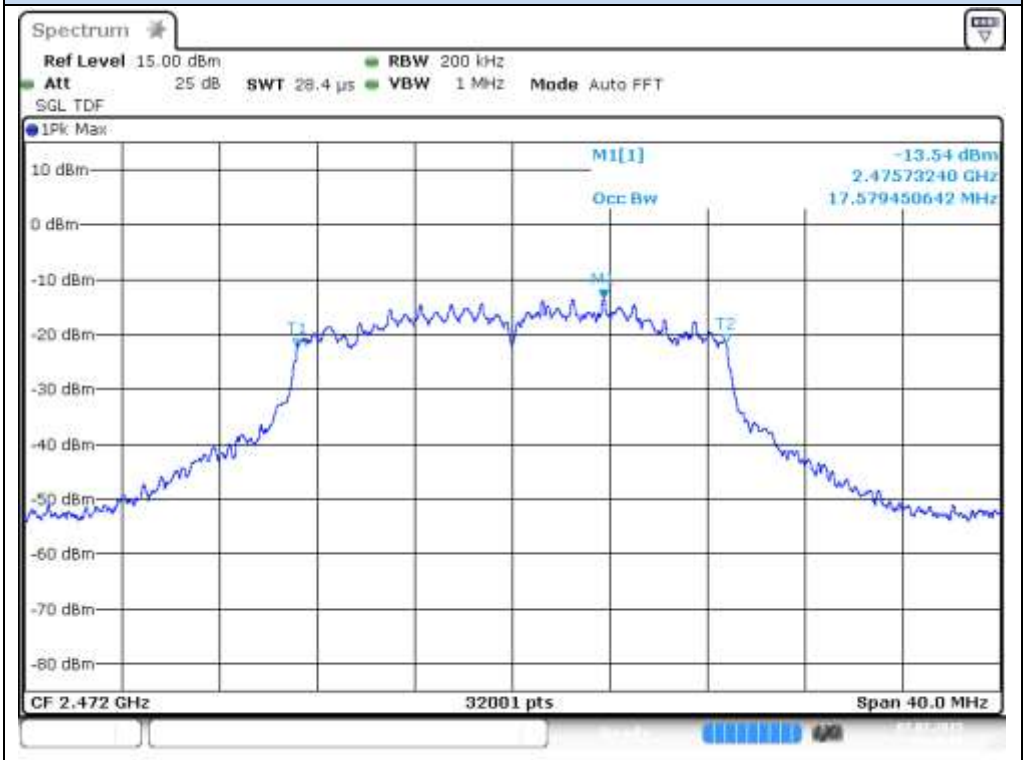


Printed copies are not controlled documents

6dB BW – CH13



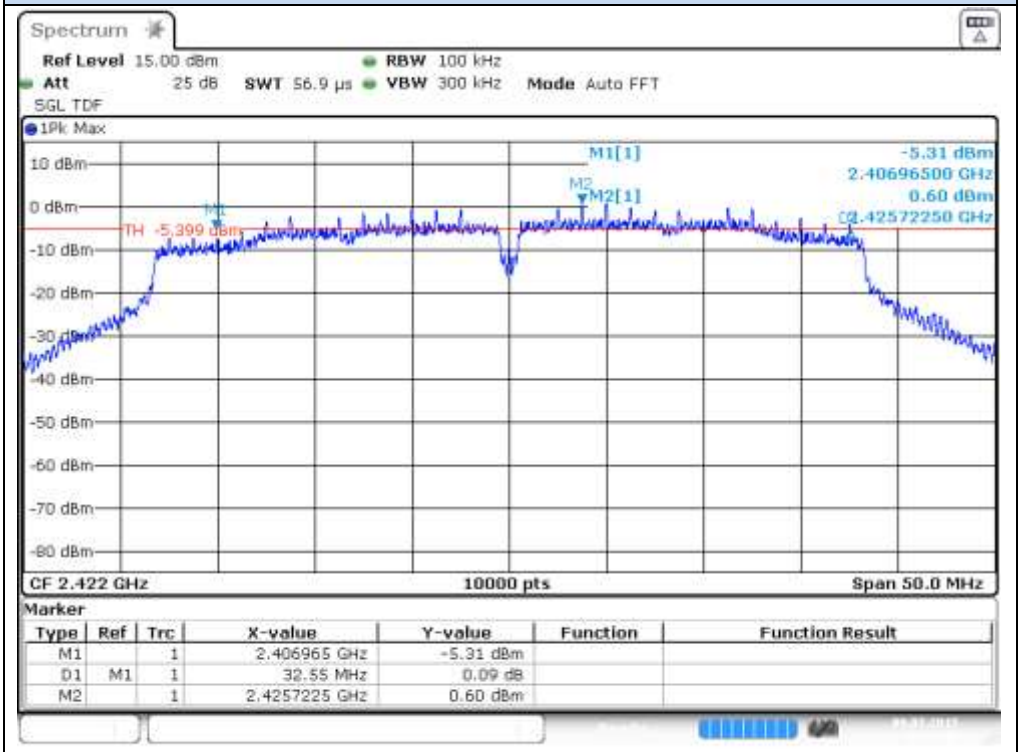
99% BW – CH13



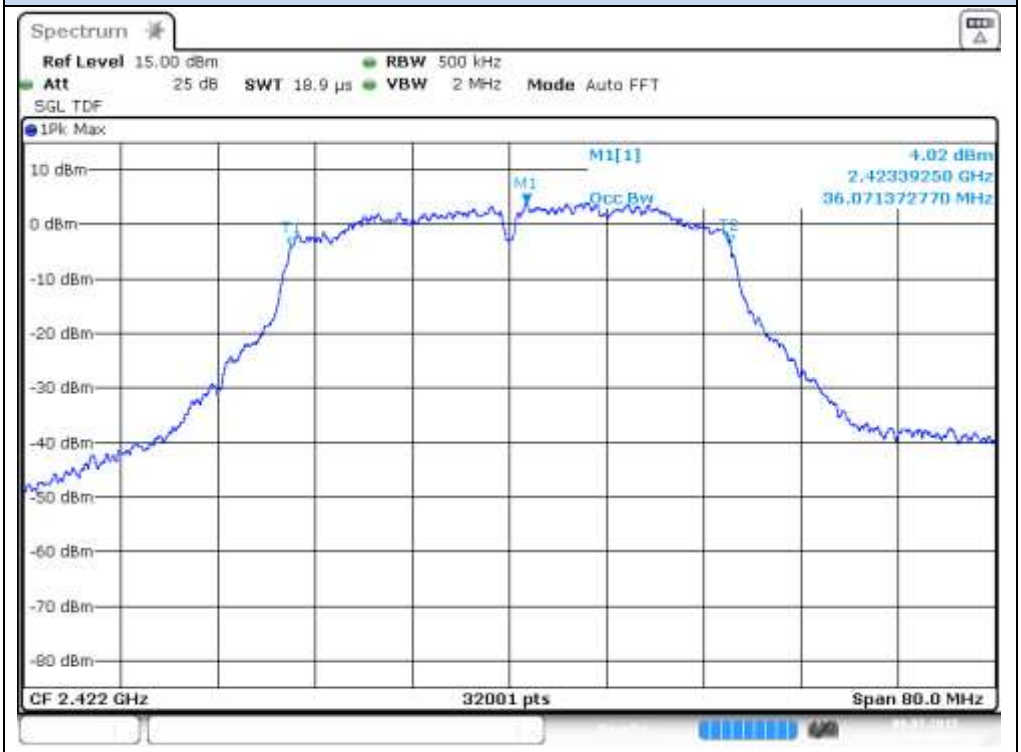
Printed copies are not controlled documents

802.11n40, HT0 (SISO) – Chain A

6dB BW – CH3F



99% BW – CH3F



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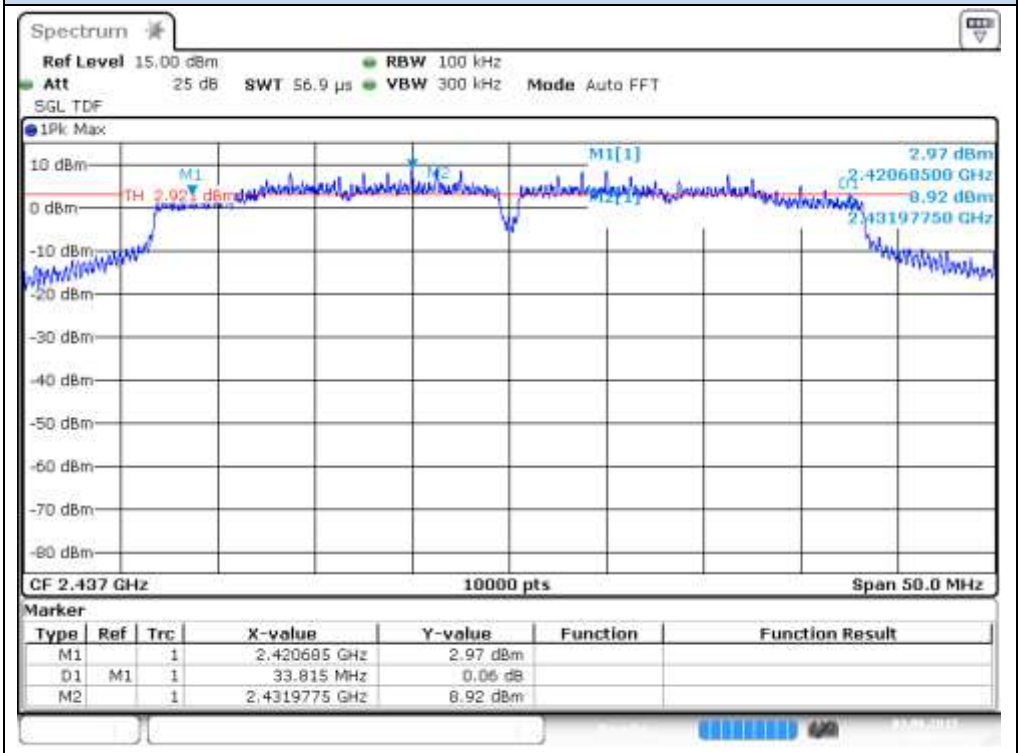
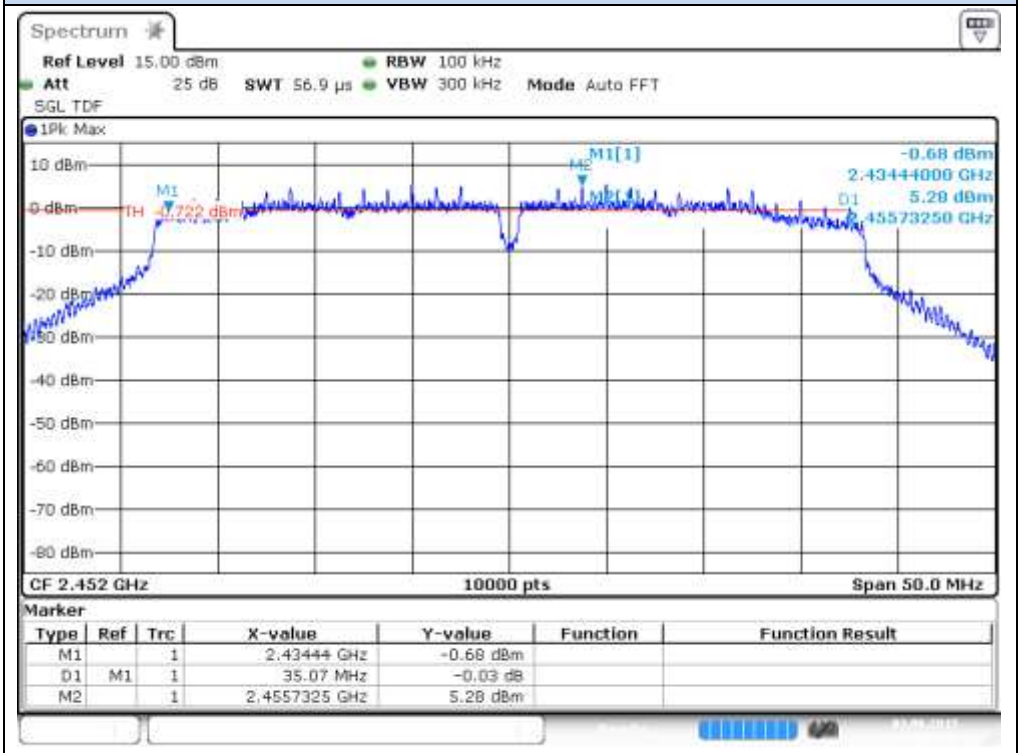
6dB BW – CH6F



99% BW – CH6F

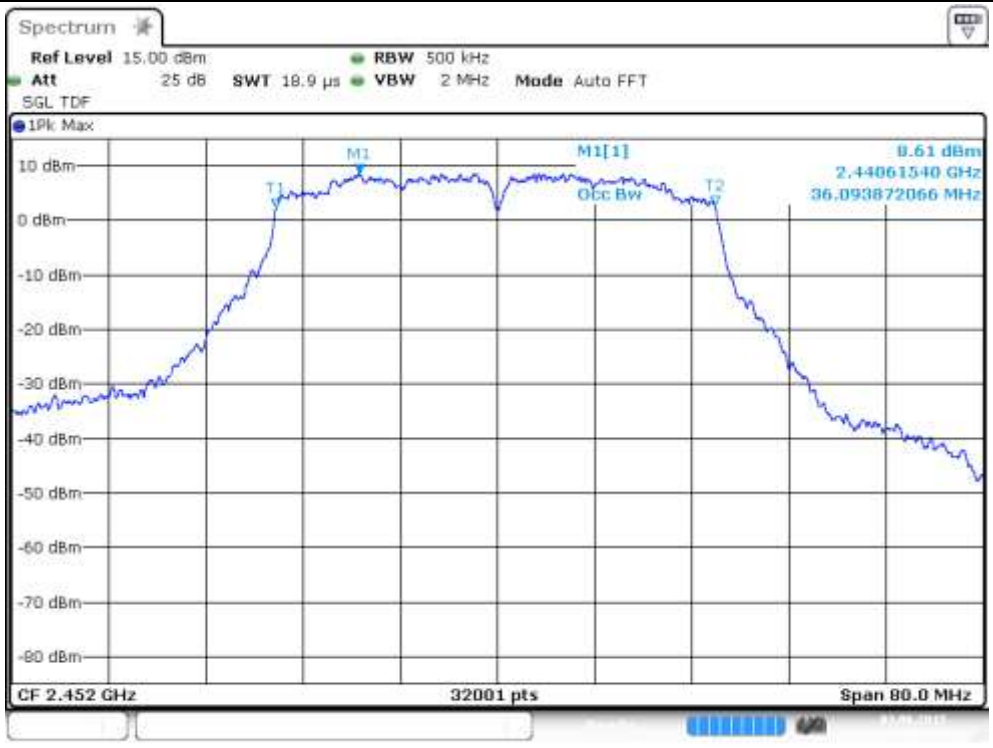
Printed copies are not controlled documents

6dB BW – CH9F



Date: 3.JUN.2015 11:52:36

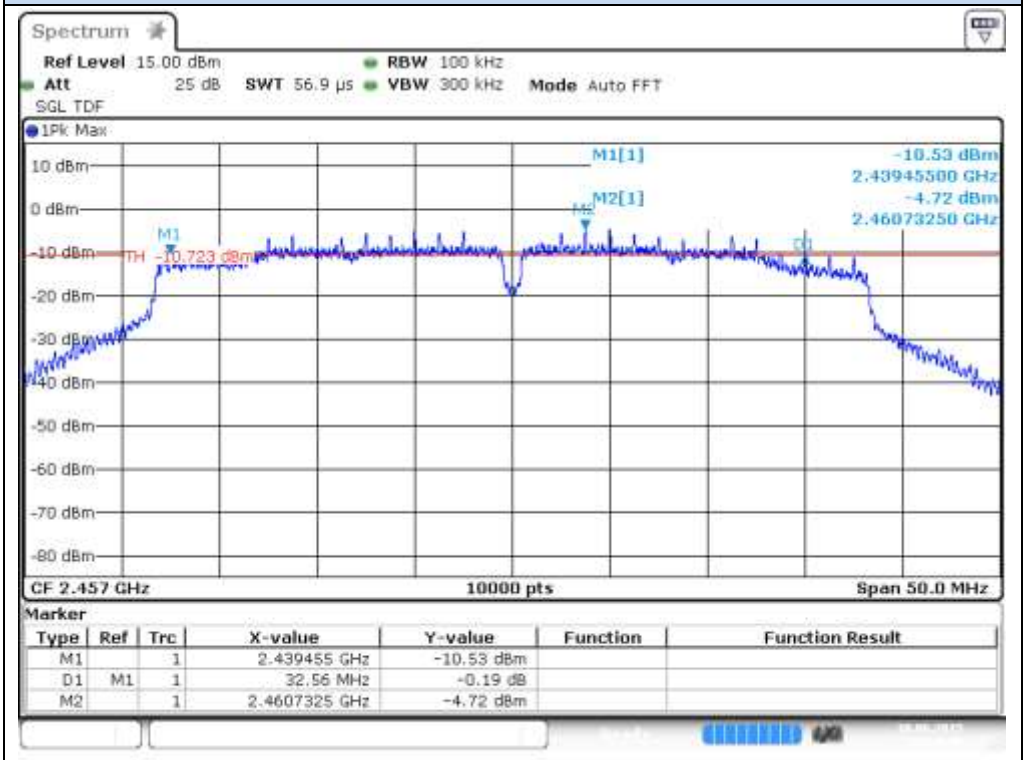
99% BW – CH9F



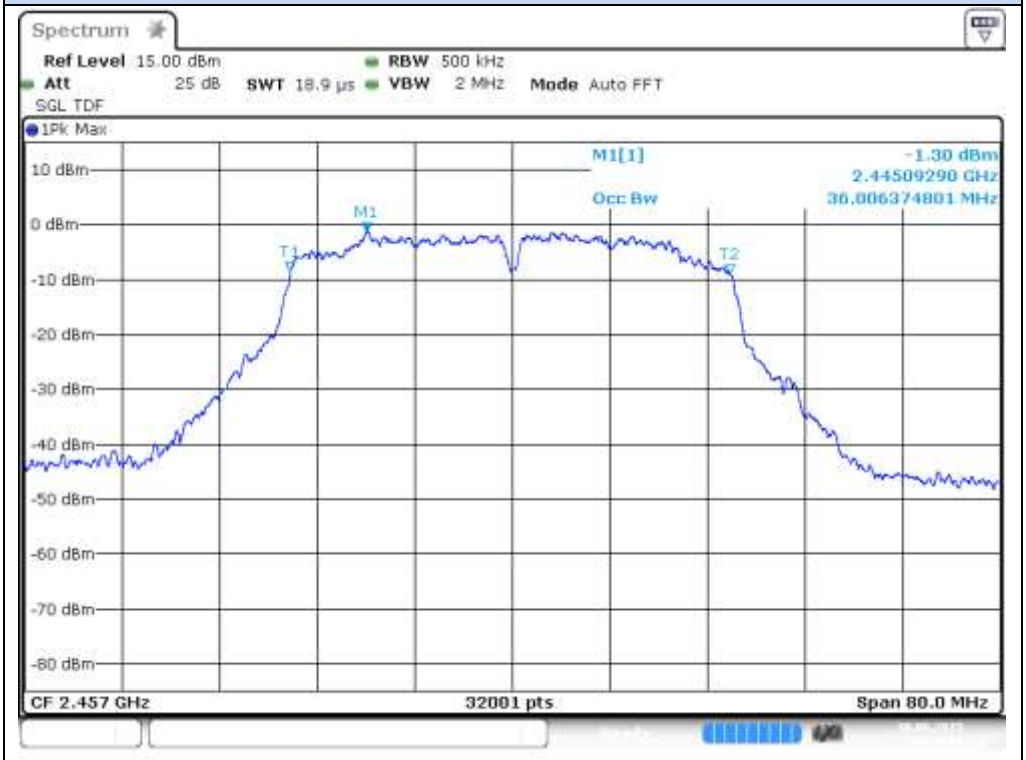
Date: 3.JUN.2015 11:52:52

Printed copies are not controlled documents

6dB BW – CH10F

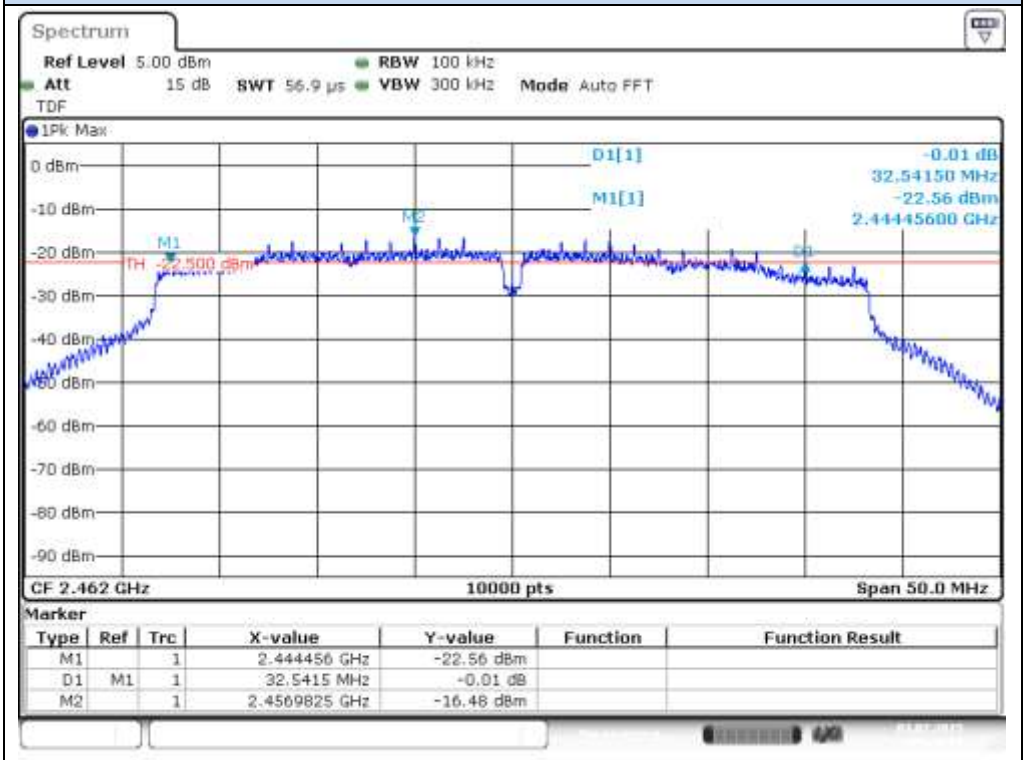


99% BW – CH10F

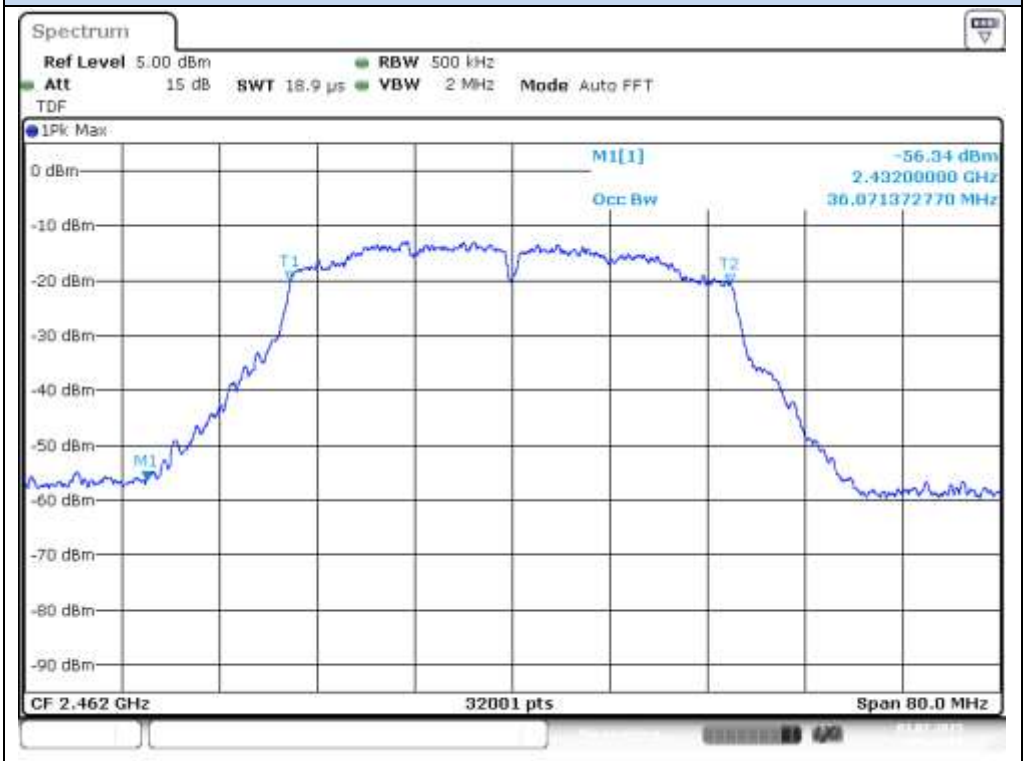


Printed copies are not controlled documents

6dB BW – CH11F



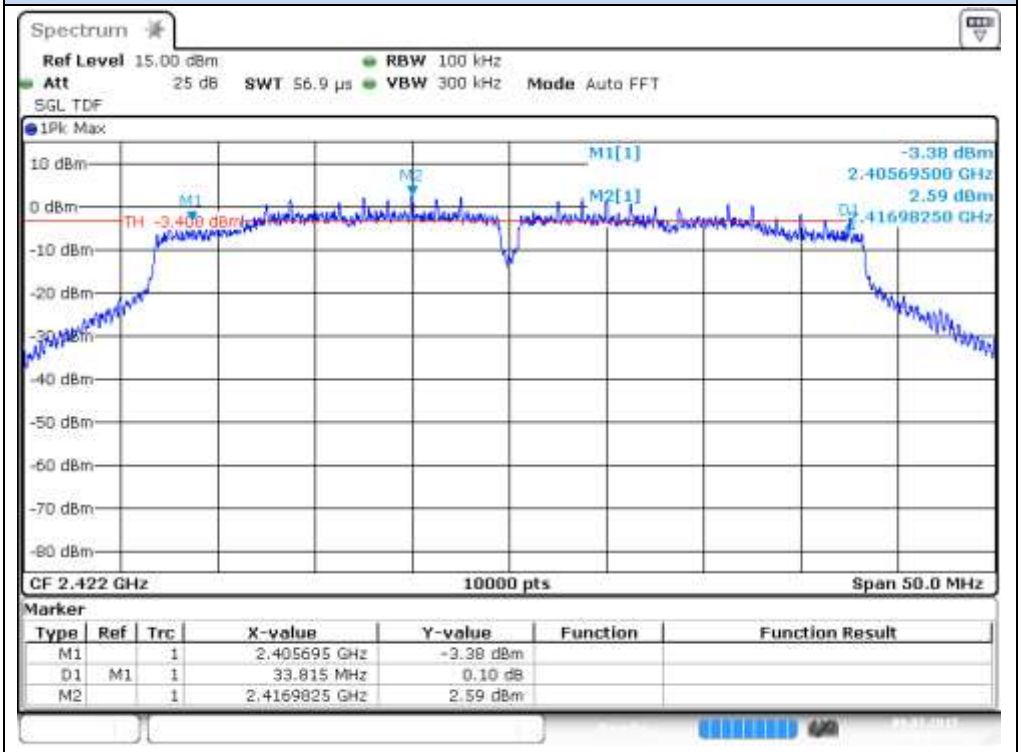
99% BW – CH11F



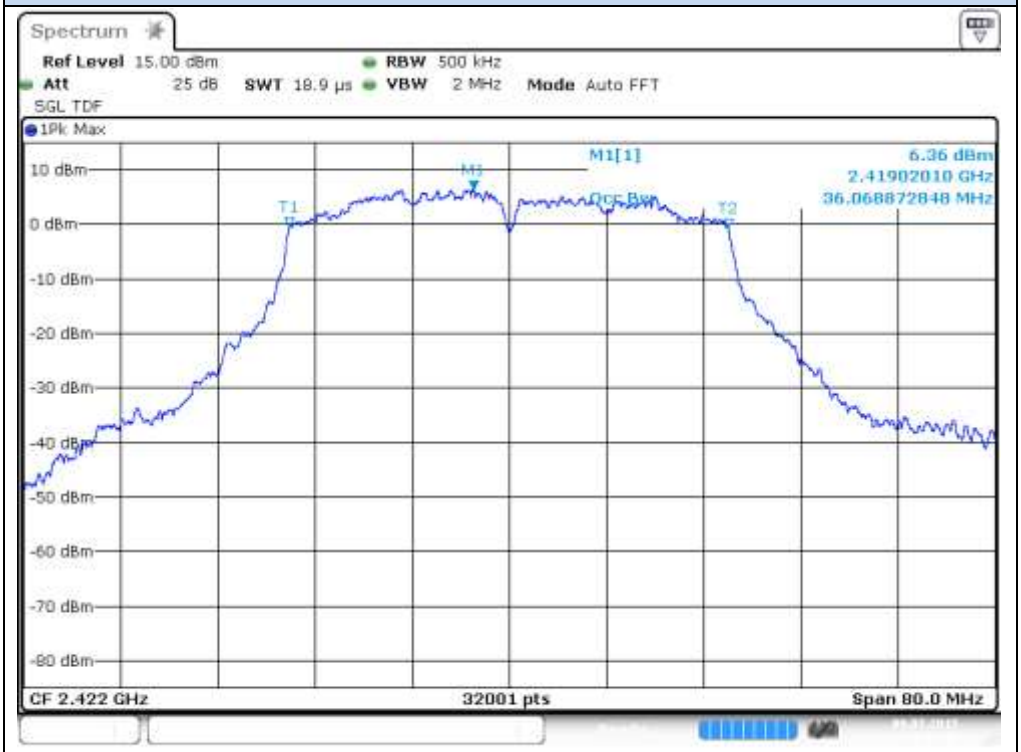
Printed copies are not controlled documents

802.11n40, HT0 (SISO) – Chain B

6dB BW – CH3F

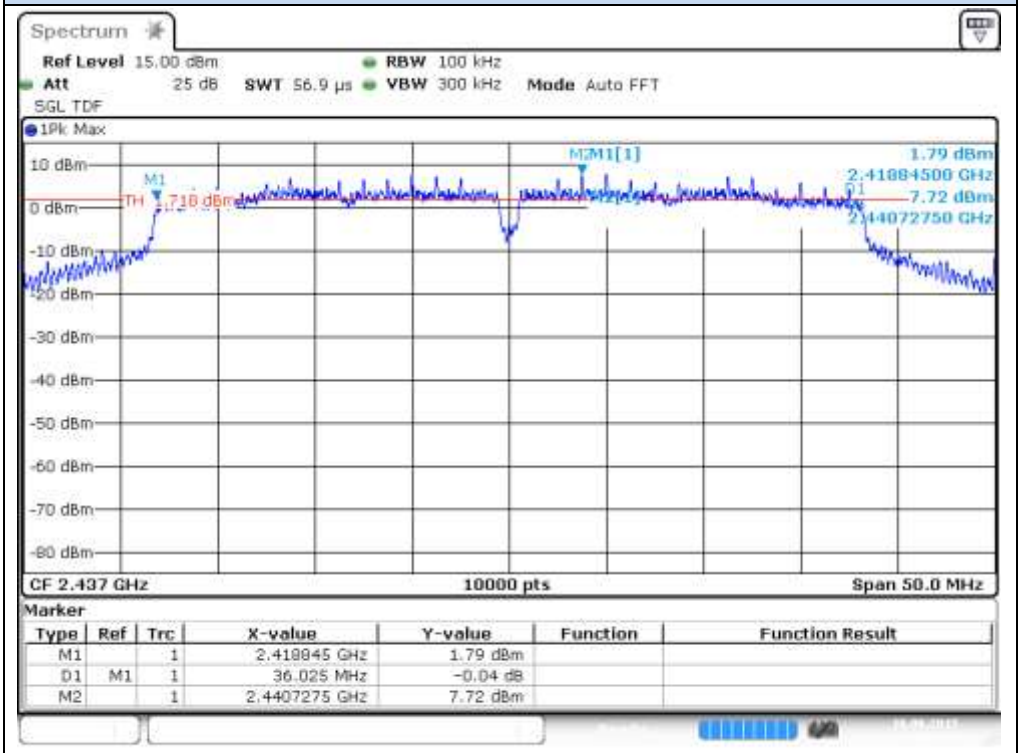


99% BW – CH3F



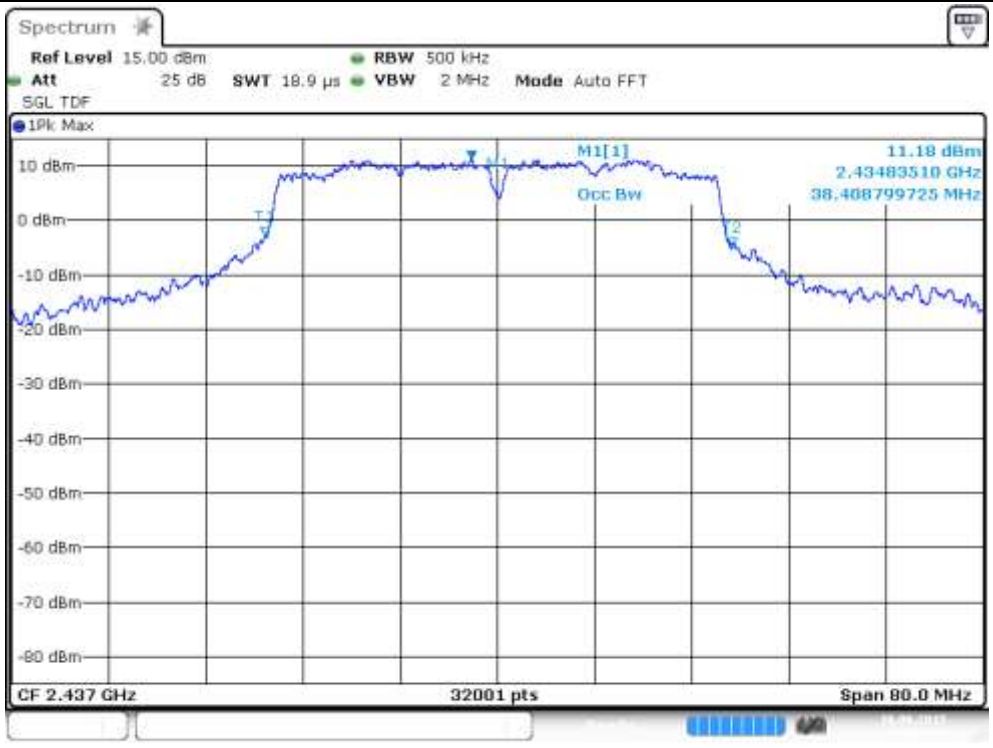
Printed copies are not controlled documents

6dB BW – CH6F



Date: 16.JUN.2015 11:52:51

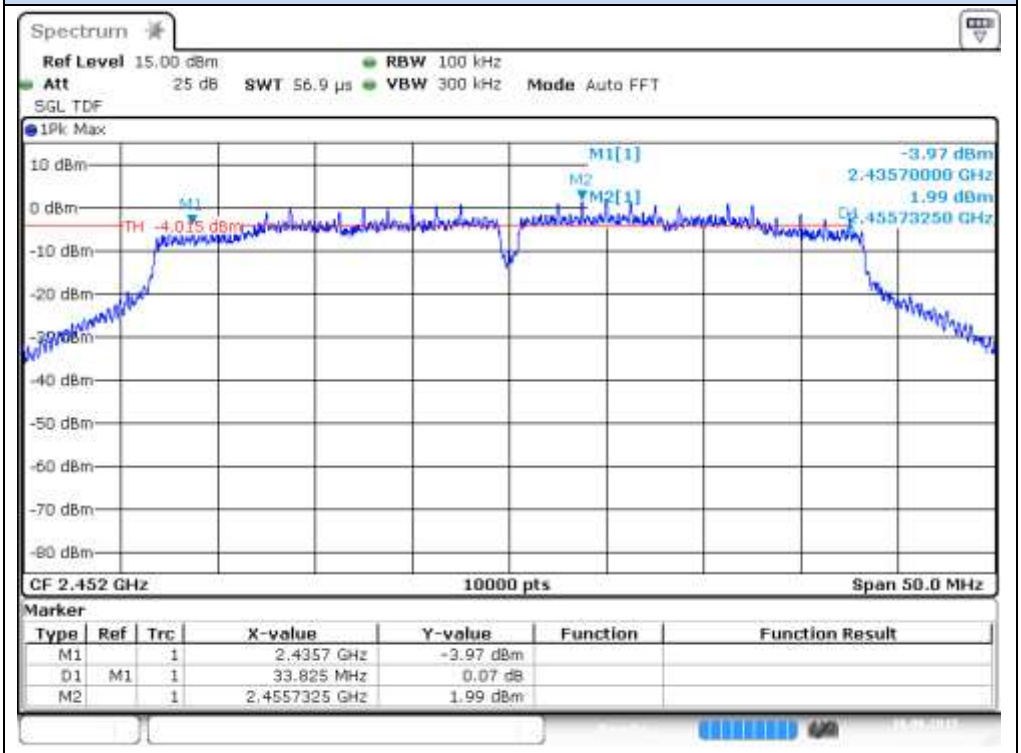
99% BW – CH6F



Date: 16.JUN.2015 11:53:07

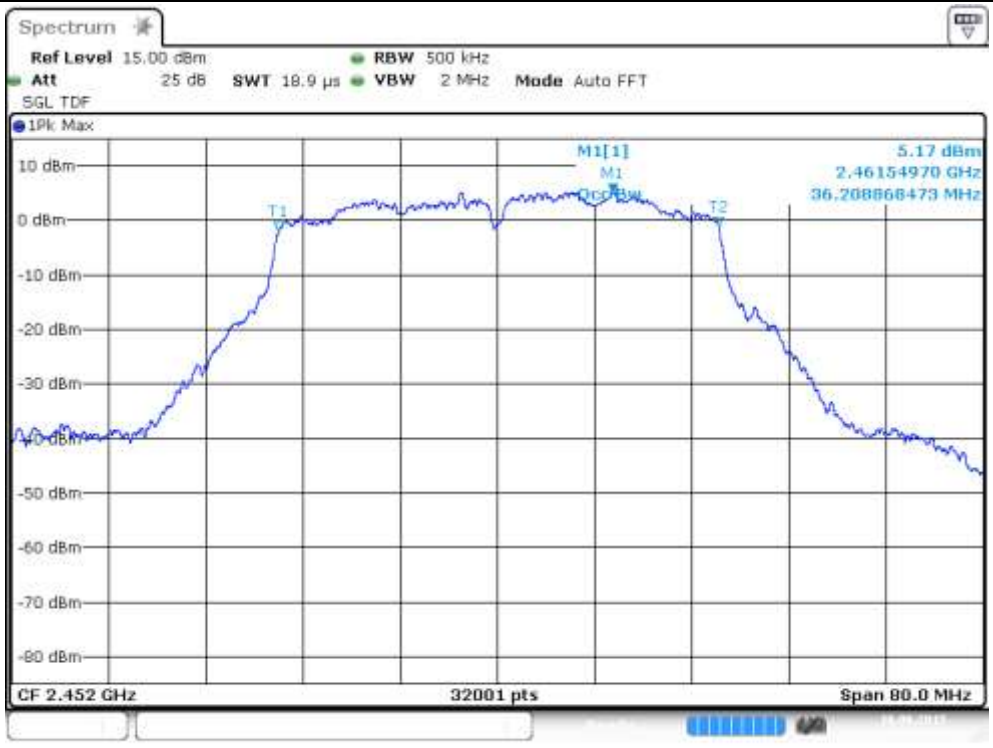
Printed copies are not controlled documents

6dB BW – CH9F



Date: 16.JUN.2015 17:13:11

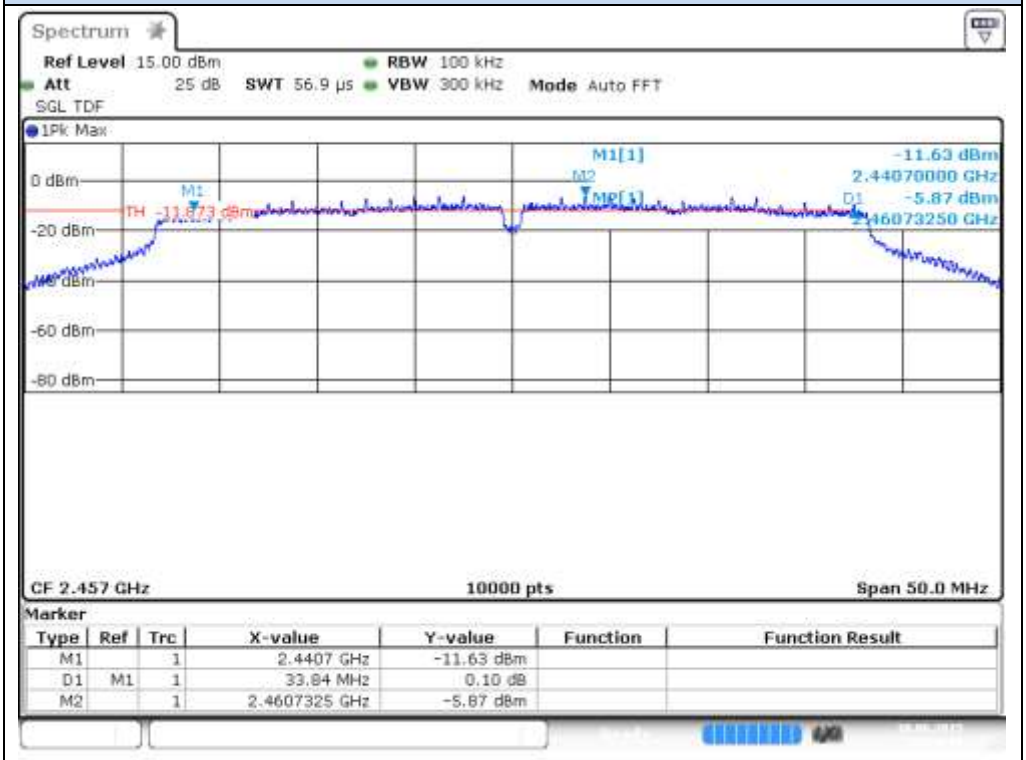
99% BW – CH9F



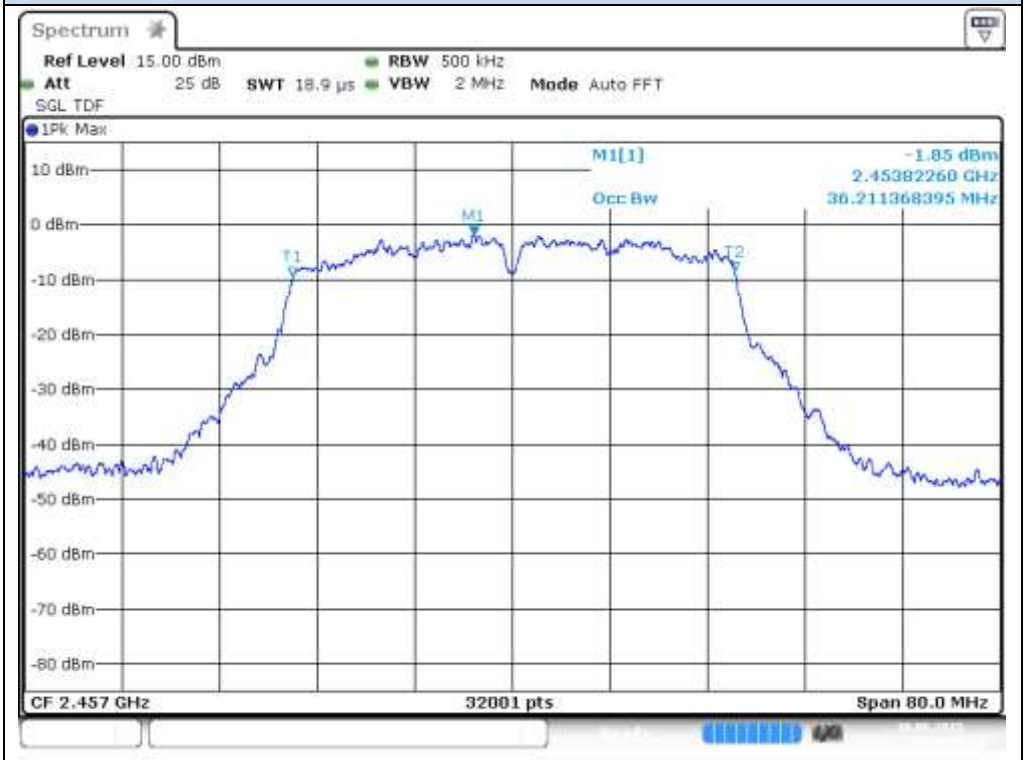
Date: 16.JUN.2015 17:13:27

Printed copies are not controlled documents

6dB BW – CH10F

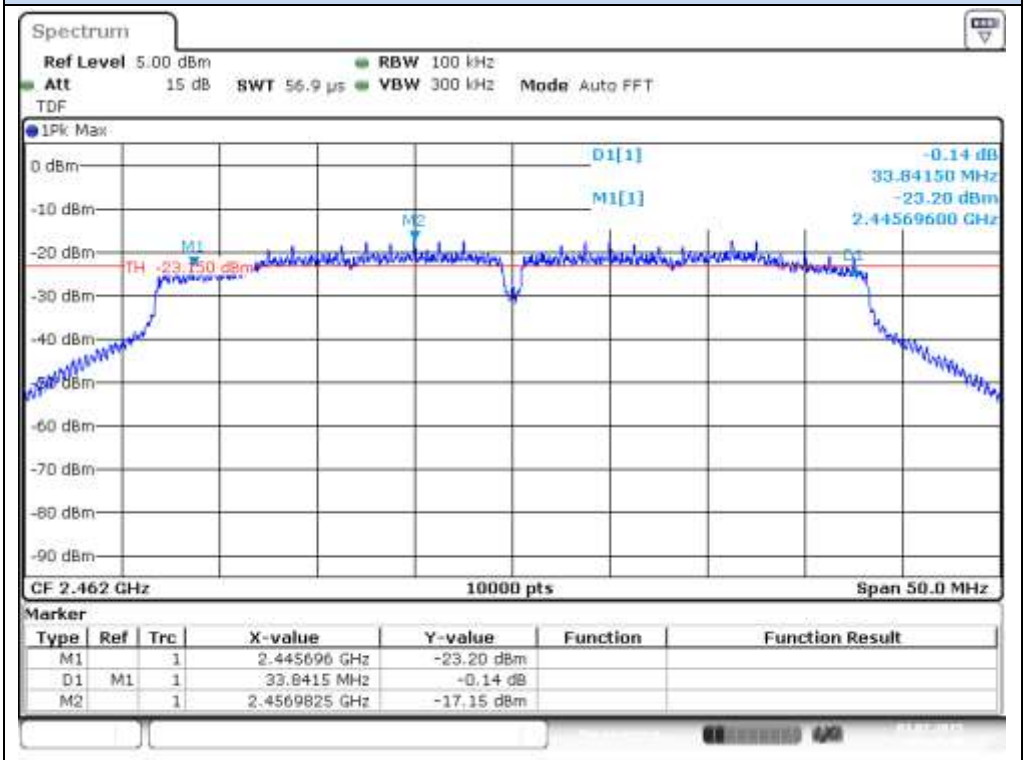


99% BW – CH10F



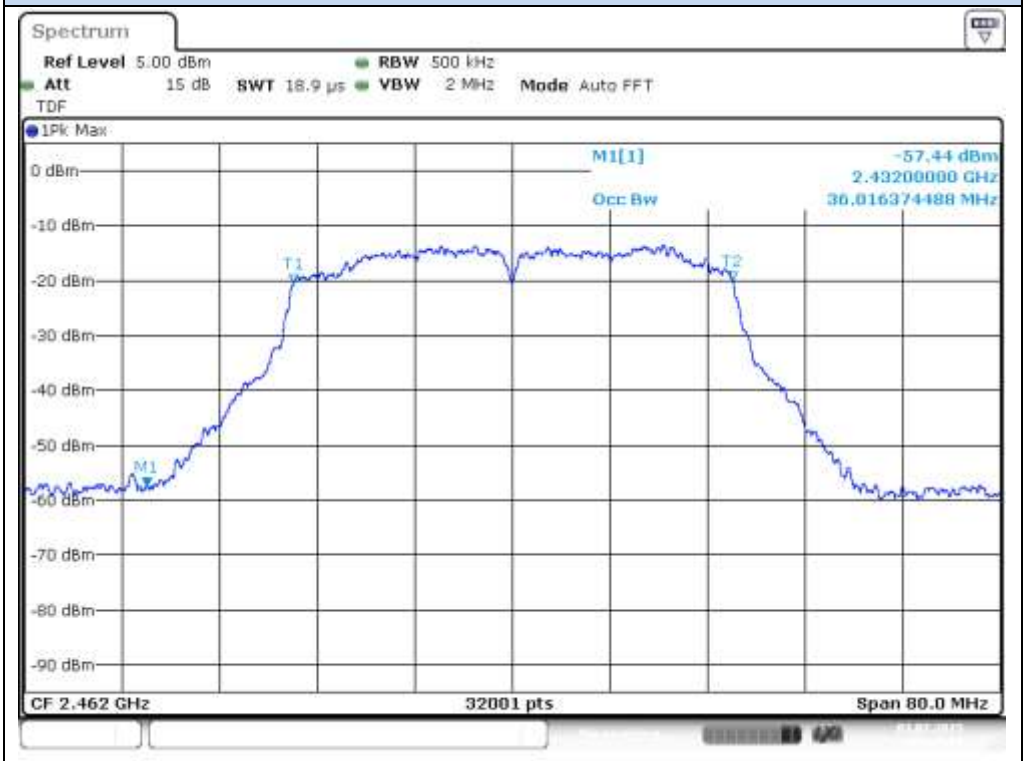
Printed copies are not controlled documents

6dB BW – CH11F



Date: 3.JUL.2015 15:41:40

99% BW – CH11F



Date: 3.JUL.2015 15:42:19

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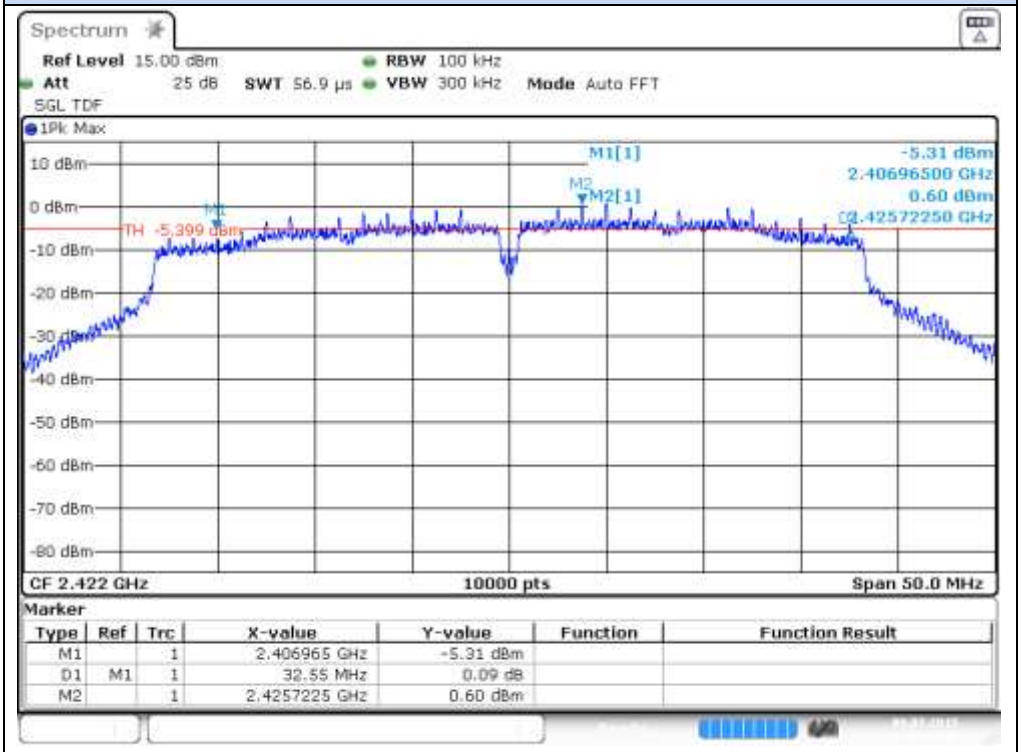
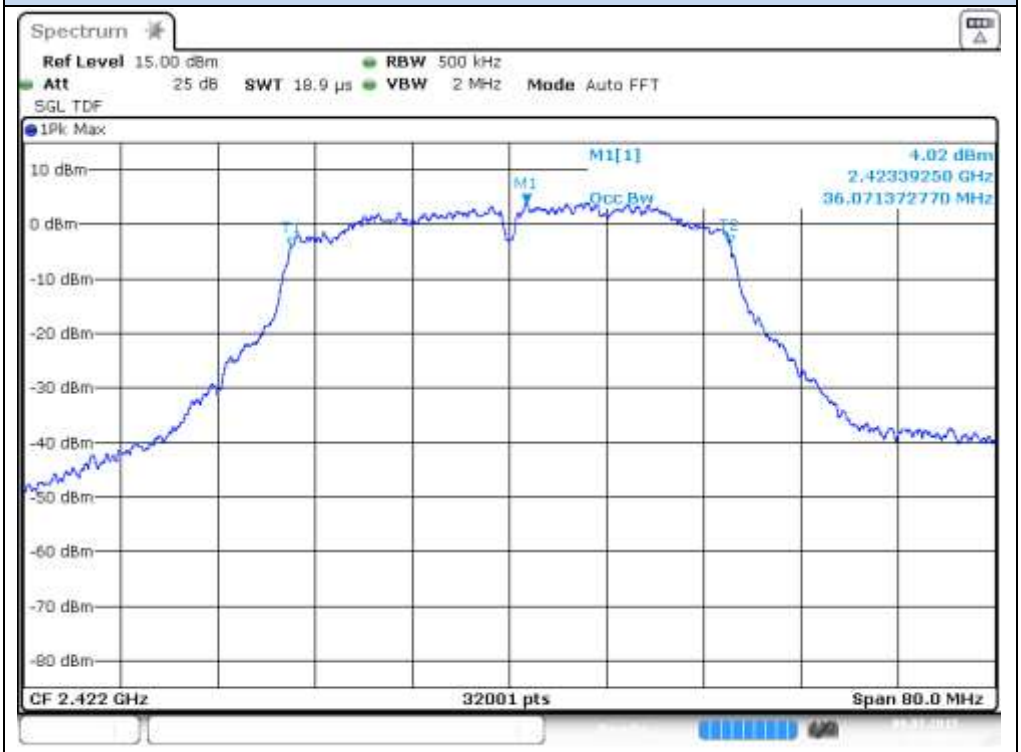
802.11n40, HT8 (MIMO) – Chain A

6dB BW – CH3F

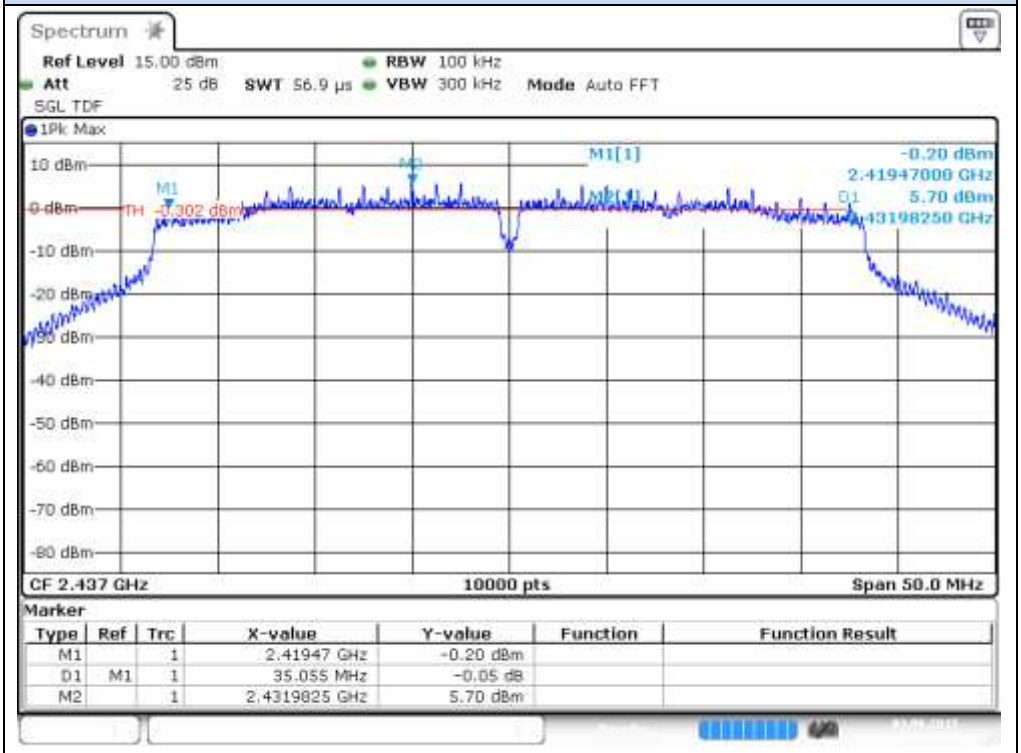


99% BW – CH3F



Printed copies are not controlled documents

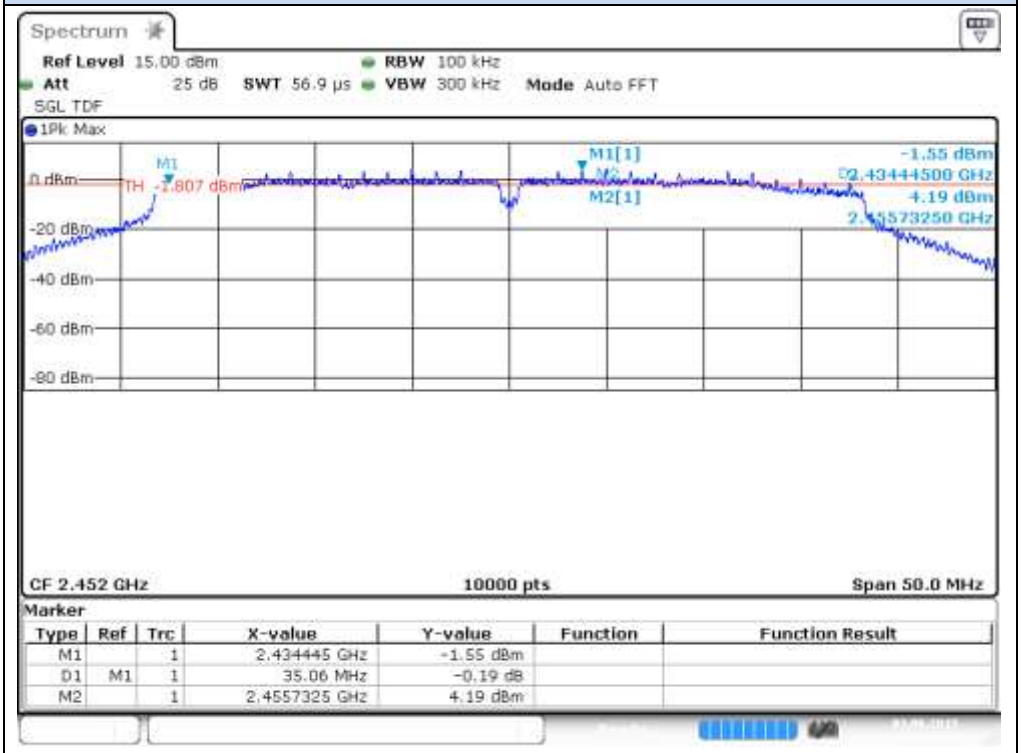
6dB BW – CH6F



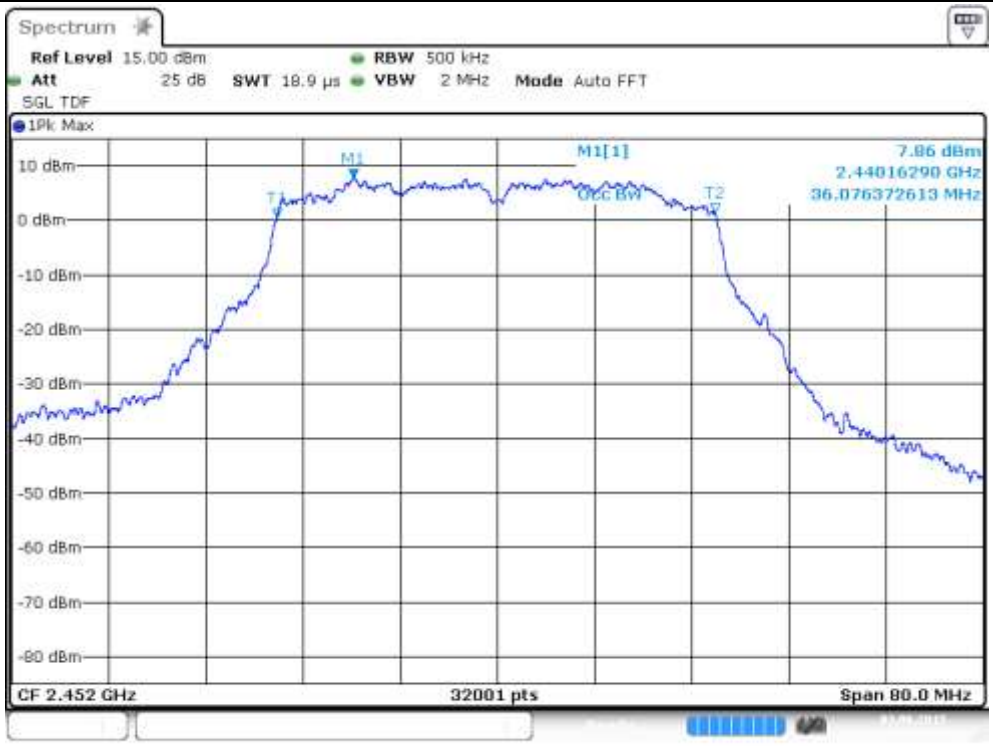
99% BW – CH6F

Printed copies are not controlled documents

6dB BW – CH9F



99% BW – CH9F



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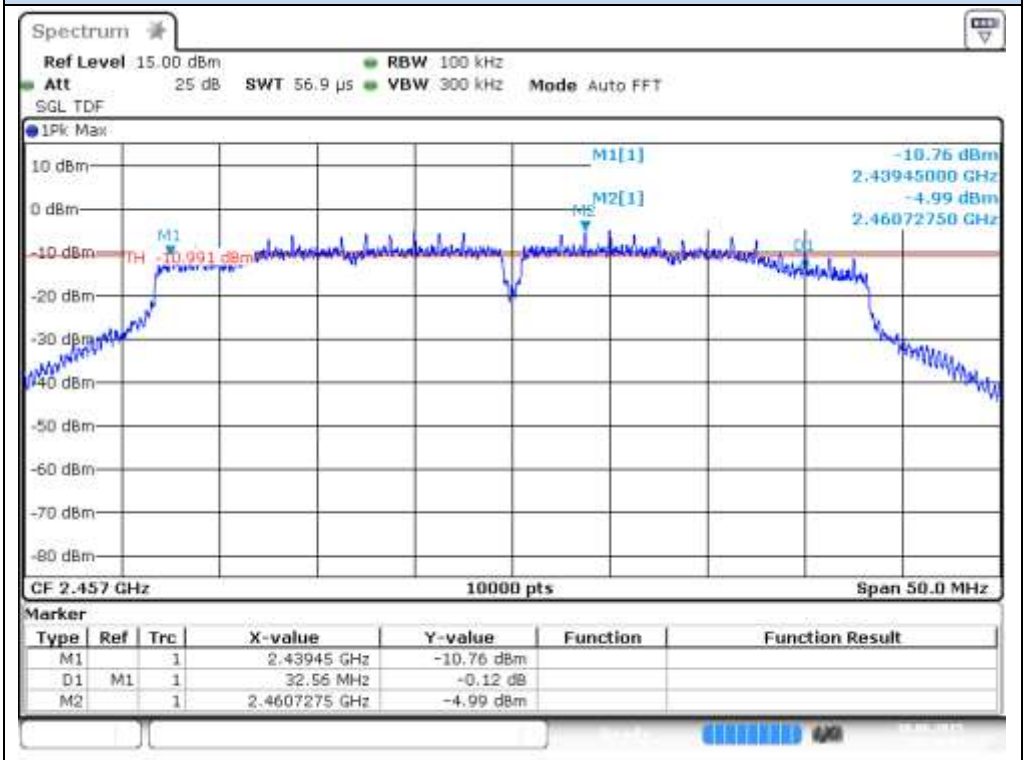
6dB BW – CH10F



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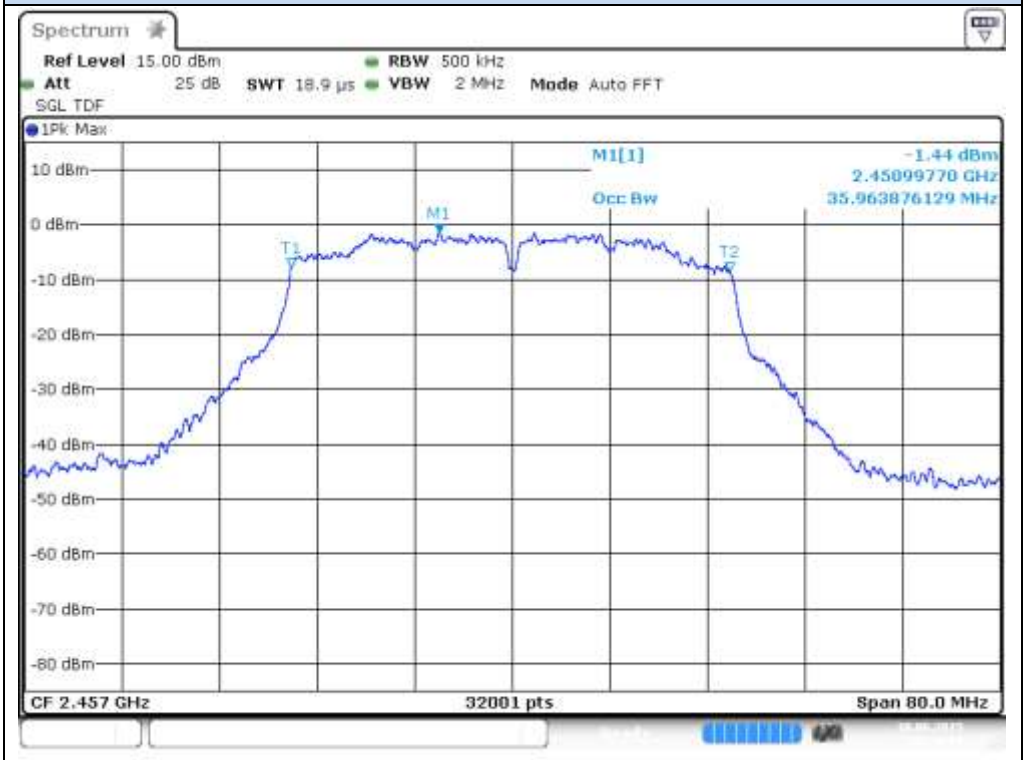
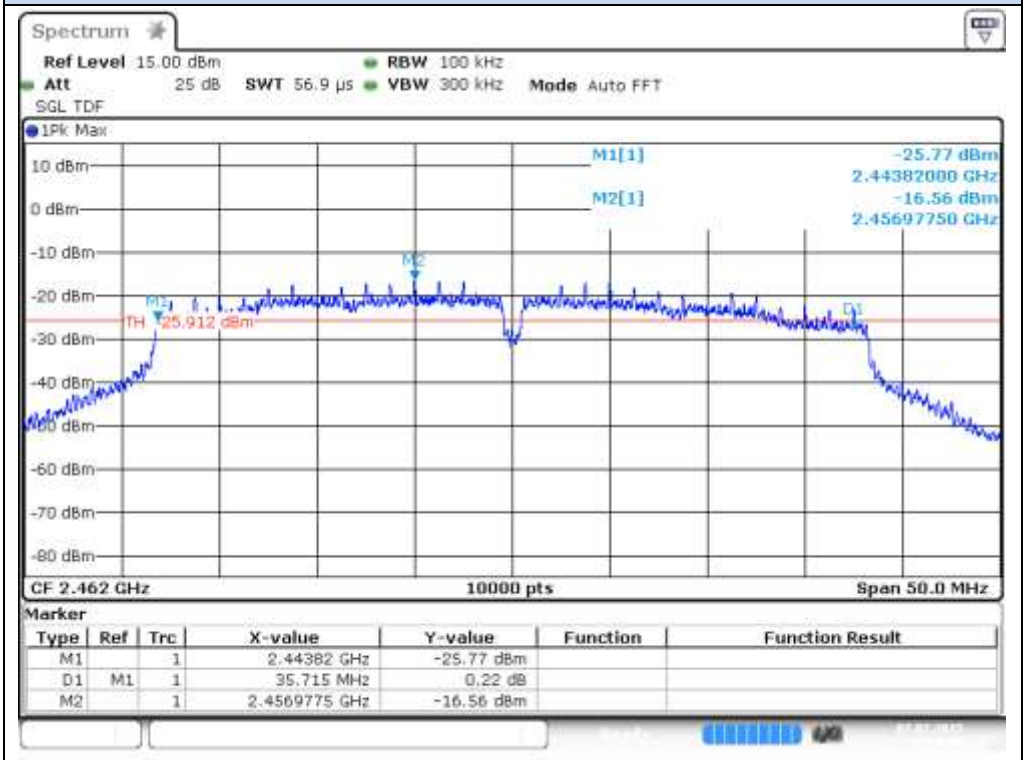
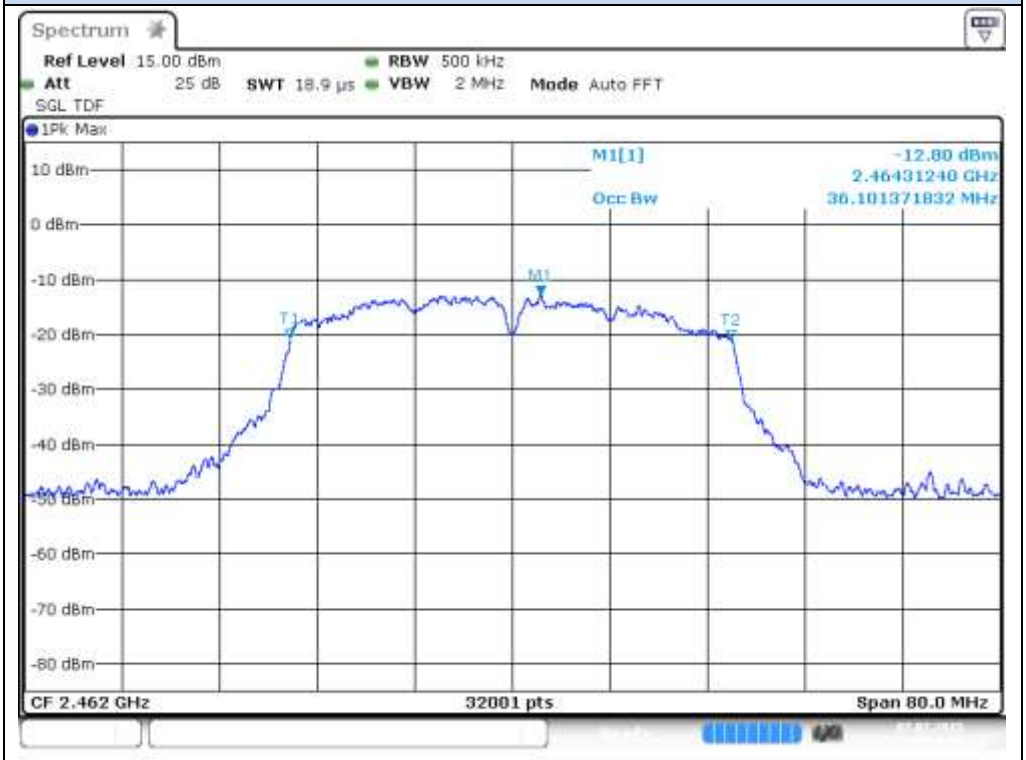


Printed copies are not controlled documents

6dB BW – CH11F



99% BW – CH11F



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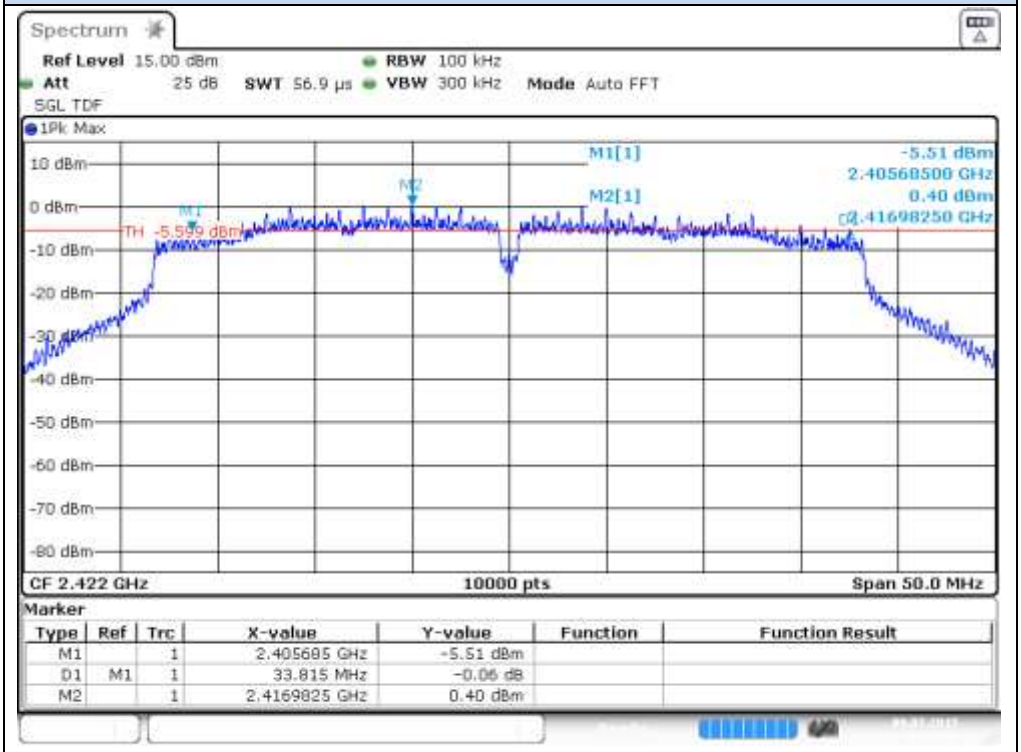
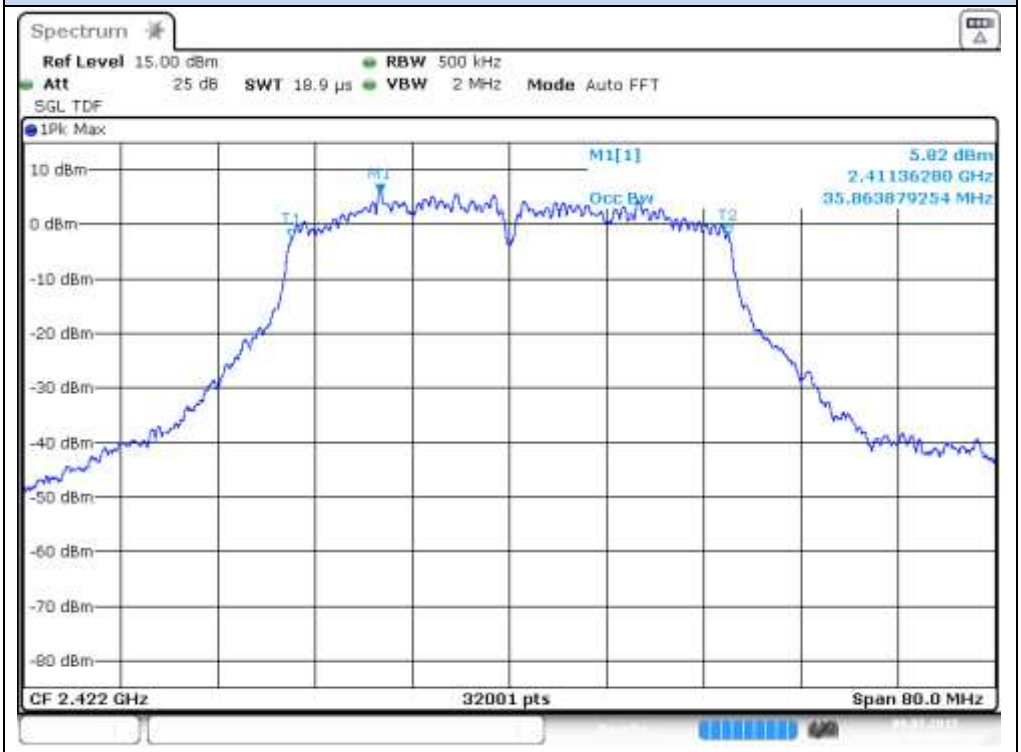
802.11n40, HT8 (MIMO) – Chain B

6dB BW – CH3F

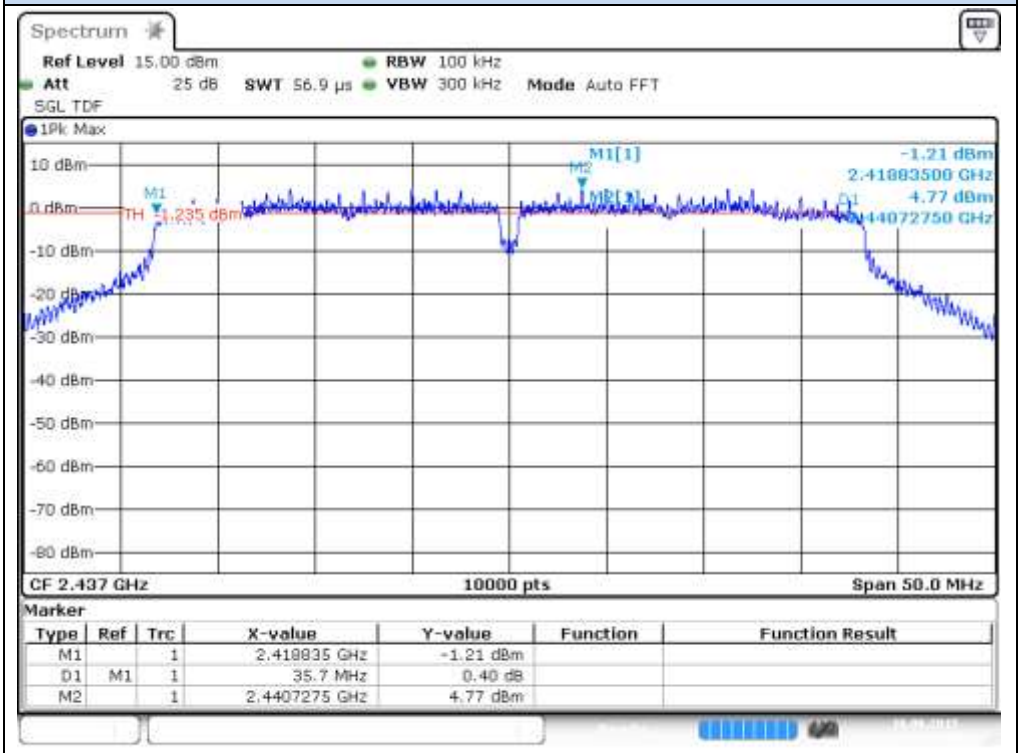


99% BW – CH3F



Printed copies are not controlled documents

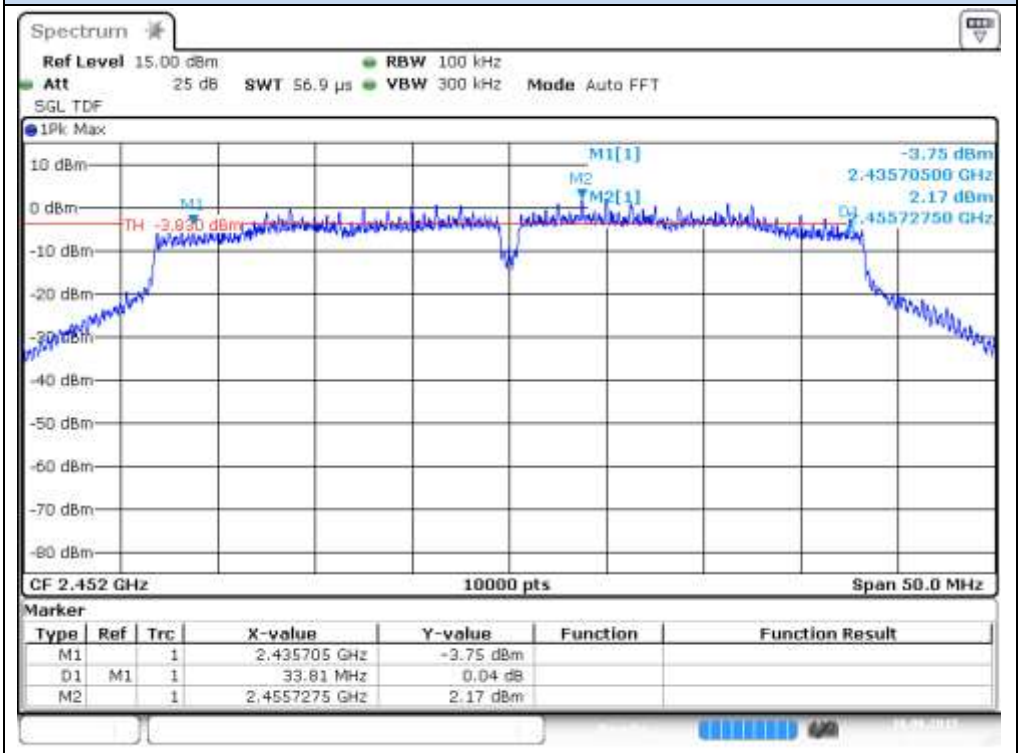
6dB BW – CH6F



99% BW – CH6F

Printed copies are not controlled documents

6dB BW – CH9F



Date: 16.JUN.2015 18:38:42

99% BW – CH9F

Date: 16.JUN.2015 18:38:57

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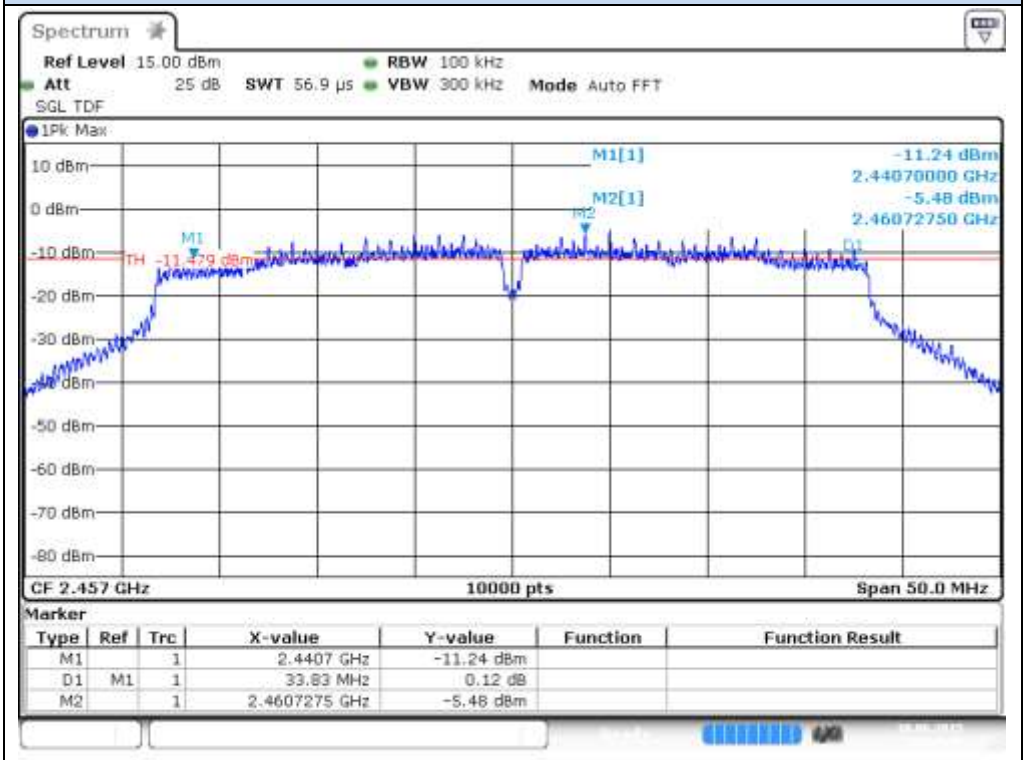
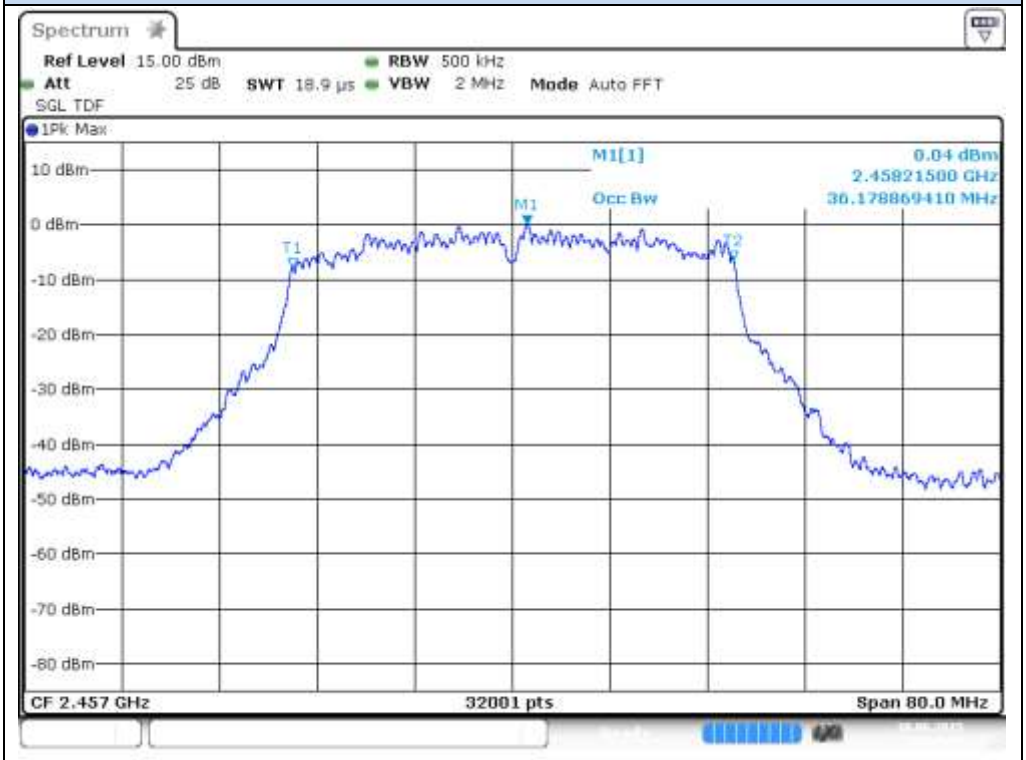
6dB BW – CH10F

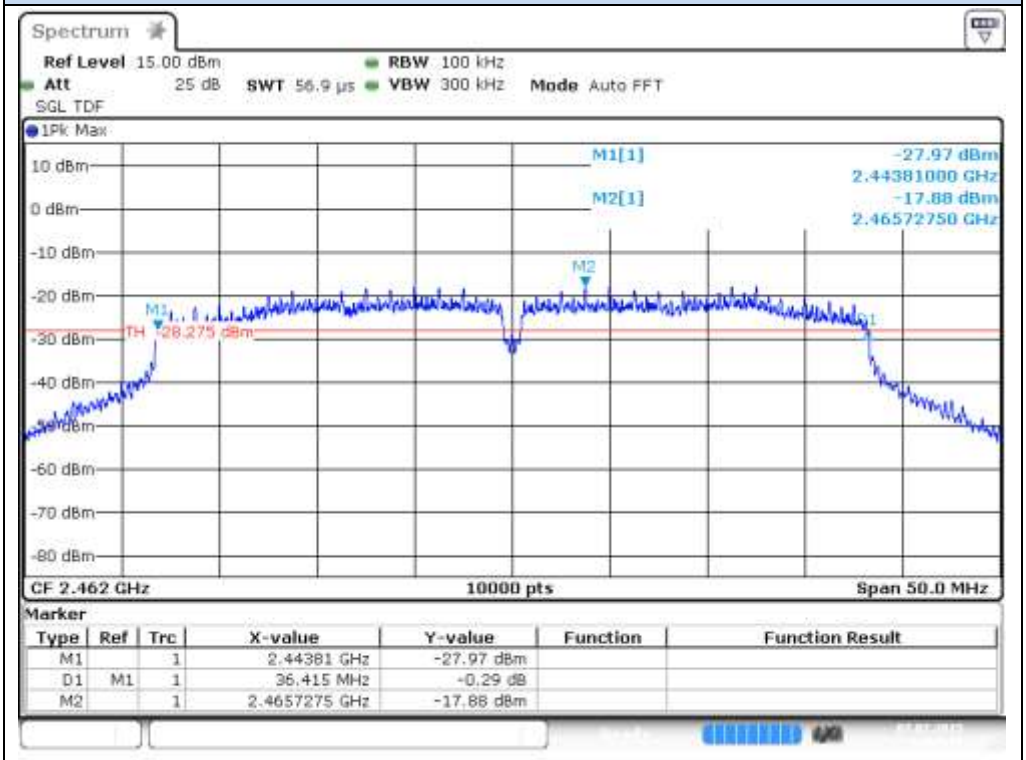


99% BW – CH10F



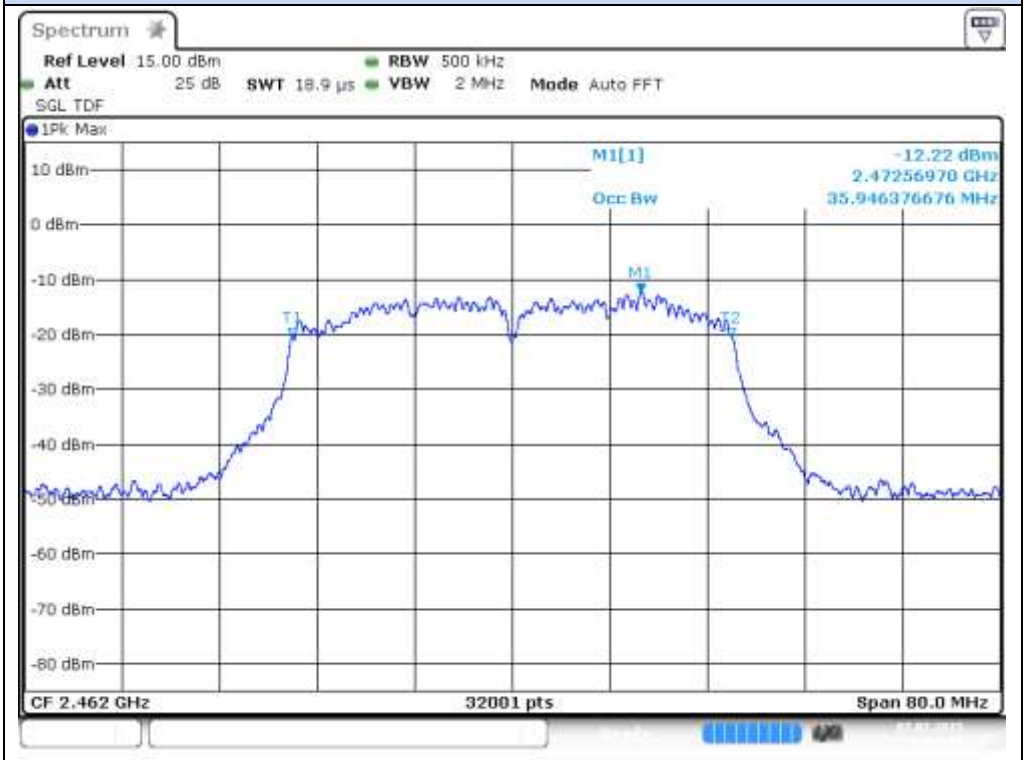
Printed copies are not controlled documents

6dB BW – CH11F



Date: 7.JUL.2015 11:05:12

99% BW – CH11F



Date: 7.JUL.2015 11:05:28

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B.2 Maximum Output Power and antenna gain

Test limits:

FCC part	RSS part	Limits
15.247 (b) (3)	RSS-247 Clause 5.4 (4)	(b) The maximum peak conducted output power of the intentional radiator shall not exceed the following: (3) For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. (4) The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi.

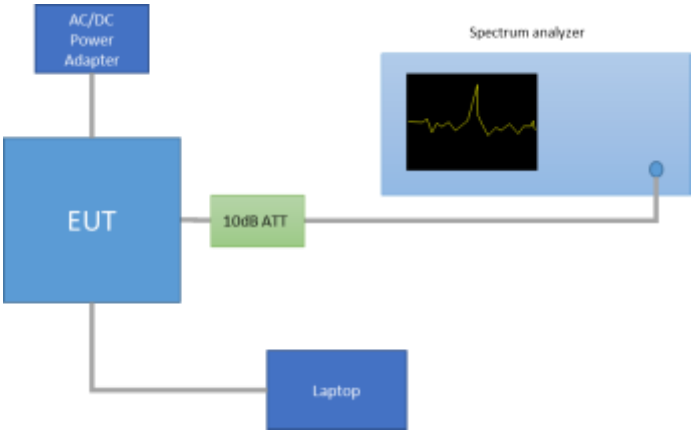
Test procedure:

The Maximum Conducted Output Power was measured using the channel integration method according to Method AVGSA-2, defined in paragraph 9.2.2.4 of FCC KDB 558074 D01 - Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247.

For MIMO mode, according to the measure-and-sum approach defined in FCC KDB 662911 - Guidance for Emission Testing of Transmitters with Multiple Outputs in the Same Band, 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. The declared maximum antenna gain is 3dBi.

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



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Results tables:

Mode	Rate	Meas. Duty Cycle [%]	CH	Frequency [MHz]	Antenna	Power [dBm]		
						Measured Conducted RMS	Duty cycle Compensated	EIRP
802.11b	1Mbps	98.7	1	2412	SISO CHAIN A	20.8	20.8	23.8
					SISO CHAIN B	19.4	19.4	22.4
			6	2437	SISO CHAIN A	21.0	21.1	24.1
					SISO CHAIN B	20.0	20.1	23.1
			11	2462	SISO CHAIN A	17.8	17.9	20.9
					SISO CHAIN B	16.0	16.0	19.0
			12	2467	SISO CHAIN A	14.1	14.2	17.2
					SISO CHAIN B	12.7	12.8	15.8
			13	2472	SISO CHAIN A	8.0	8.0	11.0
					SISO CHAIN B	7.7	7.8	10.8
802.11g	6Mbps	98.7	1	2412	SISO CHAIN A	17.7	17.8	20.8
					SISO CHAIN B	15.5	15.5	18.6
			6	2437	SISO CHAIN A	21.0	21.0	24.0
					SISO CHAIN B	20.3	20.4	23.4
			11	2462	SISO CHAIN A	18.1	18.2	21.2
					SISO CHAIN B	17.3	17.3	20.3
			12	2467	SISO CHAIN A	10.2	10.3	13.3
					SISO CHAIN B	10.2	10.3	13.3
			13	2472	SISO CHAIN A	-5.0	-5.0	-2.0
					SISO CHAIN B	-4.1	-4.0	-1.0
802.11n20	HT0	97.5	1	2412	SISO CHAIN A	16.4	16.5	19.5
					SISO CHAIN B	14.8	14.9	17.9
			6	2437	SISO CHAIN A	21.4	21.6	24.6
					SISO CHAIN B	20.3	20.4	23.4
			11	2462	SISO CHAIN A	17.8	18.0	21.0
					SISO CHAIN B	17.3	17.4	20.4
			12	2467	SISO CHAIN A	9.0	9.1	12.1
					SISO CHAIN B	7.8	7.9	10.9
			13	2472	SISO CHAIN A	-5.7	-5.6	-2.6
					SISO CHAIN B	-4.6	-4.5	-1.5

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Mode	Rate	Meas. Duty Cycle [%]	CH	Frequency [MHz]	Antenna	Power [dBm]		
						Measured Conducted RMS	Duty cycle Compensated	EIRP
802.11n20	HT8	97.0	1	2412	MIMO CHAIN A	15.3	15.5	18.5
					MIMO CHAIN B	15.4	15.6	18.6
			6	2437	MIMO CHAIN A	18.5	18.7	21.7
					MIMO CHAIN B	17.8	18.0	21.0
			11	2462	MIMO CHAIN A	18.2	18.3	21.3
					MIMO CHAIN B	15.6	15.8	18.8
			12	2467	MIMO CHAIN A	7.9	8.0	11.0
					MIMO CHAIN B	7.8	7.9	10.9
			13	2472	MIMO CHAIN A	-6.5	-6.4	-3.4
					MIMO CHAIN B	-5.3	-5.3	-2.3
802.11n40	HT0	96.7	3F	2422	SISO CHAIN A	15.9	16.0	19.0
					SISO CHAIN B	15.0	15.1	18.1
			6F	2437	SISO CHAIN A	21.5	**21.7**	24.7
					SISO CHAIN B	20.8	21.0	24.0
			9F	2452	SISO CHAIN A	17.4	17.5	20.5
					SISO CHAIN B	13.8	14.0	17.0
			10F	2457	SISO CHAIN A	7.8	8.1	11.1
					SISO CHAIN B	6.8	7.1	10.1
			11F	2462	SISO CHAIN A	-4.3	-4.0	-1.0
					SISO CHAIN B	-4.3	-4.0	-1.0
	HT8	96.7	3F	2422	MIMO CHAIN A	12.4	12.6	15.6
					MIMO CHAIN B	12.5	12.7	15.7
			6F	2437	MIMO CHAIN A	18.1	18.2	21.2
					MIMO CHAIN B	17.4	17.6	20.7
			9F	2452	MIMO CHAIN A	16.1	16.3	19.3
					MIMO CHAIN B	13.6	13.7	16.7
			10F	2457	MIMO CHAIN A	7.3	7.6	10.6
					MIMO CHAIN B	6.7	7.0	10.0
			11F	2462	MIMO CHAIN A	-4.5	-4.2	-1.2
					MIMO CHAIN B	-5.2	-4.9	-1.9

Max Value

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MIMO modes – Combined results					Power [dBm]	
Mode	**Rate**	**Channel**	**Frequency (MHz)**	**Antenna**	**Combined, Duty Cycle compensated**	**EIRP**
802.11n20	HT8	1	2412	MIMO CHAIN A + CHAIN B	18.5	21.5
		6	2437		**21.3**	24.3
		11	2462		20.2	23.2
		12	2467		10.9	13.9
		13	2472		-2.8	0.2
802.11n40	HT8	3F	2422		15.6	18.6
		6F	2437		20.9	23.9
		9F	2452		18.2	21.2
		10F	2457		10.3	13.3
		11F	2462		-1.5	1.5

Max Value

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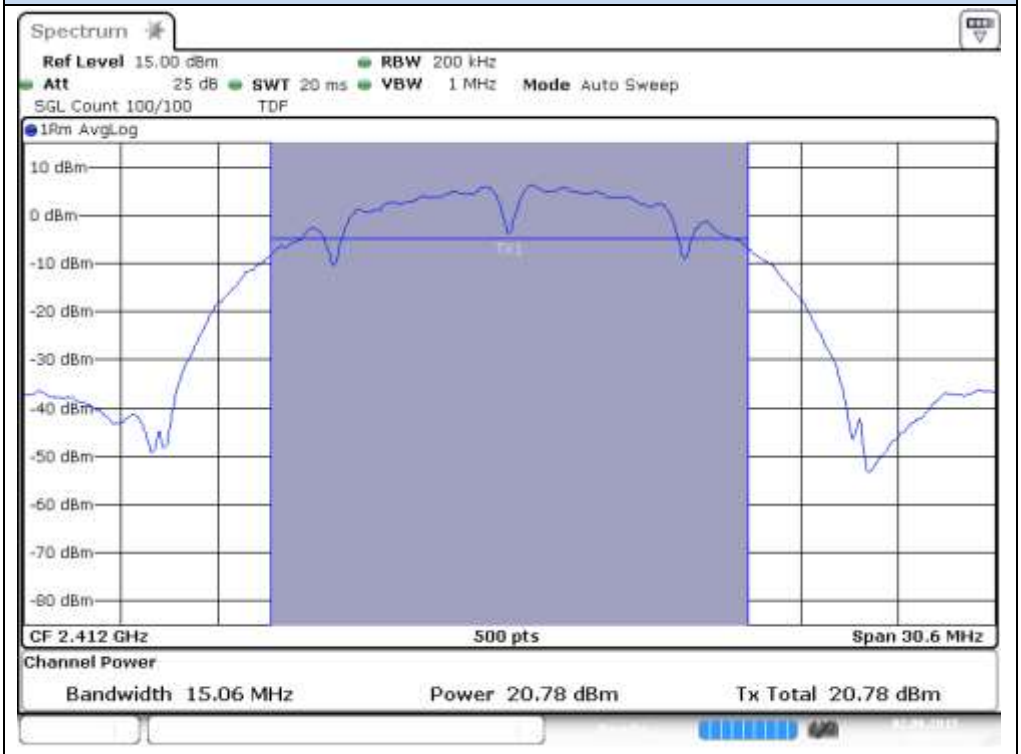
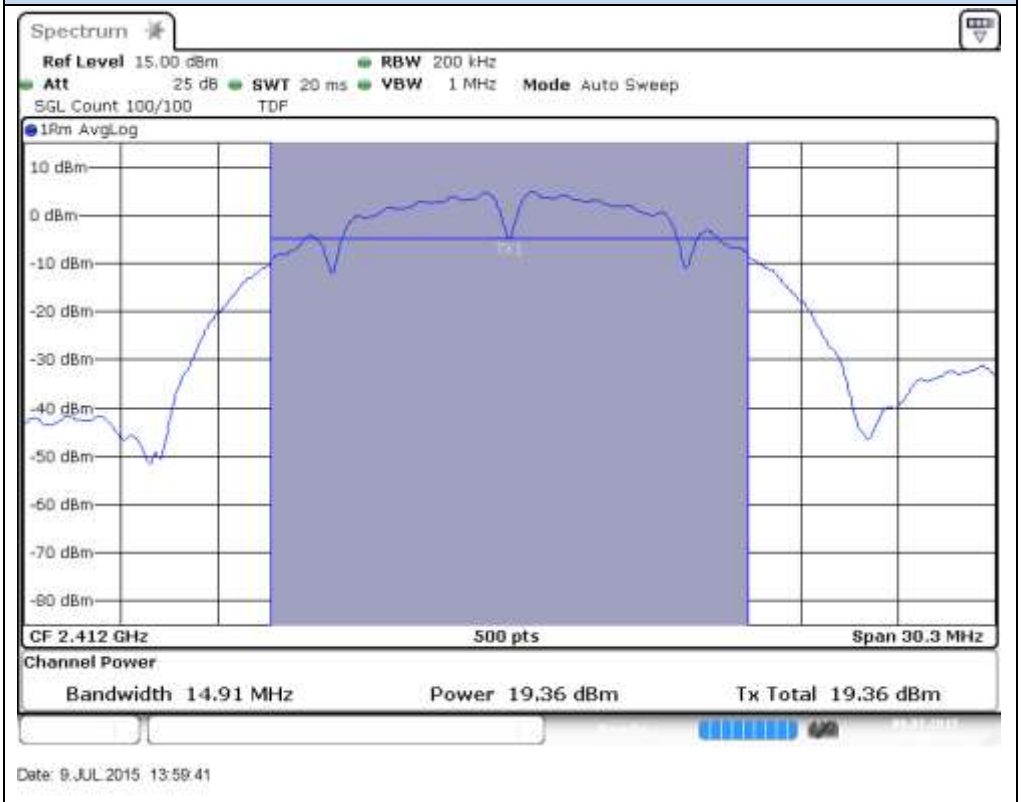
Results screenshot

802.11b, 1Mbps

Max Power, Chain A - CH1



Max Power, Chain B – CH1



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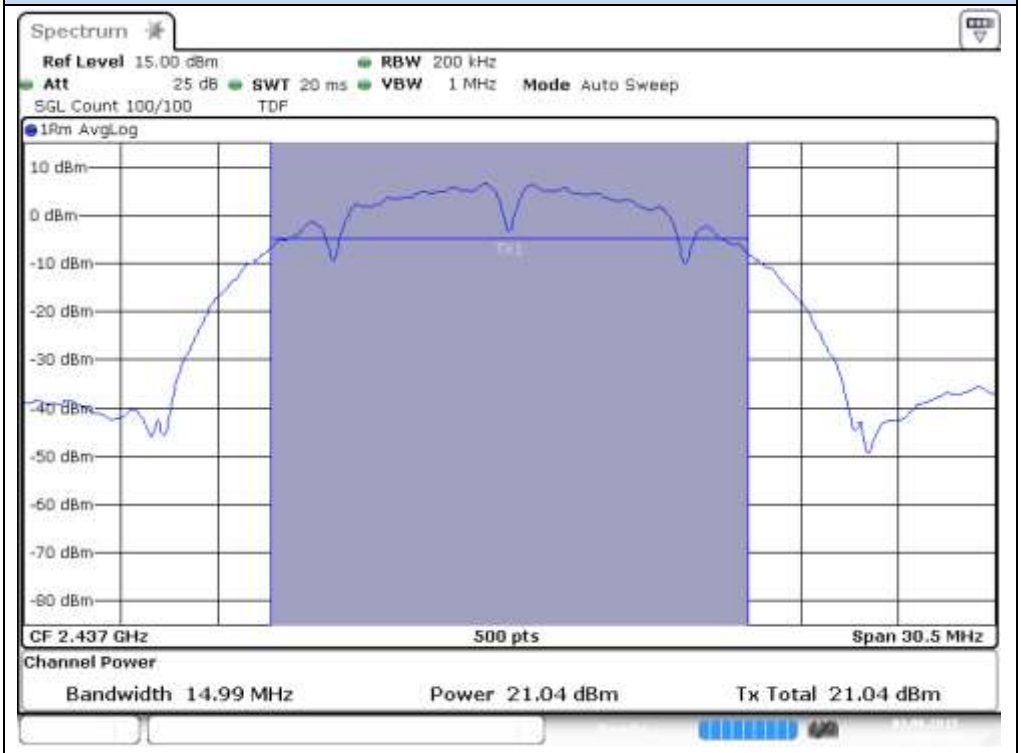
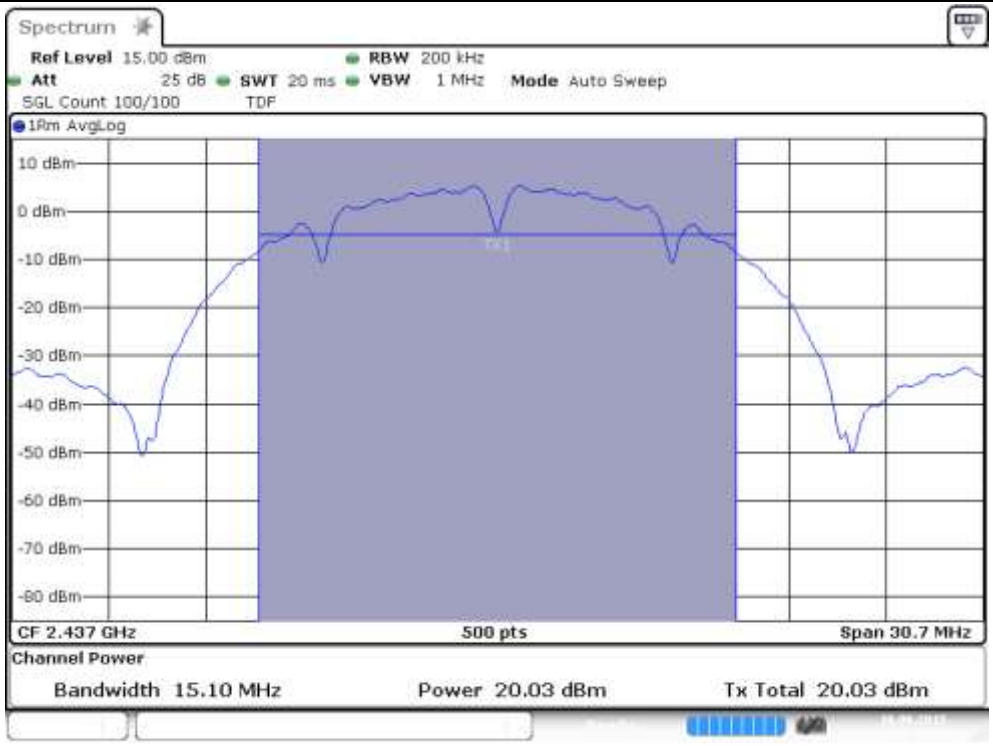
Max Power, Chain A – CH6



Max Power, Chain B – CH6



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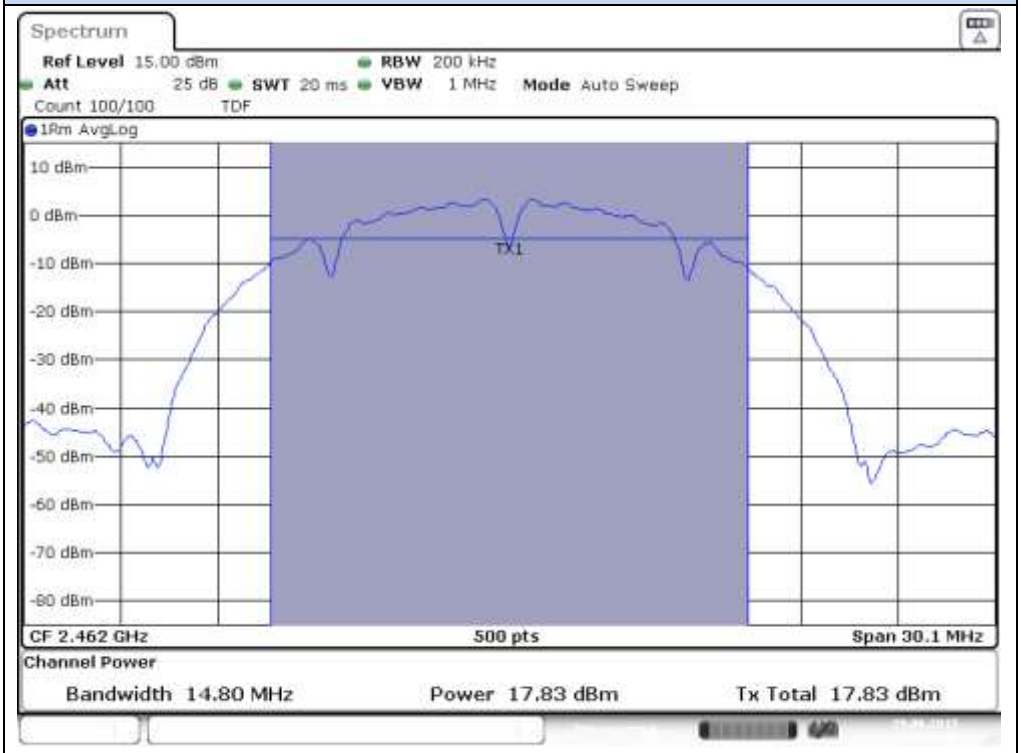
Max Power, Chain A – CH11



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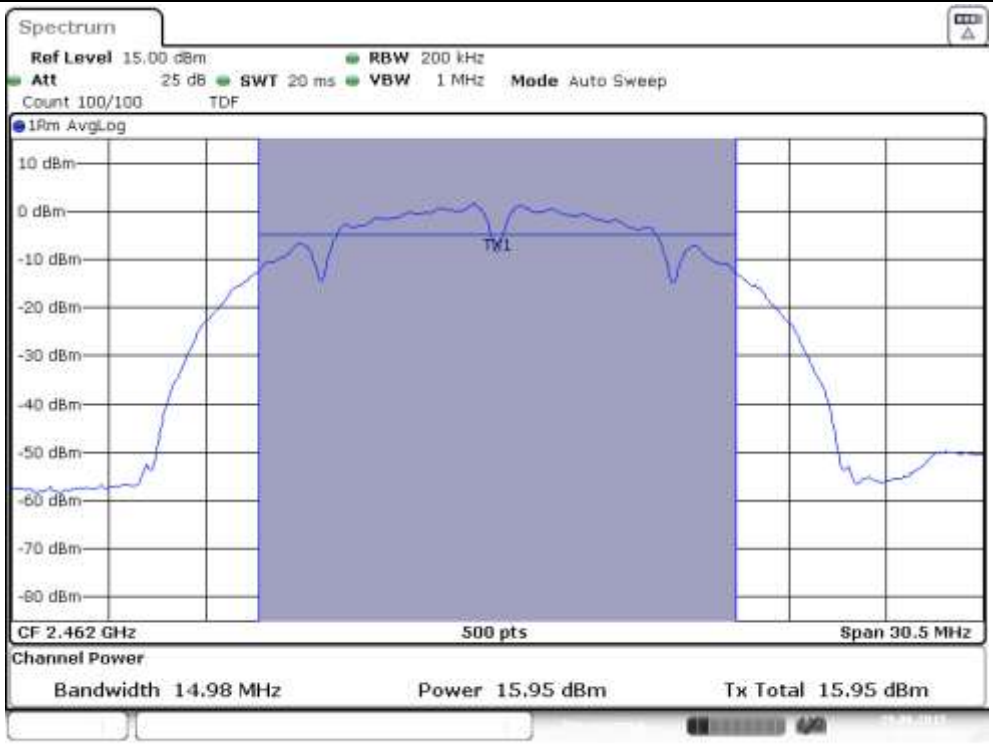

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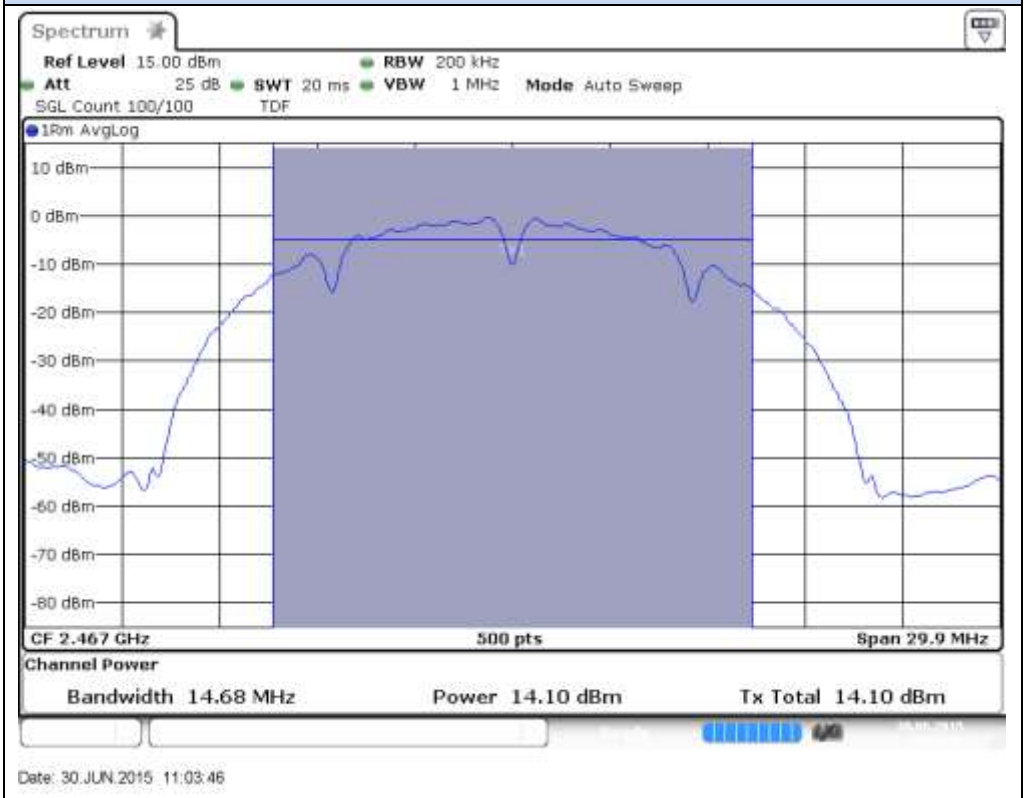
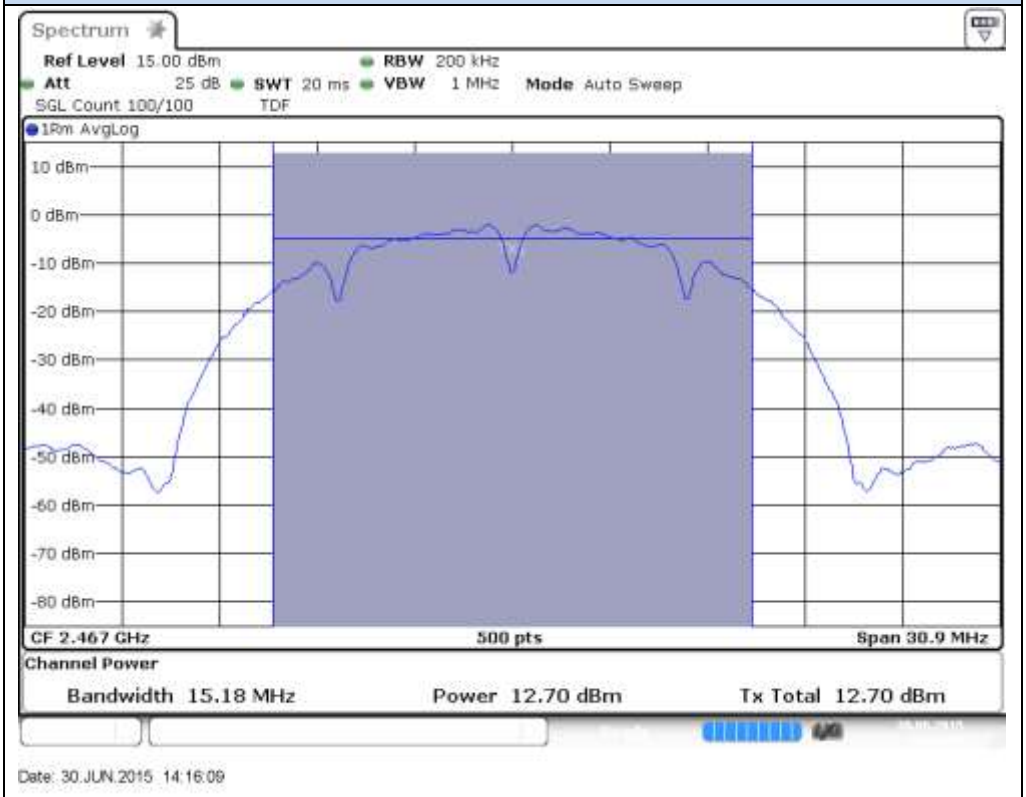
Max Power, Chain A – CH12



Max Power, Chain B – CH12



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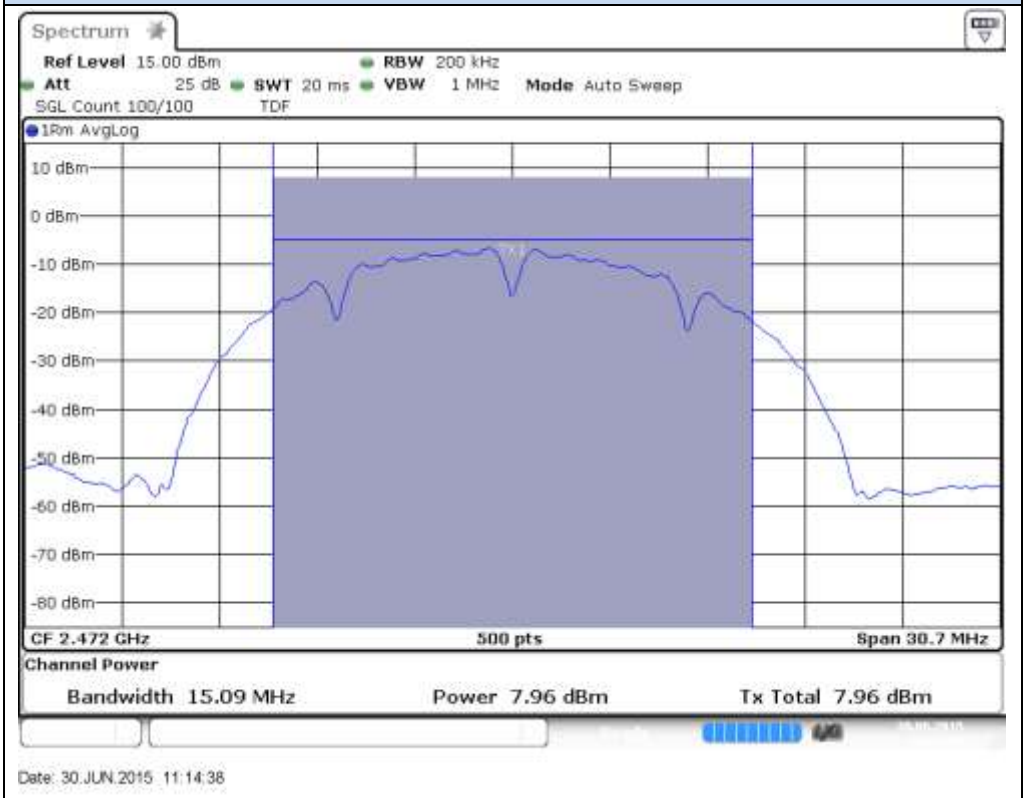
Max Power, Chain A – CH13



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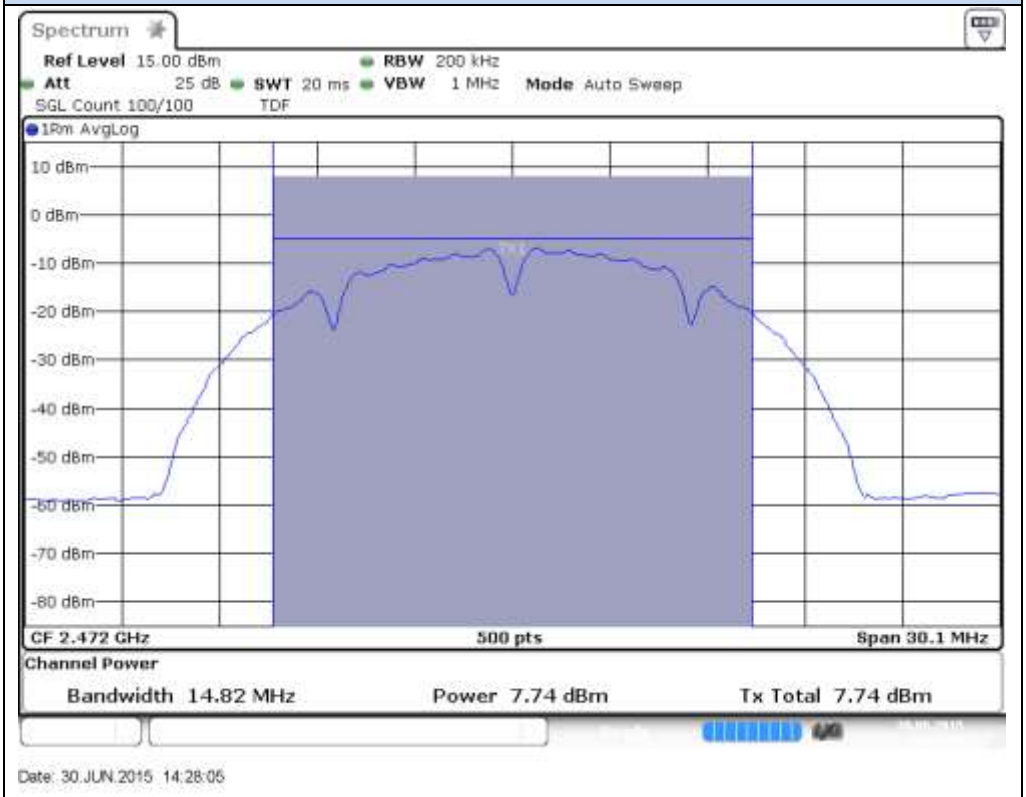

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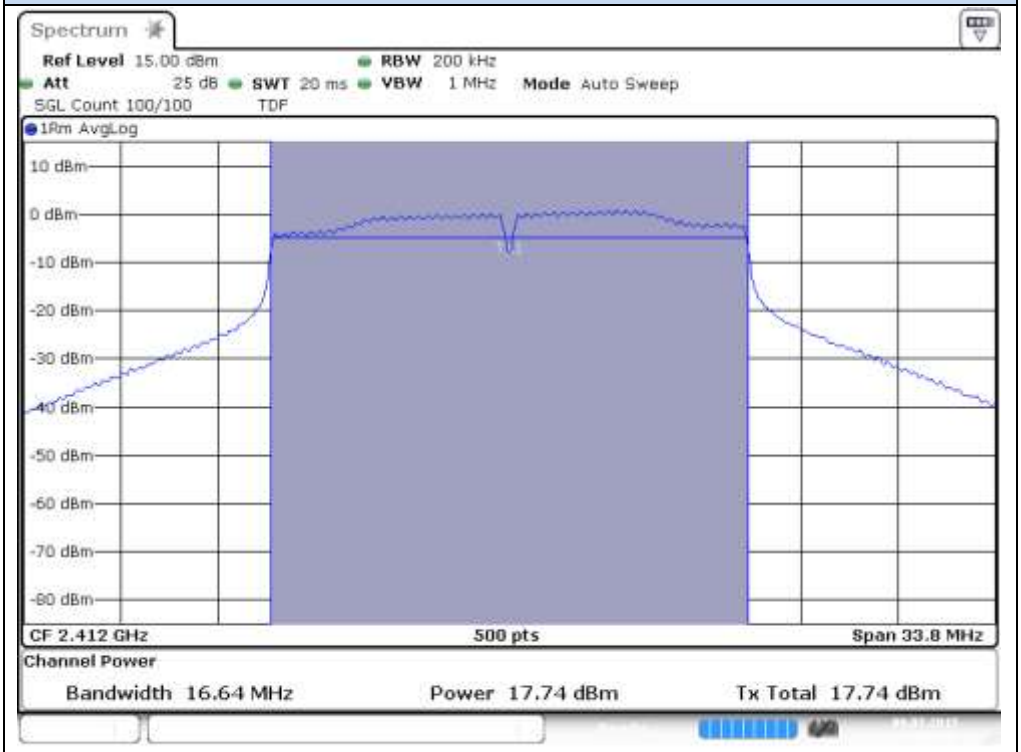
802.11g, 6Mbps(SISO)

Max Power, Chain A – CH1



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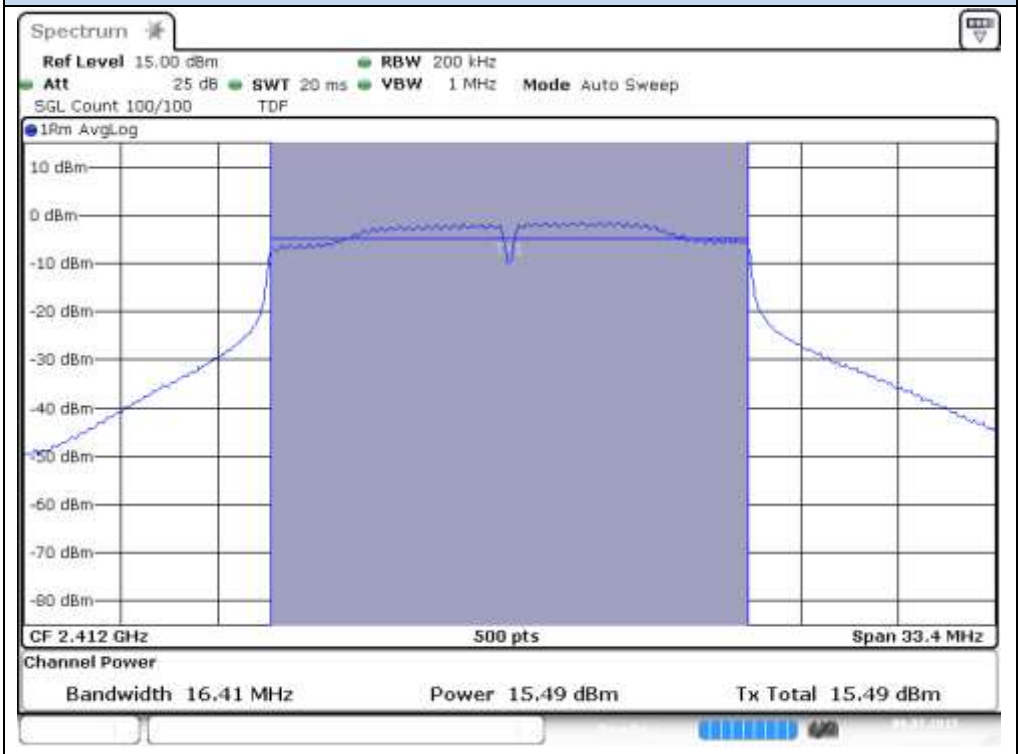

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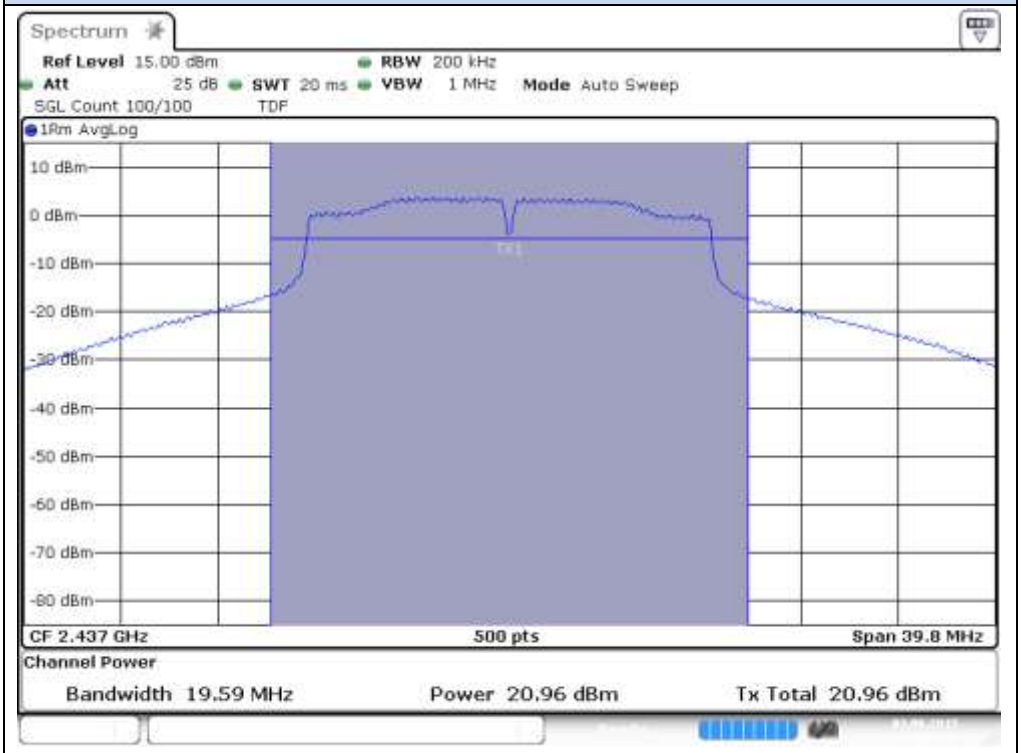
Max Power, Chain A – CH6



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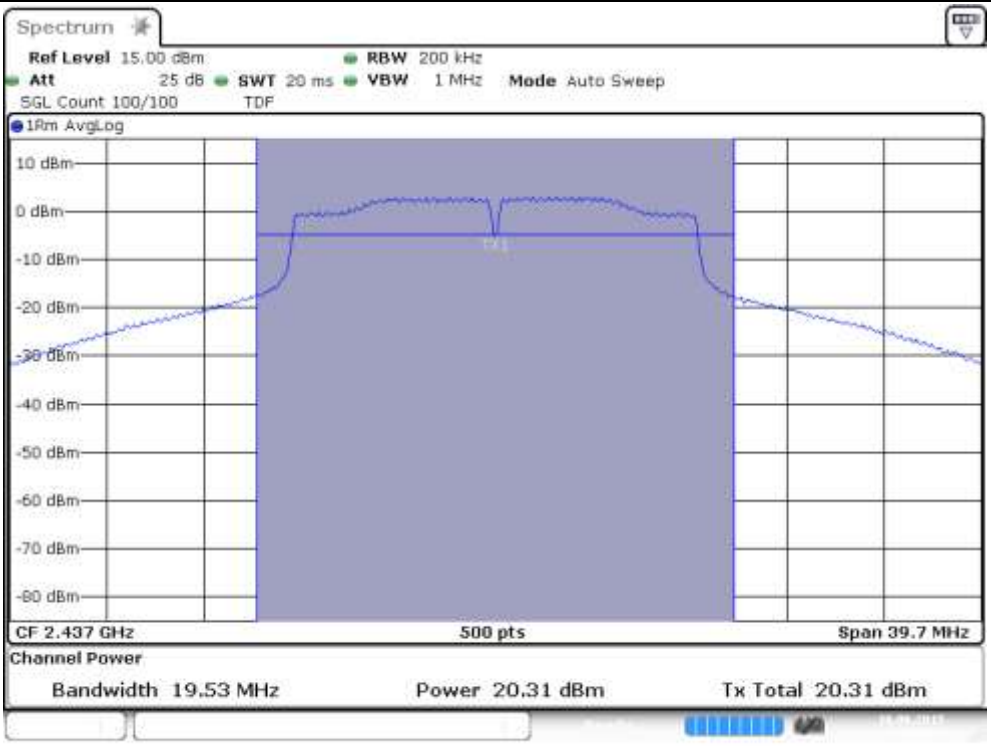
Max Power, Chain B – CH6



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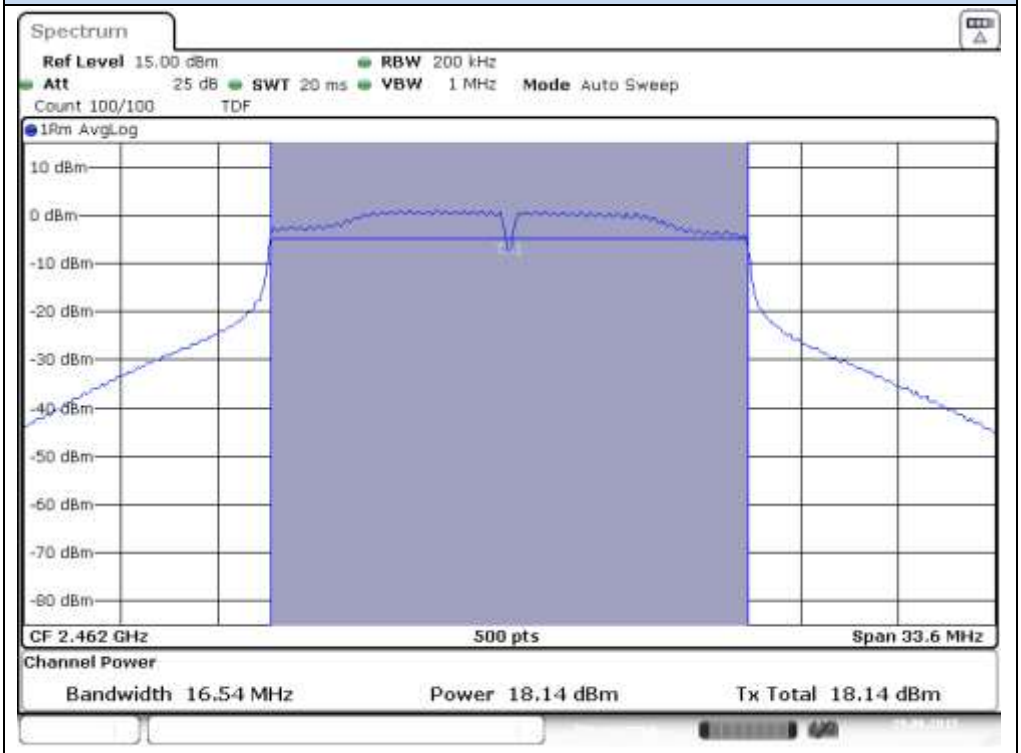
Max Power, Chain A – CH11



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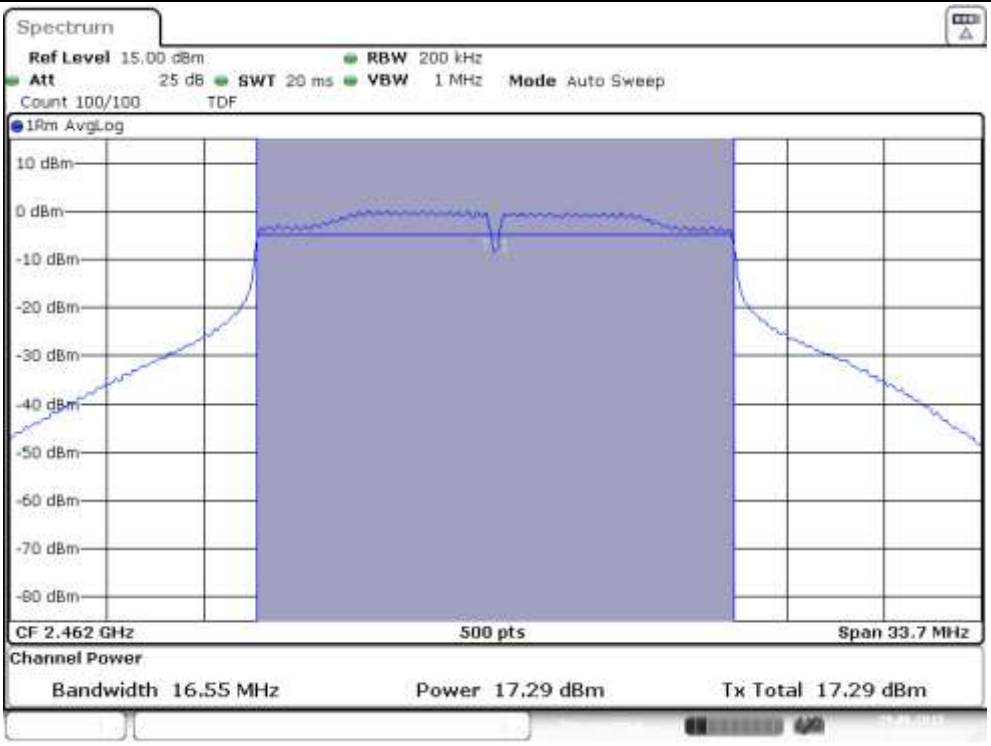

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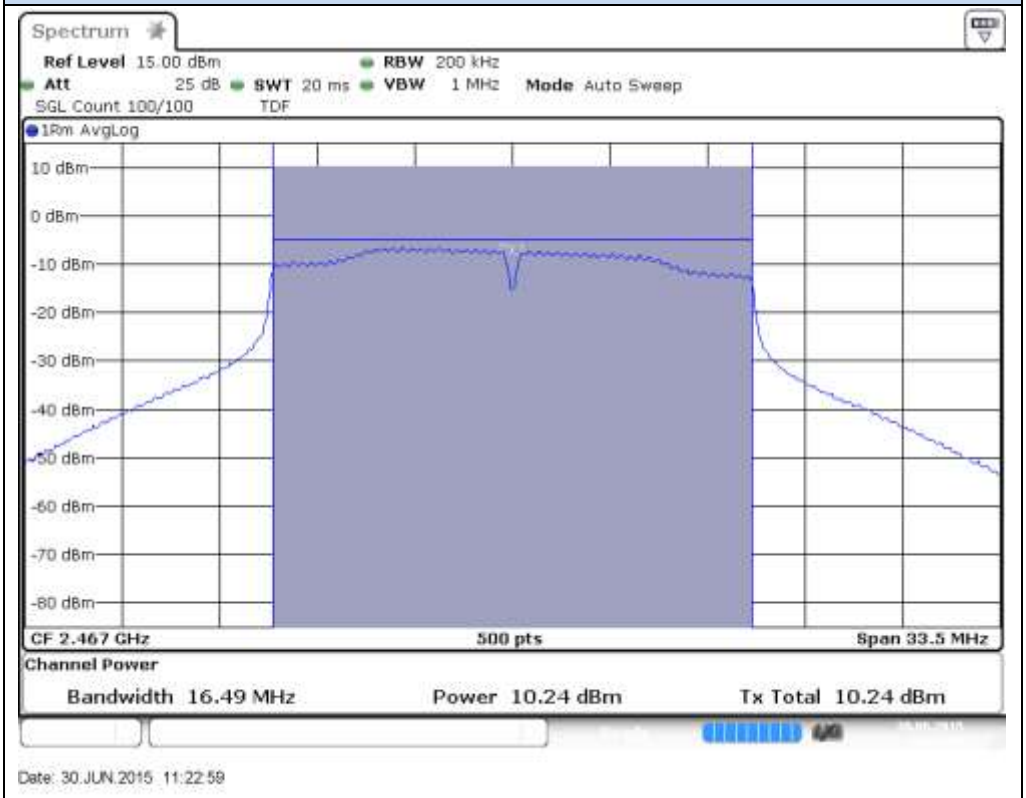
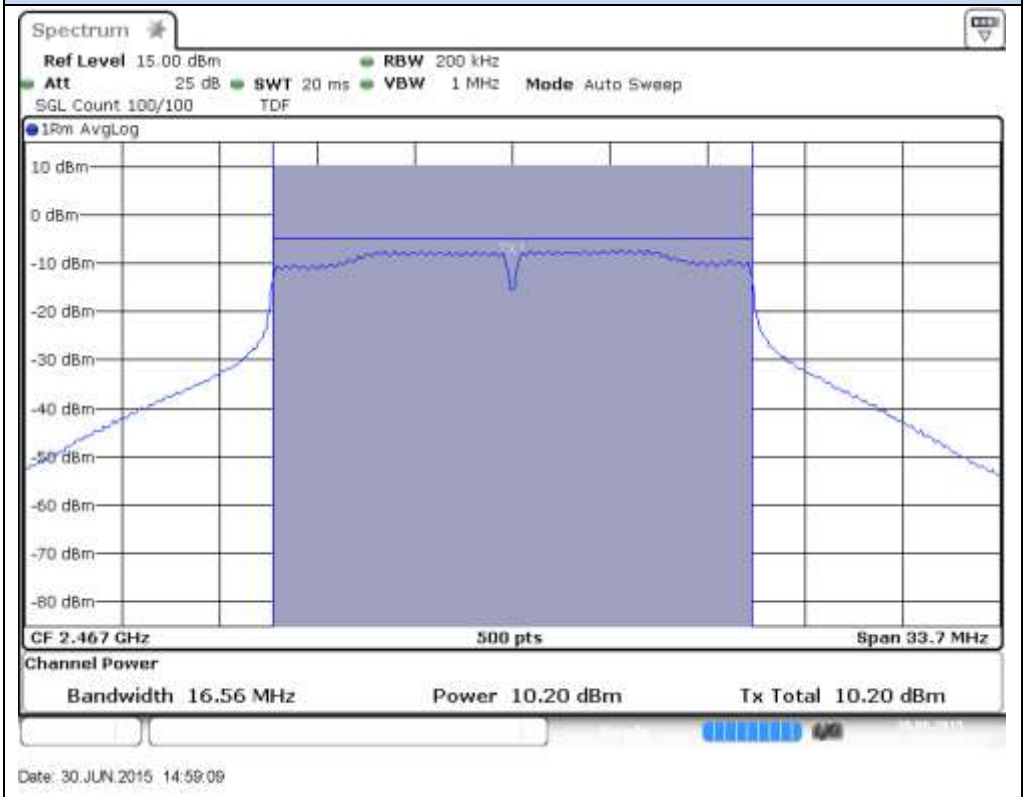
Max Power, Chain A – CH12



Max Power, Chain B – CH12



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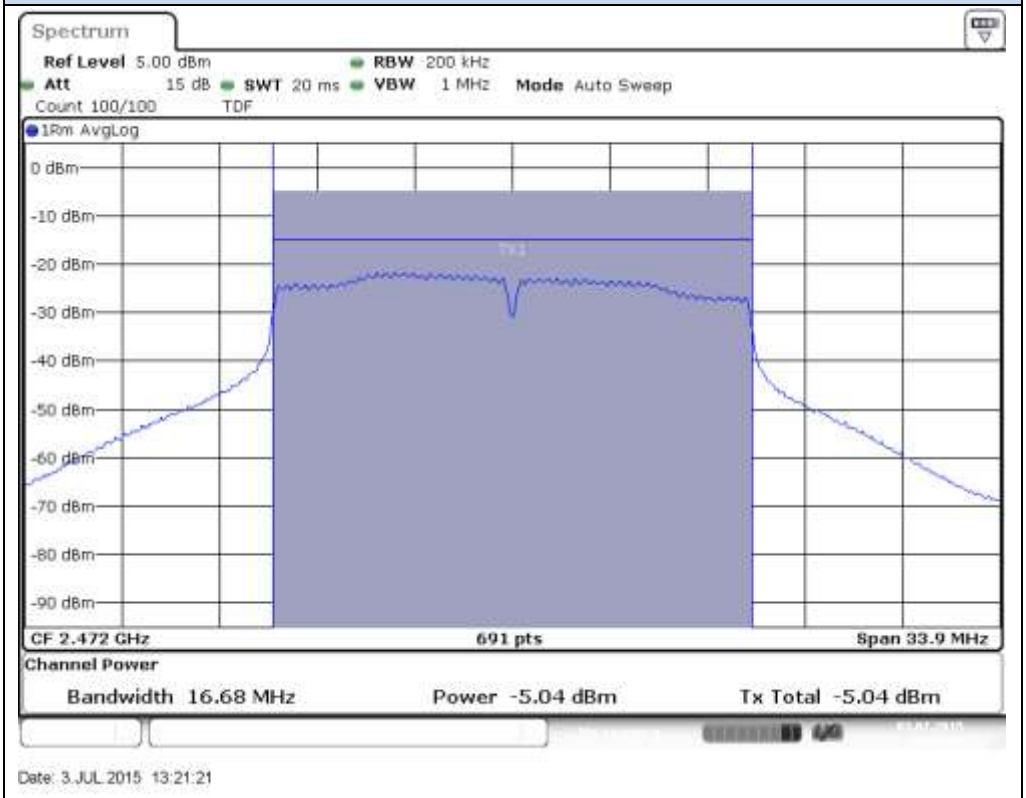
Max Power, Chain A – CH13



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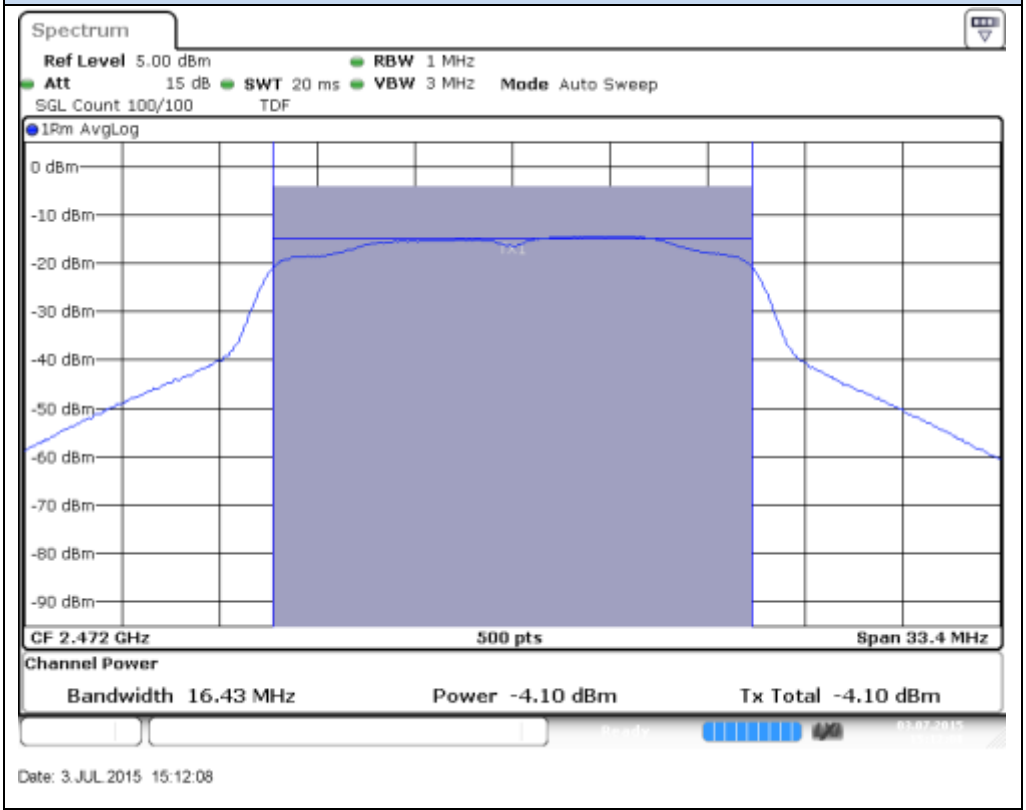

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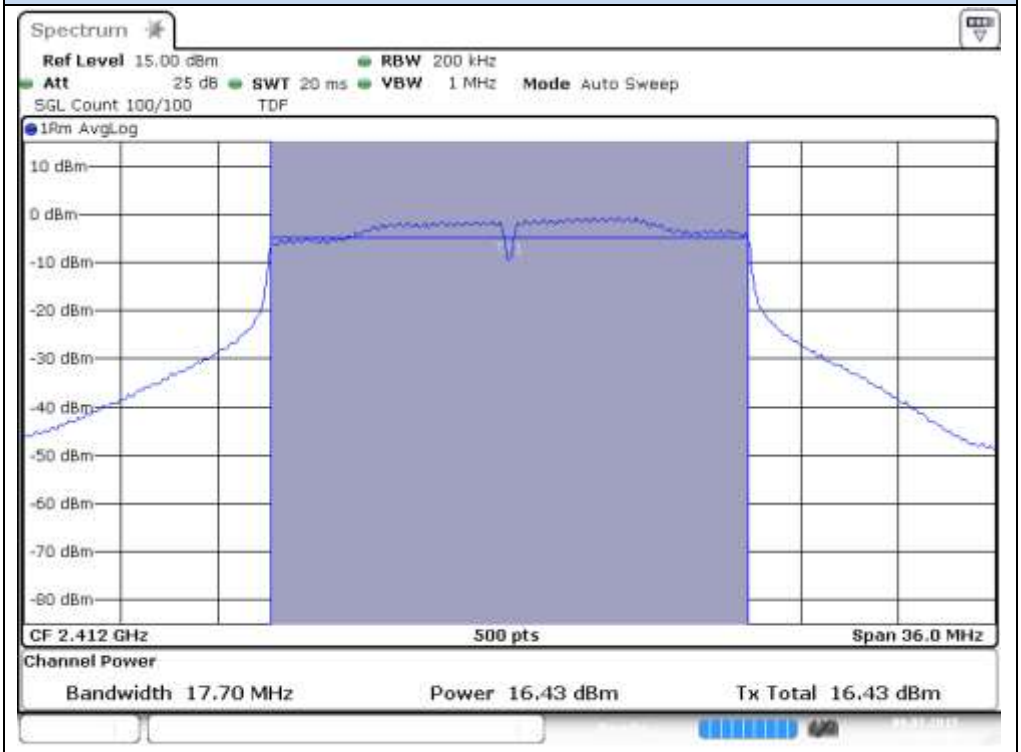
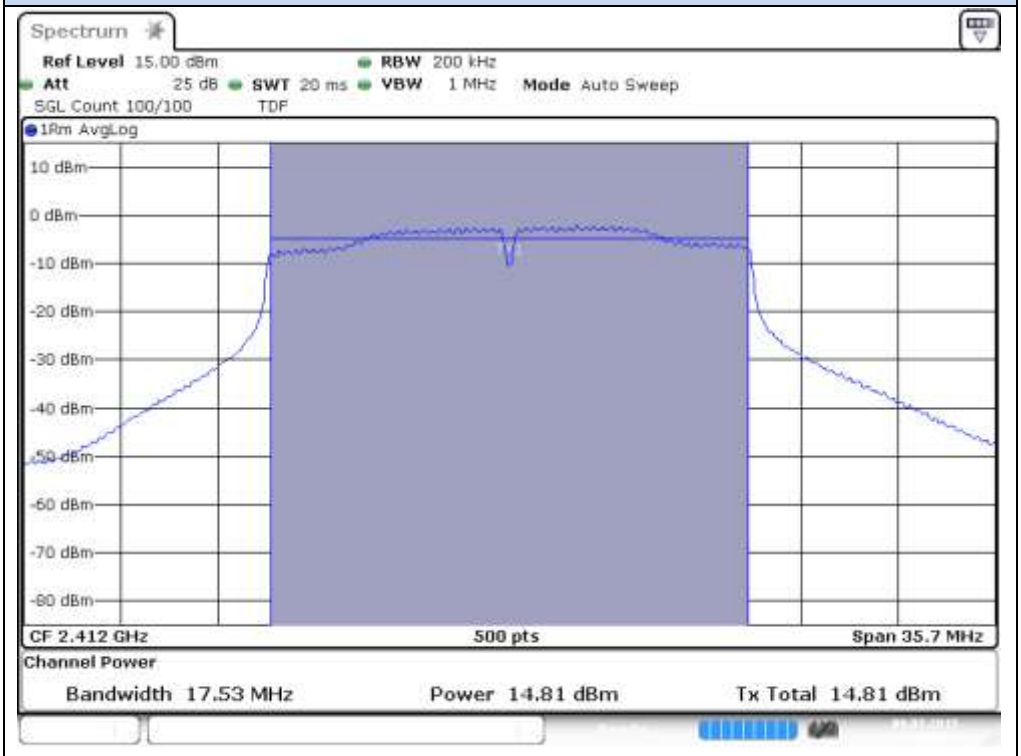
802.11n20, HT0 (SISO)

Max Power, Chain A – CH1



Max Power, Chain B – CH1



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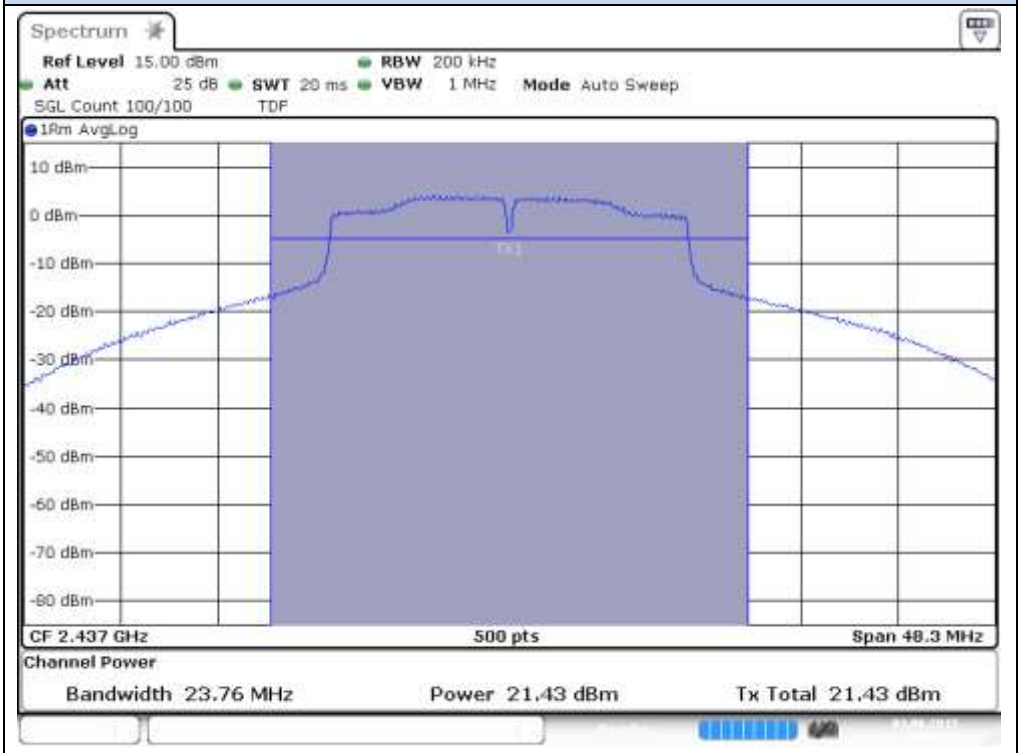
Max Power, Chain A – CH6



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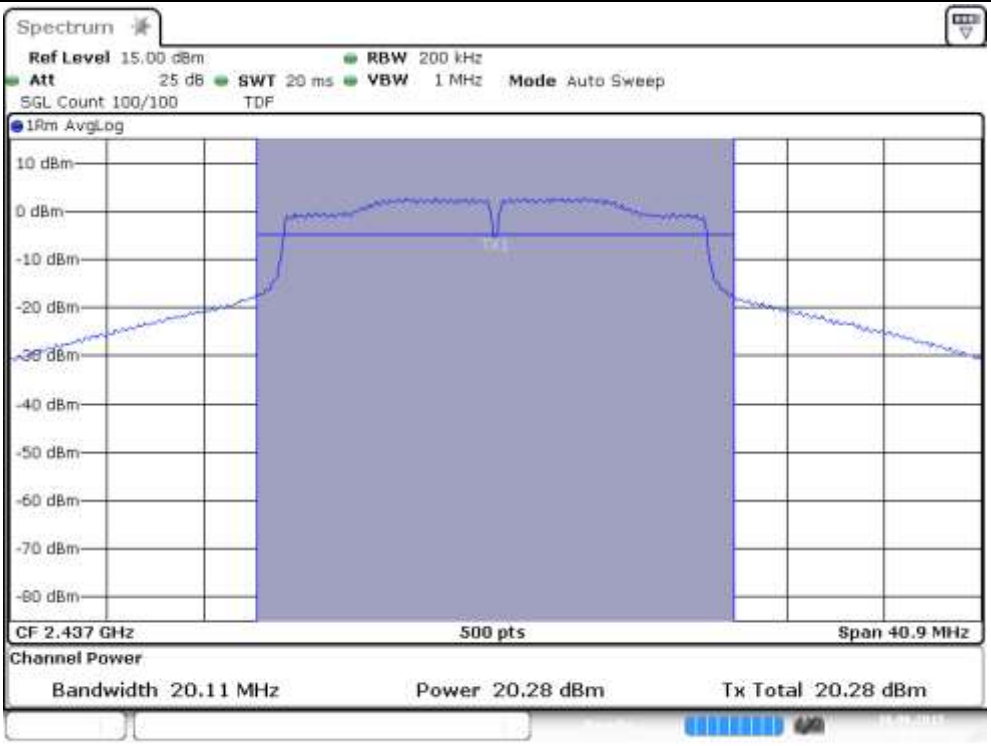
Max Power, Chain B – CH6



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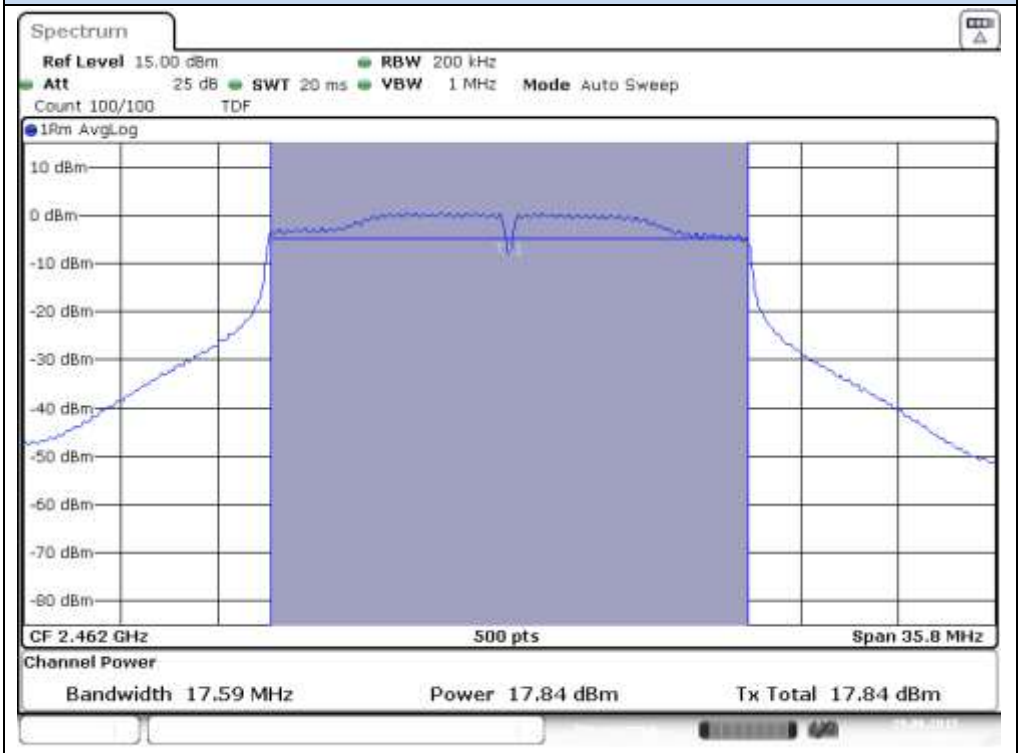
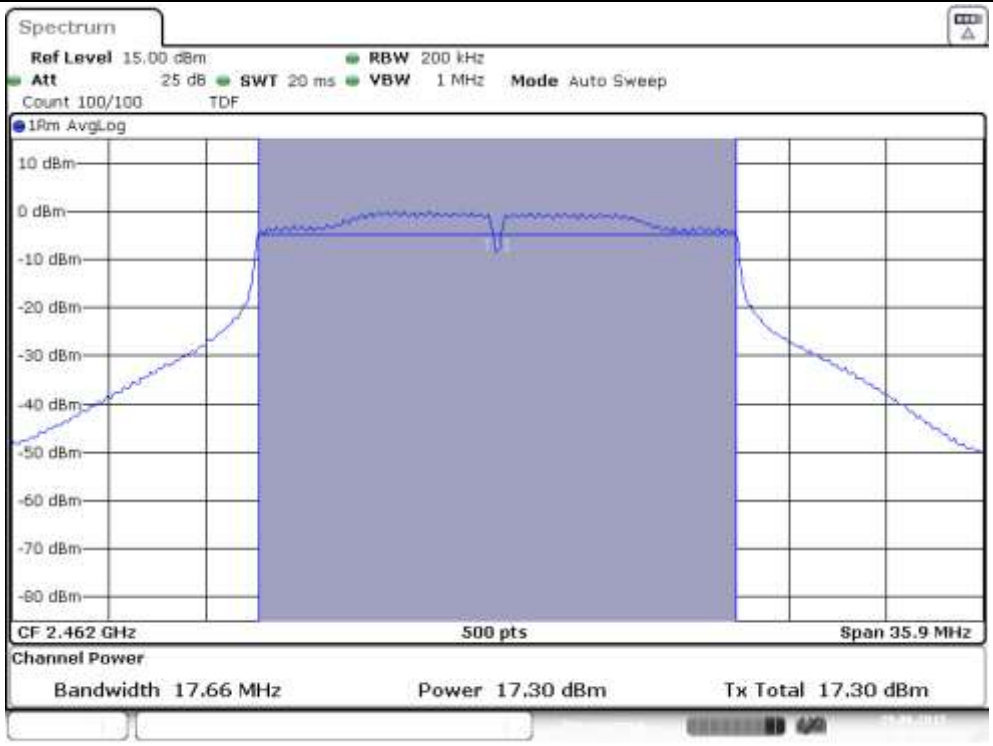
Max Power, Chain A – CH11



Max Power, Chain B – CH11



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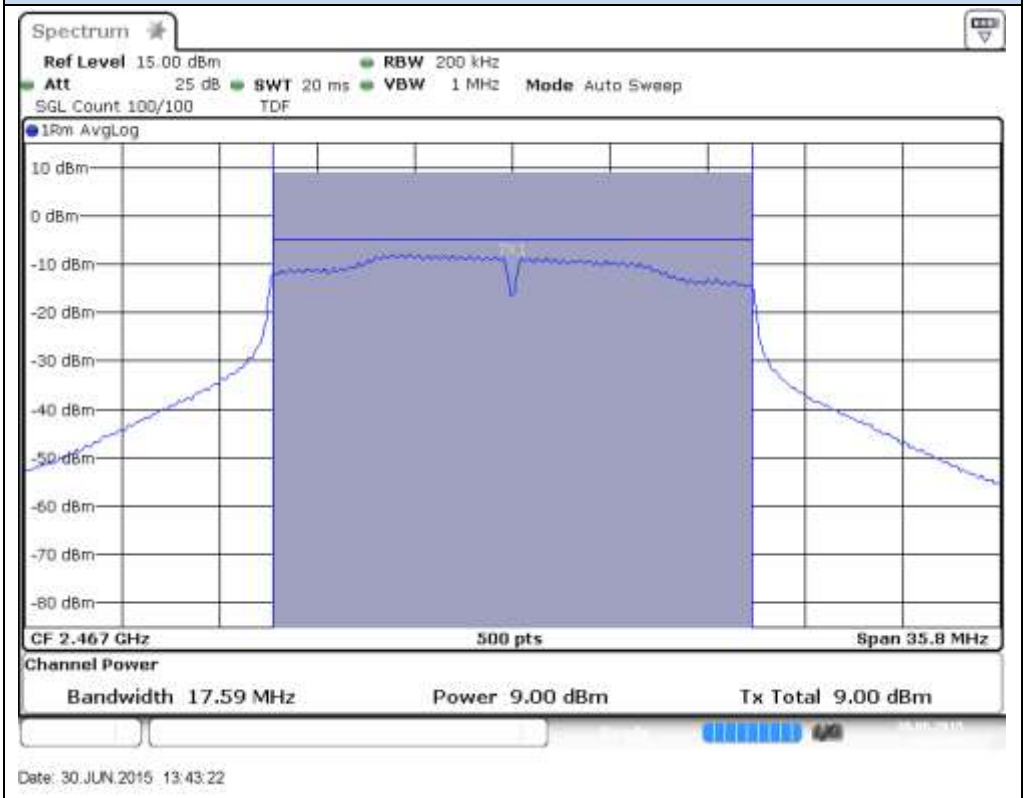
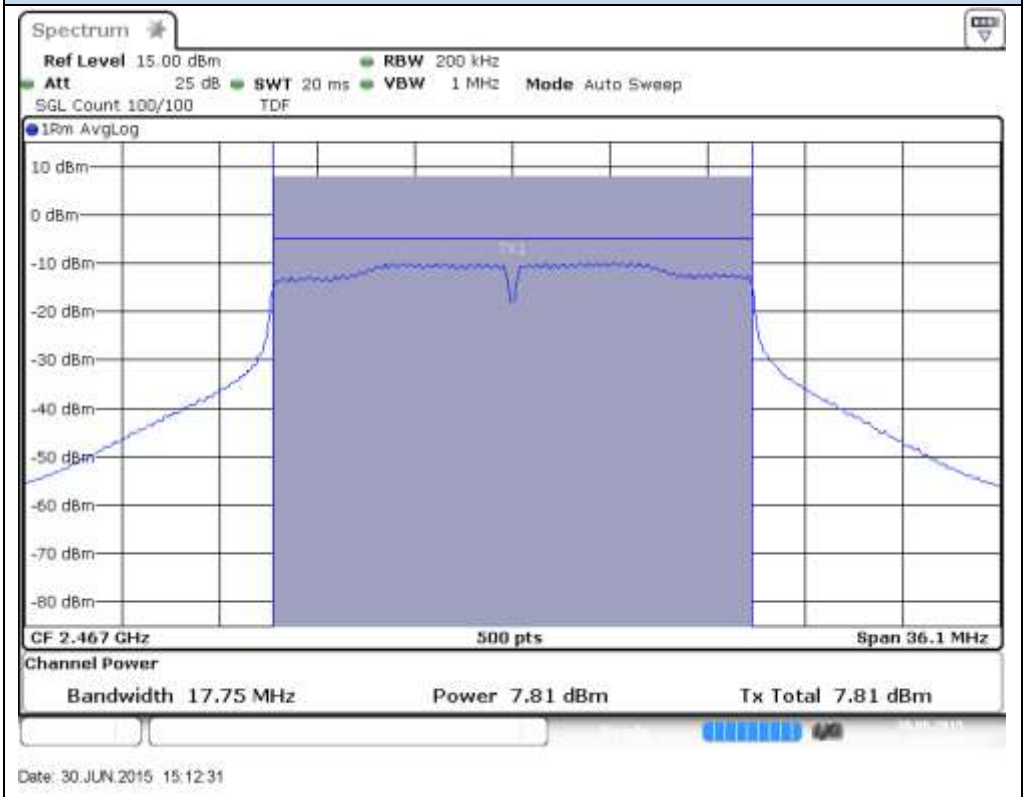
Max Power, Chain A – CH12



Max Power, Chain B – CH12



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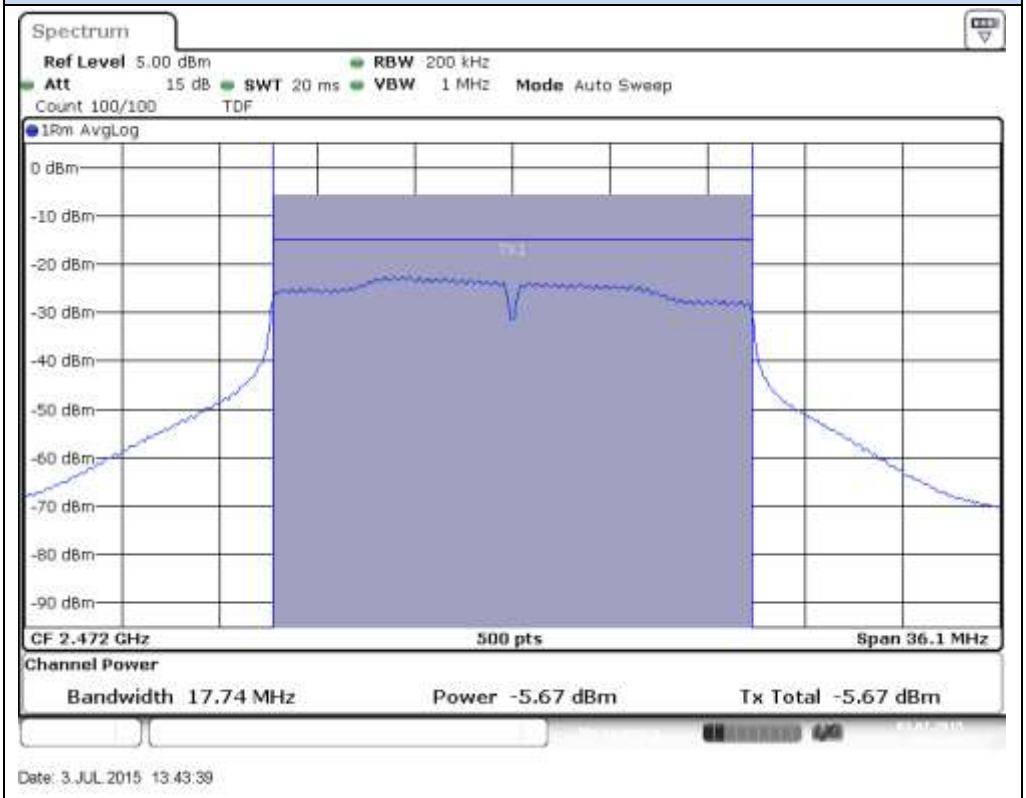
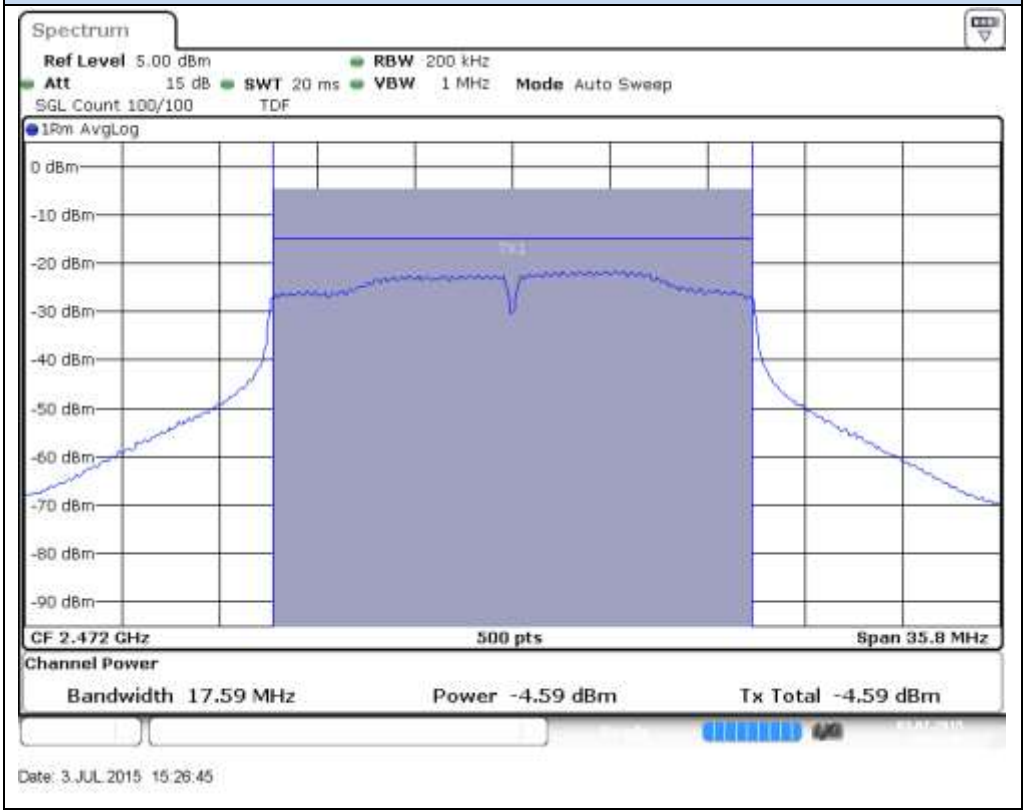
Max Power, Chain A – CH13



Max Power, Chain B – CH13



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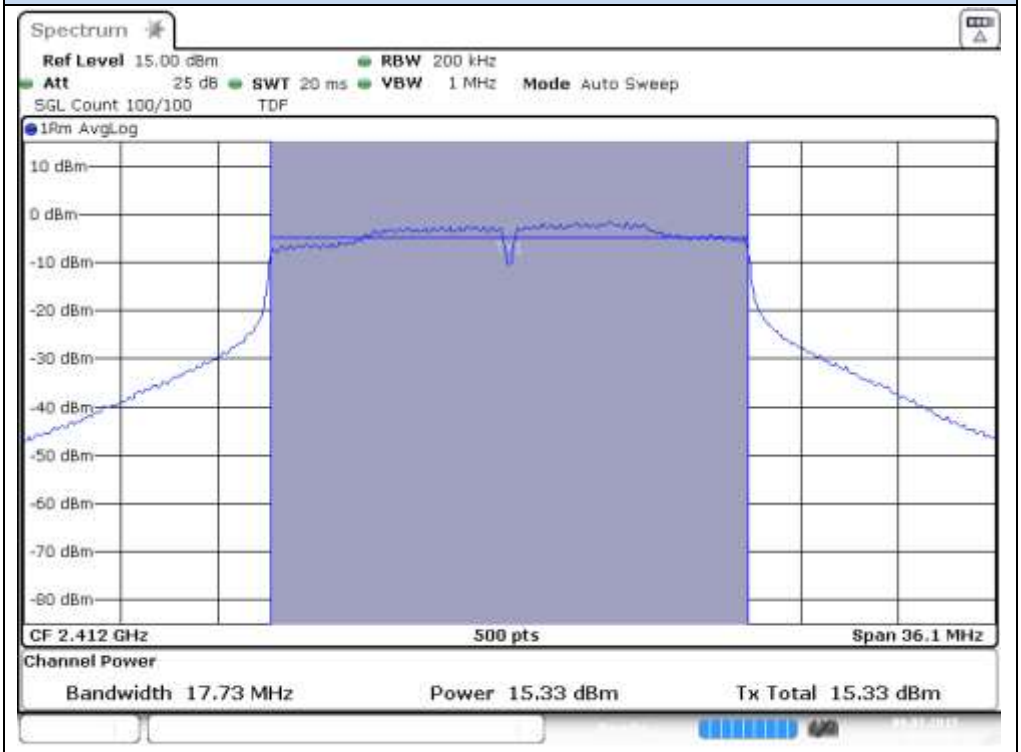
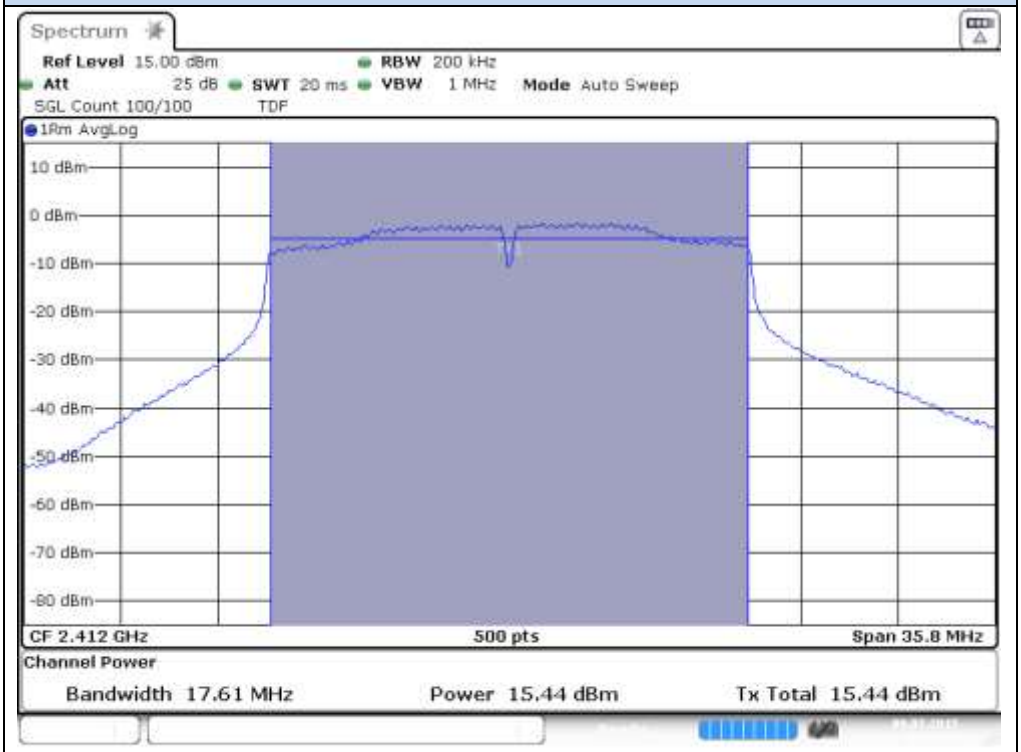
802.11n20, HT8 (MIMO)

Max Power, Chain A – CH1



Date: 9.JUL.2015 16:36:17

Max Power, Chain B – CH1



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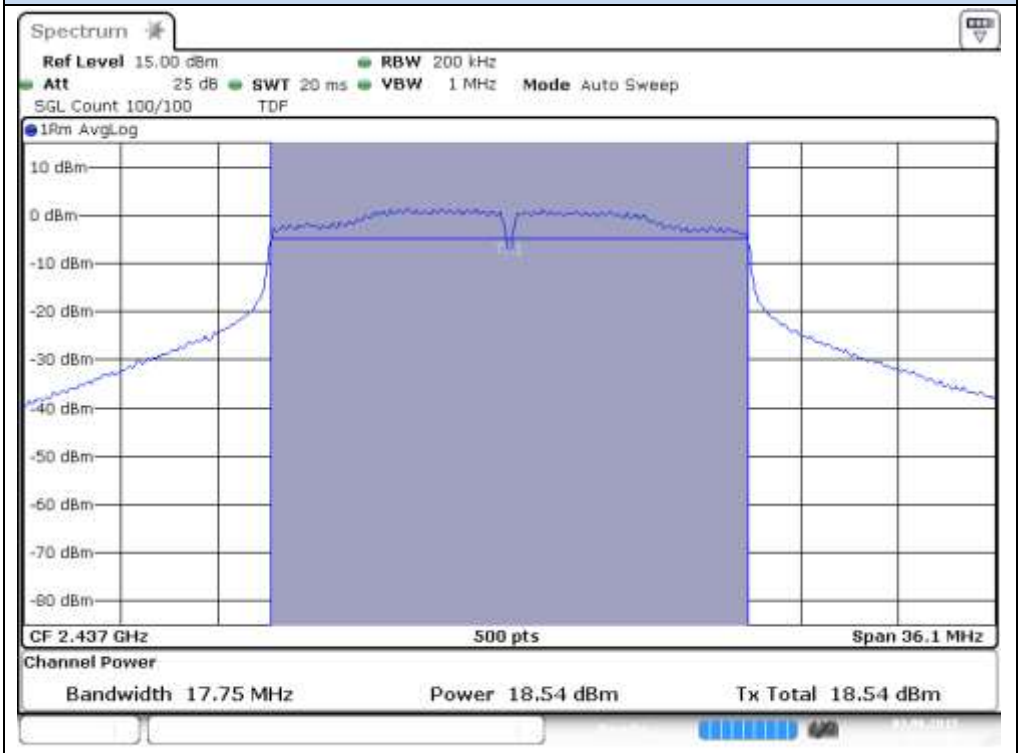
Max Power, Chain A – CH6



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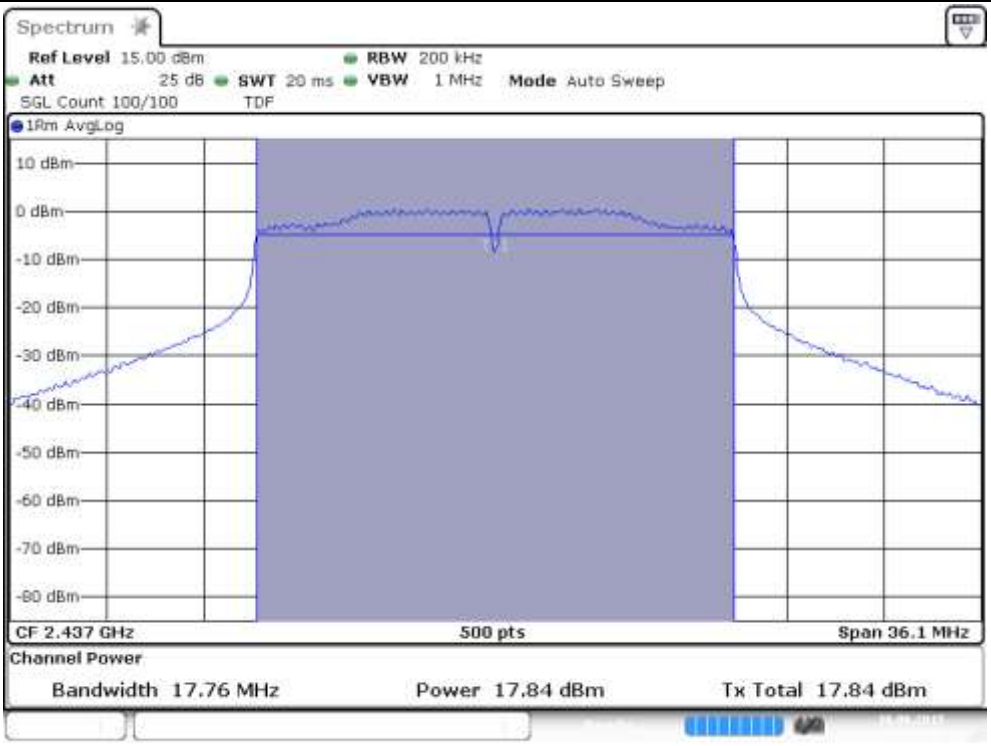
Max Power, Chain B – CH6



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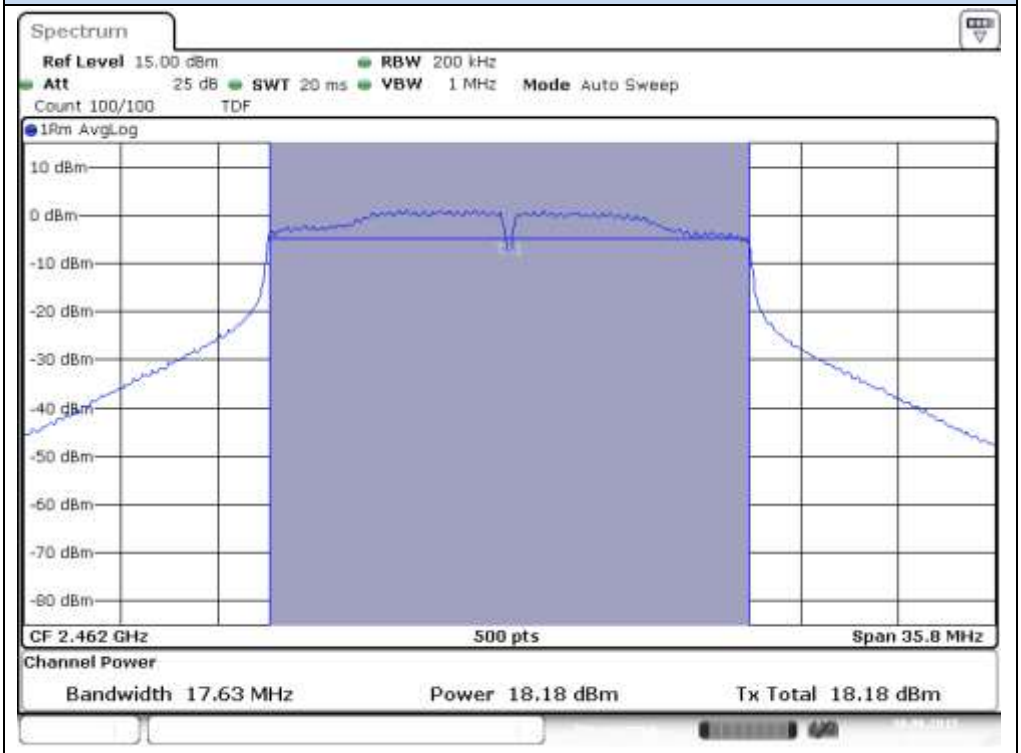
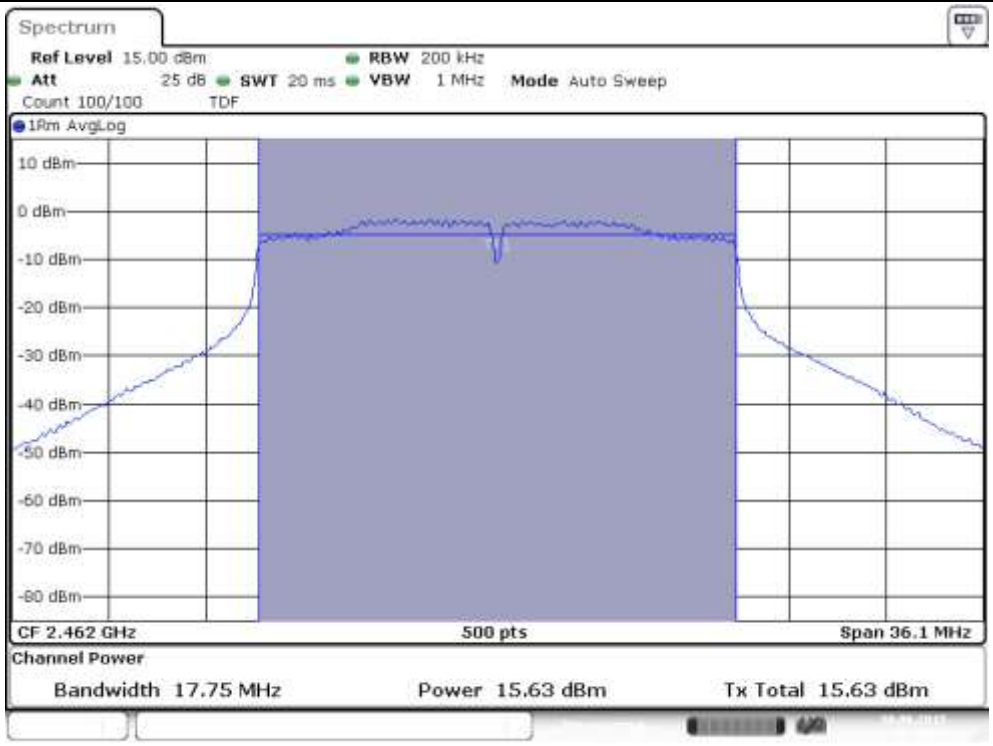
Max Power, Chain A – CH11



Max Power, Chain B – CH11



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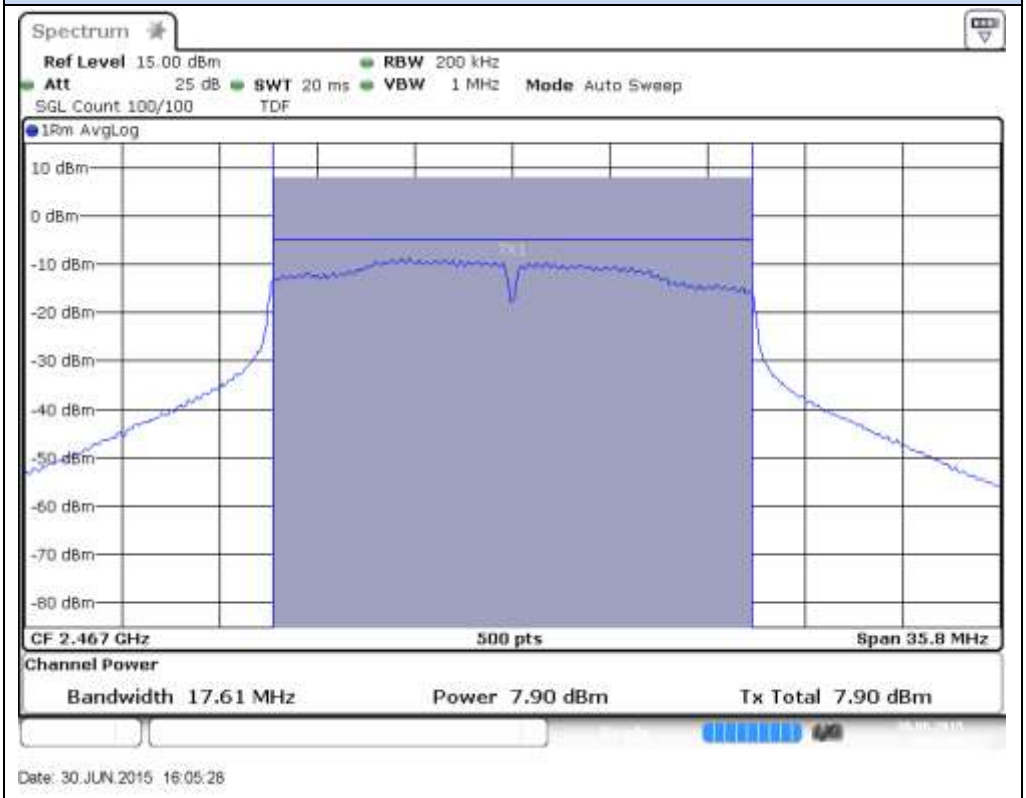
Max Power, Chain A – CH12



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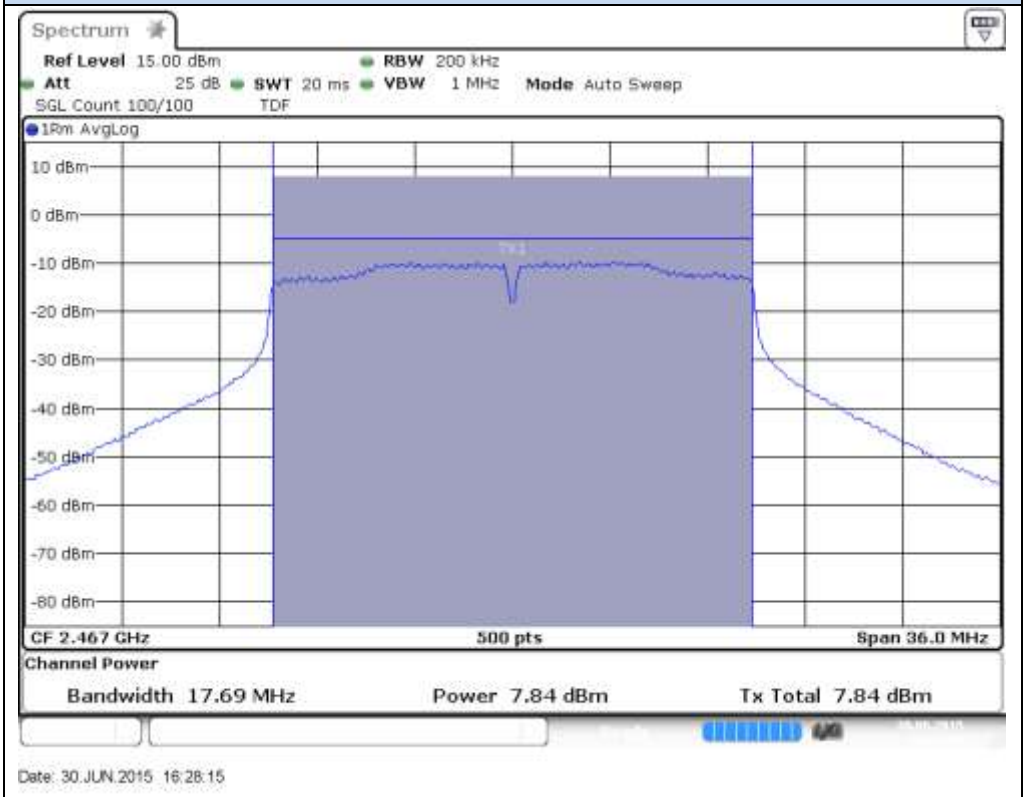

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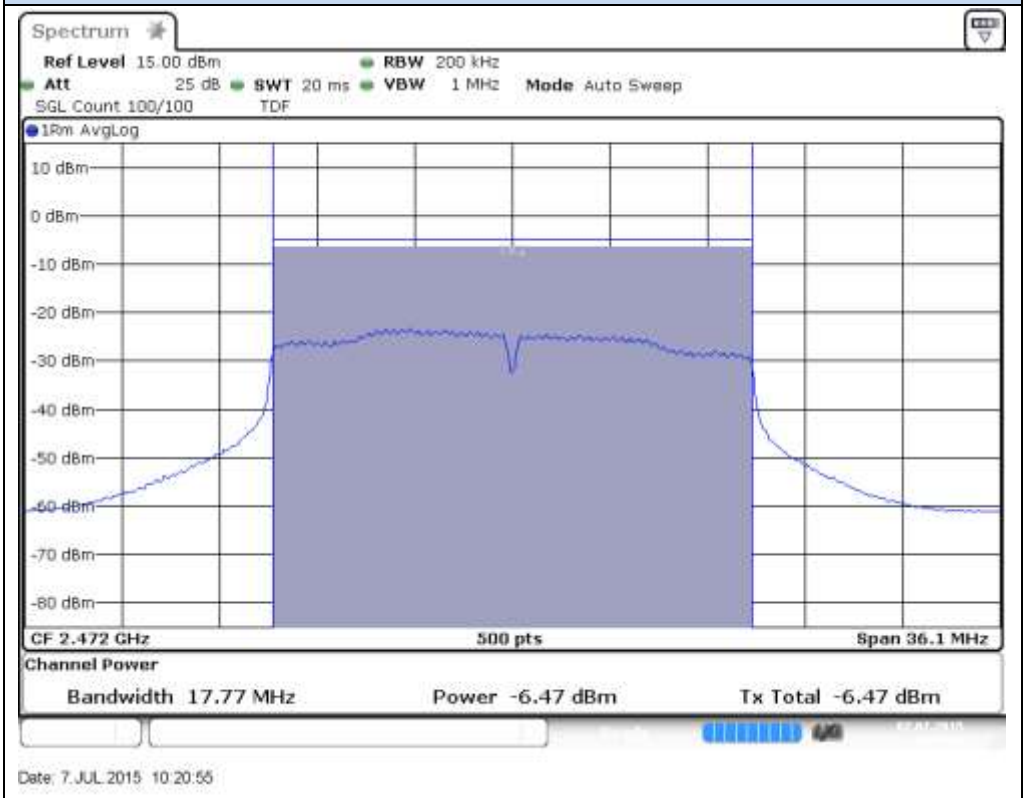
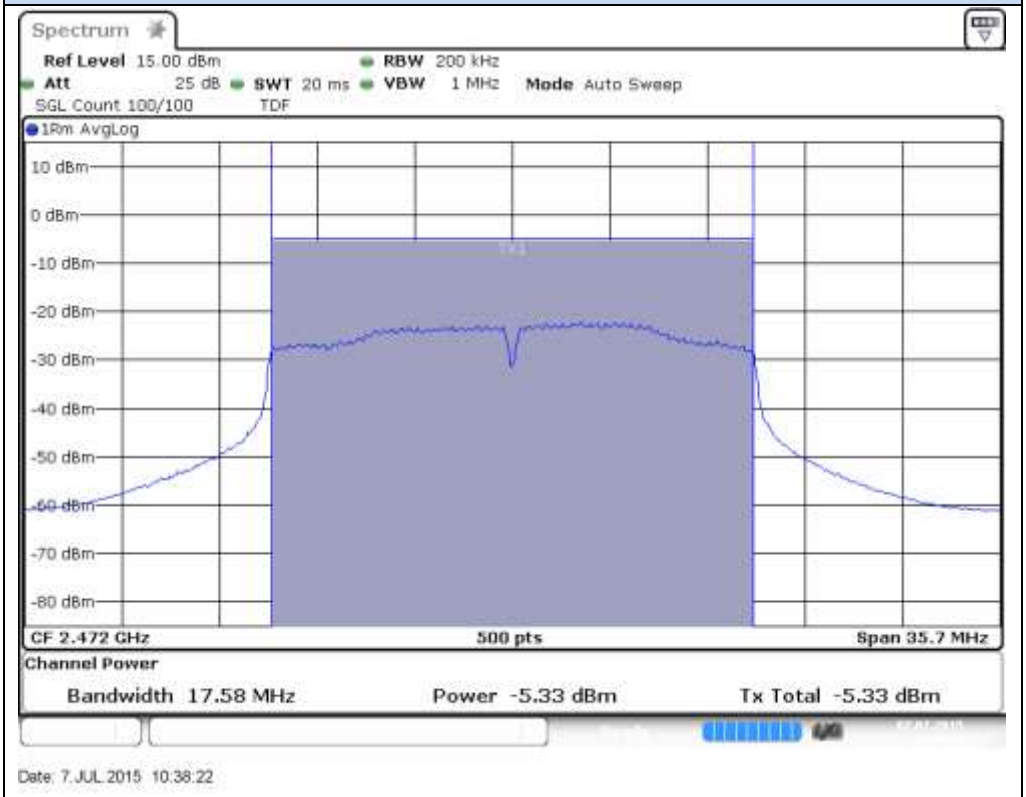
Max Power, Chain A – CH13



Max Power, Chain B – CH13



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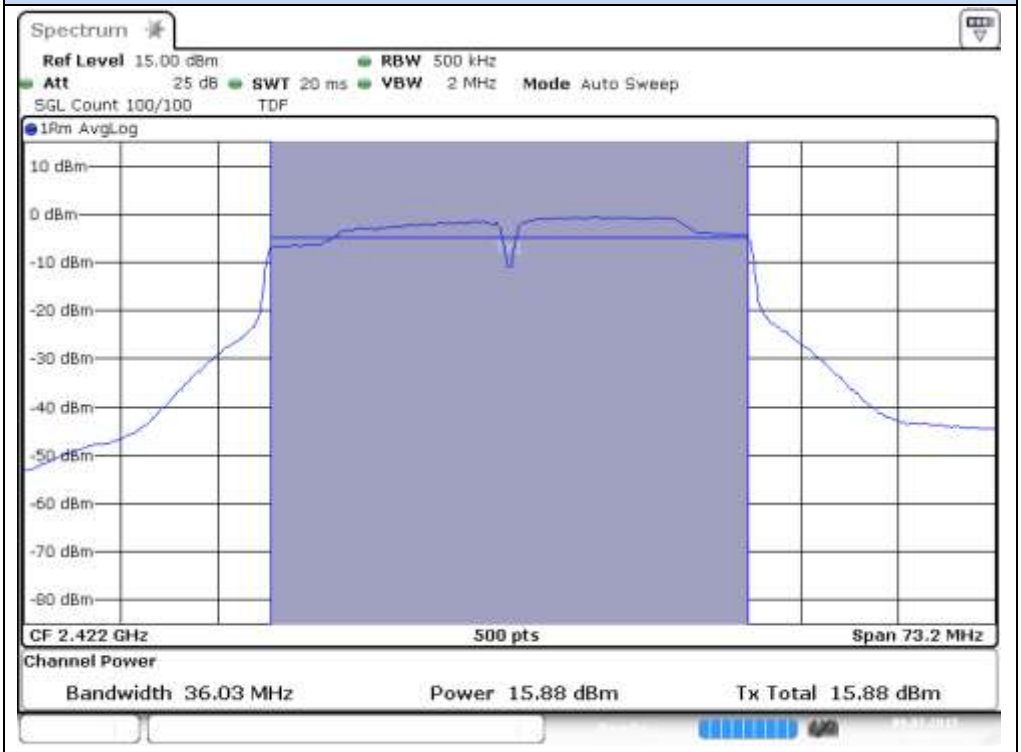
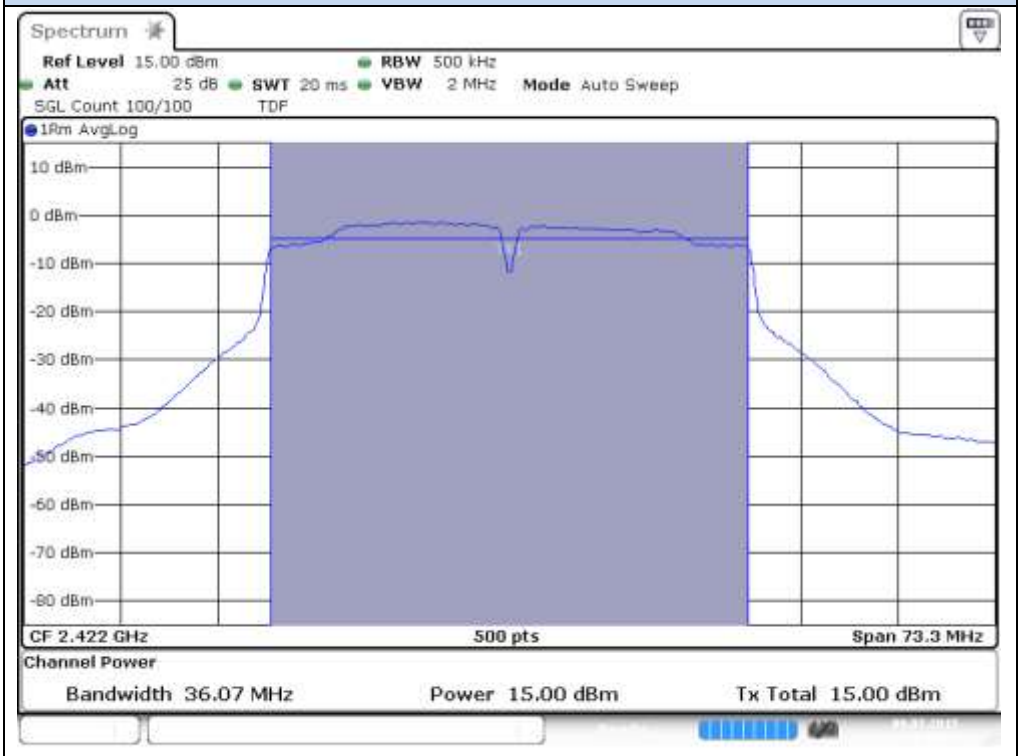
802.11n40, HT0 (SISO)

Max Power, Chain A – CH3F



Max Power, Chain B – CH3F



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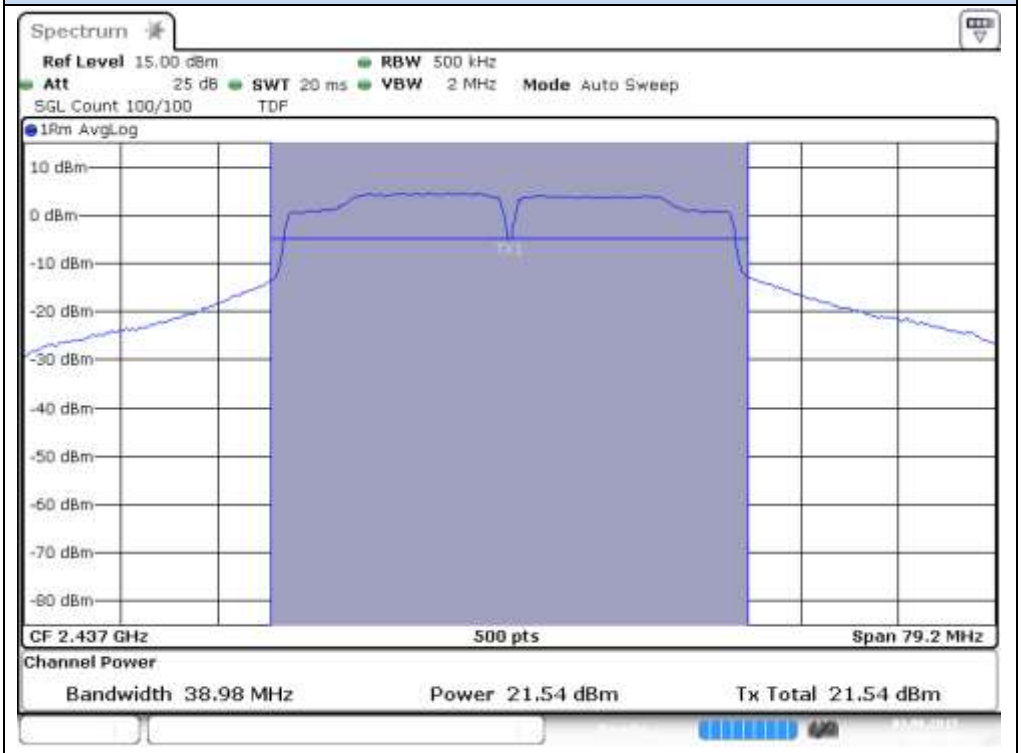
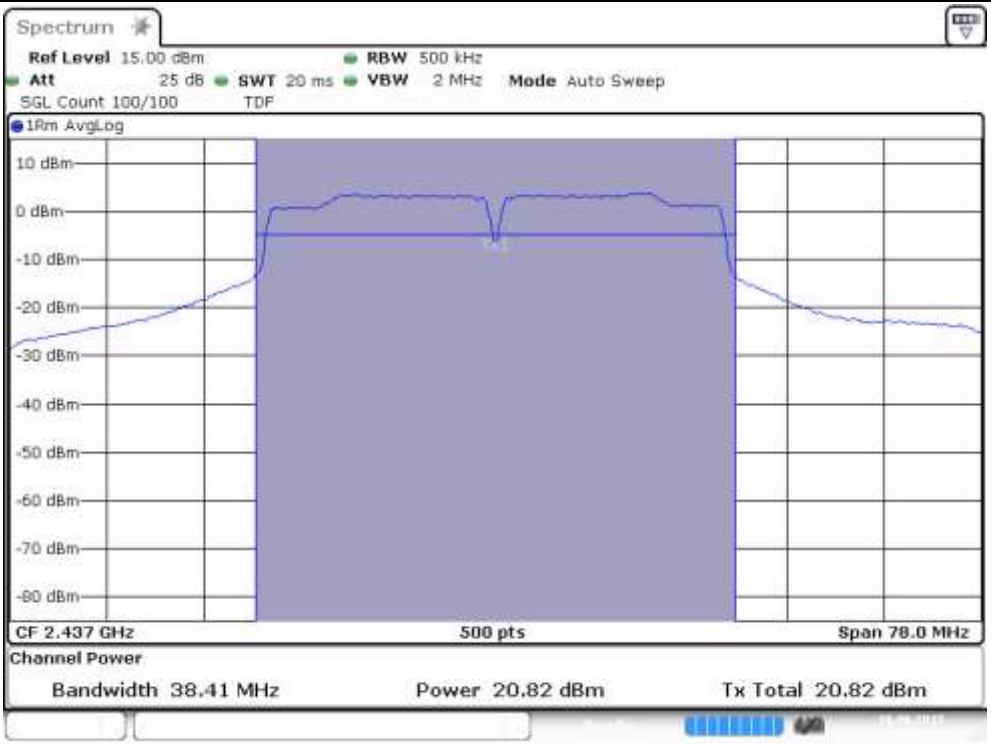
Max Power, Chain A – CH6F



Max Power, Chain B – CH6F



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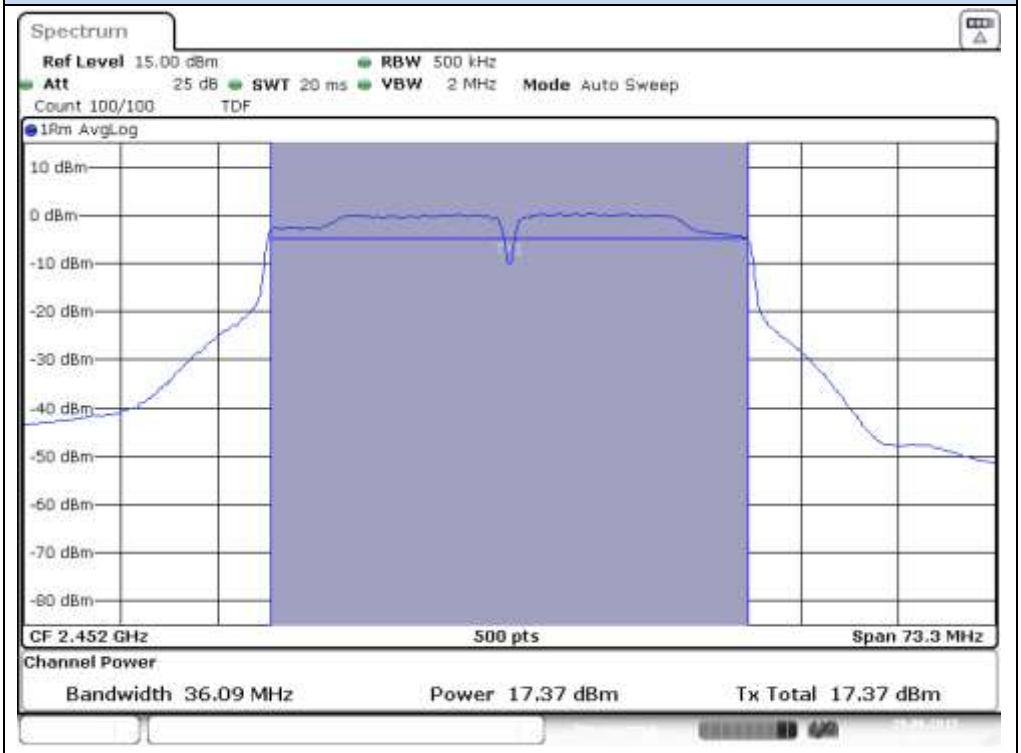
Max Power, Chain A – CH9F



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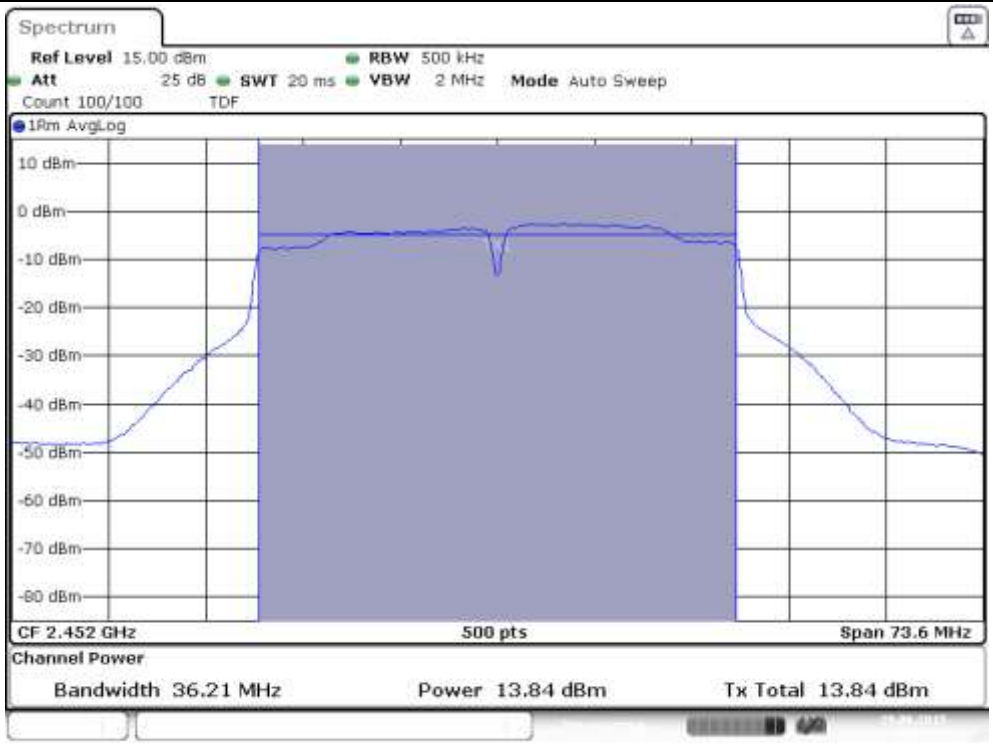
Max Power, Chain B – CH9F



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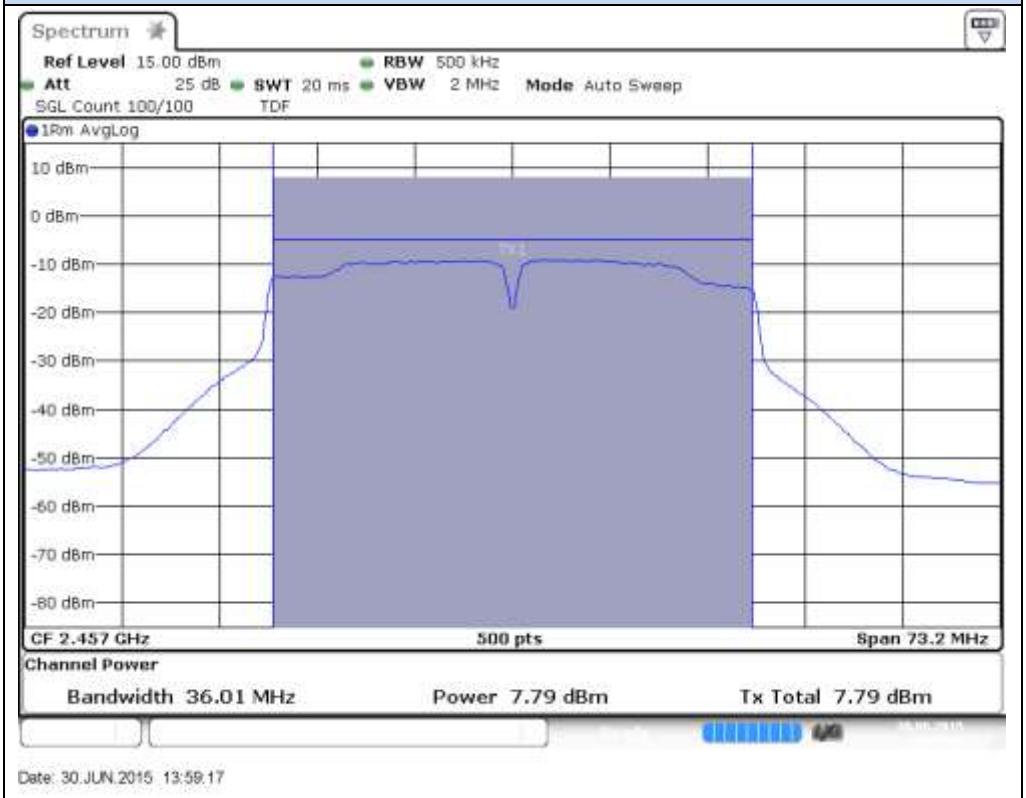
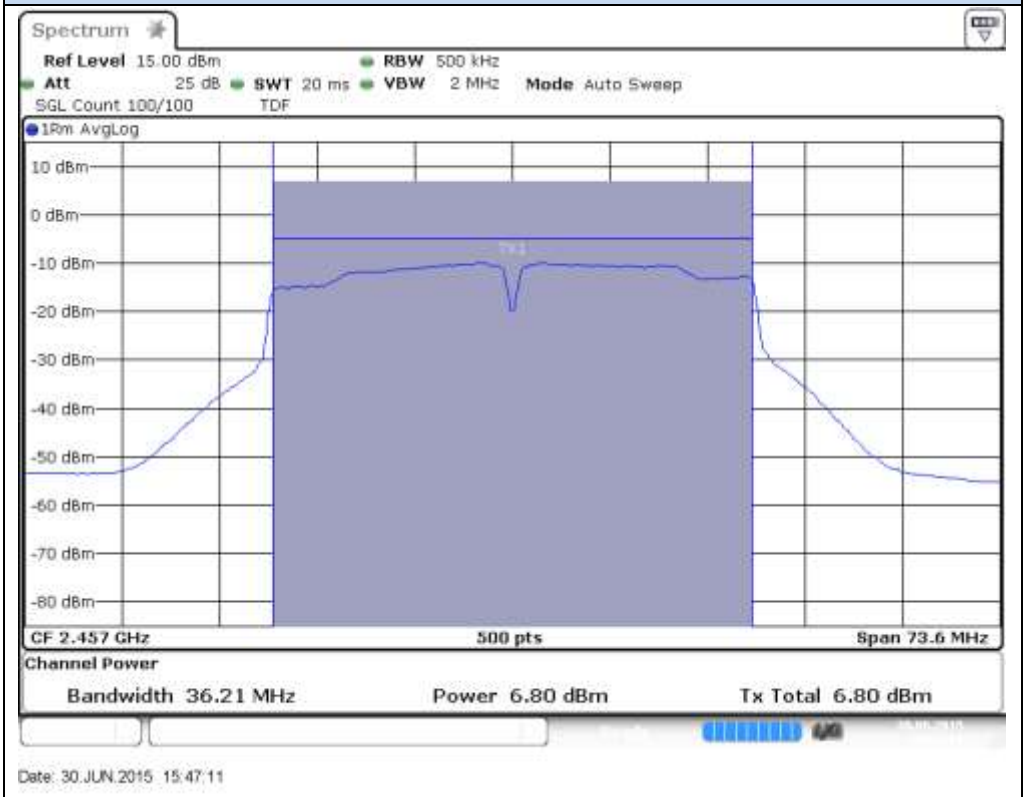
Max Power, Chain A – CH10F



Max Power, Chain B – CH10F



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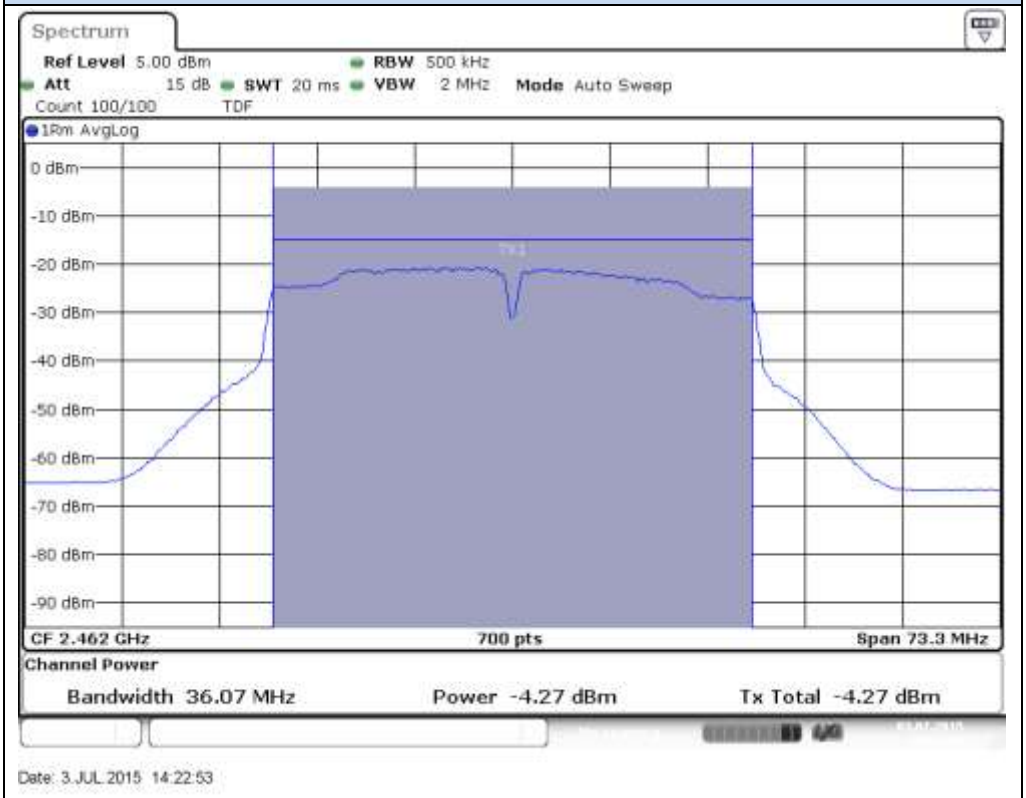
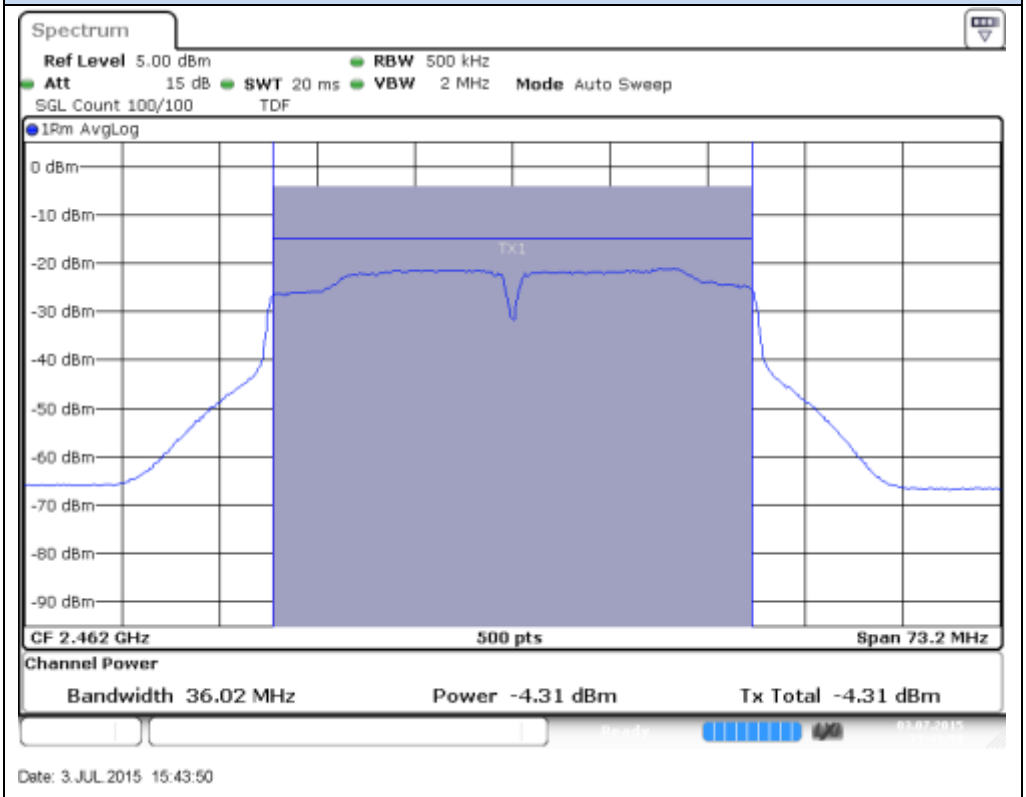
Max Power, Chain A – CH11F



Max Power, Chain B – CH11F



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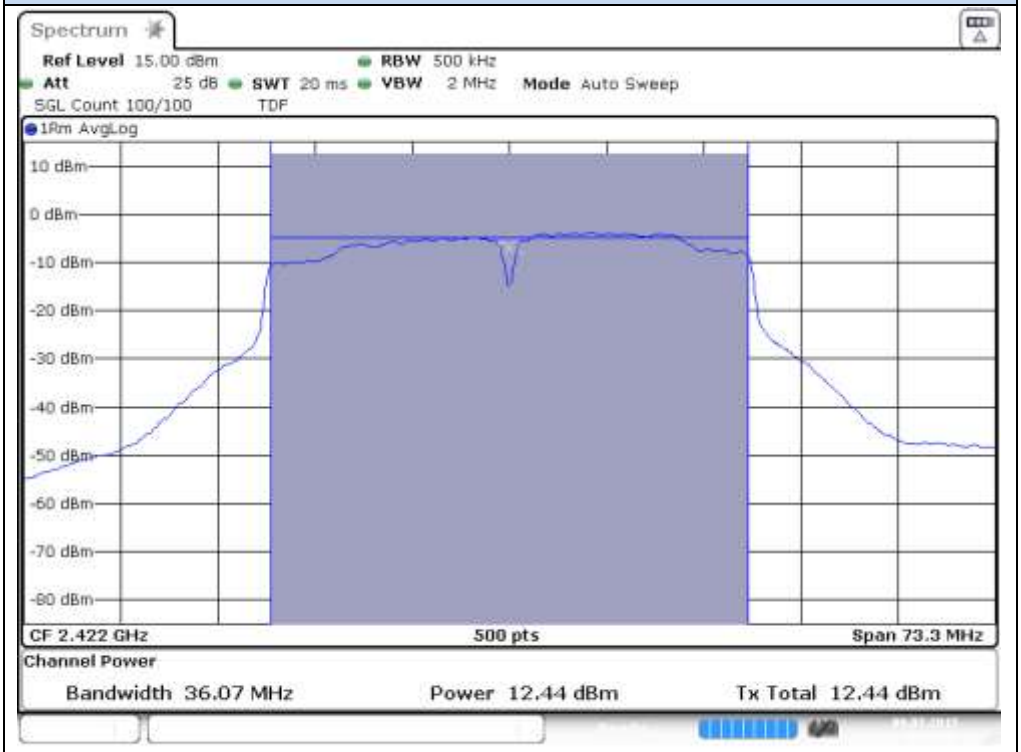
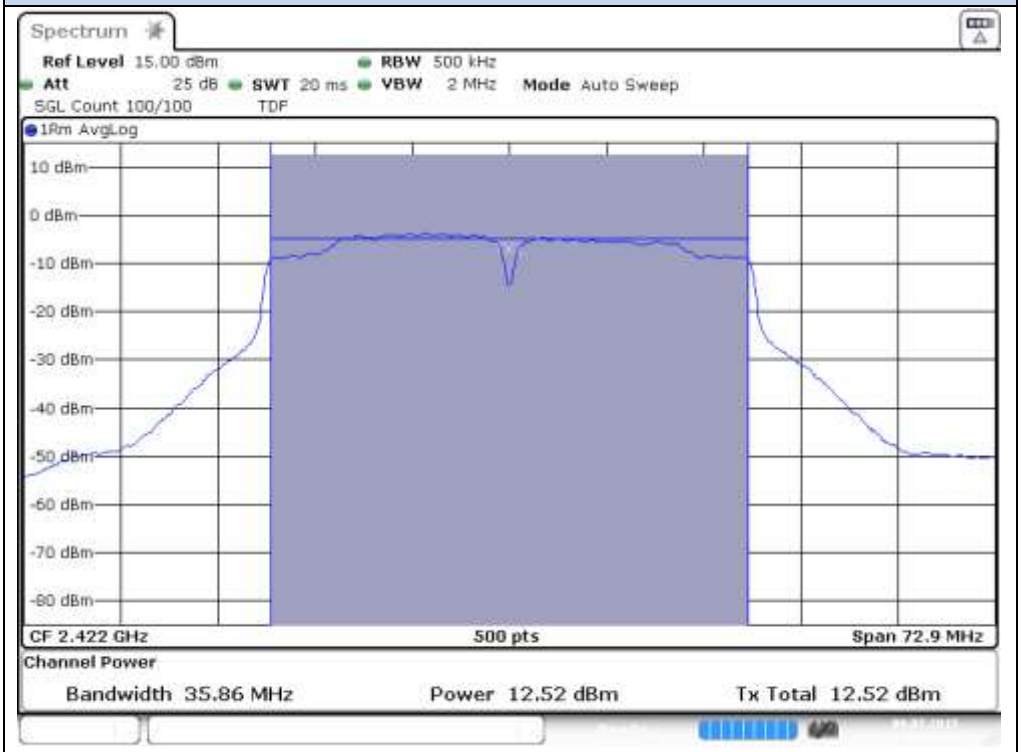
802.11n40, HT8 (MIMO)

Max Power, Chain A – CH3F



Max Power, Chain B – CH3F



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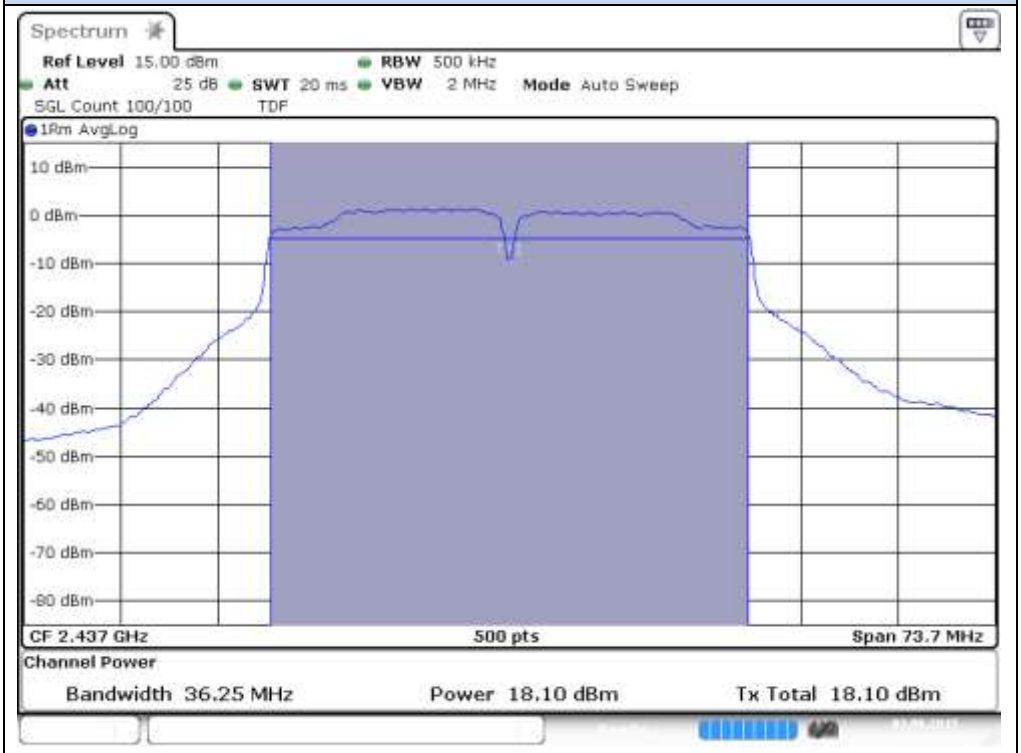
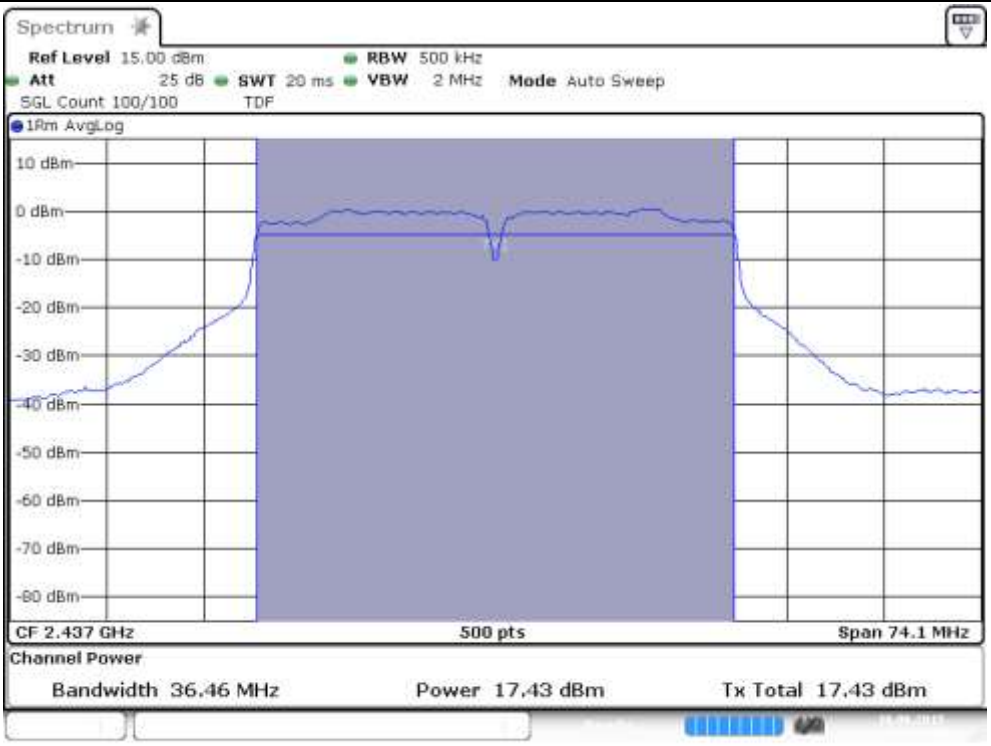
Max Power, Chain A – CH6F



Max Power, Chain B – CH6F



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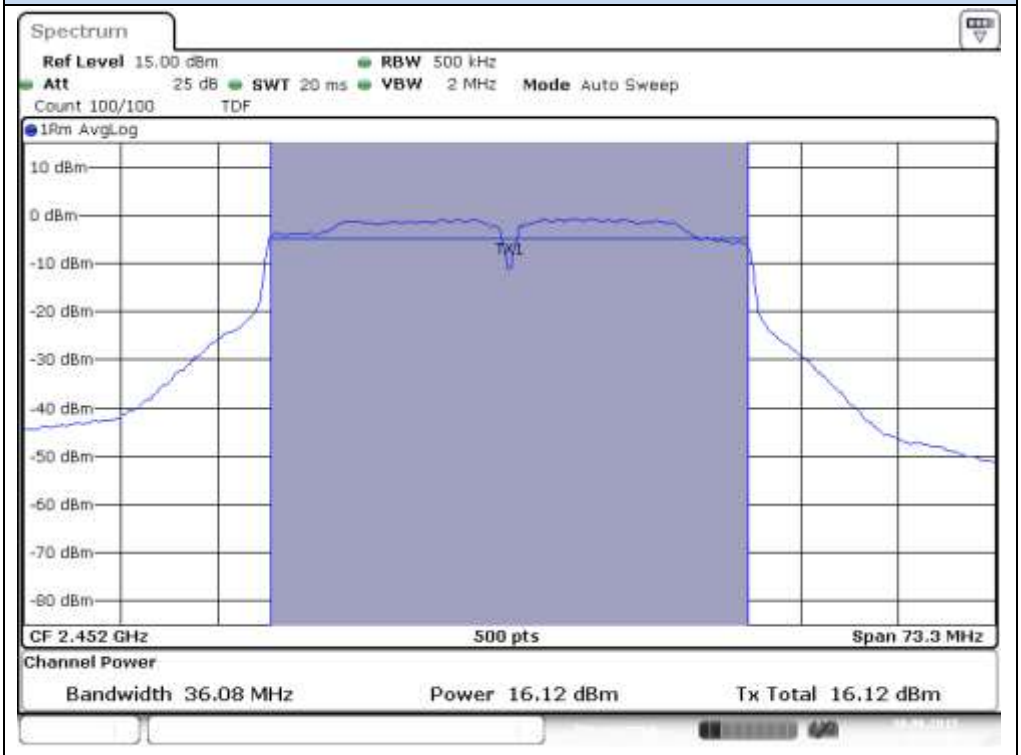
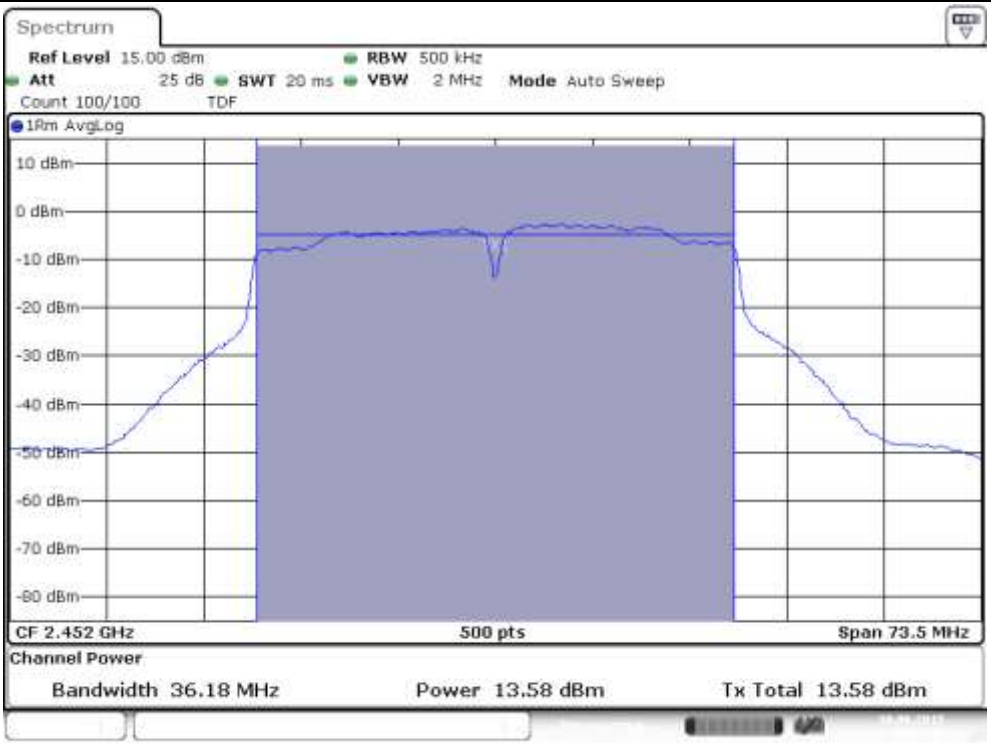
Max Power, Chain A – CH9F



Max Power, Chain B – CH9F



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