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FCC RADIO TEST REPORT

Applicant's company	**Allied Telesis K.K**
Applicant Address	2nd. TOC Bldg. 7-21-11 Nishi-Gotanda, Shinagawa-ku, Tokyo Japan, 141-0031
FCC ID	**RSL-MWS2533AP**
Manufacturer's company	**Senao Networks, Inc.**
Manufacturer Address	3F, No. 529, Chung Cheng Rd., Hsintien, Taipei, Taiwan

Product Name	IEEE 802.a/b/g/n/ac Managed Wireless Access Point
Brand Name	Allied Telesis
Model No.	AT-MWS2533AP
Test Rule	47 CFR FCC Part 15 Subpart C § 15.247
Test Freq. Range	2400 ~ 2483.5MHz
Received Date	Oct. 15, 2015
Final Test Date	Aug. 15, 2017
Submission Type	Original Equipment

Statement

Test result included is only for the IEEE 802.11b/g, IEEE 802.11n and IEEE 802.11ac of the product.

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

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

The measurements and test results shown in this test report were made in accordance with the procedures and found in compliance with the limit given in **ANSI C63.10-2013**, **47 CFR FCC Part 15 Subpart C**, **KDB558074 D01 v03r03** and **KDB 662911 D01 v02r01, KDB644545 D01 v01r02**.

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

TAF Testing Laboratory 1190

Table of Contents

History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR720735-01AA	Rev. 01	Initial issue of report	Sep. 12, 2017

1. VERIFICATION OF COMPLIANCE

Product Name	:	**IEEE 802.a/b/g/n/ac Managed Wireless Access Point**
Brand Name	:	Allied Telesis
Model No.	:	**AT-MWS2533AP**
Applicant	:	**Allied Telesis K.K**
Test Rule Part(s)	:	**47 CFR FCC Part 15 Subpart C § 15.247**

Sporton International as requested by the applicant to evaluate the EMC performance of the product sample received on Oct. 15, 2015 would like to declare that the tested sample has been evaluated and found to be in compliance with the tested rule parts. The data recorded as well as the test configuration specified is true and accurate for showing the sample's EMC nature.

Phoenix Chen
SPORTON INTERNATIONAL INC.

2. SUMMARY OF THE TEST RESULT

Applied Standard: 47 CFR FCC Part 15 Subpart C				
Part	**Rule Section**	**Description of Test**	**Result**	**Under Limit**
4.1	15.207	AC Power Line Conducted Emissions	Complies	5.3 dB
4.2	15.247(b)(3)	Maximum Conducted Output Power	Complies	0.31 dB
4.3	15.247(e)	Power Spectral Density	Complies	1.50 dB
4.4	15.247(a)(2)	6dB Spectrum Bandwidth	Complies	-
4.5	15.247(d)	Radiated Emissions	Complies	1.03 dB
4.6	15.247(d)	Band Edge Emissions	Complies	1.01 dB
4.7	15.203	Antenna Requirements	Complies	-

3. GENERAL INFORMATION

3.1. Product Details

Items	Description
Product Type	WLAN (4TX, 4RX)
Radio Type	Intentional Transceiver
Power Type	From power adapter or PoE
Modulation	IEEE 802.11b: DSSS IEEE 802.11g: OFDM IEEE 802.11n/ac: see the below table
Data Modulation	IEEE 802.11b: DSSS (BPSK / QPSK / CCK) IEEE 802.11g/n: OFDM (BPSK / QPSK / 16QAM / 64QAM) IEEE 802.11ac: OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)
Data Rate (Mbps)	IEEE 802.11b: DSSS (1/ 2/ 5.5/11) IEEE 802.11g: OFDM (6/9/12/18/24/36/48/54) IEEE 802.11n/ac: see the below table
Frequency Range	2400 ~ 2483.5MHz
Channel Number	11 for 20MHz bandwidth ; 7 for 40MHz bandwidth
Channel Band Width (99%)	Mode 1: EUT 1 + Set 1 Ceiling Mount Omni Antenna / 4 dBi IEEE 802.11b: 14.50 MHz IEEE 802.11g: 19.80 MHz IEEE 802.11n MCS0 (HT20): 22.84 MHz IEEE 802.11n MCS0 (HT40): 36.18 MHz Mode 2: EUT 1 + Set 2 Sector Antenna / 7.5 dBi IEEE 802.11b: 13.89 MHz IEEE 802.11g: 16.50 MHz IEEE 802.11n MCS0 (HT20): 19.19 MHz IEEE 802.11n MCS0 (HT40): 36.18 MHz Mode 3: EUT 1 + Set 3 Sector Antenna / 5.5 dBi IEEE 802.11b: 14.15 MHz IEEE 802.11g: 19.80 MHz IEEE 802.11n MCS0 (HT20): 22.84 MHz IEEE 802.11n MCS0 (HT40): 36.18 MHz Mode 4: EUT 1 + Set 4 Sector Antenna / 10.5 dBi IEEE 802.11b: 14.33 MHz IEEE 802.11g: 16.15 MHz IEEE 802.11n MCS0 (HT20): 17.80 MHz IEEE 802.11n MCS0 (HT40): 35.89 MHz

	Mode 5: EUT 1 + Set 7 Sector Antenna / 5 dBi IEEE 802.11b: 14.15 MHz IEEE 802.11g: 19.80 MHz IEEE 802.11n MCS0 (HT20): 22.84 MHz IEEE 802.11n MCS0 (HT40): 36.32 MHz Mode 6: EUT 1 + Set 8 Dipole Antenna / 4.66 dBi IEEE 802.11b: 14.50 MHz IEEE 802.11g: 19.80 MHz IEEE 802.11n MCS0 (HT20): 21.88 MHz IEEE 802.11n MCS0 (HT40): 36.76 MHz Mode 7: EUT 2 + Set 10 PIFA Antenna / Chain1:3.81 dBi, Chain2:3.75 dBi, Chain3:3.98 dBi, Chain4:3.47 dBi IEEE 802.11b: 14.50 MHz IEEE 802.11g: 20.14 MHz IEEE 802.11n MCS0 (HT20): 19.80 MHz IEEE 802.11n MCS0 (HT40): 36.61 MHz
Maximum Conducted Output Power	Mode 1: EUT 1 + Set 1 Ceiling Mount Omni Antenna / 4 dBi IEEE 802.11b: 27.50 dBm IEEE 802.11g: 27.95 dBm IEEE 802.11n MCS0 (HT20): 28.11 dBm IEEE 802.11n MCS0 (HT40): 21.14 dBm Mode 2: EUT 1 + Set 2 Sector Antenna / 7.5 dBi IEEE 802.11b: 26.69 dBm IEEE 802.11g: 27.03 dBm IEEE 802.11n MCS0 (HT20): 27.02 dBm IEEE 802.11n MCS0 (HT40): 19.63 dBm Mode 3: EUT 1 + Set 3 Sector Antenna / 5.5 dBi IEEE 802.11b: 27.31 dBm IEEE 802.11g: 27.95 dBm IEEE 802.11n MCS0 (HT20): 28.11 dBm IEEE 802.11n MCS0 (HT40): 20.67 dBm Mode 4: EUT 1 + Set 4 Sector Antenna / 10.5 dBi IEEE 802.11b: 24.16 dBm IEEE 802.11g: 25.19 dBm IEEE 802.11n MCS0 (HT20): 24.85 dBm IEEE 802.11n MCS0 (HT40): 18.96 dBm

	Mode 5: EUT 1 + Set 7 Sector Antenna / 5 dBi IEEE 802.11b: 27.31 dBm IEEE 802.11g: 27.95 dBm IEEE 802.11n MCS0 (HT20): 28.11 dBm IEEE 802.11n MCS0 (HT40): 20.67 dBm Mode 6: EUT 1 + Set 8 Dipole Antenna / 4.66 dBi IEEE 802.11b: 27.31 dBm IEEE 802.11g: 28.08 dBm IEEE 802.11n MCS0 (HT20): 27.02 dBm IEEE 802.11n MCS0 (HT40): 20.21 dBm Mode 7: EUT 2 + Set 10 PIFA Antenna / Chain1:3.81 dBi, Chain2:3.75 dBi, Chain3:3.98 dBi, Chain4:3.47 dBi IEEE 802.11b: 26.03 dBm IEEE 802.11g: 28.34 dBm IEEE 802.11n MCS0 (HT20): 28.11 dBm IEEE 802.11n MCS0 (HT40): 21.82 dBm
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3

Antenna and Band width

Antenna	Four (TX)	
Band width Mode	20 MHz	40 MHz
IEEE 802.11b	V	X
IEEE 802.11g	V	X
IEEE 802.11n	V	V
IEEE 802.11ac	V	V

IEEE 11n/ac Spec.

Protocol	Number of Transmit Chains (NTX)	Data Rate / MCS
802.11n (HT20)	4	MCS 0-31
802.11n (HT40)	4	MCS 0-31
802.11ac (VHT20)	4	MCS 0-9/Nss1-4
802.11ac (VHT40)	4	MCS 0-9/Nss1-4
Note 1: IEEE Std. 802.11n modulation consists of HT20 and HT40 (HT: High Throughput). Then EUT supports HT20 and HT40. Note 2: IEEE Std. 802.11ac modulation consists of VHT20, VHT40, VHT80 and VHT160 (VHT: Very High Throughput). Then EUT supports VHT20 and VHT40 in 2.4GHz. Note 3: Modulation modes consist of below configuration: HT20/HT40: IEEE 802.11n, VHT20/VHT40: IEEE 802.11ac		

3.2. Accessories

N/A

3.3. Table for Filed Antenna

Set.	Brand Holder	Model Number (Part No.)	Extreme Part No. (Short Description)	Antenna Type	Connector	Polarized Antenna	Gain (dBi)	
							2.4GHz	5GHz
1	PCTEL Inc.	WS-AI-DQ04360	WS-AI-DQ04360 (WS-AI-DQ04360)	Ceiling Mount Omni	RP SMA Male	V	4	7
2	PCTEL Inc.	908403-10	30705 (WS-AI-DE07025)	Sector Antenna	RP SMA Male	V	7.5	6.5
3	PCTEL Inc.	908400-10	30702 (WS-AI-DQ05120)	Sector Antenna	RP SMA Male	V	5.5	5.5
4	PCTEL Inc.	908405-10	30707 (WS-AI-DE10055)	Sector Antenna	RP SMA Male	V	10.5	7.5
5	PCTEL Inc.	908404-10	30706 (WS-AI-5Q05025)	Sector Antenna	RP SMA Male	V	-	4.5
6	PCTEL Inc.	908401-10	30703 (WS-AI-5Q04060)	Sector Antenna	RP SMA Male	V	-	4
7	PCTEL Inc.	908402-10	30704 (WS-AI-2Q05060)	Sector Antenna	RP SMA Male	V	5	-
8	Master Wave Technology Co., Ltd.	98152MRSX015	30709 (WS-ANT-2DIP-4)	Dipole Antenna	RP SMA Male	X	4.66	-
9	Master Wave Technology Co., Ltd.	98152URSX009	30710 (WS-ANT-5DIP-4)	Dipole Antenna	RP SMA Male	X	-	4.67
10	Senao Networks, Inc.	AP3935i	-	PIFA Antenna	IPEX	X	Note 1	

Note1:

Set.	Antenna Gain (dBi)							
	2.4GHz				5GHz			
	Chain 1	Chain 2	Chain 3	Chain 4	Chain 1	Chain 2	Chain 3	Chain 4
10	3.81	3.75	3.98	3.47	5.84	5.50	5.84	5.65

Note2:

The EUT has ten sets of antennas.

<For 2.4GHz Function>

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

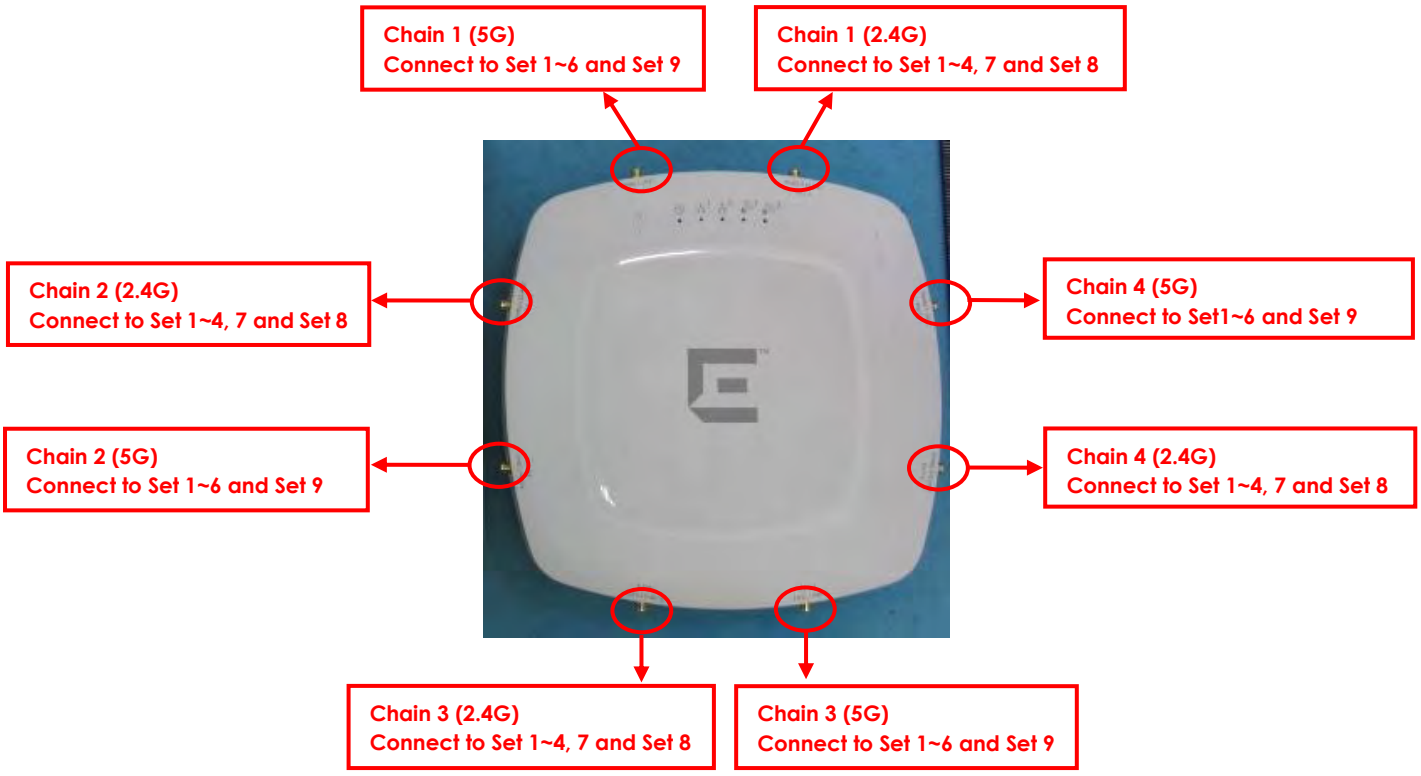
Chain 1, Chain 2, Chain 3 and Chain 4 could transmit/receive simultaneously.

<For 5GHz Function>

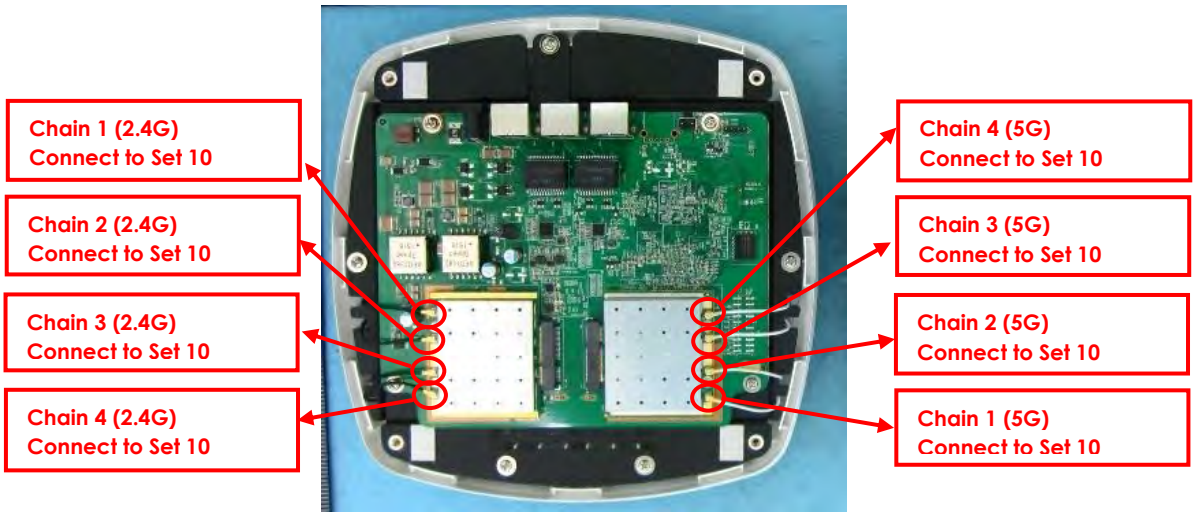
For IEEE 802.11a/n/ac mode (4TX, 4RX):

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

For EUT 1:



For EUT 2:



3.4. Table for Carrier Frequencies

There are two bandwidth systems.

For 20MHz bandwidth systems, use Channel 1~Channel 11.

For 40MHz bandwidth systems, use Channel 3~Channel 9.

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
2400~2483.5MHz	1	2412 MHz	7	2442 MHz
	2	2417 MHz	8	2447 MHz
	3	2422 MHz	9	2452 MHz
	4	2427 MHz	10	2457 MHz
	5	2432 MHz	11	2462 MHz
	6	2437 MHz	-	-

3.5. Table for Test Modes

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

Test Items	Mode	Data Rate	Channel	Chain
AC Power Line Conducted Emissions	Normal Link	-	-	-
Maximum Conducted Output Power	11b/CCK	1 Mbps	1/6/11	1+2+3+4
	11g/BPSK	6 Mbps	1/6/11	1+2+3+4
	11n HT20	MCS0	1/6/11	1+2+3+4
	11n HT40	MCS0	3/6/9	1+2+3+4
Power Spectral Density	11b/CCK	1 Mbps	1/6/11	1+2+3+4
	11g/BPSK	6 Mbps	1/6/11	1+2+3+4
	11n HT20	MCS0	1/6/11	1+2+3+4
	11n HT40	MCS0	3/6/9	1+2+3+4
6dB Spectrum Bandwidth	11b/CCK	1 Mbps	1/6/11	1+2+3+4
	11g/BPSK	6 Mbps	1/6/11	1+2+3+4
	11n HT20	MCS0	1/6/11	1+2+3+4
	11n HT40	MCS0	3/6/9	1+2+3+4
Radiated Emissions 9kHz~1GHz	Normal Link	-	-	-
Radiated Emissions 1GHz~10th Harmonic	11b/CCK	1 Mbps	1/6/11	1+2+3+4
	11g/BPSK	6 Mbps	1/6/11	1+2+3+4
	11n HT20	MCS0	1/6/11	1+2+3+4
	11n HT40	MCS0	3/6/9	1+2+3+4
Band Edge Emissions	11b/CCK	1 Mbps	1/6/11	1+2+3+4
	11g/BPSK	6 Mbps	1/6/11	1+2+3+4
	11n HT20	MCS0	1/6/11	1+2+3+4
	11n HT40	MCS0	3/6/9	1+2+3+4

Note1: HT20/HT40 covers VHT20/VHT40, due to same modulation. The power setting for 802.11ac VHT20 and VHT40 are the same or lower than 802.11n HT20 and HT40.

Note2:

The adapter and PoE are for measurement only, would not be marketed.

The adapter and PoE information as below:

Power	Brand	Model
Adapter	APD	WA-24Q12R
PoE	Microsemi	PD-9001GR

Note3: All the specification of test configurations and test modes were based on customer's request.

Note4: The console port can not be used by end user. It is generally used for updating FW by professional installer.

The following test modes were performed for all tests:

For Conducted Emission test:

Mode 1. Normal Link - EUT 1 + Adapter

Mode 2. Normal Link - EUT 2 + Adapter

Mode 1 is the worst case, so it was selected to record in this test report.

For Radiated Emission Below 1GHz test:

Mode 1. Place EUT 1 in Y axis + Set 4 + Adapter

Mode 2. Place EUT 1 in Z axis + Set 4 + Adapter

Mode 2 has been evaluated to be the worst case among Mode 1~2, thus measurement for Mode 3~5 will follow this same test mode.

Mode 3. Place EUT 1 in Z axis + Set 4 + PoE

Mode 4. Place EUT 2 in Z axis + Set 10 + Adapter

Mode 5. Place EUT 2 in Z axis + Set 10 + PoE

Mode 2 is the worst case, so it was selected to record in this test report.

For Radiated Emission Above 1GHz test:

The EUT 1 was performed at Y axis and Z axis position. Z axis has been evaluated to be the worst case, thus measurement will follow this same test mode.

The EUT 2 was performed at Y axis and Z axis position. Y axis has been evaluated to be the worst case, thus measurement will follow this same test mode.

Mode 1. Place EUT 1 in Z axis + Set 1

Mode 2. Place EUT 1 in Z axis + Set 2

Mode 3. Place EUT 1 in Z axis + Set 3

Mode 4. Place EUT 1 in Z axis + Set 4

Mode 5. Place EUT 1 in Z axis + Set 7

Mode 6. Place EUT 1 in Z axis + Set 8

Mode 7. Place EUT 2 in Y axis + Set 10

For Co-location MPE and Radiated Emission Co-location Test:

The EUT could be applied with 2.4GHz WLAN function and 5GHz WLAN function; therefore Co-location Maximum Permissible Exposure (Please refer to FA541527-01AA) and Radiated Emission Co-location (please refer to Appendix B) tests are added for simultaneously transmit between 2.4GHz WLAN function and 5GHz WLAN function.

3.6. Table for Testing Locations

Test Site Location				
Address:	No.8, Lane 724, Bo-ai St., Jhubei City, Hsinchu County 302, Taiwan, R.O.C.			
TEL:	886-3-656-9065			
FAX:	886-3-656-9085			
Test Site No.	**Site Category**	**Location**	**FCC Reg. No.**	**IC File No.**
03CH01-CB	SAC	Hsin Chu	262045	IC 4086D
TH01-CB	OVEN Room	Hsin Chu	-	-

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

Testing Location			
☒	HWA YA	ADD : No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)	
		TEL : 886-3-327-3456	FAX : 886-3-327-0973
Test site Designation No. TW1190 with FCC.			
Test site registered number IC 4086B-1 with Industry Canada.			

Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
Radiated	03CH02-HY	Thor Wei	23°C / 66%	12/Aug/2017
AC Conduction	CO04-HY	Teddy Chang	22°C / 55%	15/Aug/2017

3.7. Table for Multiple Listing

The model names are identical to each other in all aspects except for the following table:

Equipment	EUT	Product Name	Model Name	Internal Antenna	External Antenna	Equipped Antenna
Wireless 802.11a/AC+ b/g/n Access Point	1	WS-AP3935e-FCC	31014	X	V	Set 1~9
	2	WS-AP3935i-FCC	31012	V	X	Set 10

3.8. Table for Supporting Units

For Test Site No: 03CH02-HY (For Below 1GHz)

Support Unit	Brand	Model	FCC ID
Load	-	-	N/A
Notebook	DELL	E6400	N/A
Adapter (Client Provided)	APD	WA-24Q12R	N/A

For Test Site No: 03CH01-CB (For Above 1GHz)

Support Unit	Brand	Model	FCC ID
Notebook	DELL	E4300	DoC
Adapter (Client Provided)	APD	WA-24Q12R	N/A

For Test Site No: CO04-HY

Support Unit	Brand	Model	FCC ID
Adapter (Client Provided)	APD	WA-24Q12R	N/A
Dummy Load	-	-	N/A
Notebook	DELL	E5430	DoC
Notebook(2.4G)	DELL	P55G	DoC
Notebook(5G)	DELL	P55G	DoC

For Test Site No: TH01-CB

Support Unit	Brand	Model	FCC ID
Notebook	DELL	E4300	DoC
Adapter (Client Provided)	APD	WA-24Q12R	N/A

3.9. Table for Parameters of Test Software Setting

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

Mode 1: EUT 1 + Set 1 Ceiling Mount Omni Antenna / 4 dBi

Test Software Version	QCA VER3.0.144.0					
Mode	Test Frequency (MHz)					
	NCB: 20MHz			NCB: 40MHz		
	2412 MHz	2437 MHz	2462 MHz	2422 MHz	2437 MHz	2452 MHz
802.11b	21	21	20	-	-	-
802.11g	15	23	15	-	-	-
802.11n MCS0 HT20	15	22.5	16	-	-	-
802.11n MCS0 HT40	-	-	-	10.5	15.5	12

Mode 2: EUT 1 + Set 2 Sector Antenna / 7.5 dBi

Test Software Version	QCA VER3.0.144.0					
Mode	Test Frequency (MHz)					
	NCB: 20MHz			NCB: 40MHz		
	2412 MHz	2437 MHz	2462 MHz	2422 MHz	2437 MHz	2452 MHz
802.11b	19.5	20.5	19.5	-	-	-
802.11g	14.5	22	14	-	-	-
802.11n MCS0 HT20	13.5	22	13.5	-	-	-
802.11n MCS0 HT40	-	-	-	10.5	14	11

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

Test Software Version	QCA VER3.0.144.0					
Mode	Test Frequency (MHz)					
	NCB: 20MHz			NCB: 40MHz		
	2412 MHz	2437 MHz	2462 MHz	2422 MHz	2437 MHz	2452 MHz
802.11b	19.5	21	20	-	-	-
802.11g	15	23	14.5	-	-	-
802.11n MCS0 HT20	14	22.5	14.5	-	-	-
802.11n MCS0 HT40	-	-	-	10.5	15	12

Mode 4: EUT 1 + Set 4 Sector Antenna / 10.5 dBi

Test Software Version	QCA VER3.0.144.0					
Mode	Test Frequency (MHz)					
	NCB: 20MHz			NCB: 40MHz		
	2412 MHz	2437 MHz	2462 MHz	2422 MHz	2437 MHz	2452 MHz
802.11b	16.5	17.5	16	-	-	-
802.11g	13	19	13	-	-	-
802.11n MCS0 HT20	13	19	12	-	-	-
802.11n MCS0 HT40	-	-	-	7.5	12.5	9.5

Mode 5: EUT 1 + Set 7 Sector Antenna / 5 dBi

Test Software Version	QCA VER3.0.144.0					
Mode	Test Frequency (MHz)					
	NCB: 20MHz			NCB: 40MHz		
	2412 MHz	2437 MHz	2462 MHz	2422 MHz	2437 MHz	2452 MHz
802.11b	19.5	21	19.5	-	-	-
802.11g	15	23	15	-	-	-
802.11n MCS0 HT20	14.5	22.5	14.5	-	-	-
802.11n MCS0 HT40	-	-	-	11.5	15	12

Mode 6: EUT 1 + Set 8 Dipole Antenna / 4.66 dBi

Test Software Version	QCA VER3.0.144.0					
Mode	Test Frequency (MHz)					
	NCB: 20MHz			NCB: 40MHz		
	2412 MHz	2437 MHz	2462 MHz	2422 MHz	2437 MHz	2452 MHz
802.11b	21	21	20.5	-	-	-
802.11g	13.5	23	14.5	-	-	-
802.11n MCS0 HT20	14	22	14	-	-	-
802.11n MCS0 HT40	-	-	-	9.5	14.5	11

Mode 7: EUT 2 + Set 10 PIFA Antenna / Chain1:3.81 dBi, Chain2:3.75 dBi, Chain3:3.98 dBi, Chain4:3.47 dBi

Test Software Version	QCA VER3.0.144.0					
Mode	Test Frequency (MHz)					
	NCB: 20MHz			NCB: 40MHz		
	2412 MHz	2437 MHz	2462 MHz	2422 MHz	2437 MHz	2452 MHz
802.11b	19	20	20	-	-	-
802.11g	16.5	23	16.5	-	-	-
802.11n MCS0 HT20	15.5	23	16.5	-	-	-
802.11n MCS0 HT40	-	-	-	13	16	12

3.10. EUT Operation during Test

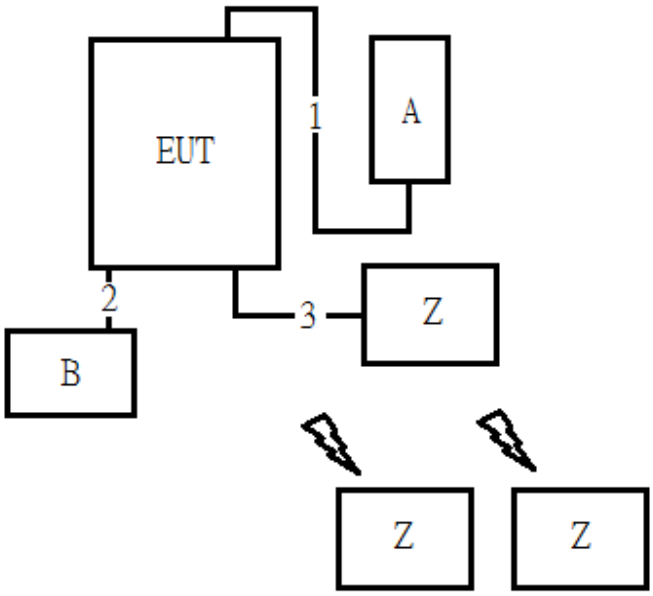
The EUT was programmed to be in continuously transmitting mode.

3.11. Duty Cycle

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11b	1.000	1.000	100	0.00	0.01
802.11g	2.060	2.150	95.81	0.19	0.49
802.11n MCS0 HT20	5.000	5.096	98.12	0.08	0.01
802.11n MCS0 HT40	2.380	2.480	95.97	0.18	0.42

3.12. Test Configurations

3.12.1. AC Power Line Conduction Emissions Test Configuration

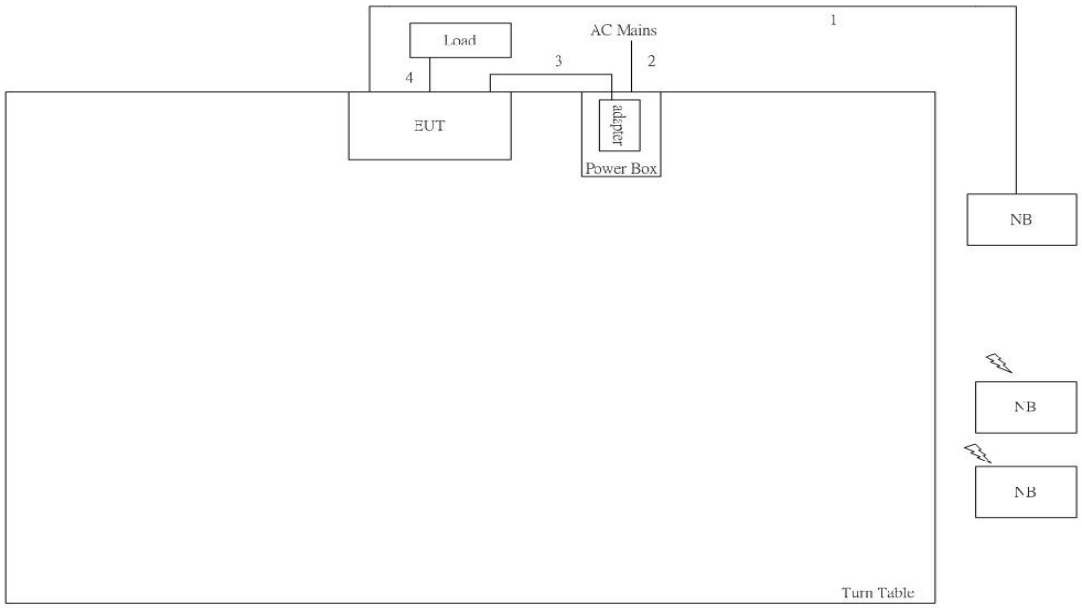


Item	Connection	Shielded	Length(m)
1	DC Power Cable	No	1.5
2	RJ45 Cable	No	1
3	RJ45 Cable	No	10

No.	Equipment	Brand	Model	FCC ID
A	Adapter	APD	WA-24Q12R	N/A
B	Dummy Load	-	-	N/A
Z	NoteBook	DELL	E5430	DoC
Z	NoteBook(2.4G)	DELL	P55G	DoC
Z	NoteBook(5G)	DELL	P55G	DoC

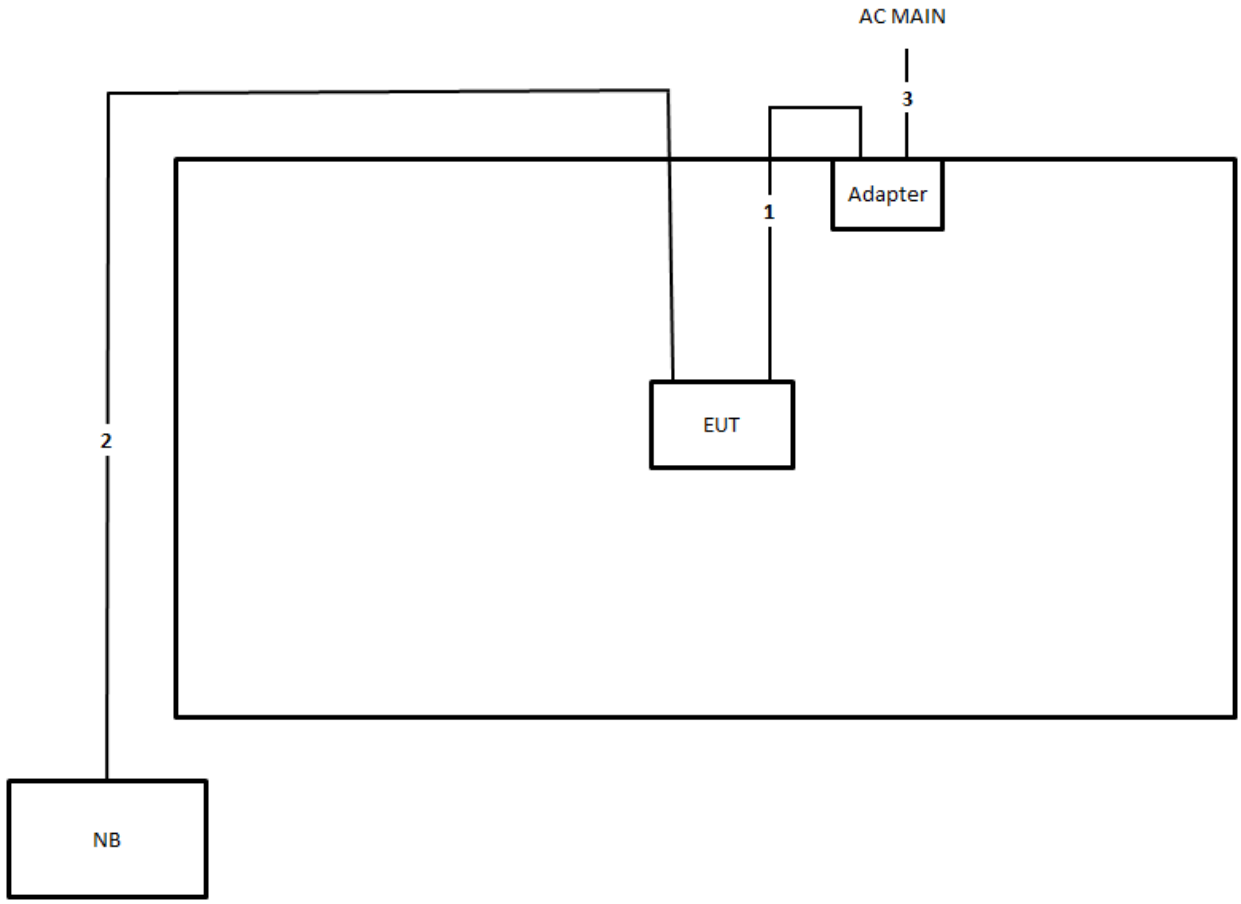
3.12.2. Radiation Emissions Test Configuration

Test Configuration: 30MHz~1GHz



Item	Connection	Shielded	Length(m)
1	LAN Cable	No	10
2	AC Power line	No	1.8
3	DC Power line	No	1.5
4	LAN line	No	3

Test Configuration: above 1GHz



Item	Connection	Shielded	Length(m)
1	DC Power cable	No	1.2
2	RJ-45 cable	No	10
3	AC Power cable	No	1.8

4. TEST RESULT

4.1. AC Power Line Conducted Emissions Measurement

4.1.1. Limit

For this product which is designed to be connected to the AC power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed below limits table.

Frequency (MHz)	QP Limit (dBuV)	AV Limit (dBuV)
0.15~0.5	66~56	56~46
0.5~5	56	46
5~30	60	50

4.1.2. Measuring Instruments and Setting

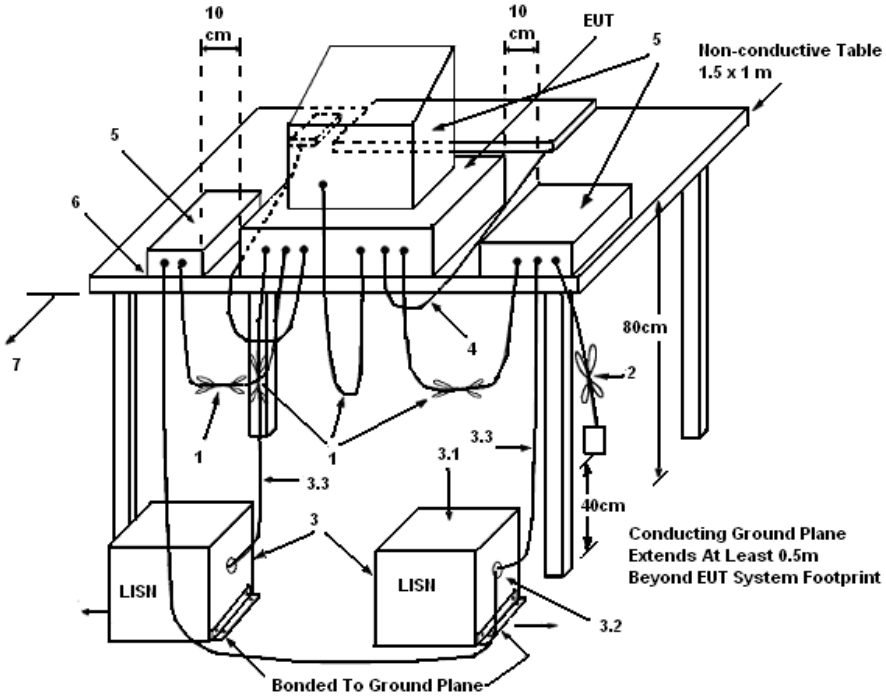
Please refer to section 5 of equipments list in this report. The following table is the setting of the receiver.

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

4.1.3. Test Procedures

1. Configure the EUT according to ANSI C63.10. The EUT or host of EUT has to be placed 0.4 meter far from the conducting wall of the shielding room and at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT or host of EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connected to the other LISNs. The LISN should provide 50uH/50ohms coupling impedance.
4. The frequency range from 150 kHz to 30 MHz was searched.
5. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. The measurement has to be done between each power line and ground at the power terminal.

4.1.4. Test Setup Layout



LEGEND:

(1) Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

(2) I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

(3) EUT connected to one LISN. Unused LISN measuring port connectors shall be terminated in 50 Ω. LISN can be placed on top of, or immediately beneath, reference ground plane.

(3.1) All other equipment powered from additional LISN(s).

(3.2) Multiple outlet strip can be used for multiple power cords of non-EUT equipment.

(3.3) LISN at least 80 cm from nearest part of EUT chassis.

(4) Cables of hand-operated devices, such as keyboards, mice, etc., shall be placed as for normal use.

(5) Non-EUT components of EUT system being tested.

(6) Rear of EUT, including peripherals, shall all be aligned and flush with rear of tabletop.

(7) Rear of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the ground plane.

4.1.5. Test Deviation

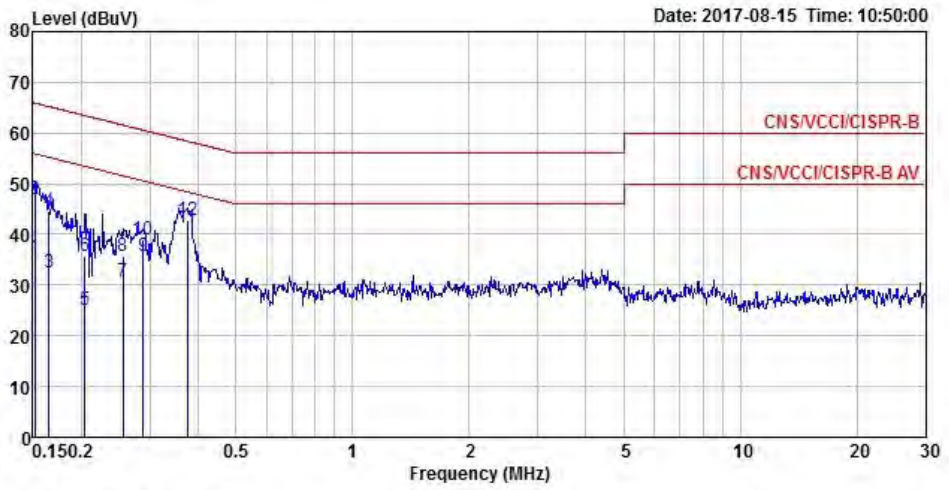
There is no deviation with the original standard.

4.1.6. EUT Operation during Test

The EUT was placed on the test table and programmed in normal function.

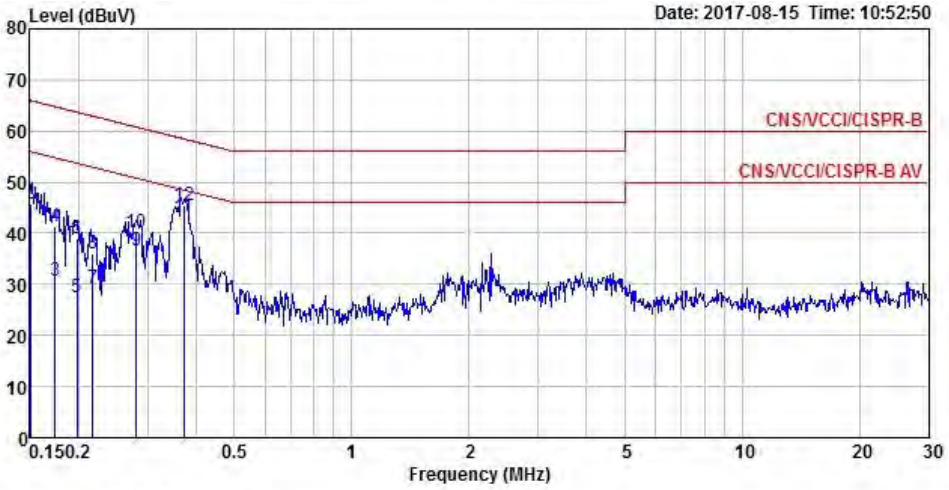
4.1.7. Results of AC Power Line Conducted Emissions Measurement

Temperature	22℃	Humidity	55%
Test Engineer	Teddy Chang	Phase	Line
Configuration	Normal Link	Test Mode	Mode 1



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.15	35.31	-20.60	55.91	25.43	9.66	0.22	Average
2	0.15	46.88	-19.03	65.91	37.00	9.66	0.22	QP
3	0.17	32.33	-22.88	55.21	22.42	9.66	0.25	Average
4	0.17	44.48	-20.73	65.21	34.57	9.66	0.25	QP
5	0.20	25.00	-28.45	53.45	15.06	9.65	0.29	Average
6	0.20	35.68	-27.77	63.45	25.74	9.65	0.29	QP
7	0.26	30.65	-20.91	51.56	20.76	9.66	0.23	Average
8	0.26	35.75	-25.81	61.56	25.86	9.66	0.23	QP
9	0.29	35.66	-14.93	50.59	25.79	9.67	0.20	Average
10	0.29	38.83	-21.76	60.59	28.96	9.67	0.20	QP
11 MAX	0.38	41.35	-7.04	48.39	31.55	9.68	0.12	Average
12	0.38	42.86	-15.53	58.39	33.06	9.68	0.12	QP

Temperature	22℃	Humidity	55%
Test Engineer	Teddy Chang	Phase	Neutral
Configuration	Normal Link	Test Mode	Mode 1



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.15	34.62	-21.38	56.00	24.80	9.60	0.22	Average
2	0.15	45.82	-20.18	66.00	36.00	9.60	0.22	QP
3	0.17	30.67	-24.10	54.77	20.77	9.64	0.26	Average
4	0.17	41.35	-23.42	64.77	31.45	9.64	0.26	QP
5	0.20	27.43	-26.28	53.71	17.46	9.67	0.30	Average
6	0.20	39.01	-24.70	63.71	29.04	9.67	0.30	QP
7	0.22	29.30	-23.62	52.92	19.37	9.66	0.27	Average
8	0.22	36.02	-26.90	62.92	26.09	9.66	0.27	QP
9	0.28	36.73	-14.08	50.81	26.88	9.65	0.20	Average
10	0.28	40.02	-20.79	60.81	30.17	9.65	0.20	QP
11 MAX	0.37	43.17	-5.30	48.47	33.42	9.63	0.12	Average
12	0.37	45.52	-12.95	58.47	35.77	9.63	0.12	QP

Note:

Level = Read Level + LISN Factor + Cable Loss.

4.2. Maximum Conducted Output Power Measurement

4.2.1. Limit

The limit for output power is 30dBm.

4.2.2. Measuring Instruments and Setting

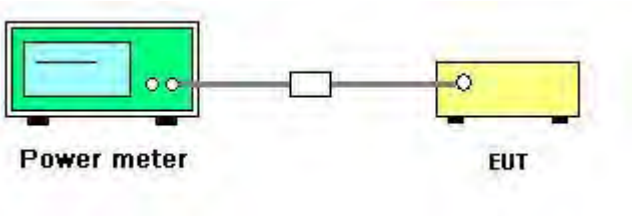
Please refer to section 5 of equipments list in this report. The following table is the setting of the power meter.

Power Meter Parameter	Setting
Bandwidth	50MHz bandwidth is greater than the EUT emission bandwidth
Detector	Average

4.2.3. Test Procedures

1. Test procedures refer KDB558074 D01 v03r03 section 9.2.3.2 Measurement using a power meter (PM).
2. Multiple antenna systems was performed in accordance with KDB 662911 D01 v02r01 Emissions Testing of Transmitters with Multiple Outputs in the Same Band.
3. This procedure provides an alternative for determining the RMS output power using a broadband RF average power meter with a thermocouple detector.

4.2.4. Test Setup Layout



4.2.5. Test Deviation

There is no deviation with the original standard.

4.2.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.2.7. Test Result of Maximum Conducted Output Power

Temperature	25℃	Humidity	50%
Test Engineer	Eddie Weng & Lucas Huang	Test Date	Nov. 10, 2015
Test Mode	Mode 1: EUT 1 + Set 1 Ceiling Mount Omni Antenna / 4 dBi		

Mode	Frequency	Conducted Power (dBm)					Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
802.11b	2412 MHz	21.43	21.52	21.83	21.10	27.50	30.00	**Complies**
	2437 MHz	21.73	21.57	21.11	20.66	27.31	30.00	**Complies**
	2462 MHz	20.79	20.85	20.38	19.84	26.50	30.00	**Complies**
802.11g	2412 MHz	14.01	13.92	14.66	14.11	20.21	30.00	**Complies**
	2437 MHz	22.03	21.82	22.06	21.81	27.95	30.00	**Complies**
	2462 MHz	14.58	14.27	13.99	13.49	20.12	30.00	**Complies**
802.11n MCS0 HT20	2412 MHz	14.12	14.22	14.59	14.42	20.36	30.00	**Complies**
	2437 MHz	21.86	22.61	21.57	22.23	28.11	30.00	**Complies**
	2462 MHz	14.93	15.02	14.96	14.69	20.92	30.00	**Complies**
802.11n MCS0 HT40	2422 MHz	9.57	10.42	9.97	10.58	16.17	30.00	**Complies**
	2437 MHz	15.32	15.21	15.15	14.78	21.14	30.00	**Complies**
	2452 MHz	11.71	11.52	11.42	11.01	17.44	30.00	**Complies**

Temperature	25℃	Humidity	50%
Test Engineer	Eddie Weng & Lucas Huang	Test Date	Oct. 23, 2015 ~ Nov. 05, 2015
Test Mode	Mode 2: EUT 1 + Set 2 Sector Antenna / 7.5 dBi		

Mode	Frequency	Conducted Power (dBm)					Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
802.11b	2412 MHz	19.99	20.03	20.31	19.55	26.00	28.50	**Complies**
	2437 MHz	20.12	21.07	20.17	21.19	26.69	28.50	**Complies**
	2462 MHz	19.12	19.05	19.62	19.13	25.26	28.50	**Complies**
802.11g	2412 MHz	13.02	14.15	13.56	13.73	19.65	28.50	**Complies**
	2437 MHz	20.72	21.19	20.84	21.25	27.03	28.50	**Complies**
	2462 MHz	13.01	12.95	12.65	13.07	18.94	28.50	**Complies**
802.11n MCS0 HT20	2412 MHz	12.14	13.06	13.48	12.78	18.91	28.50	**Complies**
	2437 MHz	20.45	21.31	20.85	21.33	27.02	28.50	**Complies**
	2462 MHz	12.18	13.38	12.34	12.67	18.69	28.50	**Complies**
802.11n MCS0 HT40	2422 MHz	9.57	10.42	9.97	10.58	16.17	28.50	**Complies**
	2437 MHz	13.34	13.72	13.39	13.97	19.63	28.50	**Complies**
	2452 MHz	10.05	10.58	10.27	10.78	16.45	28.50	**Complies**

Note: Antenna gain=7.50dBi > 6dBi, So Limit =30-(7.50-6)=28.50dBm.

Temperature	25℃	Humidity	50%
Test Engineer	Eddie Weng & Lucas Huang	Test Date	Nov. 11, 2015
Test Mode	Mode 3: EUT 1 + Set 3 Sector Antenna / 5.5 dBi		

Mode	Frequency	Conducted Power (dBm)					Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
802.11b	2412 MHz	19.99	20.03	20.31	19.55	26.00	30.00	**Complies**
	2437 MHz	21.73	21.57	21.11	20.66	27.31	30.00	**Complies**
	2462 MHz	20.79	20.85	20.38	19.84	26.50	30.00	**Complies**
802.11g	2412 MHz	14.01	13.92	14.66	14.11	20.21	30.00	**Complies**
	2437 MHz	22.03	21.82	22.06	21.81	27.95	30.00	**Complies**
	2462 MHz	14.35	14.02	13.71	13.43	19.91	30.00	**Complies**
802.11n MCS0 HT20	2412 MHz	13.77	13.50	13.65	13.21	19.56	30.00	**Complies**
	2437 MHz	21.86	22.61	21.57	22.23	28.11	30.00	**Complies**
	2462 MHz	13.38	13.54	13.27	13.17	19.36	30.00	**Complies**
802.11n MCS0 HT40	2422 MHz	9.57	10.42	9.97	10.58	16.17	30.00	**Complies**
	2437 MHz	14.88	14.76	14.67	14.28	20.67	30.00	**Complies**
	2452 MHz	11.71	11.52	11.42	11.01	17.44	30.00	**Complies**

Temperature	25℃	Humidity	50%
Test Engineer	Eddie Weng & Lucas Huang	Test Date	Oct. 23, 2015 ~ Nov. 10, 2015
Test Mode	Mode 4: EUT 1 + Set 4 Sector Antenna / 10.5 dBi		

Mode	Frequency	Conducted Power (dBm)					Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
802.11b	2412 MHz	17.31	16.66	17.98	17.42	23.39	25.50	**Complies**
	2437 MHz	18.45	17.46	18.48	18.08	24.16	25.50	**Complies**
	2462 MHz	16.70	16.06	17.31	16.47	22.68	25.50	**Complies**
802.11g	2412 MHz	13.10	12.33	13.57	13.09	19.07	25.50	**Complies**
	2437 MHz	19.20	19.33	19.21	18.92	25.19	25.50	**Complies**
	2462 MHz	13.31	13.22	13.16	12.87	19.16	25.50	**Complies**
802.11n MCS0 HT20	2412 MHz	12.87	12.58	13.43	12.86	18.97	25.50	**Complies**
	2437 MHz	18.87	18.79	18.90	18.77	24.85	25.50	**Complies**
	2462 MHz	11.83	11.76	11.97	11.69	17.83	25.50	**Complies**
802.11n MCS0 HT40	2422 MHz	8.17	7.42	8.20	8.29	14.05	25.50	**Complies**
	2437 MHz	13.04	12.99	12.87	12.87	18.96	25.50	**Complies**
	2452 MHz	10.20	9.79	9.92	9.85	15.96	25.50	**Complies**

Note: Antenna gain=10.50dBi > 6dBi, So Limit =30-(10.50-6)=25.50dBm.

Temperature	25℃	Humidity	50%
Test Engineer	Eddie Weng & Lucas Huang	Test Date	Nov. 06, 2015
Test Mode	Mode 5: EUT 1 + Set 7 Sector Antenna / 5 dBi		

Mode	Frequency	Conducted Power (dBm)					Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
802.11b	2412 MHz	19.99	20.03	20.31	19.55	26.00	30.00	**Complies**
	2437 MHz	21.73	21.57	21.11	20.66	27.31	30.00	**Complies**
	2462 MHz	19.12	19.05	19.62	19.13	25.26	30.00	**Complies**
802.11g	2412 MHz	14.01	13.92	14.66	14.11	20.21	30.00	**Complies**
	2437 MHz	22.03	21.82	22.06	21.81	27.95	30.00	**Complies**
	2462 MHz	14.58	14.27	13.99	13.49	20.12	30.00	**Complies**
802.11n MCS0 HT20	2412 MHz	13.61	13.58	14.09	13.92	19.83	30.00	**Complies**
	2437 MHz	21.86	22.61	21.57	22.23	28.11	30.00	**Complies**
	2462 MHz	13.38	13.54	13.27	13.17	19.36	30.00	**Complies**
802.11n MCS0 HT40	2422 MHz	11.26	11.43	11.41	10.88	17.27	30.00	**Complies**
	2437 MHz	14.88	14.76	14.67	14.28	20.67	30.00	**Complies**
	2452 MHz	11.71	11.52	11.42	11.01	17.44	30.00	**Complies**

Temperature	25℃	Humidity	50%
Test Engineer	Eddie Weng & Lucas Huang	Test Date	Nov. 06, 2015
Test Mode	Mode 6: EUT 1 + Set 8 Dipole Antenna / 4.66 dBi		

Mode	Frequency	Conducted Power (dBm)					Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
802.11b	2412 MHz	20.63	21.86	21.02	20.89	27.15	30.00	**Complies**
	2437 MHz	21.73	21.57	21.11	20.66	27.31	30.00	**Complies**
	2462 MHz	20.75	20.98	20.14	20.03	26.51	30.00	**Complies**
802.11g	2412 MHz	13.28	13.23	12.54	12.76	18.98	30.00	**Complies**
	2437 MHz	21.65	22.46	21.84	22.25	28.08	30.00	**Complies**
	2462 MHz	13.64	13.56	13.25	13.64	19.55	30.00	**Complies**
802.11n MCS0 HT20	2412 MHz	12.64	13.57	12.98	13.24	19.14	30.00	**Complies**
	2437 MHz	20.45	21.31	20.85	21.33	27.02	30.00	**Complies**
	2462 MHz	12.73	12.95	12.83	13.27	18.97	30.00	**Complies**
802.11n MCS0 HT40	2422 MHz	8.74	9.42	9.17	9.53	15.25	30.00	**Complies**
	2437 MHz	13.82	14.33	13.98	14.58	20.21	30.00	**Complies**
	2452 MHz	10.05	10.58	10.27	10.78	16.45	30.00	**Complies**

Temperature	25℃	Humidity	50%
Test Engineer	Eddie Weng & Lucas Huang	Test Date	Nov. 20, 2015
Test Mode	Mode 7: EUT 2 + Set 10 PIFA Antenna / Chain1:3.81 dBi, Chain2:3.75 dBi, Chain3:3.98 dBi, Chain4:3.47 dBi		

Mode	Frequency	Conducted Power (dBm)					Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
802.11b	2412 MHz	19.24	19.62	18.78	18.61	25.10	30.00	**Complies**
	2437 MHz	20.03	20.62	19.73	19.58	26.03	30.00	**Complies**
	2462 MHz	19.84	20.21	19.66	19.63	25.86	30.00	**Complies**
802.11g	2412 MHz	16.26	15.97	15.85	15.48	21.92	30.00	**Complies**
	2437 MHz	22.64	22.58	21.85	22.14	28.34	30.00	**Complies**
	2462 MHz	15.89	16.17	15.43	15.34	21.74	30.00	**Complies**
802.11n MCS0 HT20	2412 MHz	15.12	14.78	14.38	14.09	20.63	30.00	**Complies**
	2437 MHz	22.28	22.37	21.72	21.95	28.11	30.00	**Complies**
	2462 MHz	15.68	15.92	15.47	15.39	21.64	30.00	**Complies**
802.11n MCS0 HT40	2422 MHz	13.32	13.19	12.38	12.87	18.98	30.00	**Complies**
	2437 MHz	16.05	15.89	15.54	15.71	21.82	30.00	**Complies**
	2452 MHz	11.89	12.03	11.66	11.21	17.73	30.00	**Complies**

4.3. Power Spectral Density Measurement

4.3.1. Limit

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

4.3.2. Measuring Instruments and Setting

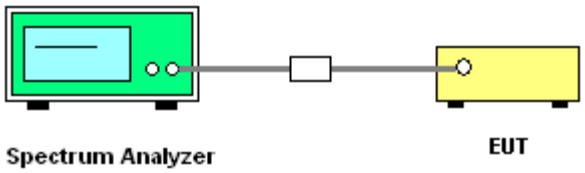
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Set the span to 1.5 times the DTS channel bandwidth.
RBW	3 kHz ≤ RBW ≤ 100kHz
VBW	≥ 3 x RBW
Detector	Peak
Trace	Max Hold
Sweep Time	Auto couple

4.3.3. Test Procedures

1. Test was performed in accordance with KDB558074 D01 v03r03 for Performing Compliance Measurements on Digital Transmission Systems (DTS) - section 10.2 Method PKPSD (peak PSD) and KDB 662911 D01 v02r01 section In-Band Power Spectral Density (PSD) Measurements option (b) Measure and sum spectral maximal across the outputs.
2. Use this procedure when the maximum conducted output power in the fundamental emission is used to demonstrate compliance. The EUT must be configured to transmit continuously at full power over the measurement duration.
3. Ensure that the number of measurement points in the sweep ≥ 2 x span/RBW (use of a greater number of measurement points than this minimum requirement is recommended).
4. Use the peak marker function to determine the maximum level in any 3 kHz band segment within the fundamental EBW.
5. The resulting PSD level must be ≤ 8 dBm.

4.3.4. Test Setup Layout



4.3.5. Test Deviation

There is no deviation with the original standard.

4.3.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.3.7. Test Result of Power Spectral Density

Temperature	25℃	Humidity	50%
Test Engineer	Eddie Weng & Lucas Huang		
Test Mode	Mode 1: EUT 1 + Set 1 Ceiling Mount Omni Antenna / 4 dBi		

Mode	Frequency	Power Density (dBm/3kHz)					Power Density Limit (dBm/3kHz)	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
802.11b	2412 MHz	-3.49	-3.72	-4.99	-4.82	1.82	6.99	**Complies**
	2437 MHz	-4.78	-6.71	-4.30	-4.96	0.92	6.99	**Complies**
	2462 MHz	-7.86	-4.45	-7.61	-5.91	-0.21	6.99	**Complies**
802.11g	2412 MHz	-11.43	-13.59	-11.53	-13.25	-6.32	6.99	**Complies**
	2437 MHz	-5.16	-5.68	-4.14	-5.02	1.06	6.99	**Complies**
	2462 MHz	-13.15	-13.21	-12.37	-12.93	-6.88	6.99	**Complies**
802.11n MCS0 HT20	2412 MHz	-12.74	-13.67	-13.34	-14.22	-7.44	6.99	**Complies**
	2437 MHz	-6.16	-6.05	-4.80	-4.92	0.58	6.99	**Complies**
	2462 MHz	-9.74	-12.30	-13.37	-14.26	-6.05	6.99	**Complies**
802.11n MCS0 HT40	2422 MHz	-20.95	-18.56	-18.92	-18.52	-13.11	6.99	**Complies**
	2437 MHz	-14.92	-16.55	-14.20	-15.69	-9.23	6.99	**Complies**
	2452 MHz	-19.21	-18.42	-18.33	-17.83	-12.40	6.99	**Complies**

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$ =7.01dBi > 6dBi, So Limit =8-(7.01-6)=6.99dBm/3kHz.

Temperature	25℃	Humidity	50%
Test Engineer	Eddie Weng & Lucas Huang		
Test Mode	Mode 2: EUT 1 + Set 2 Sector Antenna / 7.5 dBi		

Mode	Frequency	Power Density (dBm/3kHz)					Power Density Limit (dBm/3kHz)	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
802.11b	2412 MHz	-6.21	-7.90	-5.25	-6.43	-0.33	3.49	**Complies**
	2437 MHz	-5.96	-5.73	-3.45	-5.93	0.89	3.49	**Complies**
	2462 MHz	-7.26	-6.13	-4.57	-5.87	0.17	3.49	**Complies**
802.11g	2412 MHz	-14.88	-12.48	-11.02	-13.07	-6.63	3.49	**Complies**
	2437 MHz	-5.07	-5.76	-6.18	-5.86	0.32	3.49	**Complies**
	2462 MHz	-15.04	-14.12	-14.09	-14.10	-8.30	3.49	**Complies**
802.11n MCS0 HT20	2412 MHz	-15.17	-15.27	-14.20	-15.81	-9.05	3.49	**Complies**
	2437 MHz	-5.02	-6.86	-5.72	-7.16	-0.08	3.49	**Complies**
	2462 MHz	-15.52	-16.18	-14.38	-14.37	-9.02	3.49	**Complies**
802.11n MCS0 HT40	2422 MHz	-20.95	-18.56	-18.92	-18.52	-13.11	3.49	**Complies**
	2437 MHz	-15.82	-15.89	-16.20	-14.81	-9.63	3.49	**Complies**
	2452 MHz	-20.05	-19.62	-18.98	-18.98	-13.36	3.49	**Complies**

Note: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =10.51dBi > 6dBi, So Limit =8-(10.51-6)=3.49dBm/3kHz.

Temperature	25℃	Humidity	50%
Test Engineer	Eddie Weng & Lucas Huang		
Test Mode	Mode 3: EUT 1 + Set 3 Sector Antenna / 5.5 dBi		

Mode	Frequency	Power Density (dBm/3kHz)					Power Density Limit (dBm/3kHz)	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
802.11b	2412 MHz	-6.21	-7.90	-5.25	-6.43	-0.33	5.49	**Complies**
	2437 MHz	-4.78	-6.71	-4.30	-4.96	0.92	5.49	**Complies**
	2462 MHz	-7.86	-4.45	-7.61	-5.91	-0.21	5.49	**Complies**
802.11g	2412 MHz	-11.43	-13.59	-11.53	-13.25	-6.32	5.49	**Complies**
	2437 MHz	-5.16	-5.68	-4.14	-5.02	1.06	5.49	**Complies**
	2462 MHz	-17.36	-18.00	-17.01	-17.44	-11.42	5.49	**Complies**
802.11n MCS0 HT20	2412 MHz	-18.05	-18.47	-17.32	-18.07	-11.94	5.49	**Complies**
	2437 MHz	-6.16	-6.05	-4.80	-4.92	0.58	5.49	**Complies**
	2462 MHz	-14.27	-14.47	-13.37	-12.87	-7.67	5.49	**Complies**
802.11n MCS0 HT40	2422 MHz	-20.95	-18.56	-18.92	-18.52	-13.11	5.49	**Complies**
	2437 MHz	-16.62	-14.78	-14.16	-15.06	-9.04	5.49	**Complies**
	2452 MHz	-19.21	-18.42	-18.33	-17.83	-12.40	5.49	**Complies**

Note: $Directional Gain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =8.51dBi > 6dBi, So Limit =8-(8.51-6)=5.49dBm/3kHz.

Temperature	25℃	Humidity	50%
Test Engineer	Eddie Weng & Lucas Huang		
Test Mode	Mode 4: EUT 1 + Set 4 Sector Antenna / 10.5 dBi		

Mode	Frequency	Power Density (dBm/3kHz)					Power Density Limit (dBm/3kHz)	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
802.11b	2412 MHz	-16.47	-15.64	-15.22	-16.11	-9.81	0.49	**Complies**
	2437 MHz	-15.30	-13.02	-15.16	-14.44	-8.36	0.49	**Complies**
	2462 MHz	-17.30	-16.71	-15.82	-16.74	-10.59	0.49	**Complies**
802.11g	2412 MHz	-21.96	-22.15	-21.24	-22.12	-15.83	0.49	**Complies**
	2437 MHz	-15.92	-16.28	-14.72	-16.43	-9.76	0.49	**Complies**
	2462 MHz	-21.87	-21.92	-22.13	-21.99	-15.96	0.49	**Complies**
802.11n MCS0 HT20	2412 MHz	-22.04	-21.79	-21.16	-21.85	-15.68	0.49	**Complies**
	2437 MHz	-21.95	-22.58	-21.01	-22.24	-15.88	0.49	**Complies**
	2462 MHz	-22.98	-23.23	-22.83	-22.82	-16.94	0.49	**Complies**
802.11n MCS0 HT40	2422 MHz	-24.34	-24.01	-22.30	-23.99	-17.56	0.49	**Complies**
	2437 MHz	-18.20	-18.58	-18.09	-18.84	-12.40	0.49	**Complies**
	2452 MHz	-21.66	-22.12	-21.48	-21.34	-15.62	0.49	**Complies**

Note: $Directional Gain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =13.51dBi > 6dBi, So Limit =8-(13.51-6)=0.49dBm/3kHz.

Temperature	25℃	Humidity	50%
Test Engineer	Eddie Weng & Lucas Huang		
Test Mode	Mode 5: EUT 1 + Set 7 Sector Antenna / 5 dBi		

Mode	Frequency	Power Density (dBm/3kHz)					Power Density Limit (dBm/3kHz)	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
802.11b	2412 MHz	-6.21	-7.90	-5.25	-6.43	-0.33	5.99	**Complies**
	2437 MHz	-4.78	-6.71	-4.30	-4.96	0.92	5.99	**Complies**
	2462 MHz	-7.26	-6.13	-4.57	-5.87	0.17	5.99	**Complies**
802.11g	2412 MHz	-11.43	-13.59	-11.53	-13.25	-6.32	5.99	**Complies**
	2437 MHz	-5.16	-5.68	-4.14	-5.02	1.06	5.99	**Complies**
	2462 MHz	-13.15	-13.21	-12.37	-12.93	-6.88	5.99	**Complies**
802.11n MCS0 HT20	2412 MHz	-13.54	-13.94	-12.63	-13.08	-7.25	5.99	**Complies**
	2437 MHz	-6.16	-6.05	-4.80	-4.92	0.58	5.99	**Complies**
	2462 MHz	-14.27	-14.47	-13.37	-12.87	-7.67	5.99	**Complies**
802.11n MCS0 HT40	2422 MHz	-18.27	-16.26	-17.66	-17.97	-11.45	5.99	**Complies**
	2437 MHz	-16.62	-14.78	-14.16	-15.06	-9.04	5.99	**Complies**
	2452 MHz	-19.21	-18.42	-18.33	-17.83	-12.40	5.99	**Complies**

Note: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =8.01dBi > 6dBi, So Limit =8-(8.01-6)=5.99dBm/3kHz.

Temperature	25℃	Humidity	50%
Test Engineer	Eddie Weng & Lucas Huang		
Test Mode	Mode 6: EUT 1 + Set 8 Dipole Antenna / 4.66 dBi		

Mode	Frequency	Power Density (dBm/3kHz)					Power Density Limit (dBm/3kHz)	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
802.11b	2412 MHz	-3.49	-3.72	-4.99	-4.82	1.82	3.32	**Complies**
	2437 MHz	-4.78	-6.71	-4.30	-4.96	0.92	3.32	**Complies**
	2462 MHz	-3.36	-5.50	-4.52	-5.15	1.47	3.32	**Complies**
802.11g	2412 MHz	-14.28	-14.84	-13.40	-14.14	-8.11	3.32	**Complies**
	2437 MHz	-5.16	-5.68	-4.14	-5.02	1.06	3.32	**Complies**
	2462 MHz	-12.52	-13.55	-13.22	-13.27	-7.10	3.32	**Complies**
802.11n MCS0 HT20	2412 MHz	-13.89	-13.45	-13.32	-12.42	-7.22	3.32	**Complies**
	2437 MHz	-6.73	-6.28	-6.88	-5.95	-0.42	3.32	**Complies**
	2462 MHz	-12.24	-15.28	-14.15	-14.66	-7.90	3.32	**Complies**
802.11n MCS0 HT40	2422 MHz	-20.08	-20.25	-20.06	-19.50	-13.94	3.32	**Complies**
	2437 MHz	-16.28	-15.35	-14.30	-15.20	-9.21	3.32	**Complies**
	2452 MHz	-20.05	-19.62	-18.98	-18.98	-13.36	3.32	**Complies**

Note: $Directional Gain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =10.68dBi > 6dBi, So Limit =8-(10.68-6)=3.32dBm/3kHz.

Temperature	25℃	Humidity	50%
Test Engineer	Eddie Weng & Lucas Huang		
Test Mode	Mode 7: EUT 2 + Set 10 PIFA Antenna / Chain1:3.81 dBi, Chain2:3.75 dBi, Chain3:3.98 dBi, Chain4:3.47 dBi		

Mode	Frequency	Power Density (dBm/3kHz)					Power Density Limit (dBm/3kHz)	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
802.11b	2412 MHz	-11.93	-12.20	-12.55	-12.08	-6.16	4.22	**Complies**
	2437 MHz	-11.76	-10.39	-11.36	-11.70	-5.25	4.22	**Complies**
	2462 MHz	-9.59	-10.76	-10.87	-11.56	-4.62	4.22	**Complies**
802.11g	2412 MHz	-17.15	-16.41	-17.62	-17.09	-11.03	4.22	**Complies**
	2437 MHz	-10.66	-11.08	-10.48	-11.75	-4.95	4.22	**Complies**
	2462 MHz	-17.36	-18.00	-17.01	-17.44	-11.42	4.22	**Complies**
802.11n MCS0 HT20	2412 MHz	-18.05	-18.47	-17.32	-18.07	-11.94	4.22	**Complies**
	2437 MHz	-10.83	-10.97	-10.44	-11.31	-4.86	4.22	**Complies**
	2462 MHz	-17.86	-16.92	-17.19	-18.18	-11.49	4.22	**Complies**
802.11n MCS0 HT40	2422 MHz	-23.20	-23.66	-22.87	-23.76	-17.34	4.22	**Complies**
	2437 MHz	-20.41	-20.94	-19.34	-20.78	-14.30	4.22	**Complies**
	2452 MHz	-24.75	-24.93	-24.27	-24.60	-18.61	4.22	**Complies**

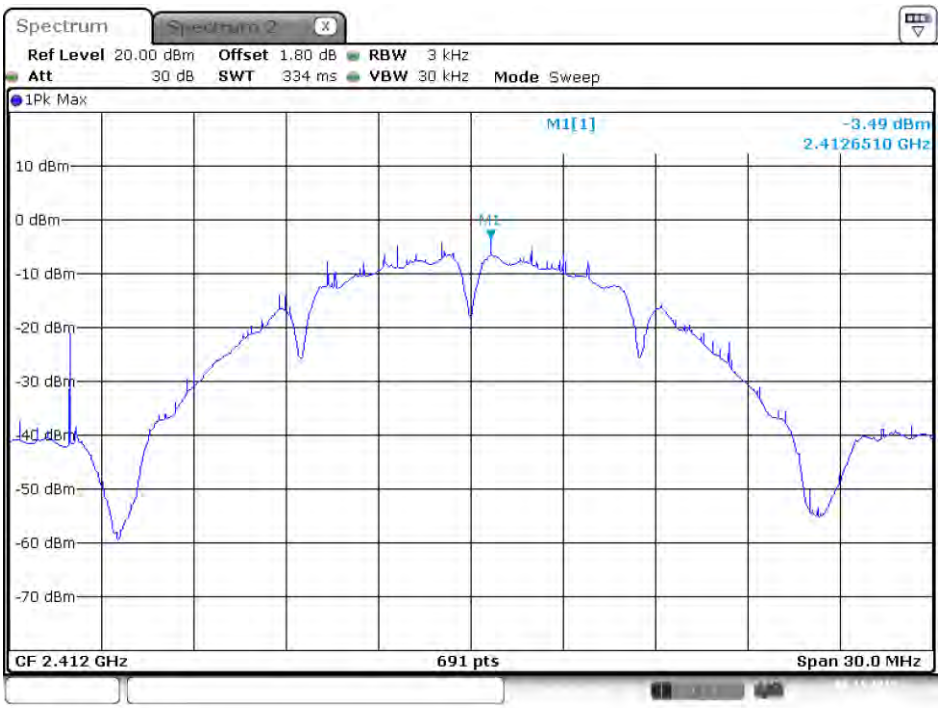
Note: $Directional Gain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$ =9.78dBi > 6dBi, So Limit =8-(9.78-6)=4.22dBm/3kHz.

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

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

Mode 1: EUT 1 + Set 1 Ceiling Mount Omni Antenna / 4 dBi

Power Density Plot on Configuration IEEE 802.11b / 2412 MHz / Chain 1



Date: 6.NOV.2015 03:04:52

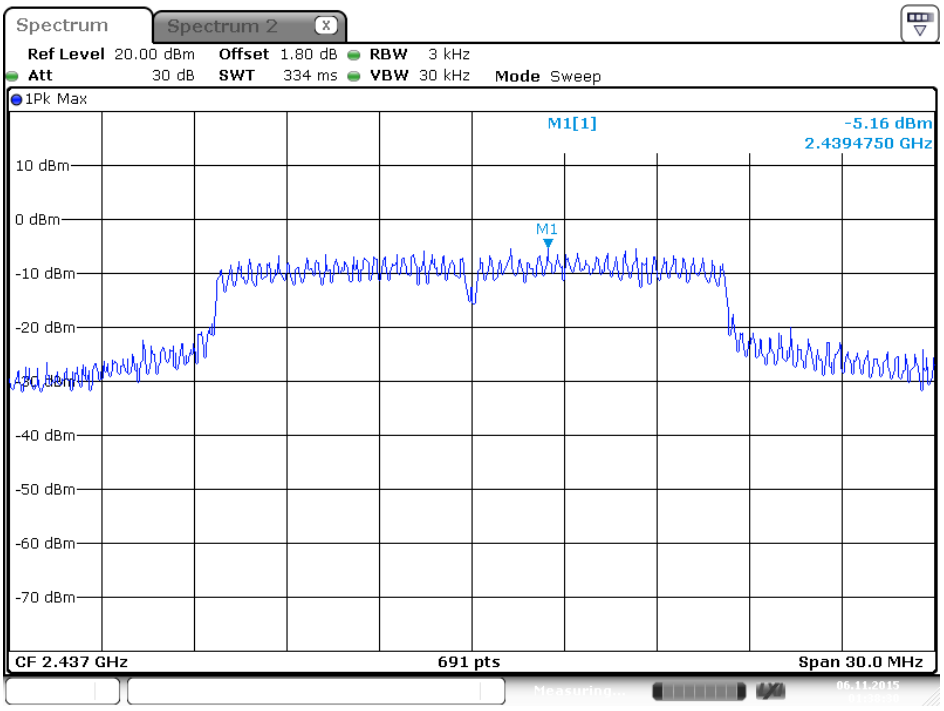
Power Density Plot on Configuration IEEE 802.11b / 2412 MHz / Chain 2

Date: 6.NOV.2015 03:05:18

Power Density Plot on Configuration IEEE 802.11b / 2412 MHz / Chain 3

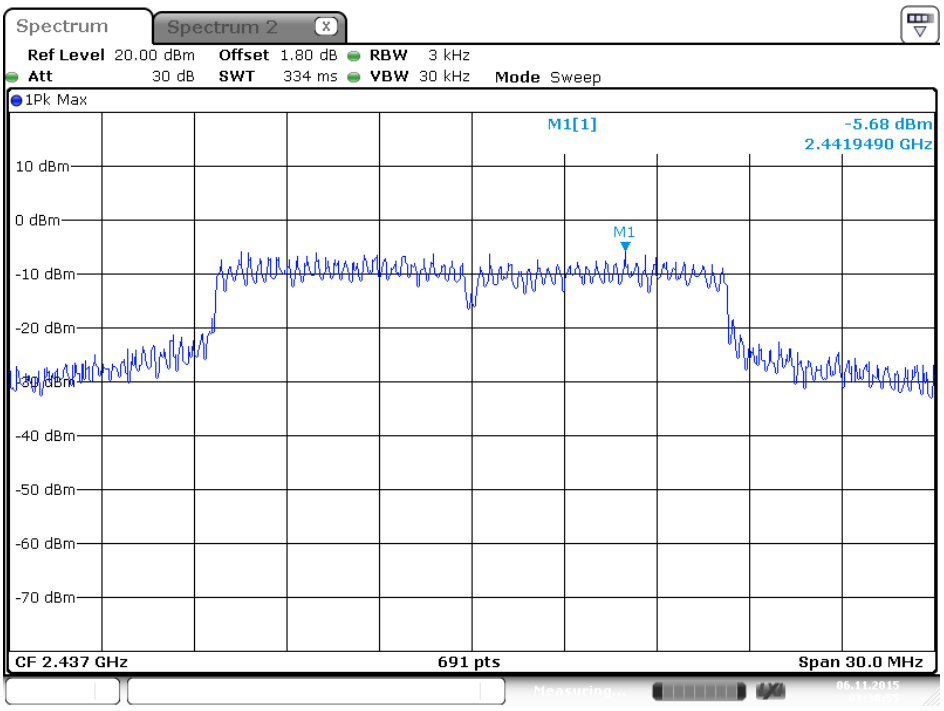
Power Density Plot on Configuration IEEE 802.11b / 2412 MHz / Chain 4

Power Density Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 1



Date: 6.NOV.2015 01:38:30

P Power Density Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 2



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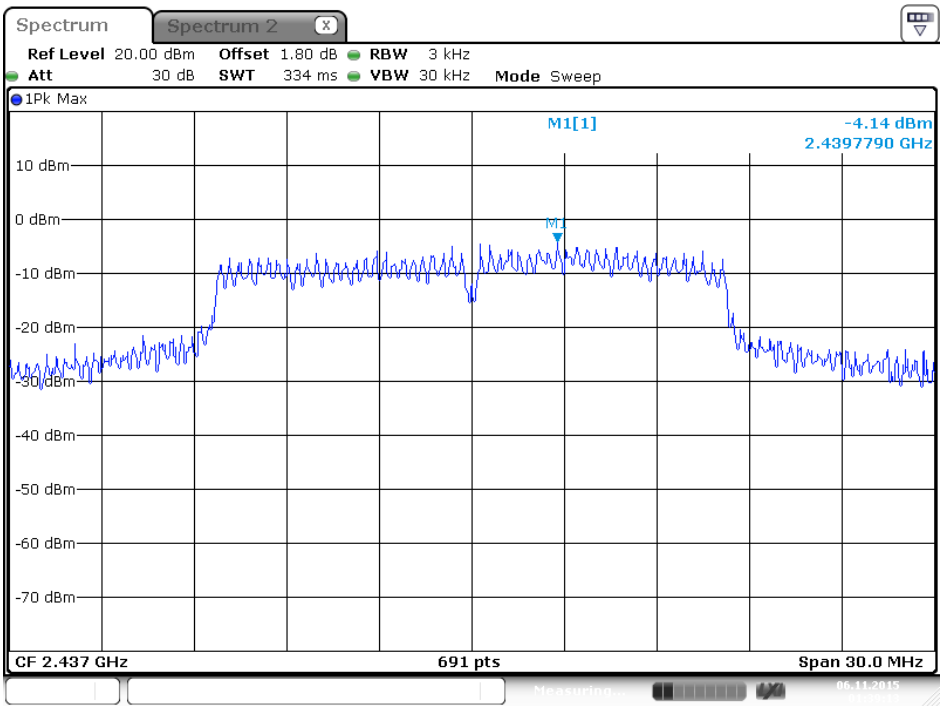
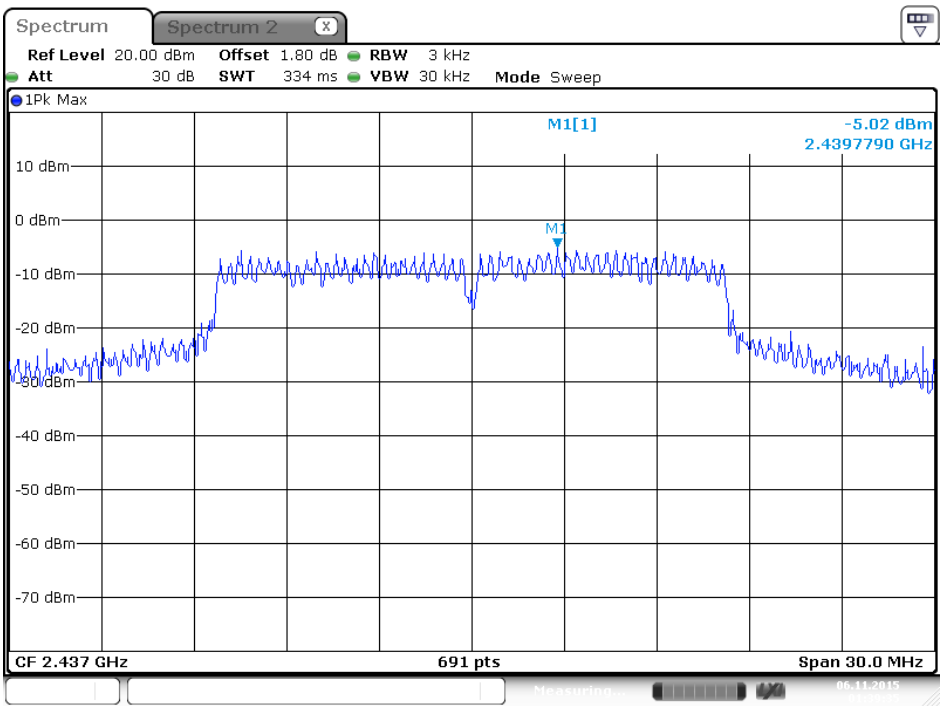
Power Density Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 3



Date: 6.NOV.2015 01:39:13

Power Density Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 4



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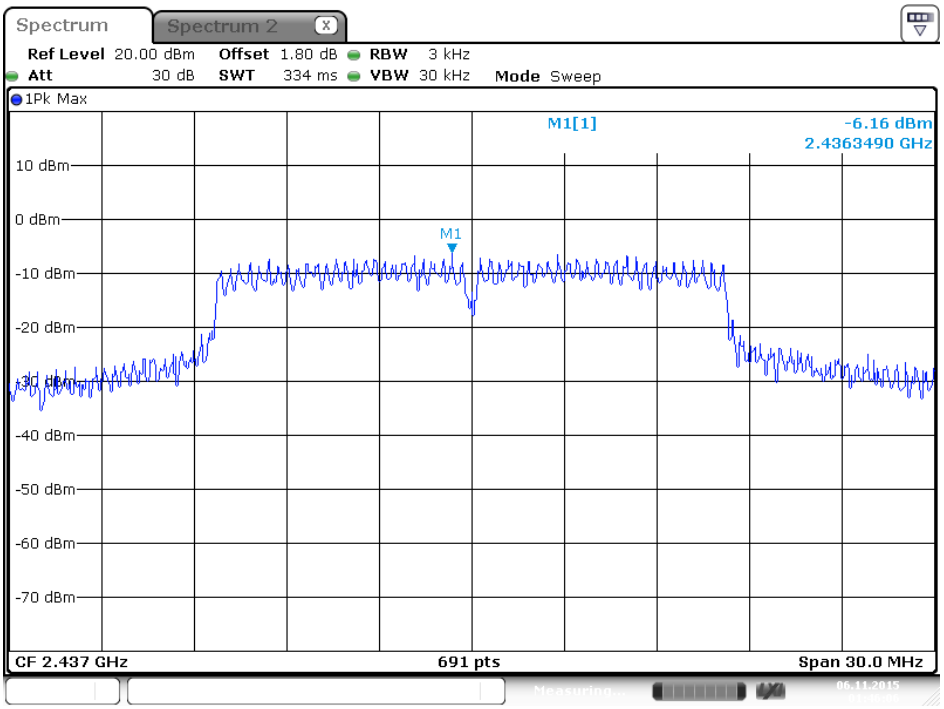
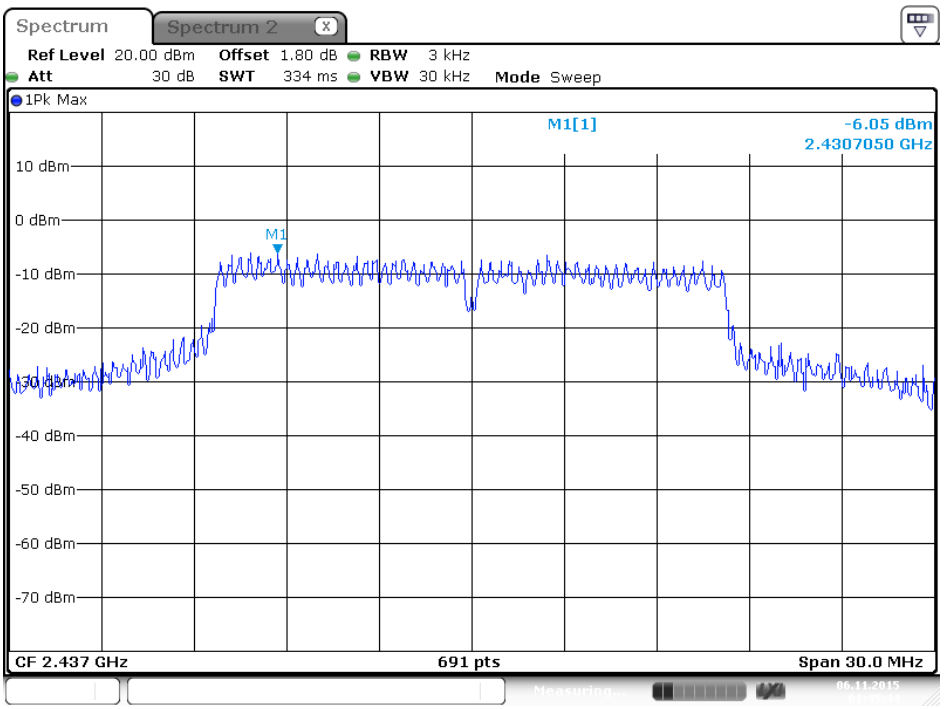
Power Density Plot on Configuration IEEE 802.11n MCS0 HT20 / 2437 MHz / Chain 1



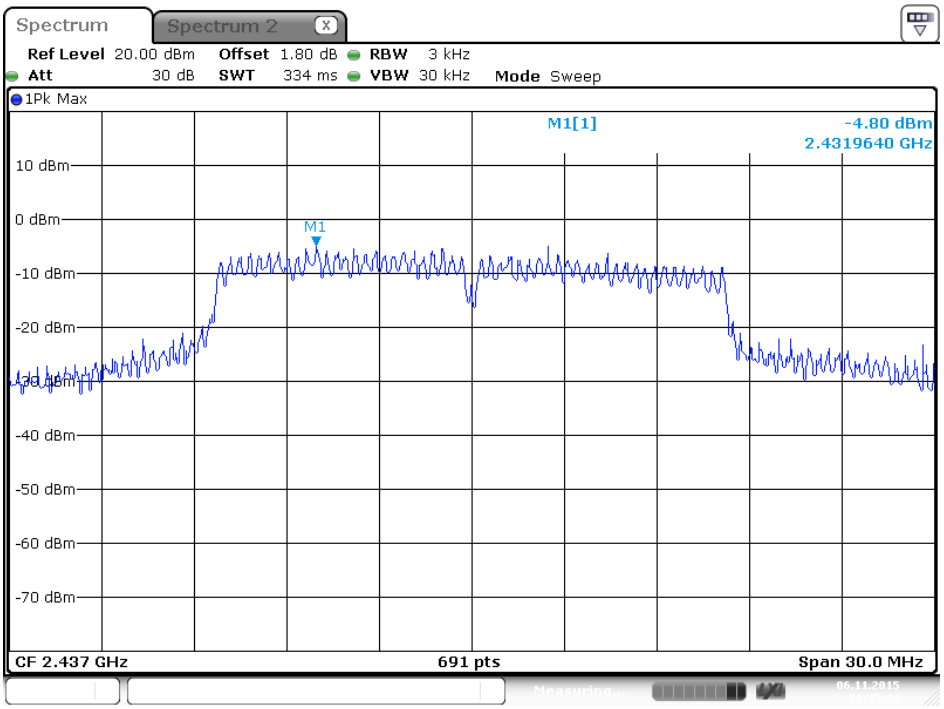
Date: 6.NOV.2015 01:46:06

Power Density Plot on Configuration IEEE 802.11n MCS0 HT20 / 2437 MHz / Chain 2



Date: 6.NOV.2015 01:45:43

Power Density Plot on Configuration IEEE 802.11n MCS0 HT20 / 2437 MHz / Chain 3



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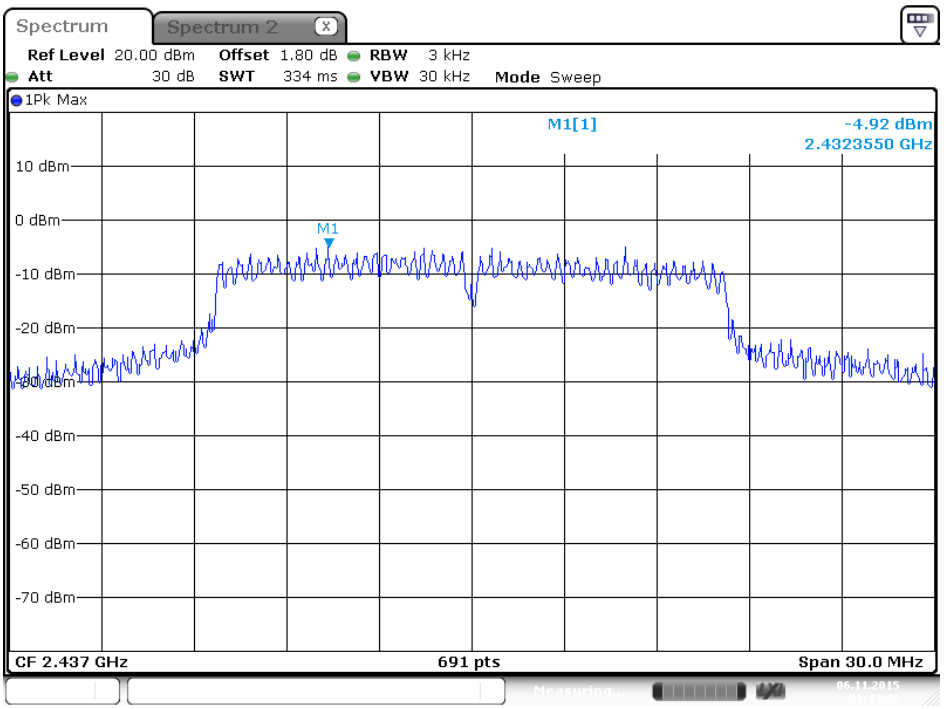
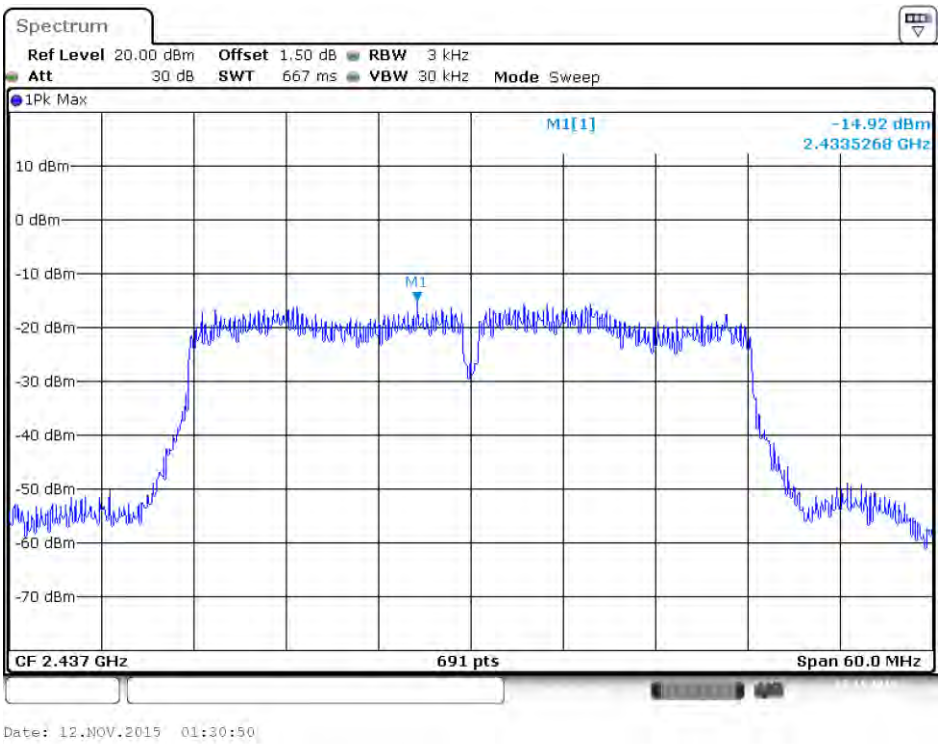
Power Density Plot on Configuration IEEE 802.11n MCS0 HT20 / 2437 MHz / Chain 4

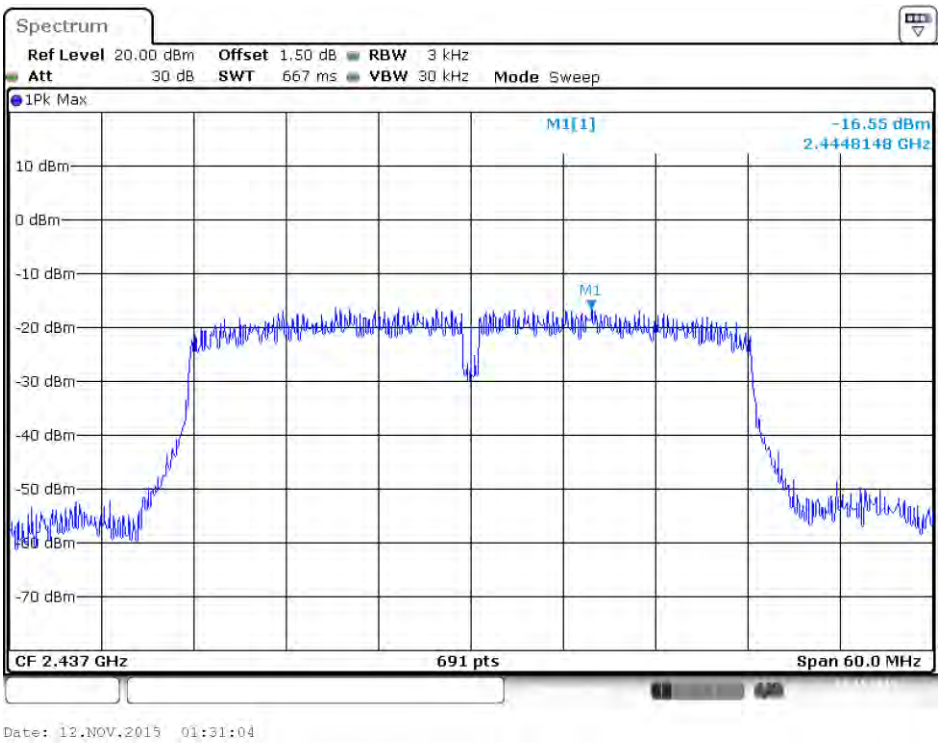


Date: 6.NOV.2015 01:44:48

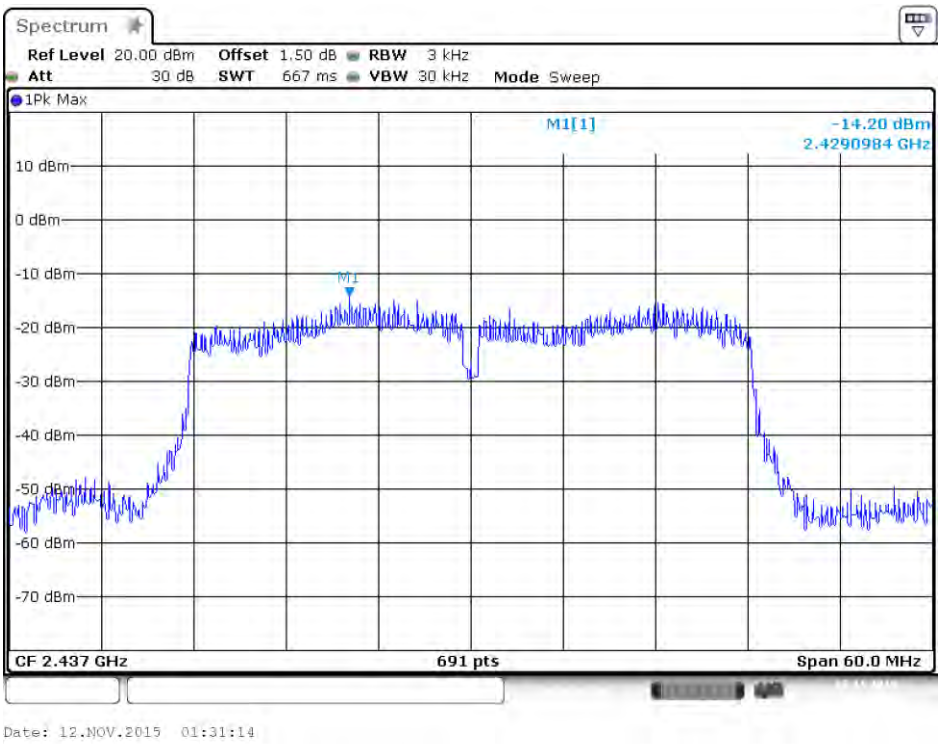
Power Density Plot on Configuration IEEE 802.11n MCS0 HT40 / 2437 MHz / Chain 1



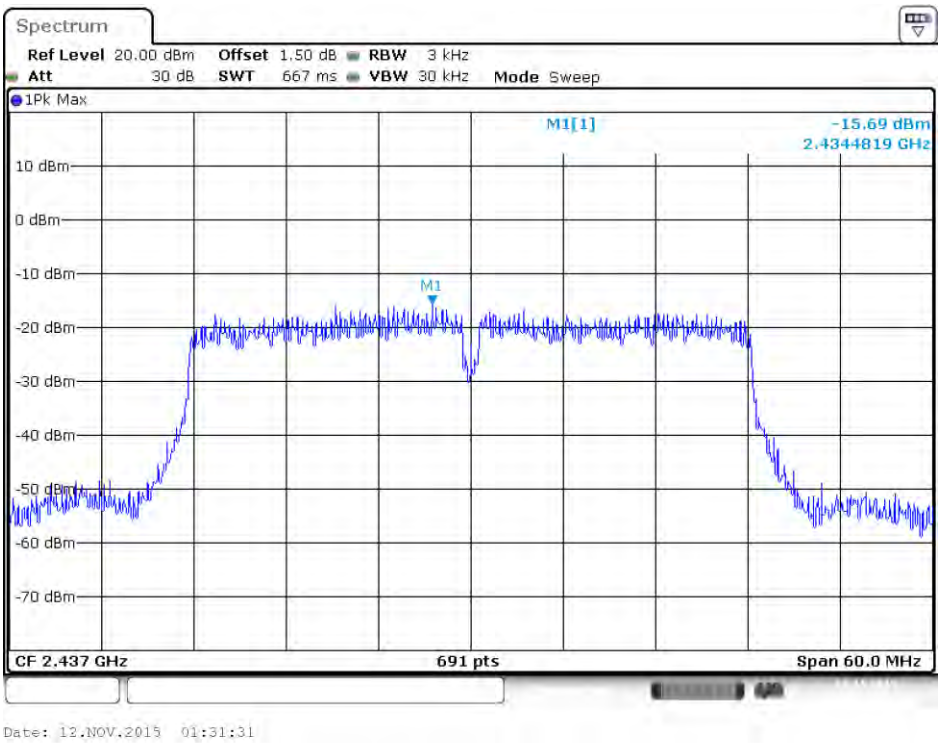
Power Density Plot on Configuration IEEE 802.11n MCS0 HT40 / 2437 MHz / Chain 2



Power Density Plot on Configuration IEEE 802.11n MCS0 HT40 / 2437 MHz / Chain 3

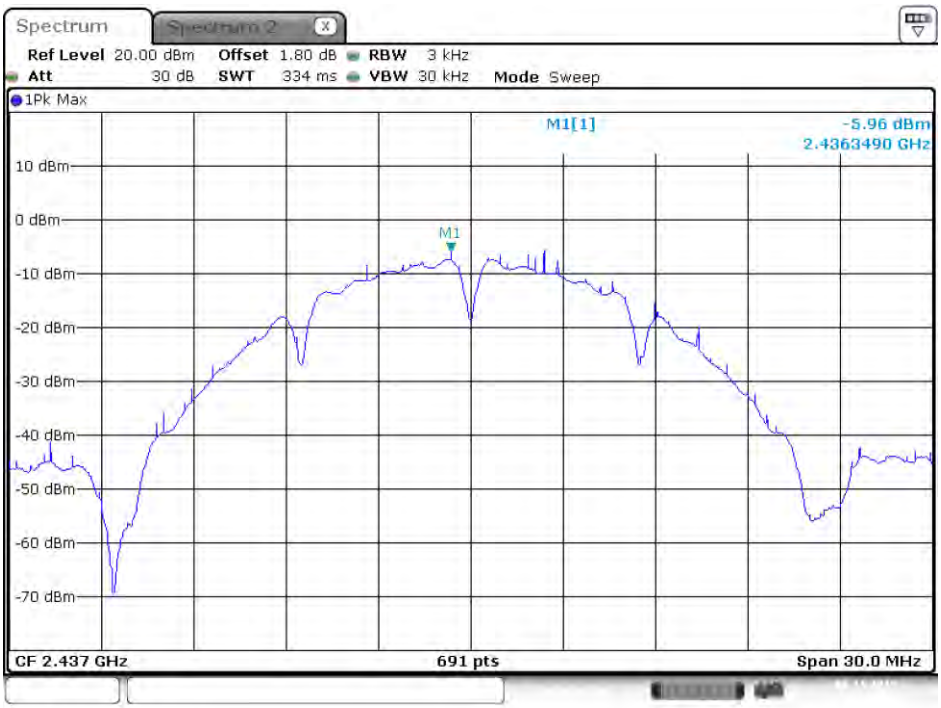


Power Density Plot on Configuration IEEE 802.11n MCS0 HT40 / 2437 MHz / Chain 4



Mode 2: EUT 1 + Set 2 Sector Antenna / 7.5 dBi

Power Density Plot on Configuration IEEE 802.11b / 2437 MHz / Chain 1

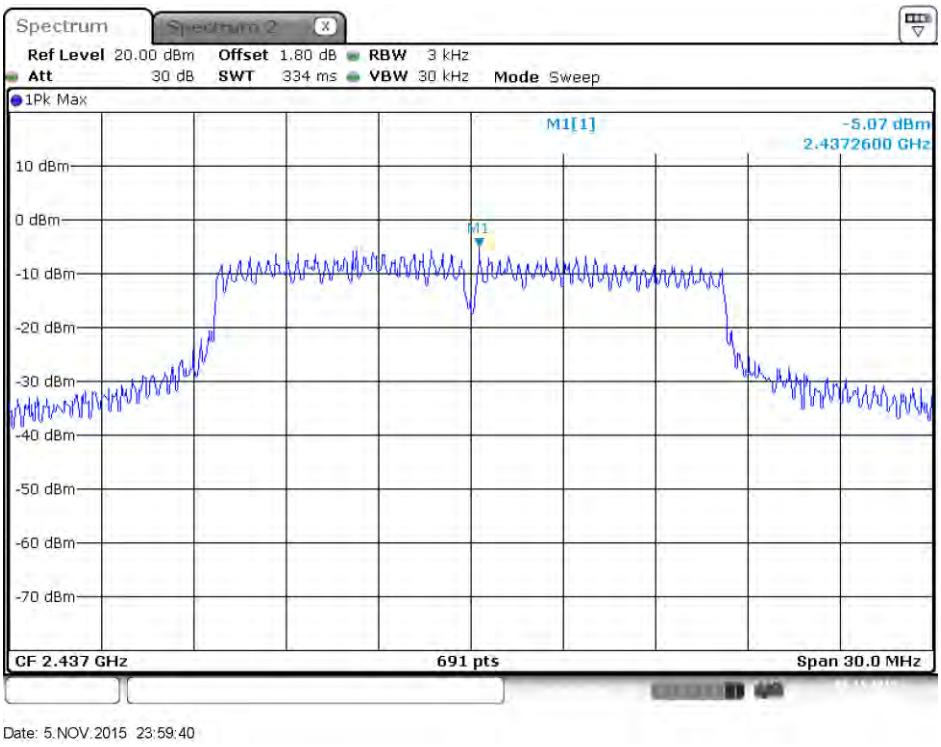


Power Density Plot on Configuration IEEE 802.11b / 2437 MHz / Chain 2

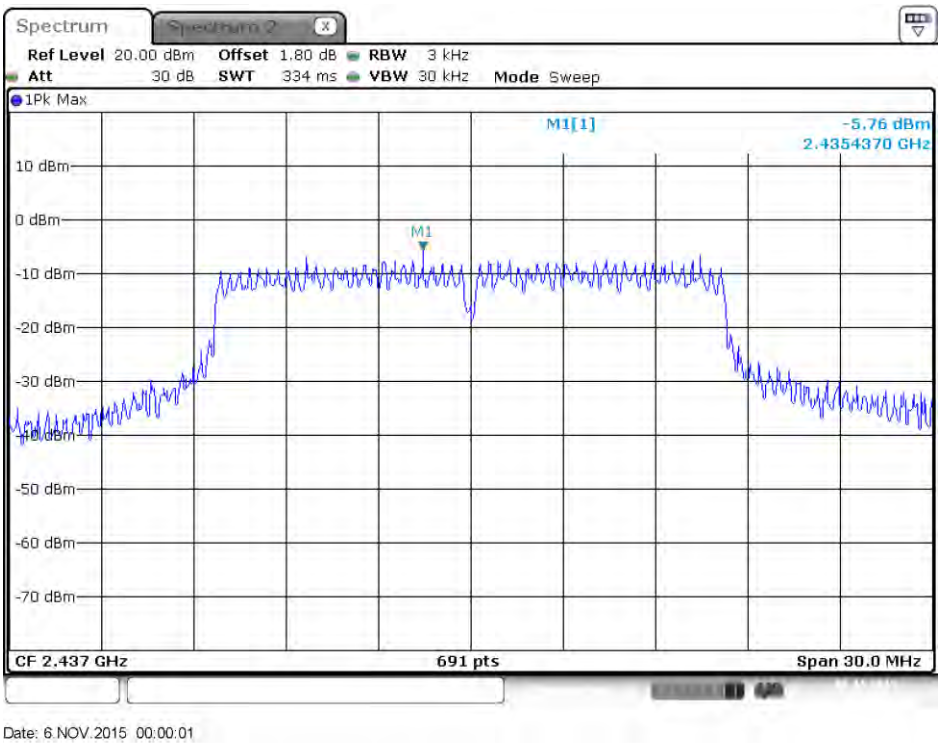
Power Density Plot on Configuration IEEE 802.11b / 2437 MHz / Chain 3

Power Density Plot on Configuration IEEE 802.11b / 2437 MHz / Chain 4

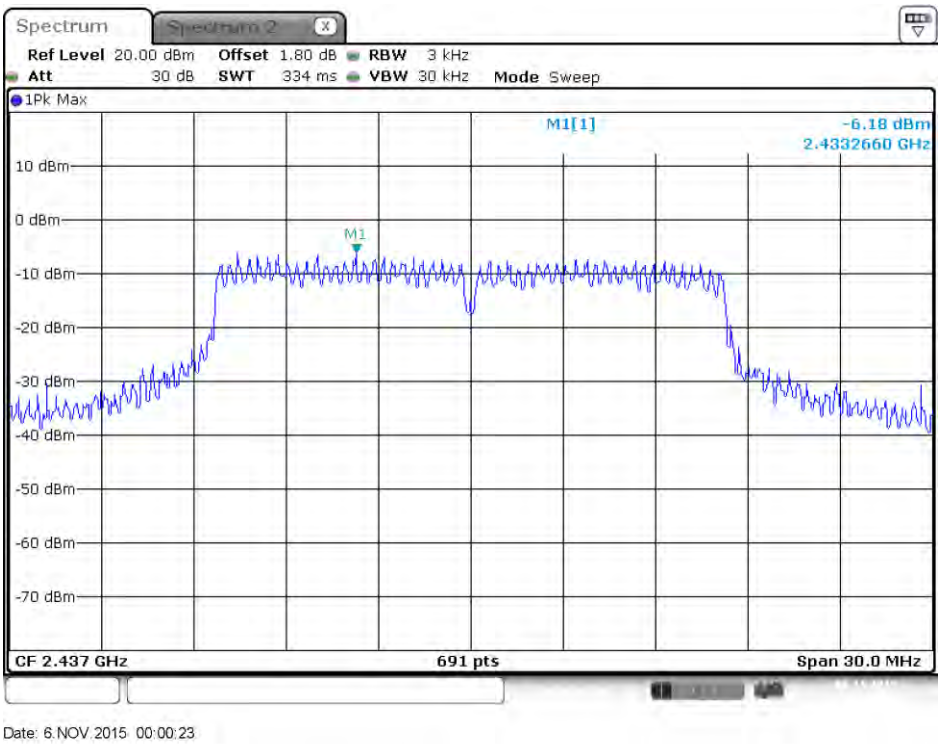
Power Density Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 1



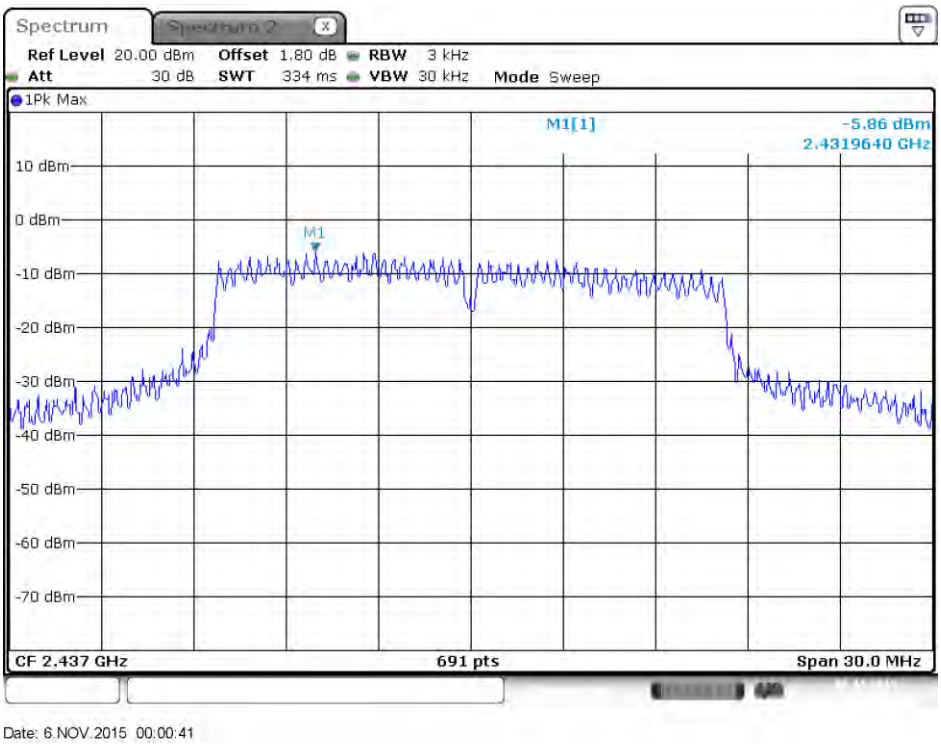
P Power Density Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 2



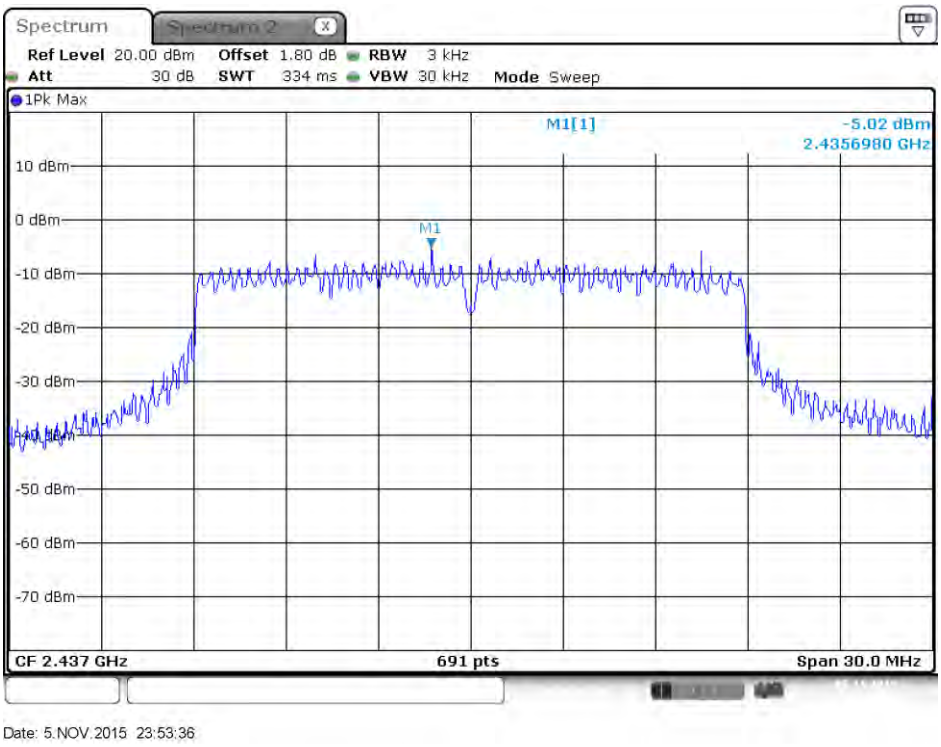
Power Density Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 3



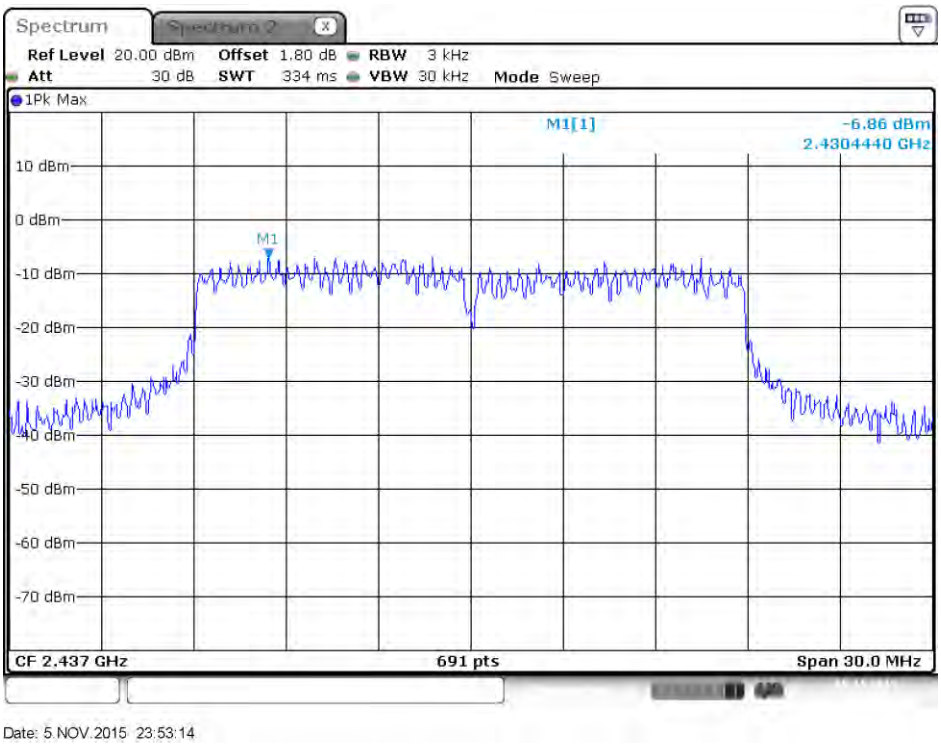
Power Density Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 4



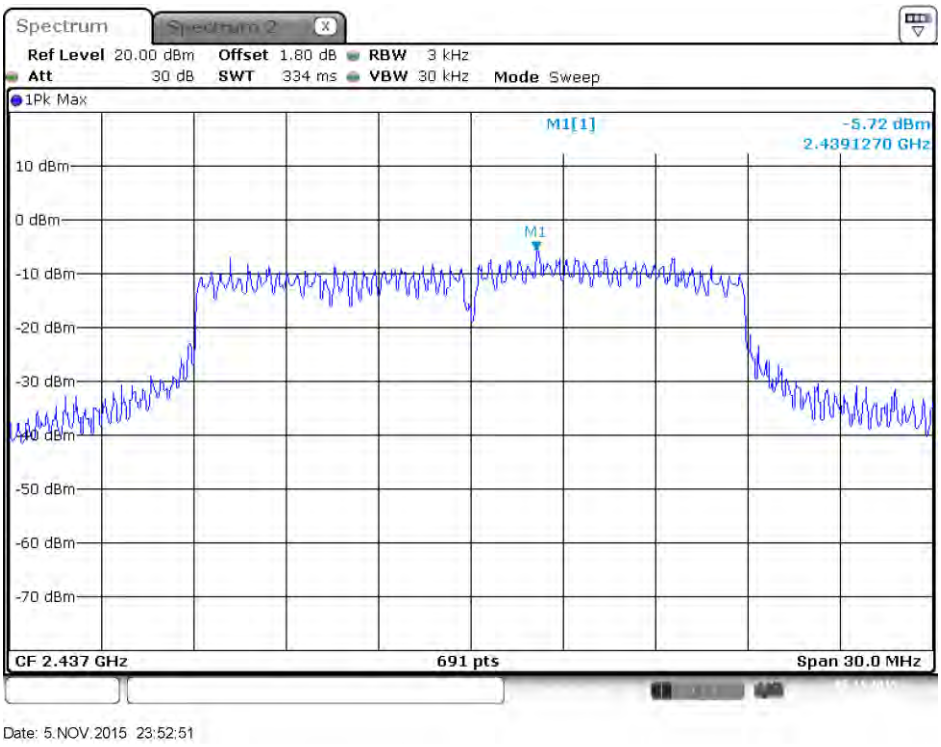
Power Density Plot on Configuration IEEE 802.11n MCS0 HT20 / 2437 MHz / Chain 1



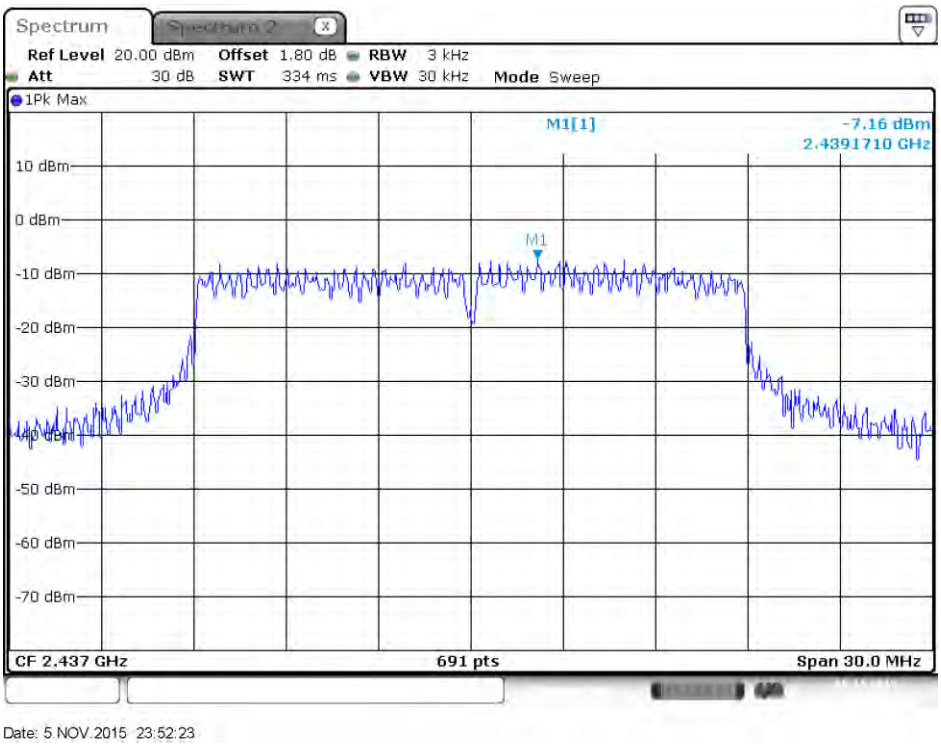
Power Density Plot on Configuration IEEE 802.11n MCS0 HT20 / 2437 MHz / Chain 2



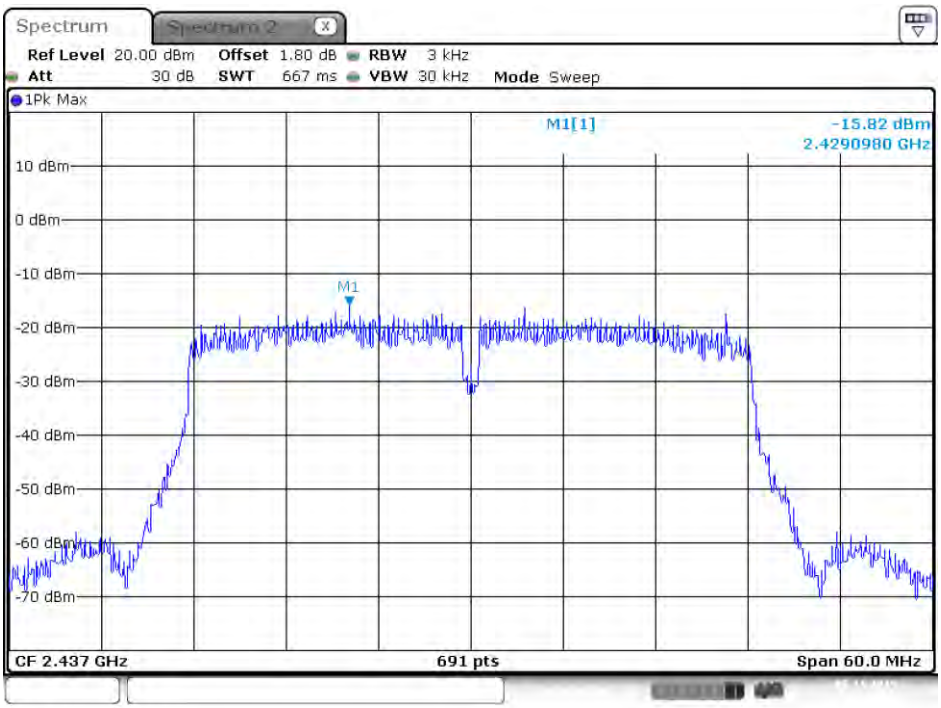
Power Density Plot on Configuration IEEE 802.11n MCS0 HT20 / 2437 MHz / Chain 3



Power Density Plot on Configuration IEEE 802.11n MCS0 HT20 / 2437 MHz / Chain 4

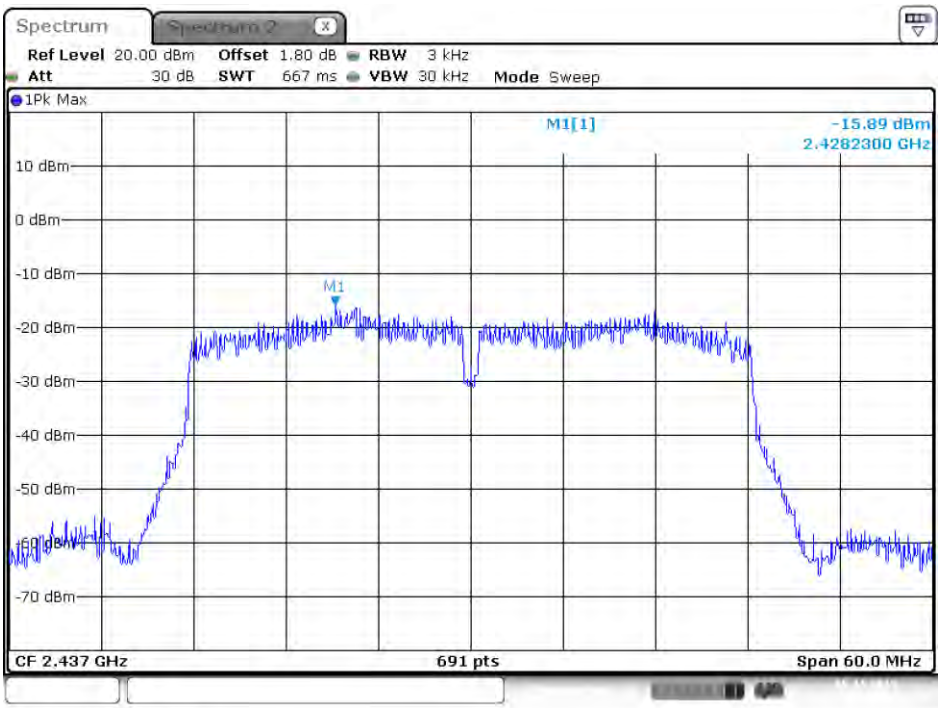


Power Density Plot on Configuration IEEE 802.11n MCS0 HT40 / 2437 MHz / Chain 1



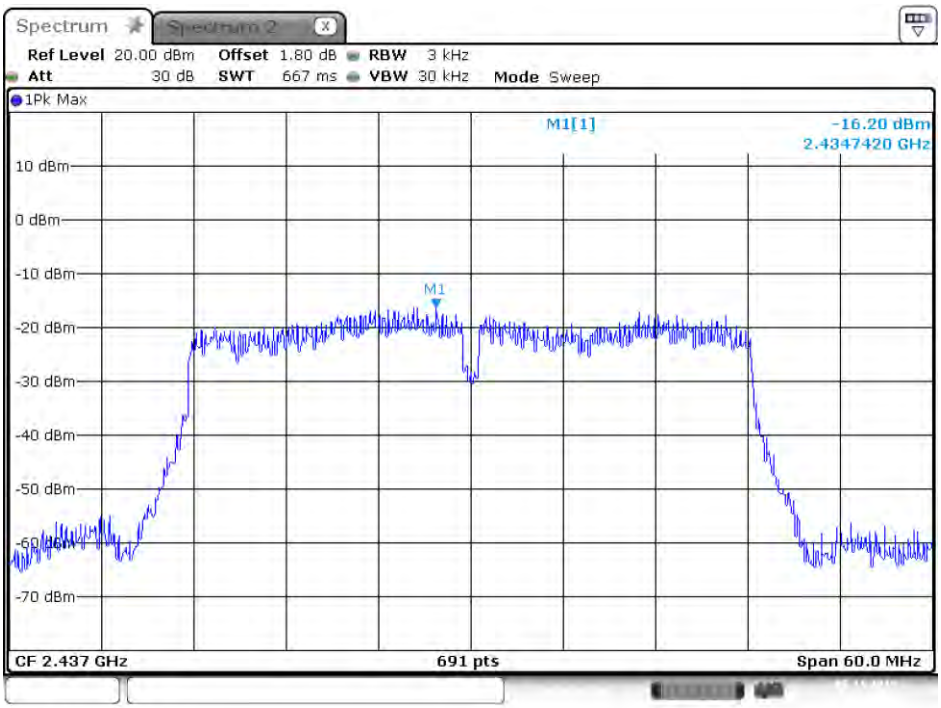
Date: 5.NOV.2015 23:43:52

Power Density Plot on Configuration IEEE 802.11n MCS0 HT40 / 2437 MHz / Chain 2

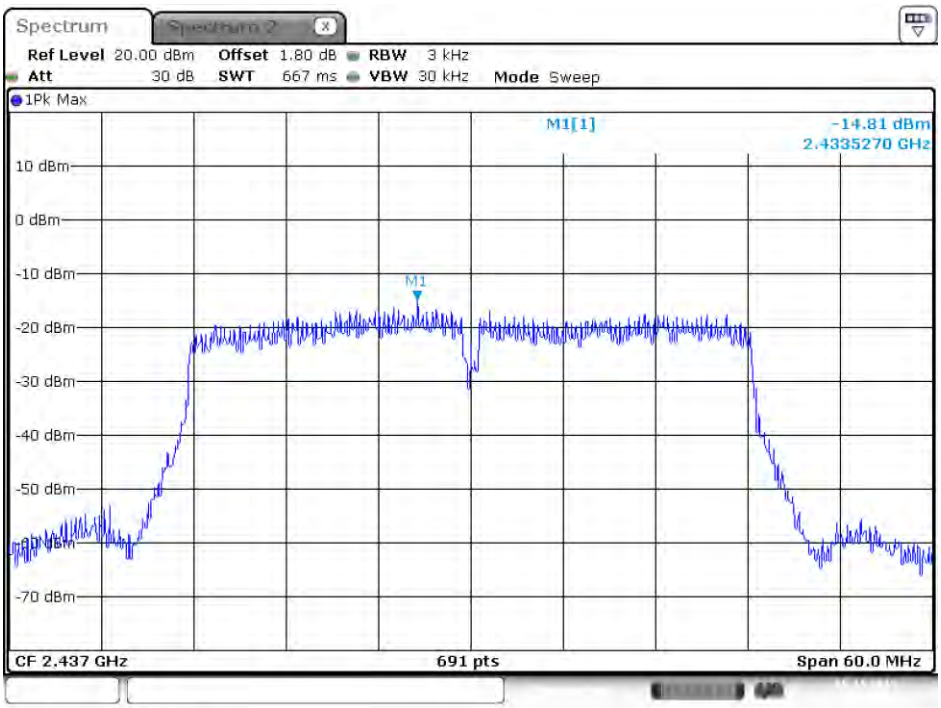


Date: 5.NOV.2015 23:44:17

Power Density Plot on Configuration IEEE 802.11n MCS0 HT40 / 2437 MHz / Chain 3

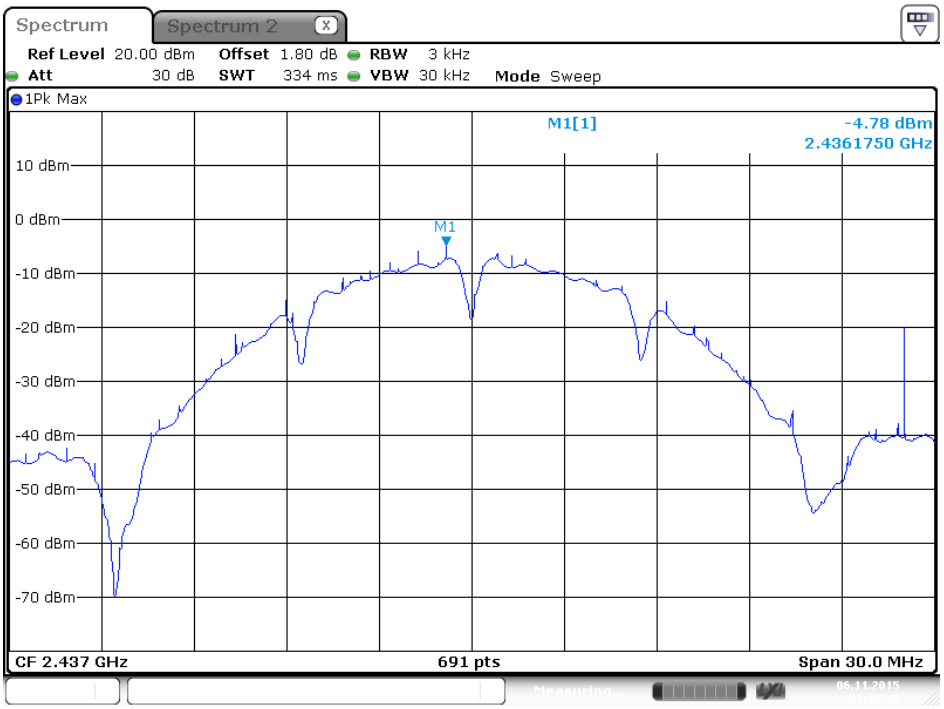


Power Density Plot on Configuration IEEE 802.11n MCS0 HT40 / 2437 MHz / Chain 4



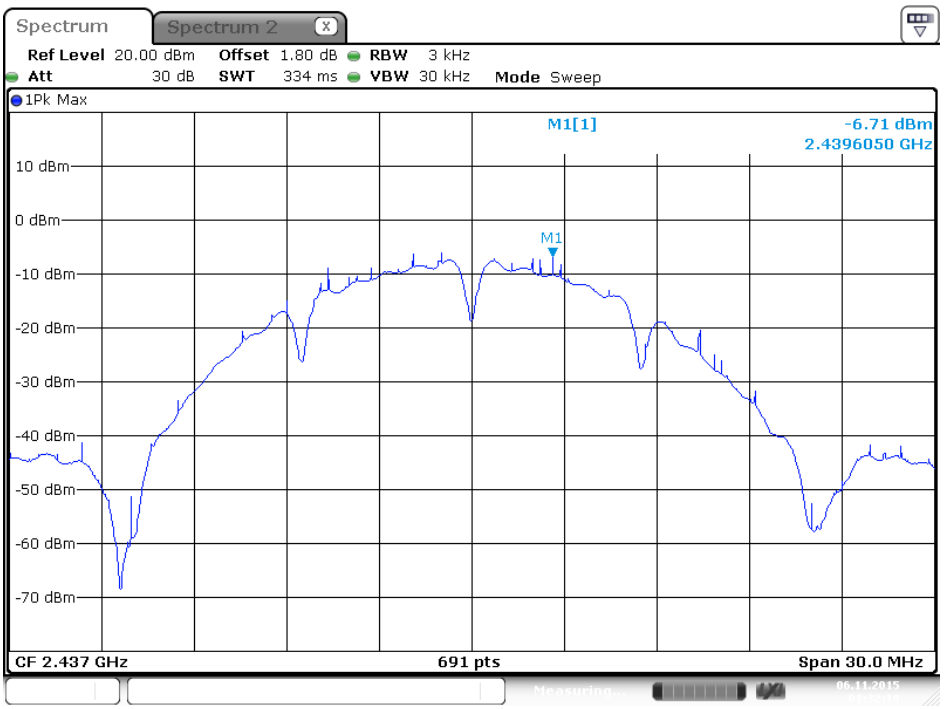
Mode 3: EUT 1 + Set 3 Sector Antenna / 5.5 dBi

Power Density Plot on Configuration IEEE 802.11b / 2437 MHz / Chain 1



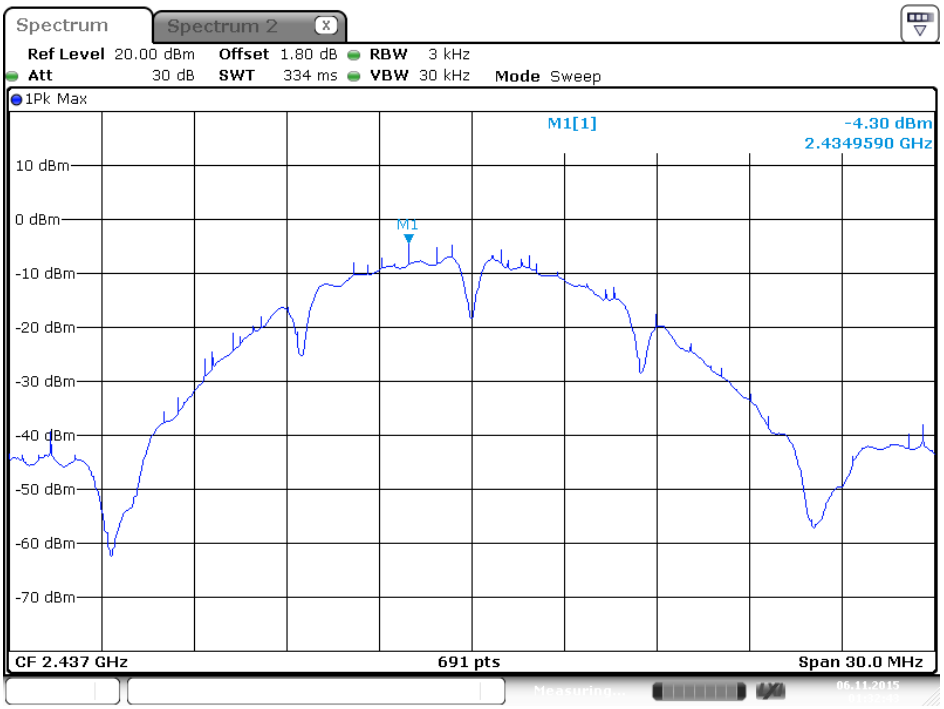
Date: 6.NOV.2015 01:33:48

Power Density Plot on Configuration IEEE 802.11b / 2437 MHz / Chain 2



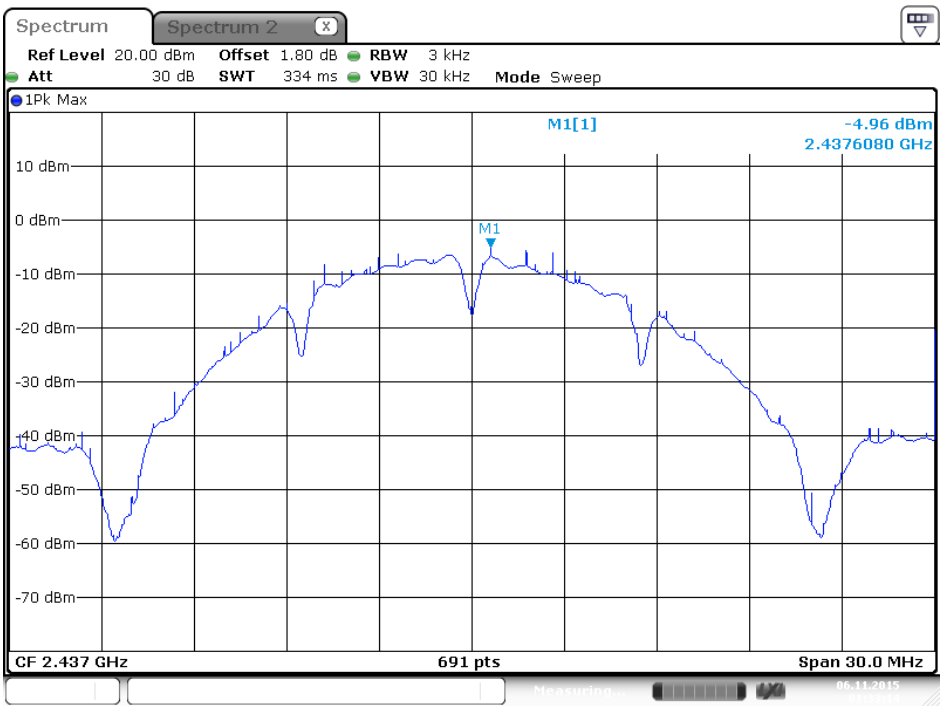
Date: 6.NOV.2015 01:32:19

Power Density Plot on Configuration IEEE 802.11b / 2437 MHz / Chain 3



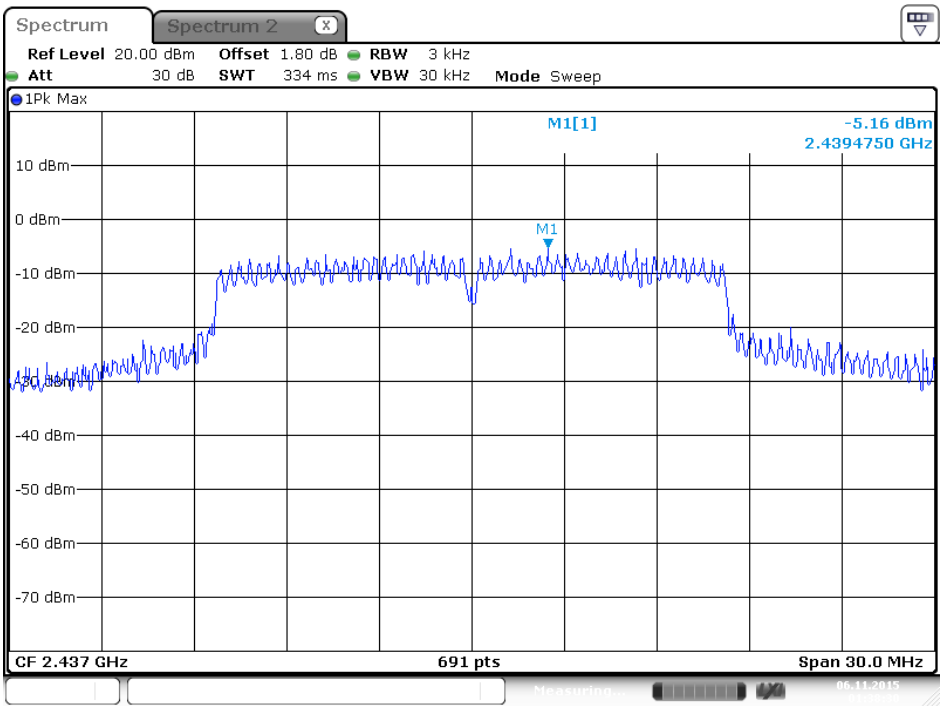
Date: 6.NOV.2015 01:32:43

Power Density Plot on Configuration IEEE 802.11b / 2437 MHz / Chain 4



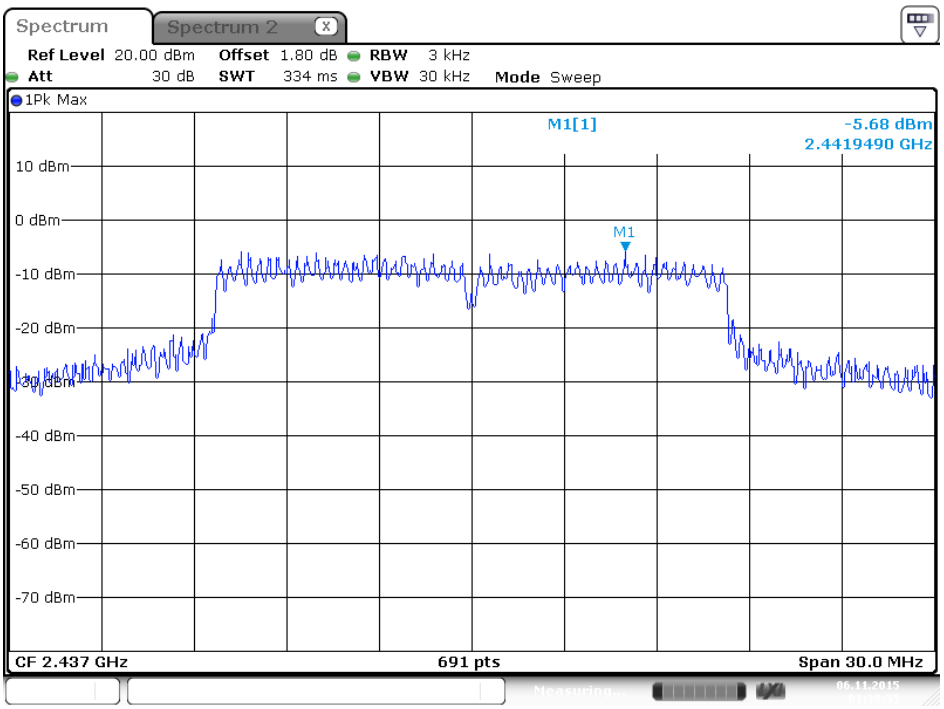
Date: 6.NOV.2015 01:33:14

Power Density Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 1



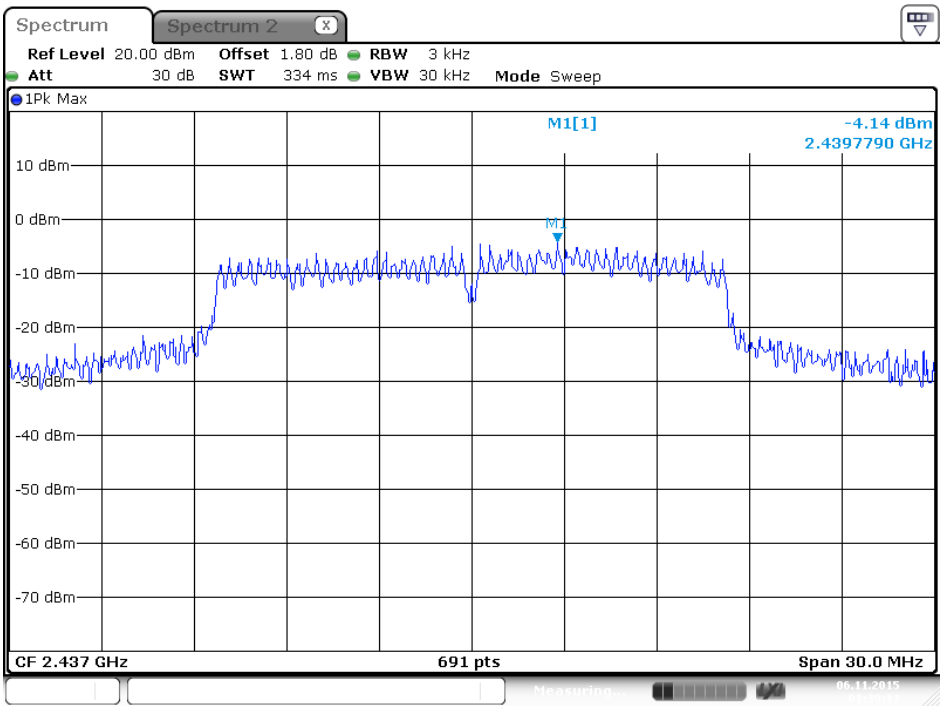
Date: 6.NOV.2015 01:38:30

P Power Density Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 2



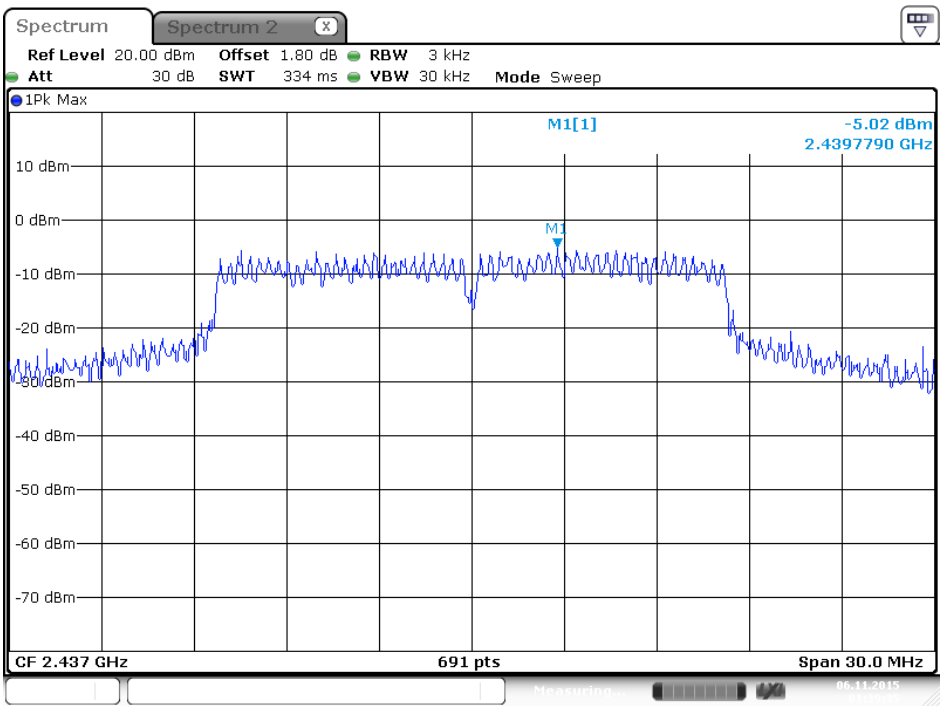
Date: 6.NOV.2015 01:38:55

Power Density Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 3



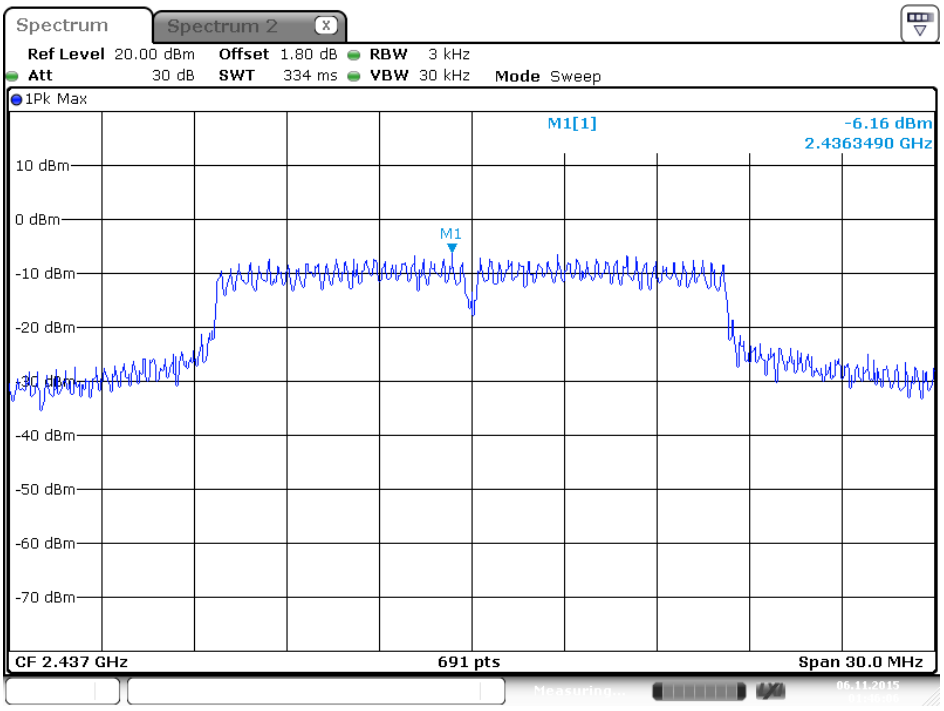
Date: 6.NOV.2015 01:39:13

Power Density Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 4



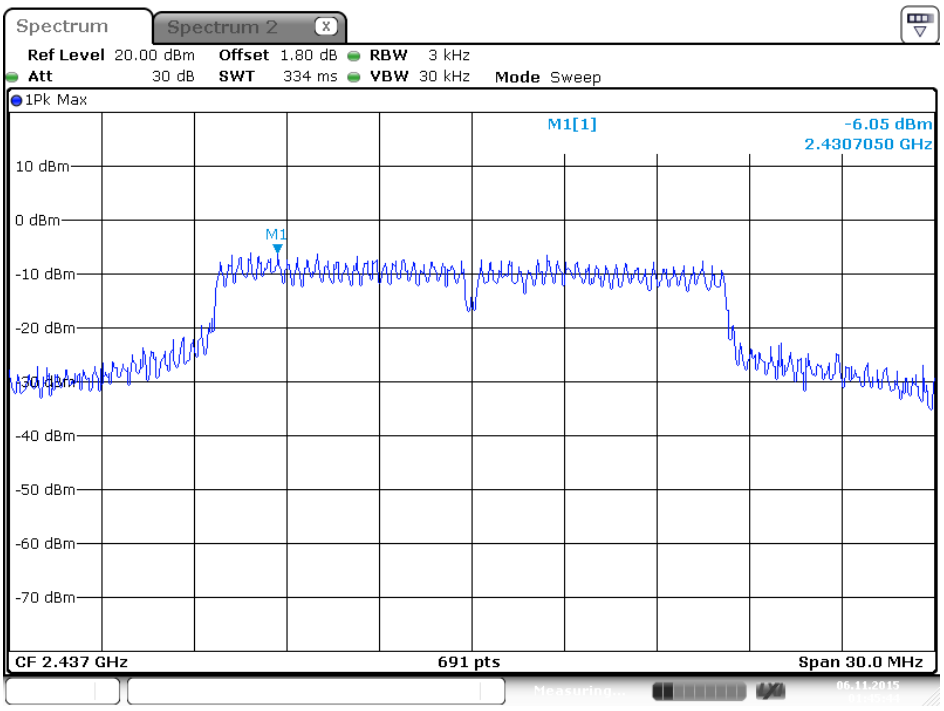
Date: 6.NOV.2015 01:39:36

Power Density Plot on Configuration IEEE 802.11n MCS0 HT20 / 2437 MHz / Chain 1



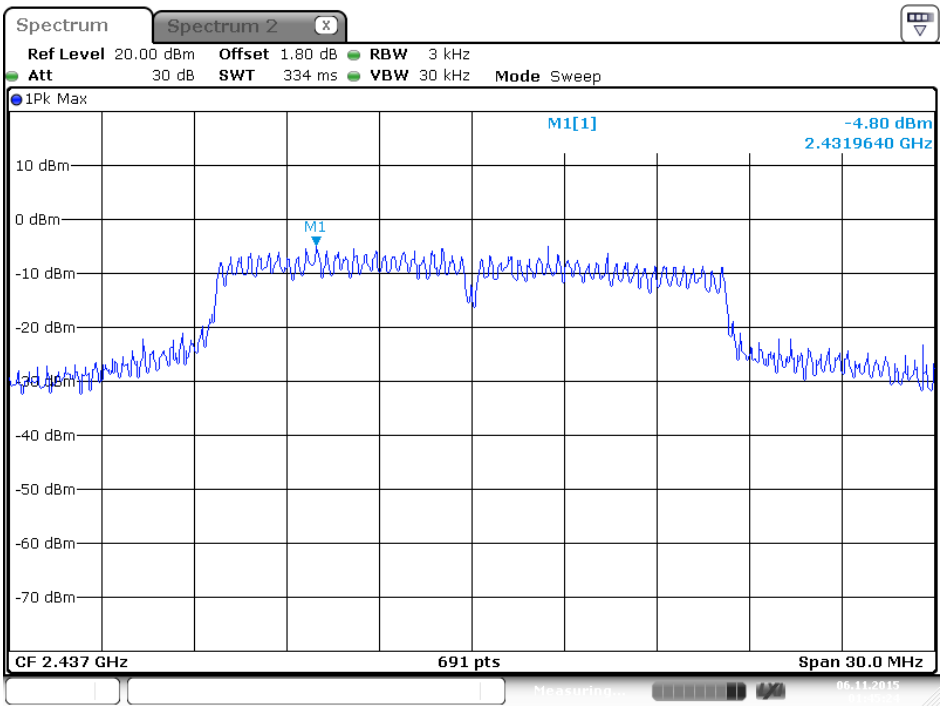
Date: 6.NOV.2015 01:46:06

Power Density Plot on Configuration IEEE 802.11n MCS0 HT20 / 2437 MHz / Chain 2



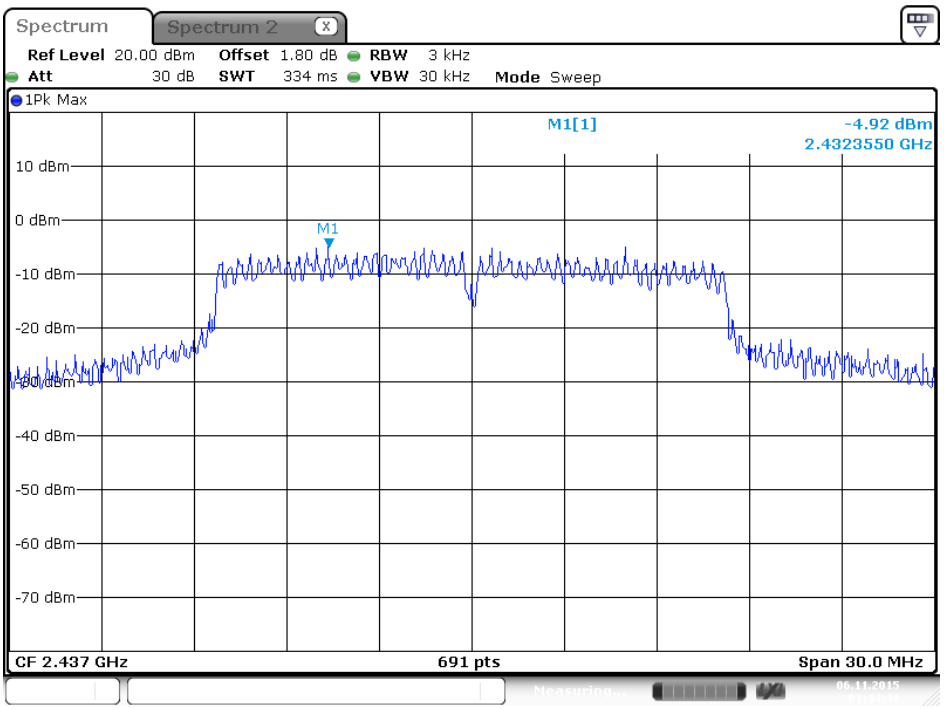
Date: 6.NOV.2015 01:45:43

Power Density Plot on Configuration IEEE 802.11n MCS0 HT20 / 2437 MHz / Chain 3



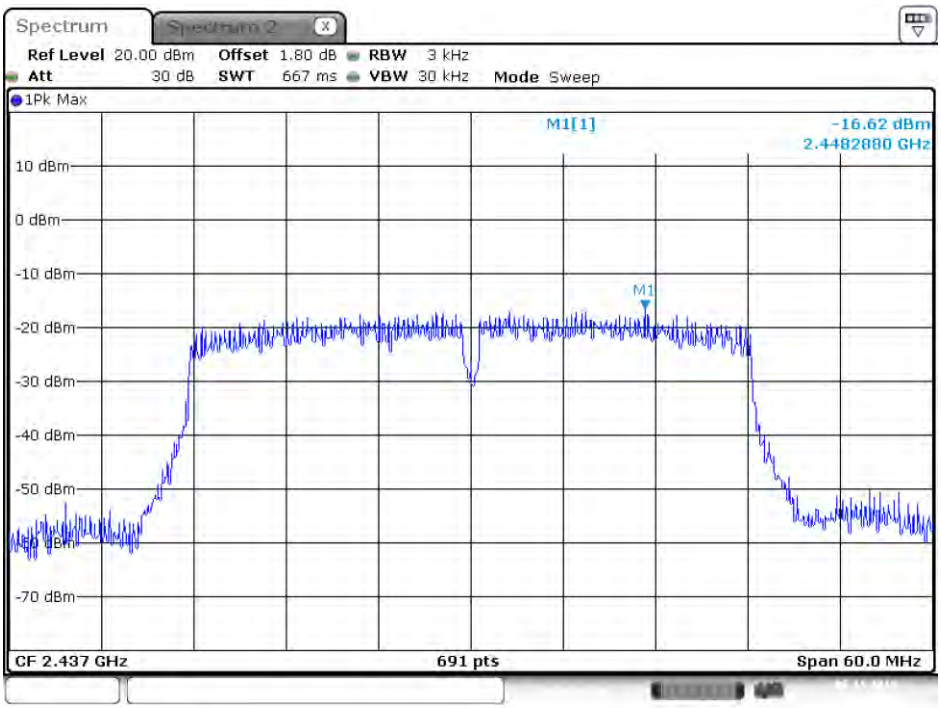
Date: 6.NOV.2015 01:45:24

Power Density Plot on Configuration IEEE 802.11n MCS0 HT20 / 2437 MHz / Chain 4



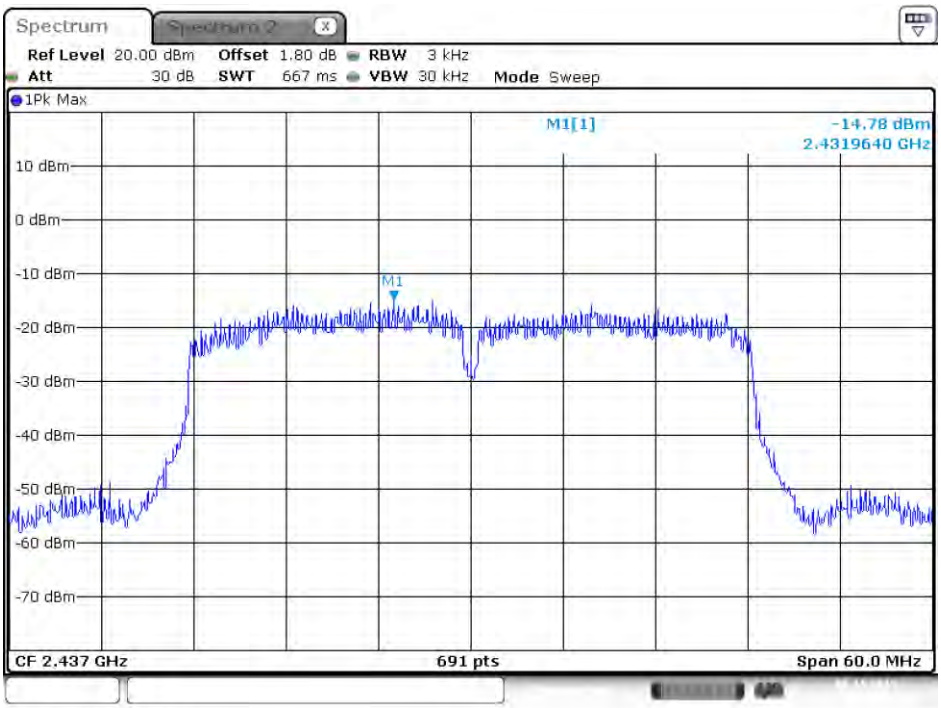
Date: 6.NOV.2015 01:44:48

Power Density Plot on Configuration IEEE 802.11n MCS0 HT40 / 2437 MHz / Chain 1



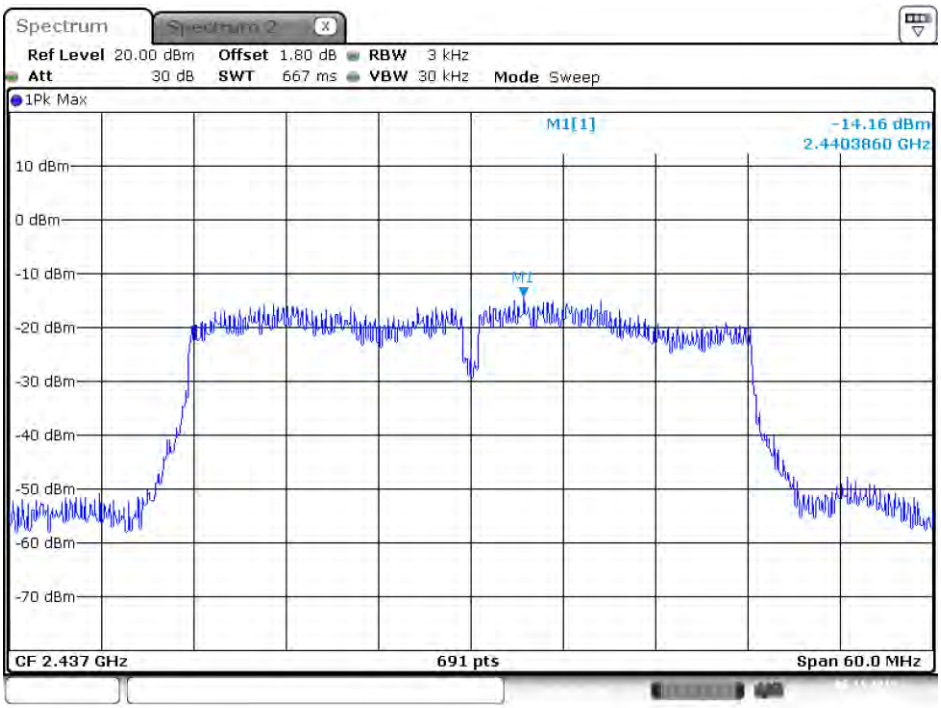
Date: 6.NOV.2015 01:50:13

Power Density Plot on Configuration IEEE 802.11n MCS0 HT40 / 2437 MHz / Chain 2

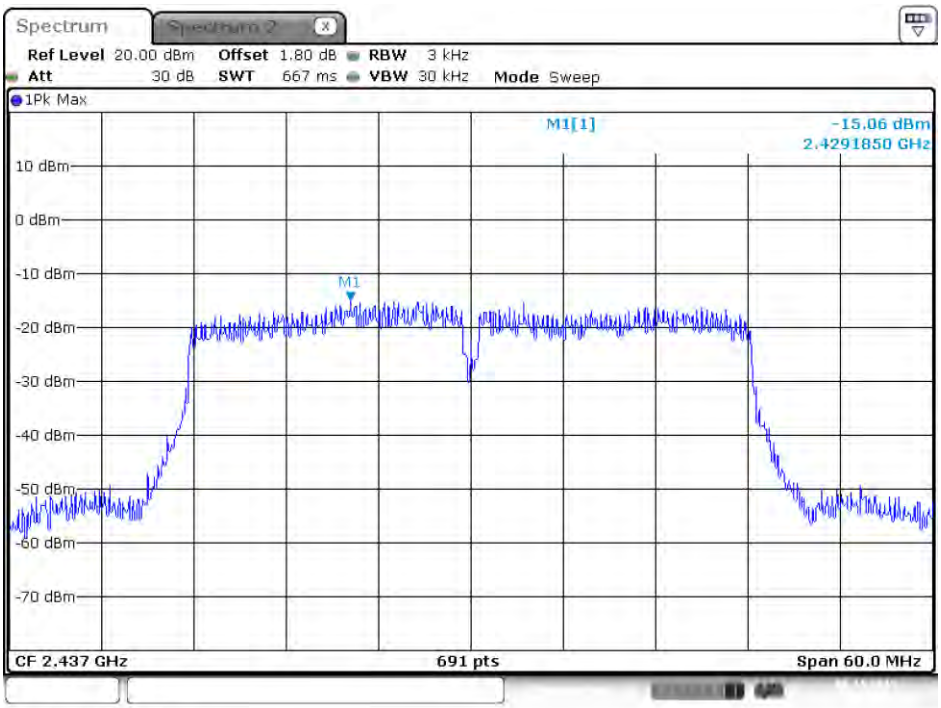


Date: 6.NOV.2015 01:50:49

Power Density Plot on Configuration IEEE 802.11n MCS0 HT40 / 2437 MHz / Chain 3

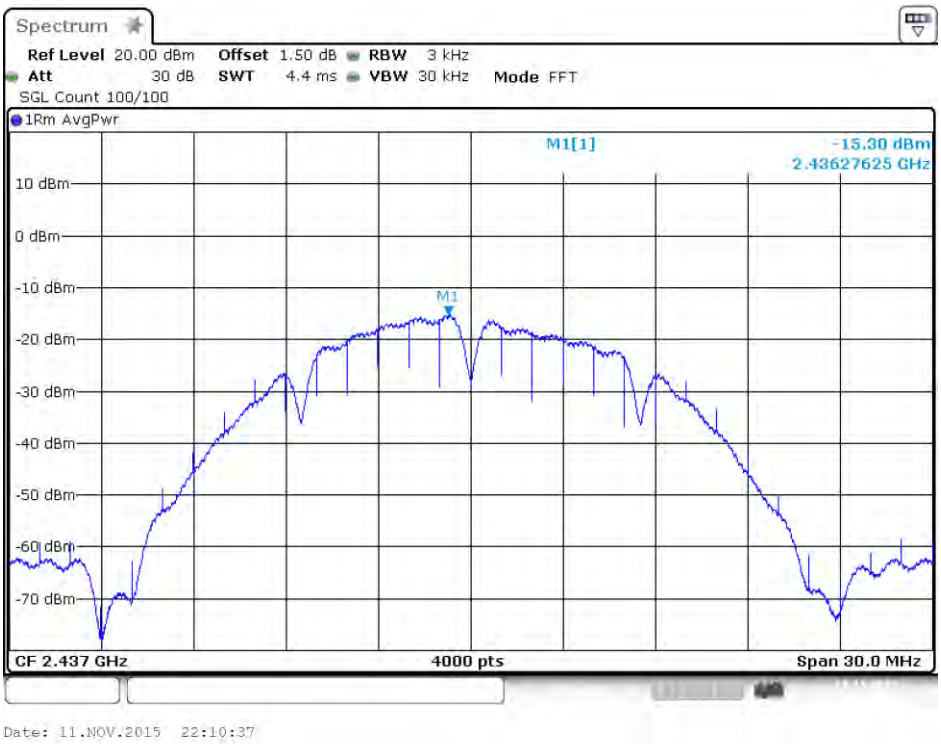


Power Density Plot on Configuration IEEE 802.11n MCS0 HT40 / 2437 MHz / Chain 4

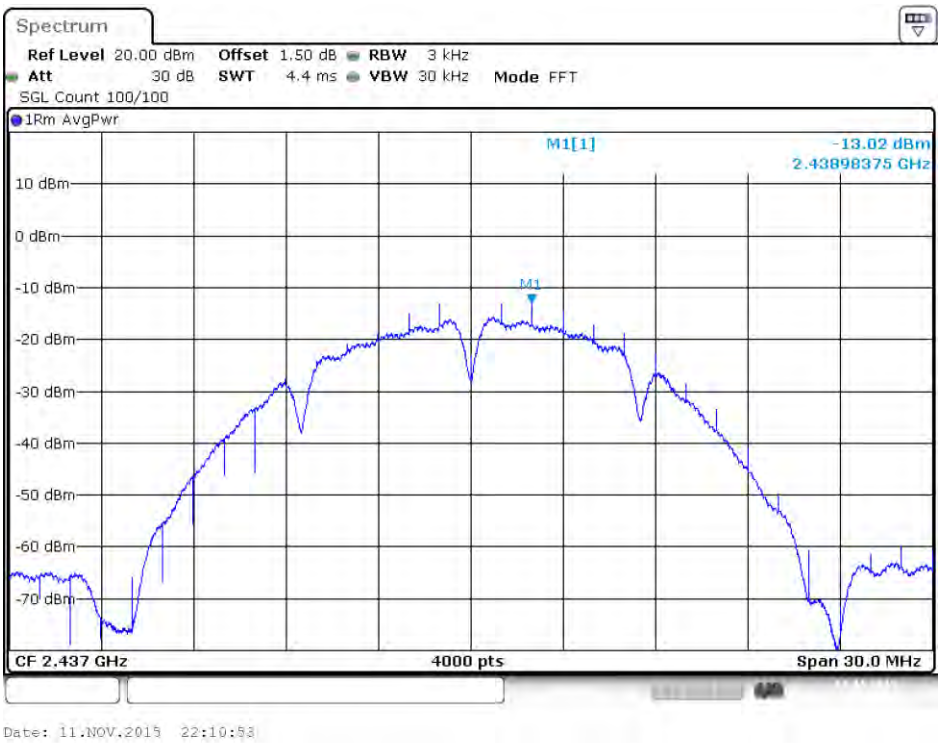


Mode 4: EUT 1 + Set 4 Sector Antenna / 10.5 dBi

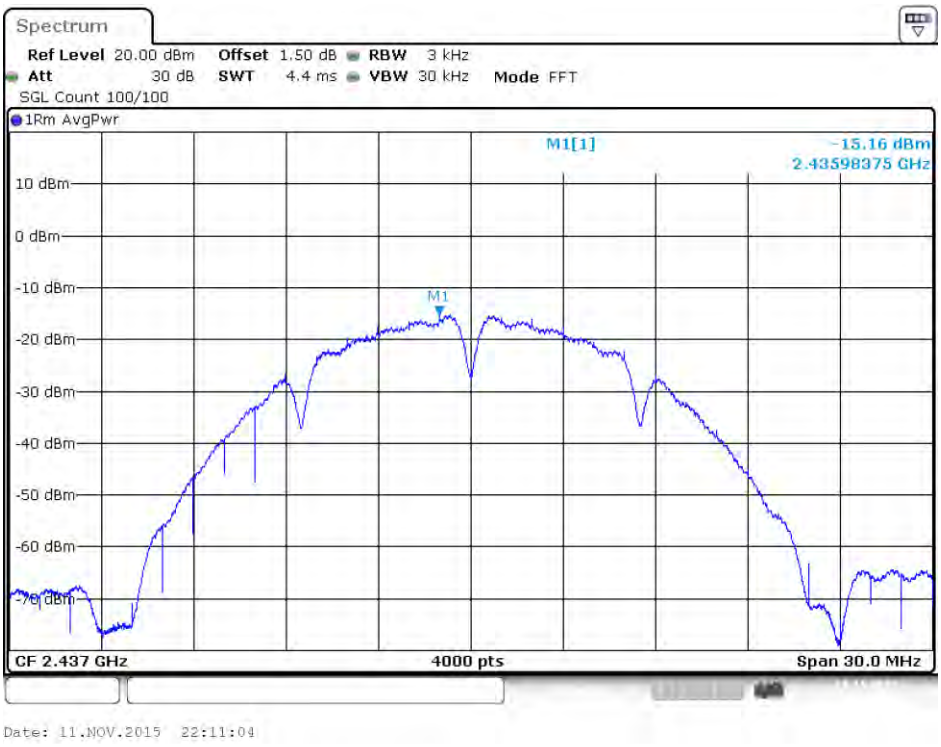
Power Density Plot on Configuration IEEE 802.11b / 2437 MHz / Chain 1



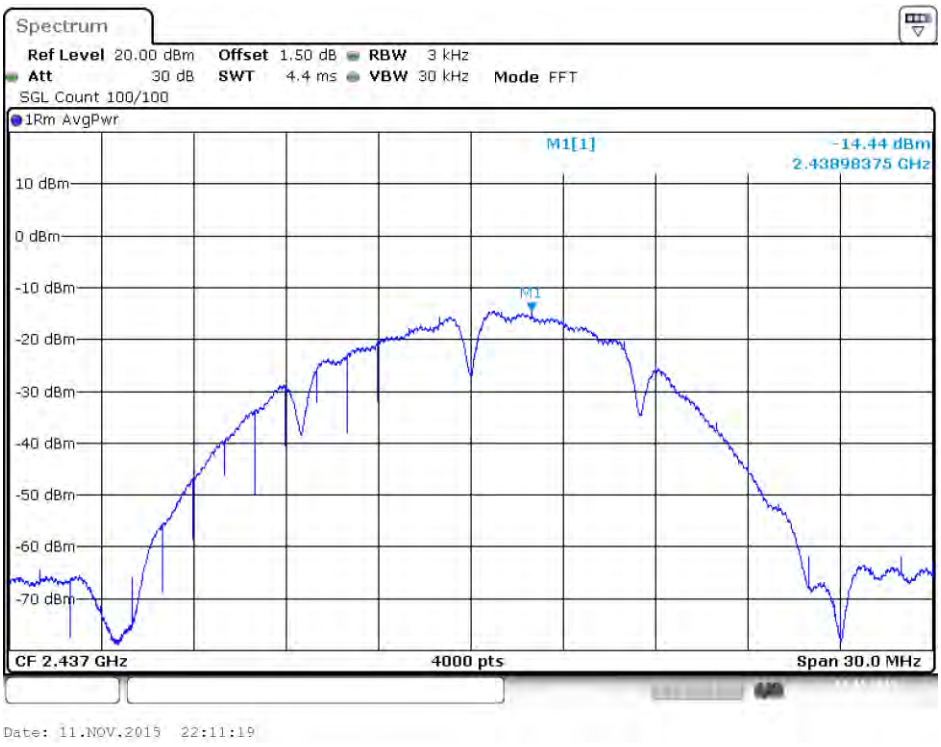
Power Density Plot on Configuration IEEE 802.11b / 2437 MHz / Chain 2



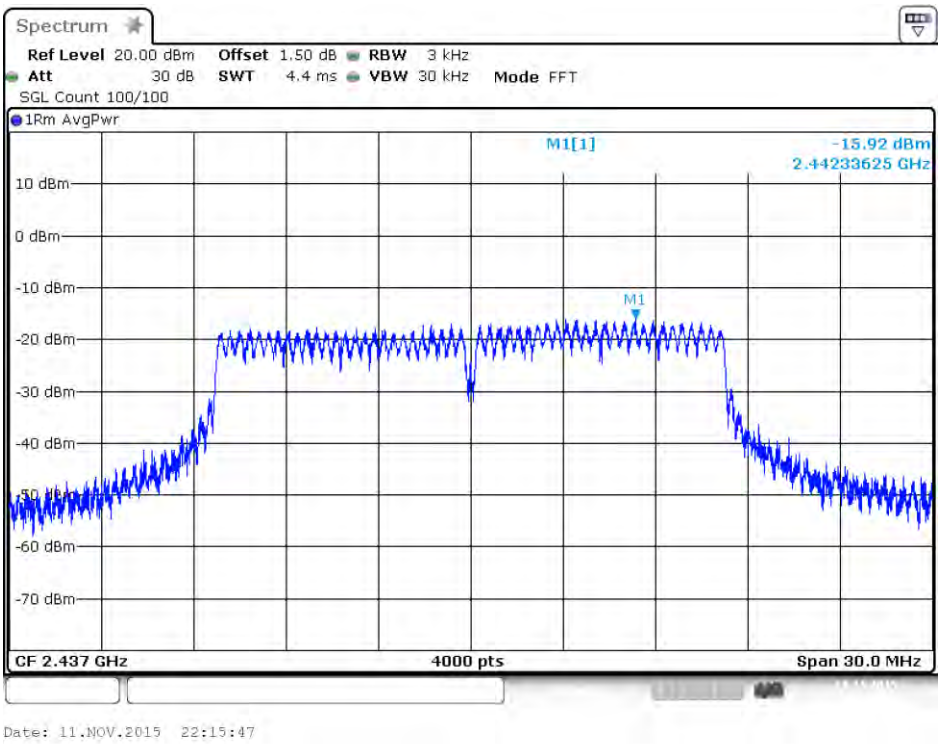
Power Density Plot on Configuration IEEE 802.11b / 2437 MHz / Chain 3



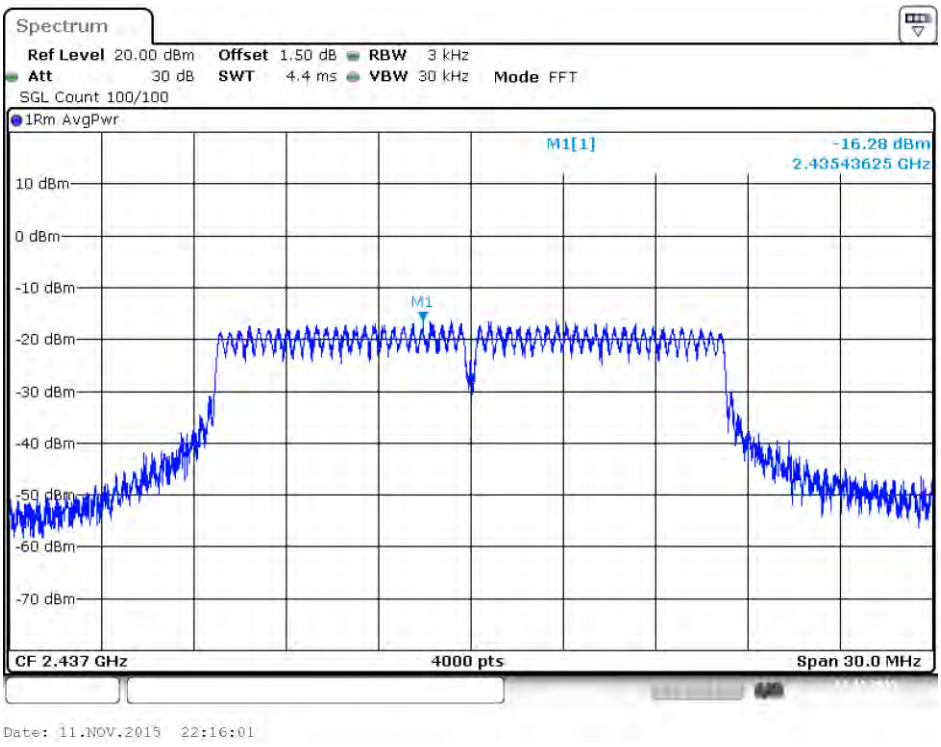
Power Density Plot on Configuration IEEE 802.11b / 2437 MHz / Chain 4



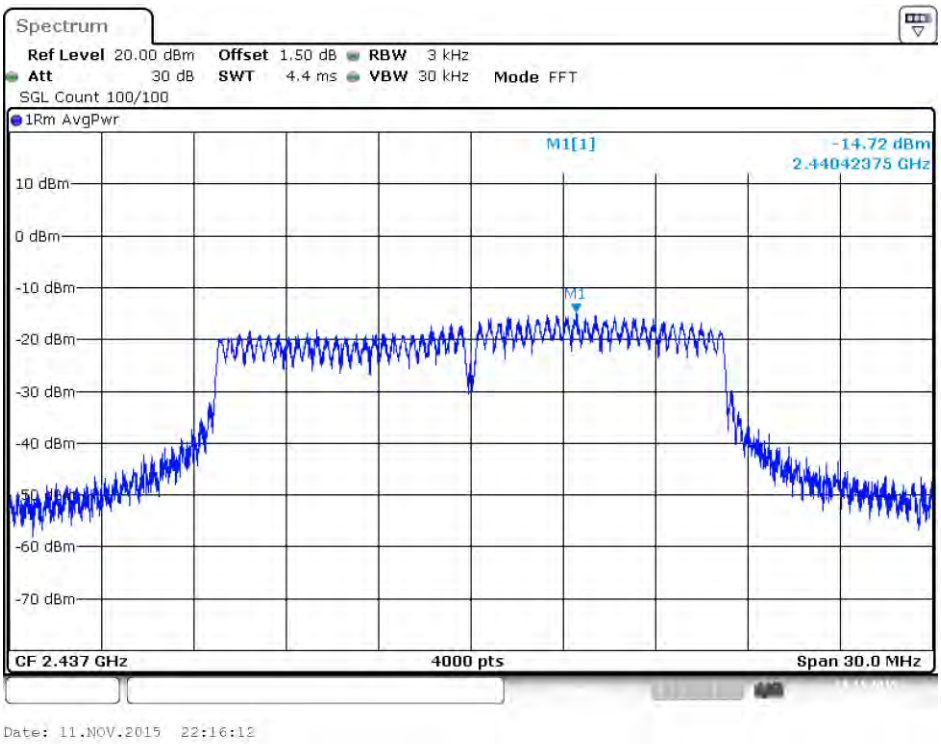
Power Density Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 1



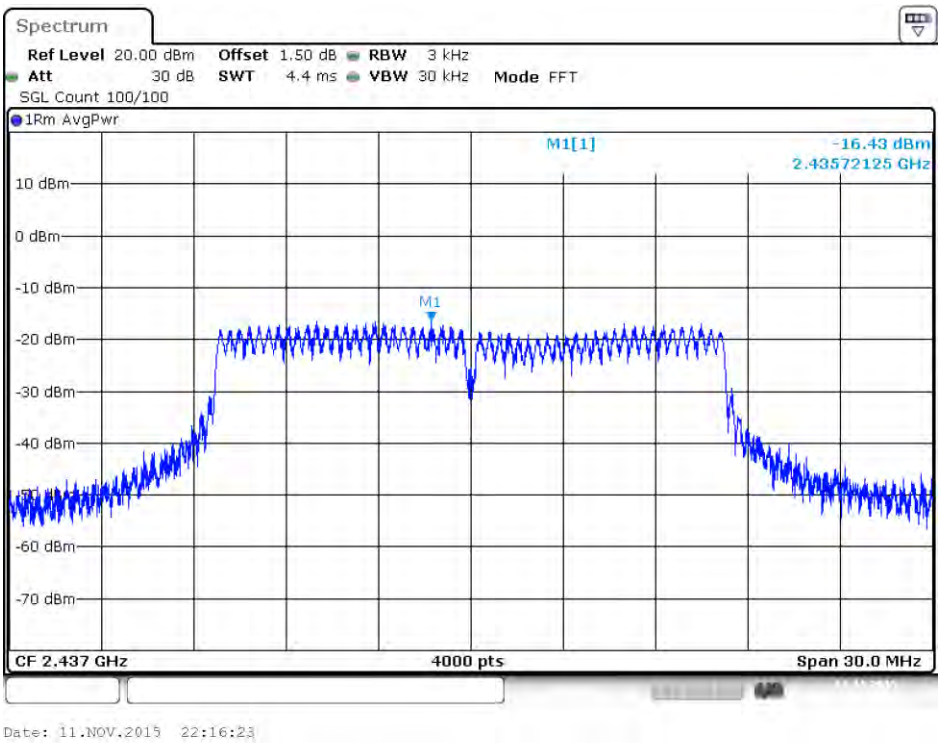
P Power Density Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 2



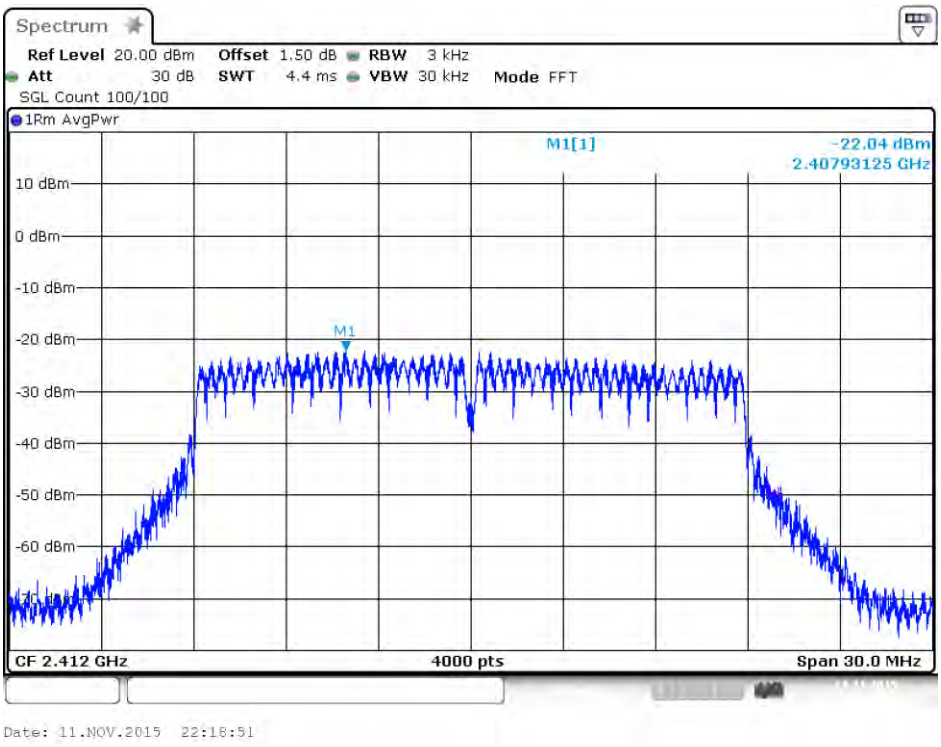
Power Density Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 3



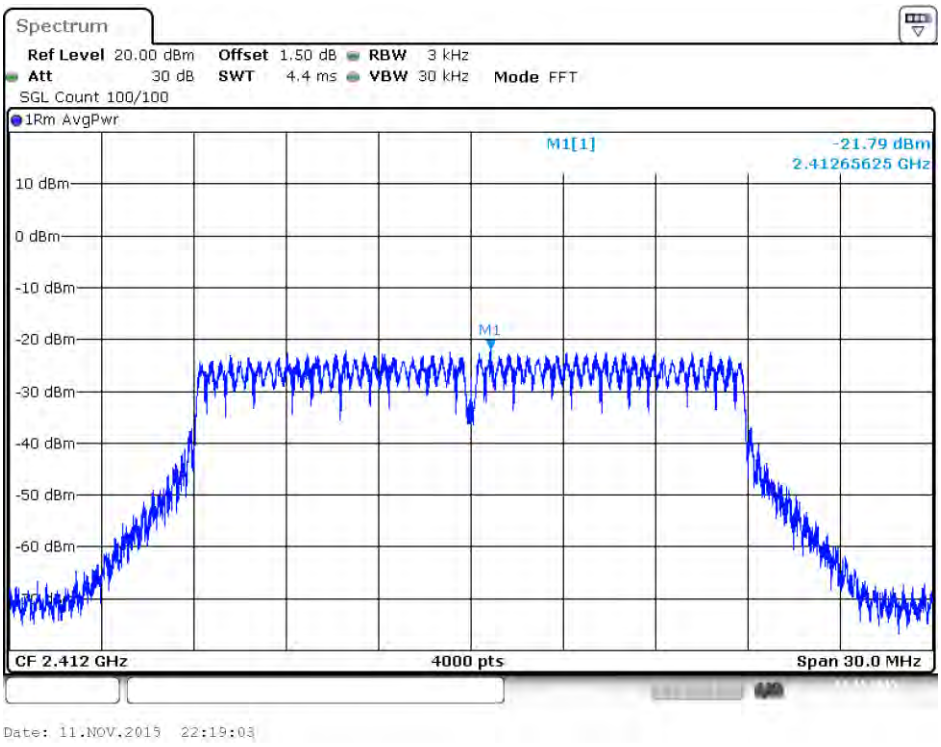
Power Density Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 4



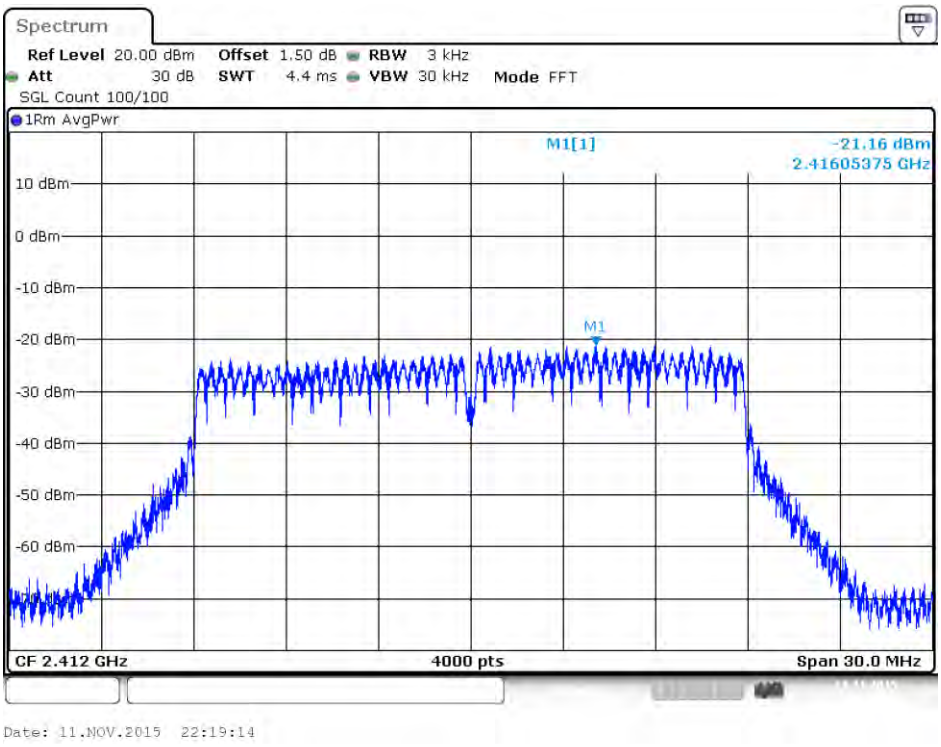
Power Density Plot on Configuration IEEE 802.11n MCS0 HT20 / 2412 MHz / Chain 1



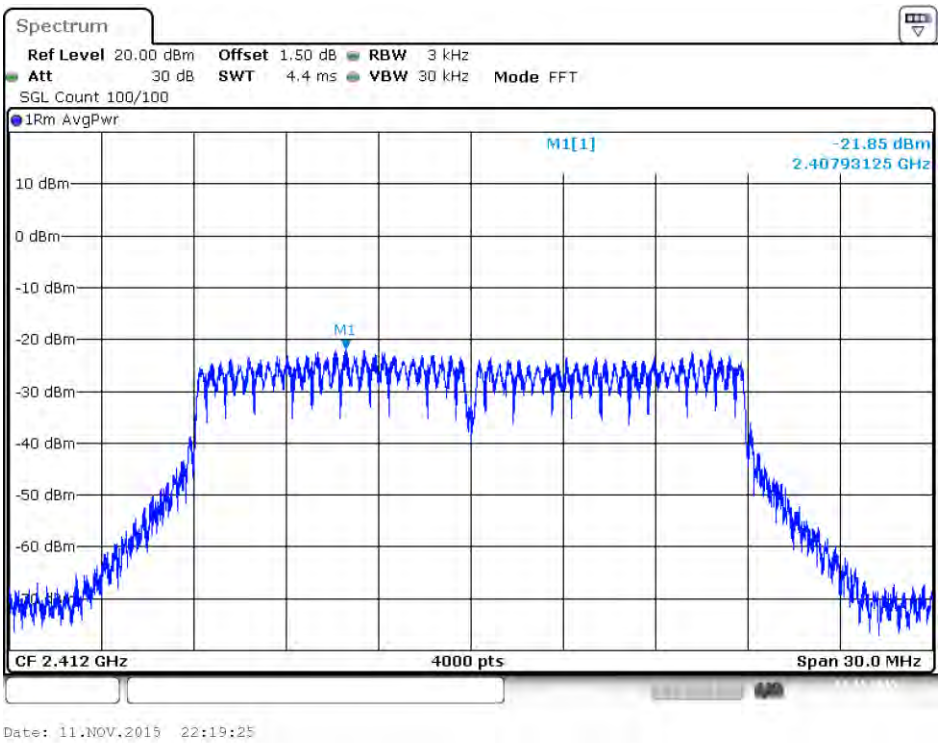
Power Density Plot on Configuration IEEE 802.11n MCS0 HT20 / 2412 MHz / Chain 2



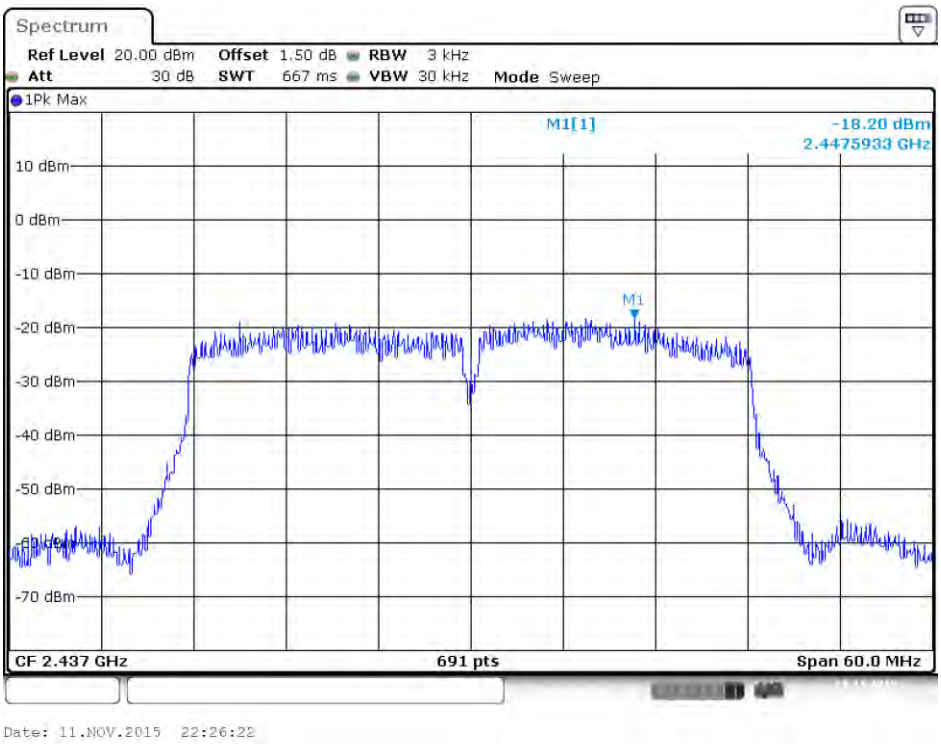
Power Density Plot on Configuration IEEE 802.11n MCS0 HT20 / 2412 MHz / Chain 3



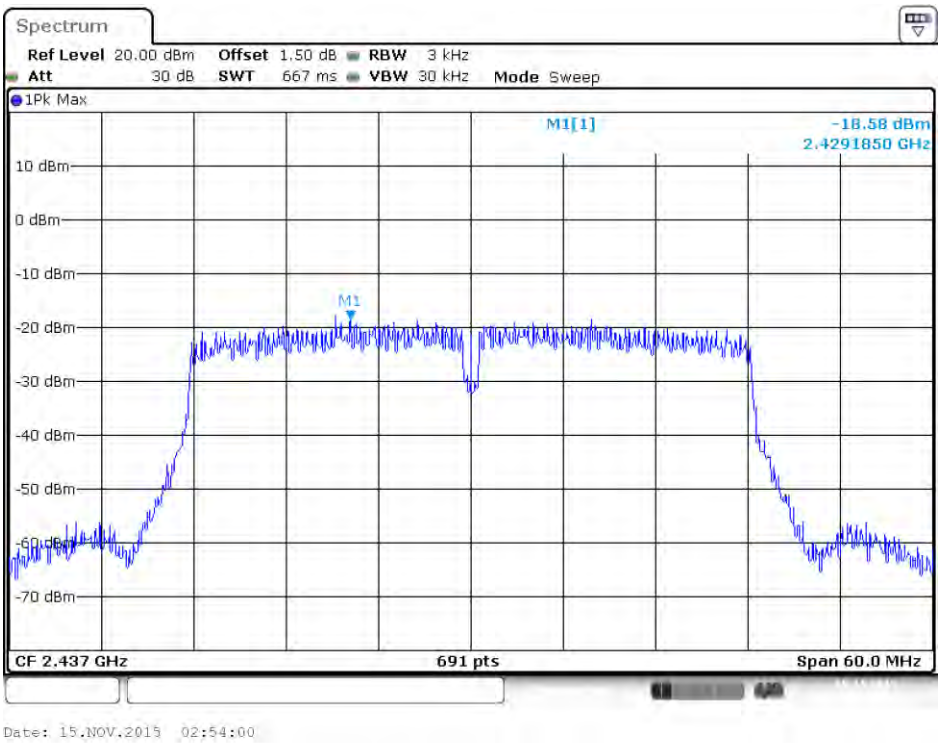
Power Density Plot on Configuration IEEE 802.11n MCS0 HT20 / 2412 MHz / Chain 4



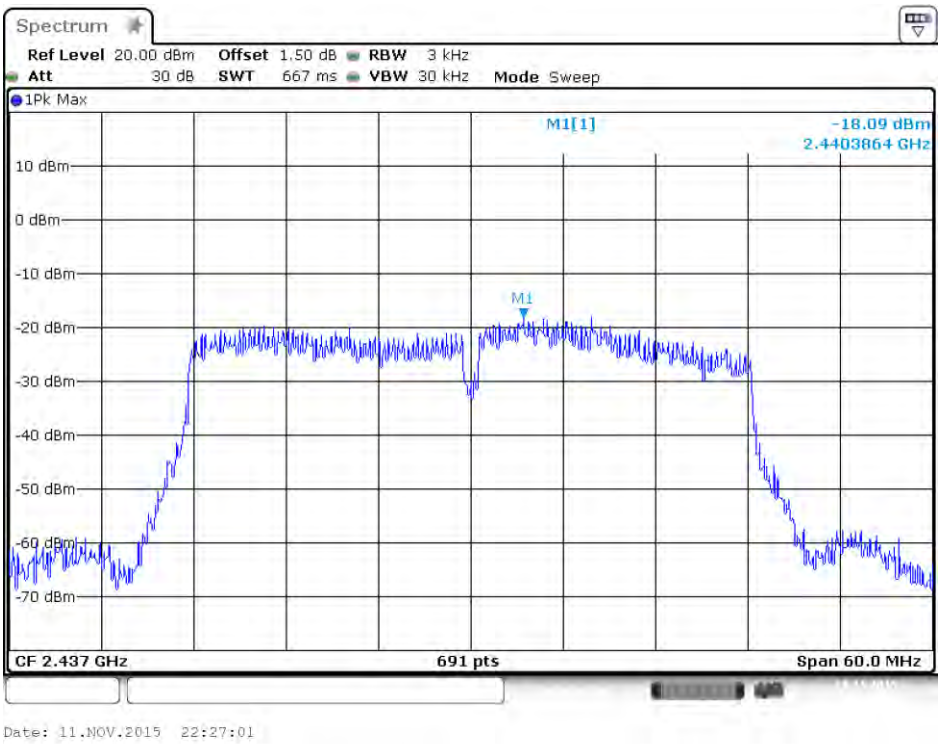
Power Density Plot on Configuration IEEE 802.11n MCS0 HT40 / 2437 MHz / Chain 1



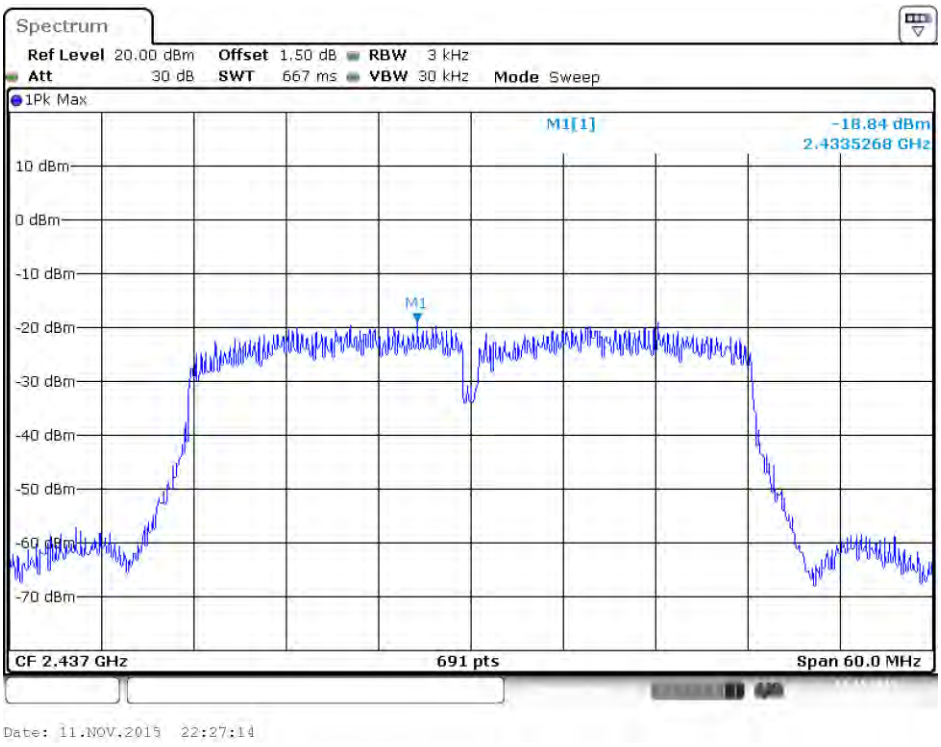
Power Density Plot on Configuration IEEE 802.11n MCS0 HT40 / 2437 MHz / Chain 2



Power Density Plot on Configuration IEEE 802.11n MCS0 HT40 / 2437 MHz / Chain 3

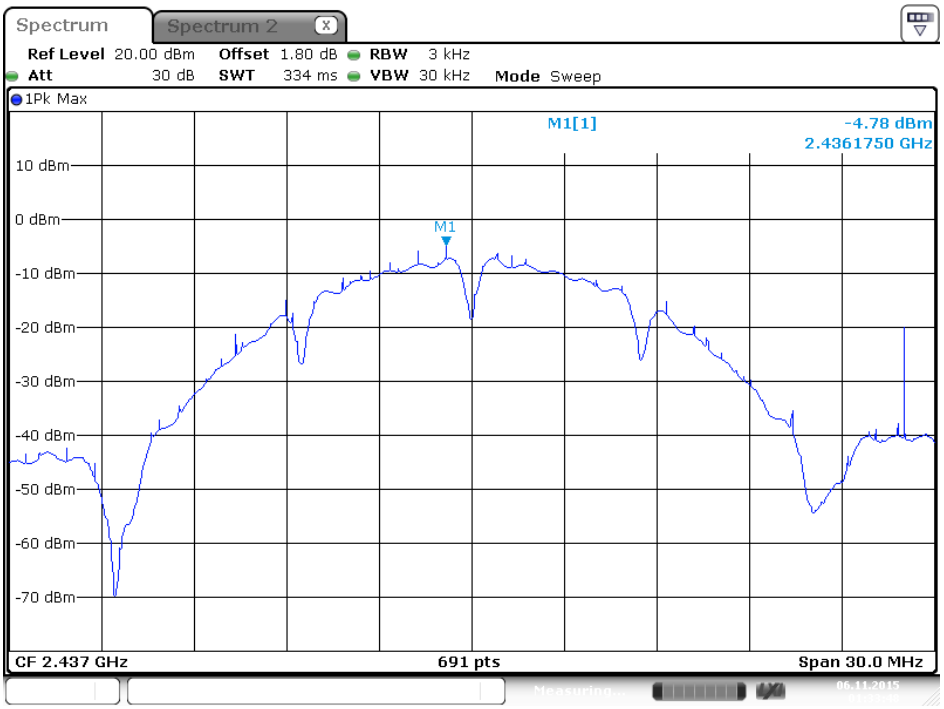


Power Density Plot on Configuration IEEE 802.11n MCS0 HT40 / 2437 MHz / Chain 4



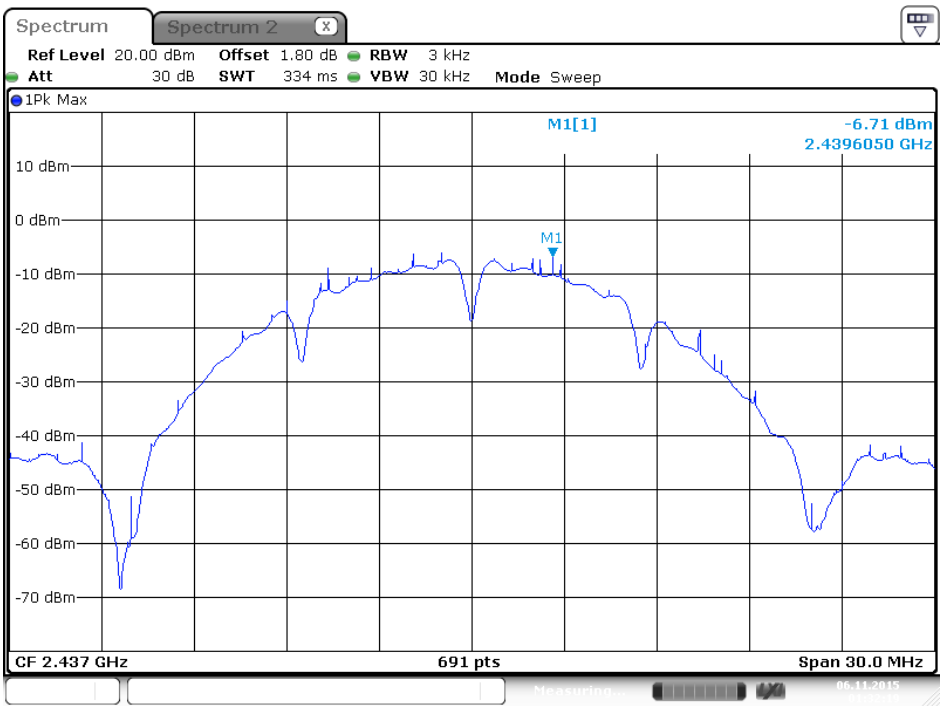
Mode 5: EUT 1 + Set 7 Sector Antenna / 5 dBi

Power Density Plot on Configuration IEEE 802.11b / 2437 MHz / Chain 1



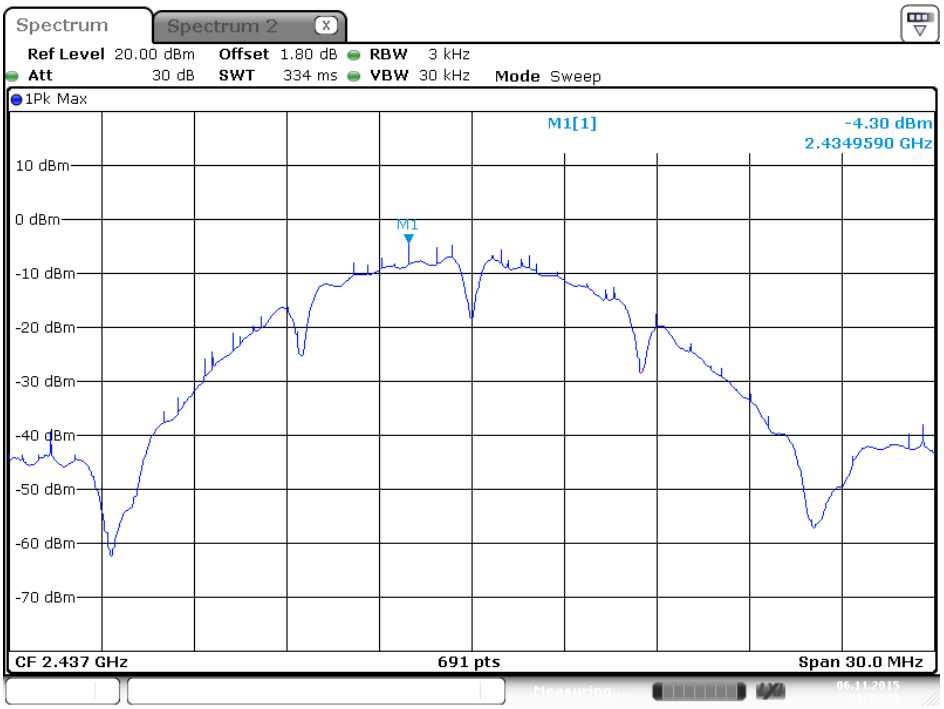
Date: 6.NOV.2015 01:33:48

Power Density Plot on Configuration IEEE 802.11b / 2437 MHz / Chain 2



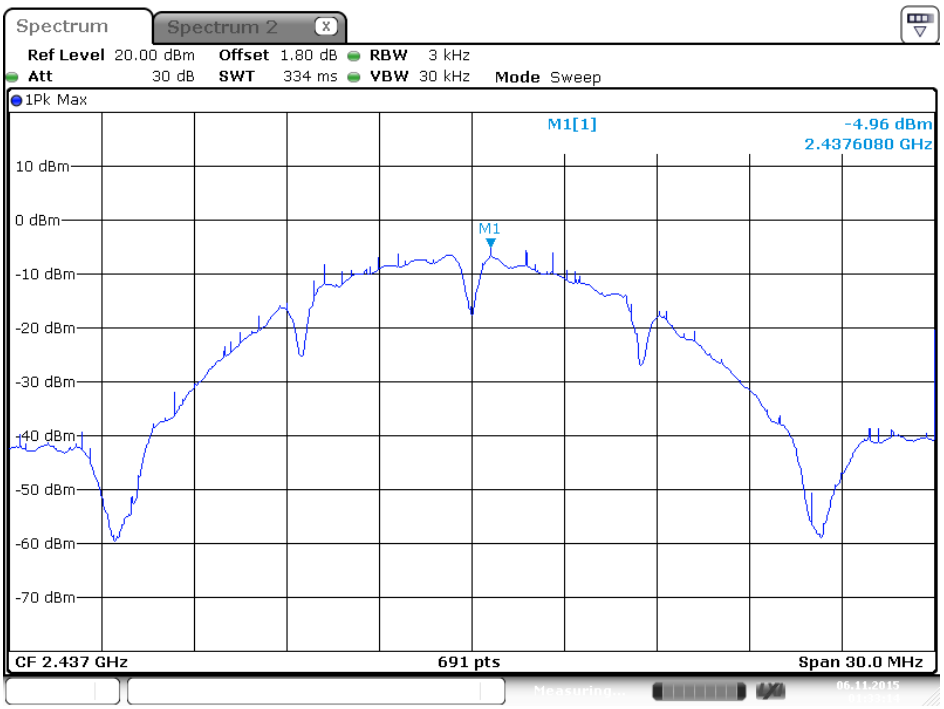
Date: 6.NOV.2015 01:32:19

Power Density Plot on Configuration IEEE 802.11b / 2437 MHz / Chain 3



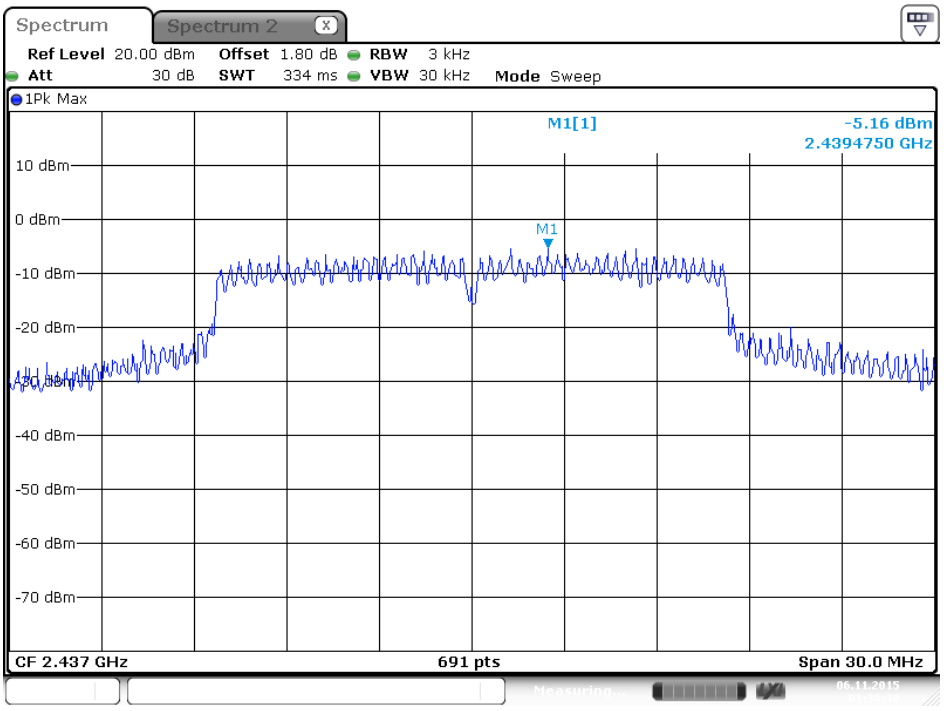
Date: 6.NOV.2015 01:32:43

Power Density Plot on Configuration IEEE 802.11b / 2437 MHz / Chain 4



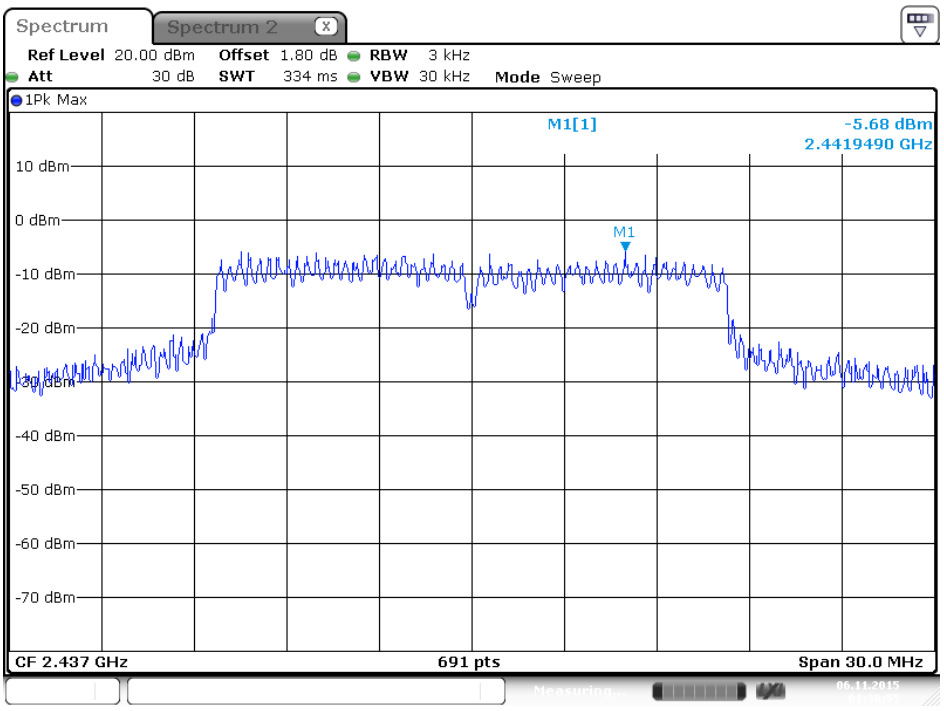
Date: 6.NOV.2015 01:33:14

Power Density Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 1



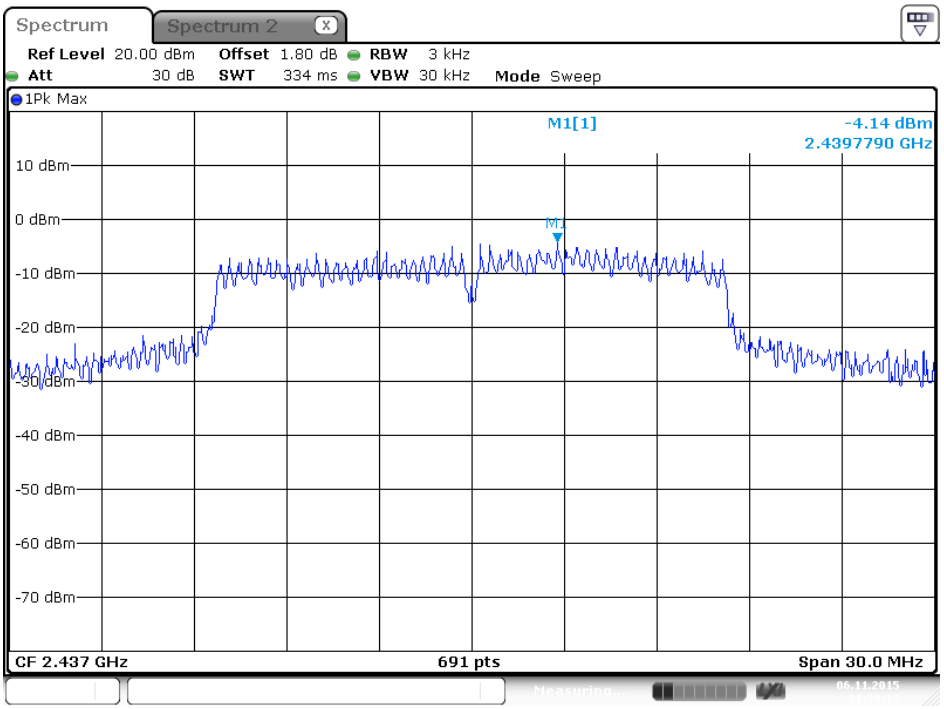
Date: 6.NOV.2015 01:38:30

P Power Density Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 2



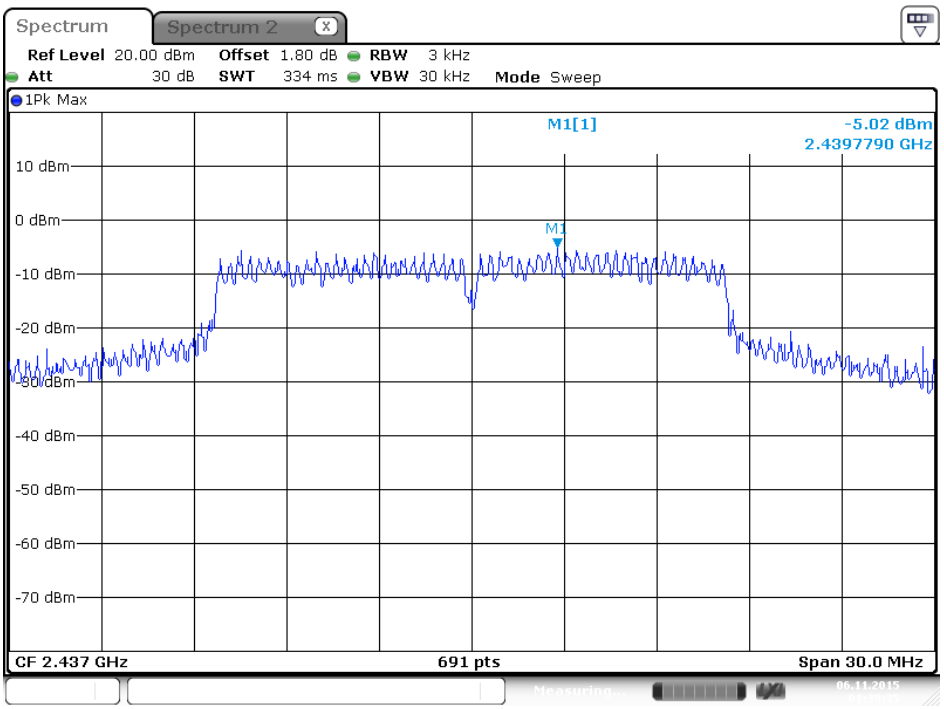
Date: 6.NOV.2015 01:38:55

Power Density Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 3



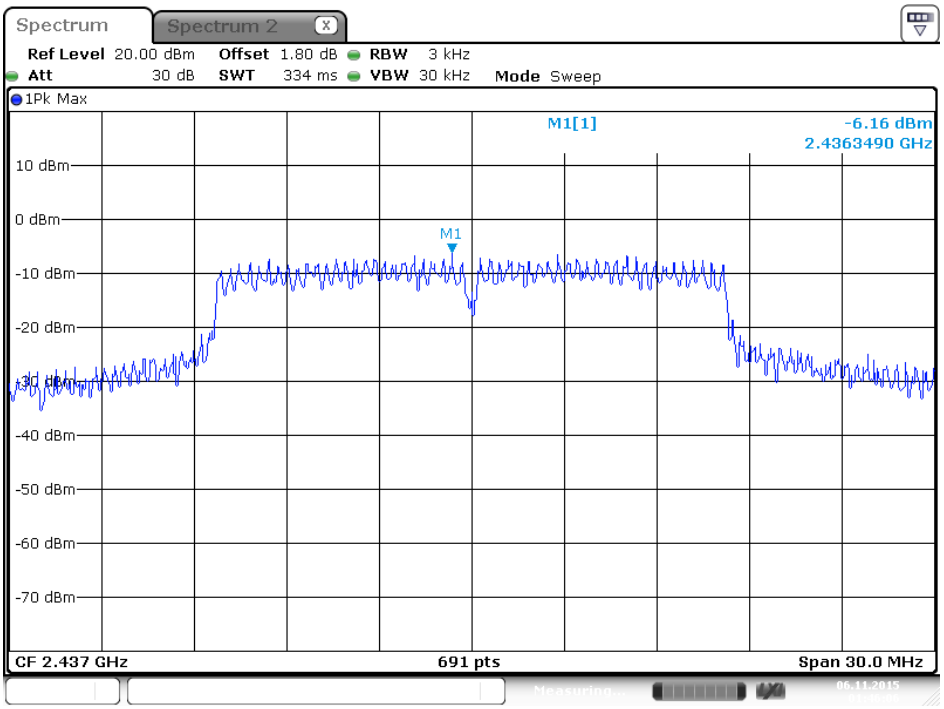
Date: 6.NOV.2015 01:39:13

Power Density Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 4



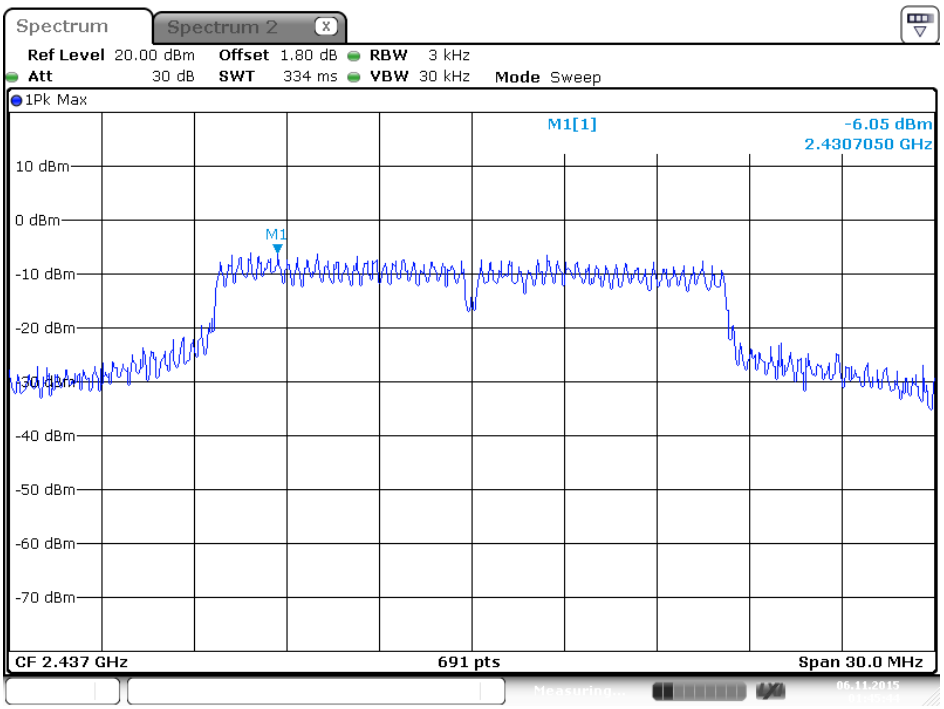
Date: 6.NOV.2015 01:39:36

Power Density Plot on Configuration IEEE 802.11n MCS0 HT20 / 2437 MHz / Chain 1



Date: 6.NOV.2015 01:46:06

Power Density Plot on Configuration IEEE 802.11n MCS0 HT20 / 2437 MHz / Chain 2



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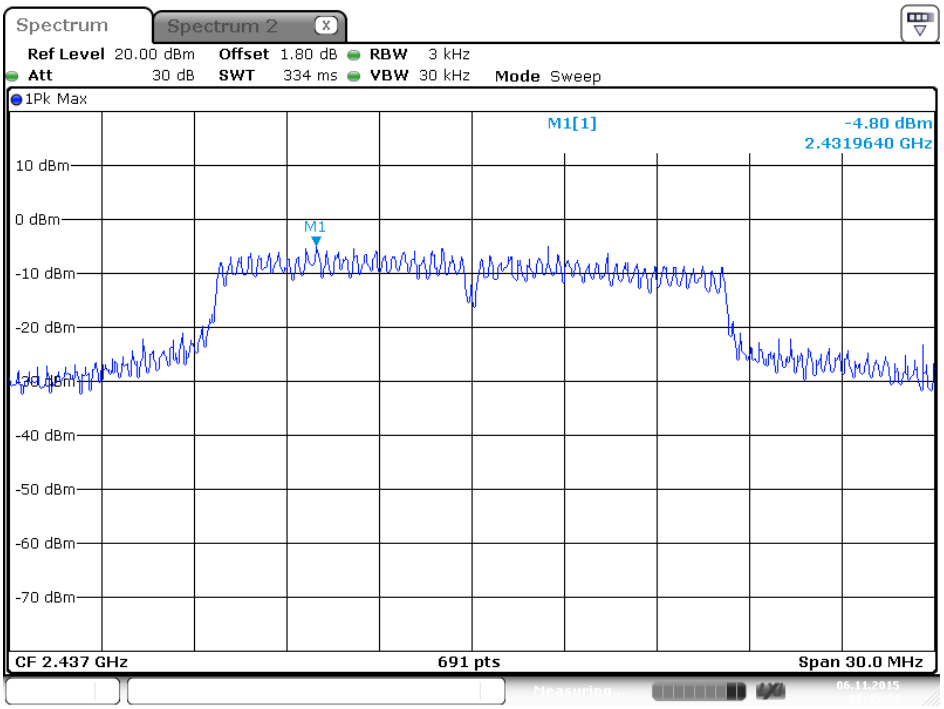
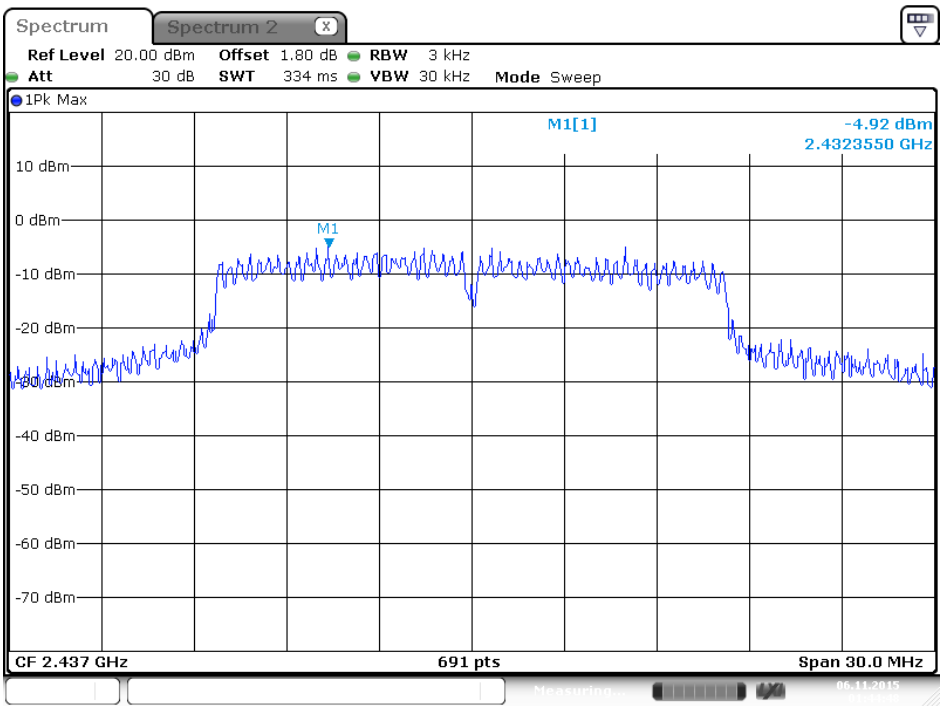
Power Density Plot on Configuration IEEE 802.11n MCS0 HT20 / 2437 MHz / Chain 3



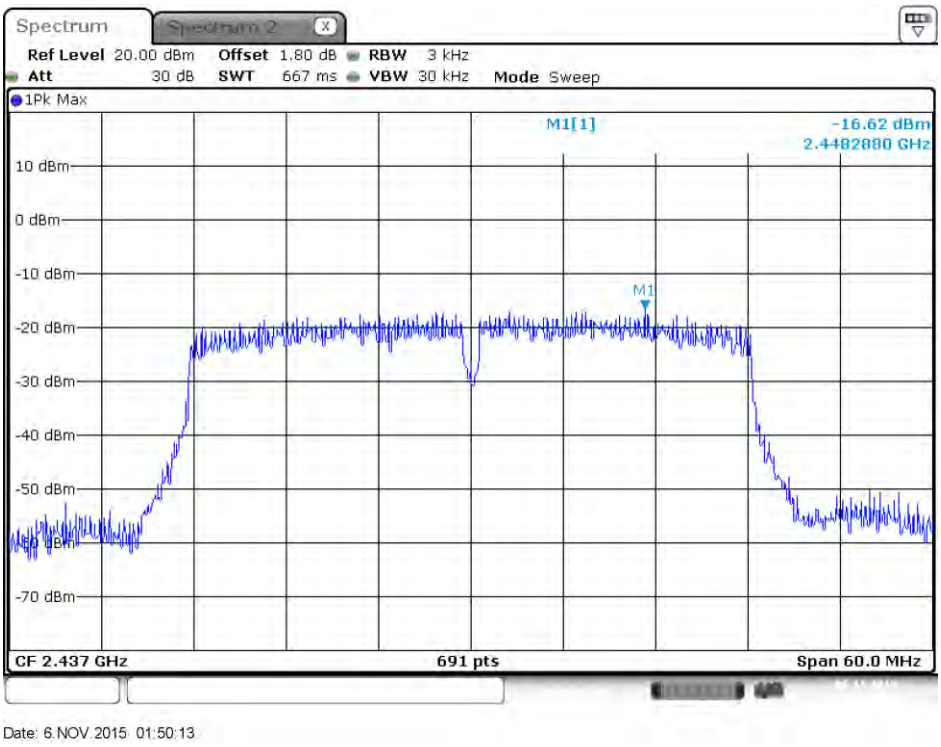
Date: 6.NOV.2015 01:45:24

Power Density Plot on Configuration IEEE 802.11n MCS0 HT20 / 2437 MHz / Chain 4

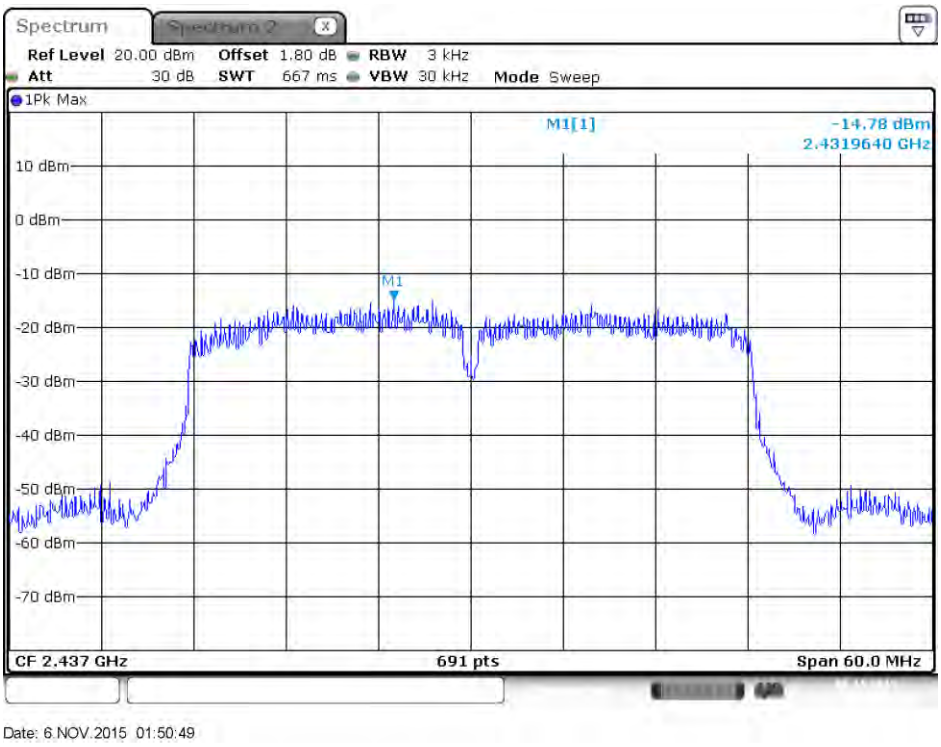


Date: 6.NOV.2015 01:44:48

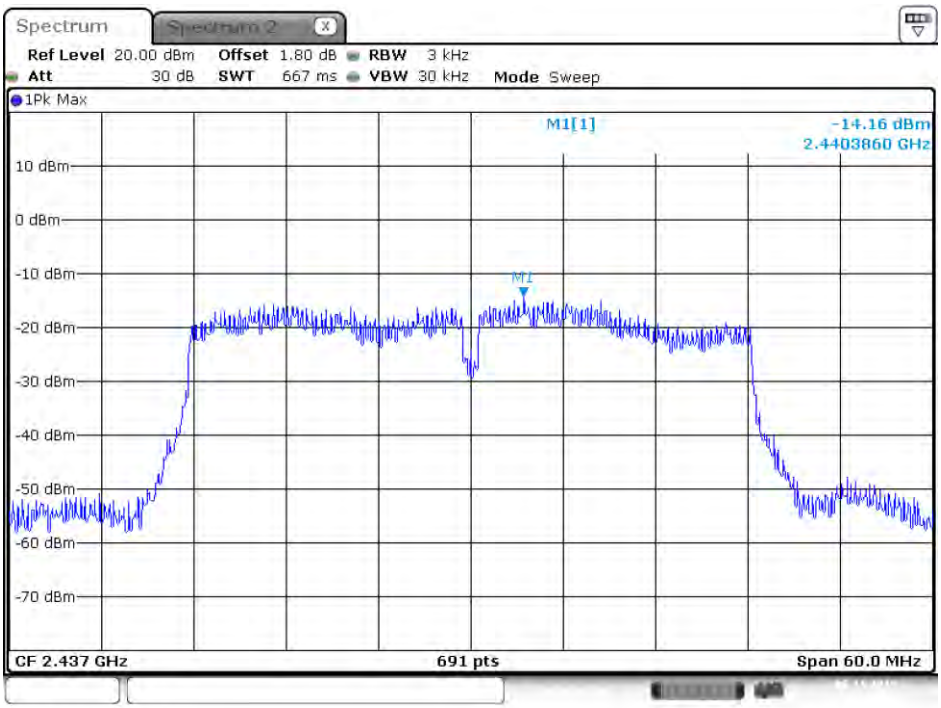
Power Density Plot on Configuration IEEE 802.11n MCS0 HT40 / 2437 MHz / Chain 1



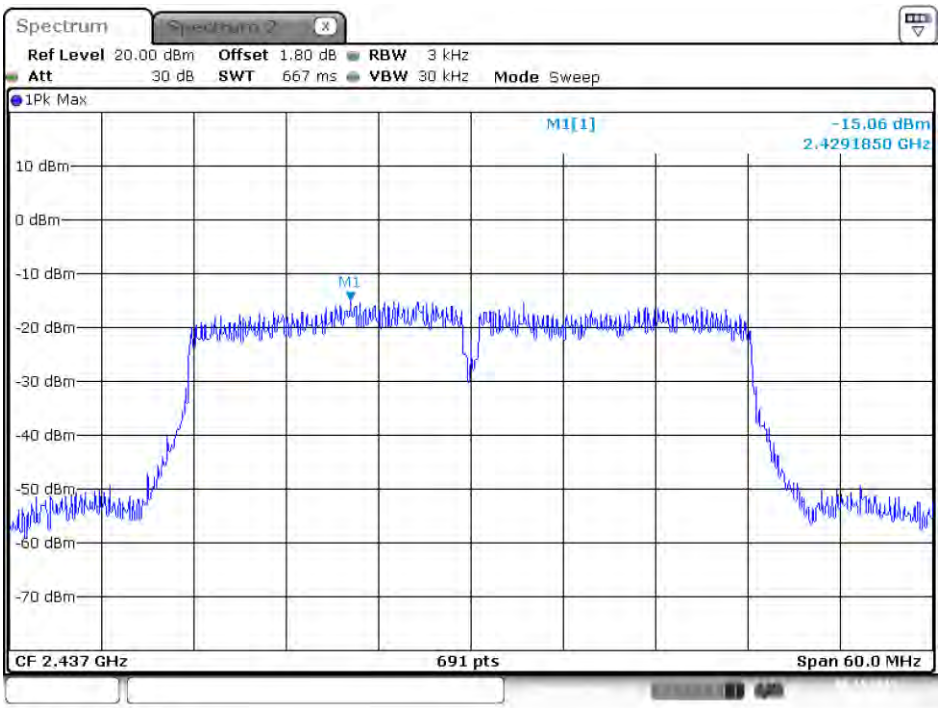
Power Density Plot on Configuration IEEE 802.11n MCS0 HT40 / 2437 MHz / Chain 2



Power Density Plot on Configuration IEEE 802.11n MCS0 HT40 / 2437 MHz / Chain 3

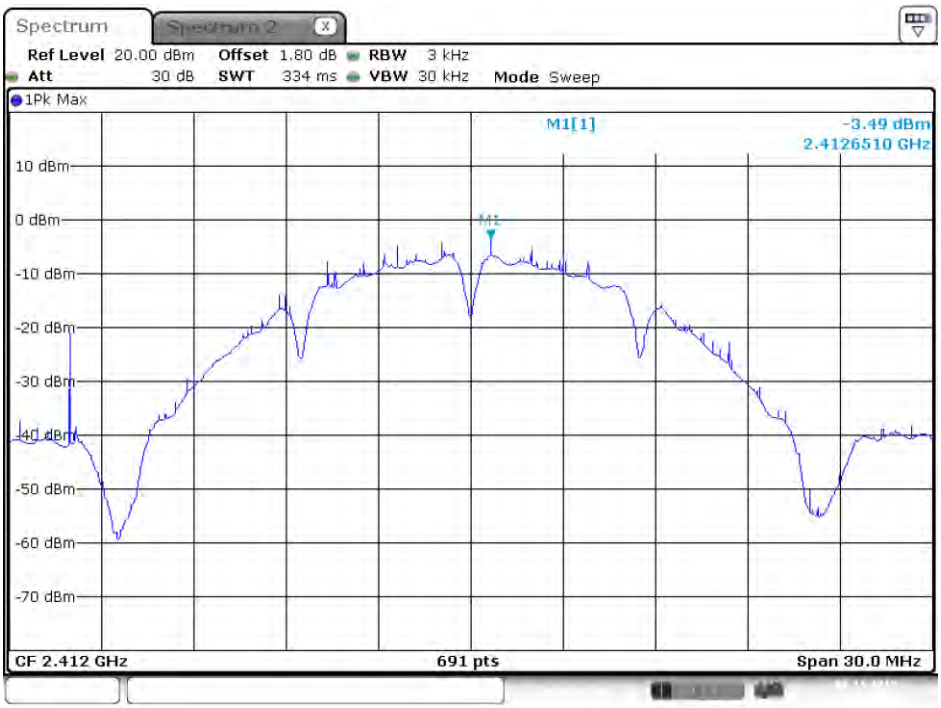


Power Density Plot on Configuration IEEE 802.11n MCS0 HT40 / 2437 MHz / Chain 4



Mode 6: EUT 1 + Set 8 Dipole Antenna / 4.66 dBi

Power Density Plot on Configuration IEEE 802.11b / 2412 MHz / Chain 1



Date: 6.NOV.2015 03:04:52

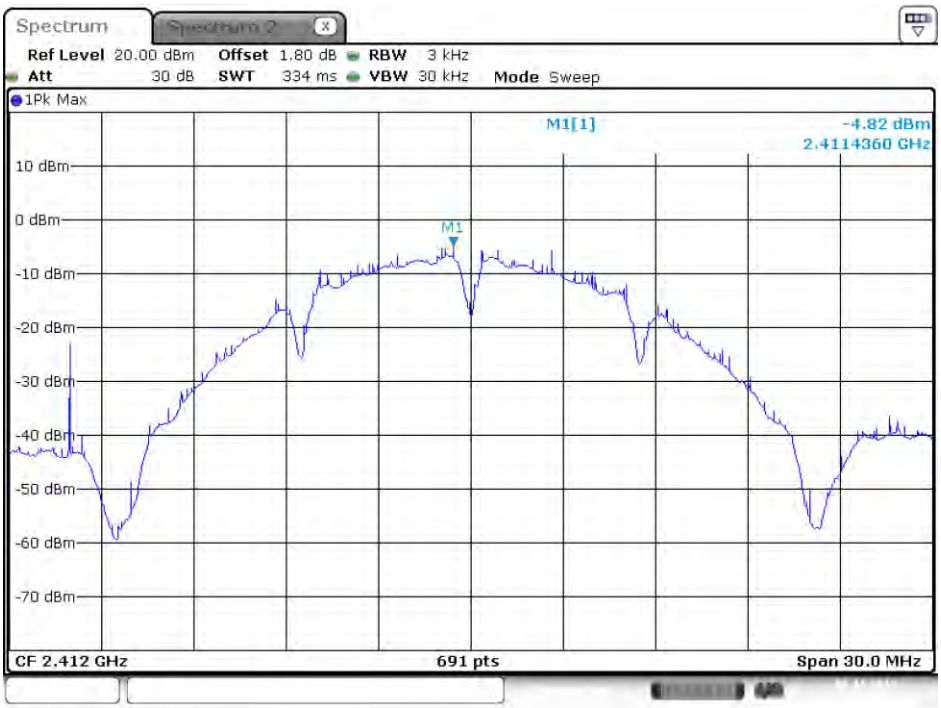
Power Density Plot on Configuration IEEE 802.11b / 2412 MHz / Chain 2

Date: 6.NOV.2015 03:05:18

Power Density Plot on Configuration IEEE 802.11b / 2412 MHz / Chain 3

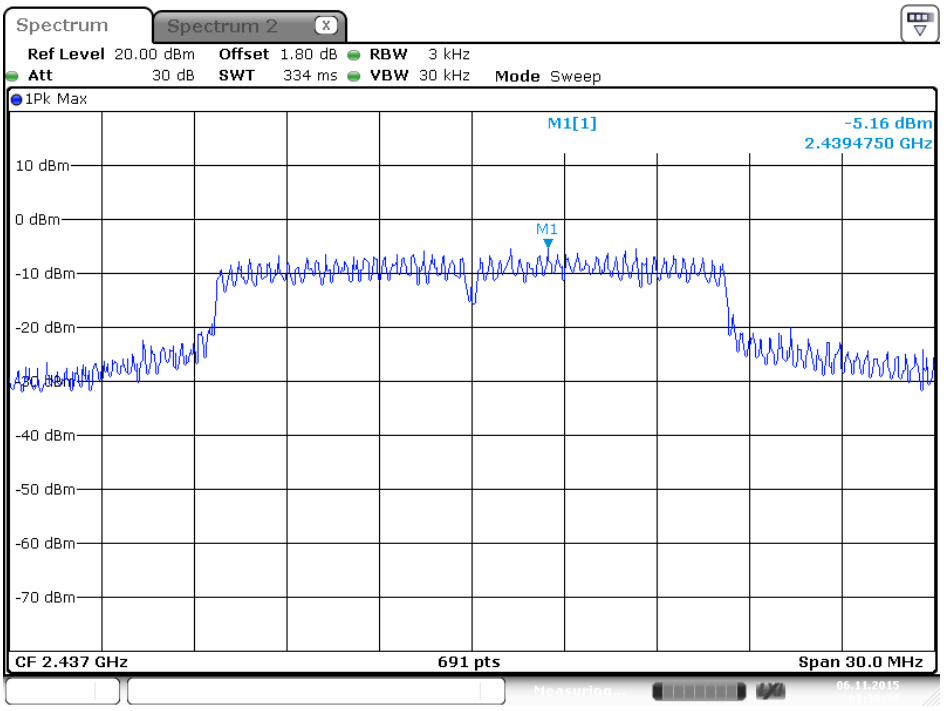
Date: 6.NOV.2015 03:05:40

Power Density Plot on Configuration IEEE 802.11b / 2412 MHz / Chain 4



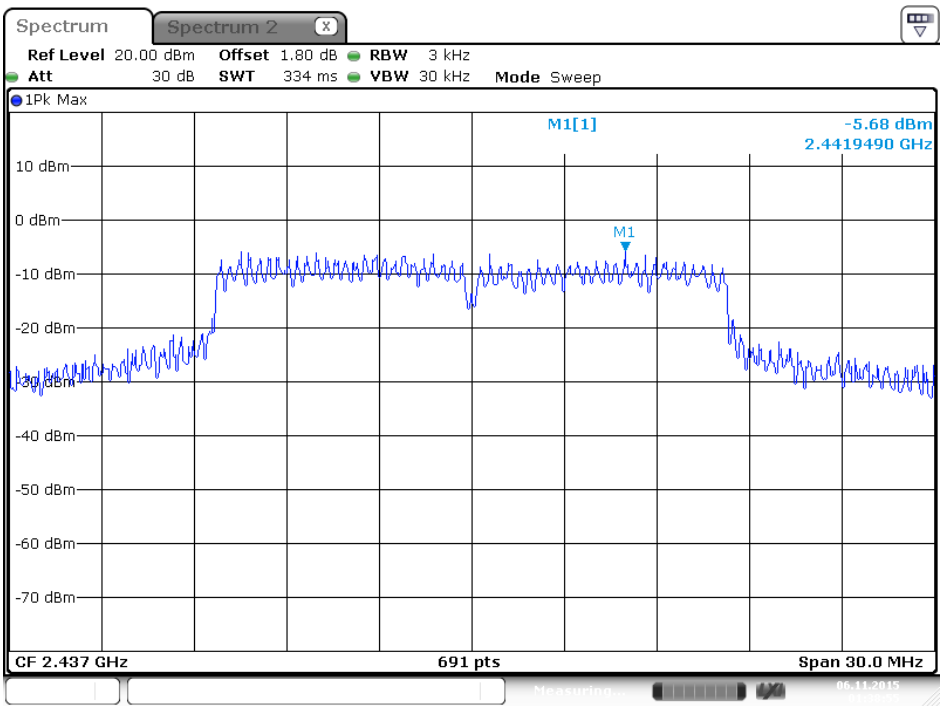
Date: 6.NOV.2015 03:05:55

Power Density Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 1



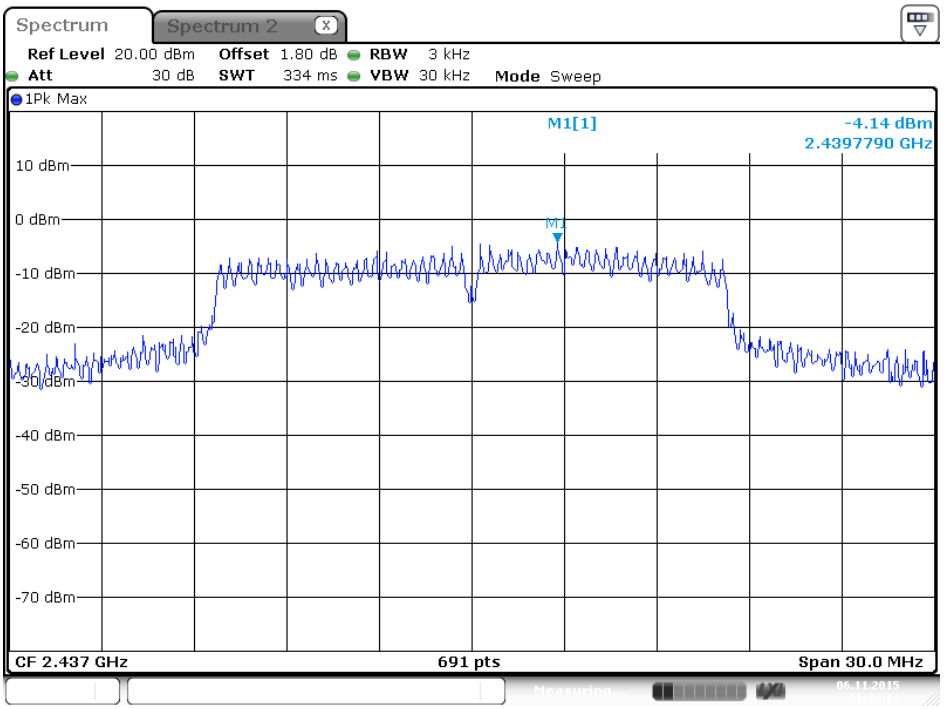
Date: 6.NOV.2015 01:38:30

P Power Density Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 2



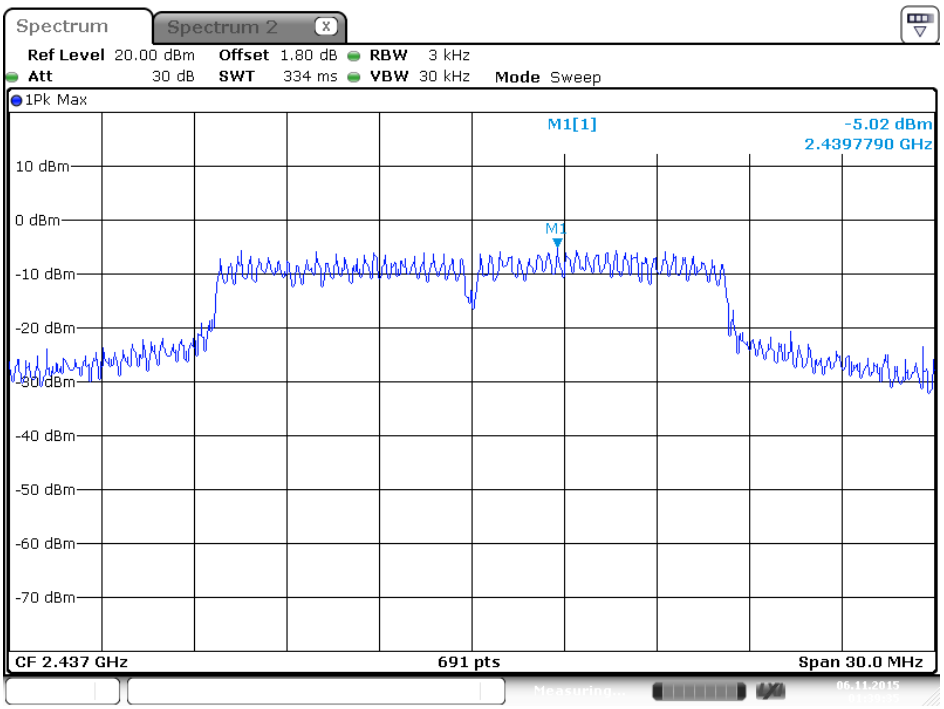
Date: 6.NOV.2015 01:38:55

Power Density Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 3



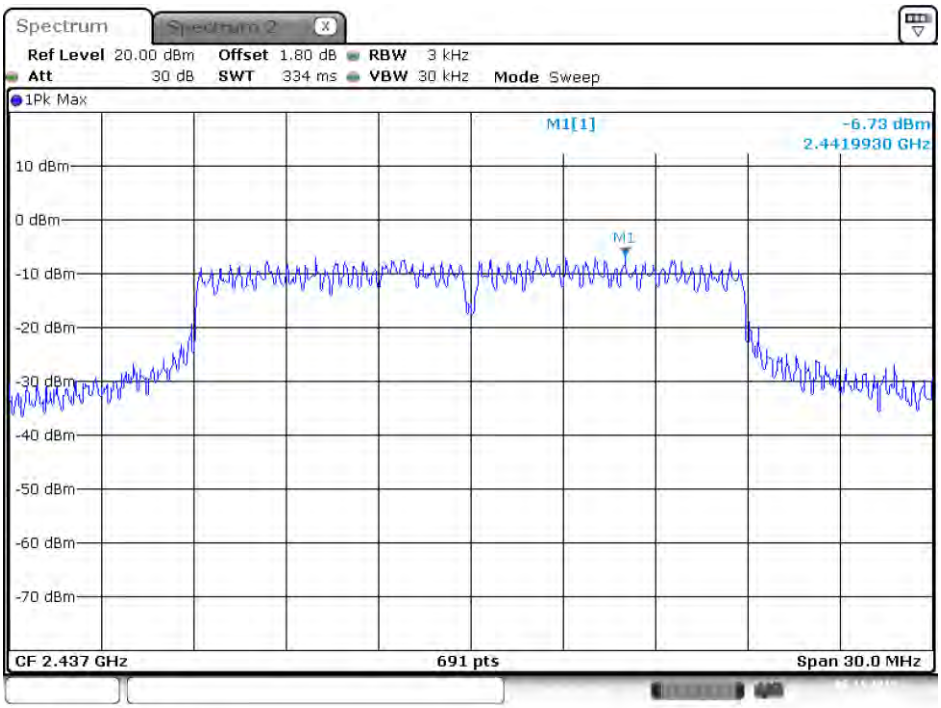
Date: 6.NOV.2015 01:39:13

Power Density Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 4

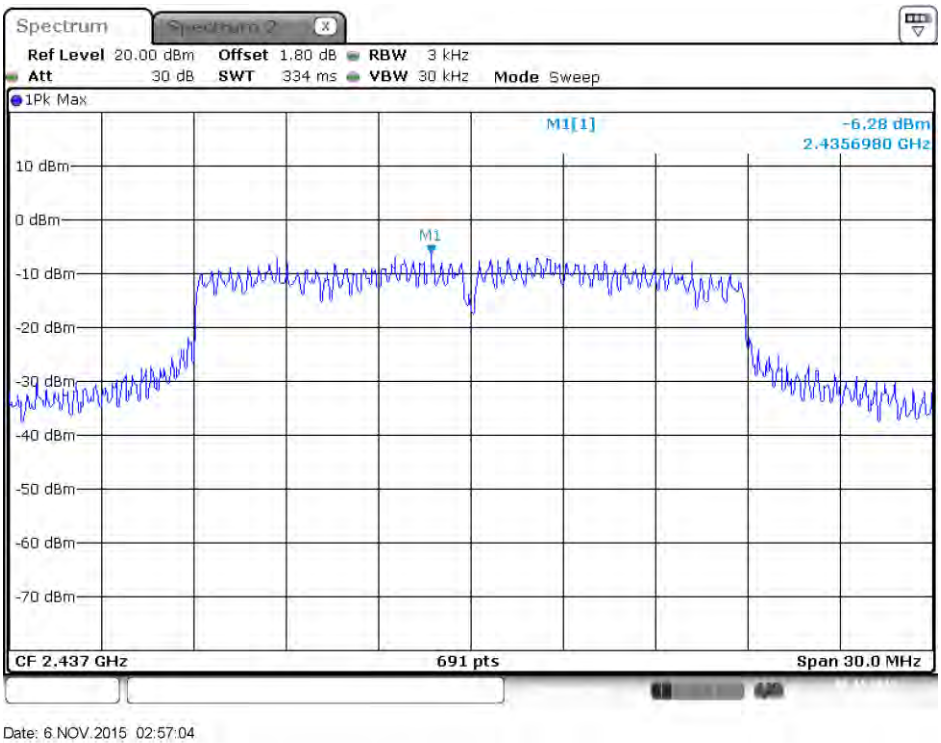


Date: 6.NOV.2015 01:39:36

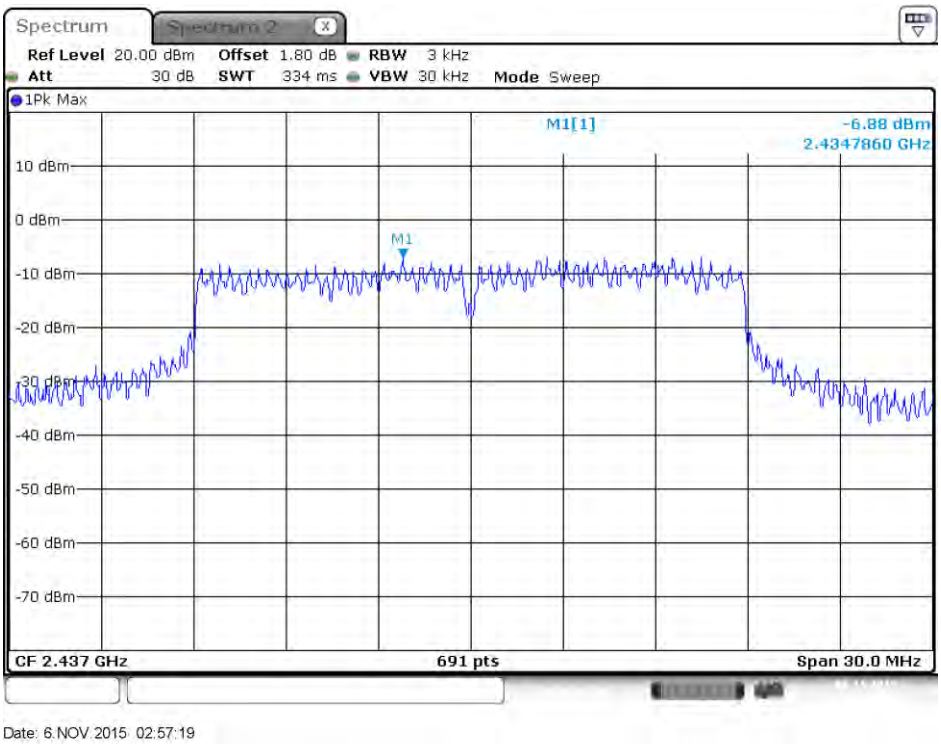
Power Density Plot on Configuration IEEE 802.11n MCS0 HT20 / 2437 MHz / Chain 1



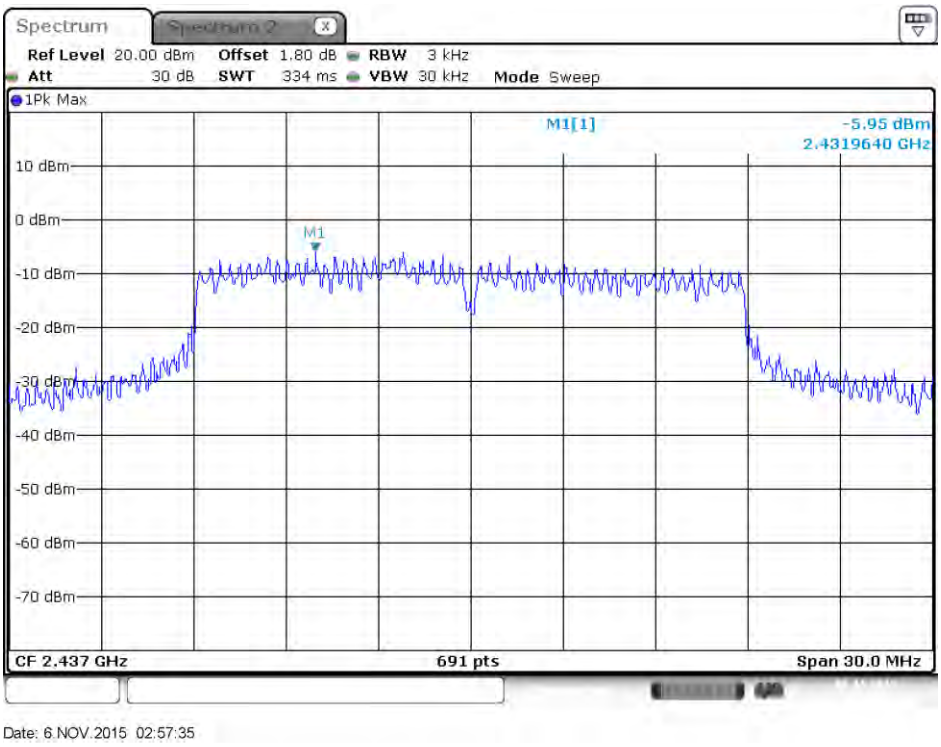
Power Density Plot on Configuration IEEE 802.11n MCS0 HT20 / 2437 MHz / Chain 2



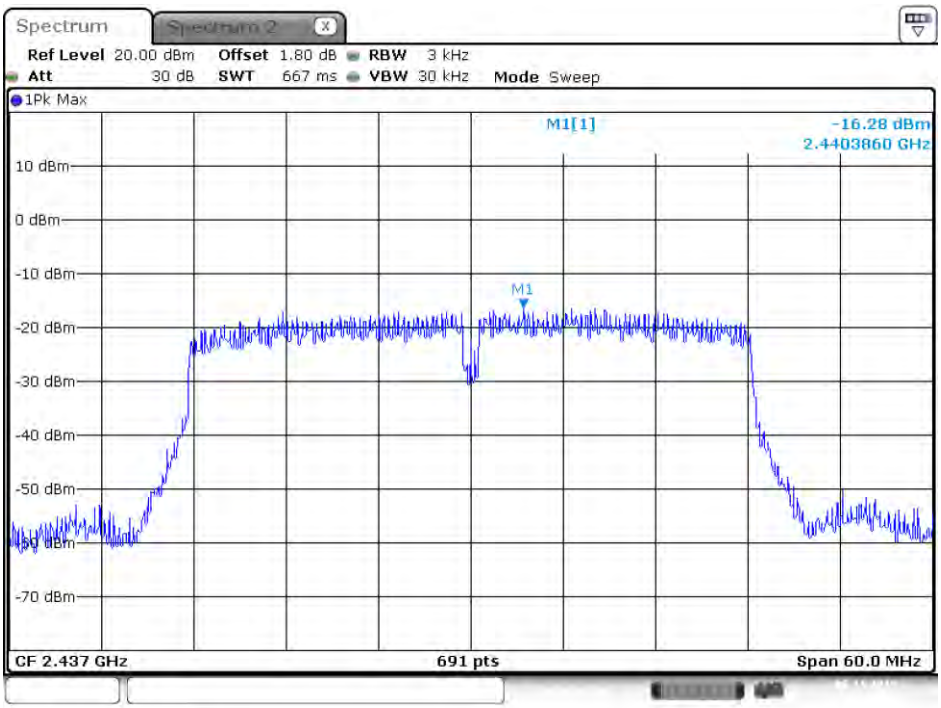
Power Density Plot on Configuration IEEE 802.11n MCS0 HT20 / 2437 MHz / Chain 3



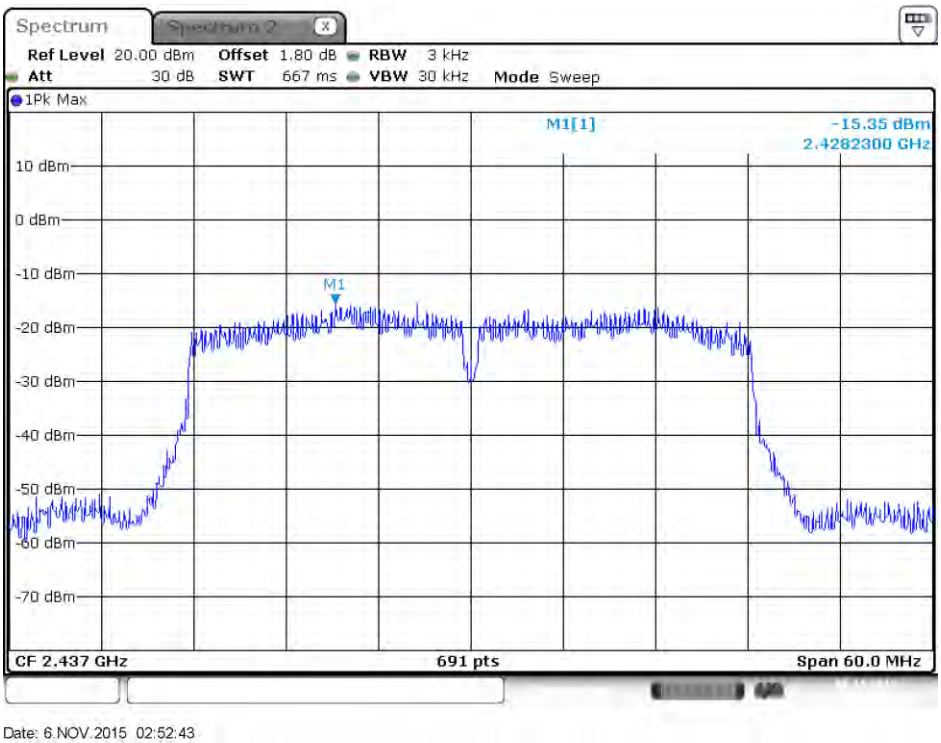
Power Density Plot on Configuration IEEE 802.11n MCS0 HT20 / 2437 MHz / Chain 4



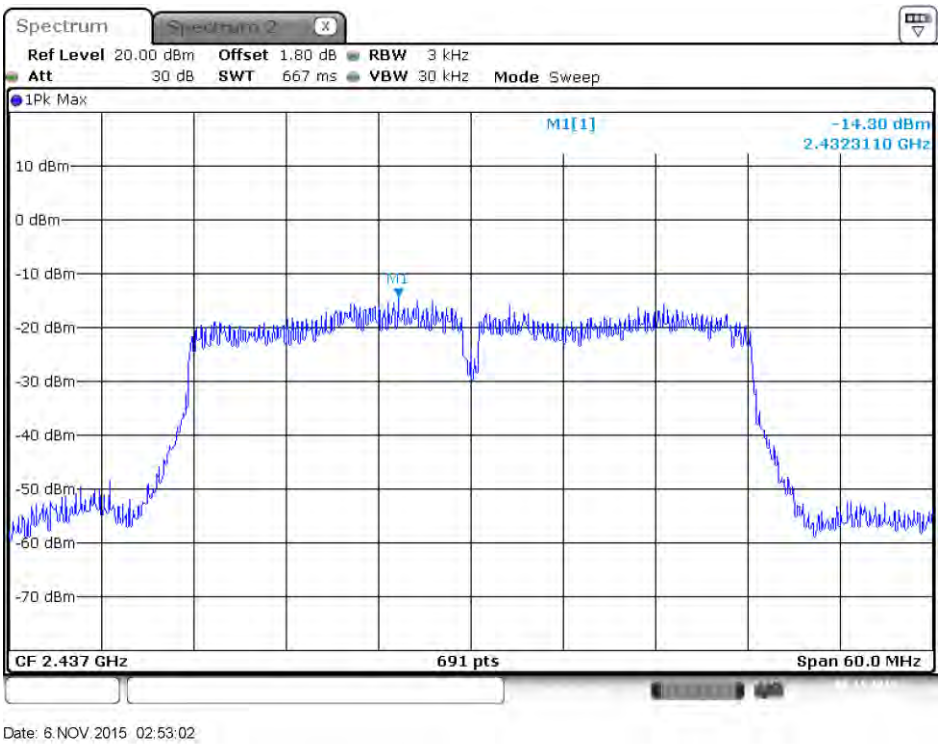
Power Density Plot on Configuration IEEE 802.11n MCS0 HT40 / 2437 MHz / Chain 1



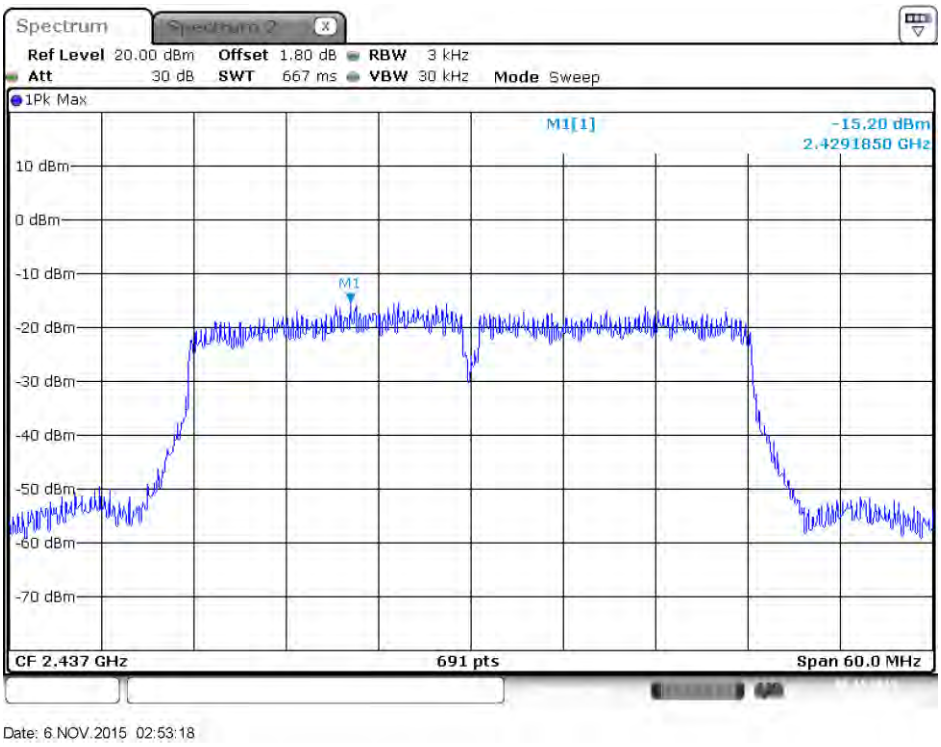
Power Density Plot on Configuration IEEE 802.11n MCS0 HT40 / 2437 MHz / Chain 2



Power Density Plot on Configuration IEEE 802.11n MCS0 HT40 / 2437 MHz / Chain 3



Power Density Plot on Configuration IEEE 802.11n MCS0 HT40 / 2437 MHz / Chain 4



Mode 7: EUT 2 + Set 10 PIFA Antenna / Chain1:3.81 dBi, Chain2:3.75 dBi, Chain3:3.98 dBi, Chain4:3.47 dBi

Power Density Plot on Configuration IEEE 802.11b / 2462 MHz / Chain 1

Date: 21.OCT.2015 01:24:58

Power Density Plot on Configuration IEEE 802.11b / 2462 MHz / Chain 2

Date: 21.OCT.2015 01:24:41

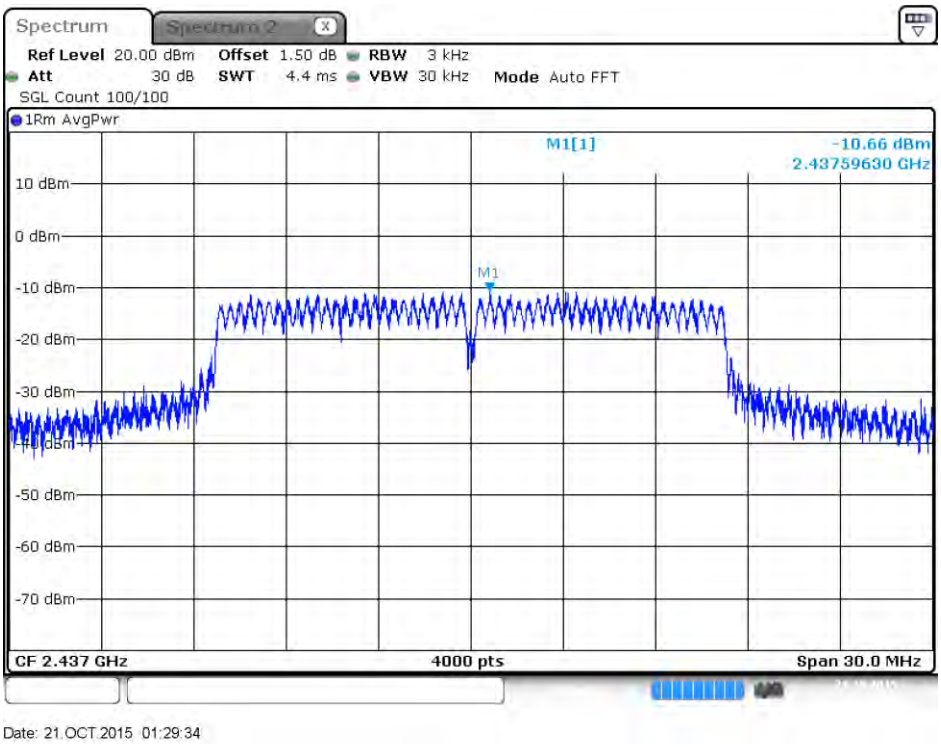
Power Density Plot on Configuration IEEE 802.11b / 2462 MHz / Chain 3

Date: 21.OCT.2015 01:24:23

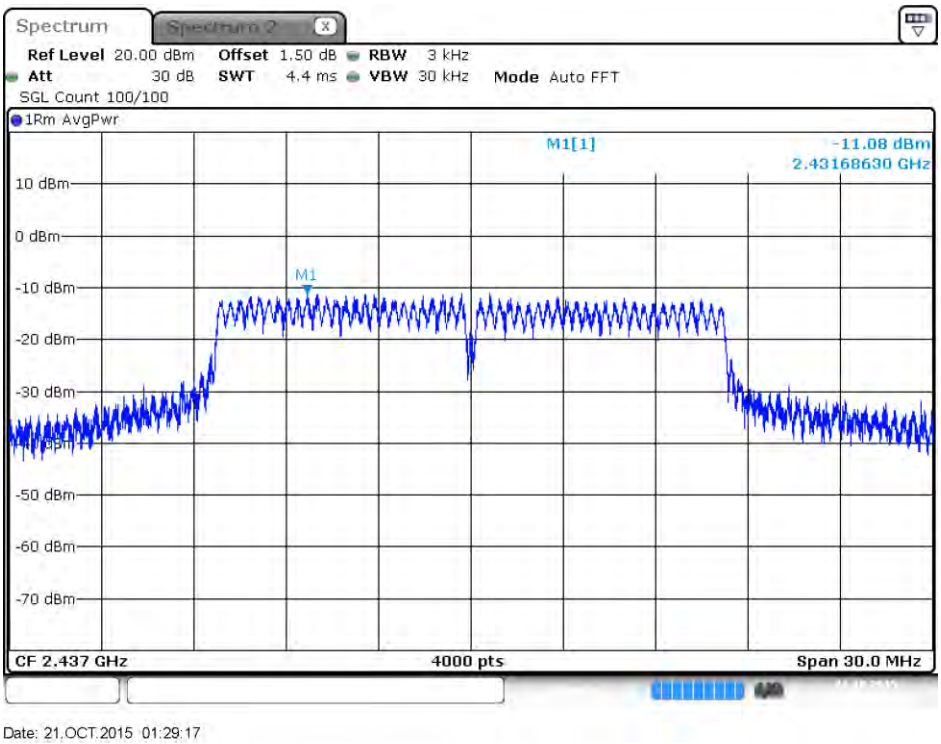
Power Density Plot on Configuration IEEE 802.11b / 2462 MHz / Chain 4

Date: 21.OCT.2015 01:24:04

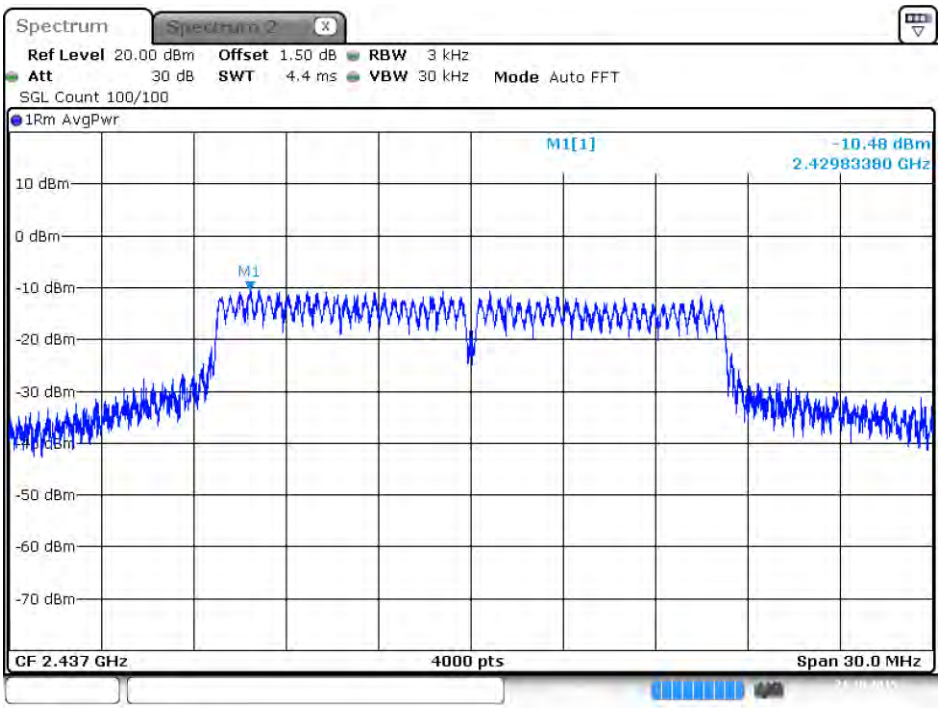
Power Density Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 1



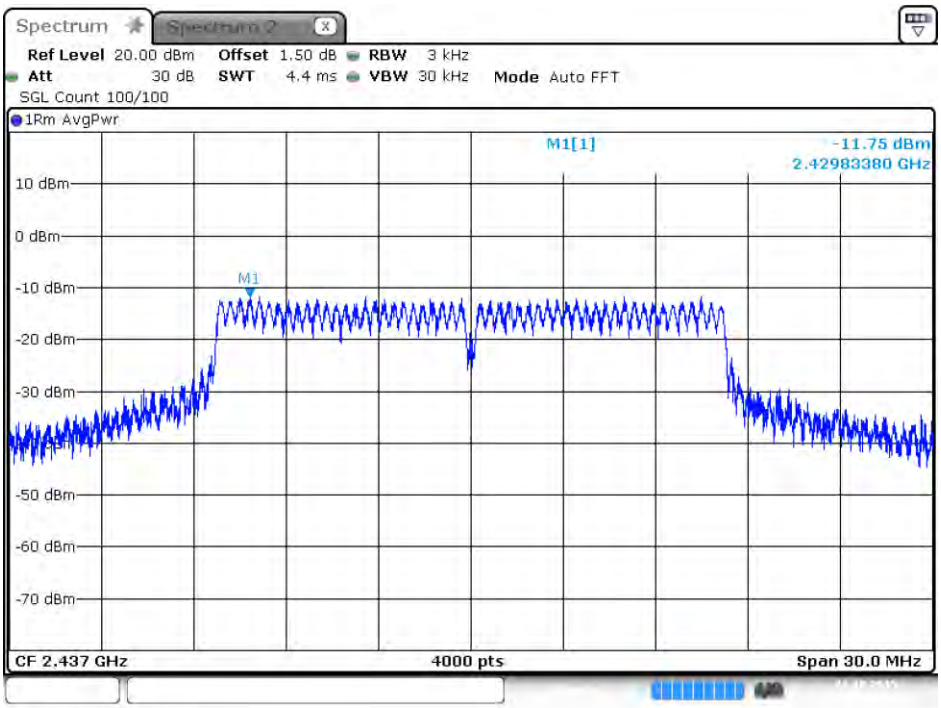
P Power Density Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 2



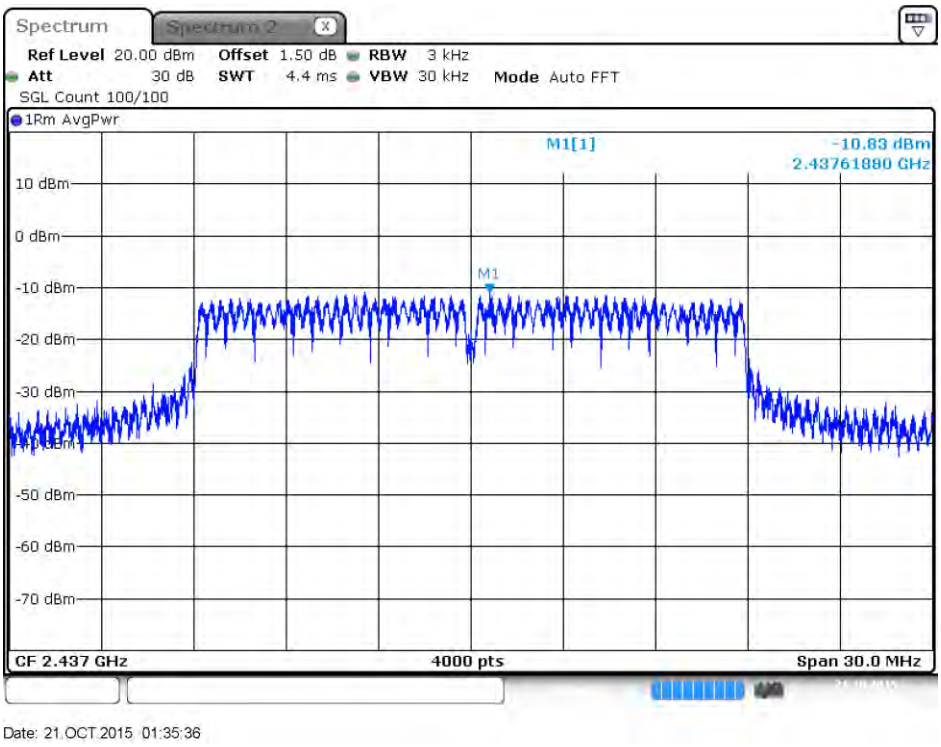
Power Density Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 3



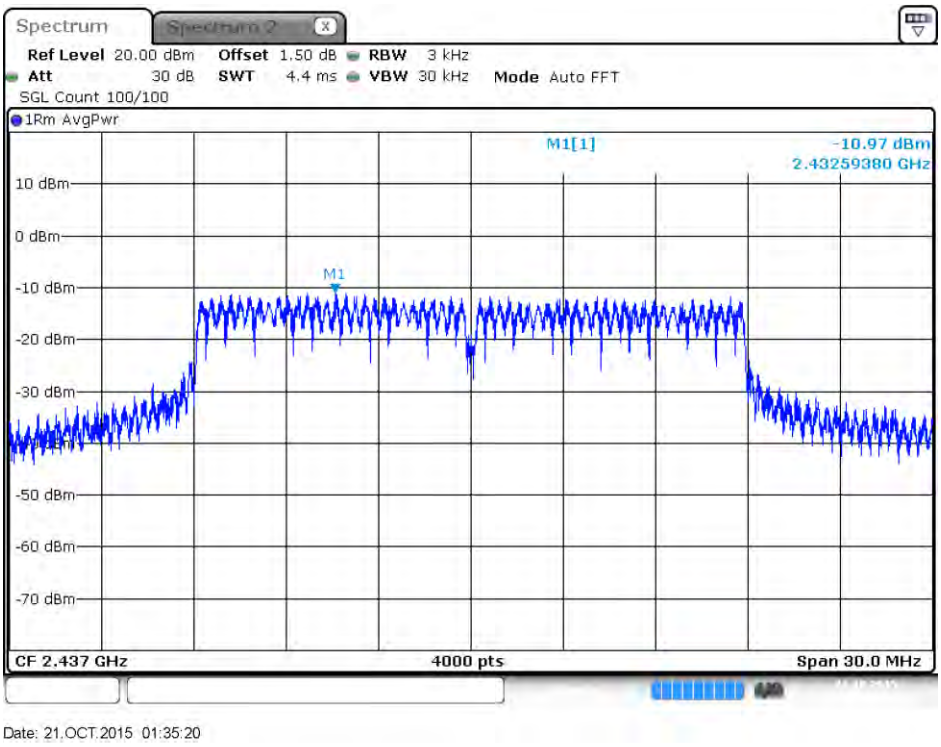
Power Density Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 4



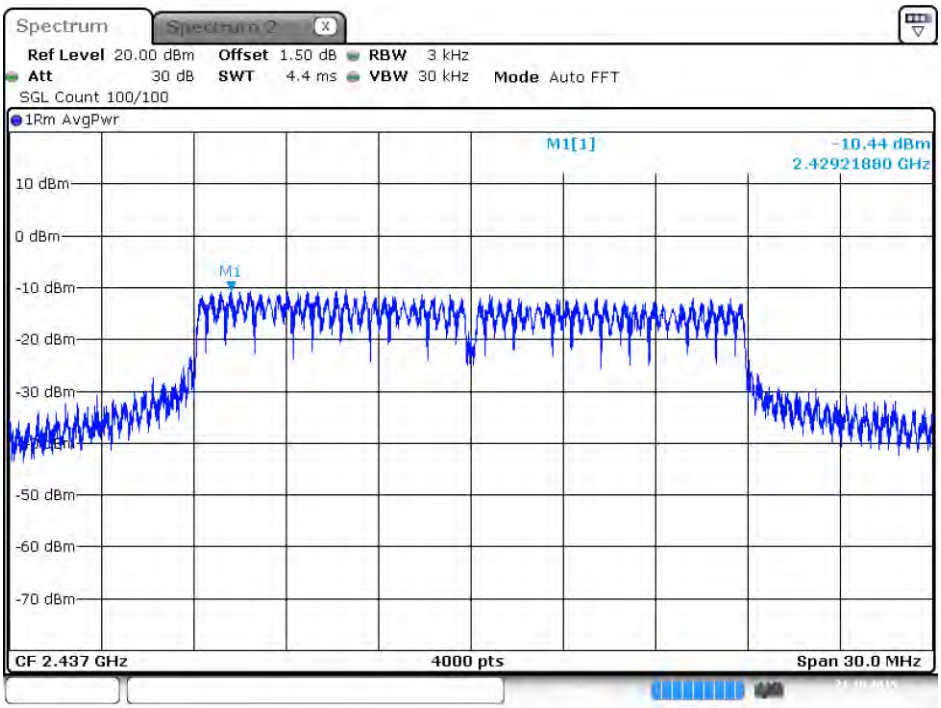
Power Density Plot on Configuration IEEE 802.11n MCS0 HT20 / 2437 MHz / Chain 1



Power Density Plot on Configuration IEEE 802.11n MCS0 HT20 / 2437 MHz / Chain 2

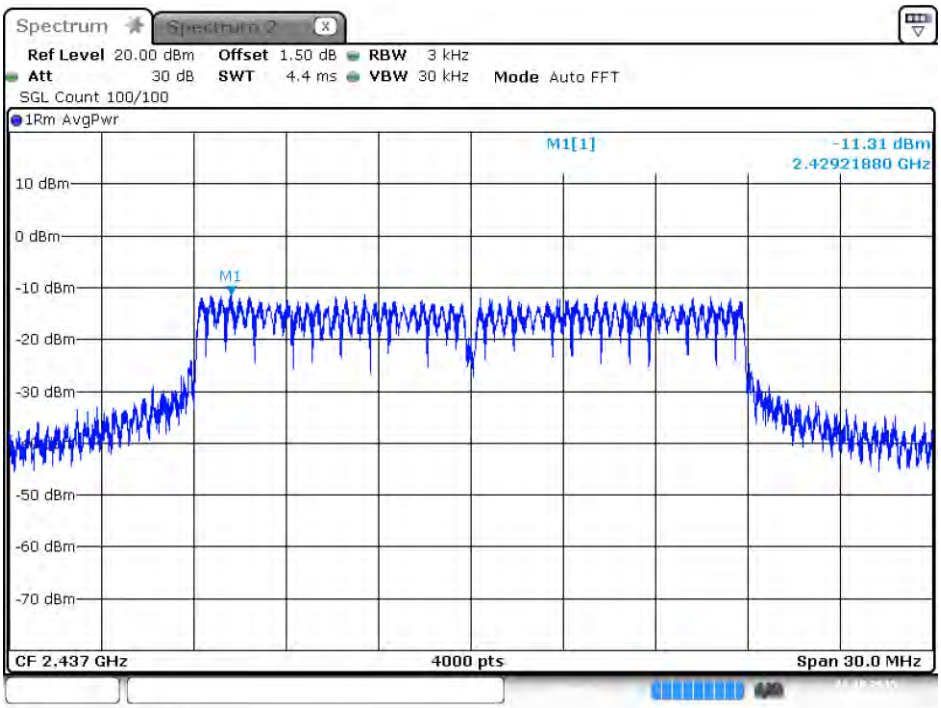


Power Density Plot on Configuration IEEE 802.11n MCS0 HT20 / 2437 MHz / Chain 3



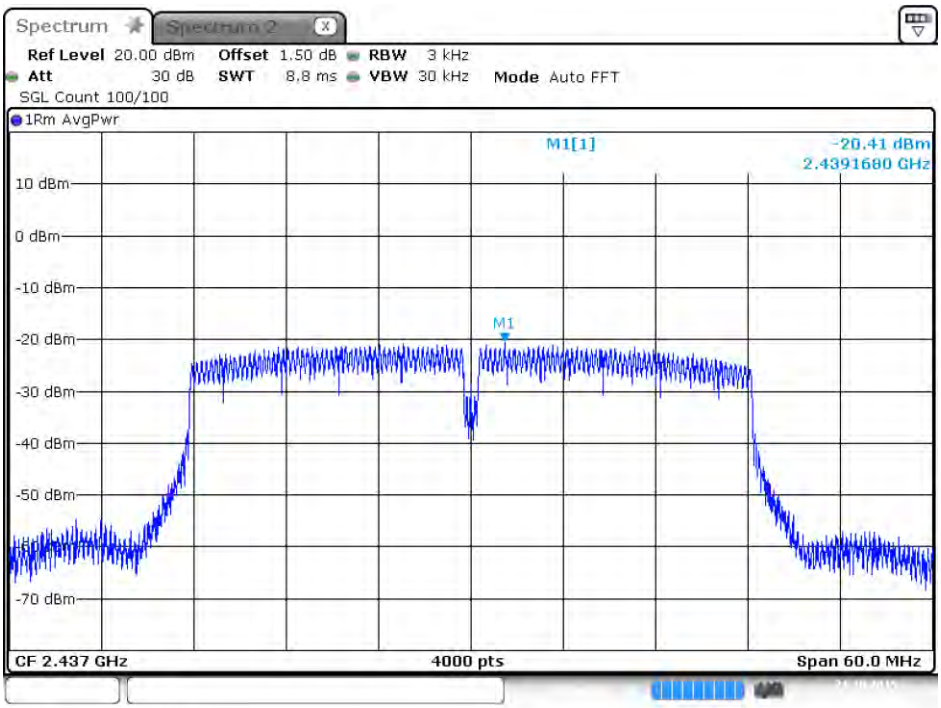
Date: 21.OCT.2015 01:35:04

Power Density Plot on Configuration IEEE 802.11n MCS0 HT20 / 2437 MHz / Chain 4



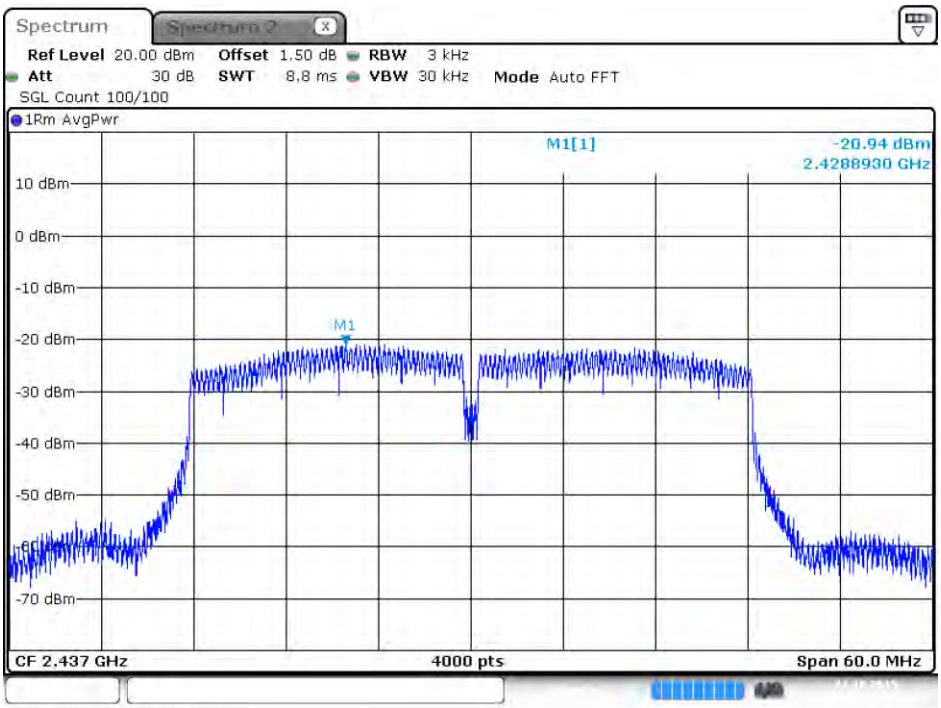
Date: 21.OCT.2015 01:34:45

Power Density Plot on Configuration IEEE 802.11n MCS0 HT40 / 2437 MHz / Chain 1



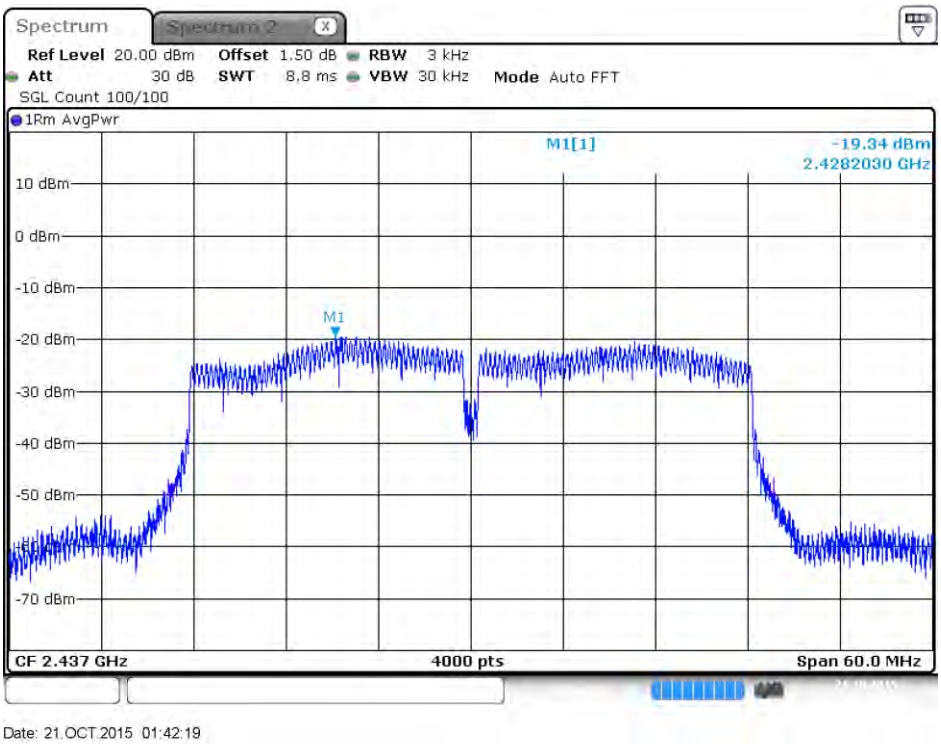
Date: 21.OCT.2015 01:41:39

Power Density Plot on Configuration IEEE 802.11n MCS0 HT40 / 2437 MHz / Chain 2

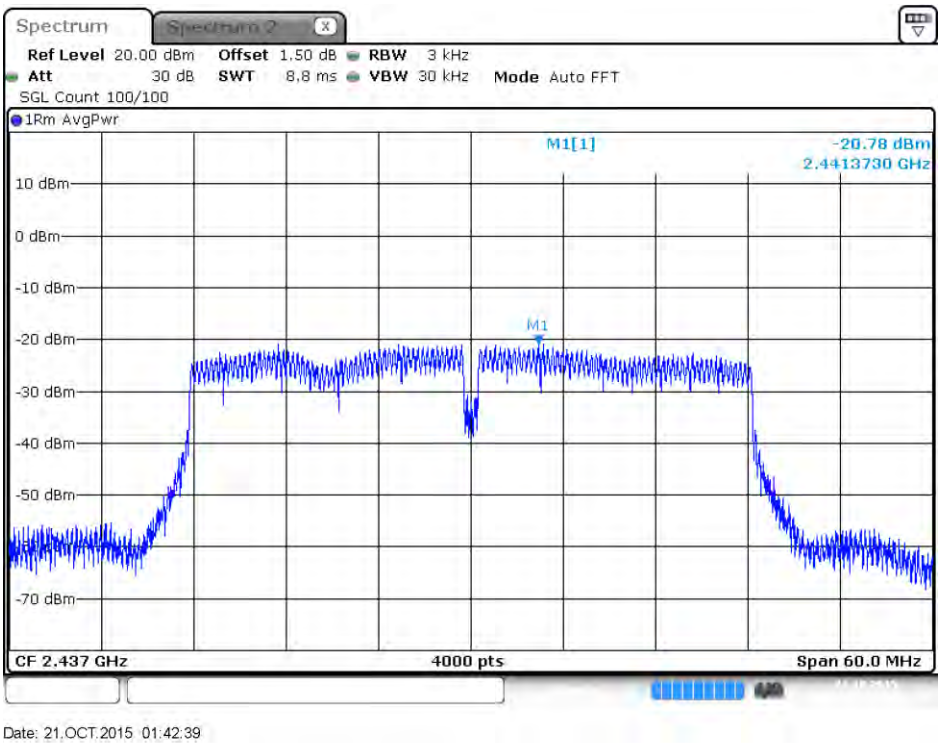


Date: 21.OCT.2015 01:41:58

Power Density Plot on Configuration IEEE 802.11n MCS0 HT40 / 2437 MHz / Chain 3



Power Density Plot on Configuration IEEE 802.11n MCS0 HT40 / 2437 MHz / Chain 4



4.4. 6dB Spectrum Bandwidth Measurement

4.4.1. Limit

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

4.4.2. Measuring Instruments and Setting

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

6dB Spectrum Bandwidth	
Spectrum Parameters	**Setting**
Attenuation	Auto
Span Frequency	> 6dB Bandwidth
RBW	100kHz
VBW	≥ 3 x RBW
Detector	Peak
Trace	Max Hold
Sweep Time	Auto
99% Occupied Bandwidth	
Spectrum Parameters	**Setting**
Span	1.5 times to 5.0 times the OBW
RBW	1 % to 5 % of the OBW
VBW	≥ 3 x RBW
Detector	Peak
Trace	Max Hold

4.4.3. Test Procedures

For Radiated 6dB Bandwidth Measurement:

1. The transmitter was radiated to the spectrum analyzer in peak hold mode.
2. Test was performed in accordance with KDB558074 D01 v03r03 for Performing Compliance Measurements on Digital Transmission Systems (DTS) - section 8.0 DTS bandwidth=> 8.1 Option 1.
3. Multiple antenna system was performed in accordance with KDB 662911 D01 v02r01 Emissions Testing of Transmitters with Multiple Outputs in the Same Band.
4. Measured the spectrum width with power higher than 6dB below carrier.

4.4.4. Test Setup Layout

For Radiated 6dB Bandwidth Measurement:

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

4.4.5. Test Deviation

There is no deviation with the original standard.

4.4.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.4.7. Test Result of 6dB Spectrum Bandwidth

Temperature	25℃	Humidity	50%
Test Engineer	Eddie Weng & Lucas Huang		
Test Mode	Mode 1: EUT 1 + Set 1 Ceiling Mount Omni Antenna / 4 dBi		

Mode	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11b	2412 MHz	3.71	14.50	500	**Complies**
	2437 MHz	4.06	14.15	500	**Complies**
	2462 MHz	4.52	12.16	500	**Complies**
802.11g	2412 MHz	11.30	15.63	500	**Complies**
	2437 MHz	5.57	19.80	500	**Complies**
	2462 MHz	11.36	15.98	500	**Complies**
802.11n MCS0 HT20	2412 MHz	13.74	16.58	500	**Complies**
	2437 MHz	9.45	22.84	500	**Complies**
	2462 MHz	4.46	15.54	500	**Complies**
802.11n MCS0 HT40	2422 MHz	24.35	36.18	500	**Complies**
	2437 MHz	25.62	36.18	500	**Complies**
	2452 MHz	32.58	36.18	500	**Complies**

Temperature	25℃	Humidity	50%
Test Engineer	Eddie Weng & Lucas Huang		
Test Mode	Mode 2: EUT 1 + Set 2 Sector Antenna / 7.5 dBi		

Mode	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11b	2412 MHz	3.59	13.89	500	**Complies**
	2437 MHz	6.67	12.07	500	**Complies**
	2462 MHz	3.71	10.33	500	**Complies**
802.11g	2412 MHz	13.57	16.50	500	**Complies**
	2437 MHz	12.12	15.80	500	**Complies**
	2462 MHz	9.22	15.98	500	**Complies**
802.11n MCS0 HT20	2412 MHz	17.33	17.54	500	**Complies**
	2437 MHz	15.07	19.19	500	**Complies**
	2462 MHz	11.71	17.45	500	**Complies**
802.11n MCS0 HT40	2422 MHz	24.35	36.18	500	**Complies**
	2437 MHz	28.87	34.73	500	**Complies**
	2452 MHz	36.29	34.47	500	**Complies**

Temperature	25℃	Humidity	50%
Test Engineer	Eddie Weng & Lucas Huang		
Test Mode	Mode 3: EUT 1 + Set 3 Sector Antenna / 5.5 dBi		

Mode	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11b	2412 MHz	3.59	13.89	500	**Complies**
	2437 MHz	4.06	14.15	500	**Complies**
	2462 MHz	4.52	12.16	500	**Complies**
802.11g	2412 MHz	11.30	15.63	500	**Complies**
	2437 MHz	5.57	19.80	500	**Complies**
	2462 MHz	12.64	17.28	500	**Complies**
802.11n MCS0 HT20	2412 MHz	3.36	17.45	500	**Complies**
	2437 MHz	9.45	22.84	500	**Complies**
	2462 MHz	11.65	17.45	500	**Complies**
802.11n MCS0 HT40	2422 MHz	24.35	36.18	500	**Complies**
	2437 MHz	24.46	35.46	500	**Complies**
	2452 MHz	32.58	36.18	500	**Complies**

Temperature	25℃	Humidity	50%
Test Engineer	Eddie Weng & Lucas Huang		
Test Mode	Mode 4: EUT 1 + Set 4 Sector Antenna / 10.5 dBi		

Mode	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11b	2412 MHz	4.99	14.33	500	**Complies**
	2437 MHz	4.58	13.11	500	**Complies**
	2462 MHz	4.52	12.24	500	**Complies**
802.11g	2412 MHz	16.41	15.72	500	**Complies**
	2437 MHz	13.91	15.63	500	**Complies**
	2462 MHz	4.06	16.15	500	**Complies**
802.11n MCS0 HT20	2412 MHz	11.94	17.02	500	**Complies**
	2437 MHz	12.46	17.80	500	**Complies**
	2462 MHz	4.00	17.19	500	**Complies**
802.11n MCS0 HT40	2422 MHz	34.44	33.43	500	**Complies**
	2437 MHz	24.12	35.31	500	**Complies**
	2452 MHz	24.70	35.89	500	**Complies**

Temperature	25℃	Humidity	50%
Test Engineer	Eddie Weng & Lucas Huang		
Test Mode	Mode 5: EUT 1 + Set 7 Sector Antenna / 5 dBi		

Mode	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11b	2412 MHz	3.59	13.89	500	**Complies**
	2437 MHz	4.06	14.15	500	**Complies**
	2462 MHz	3.71	10.33	500	**Complies**
802.11g	2412 MHz	11.30	15.63	500	**Complies**
	2437 MHz	5.57	19.80	500	**Complies**
	2462 MHz	11.36	15.98	500	**Complies**
802.11n MCS0 HT20	2412 MHz	10.60	17.19	500	**Complies**
	2437 MHz	9.45	22.84	500	**Complies**
	2462 MHz	11.65	17.45	500	**Complies**
802.11n MCS0 HT40	2422 MHz	25.04	36.32	500	**Complies**
	2437 MHz	24.46	35.46	500	**Complies**
	2452 MHz	32.58	36.18	500	**Complies**

Temperature	25℃	Humidity	50%
Test Engineer	Eddie Weng & Lucas Huang		
Test Mode	Mode 6: EUT 1 + Set 8 Dipole Antenna / 4.66 dBi		

Mode	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11b	2412 MHz	3.71	14.50	500	**Complies**
	2437 MHz	4.06	14.15	500	**Complies**
	2462 MHz	4.06	13.89	500	**Complies**
802.11g	2412 MHz	9.80	15.63	500	**Complies**
	2437 MHz	5.57	19.80	500	**Complies**
	2462 MHz	8.87	14.93	500	**Complies**
802.11n MCS0 HT20	2412 MHz	10.43	17.19	500	**Complies**
	2437 MHz	14.49	21.88	500	**Complies**
	2462 MHz	9.80	17.45	500	**Complies**
802.11n MCS0 HT40	2422 MHz	33.74	34.88	500	**Complies**
	2437 MHz	24.46	36.76	500	**Complies**
	2452 MHz	36.29	34.47	500	**Complies**

Temperature	25℃	Humidity	50%
Test Engineer	Eddie Weng & Lucas Huang		
Test Mode	Mode 7: EUT 2 + Set 10 PIFA Antenna / Chain1:3.81 dBi, Chain2:3.75 dBi, Chain3:3.98 dBi, Chain4:3.47 dBi		

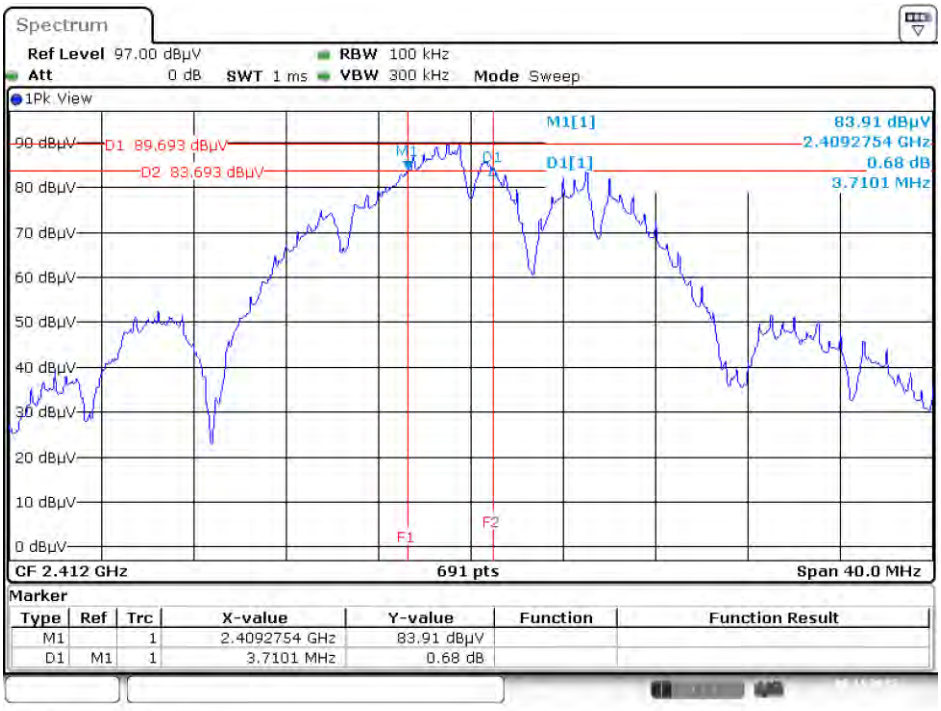
Mode	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11b	2412 MHz	3.59	14.41	500	**Complies**
	2437 MHz	11.13	11.03	500	**Complies**
	2462 MHz	3.59	14.50	500	**Complies**
802.11g	2412 MHz	6.67	16.41	500	**Complies**
	2437 MHz	5.04	20.14	500	**Complies**
	2462 MHz	12.64	17.28	500	**Complies**
802.11n MCS0 HT20	2412 MHz	3.36	17.45	500	**Complies**
	2437 MHz	13.74	19.80	500	**Complies**
	2462 MHz	13.16	17.71	500	**Complies**
802.11n MCS0 HT40	2422 MHz	32.46	36.61	500	**Complies**
	2437 MHz	24.70	33.86	500	**Complies**
	2452 MHz	26.90	33.14	500	**Complies**

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

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

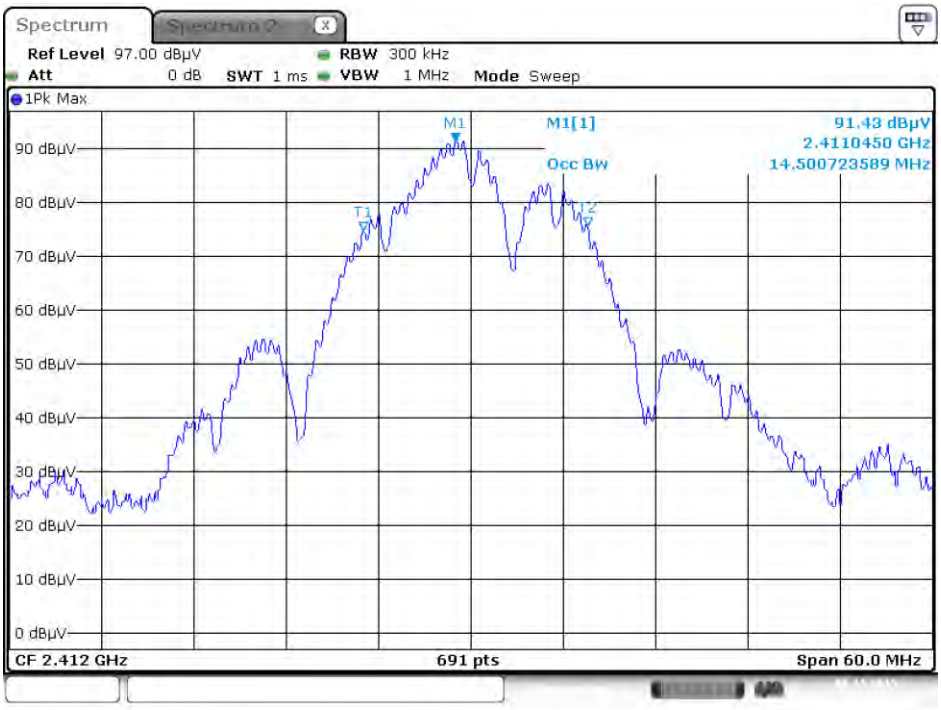
Mode 1: EUT 1 + Set 1 Ceiling Mount Omni Antenna / 4 dBi

6 dB Bandwidth Plot on Configuration IEEE 802.11b / 2412 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



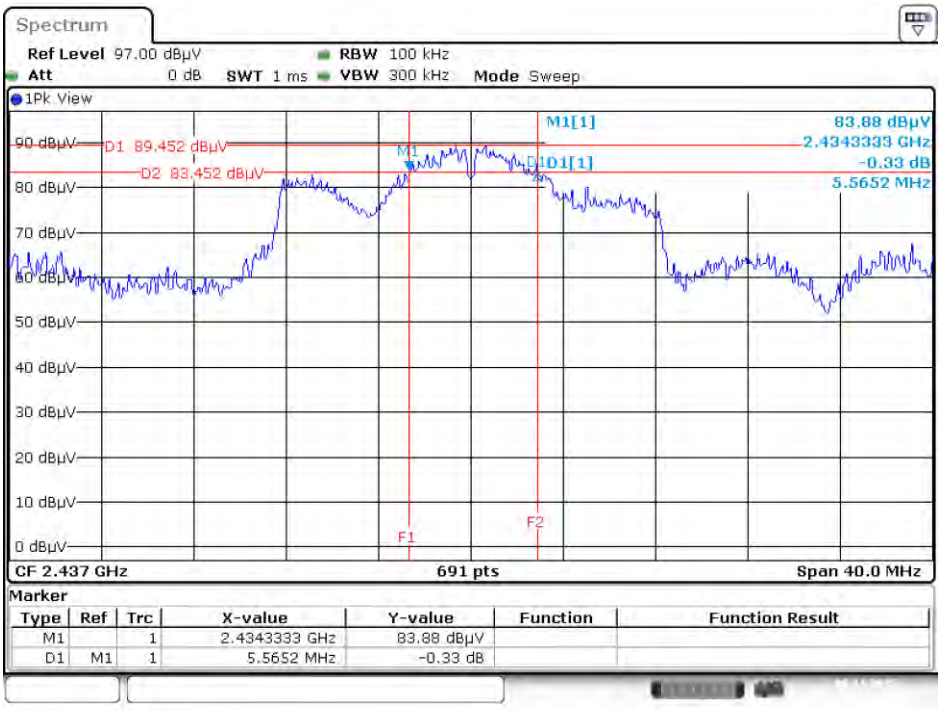
Date: 6.NOV.2015 02:42:53

99% Occupied Bandwidth Plot on Configuration IEEE 802.11b / 2412 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4

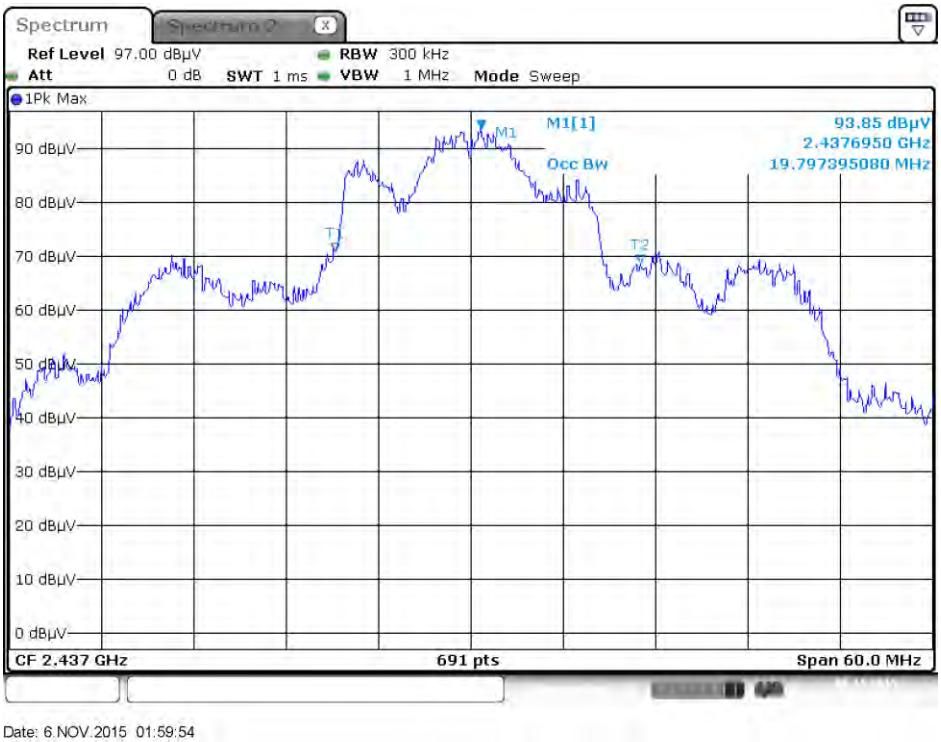


Date: 6.NOV.2015 02:43:47

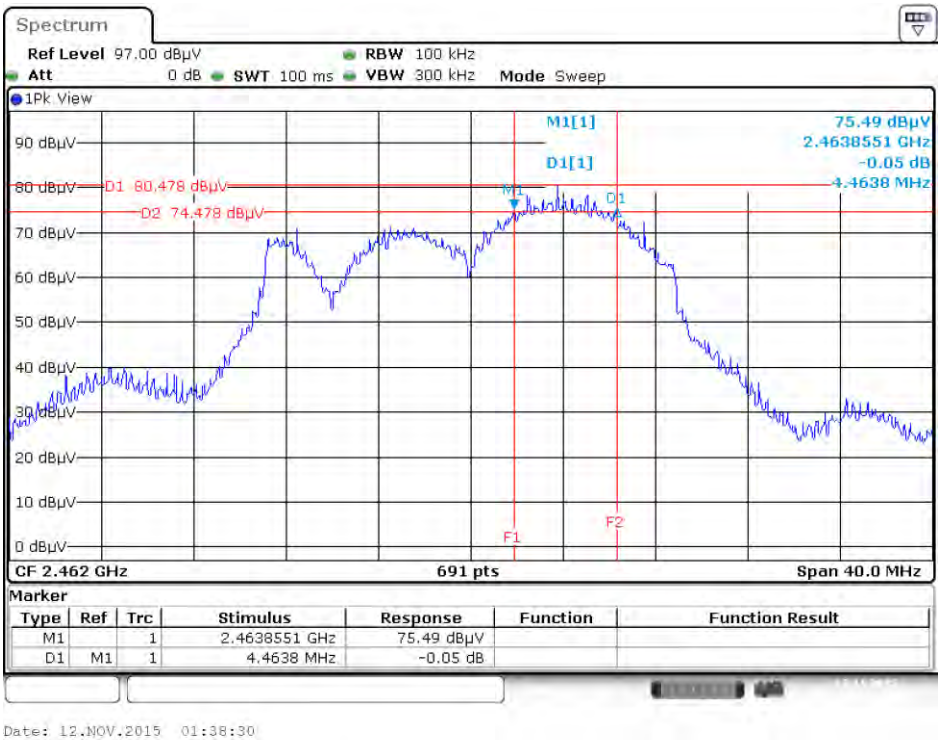
6 dB Bandwidth Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



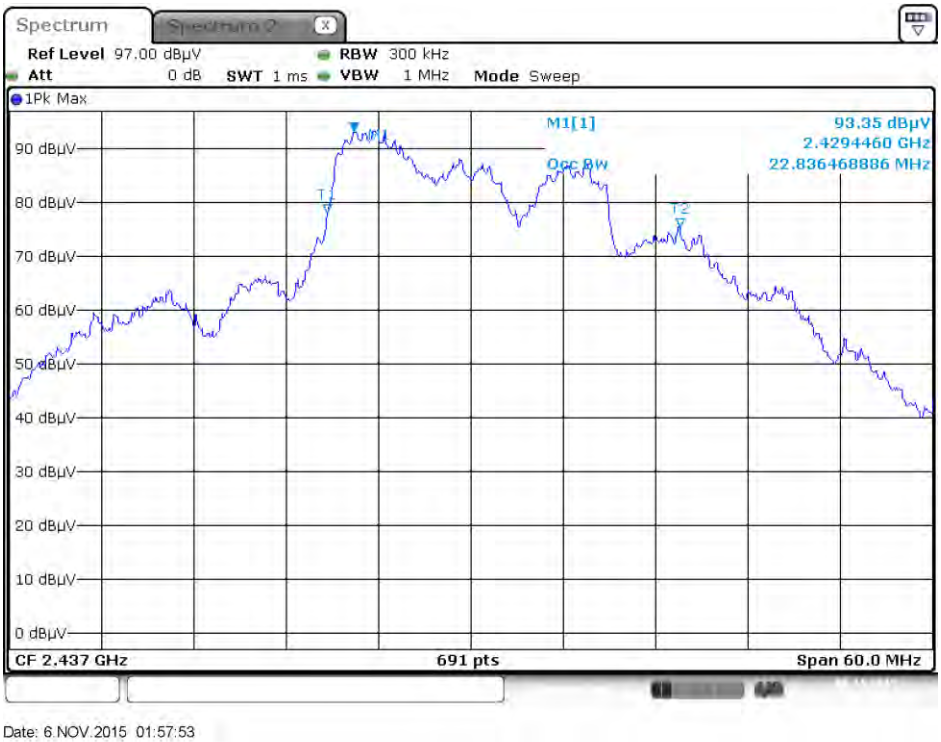
99% Occupied Bandwidth Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



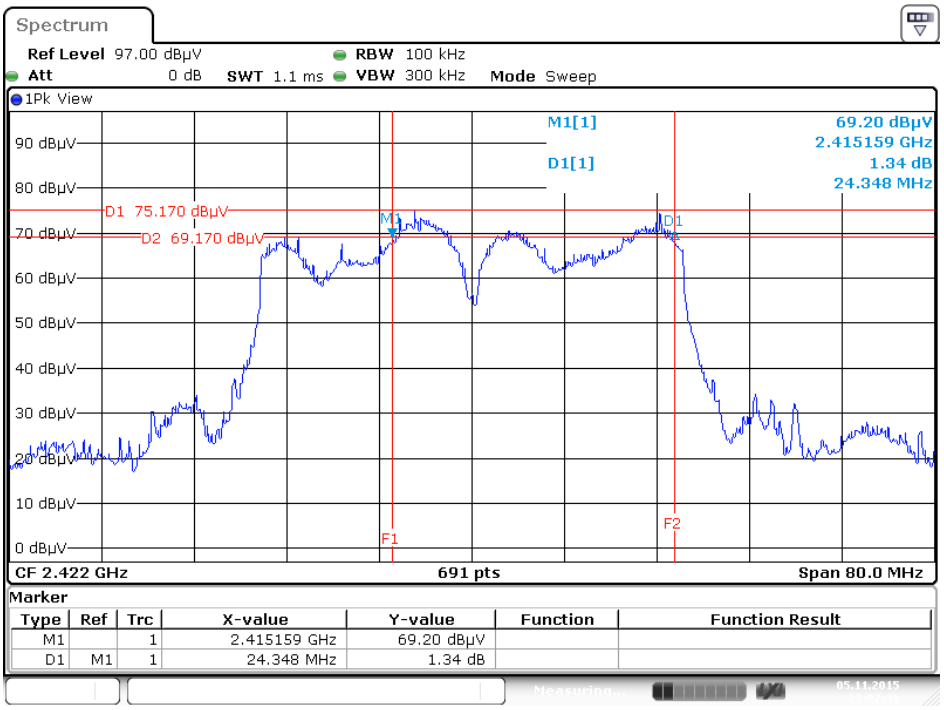
6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT20 / 2462 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



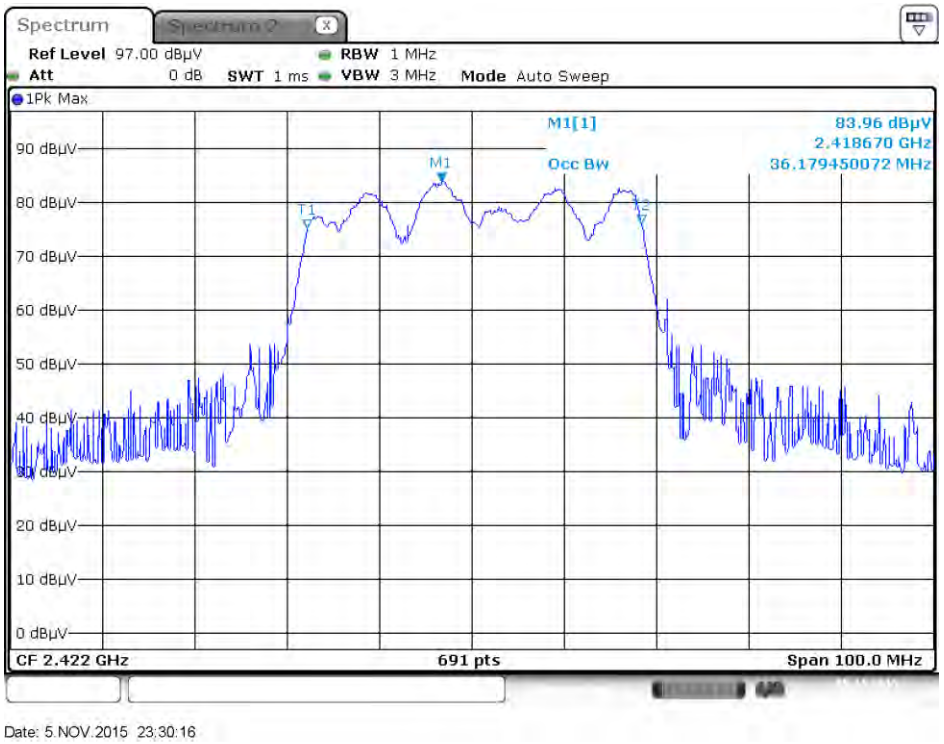
99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT20 / 2437 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT40 / 2422 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4

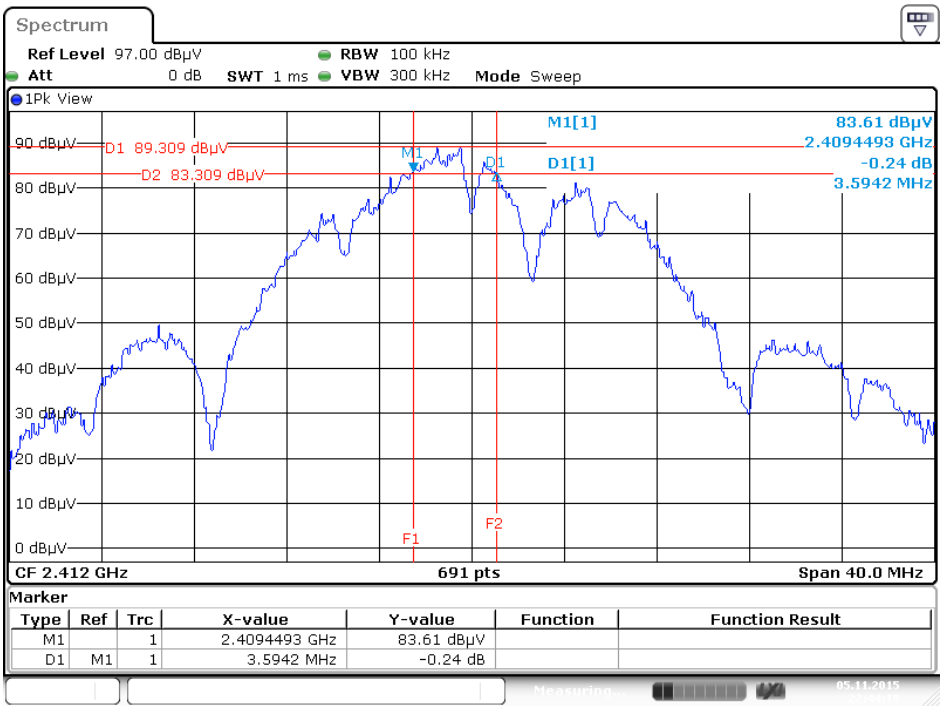


99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT40 / 2422 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



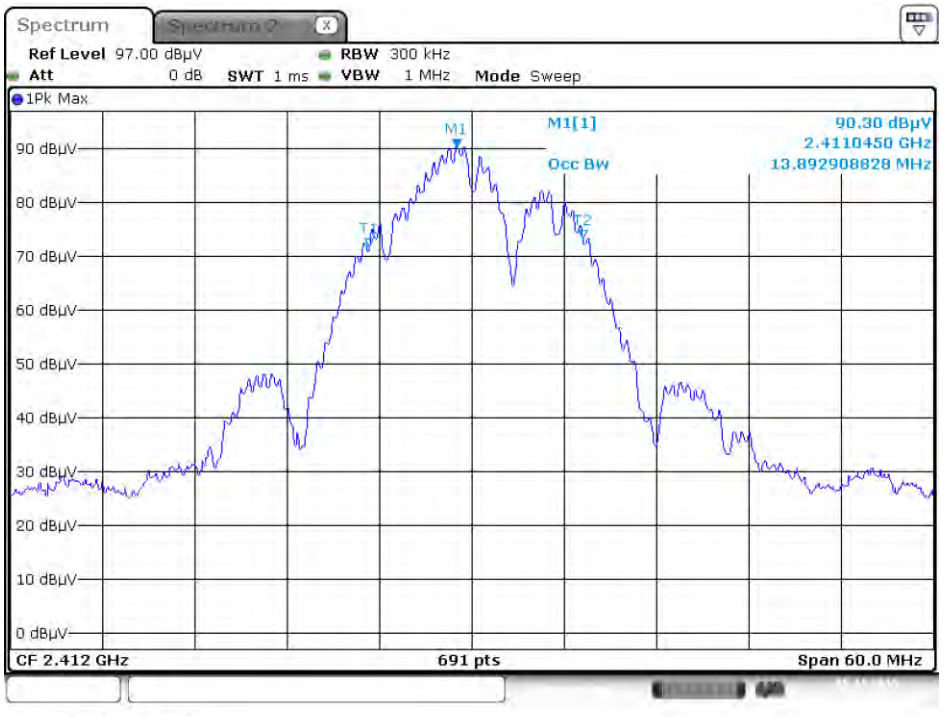
Mode 2: EUT 1 + Set 2 Sector Antenna / 7.5 dBi

6 dB Bandwidth Plot on Configuration IEEE 802.11b / 2412 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



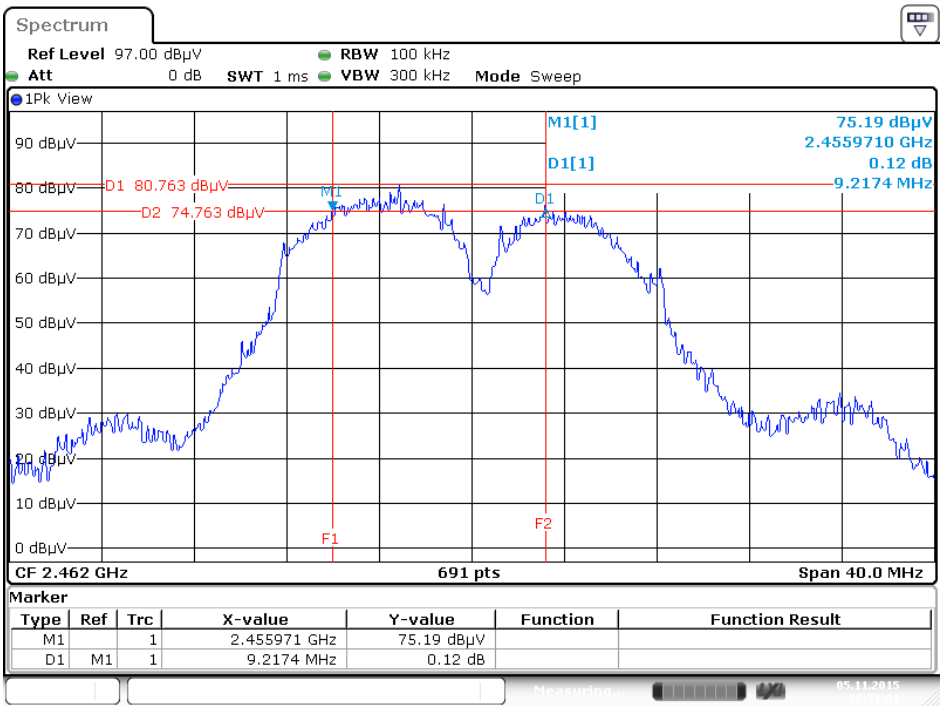
Date: 5.NOV.2015 22:44:20

99% Occupied Bandwidth Plot on Configuration IEEE 802.11b / 2412 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



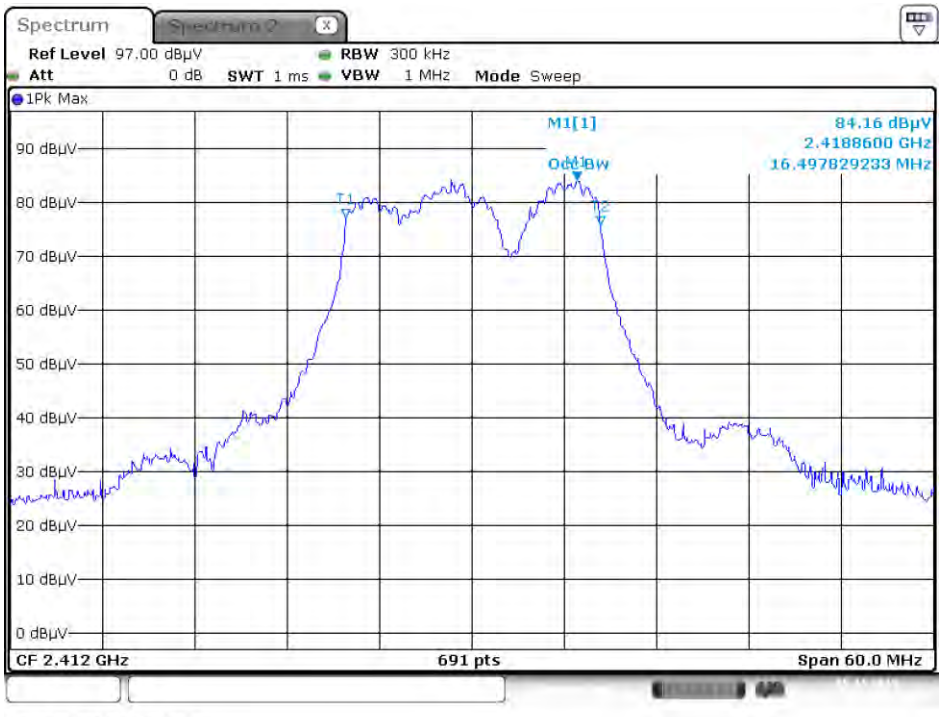
Date: 5.NOV.2015 23:19:46

6 dB Bandwidth Plot on Configuration IEEE 802.11g / 2462 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



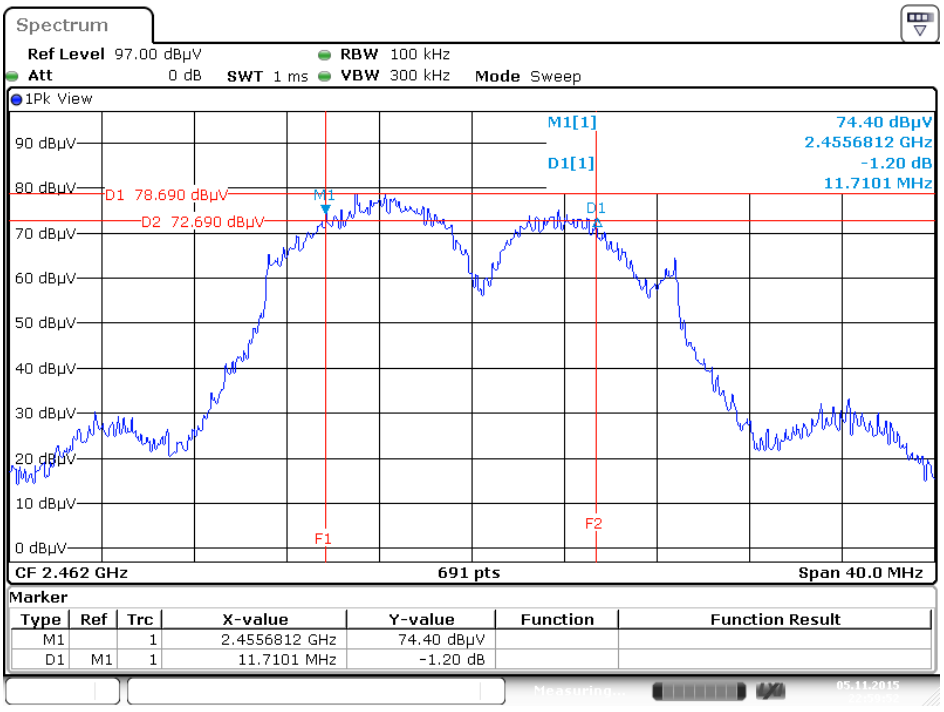
Date: 5.NOV.2015 22:51:01

99% Occupied Bandwidth Plot on Configuration IEEE 802.11g / 2412 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



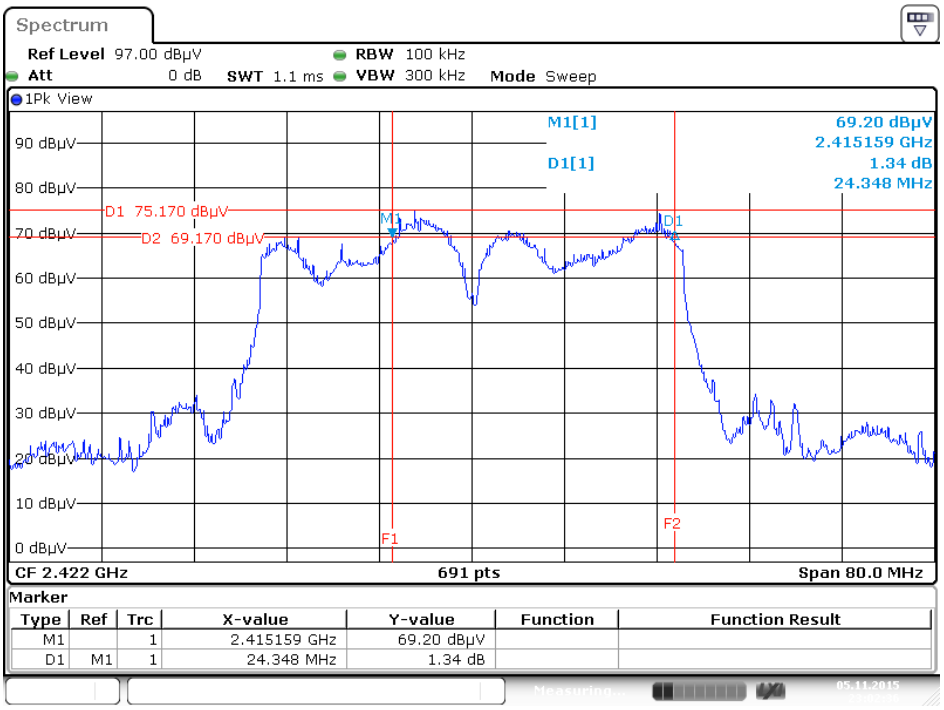
Date: 5.NOV.2015 23:23:59

6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT20 / 2462 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



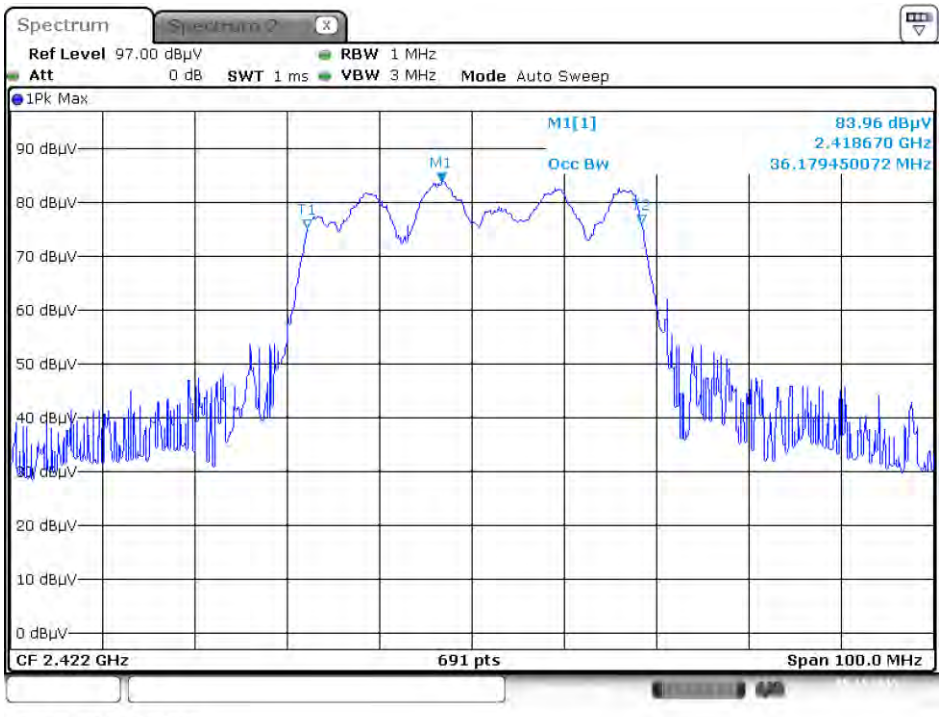
99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT20 / 2437 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4

6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT40 / 2422 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



Date: 5.NOV.2015 23:02:36

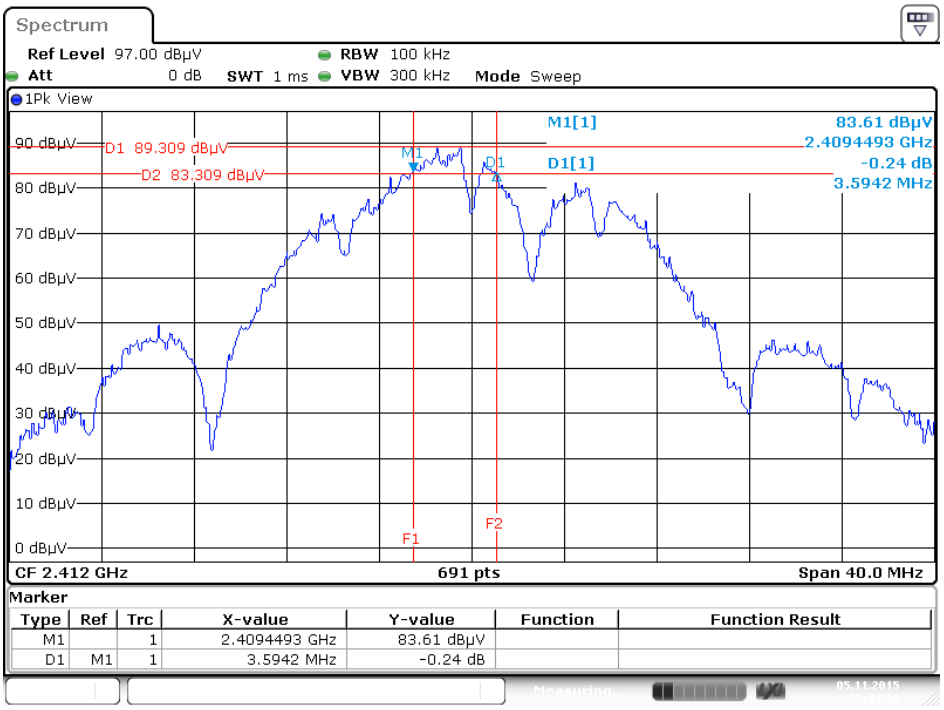
99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT40 / 2422 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



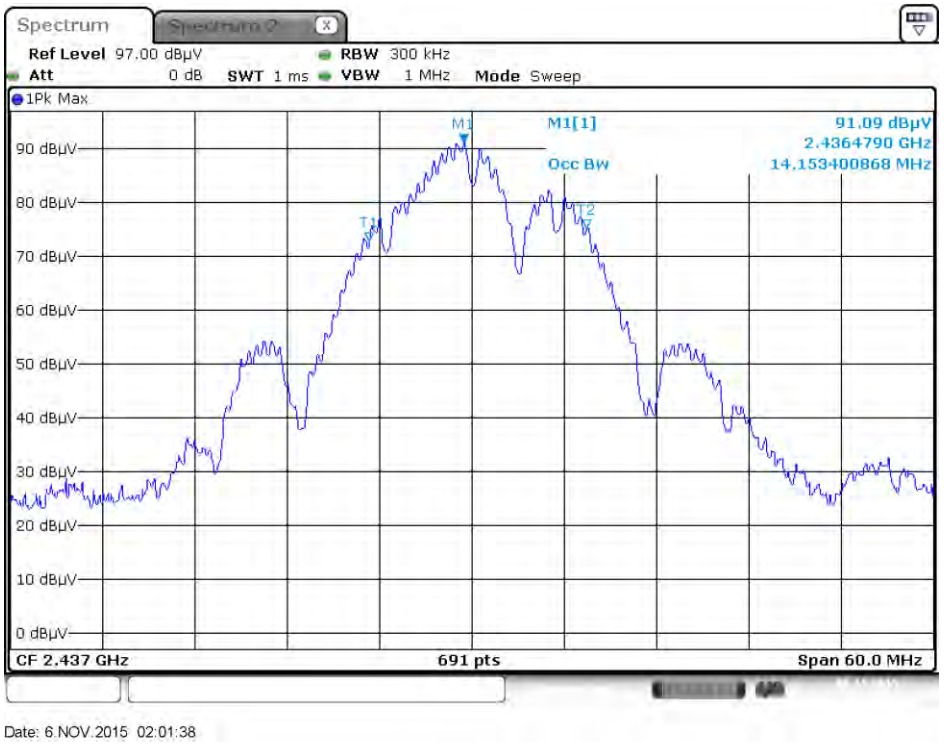
Date: 5.NOV.2015 23:30:16

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

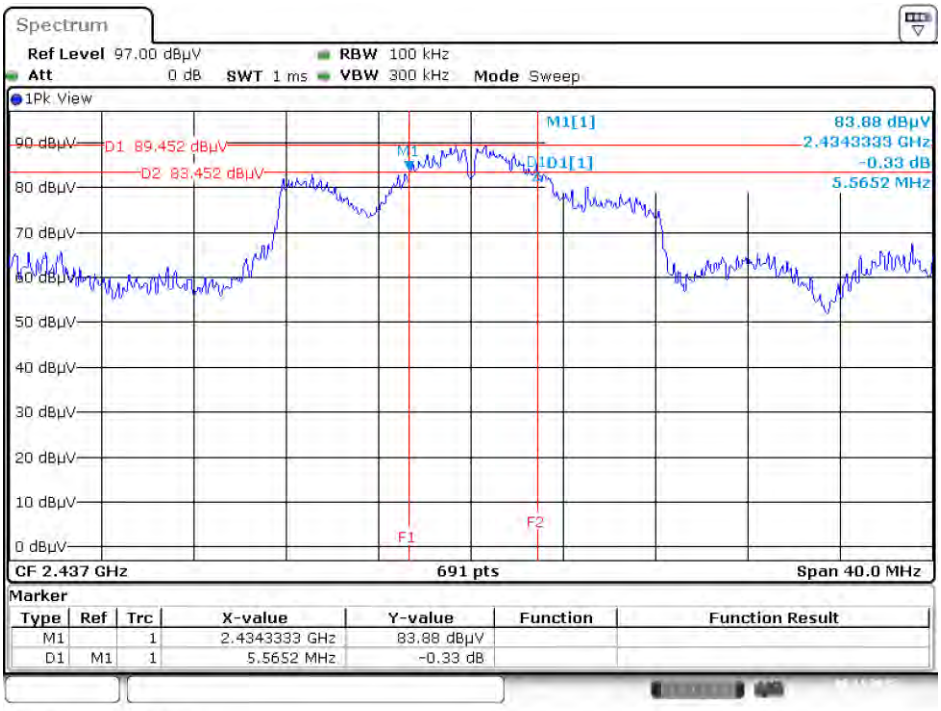
6 dB Bandwidth Plot on Configuration IEEE 802.11b / 2412 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



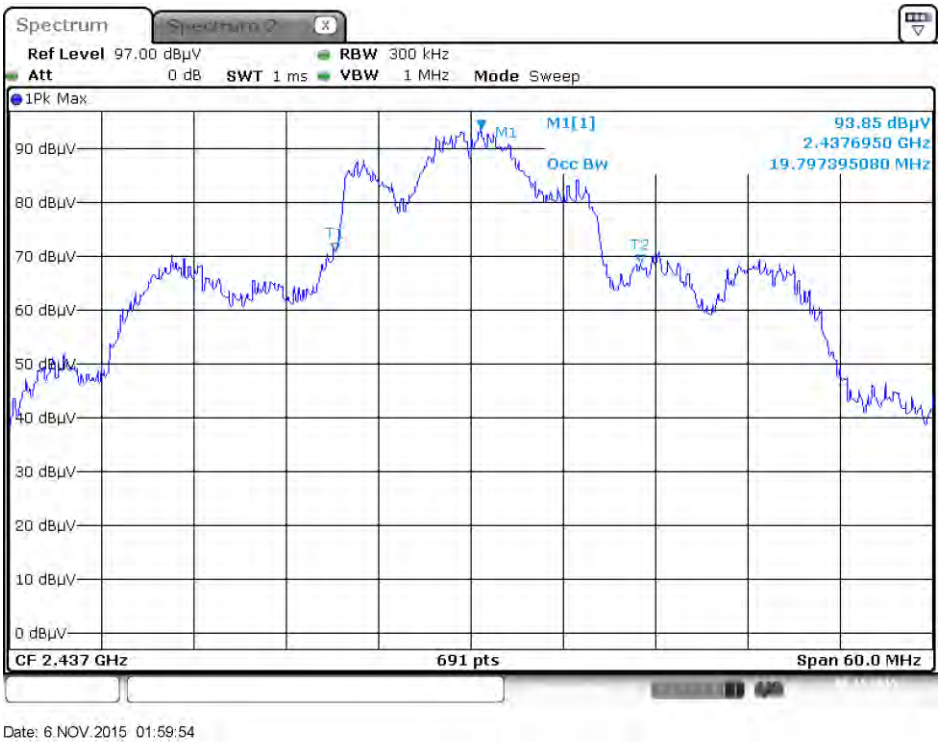
99% Occupied Bandwidth Plot on Configuration IEEE 802.11b / 2437 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



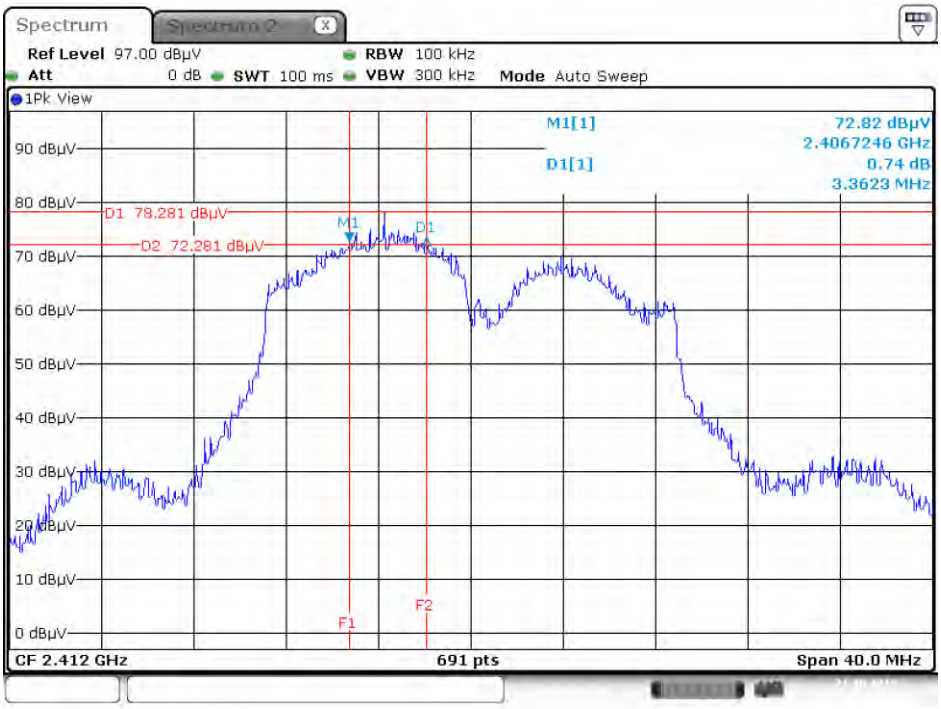
6 dB Bandwidth Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



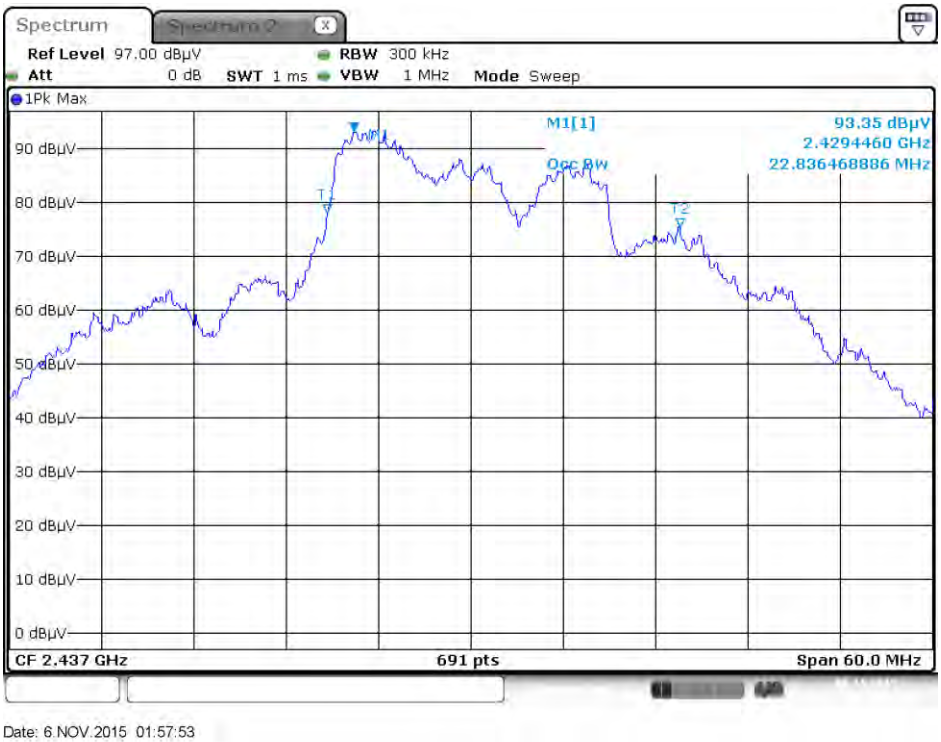
99% Occupied Bandwidth Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



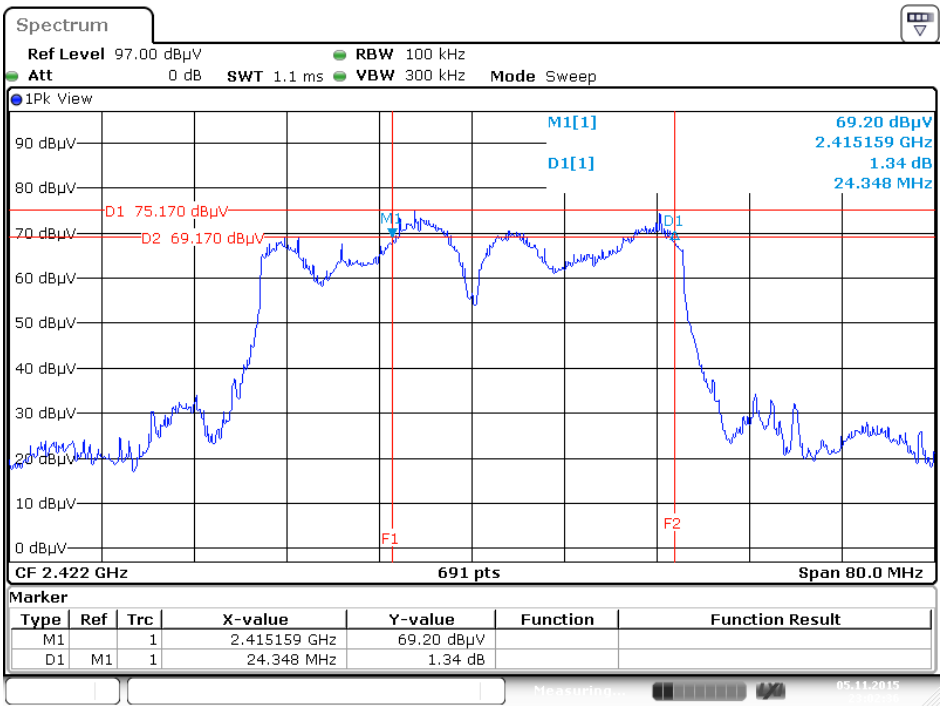
6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT20 / 2412 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



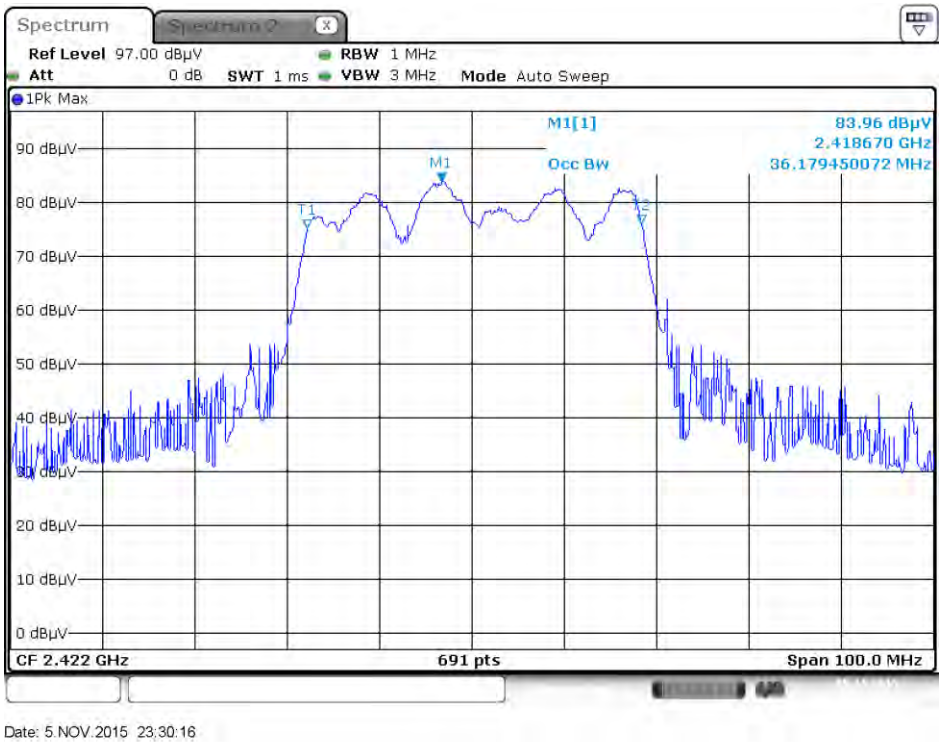
99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT20 / 2437 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT40 / 2422 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4

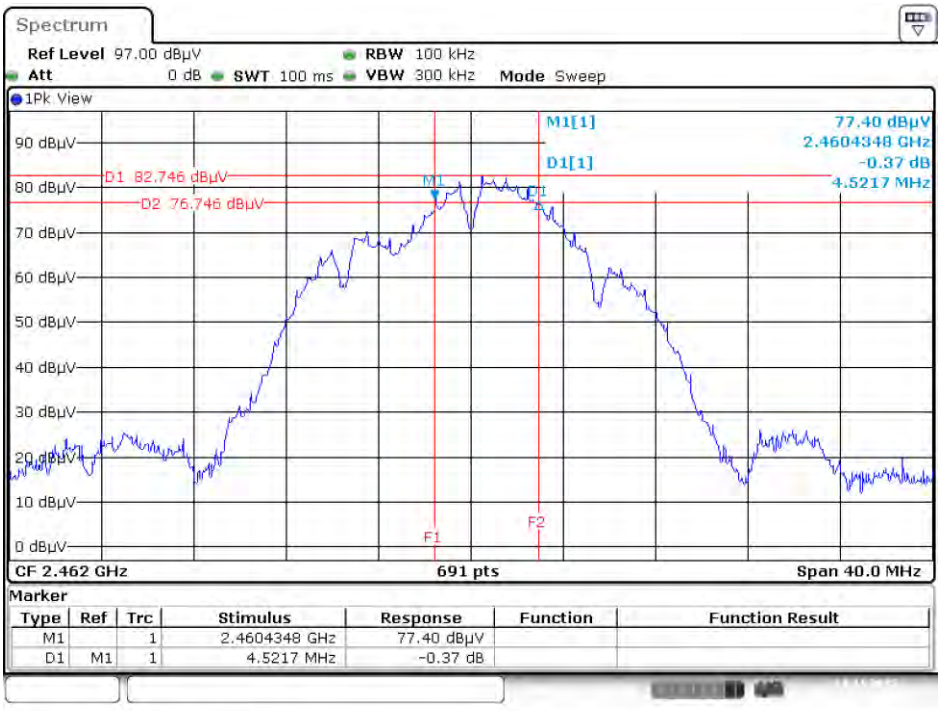


99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT40 / 2422 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4

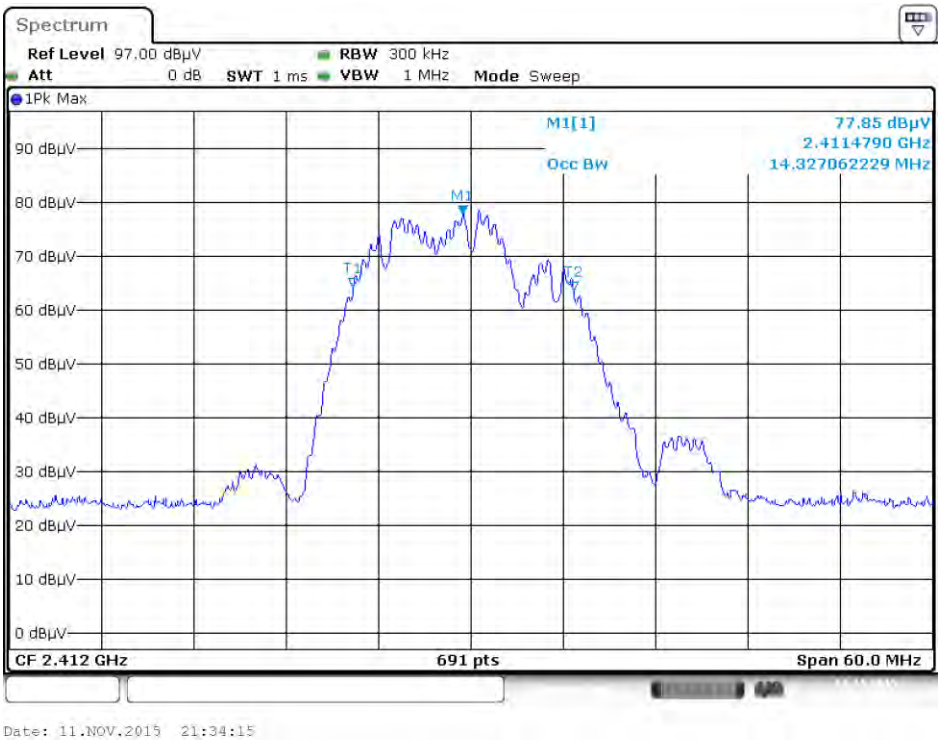


Mode 4: EUT 1 + Set 4 Sector Antenna / 10.5 dBi

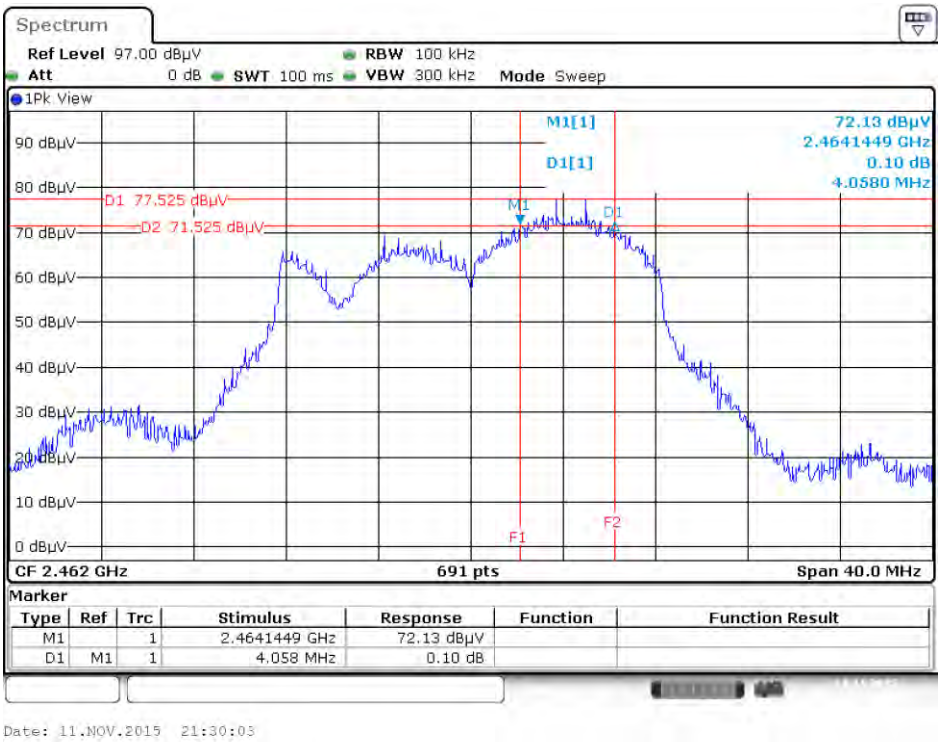
6 dB Bandwidth Plot on Configuration IEEE 802.11b / 2462 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



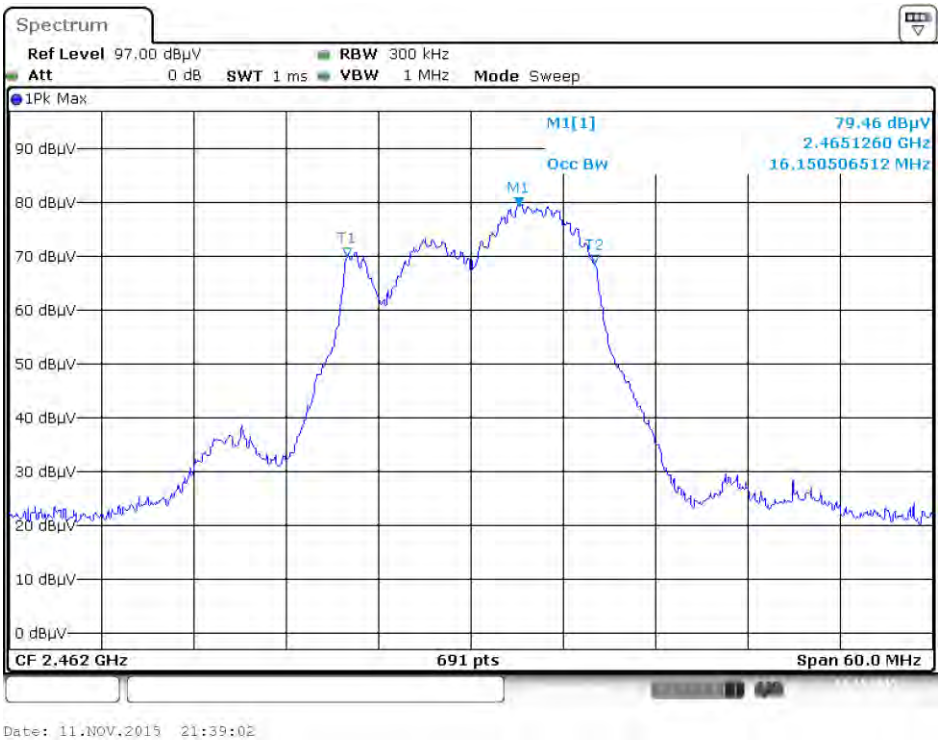
99% Occupied Bandwidth Plot on Configuration IEEE 802.11b / 2412 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



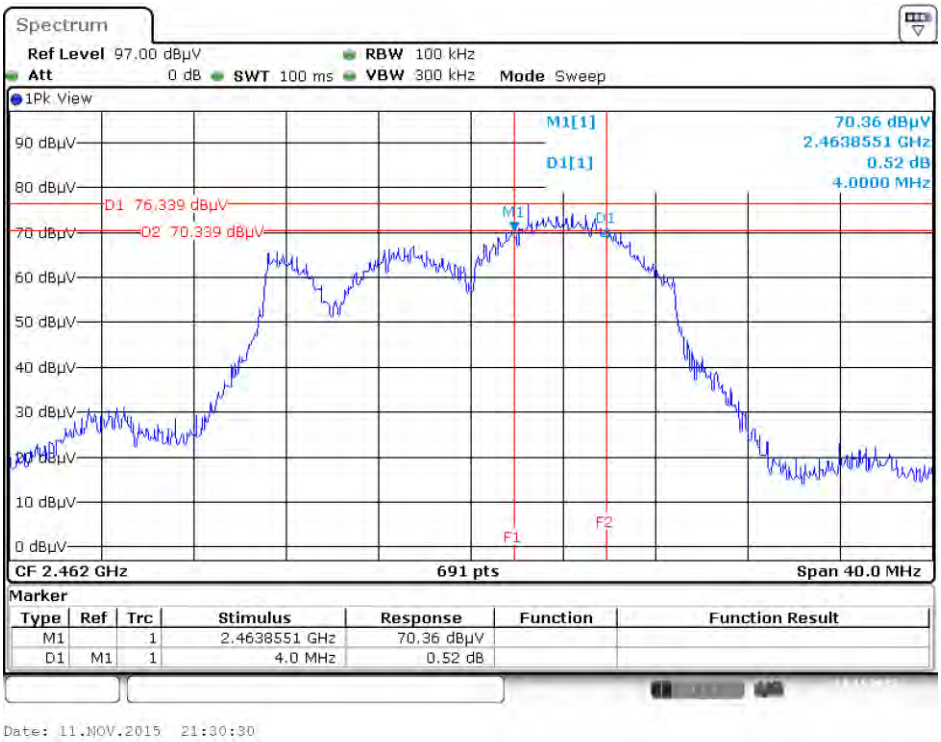
6 dB Bandwidth Plot on Configuration IEEE 802.11g / 2462 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



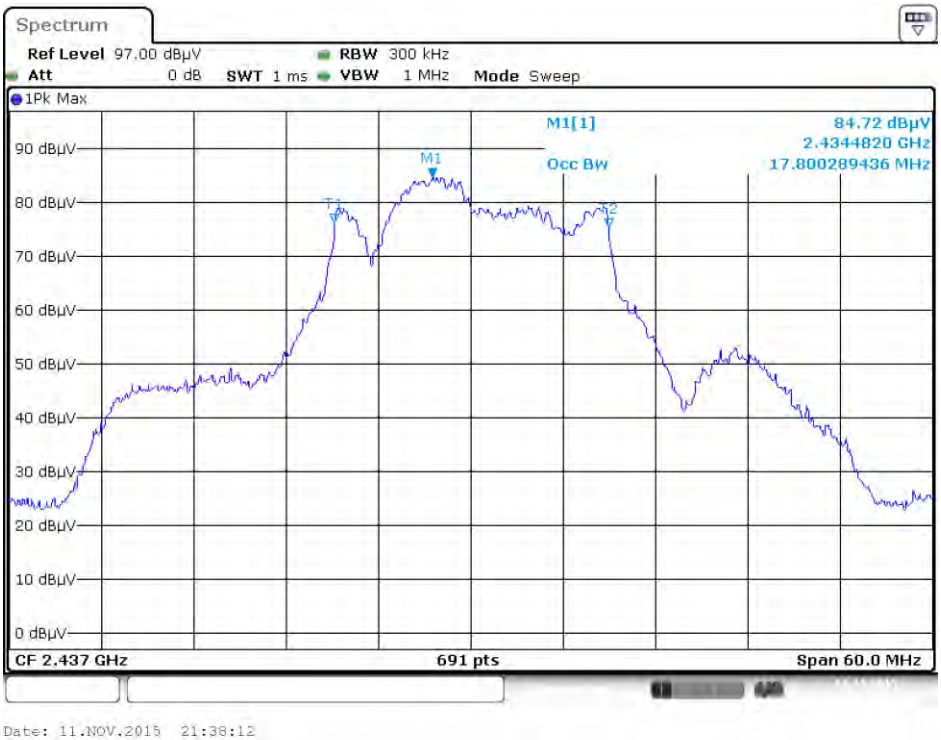
99% Occupied Bandwidth Plot on Configuration IEEE 802.11g / 2462 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



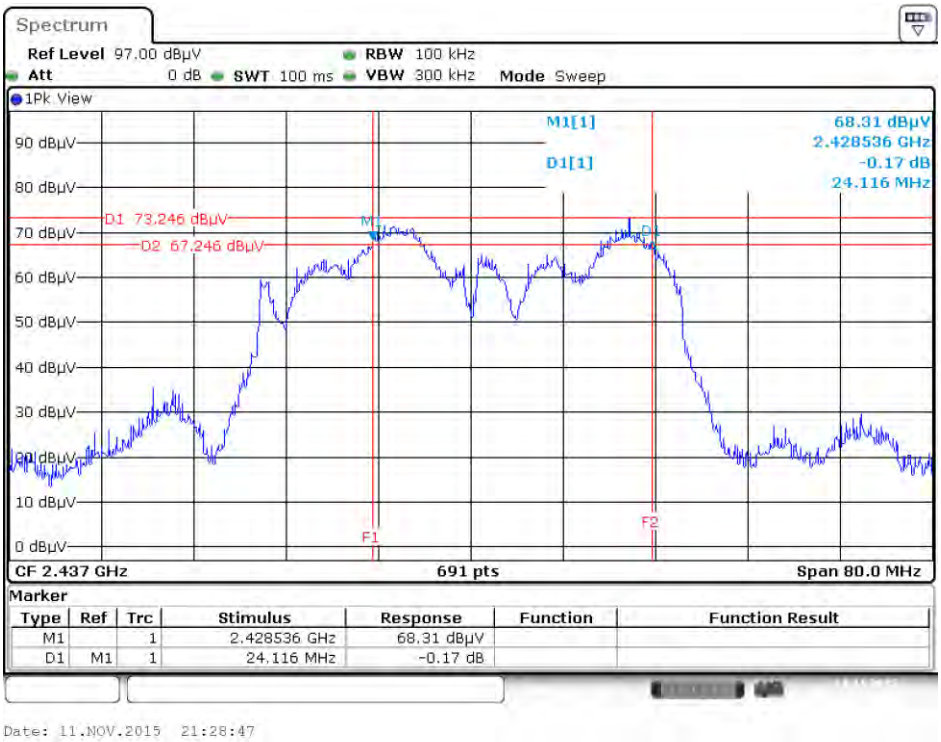
6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT20 / 2462 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



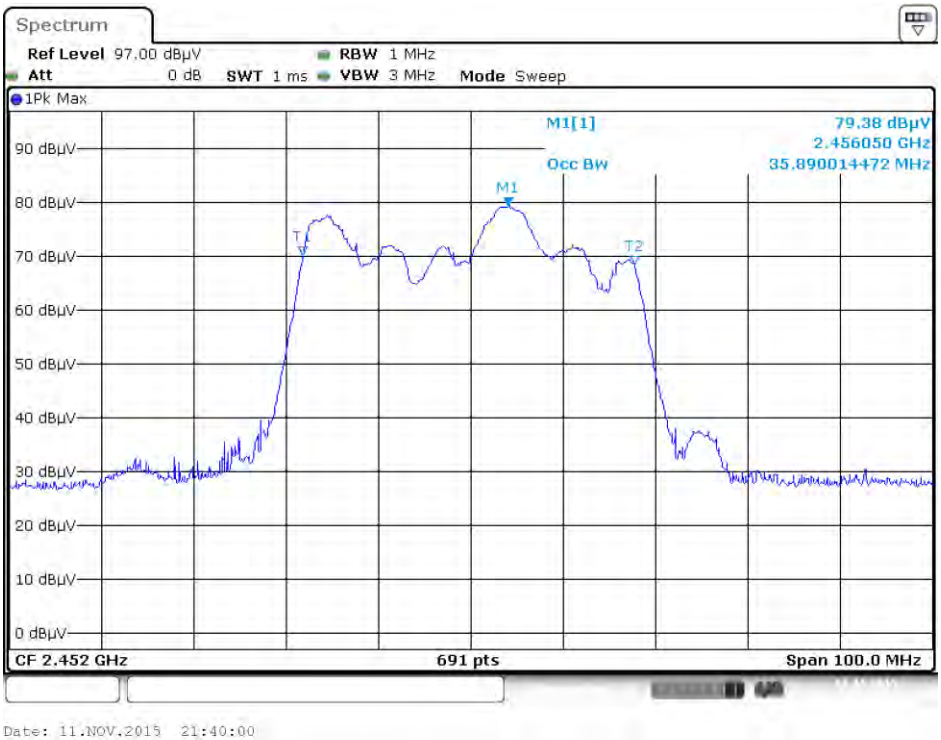
99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT20 / 2437 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT40 / 2437 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4

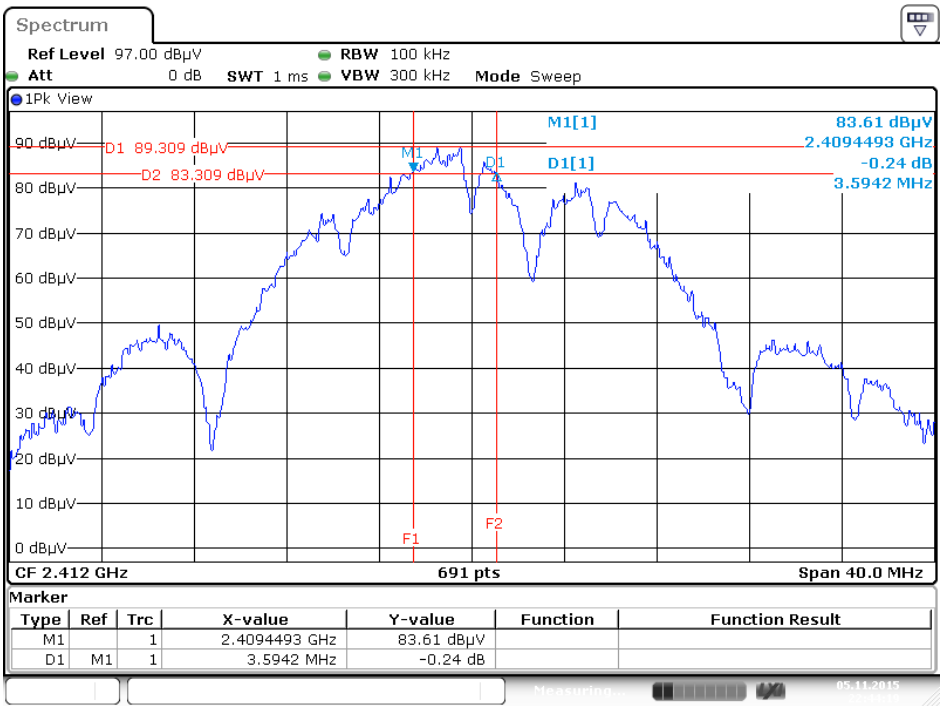


99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT40 / 2452 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4

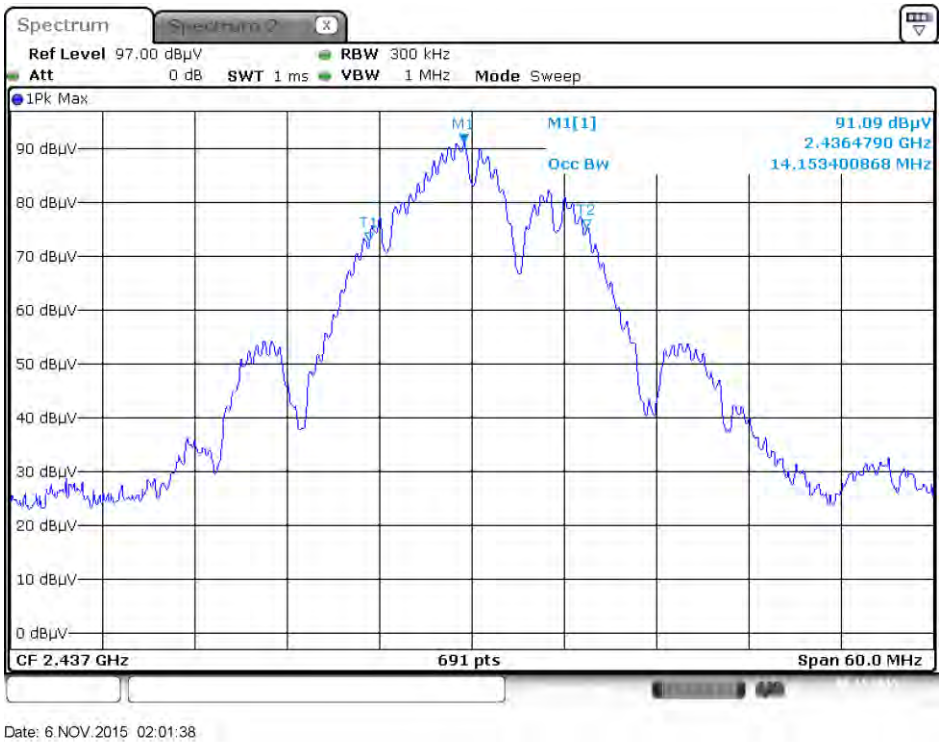


Mode 5: EUT 1 + Set 7 Sector Antenna / 5 dBi

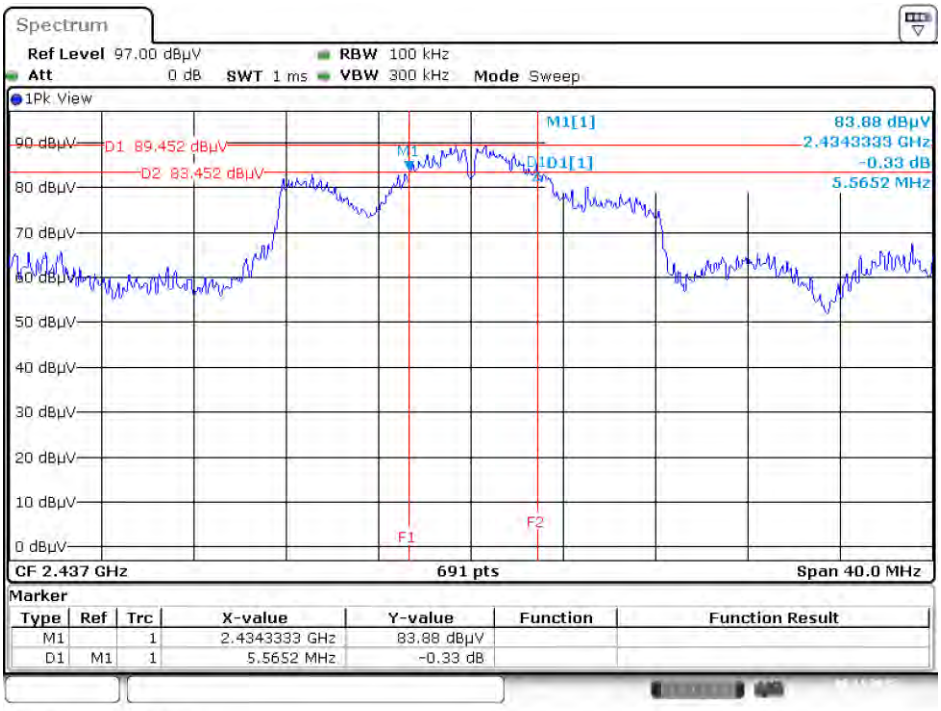
6 dB Bandwidth Plot on Configuration IEEE 802.11b / 2412 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



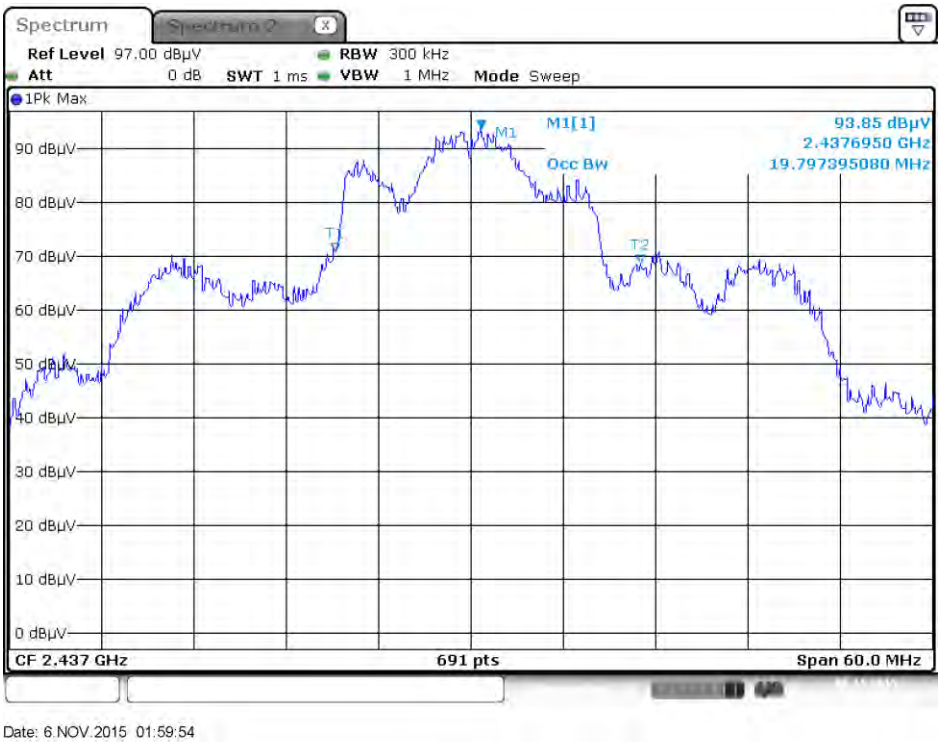
99% Occupied Bandwidth Plot on Configuration IEEE 802.11b / 2437 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



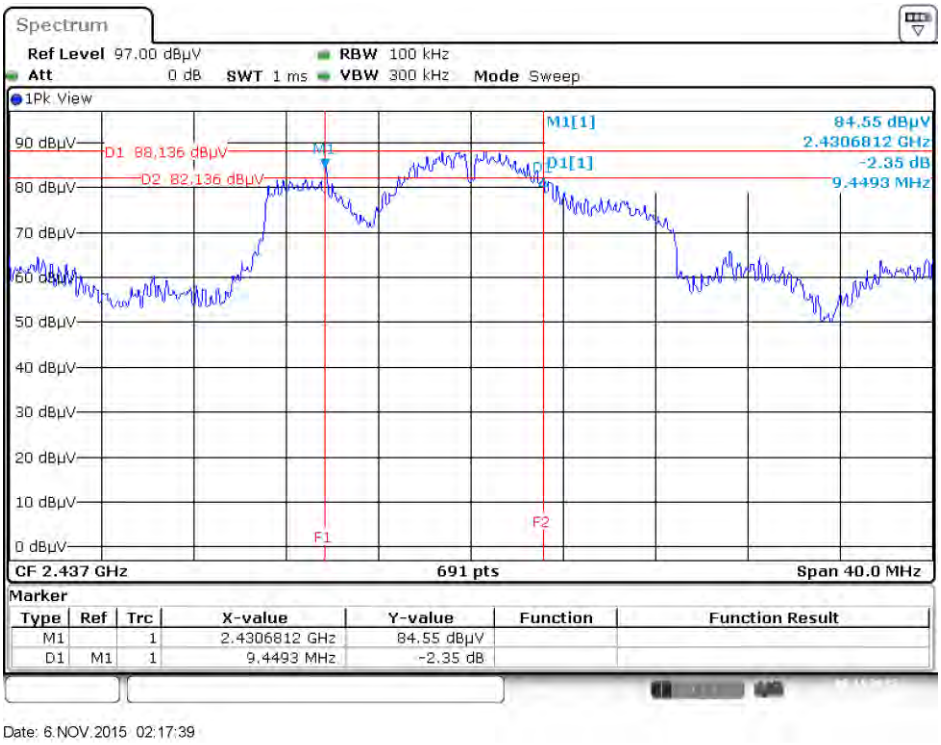
6 dB Bandwidth Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



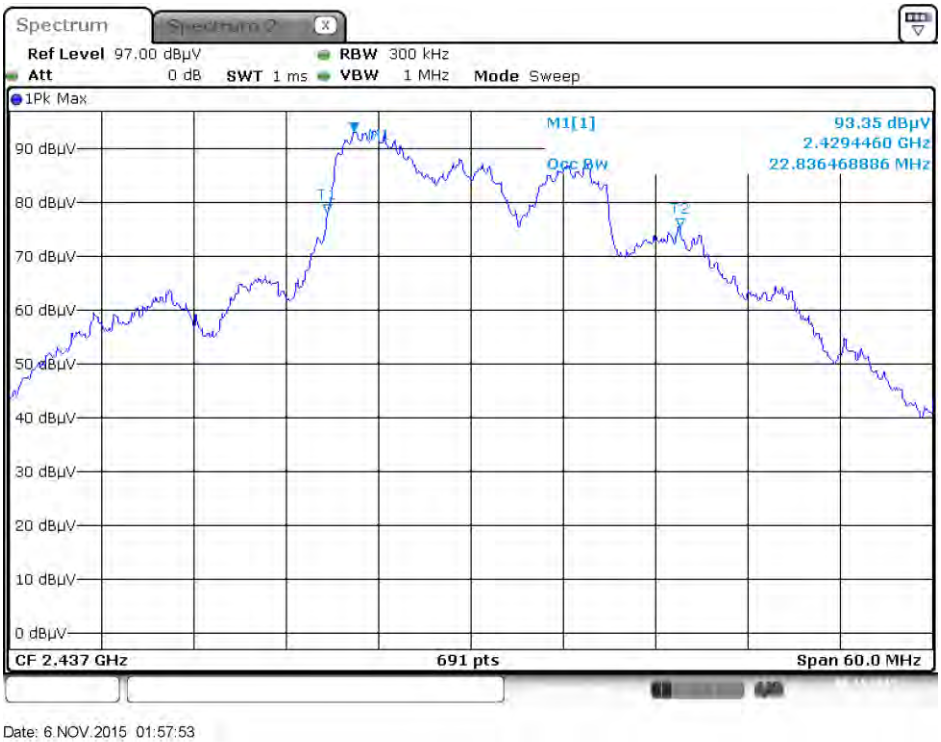
99% Occupied Bandwidth Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



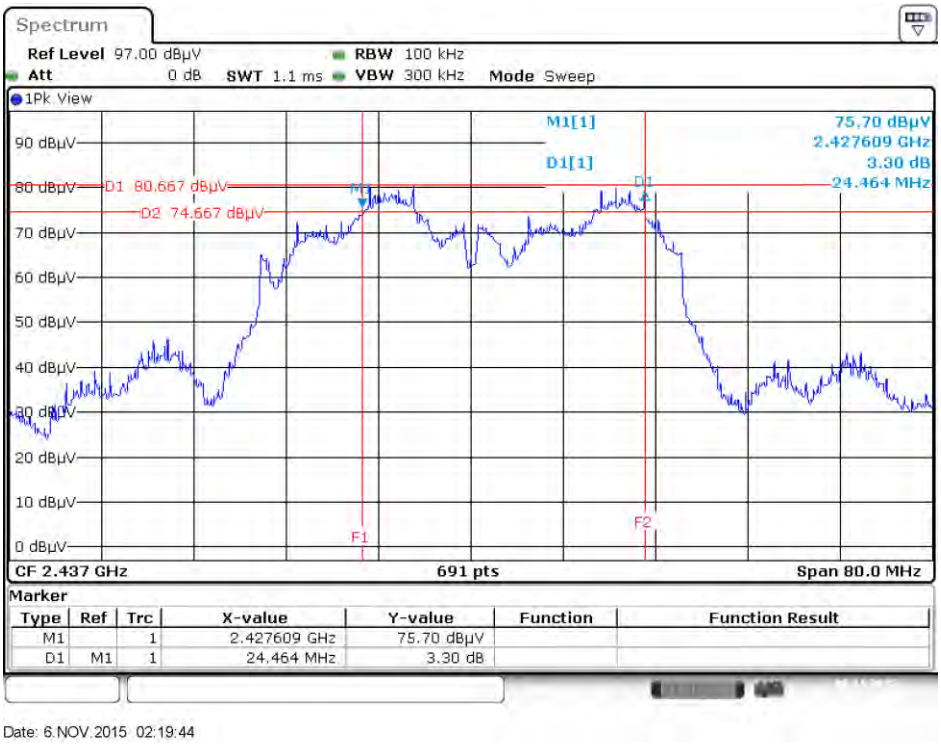
6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT20 / 2437 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT20 / 2437 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



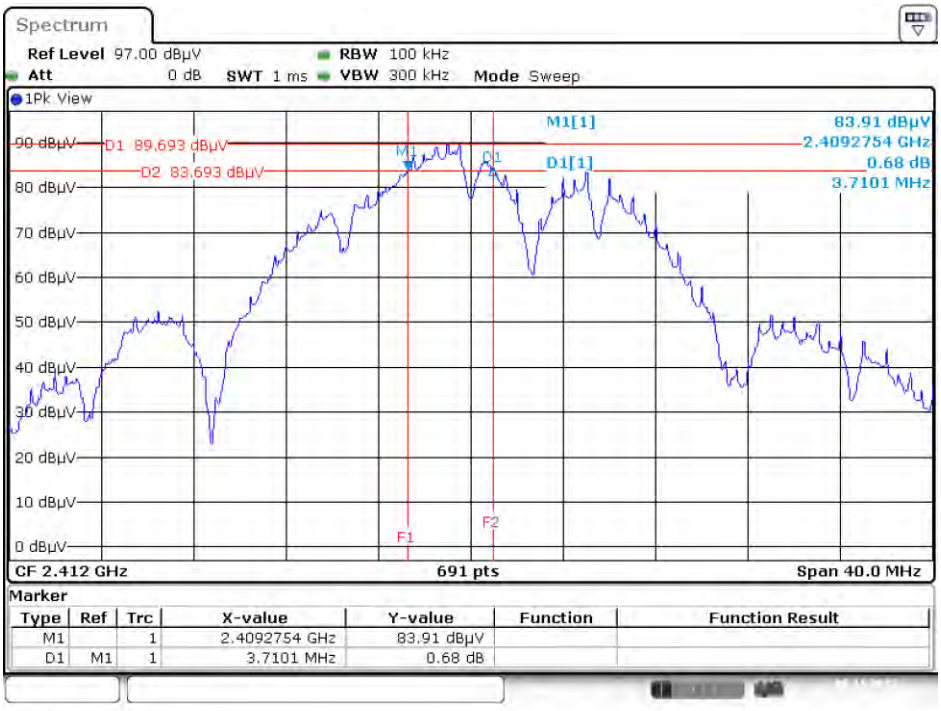
6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT40 / 2437 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT40 / 2422 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4

Mode 6: EUT 1 + Set 8 Dipole Antenna / 4.66 dBi

6 dB Bandwidth Plot on Configuration IEEE 802.11b / 2412 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



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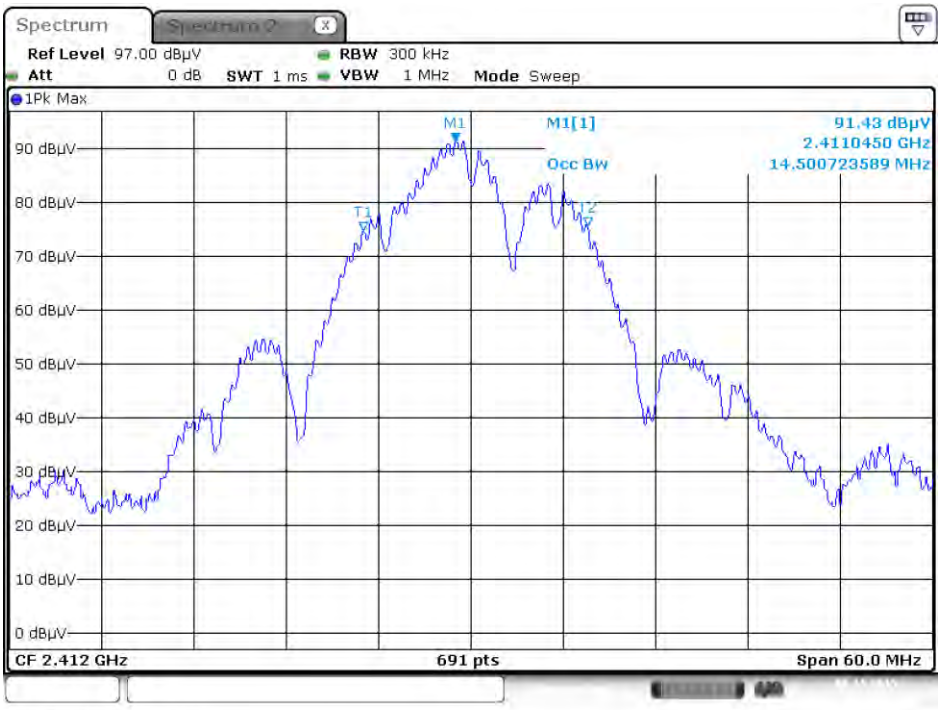
99% Occupied Bandwidth Plot on Configuration IEEE 802.11b / 2412 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



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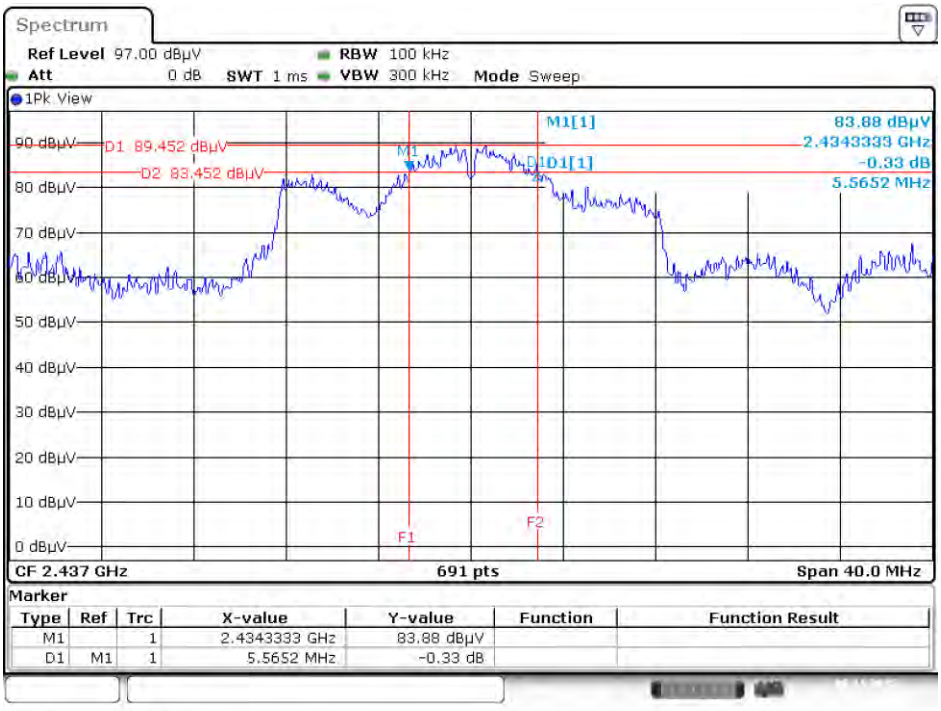
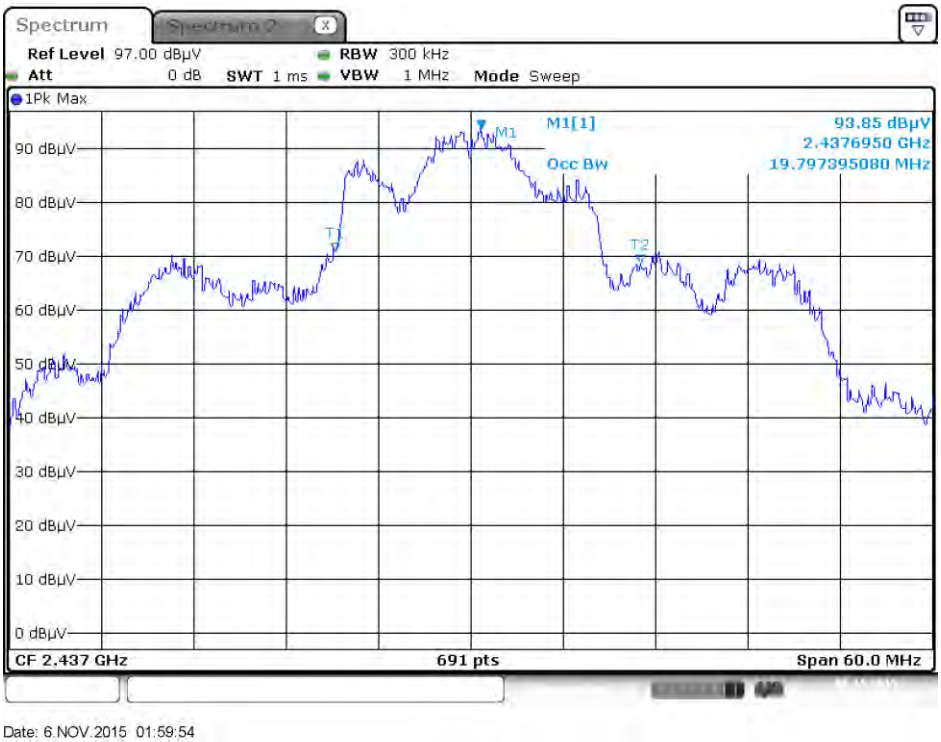
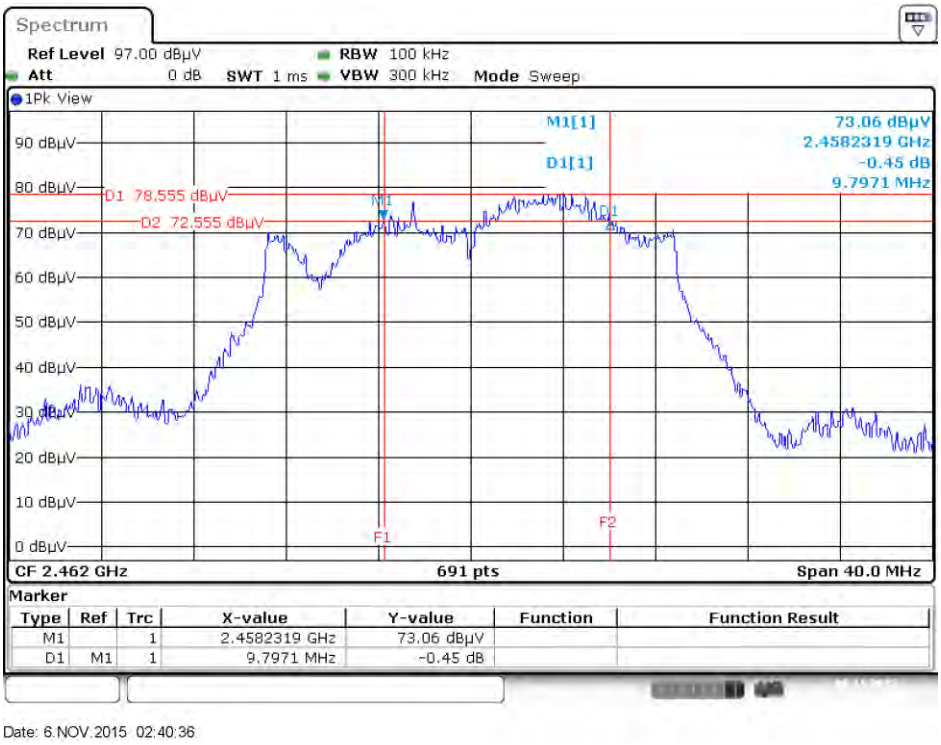
6 dB Bandwidth Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



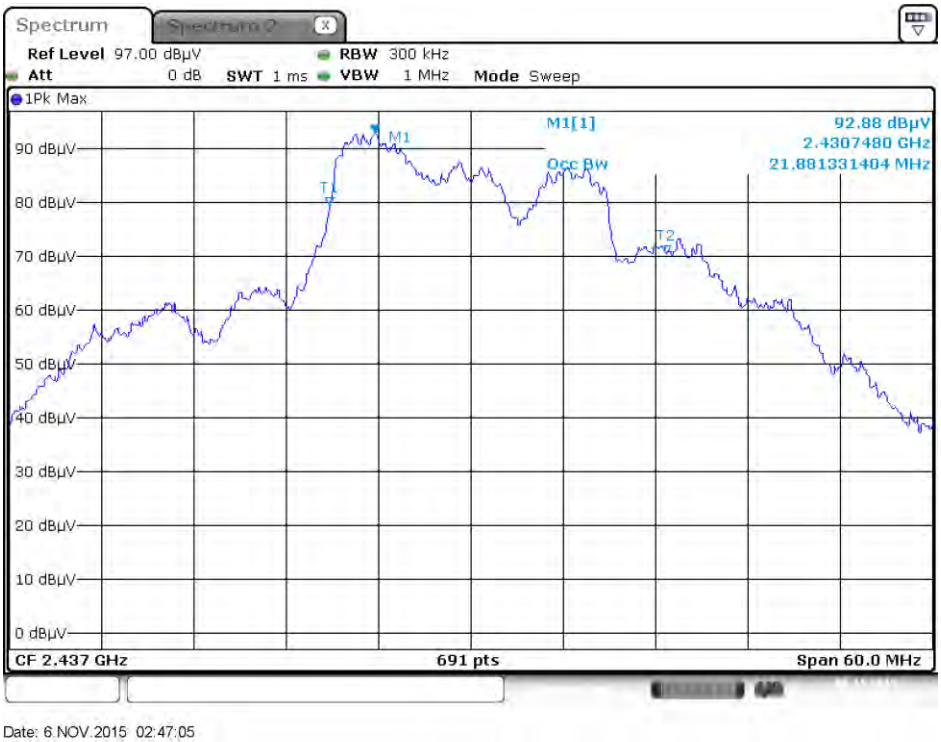
99% Occupied Bandwidth Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



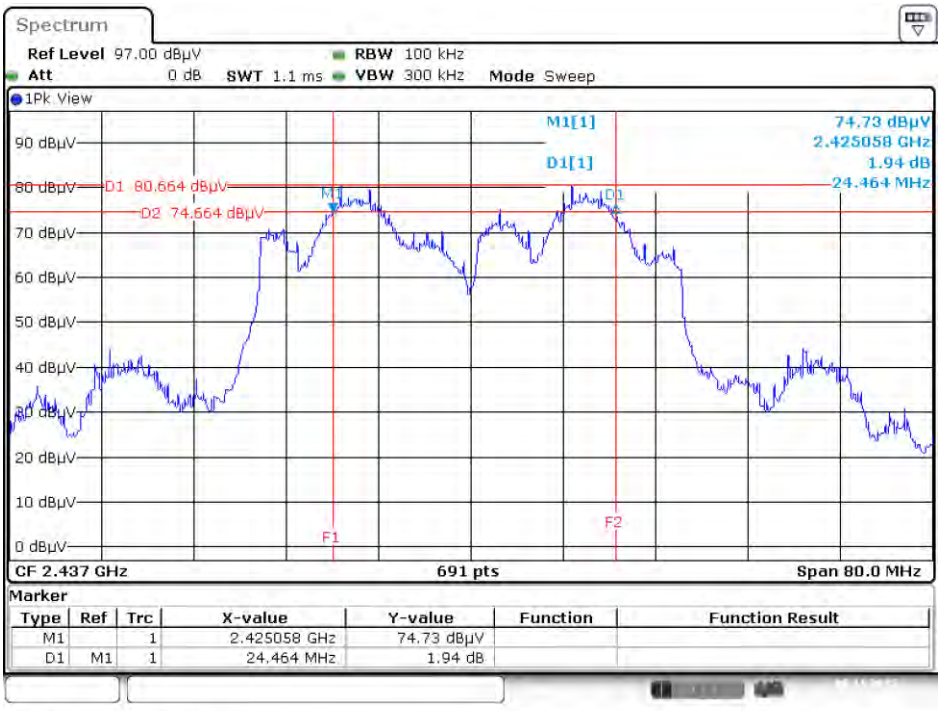
6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT20 / 2462 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



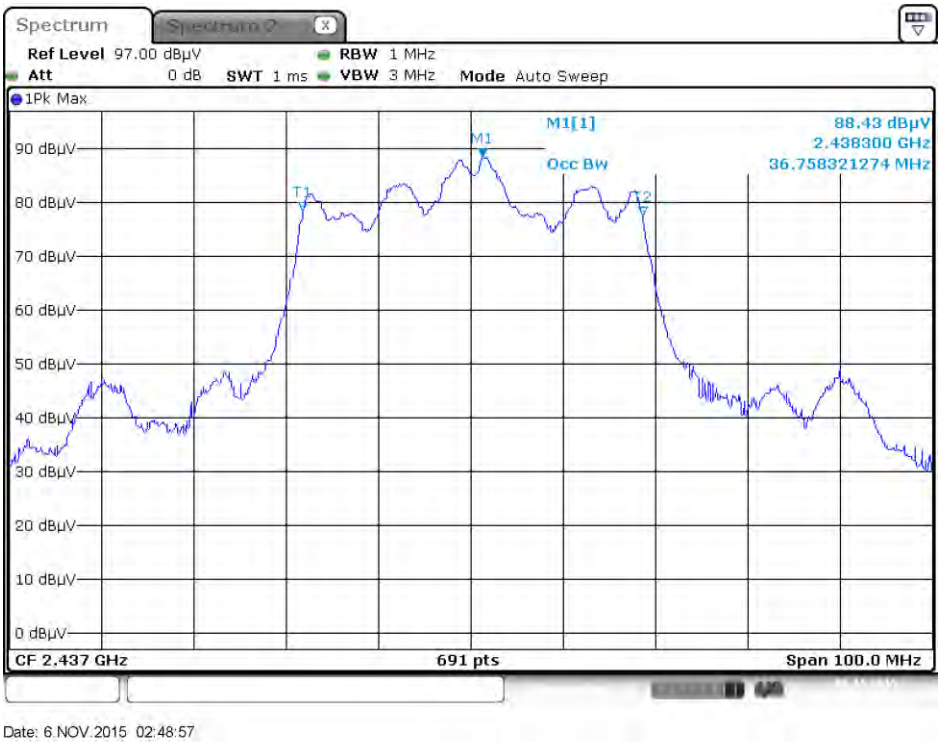
99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT20 / 2437 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT40 / 2437 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4

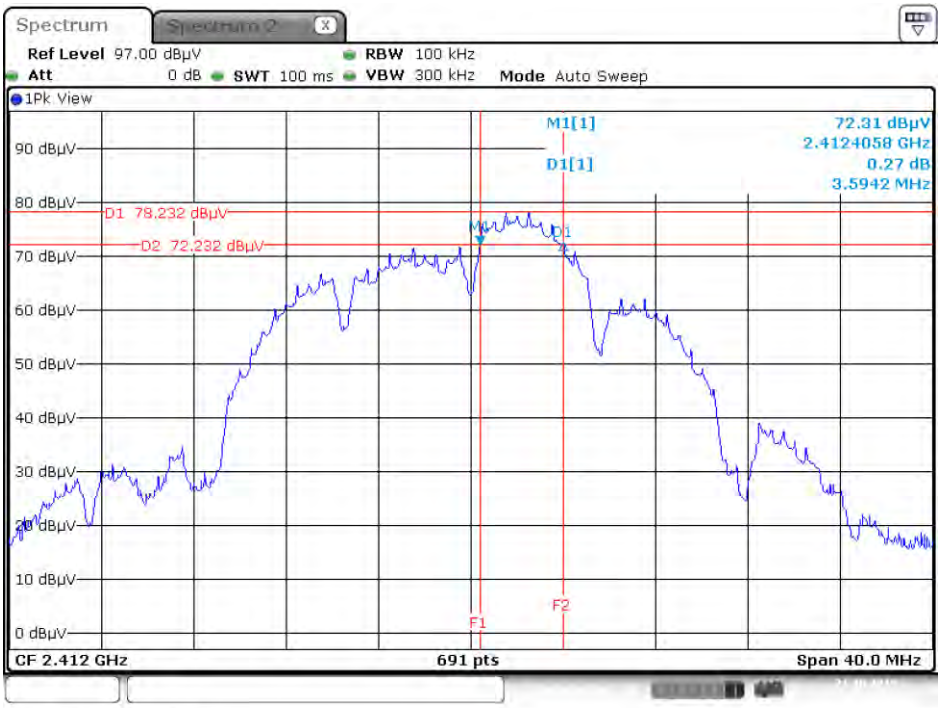


99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT40 / 2437 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4

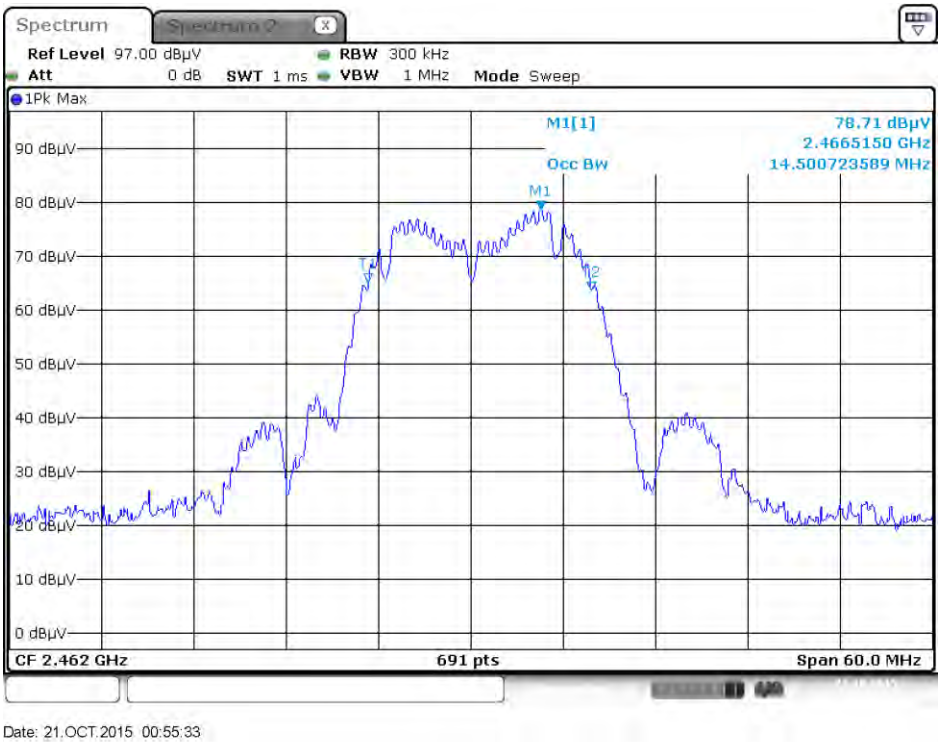


Mode 7: EUT 2 + Set 10 PIFA Antenna / Chain1:3.81 dBi, Chain2:3.75 dBi, Chain3:3.98 dBi, Chain4:3.47 dBi

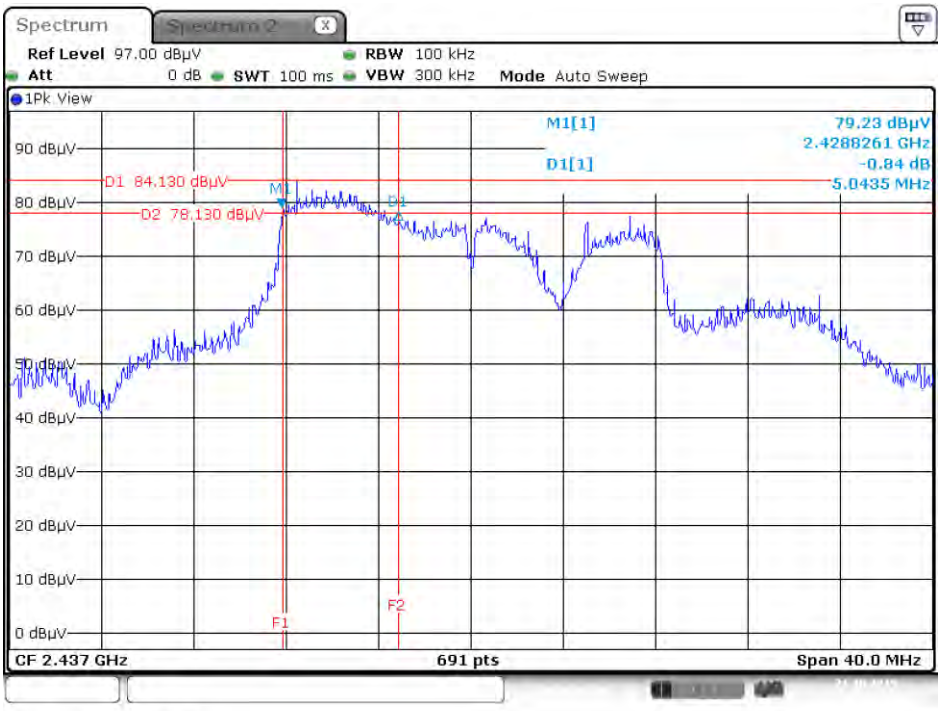
6 dB Bandwidth Plot on Configuration IEEE 802.11b / 2412 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



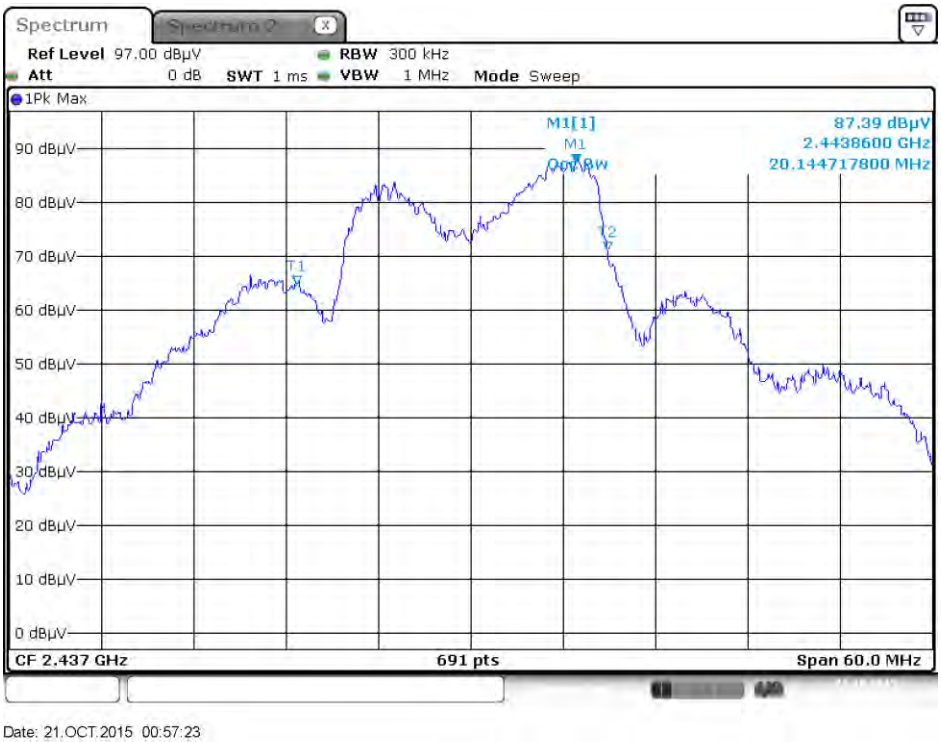
99% Occupied Bandwidth Plot on Configuration IEEE 802.11b / 2462 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



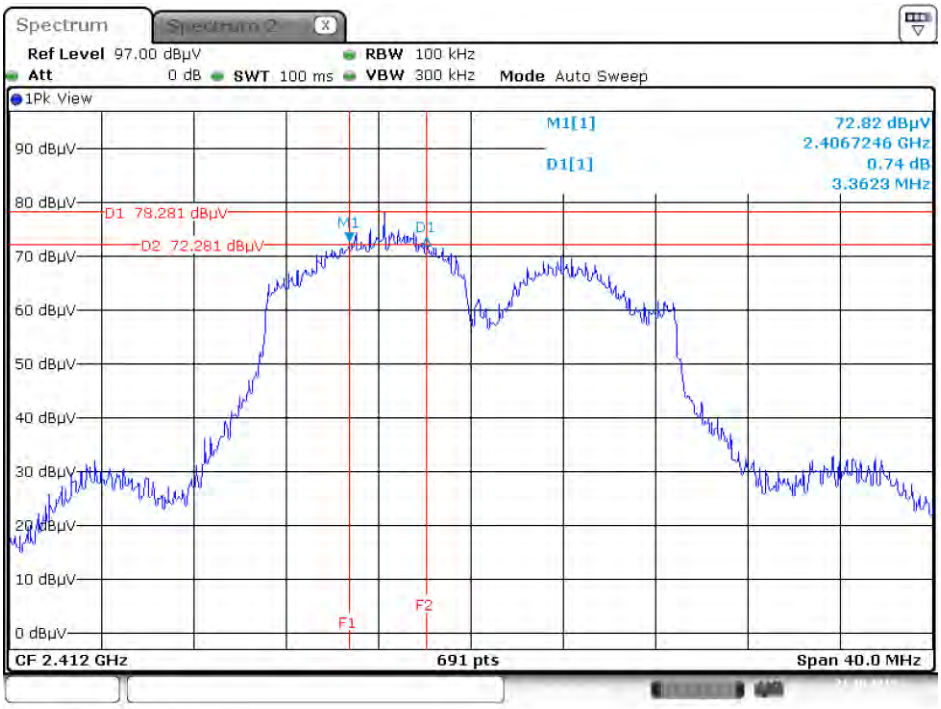
6 dB Bandwidth Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



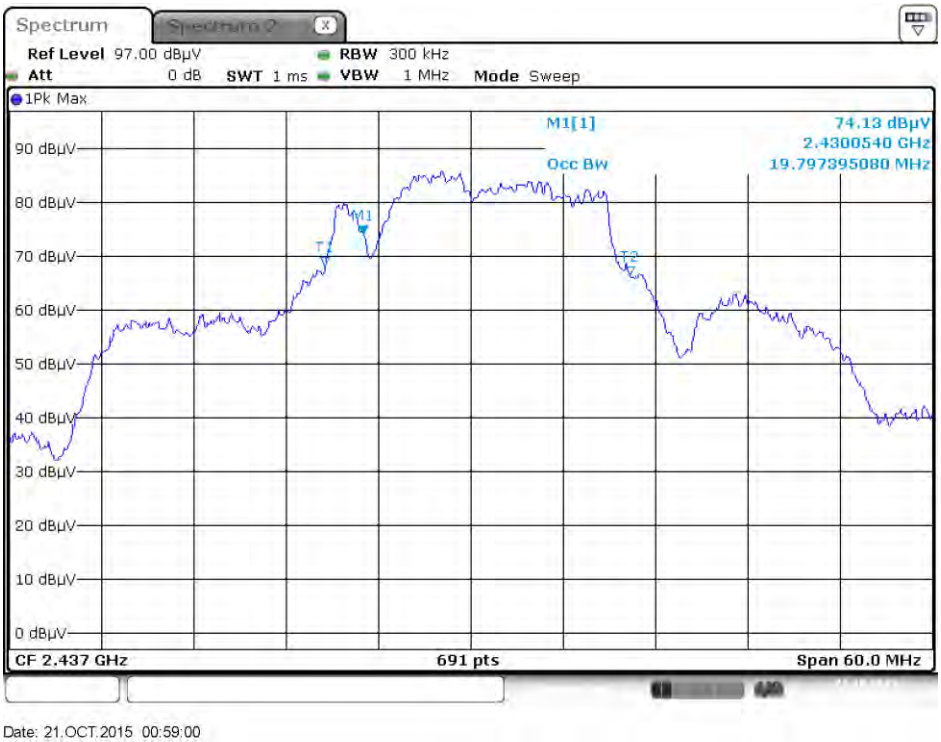
99% Occupied Bandwidth Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



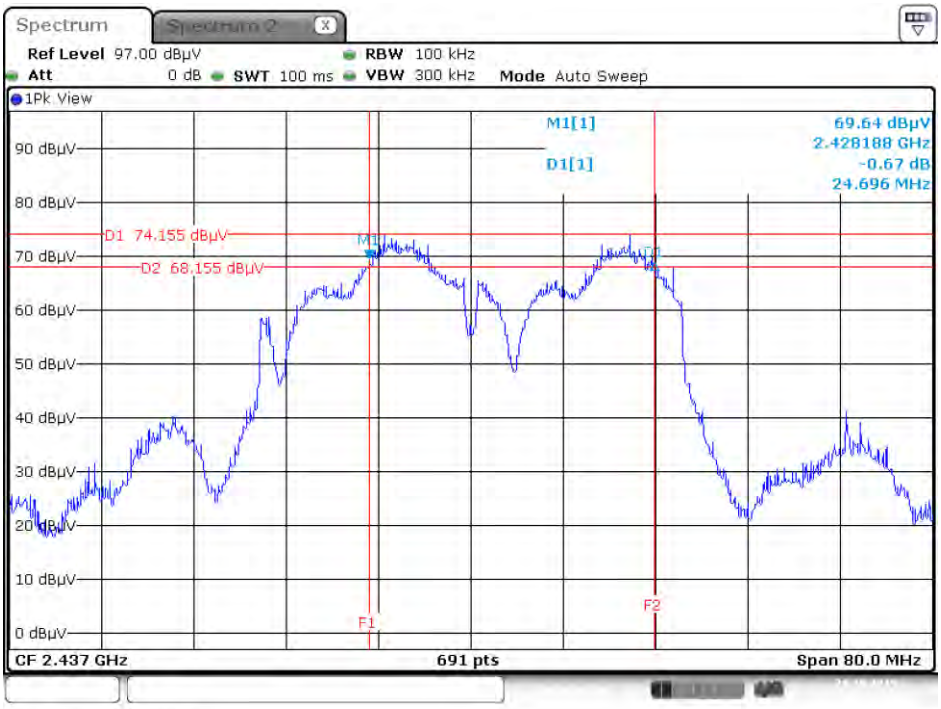
6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT20 / 2412 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT20 / 2437 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT40 / 2437 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT40 / 2422 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4