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FCC RADIO TEST REPORT

Applicant's company	**Symbol Technologies, Inc.**
Applicant Address	One Zebra Plaza Holtsville, NY 11742 USA
FCC ID	**UZ7AP7522**
Manufacturer's company	**Wistron NeWeb Corporation**
Manufacturer Address	20 Park Avenue II, Hsinchu Science Park, Hsinchu 308, Taiwan, R.O.C.

Product Name	Oak External
Brand Name	Symbol
Model No.	AP-7522
Test Rule Part(s)	47 CFR FCC Part 15 Subpart C § 15.247
Test Freq. Range	2400 ~ 2483.5MHz
Received Date	Apr. 15, 2014
Final Test Date	Jul. 31, 2015
Submission Type	Class II Change

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**, **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
FR441804-22AA	Rev. 01	Initial issue of report	Oct. 08, 2015

1. VERIFICATION OF COMPLIANCE

Product Name	:	Oak External
Brand Name	:	Symbol
Model No.	:	AP-7522
Applicant	:	Symbol Technologies, Inc.
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 Apr. 15, 2014 would like to declare that the tested sample has been evaluated and found to be in compliance with the tested rule parts. The data recorded as well as the test configuration specified is true and accurate for showing the sample's EMC nature.

Sam Chen

SPORTON INTERNATIONAL INC.

2. SUMMARY OF THE TEST RESULT

Applied Standard: 47 CFR FCC Part 15 Subpart C				
Part	**Rule Section**	**Description of Test**	**Result**	**Under Limit**
4.1	15.207	AC Power Line Conducted Emissions	Complies	11.59 dB
4.2	15.247(b)(3)	Maximum Conducted Output Power	Complies	1.43 dB
4.3	15.247(e)	Power Spectral Density	Complies	3.42 dB
4.4	15.247(a)(2)	6dB Spectrum Bandwidth	Complies	-
4.5	15.247(d)	Radiated Emissions	Complies	3.94 dB
4.6	15.247(d)	Band Edge Emissions	Complies	1.02 dB
4.7	15.203	Antenna Requirements	Complies	-

3. GENERAL INFORMATION

3.1. Product Details

Items	Description
Product Type	WLAN (1TX,2TX, 1RX,2RX)
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%)	**<For Non-Beamforming Mode>** **Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 1TX)** IEEE 802.11b: 12.32 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 20.14 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.19 MHz **Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 2TX)** IEEE 802.11b: 12.16 MHz **Mode 2 (Ant. 7 Polarized Panel / 11dBi / 1TX)** IEEE 802.11b: 12.50 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 18.67 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 36.76 MHz **Mode 2 (Ant. 7 Polarized Panel / 11dBi / 2TX)** IEEE 802.11b: 12.24 MHz **Mode 3 (Ant. 8 Patch / 5dBi / 1TX)** IEEE 802.11b: 12.42 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 20.14 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 36.76 MHz **Mode 3 (Ant. 8 Patch / 5dBi / 2TX)** IEEE 802.11b: 12.24 MHz

	<For Beamforming Mode> **Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 2TX)** IEEE 802.11ac MCS0/Nss1 (VHT20): 18.06 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 36.61 MHz **Mode 2 (Ant. 7 Polarized Panel / 11dBi / 2TX)** IEEE 802.11ac MCS0/Nss1 (VHT20): 18.06 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 36.61 MHz **Mode 3 (Ant. 8 Patch / 5dBi / 2TX)** IEEE 802.11ac MCS0/Nss1 (VHT20): 18.23 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 36.76 MHz
Maximum Conducted Output Power	<For Non-Beamforming Mode> **Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 1TX)** IEEE 802.11b: 21.38 dBm IEEE 802.11g: 21.17 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 21.20 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 14.81 dBm **Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 2TX)** IEEE 802.11b: 24.46 dBm IEEE 802.11g: 22.50 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 22.65 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 16.60 dBm **Mode 2 (Ant. 7 Polarized Panel / 11dBi / 1TX)** IEEE 802.11b: 21.45 dBm IEEE 802.11g: 20.77 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 20.72 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 15.19 dBm **Mode 2 (Ant. 7 Polarized Panel / 11dBi / 2TX)** IEEE 802.11b: 23.57 dBm IEEE 802.11g: 22.47 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 22.37 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 17.61 dBm **Mode 3 (Ant. 8 Patch / 5dBi / 1TX)** IEEE 802.11b: 21.40 dBm IEEE 802.11g: 21.17 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 21.20 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 16.78 dBm **Mode 3 (Ant. 8 Patch / 5dBi / 2TX)** IEEE 802.11b: 24.46 dBm

	IEEE 802.11g: 23.88 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 23.82 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 18.08 dBm <For Beamforming Mode> **Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 2TX)** IEEE 802.11g: 22.43 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 22.78 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 16.46 dBm **Mode 2 (Ant. 7 Polarized Panel / 11dBi / 2TX)** IEEE 802.11g: 22.47 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 22.33 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 17.65 dBm **Mode 3 (Ant. 8 Patch / 5dBi / 2TX)** IEEE 802.11g: 23.90 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 23.89 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 18.14 dBm
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3

Items	Description	
Beamforming Function	☒ With beamforming	☐ Without beamforming

Note: The beamforming function supports 802.11g/n/ac in 2.4GHz and 802.11a/n/ac in 5GHz.

Antenna and Band width

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

IEEE 802.11n/ac Spec.

Protocol	Number of Transmit Chains (NTX)	Data Rate / MCS
802.11n (HT20)	1,2	MCS 0-15
802.11n (HT40)	1,2	MCS 0-15
802.11ac (VHT20)	1,2	MCS 0-9/Nss1-2
802.11ac (VHT40)	1,2	MCS 0-9/Nss1-2

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

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

Note 3: Modulation modes consist of below configuration: HT20/HT40: IEEE 802.11n, VHT20/VHT40: IEEE 802.11ac

3.2. Accessories

Power	Brand	Model	Rating
Adapter	Leader	NU60-H120500-13	INPUT: 100-240V ~ 50/60Hz, 1.4A OUTPUT: 12.0V, 5.0A

3.3. Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector	Indoor/ Outdoor	Antenna Gain (dBi)		Cable Loss (dBi)		True Gain (dBi)	
						2.4G	5G	2.4G	5G	2.4G	5G
1	MOTOROLA	ML-2452-APA2-01	Dipole	RP-SMA Male	Indoor	3.17	4.85	-	-	3.17	4.85
2	MOTOROLA	ML-2452-HPA5-036	Dipole	RP-SMA Male	Indoor/ Outdoor	3	5	-	-	3	5
3	MOTOROLA	ML-2452-APAG2A1-01	Dipole	RP-SMA Male	Indoor	2.7	1.7	-	-	2.7	1.7
4	MOTOROLA	ML-2452-PNA5-01R	Panel	N-Type Male	Indoor/ Outdoor	5.5	6	0.7	0.9	4.8	5.1
5	ZEBRA	ML-2452-HPA6-01	Dipole	N-Type	Indoor/ Outdoor	5.3	6.1	0.7	0.9	4.6	5.2
6	ZEBRA	ML-2452-HPAG4A6-01	Dipole	N male	Indoor/ Outdoor	4	7.3	0.7	0.9	3.3	6.4
7	ZEBRA	ML-2452-PNL9M3-N36	Polarized Panel	N-Type Male*3	Indoor/ Outdoor	11	10.7	-	-	11	10.7
8	ZEBRA	ML-2452-PTA3M3-036	Patch	RP-SMA Male*3	Indoor	5	4	-	-	5	4
9	ZEBRA	ML-2452-VMM5M3-N72	Patch	N-Type Male*3	Indoor/ Outdoor	4.5	5.4	-	-	4.5	5.4

Note1: There are 9 antennas in the antenna table list.

For Ant. 1~Ant. 4

The test result of Ant. 1~Ant. 4 for 2.4GHz, please refer to FR441804-04AA radio test report.

For Ant. 5~Ant. 9

The EUT has three types of antenna. Only the highest gain antenna was selected from each different type of antenna to test and record in this report.

Ant. 5, Ant. 7 and Ant. 8 were selected to perform the test and recorded in this report.

For Ant. 7: One is Horizontal and the others are Vertical for antenna position.

Note2: Cables to use the N connector antennas to the AP (RP-SMA) are list in the Antenna Guide.

Note3: RF Connector Adapter used during testing, settings adjusted for measured loss.

<For 2.4GHz Band>

For IEEE 802.11b/g/n/ac mode (1TX,2TX/1RX,2RX):

The EUT can support 1TX, 2TX and 1RX, 2RX functions.

For 1TX (Ant. 5 and Ant. 8)

Both Chain 1 and Chain 2 support transmit and receive functions, but only one of them will be used at one time.

After evaluating, Chain 1 has been evaluated to be the worst case, so it's selected to record in this test report.

For 1TX (Ant. 7)

Both Chain 1 and Chain 2 support transmit and receive functions, but only one of them will be used at one time.

After evaluating, Chain 2 has been evaluated to be the worst case, so it's selected to record in this test report.

For 2TX

Chain 1 and Chain 2 could transmit/receive simultaneously.

<For 5GHz Band>

For IEEE 802.11a/n/ac mode (1TX,2TX/1RX,2RX):

The EUT can support 1TX, 2TX and 1RX, 2RX functions.

For 1TX (Ant. 4, Ant. 6 and Ant. 7)

Both Chain 1 and Chain 2 support transmit and receive functions, but only one of them will be used at one time.

After evaluating, Chain 2 has been evaluated to be the worst case, so it's selected to record in this test report.

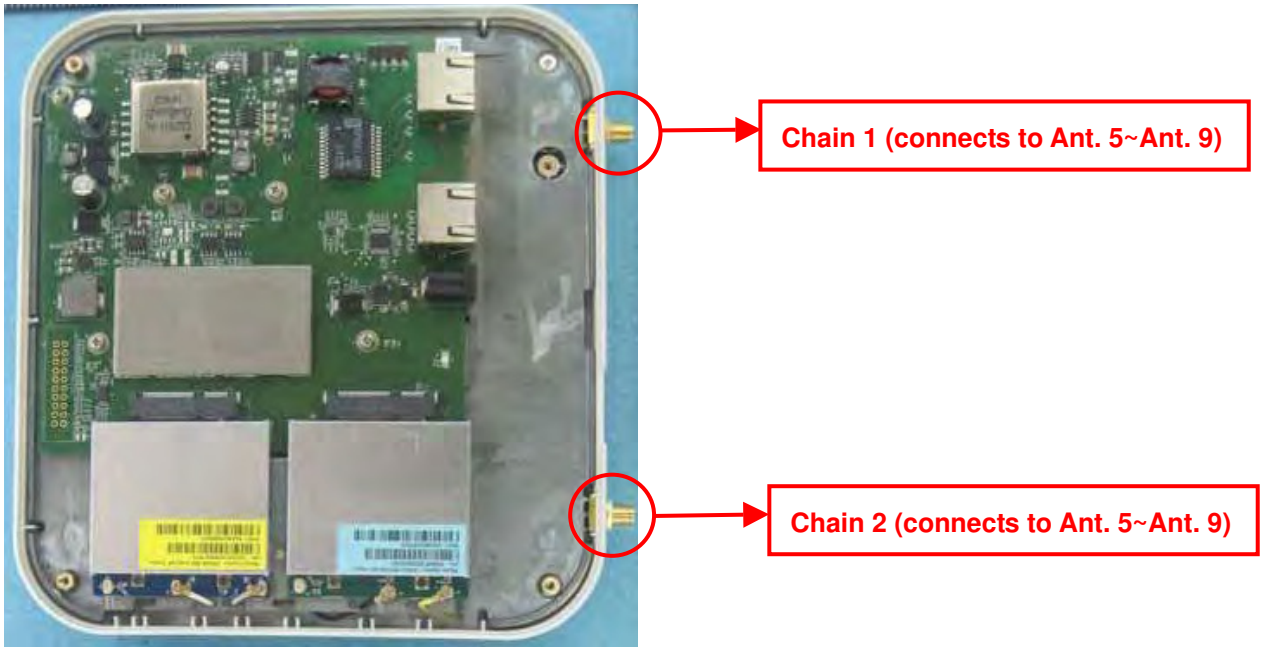
For 1TX (Ant. 9)

Both Chain 1 and Chain 2 support transmit and receive functions, but only one of them will be used at one time.

After evaluating, Chain 1 has been evaluated to be the worst case, so it's selected to record in this test report.

For 2TX

Chain 1 and Chain 2 could transmit/receive simultaneously.


Chain 1 (connects to Ant. 5~Ant. 9)
Chain 2 (connects to Ant. 5~Ant. 9)

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	**For Non-Beamforming Mode**			
	11b/CCK	1 Mbps	1/6/11	1(Ant. 5, 8) 2(Ant. 7) 1+2
	11g/BPSK	6 Mbps	1/6/11	1(Ant. 5, 8) 2(Ant. 7) 1+2
	11ac VHT20	MCS0/Nss1	1/6/11	1(Ant. 5, 8) 2(Ant. 7) 1+2
	11ac VHT40	MCS0/Nss1	3/6/9	1(Ant. 5, 8) 2(Ant. 7) 1+2
	For Beamforming Mode			
	11g/BPSK	6 Mbps	1/6/11	1+2
	11ac VHT20	MCS0/Nss1	1/6/11	1+2
	11ac VHT40	MCS0/Nss1	3/6/9	1+2
Power Spectral Density	**For Non-Beamforming Mode**			
	11b/CCK	1 Mbps	1/6/11	1(Ant. 5, 8) 2(Ant. 7) 1+2
	11ac VHT20	MCS0/Nss1	1/6/11	1(Ant. 5, 8) 2(Ant. 7) 1+2
	11ac VHT40	MCS0/Nss1	3/6/9	1(Ant. 5, 8) 2(Ant. 7) 1+2
	For Beamforming Mode			
	11ac VHT20	MCS0/Nss1	1/6/11	1+2
	11ac VHT40	MCS0/Nss1	3/6/9	1+2

6dB Spectrum Bandwidth	**For Non-Beamforming Mode**			
	11b/CCK	1 Mbps	1/6/11	1(Ant. 5, 8) 2(Ant. 7) 1+2
	11ac VHT20	MCS0/Nss1	1/6/11	1(Ant. 5, 8) 2(Ant. 7)
	11ac VHT40	MCS0/Nss1	3/6/9	1(Ant. 5, 8) 2(Ant. 7)
	For Beamforming Mode			
	11ac VHT20	MCS0/Nss1	1/6/11	1+2
	11ac VHT40	MCS0/Nss1	3/6/9	1+2
Radiated Emissions Below 1GHz	Normal Link	-	-	-
Radiated Emissions Above 1GHz	**For Non-Beamforming Mode**			
	11b/CCK	1 Mbps	1/6/11	1(Ant. 5, 8) 2(Ant. 7) 1+2
	11ac VHT20	MCS0/Nss1	1/6/11	1(Ant. 5, 8) 2(Ant. 7)
	11ac VHT40	MCS0/Nss1	3/6/9	1(Ant. 5, 8) 2(Ant. 7)
	For Beamforming Mode			
	11ac VHT20	MCS0/Nss1	1/6/11	1+2
	11ac VHT40	MCS0/Nss1	3/6/9	1+2
Band Edge Emissions	**For Non-Beamforming Mode**			
	11b/CCK	1 Mbps	1/6/11	1(Ant. 5, 8) 2(Ant. 7) 1+2
	11ac VHT20	MCS0/Nss1	1/6/11	1(Ant. 5, 8) 2(Ant. 7)
	11ac VHT40	MCS0/Nss1	3/6/9	1(Ant. 5, 8) 2(Ant. 7)
	For Beamforming Mode			
	11ac VHT20	MCS0/Nss1	1/6/11	1+2
	11ac VHT40	MCS0/Nss1	3/6/9	1+2

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

The following test modes were performed for all tests:

For Conducted Emission test:

Mode 1. Normal Link - EUT + Ant. 7 + Adapter

Mode 2. Normal Link - EUT + Ant. 7 + PoE

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

For Radiated Emission below 1GHz test:

Mode 1. Normal Link - EUT in Z axis + Ant. 7 + Adapter

Mode 2. Normal Link - EUT in Y axis + Ant. 7 + Adapter

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

Mode 3. Normal Link - EUT in Y axis + Ant. 7 + 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 was performed at Y axis and Z axis position for Radiated emission above 1GHz test, and the worst case was found at Y axis. So the measurement will follow this same test configuration.

Mode 1. CTX - EUT in Y axis + Ant. 5

Mode 2. CTX - EUT in Y axis + Ant. 7

Mode 3. CTX - EUT in Y axis + Ant. 8

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 FA: 441804-22) 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.

Note: The PoE is for measurement only, would not be marketed.

The PoE information as below:

Power	Brand	Model
PoE	Motorola	PD-9001GR/AT/AC

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
CO01-CB	Conduction	Hsin Chu	262045	IC 4086D
TH01-CB	OVEN Room	Hsin Chu	-	-

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

3.7. Table for Class II Change

This product is an extension of original one reported under Sporton project number: FR441804-04AA
Below is the table for the change of the product with respect to the original one.

<table>
<tr><th colspan="2">Modifications</th></tr>
<tr><td colspan="2">1. Changing Applicant to “Symbol Technologies, Inc.” from “Motorola Solutions, Inc.”
2. Changing Applicant address to “One Zebra Plaza Holtsville, NY 11742 USA” from “One Motorola Plaza Holtsville, NY 11742 USA”.
3. Changing brand name to “Symbol” from “MOTOROLA”</td></tr>
<tr><th>Modifications</th><th>Performance Checking</th></tr>
<tr><td>4. Adding 6 antennas.
(Ant. 5-Model name: ML-2452-HPA6-01)
(Ant. 6-Model name: ML-2452-HPAG4A6-01)
(Ant. 7-Model name: ML-2452-PNL9M3-N36)
(Ant. 8-Model name: ML-2452-PTA3M3-036)
(Ant. 9-Model name: ML-2452-VMM5M3-N72)</td><td>1. Conducted Emissions
2. Maximum Conducted Output Power
3. Power Spectral Density
4. 6dB Spectrum Bandwidth
5. Radiated Emissions Below 1GHz
6. Radiated Emissions Above 1GHz
7. Band Edge Emissions
8. Radiated Emission Co-location</td></tr>
<tr><td>5. Ant. 2 (Model name: ML-2452-HPA5-036) applies to indoor use only in the original filing and it applies to both indoor/outdoor uses now.
6. Ant. 4 (Model name: ML-2452-PNA5-01R) applies to indoor use only in the original filing and it applies to both indoor/outdoor uses now.</td><td>Do not have to retest assessed.</td></tr>
</table>

3.8. Table for Supporting Units

For Test Site No: CO01-CB

Support Unit	Brand	Model	FCC ID
Notebook*3	DELL	E6430	DoC

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

Support Unit	Brand	Model	FCC ID
Notebook*3	EDLL	E4300	DoC

For Test Site No: 03CH01-CB (For Above 1GHz / For Non-Beamforming Mode)

Support Unit	Brand	Model	FCC ID
Notebook	EDLL	E4300	DoC

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

Support Unit	Brand	Model	FCC ID
Notebook*2	EDLL	E4300	DoC
WLAN Dongle	Netgear	A6200	PY31220200

For Test Site No: TH01-CB

Support Unit	Brand	Model	FCC ID
Notebook	DELL	E4300	DoC

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.

<For Non-Beamforming Mode>

Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 1TX)

Test Software Version	Mtool 2.0.1.0					
Mode	Test Frequency (MHz)					
	NCB: 20MHz			NCB: 40MHz		
	2412 MHz	2437 MHz	2462 MHz	2422 MHz	2437 MHz	2452 MHz
802.11b	79	85	79	-	-	-
802.11g	63	85	64	-	-	-
802.11ac MCS0/Nss1 VHT20	63	85	64	-	-	-
802.11ac MCS0/Nss1 VHT40	-	-	-	47	62	58

Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 2TX)

Test Software Version	DOS					
Mode	Test Frequency (MHz)					
	NCB: 20MHz			NCB: 40MHz		
	2412 MHz	2437 MHz	2462 MHz	2422 MHz	2437 MHz	2452 MHz
802.11b	77	85	79	-	-	-
802.11g	56	81	60	-	-	-
802.11ac MCS0/Nss1 VHT20	56	81	60	-	-	-
802.11ac MCS0/Nss1 VHT40	-	-	-	42	55	51

Mode 2 (Ant. 7 Polarized Panel / 11dBi / 1TX)

Test Software Version	Mtool 2.0.1.0					
Mode	Test Frequency (MHz)					
	NCB: 20MHz			NCB: 40MHz		
	2412 MHz	2437 MHz	2462 MHz	2422 MHz	2437 MHz	2452 MHz
802.11b	81	90	83	-	-	-
802.11g	63	89	66	-	-	-
802.11ac MCS0/Nss1 VHT20	63	89	66	-	-	-
802.11ac MCS0/Nss1 VHT40	-	-	-	57	63	59

Mode 2 (Ant. 7 Polarized Panel / 11dBi / 2TX)

Test Software Version	DOS					
Mode	Test Frequency (MHz)					
	NCB: 20MHz			NCB: 40MHz		
	2412 MHz	2437 MHz	2462 MHz	2422 MHz	2437 MHz	2452 MHz
802.11b	80	85	81	-	-	-
802.11g	61	82	51	-	-	-
802.11ac MCS0/Nss1 VHT20	61	82	51	-	-	-
802.11ac MCS0/Nss1 VHT40	-	-	-	51	62	53

Mode 3 (Ant. 8 Patch / 5dBi / 1TX)

Test Software Version	Mtool 2.0.1.0					
Mode	Test Frequency (MHz)					
	NCB: 20MHz			NCB: 40MHz		
	2412 MHz	2437 MHz	2462 MHz	2422 MHz	2437 MHz	2452 MHz
802.11b	85	85	82	-	-	-
802.11g	71	85	69	-	-	-
802.11ac MCS0/Nss1 VHT20	71	85	69	-	-	-
802.11ac MCS0/Nss1 VHT40	-	-	-	65	69	63

Mode 3 (Ant. 8 Patch / 5dBi / 2TX)

Test Software Version	DOS					
Mode	Test Frequency (MHz)					
	NCB: 20MHz			NCB: 40MHz		
	2412 MHz	2437 MHz	2462 MHz	2422 MHz	2437 MHz	2452 MHz
802.11b	80	85	81	-	-	-
802.11g	60	84	60	-	-	-
802.11ac MCS0/Nss1 VHT20	60	84	60	-	-	-
802.11ac MCS0/Nss1 VHT40	-	-	-	55	61	58

<For Beamforming Mode>

Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 2TX)

Test Software Version	DOS					
Mode	Test Frequency (MHz)					
	NCB: 20MHz			NCB: 40MHz		
	2412 MHz	2437 MHz	2462 MHz	2422 MHz	2437 MHz	2452 MHz
802.11g	56	81	60	-	-	-
802.11ac MCS0/Nss1 VHT20	56	81	60	-	-	-
802.11ac MCS0/Nss1 VHT40	-	-	-	42	55	51

Mode 2 (Ant. 7 Polarized Panel / 11dBi / 2TX)

Test Software Version	DOS					
Mode	Test Frequency (MHz)					
	NCB: 20MHz			NCB: 40MHz		
	2412 MHz	2437 MHz	2462 MHz	2422 MHz	2437 MHz	2452 MHz
802.11g	61	82	51	-	-	-
802.11ac MCS0/Nss1 VHT20	61	82	51	-	-	-
802.11ac MCS0/Nss1 VHT40	-	-	-	51	62	53

Mode 3 (Ant. 8 Patch / 5dBi / 2TX)

Test Software Version	DOS					
Mode	Test Frequency (MHz)					
	NCB: 20MHz			NCB: 40MHz		
	2412 MHz	2437 MHz	2462 MHz	2422 MHz	2437 MHz	2452 MHz
802.11g	60	84	60	-	-	-
802.11ac MCS0/Nss1 VHT20	60	84	60	-	-	-
802.11ac MCS0/Nss1 VHT40	-	-	-	55	61	58

3.10. EUT Operation during Test

For non-beamforming mode:

The EUT was programmed to be in continuously transmitting mode.

For beamforming mode:

For Conducted Mode:

The EUT was programmed to be in continuously transmitting mode.

For Radiated Mode:

During the test, the following programs under WIN XP were executed.

The program was executed as follows:

1. During the test, the EUT operation to normal function.
2. Executed command fixed test channel under DOS.
3. Executed "Lantest.exe " to link with the remote workstation to receive and transmit packet by WLAN Dongle and transmit duty cycle no less 98%

3.11. Duty Cycle

For non-beamforming mode:

Mode 1 (Ant. 5 Dipole antenna / 4.6dBi)

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11b	1.000	1.000	100.00	0.00	0.01
802.11g	2.060	2.090	98.56	0.06	0.01
802.11ac MCS0/Nss1 VHT20	1.920	1.950	98.46	0.07	0.01
802.11ac MCS0/Nss1 VHT40	0.912	0.972	93.83	0.28	1.10

Mode 2 (Ant. 7 Polarized Panel / 11dBi)

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11b	1.000	1.000	100.00	0.00	0.01
802.11g	2.070	2.100	98.61	0.06	0.01
802.11ac MCS0/Nss1 VHT20	1.940	1.950	99.49	0.02	0.01
802.11ac MCS0/Nss1 VHT40	0.965	0.980	98.47	0.07	0.01

Mode 3 (Ant. 8 Patch / 5dBi)

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11b	100.000	100.000	100.00	0.00	0.01
802.11g	2.054	2.090	98.28	0.08	0.01
802.11ac MCS0/Nss1 VHT20	1.920	1.940	98.97	0.05	0.01
802.11ac MCS0/Nss1 VHT40	0.918	0.980	93.67	0.28	1.09

For beamforming mode:

Mode 1 (Ant. 5 Dipole antenna / 4.6dBi)

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11ac MCS0/Nss1 VHT20	3.840	4.040	95.05	0.22	0.26
802.11ac MCS0/Nss1 VHT40	0.865	1.154	74.96	1.25	1.16

Mode 2 (Ant. 7 Polarized Panel / 11dBi)

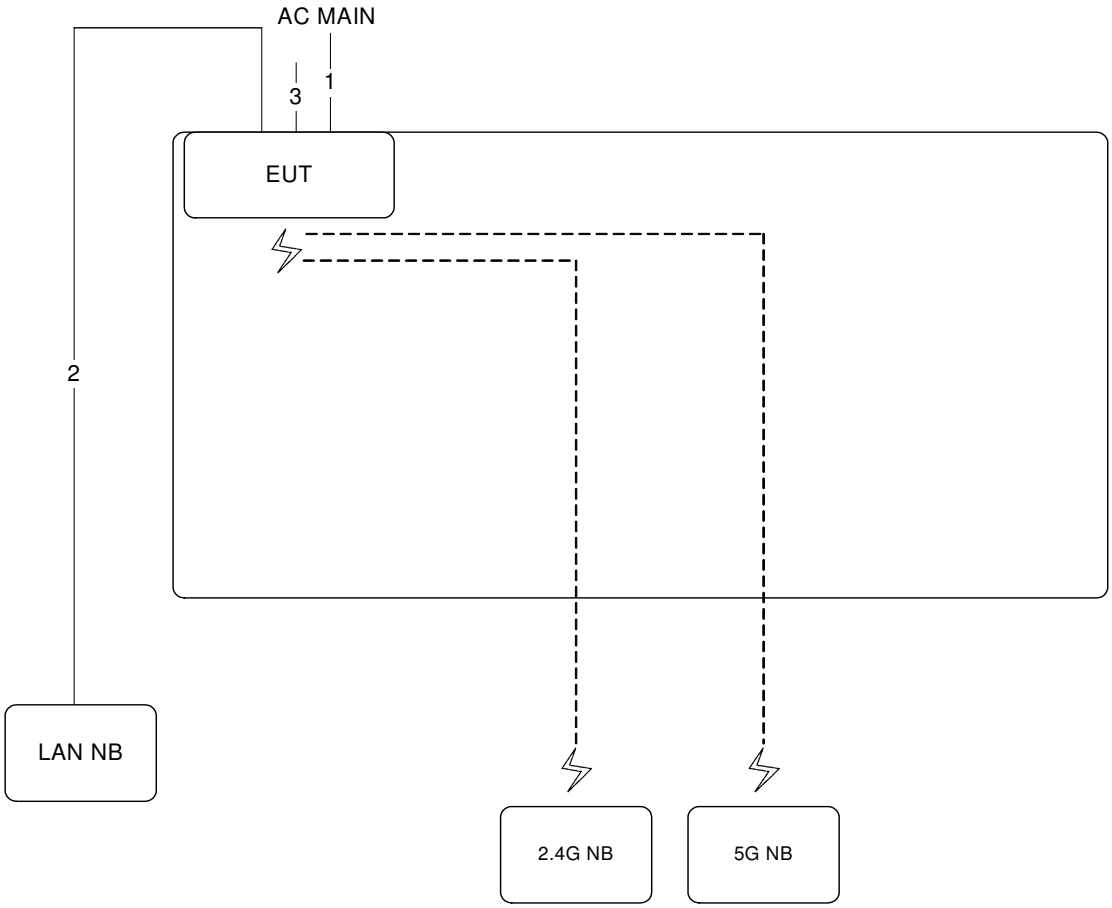
Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11ac MCS0/Nss1 VHT20	3.840	4.120	93.20	0.31	0.26
802.11ac MCS0/Nss1 VHT40	3.600	3.960	90.91	0.41	0.28

Mode 3 (Ant. 8 Patch / 5dBi)

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11ac MCS0/Nss1 VHT20	3.840	3.940	97.46	0.11	0.26
802.11ac MCS0/Nss1 VHT40	3.660	3.760	97.34	0.12	0.27

3.12. Test Configurations

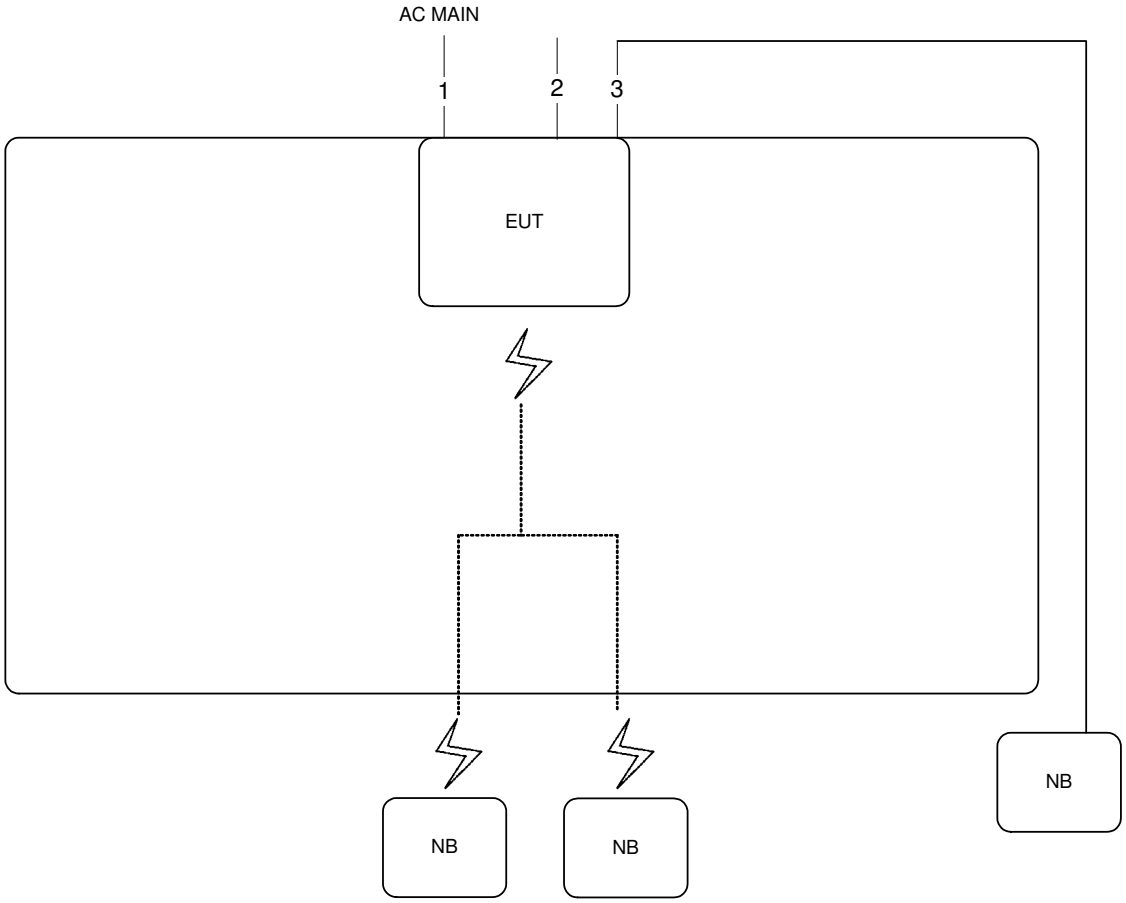
3.12.1. AC Power Line Conduction Emissions Test Configuration



Item	Connection	Shielded	Length
1	Power cable	No	3.3m
2	RJ-45 cable	No	10m
3	Console cable	No	1.5m

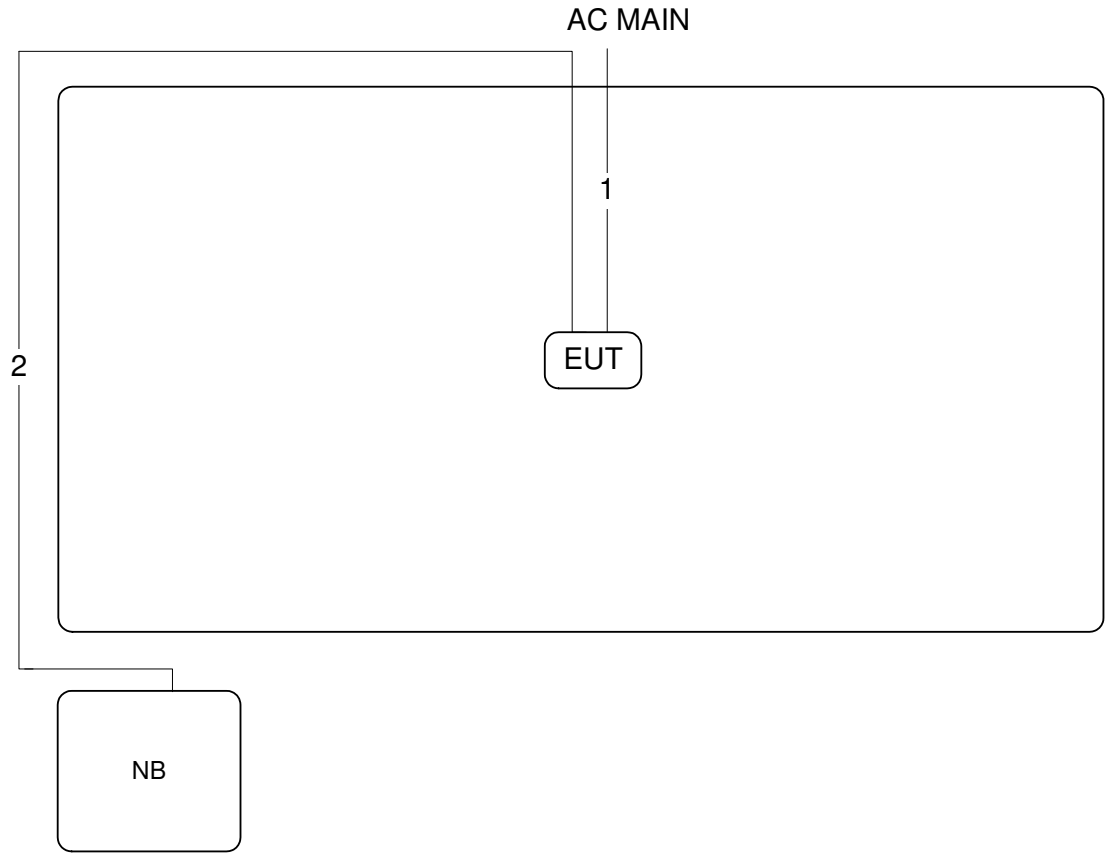
3.12.2. Radiation Emissions Test Configuration

Test Configuration: 30MHz~1GHz



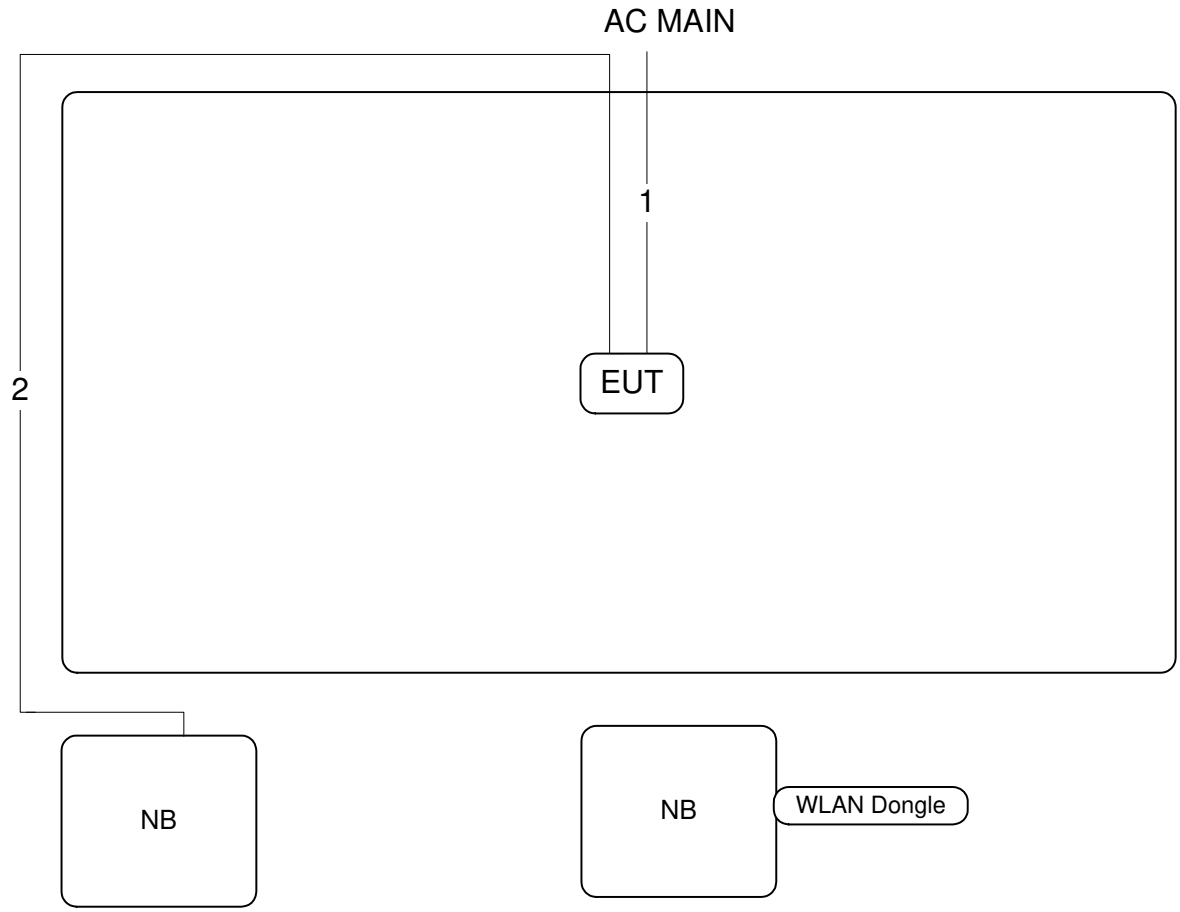
Item	Connection	Shielded	Length
1	Power cable	No	3.3m
2	Console cable	No	1.5m
3	RJ-45 cable	No	10m

Test Configuration: above 1GHz / For Non-Beamforming Mode



Item	Connection	Shielded	Length
1	Power cable	No	3.3m
2	RJ-45 cable	No	10m

For Beamforming Mode



tem	Connection	Shielded	Length
1	Power cable	No	3.3m
2	RJ-45 cable	No	10m

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

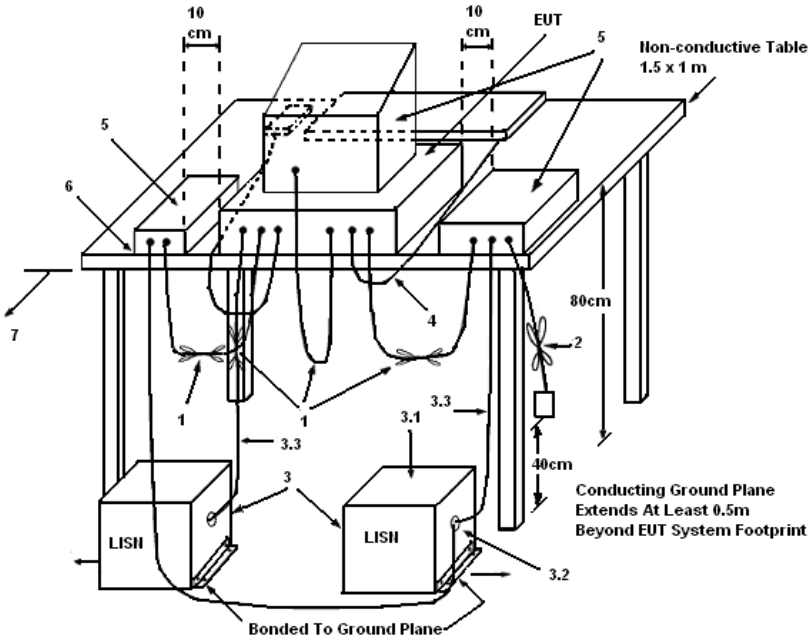
Please refer to section 5 of equipments list in this report. The following table is the setting of the receiver.

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

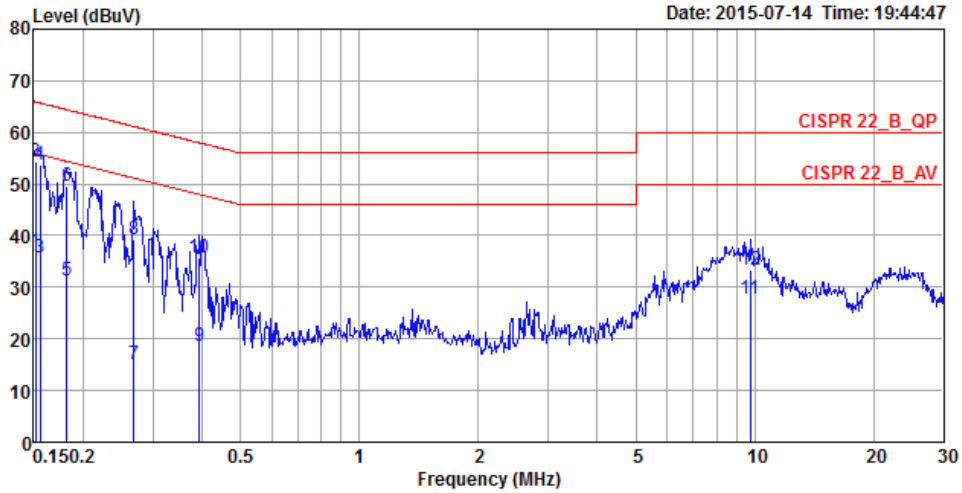
There is no deviation with the original standard.

4.1.6. EUT Operation during Test

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

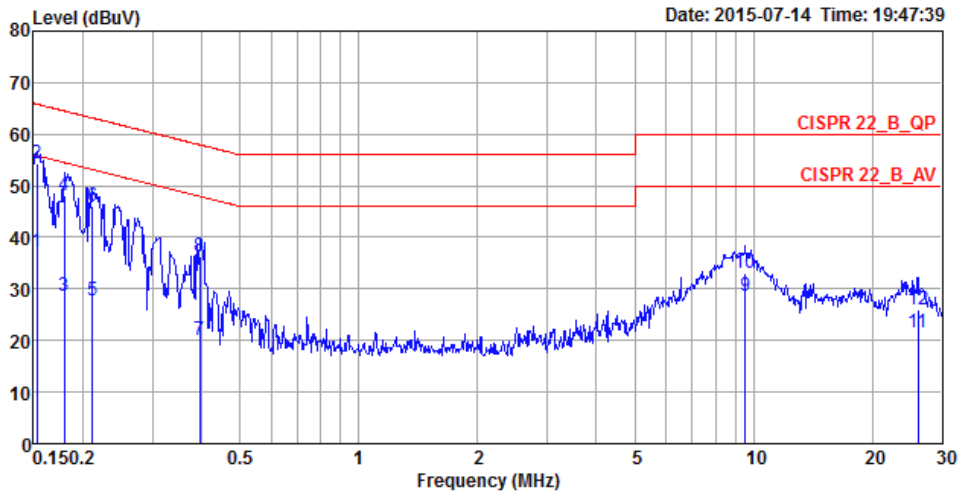
4.1.7. Results of AC Power Line Conducted Emissions Measurement

Temperature	26℃	Humidity	63%
Test Engineer	Edison Lin	Phase	Line
Configuration	Normal Link	Test Mode	Mode 1



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Pol/Phase	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.1516	36.88	-19.03	55.91	26.93	9.93	0.02	LINE	Average
2	0.1516	54.27	-11.64	65.91	44.32	9.93	0.02	LINE	QP
3	0.1557	35.62	-20.07	55.69	25.67	9.93	0.02	LINE	Average
4	0.1557	53.73	-11.96	65.69	43.78	9.93	0.02	LINE	QP
5	0.1815	31.17	-23.25	54.42	21.22	9.93	0.02	LINE	Average
6	0.1815	49.72	-14.70	64.42	39.77	9.93	0.02	LINE	QP
7	0.2687	15.17	-35.99	51.16	5.21	9.93	0.03	LINE	Average
8	0.2687	39.15	-22.01	61.16	29.19	9.93	0.03	LINE	QP
9	0.3934	18.71	-29.28	47.99	8.74	9.93	0.04	LINE	Average
10	0.3934	35.80	-22.19	57.99	25.83	9.93	0.04	LINE	QP
11	9.7567	27.68	-22.32	50.00	17.27	10.18	0.23	LINE	Average
12	9.7567	33.41	-26.59	60.00	23.00	10.18	0.23	LINE	QP

Temperature	26°C	Humidity	63%
Test Engineer	Edison Lin	Phase	Neutral
Configuration	Normal Link	Test Mode	Mode 1



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Pol/Phase	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.1532	37.29	-18.53	55.82	27.49	9.78	0.02	NEUTRAL	Average
2	0.1532	54.23	-11.59	65.82	44.43	9.78	0.02	NEUTRAL	QP
3	0.1796	28.67	-25.83	54.50	18.86	9.79	0.02	NEUTRAL	Average
4	0.1796	48.26	-16.24	64.50	38.45	9.79	0.02	NEUTRAL	QP
5	0.2117	27.65	-25.49	53.14	17.84	9.79	0.02	NEUTRAL	Average
6	0.2117	46.05	-17.09	63.14	36.24	9.79	0.02	NEUTRAL	QP
7	0.3955	20.09	-27.86	47.95	10.26	9.79	0.04	NEUTRAL	Average
8	0.3955	36.35	-21.60	57.95	26.52	9.79	0.04	NEUTRAL	QP
9	9.5521	28.61	-21.39	50.00	18.38	10.00	0.23	NEUTRAL	Average
10	9.5521	33.12	-26.88	60.00	22.89	10.00	0.23	NEUTRAL	QP
11	26.1393	21.41	-28.59	50.00	10.84	10.29	0.28	NEUTRAL	Average
12	26.1393	25.91	-34.09	60.00	15.34	10.29	0.28	NEUTRAL	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

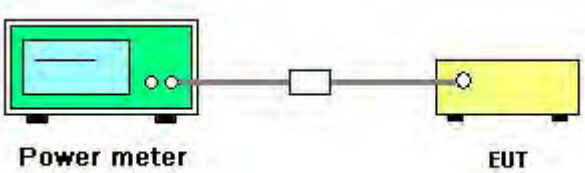
Please refer to section 5 of equipments list in this report. The following table is the setting of the power meter.

Power Meter Parameter	Setting
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 system 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

<For Non-Beamforming Mode>

Temperature	23℃	Humidity	61%
Test Engineer	Clemens Fang	Test Date	Jul. 30, 2015
Test Mode	Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 1TX)		

Mode	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
		Chain 1		
802.11b	2412 MHz	19.56	30.00	Complies
	2437 MHz	21.38	30.00	Complies
	2462 MHz	19.28	30.00	Complies
802.11g	2412 MHz	14.91	30.00	Complies
	2437 MHz	21.17	30.00	Complies
	2462 MHz	14.82	30.00	Complies
802.11ac MCS0/Nss1 VHT20	2412 MHz	14.93	30.00	Complies
	2437 MHz	21.20	30.00	Complies
	2462 MHz	15.03	30.00	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	11.68	30.00	Complies
	2437 MHz	14.81	30.00	Complies
	2452 MHz	14.09	30.00	Complies

Note: Antenna gain=4.6dBi<6dBi, so the limit doesn't reduce.

Temperature	23°C	Humidity	61%
Test Engineer	Clemens Fang	Test Date	Jul. 30, 2015
Test Mode	Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 2TX)		

Mode	Frequency	Conducted Power (dBm)			Max. Limit (dBm)	Result
		Chain 1	Chain 2	Total		
802.11b	2412 MHz	18.76	18.82	21.80	30.00	Complies
	2437 MHz	21.41	21.49	24.46	30.00	Complies
	2462 MHz	19.11	18.98	22.06	30.00	Complies
802.11g	2412 MHz	13.39	13.82	16.62	30.00	Complies
	2437 MHz	19.57	19.41	22.50	30.00	Complies
	2462 MHz	14.36	14.43	17.41	30.00	Complies
802.11ac MCS0/Nss1 VHT20	2412 MHz	13.26	13.67	16.48	30.00	Complies
	2437 MHz	19.69	19.59	22.65	30.00	Complies
	2462 MHz	14.29	14.35	17.33	30.00	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	10.71	10.59	13.66	30.00	Complies
	2437 MHz	13.52	13.65	16.60	30.00	Complies
	2452 MHz	12.51	12.64	15.59	30.00	Complies

Note: Antenna gain=4.6dBi<6dBi, so the limit doesn't reduce.

Temperature	23°C	Humidity	61%
Test Engineer	Clemens Fang	Test Date	Jul. 30, 2015
Test Mode	Mode 2 (Ant. 7 Polarized Panel / 11dBi / 1TX)		

Mode	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
		Chain 2		
802.11b	2412 MHz	19.41	25.00	Complies
	2437 MHz	21.45	25.00	Complies
	2462 MHz	19.34	25.00	Complies
802.11g	2412 MHz	15.16	25.00	Complies
	2437 MHz	20.77	25.00	Complies
	2462 MHz	15.24	25.00	Complies
802.11ac MCS0/Nss1 VHT20	2412 MHz	15.06	25.00	Complies
	2437 MHz	20.72	25.00	Complies
	2462 MHz	14.97	25.00	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	13.75	25.00	Complies
	2437 MHz	15.19	25.00	Complies
	2452 MHz	14.06	25.00	Complies

Note: Antenna gain=11dBi>6dBi,So Limit=30-(11-6)=25dBm

Temperature	23°C	Humidity	61%
Test Engineer	Clemens Fang	Test Date	Jul. 30, 2015
Test Mode	Mode 2 (Ant. 7 Polarized Panel / 11dBi / 2TX)		

Mode	Frequency	Conducted Power (dBm)			Max. Limit (dBm)	Result
		Chain 1	Chain 2	Total		
802.11b	2412 MHz	19.66	19.18	22.44	25.00	Complies
	2437 MHz	20.93	20.16	23.57	25.00	Complies
	2462 MHz	19.46	18.83	22.17	25.00	Complies
802.11g	2412 MHz	14.16	14.57	17.38	25.00	Complies
	2437 MHz	19.68	19.23	22.47	25.00	Complies
	2462 MHz	1.56	11.61	12.02	25.00	Complies
802.11ac MCS0/Nss1 VHT20	2412 MHz	14.15	14.28	17.23	25.00	Complies
	2437 MHz	19.64	19.06	22.37	25.00	Complies
	2462 MHz	11.48	11.26	14.38	25.00	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	12.28	12.32	15.31	25.00	Complies
	2437 MHz	14.56	14.64	17.61	25.00	Complies
	2452 MHz	12.70	12.31	15.52	25.00	Complies

Note: Antenna gain=11dBi>6dBi,So Limit=30-(11-6)=25dBm

Temperature	23°C	Humidity	61%
Test Engineer	Clemens Fang	Test Date	Jul. 30, 2015
Test Mode	Mode 3 (Ant. 8 Patch / 5dBi / 1TX)		

Mode	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
		Chain 1		
802.11b	2412 MHz	21.40	30.00	Complies
	2437 MHz	21.38	30.00	Complies
	2462 MHz	20.35	30.00	Complies
802.11g	2412 MHz	17.12	30.00	Complies
	2437 MHz	21.17	30.00	Complies
	2462 MHz	16.56	30.00	Complies
802.11ac MCS0/Nss1 VHT20	2412 MHz	17.13	30.00	Complies
	2437 MHz	21.20	30.00	Complies
	2462 MHz	16.53	30.00	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	16.15	30.00	Complies
	2437 MHz	16.78	30.00	Complies
	2452 MHz	15.56	30.00	Complies

Note: Antenna gain=5dBi<6dBi, so the limit doesn't reduce.

Temperature	23°C	Humidity	61%
Test Engineer	Clemens Fang	Test Date	Jul. 30, 2015
Test Mode	Mode 3 (Ant. 8 Patch / 5dBi / 2TX)		

Mode	Frequency	Conducted Power (dBm)			Max. Limit (dBm)	Result
		Chain 1	Chain 2	Total		
802.11b	2412 MHz	19.78	19.83	22.82	30.00	Complies
	2437 MHz	21.41	21.49	24.46	30.00	Complies
	2462 MHz	19.87	19.91	22.90	30.00	Complies
802.11g	2412 MHz	14.41	14.45	17.44	30.00	Complies
	2437 MHz	20.81	20.93	23.88	30.00	Complies
	2462 MHz	14.36	14.43	17.41	30.00	Complies
802.11ac MCS0/Nss1 VHT20	2412 MHz	14.37	14.44	17.42	30.00	Complies
	2437 MHz	20.78	20.83	23.82	30.00	Complies
	2462 MHz	14.29	14.35	17.33	30.00	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	13.56	13.61	16.60	30.00	Complies
	2437 MHz	15.03	15.11	18.08	30.00	Complies
	2452 MHz	14.17	14.23	17.21	30.00	Complies

Note: Antenna gain=5dBi<6dBi, so the limit doesn't reduce.

<For Beamforming Mode>

Temperature	23°C	Humidity	61%
Test Engineer	Clemens Fang	Test Date	Jul. 30, 2015
Test Mode	Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 2TX)		

Mode	Frequency	Conducted Power (dBm)			Max. Limit (dBm)	Result
		Chain 1	Chain 2	Total		
802.11g	2412 MHz	13.41	13.77	16.60	28.39	Complies
	2437 MHz	19.42	19.41	22.43	28.39	Complies
	2462 MHz	14.45	14.02	17.25	28.39	Complies
802.11ac MCS0/Nss1 VHT20	2412 MHz	13.19	13.22	16.22	28.39	Complies
	2437 MHz	19.96	19.58	22.78	28.39	Complies
	2462 MHz	14.43	14.48	17.47	28.39	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	10.82	10.61	13.73	28.39	Complies
	2437 MHz	13.37	13.52	16.46	28.39	Complies
	2452 MHz	12.43	12.51	15.48	28.39	Complies

Note: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =7.61dBi>6dBi,So Limit=30-(7.61-6)=28.39dBm

Temperature	23°C	Humidity	61%
Test Engineer	Clemens Fang	Test Date	Jul. 30, 2015
Test Mode	Mode 2 (Ant. 7 Polarized Panel / 11dBi / 2TX)		

Mode	Frequency	Conducted Power (dBm)			Max. Limit (dBm)	Result
		Chain 1	Chain 2	Total		
802.11g	2412 MHz	14.16	14.57	17.38	25.00	Complies
	2437 MHz	19.68	19.23	22.47	25.00	Complies
	2462 MHz	11.56	11.61	14.60	25.00	Complies
802.11ac MCS0/Nss1 VHT20	2412 MHz	14.27	14.05	17.17	25.00	Complies
	2437 MHz	19.54	19.09	22.33	25.00	Complies
	2462 MHz	11.35	11.24	14.31	25.00	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	12.27	12.36	15.33	25.00	Complies
	2437 MHz	14.54	14.74	17.65	25.00	Complies
	2452 MHz	12.33	12.65	15.50	25.00	Complies

Note: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =11dBi>6dBi,So Limit=30-(11-6)=25dBm

Temperature	23°C	Humidity	61%
Test Engineer	Clemens Fang	Test Date	Jul. 30, 2015
Test Mode	Mode 3 (Ant. 8 Patch / 5dBi / 2TX)		

Mode	Frequency	Conducted Power (dBm)			Max. Limit (dBm)	Result
		Chain 1	Chain 2	Total		
802.11g	2412 MHz	14.43	14.48	17.47	27.99	Complies
	2437 MHz	20.85	20.93	23.90	27.99	Complies
	2462 MHz	14.39	14.43	17.42	27.99	Complies
802.11ac MCS0/Nss1 VHT20	2412 MHz	14.57	14.59	17.59	27.99	Complies
	2437 MHz	20.85	20.90	23.89	27.99	Complies
	2462 MHz	14.43	14.48	17.47	27.99	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	13.59	13.63	16.62	27.99	Complies
	2437 MHz	15.11	15.14	18.14	27.99	Complies
	2452 MHz	14.23	14.28	17.27	27.99	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=30-(8.01-6)=27.99dBm

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 8dBm in any 3 kHz band during any time interval of continuous transmission.

4.3.2. Measuring Instruments and Setting

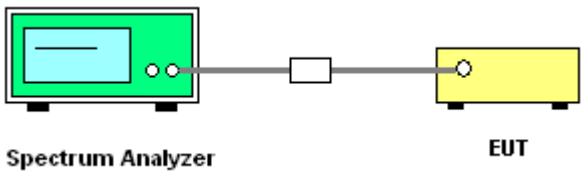
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

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

<For Non-Beamforming Mode>

Temperature	23℃	Humidity	61%
Test Engineer	Clemens Fang		
Test Mode	Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 1TX)		

Mode	Frequency	Power Density (dBm/3kHz)	Power Density Limit (dBm/3kHz)	Result
		Chain 1		
802.11b	2412 MHz	-2.95	8.00	Complies
	2437 MHz	-2.26	8.00	Complies
	2462 MHz	-1.85	8.00	Complies
802.11ac MCS0/Nss1 VHT20	2412 MHz	-11.04	8.00	Complies
	2437 MHz	-3.45	8.00	Complies
	2462 MHz	-11.00	8.00	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	-16.06	8.00	Complies
	2437 MHz	-12.49	8.00	Complies
	2452 MHz	-13.19	8.00	Complies

Note: Antenna gain=4.6dBi<6dBi, so the limit doesn't reduce.

Temperature	23°C	Humidity	61%
Test Engineer	Clemens Fang		
Test Mode	Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 2TX)		

Mode	Frequency	Power Density (dBm/3kHz)			Power Density Limit (dBm/3kHz)	Result
		Chain 1	Chain 2	Total		
802.11b	2412 MHz	-6.93	-6.29	-3.59	6.39	Complies
	2437 MHz	-3.81	-3.18	-0.47	6.39	Complies
	2462 MHz	-4.50	-5.39	-1.91	6.39	Complies

Note: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =7.61dBi>6dBi,So Limit=8-(7.61-6)=6.39dBm

Temperature	23°C	Humidity	61%
Test Engineer	Clemens Fang		
Test Mode	Mode 2 (Ant. 7 Polarized Panel / 11dBi / 1TX)		

Mode	Frequency	Power Density (dBm/3kHz)	Power Density Limit (dBm/3kHz)	Result
		Chain 2		
802.11b	2412 MHz	-4.75	3.00	Complies
	2437 MHz	-2.86	3.00	Complies
	2462 MHz	-4.33	3.00	Complies
802.11ac MCS0/Nss1 VHT20	2412 MHz	-12.26	3.00	Complies
	2437 MHz	-5.30	3.00	Complies
	2462 MHz	-11.35	3.00	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	-14.93	3.00	Complies
	2437 MHz	-13.58	3.00	Complies
	2452 MHz	-14.96	3.00	Complies

Note: Antenna gain=11dBi>6dBi,So Limit=8-(11-6)=3dBm

Temperature	23°C	Humidity	61%
Test Engineer	Clemens Fang		
Test Mode	Mode 2 (Ant. 7 Polarized Panel / 11dBi / 2TX)		

Mode	Frequency	Power Density (dBm/3kHz)			Power Density Limit (dBm/3kHz)	Result
		Chain 1	Chain 2	Total		
802.11b	2412 MHz	-6.37	-5.55	-2.93	3.00	Complies
	2437 MHz	-3.63	-3.24	-0.42	3.00	Complies
	2462 MHz	-3.19	-5.63	-1.23	3.00	Complies

Note: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =11dBi>6dBi,So Limit=8-(11-6)=3dBm

Temperature	23°C	Humidity	61%
Test Engineer	Clemens Fang		
Test Mode	Mode 3 (Ant. 8 Patch / 5dBi / 1TX)		

Mode	Frequency	Power Density (dBm/3kHz)	Power Density Limit (dBm/3kHz)	Result
		Chain 1		
802.11b	2412 MHz	-4.17	8.00	Complies
	2437 MHz	-3.58	8.00	Complies
	2462 MHz	-3.86	8.00	Complies
802.11ac MCS0/Nss1 VHT20	2412 MHz	-11.01	8.00	Complies
	2437 MHz	-7.00	8.00	Complies
	2462 MHz	-10.25	8.00	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	-13.83	8.00	Complies
	2437 MHz	-13.55	8.00	Complies
	2452 MHz	-12.68	8.00	Complies

Note: Antenna gain=5dBi<6dBi, so the limit doesn't reduce.

Temperature	23°C	Humidity	61%
Test Engineer	Clemens Fang		
Test Mode	Mode 3 (Ant. 8 Patch / 5dBi / 2TX)		

Mode	Frequency	Power Density (dBm/3kHz)			Power Density Limit (dBm/3kHz)	Result
		Chain 1	Chain 2	Total		
802.11b	2412 MHz	-6.37	-5.55	-2.93	5.99	Complies
	2437 MHz	-3.63	-3.24	-0.42	5.99	Complies
	2462 MHz	-3.19	-5.63	-1.23	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

<For Beamforming Mode>

Temperature	23°C	Humidity	61%
Test Engineer	Clemens Fang		
Test Mode	Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 2TX)		

Mode	Frequency	Power Density (dBm/3kHz)			Power Density Limit (dBm/3kHz)	Result
		Chain 1	Chain 2	Total		
802.11ac	2412 MHz	-14.49	-14.03	-11.24	6.39	Complies
MCS0/Nss1	2437 MHz	-8.23	-6.28	-4.14	6.39	Complies
VHT20	2462 MHz	-11.73	-11.95	-8.83	6.39	Complies
802.11ac	2422 MHz	-18.49	-18.22	-15.34	6.39	Complies
MCS0/Nss1	2437 MHz	-16.70	-14.29	-12.32	6.39	Complies
VHT40	2452 MHz	-16.62	-16.99	-13.79	6.39	Complies

Note: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =7.61dBi>6dBi,So Limit=8-(7.61-6)=6.39dBm

Temperature	23°C	Humidity	61%
Test Engineer	Clemens Fang		
Test Mode	Mode 2 (Ant. 7 Polarized Panel / 11dBi / 2TX)		

Mode	Frequency	Power Density (dBm/3kHz)			Power Density Limit (dBm/3kHz)	Result
		Chain 1	Chain 2	Total		
802.11ac MCS0/Nss1 VHT20	2412 MHz	-12.48	-12.64	-9.55	3.00	Complies
	2437 MHz	-7.84	-6.65	-4.19	3.00	Complies
	2462 MHz	-13.58	-14.34	-10.93	3.00	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	-16.94	-13.40	-11.81	3.00	Complies
	2437 MHz	-14.70	-13.69	-11.16	3.00	Complies
	2452 MHz	-15.42	-16.70	-13.00	3.00	Complies

Note: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =11dBi>6dBi,So Limit=8-(11-6)=3dBm

Temperature	23°C	Humidity	61%
Test Engineer	Clemens Fang		
Test Mode	Mode 3 (Ant. 8 Patch / 5dBi / 2TX)		

Mode	Frequency	Power Density (dBm/3kHz)			Power Density Limit (dBm/3kHz)	Result
		Chain 1	Chain 2	Total		
802.11ac MCS0/Nss1 VHT20	2412 MHz	-13.26	-11.71	-9.41	5.99	Complies
	2437 MHz	-6.76	-5.79	-3.24	5.99	Complies
	2462 MHz	-11.73	-11.95	-8.83	5.99	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	-16.35	-16.56	-13.44	5.99	Complies
	2437 MHz	-15.58	-14.13	-11.78	5.99	Complies
	2452 MHz	-15.50	-14.48	-11.95	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

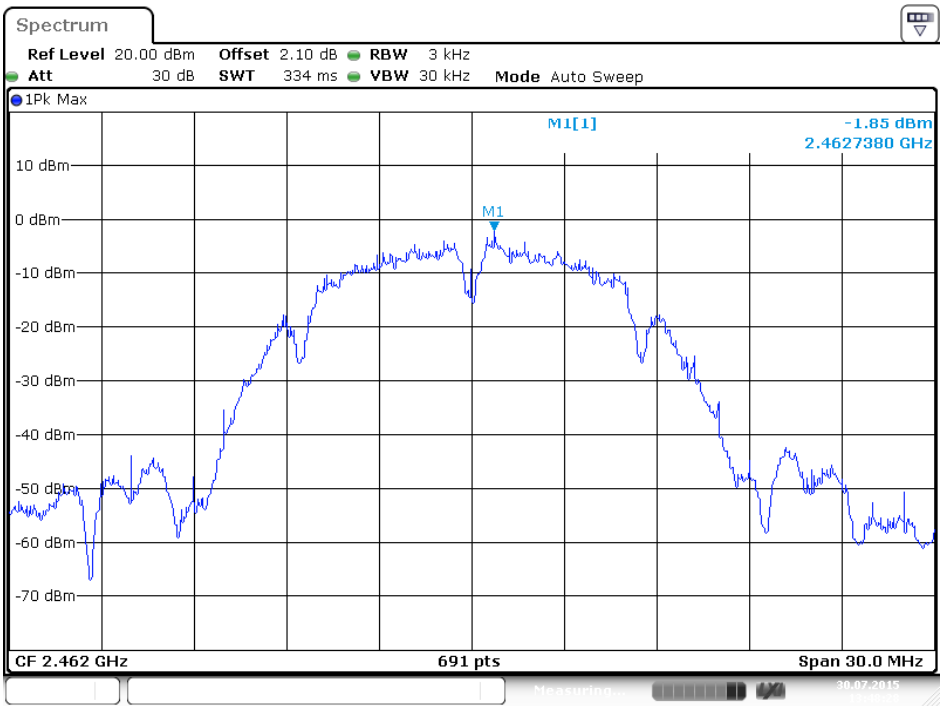
Note: All the test values were listed in the report.

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

<For Non-Beamforming Mode>

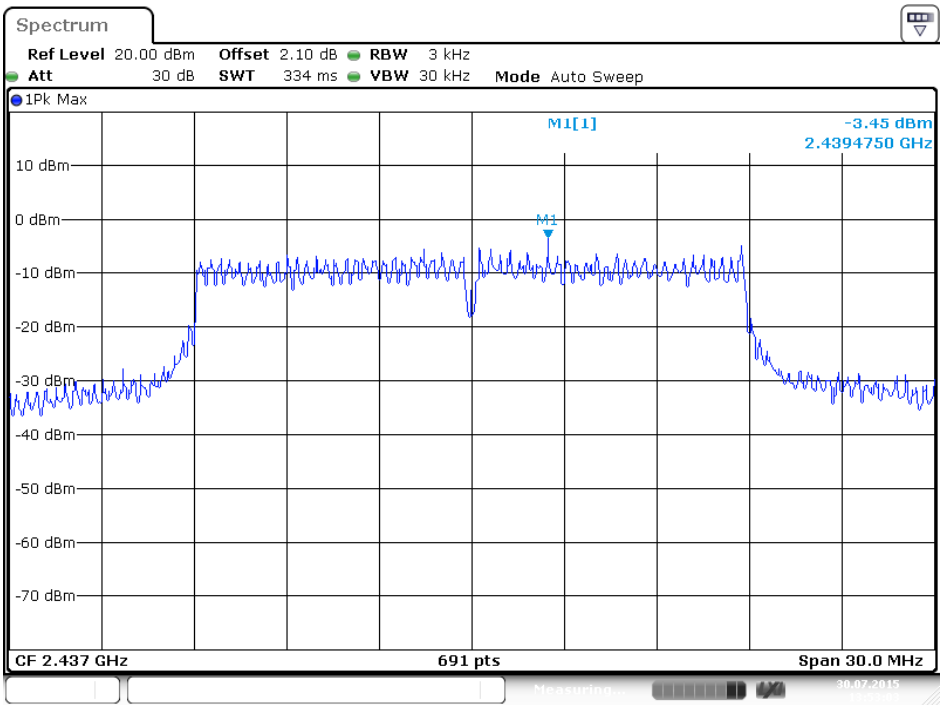
Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 1TX)

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



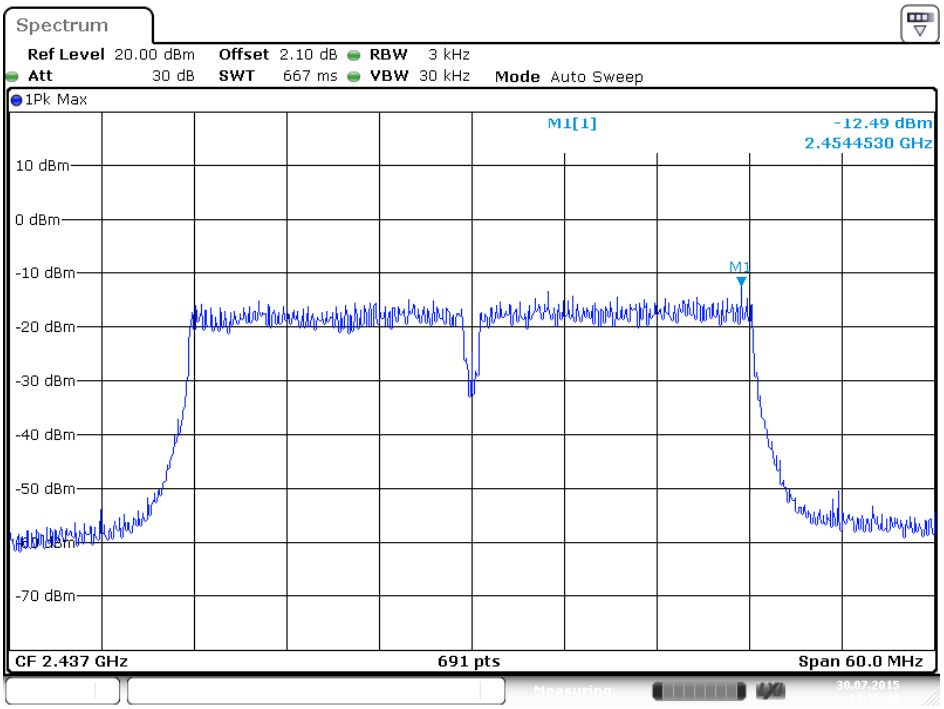
Date: 30.JUL.2015 13:48:28

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 2437 MHz / Chain 1



Date: 30.JUL.2015 13:53:02

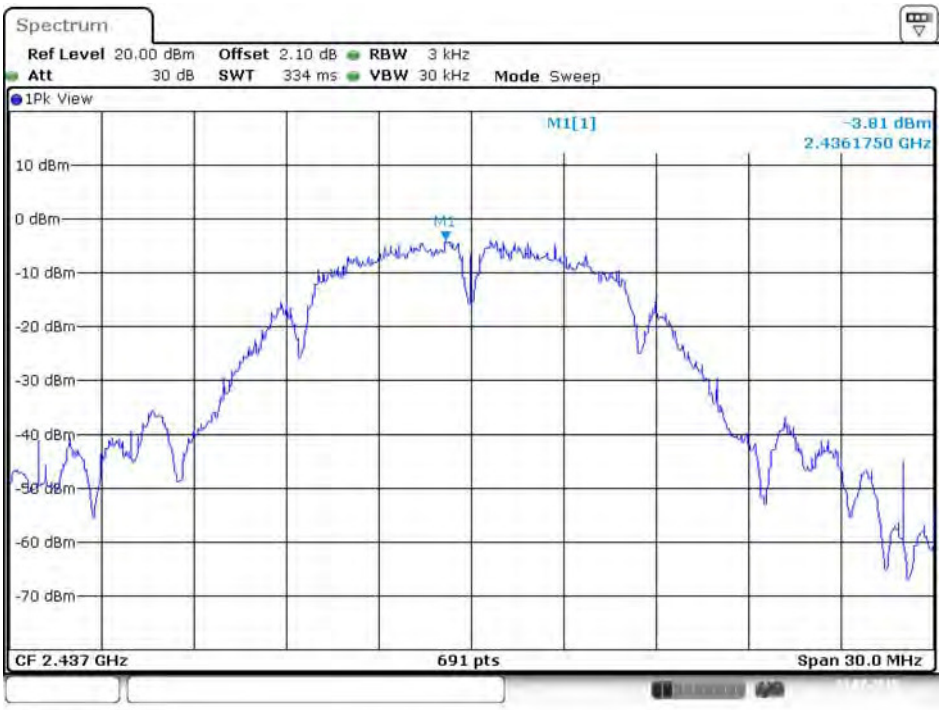
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2437 MHz / Chain 1



Date: 30.JUL.2015 13:55:40

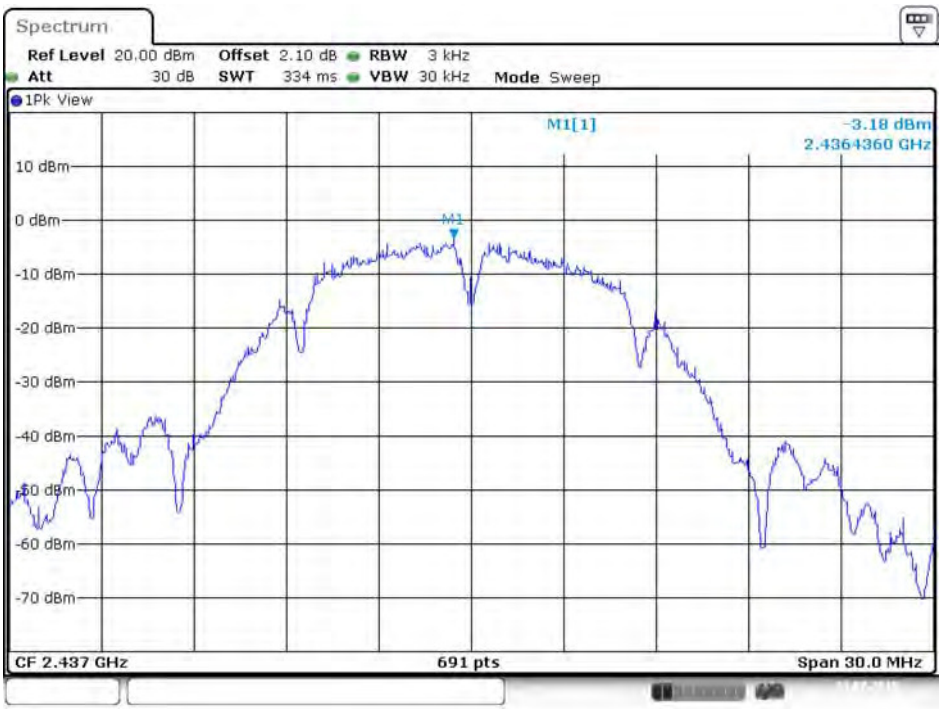
Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 2TX)

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



Date: 31.JUL.2015 11:34:38

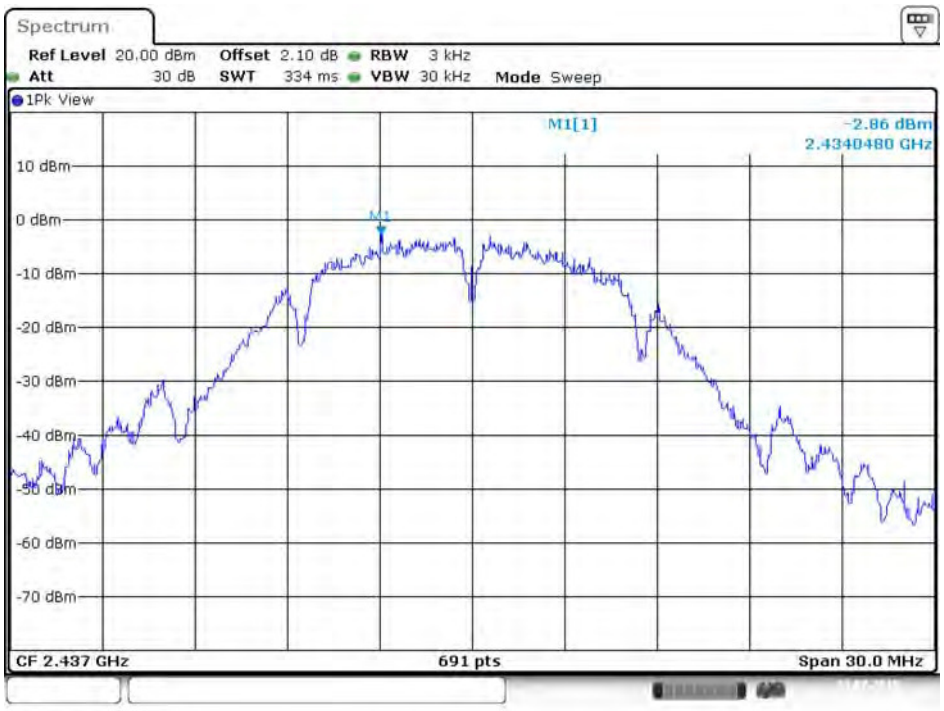
Power Density Plot on Configuration IEEE 802.11b / 2437 MHz / Chain 2



Date: 31.JUL.2015 11:35:14

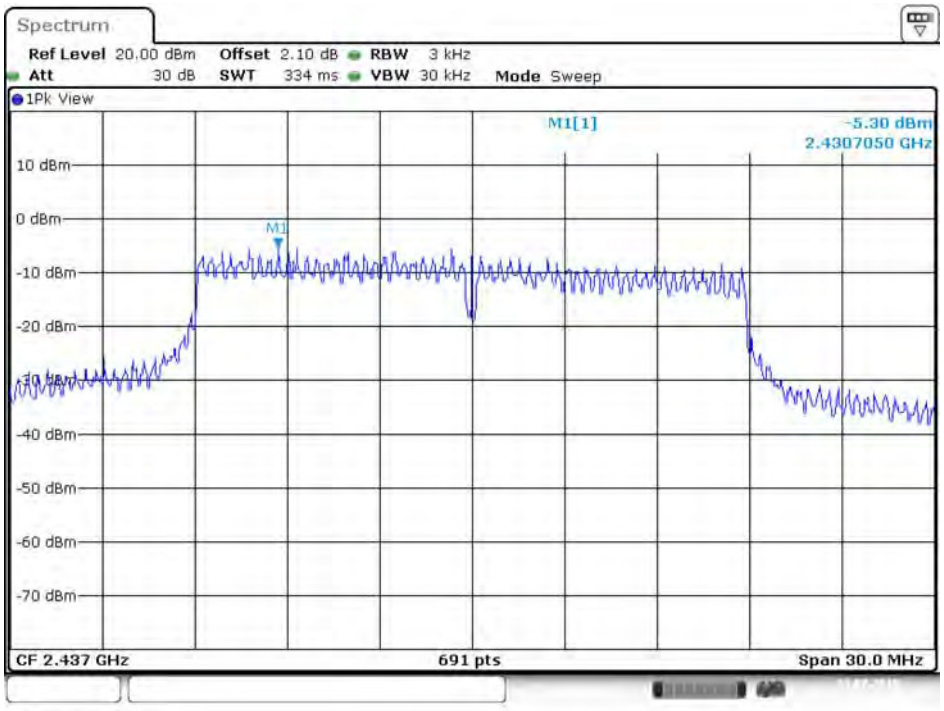
Mode 2 (Ant. 7 Polarized Panel / 11dBi / 1TX)

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



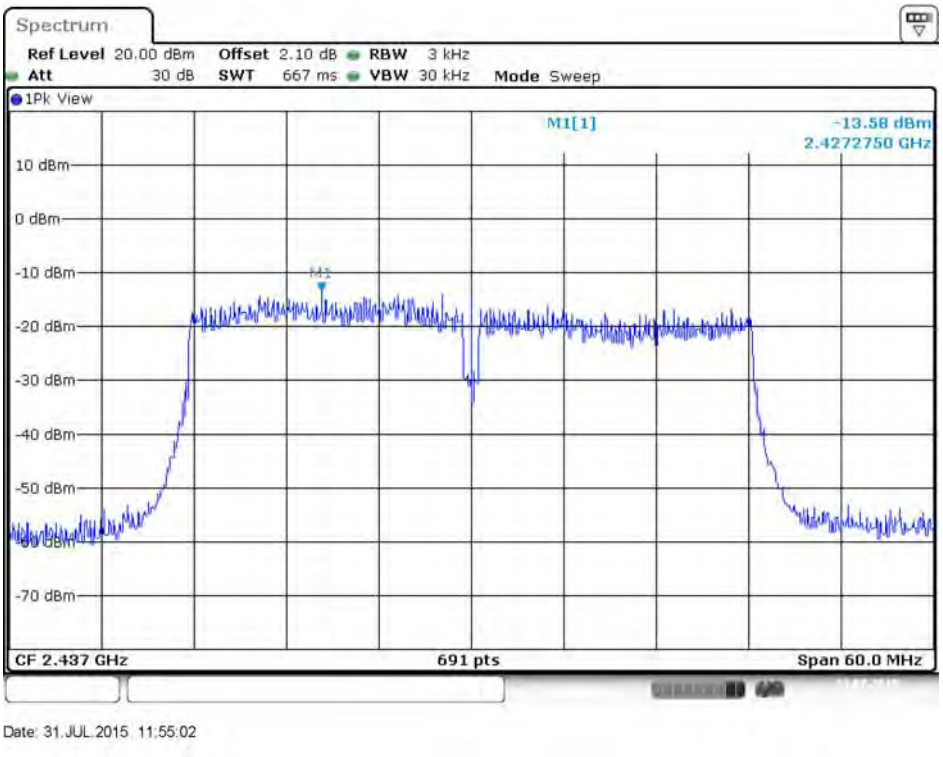
Date: 31.JUL.2015 11:51:40

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 2437 MHz / Chain 2



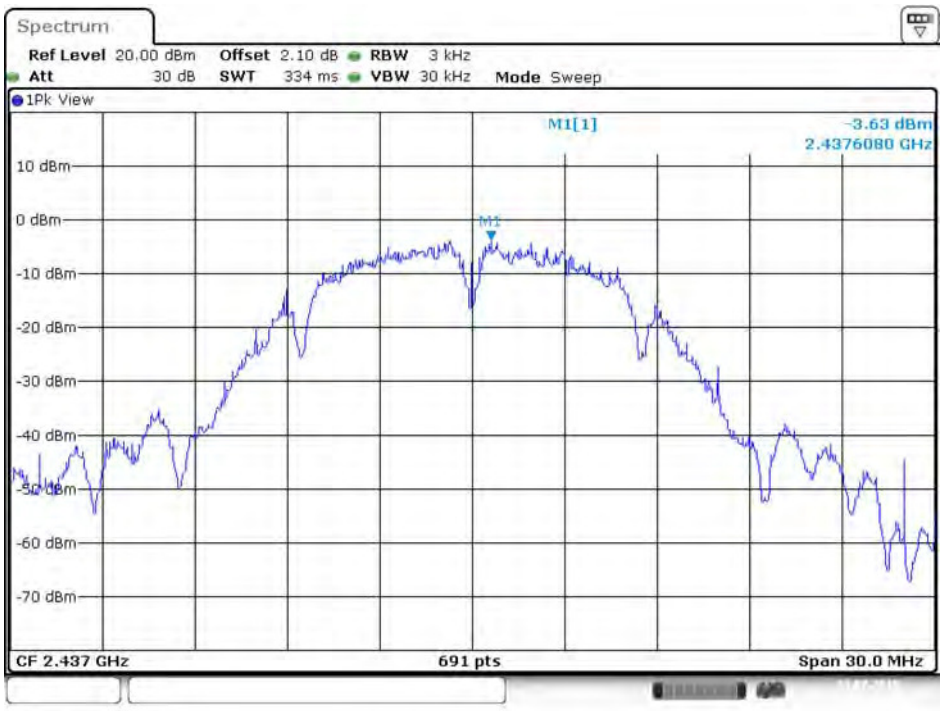
Date: 31.JUL.2015 11:53:25

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2437 MHz / Chain 2



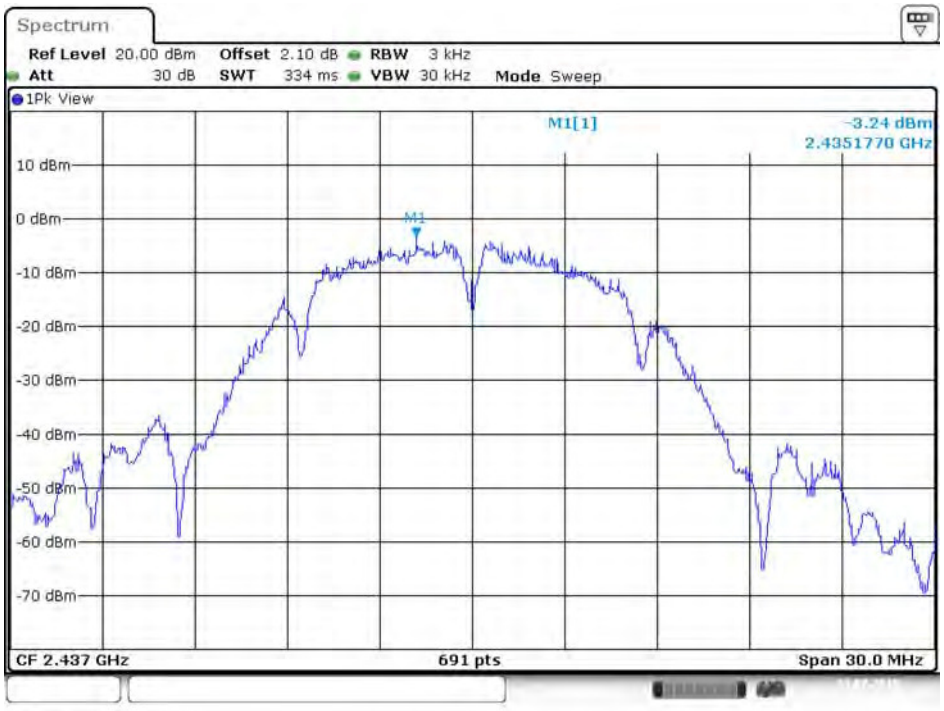
Mode 2 (Ant. 7 Polarized Panel / 11dBi / 2TX)

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



Date: 31.JUL.2015 13:54:40

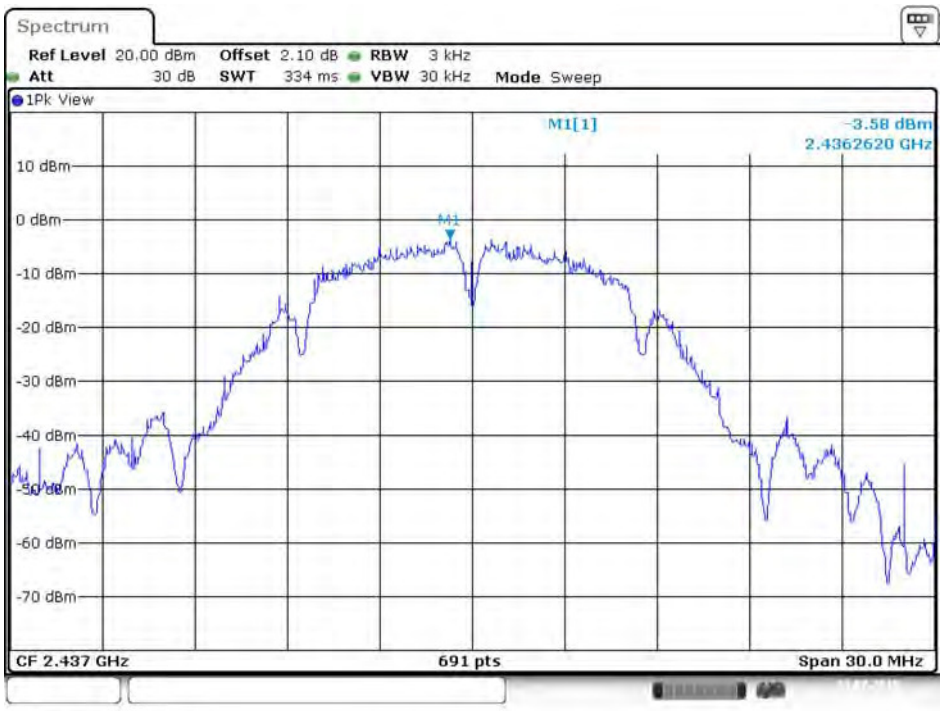
Power Density Plot on Configuration IEEE 802.11b / 2437 MHz / Chain 2



Date: 31.JUL.2015 13:54:27

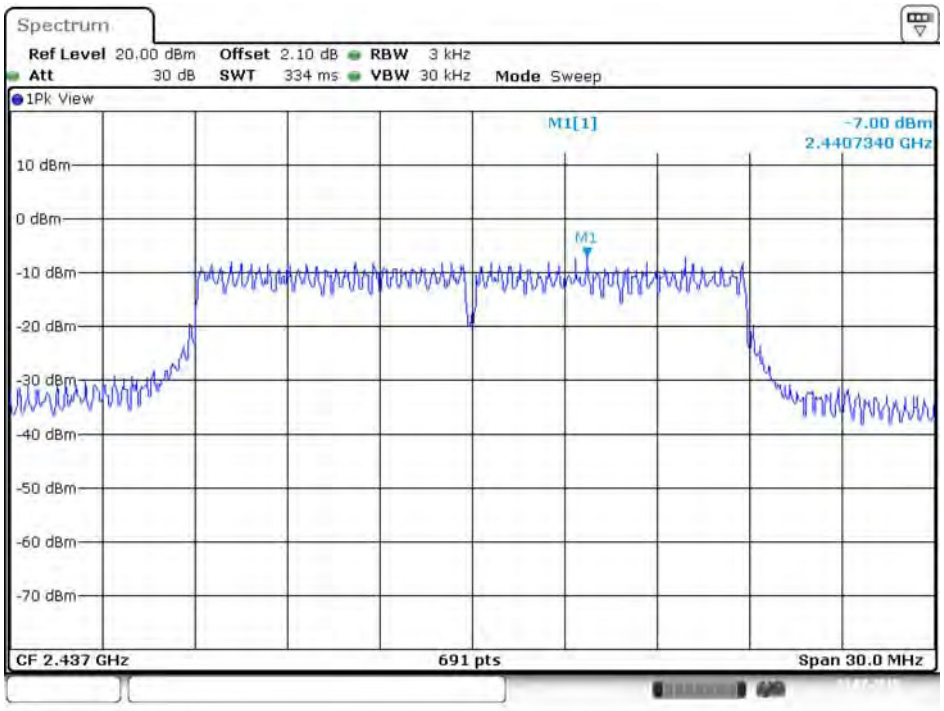
Mode 3 (Ant. 8 Patch / 5dBi / 1TX)

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



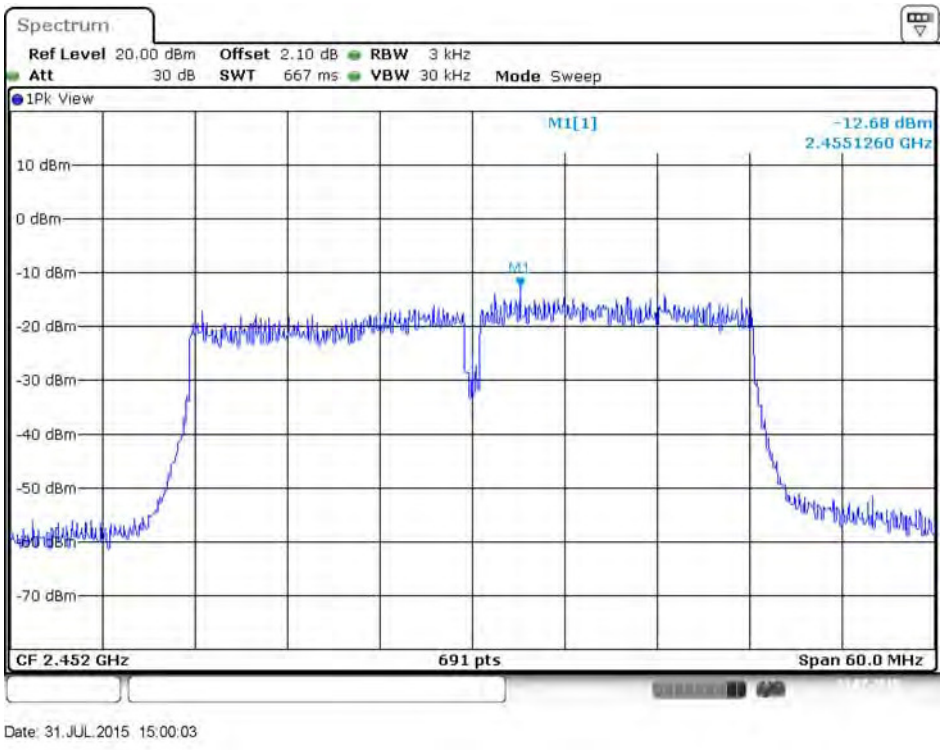
Date: 31.JUL.2015 14:56:10

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 2437 MHz / Chain 1



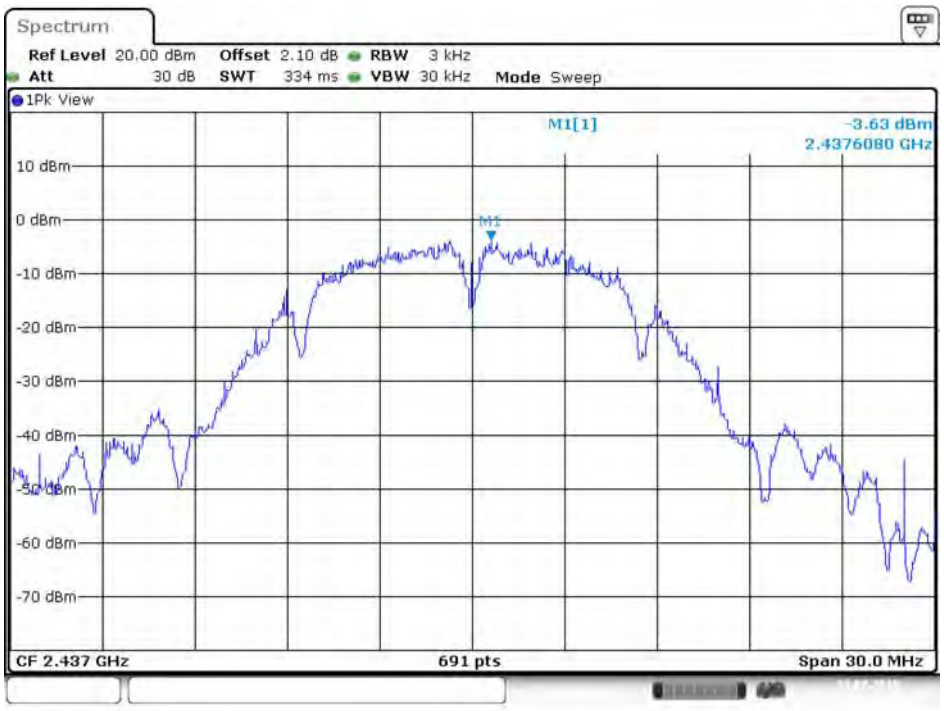
Date: 31.JUL.2015 14:57:38

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2452 MHz / Chain 1



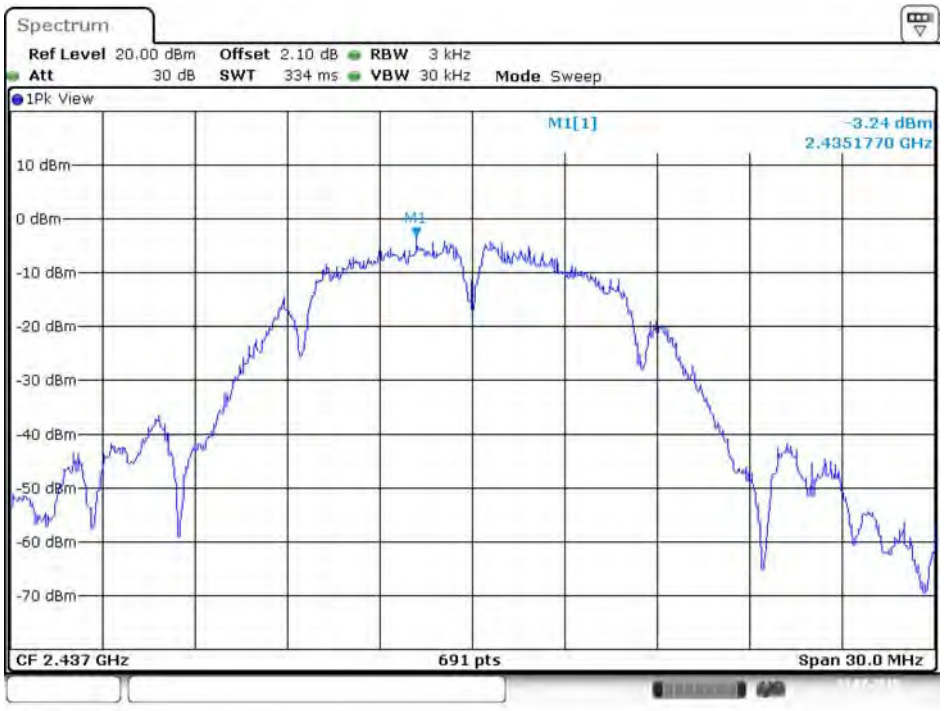
Mode 3 (Ant. 8 Patch / 5dBi / 2TX)

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



Date: 31.JUL.2015 13:54:40

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

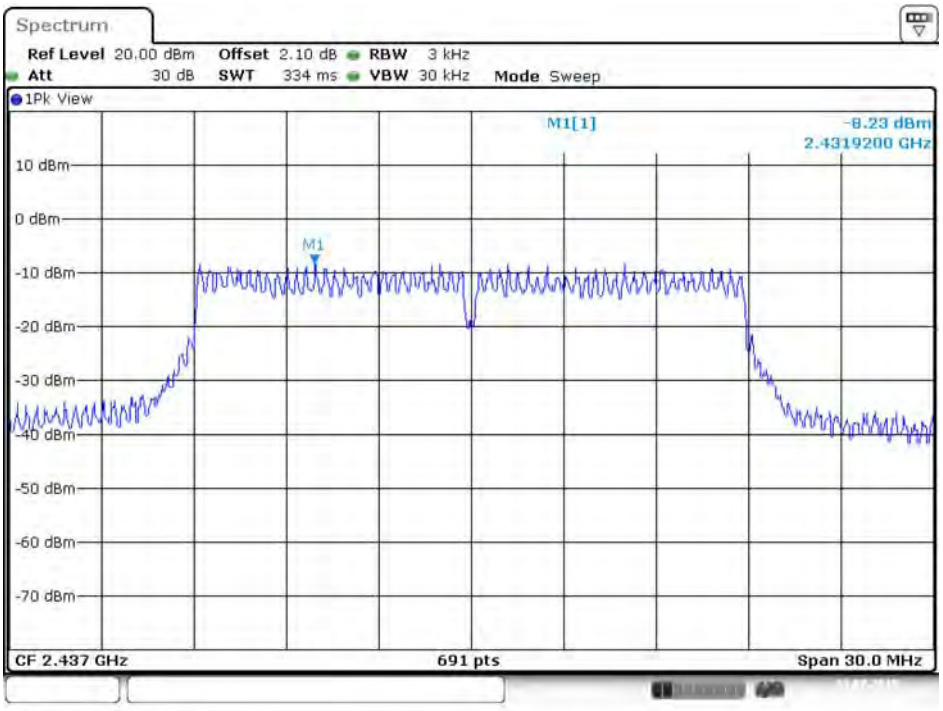


Date: 31.JUL.2015 13:54:27

<For Beamforming Mode>

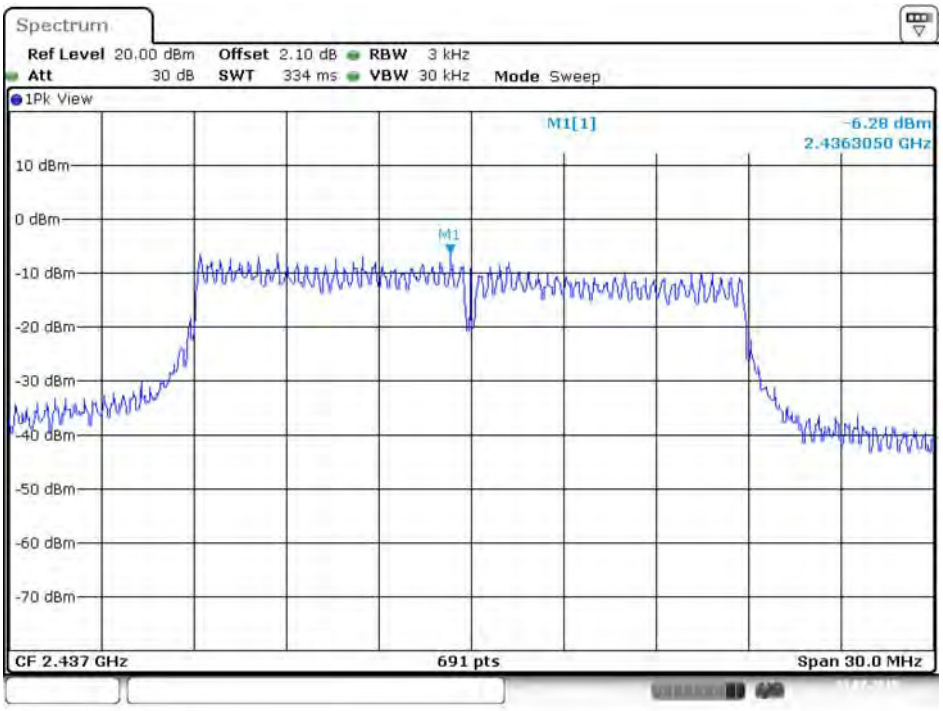
Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 2TX)

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 2437 MHz / Chain 1



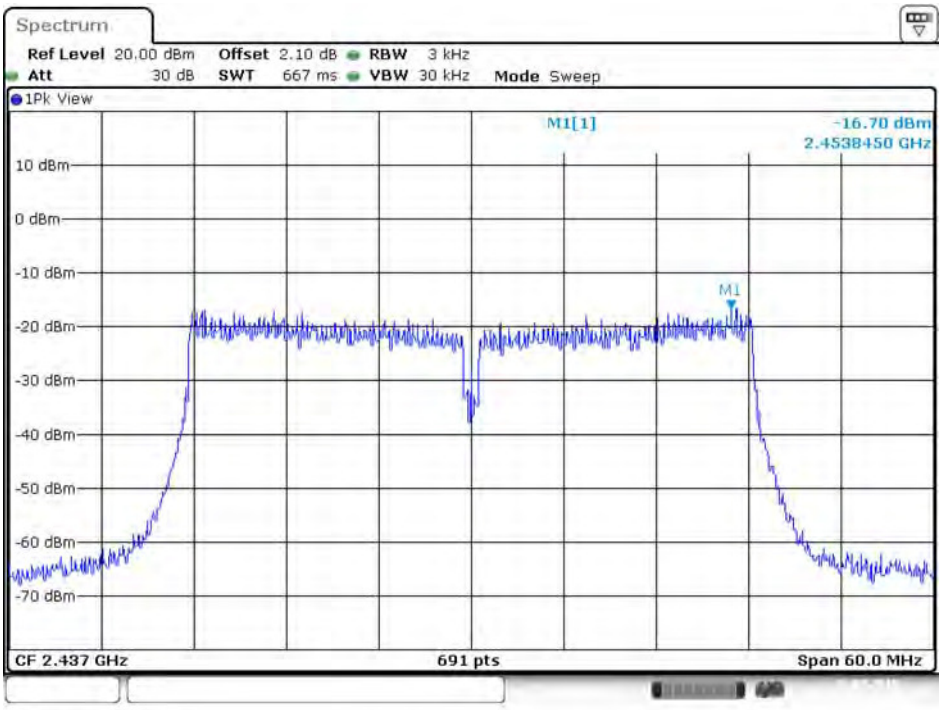
Date: 31.JUL.2015 11:39:01

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 2437 MHz / Chain 2



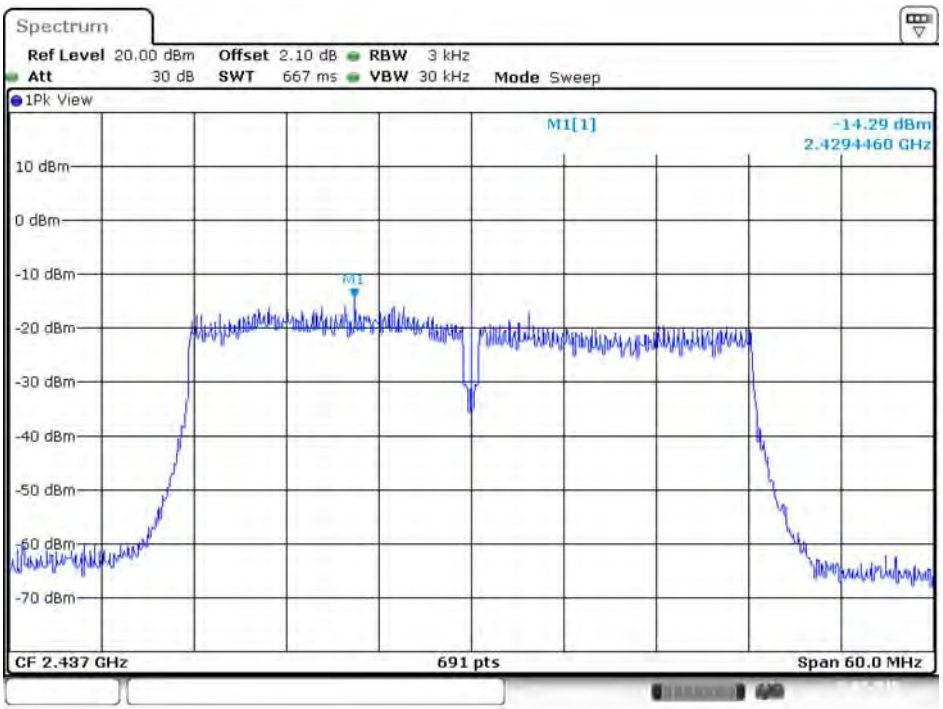
Date: 31.JUL.2015 11:38:42

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2437 MHz / Chain 1



Date: 31.JUL.2015 11:44:01

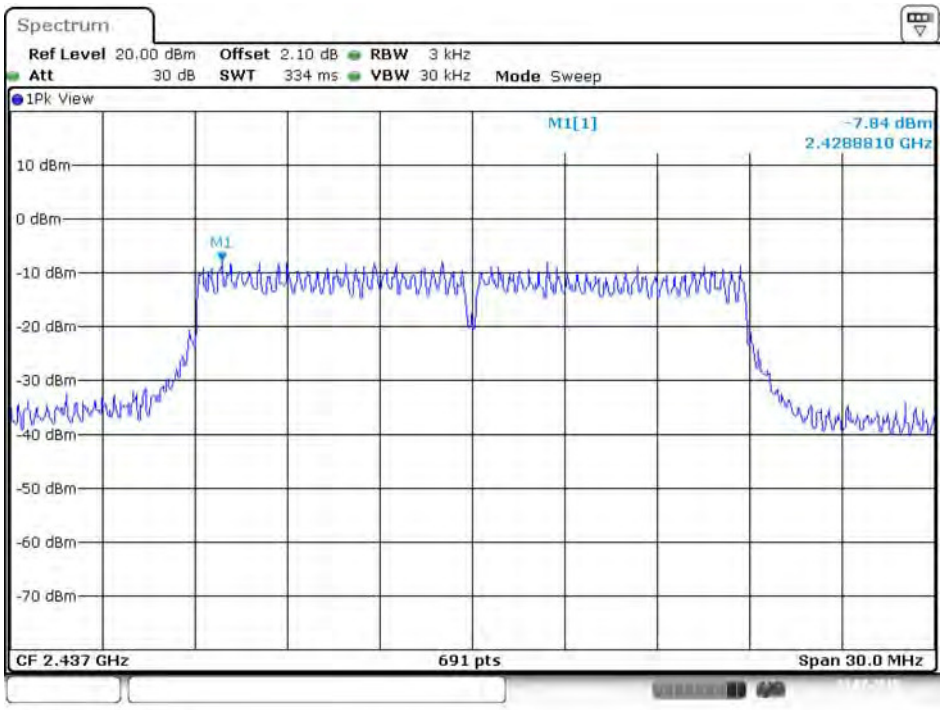
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2437 MHz / Chain 2



Date: 31.JUL.2015 11:44:23

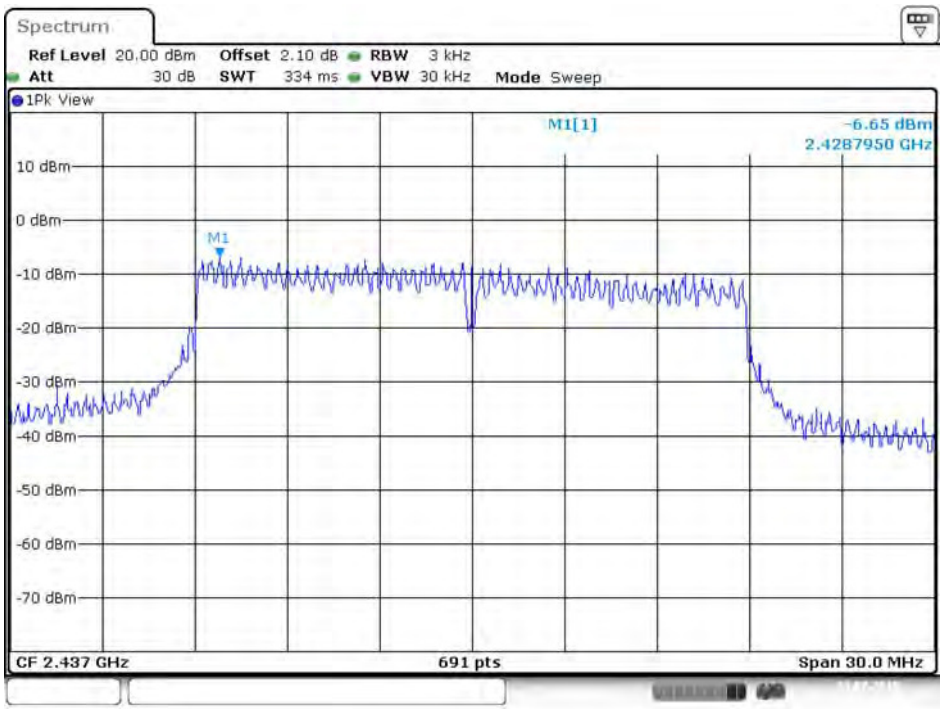
Mode 2 (Ant. 7 Polarized Panel / 11dBi / 2TX)

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 2437 MHz / Chain 1



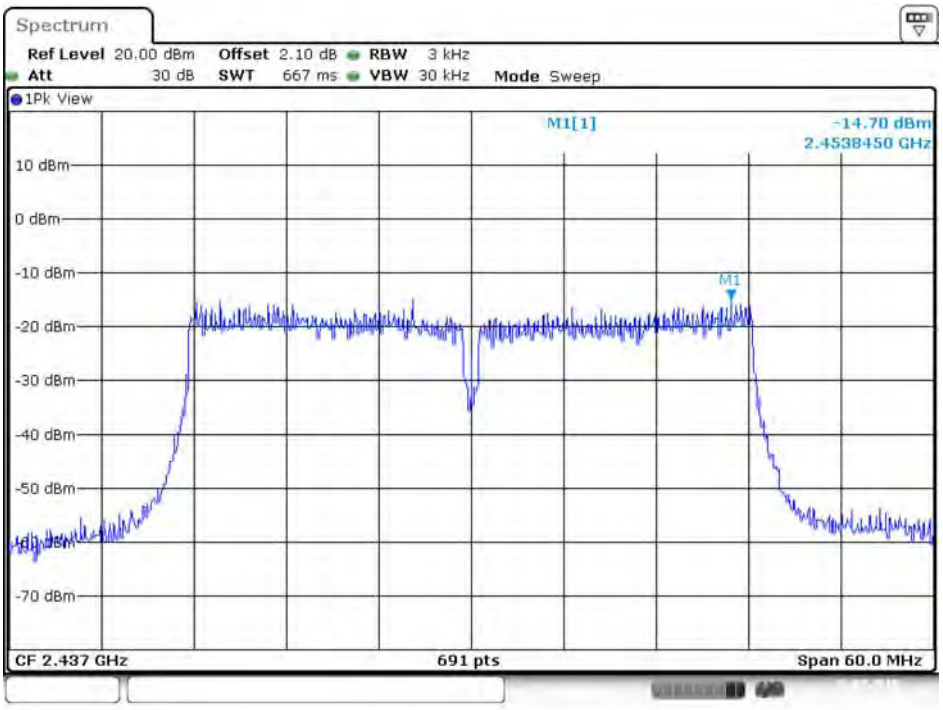
Date: 31.JUL.2015 13:57:15

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 2437 MHz / Chain 2



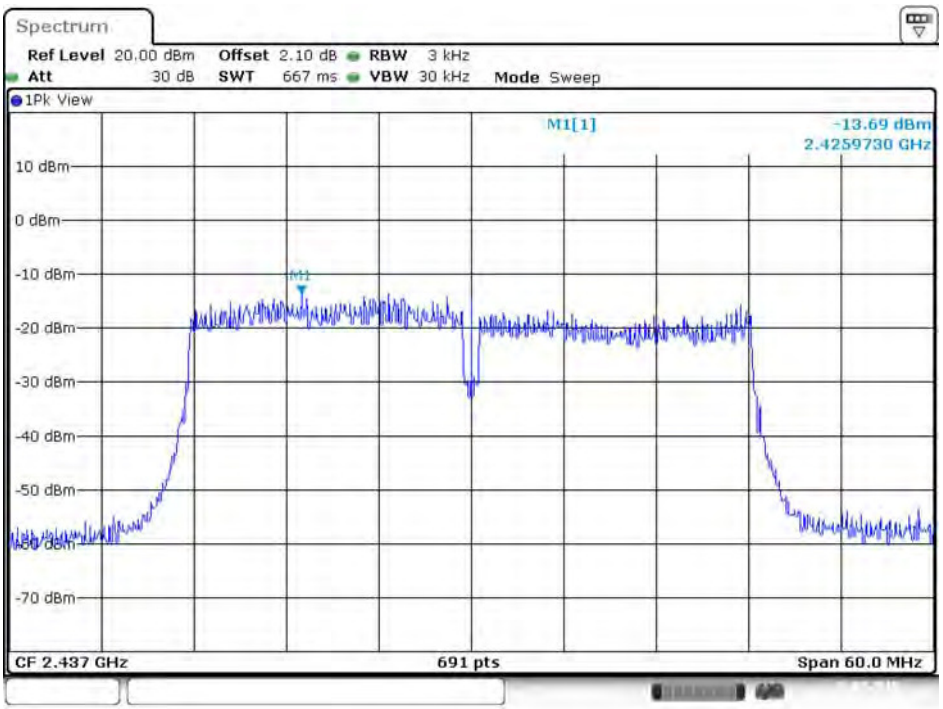
Date: 31.JUL.2015 13:57:33

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2437 MHz / Chain 1



Date: 31.JUL.2015 13:59:37

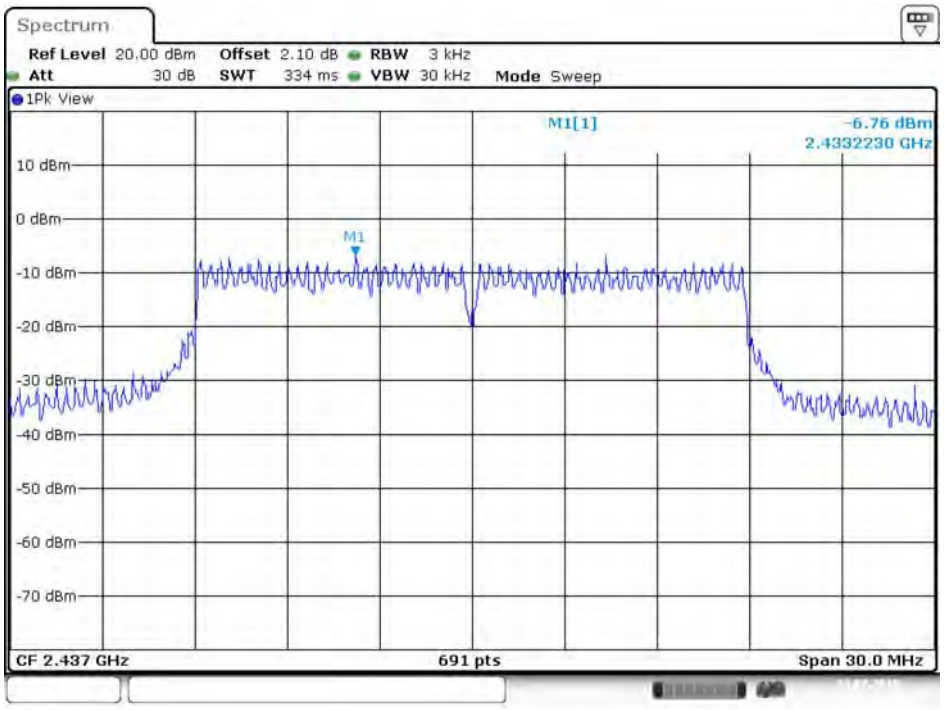
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2437 MHz / Chain 2



Date: 31.JUL.2015 13:59:52

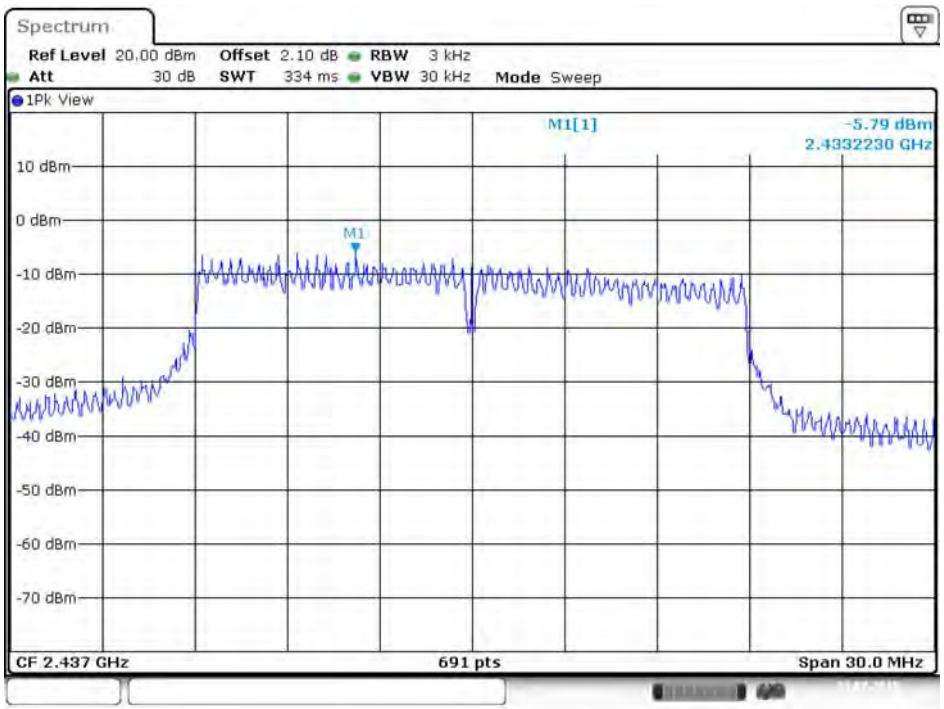
Mode 3 (Ant. 8 Patch / 5dBi / 2TX)

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 2437 MHz / Chain 1



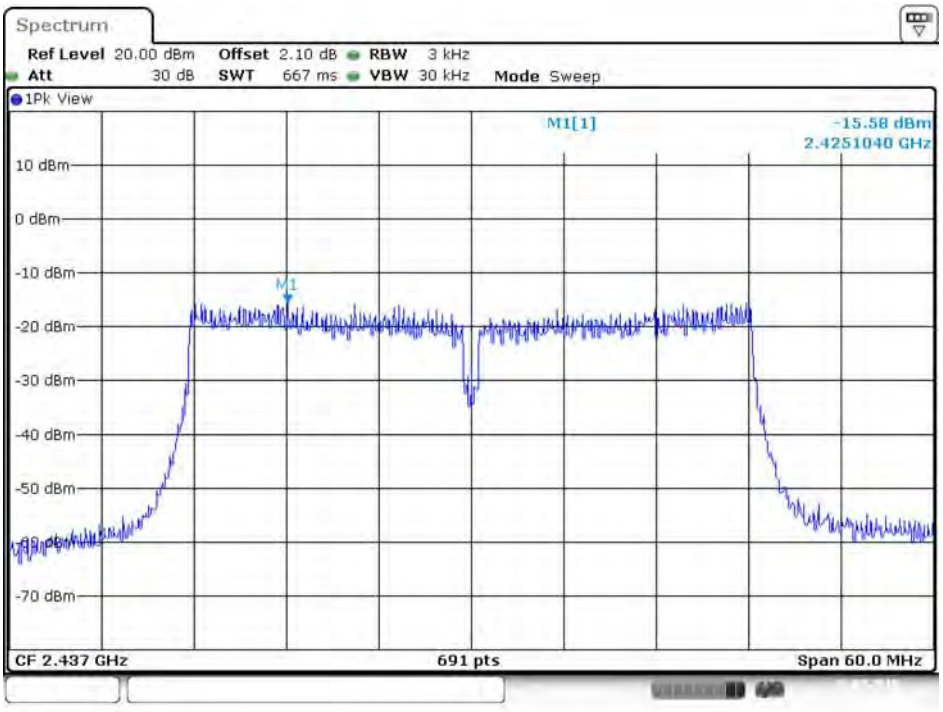
Date: 31.JUL.2015 15:16:13

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 2437 MHz / Chain 2



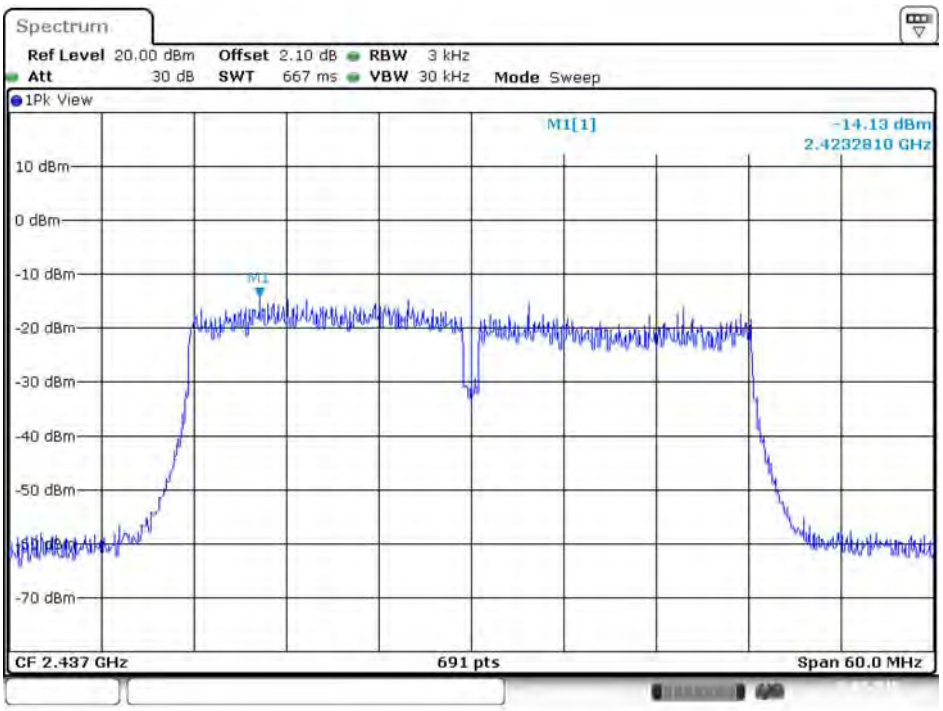
Date: 31.JUL.2015 15:16:00

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2437 MHz / Chain 1



Date: 31.JUL.2015 15:18:15

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2437 MHz / Chain 2



Date: 31.JUL.2015 15:17:54

4.4. 6dB Spectrum Bandwidth Measurement

4.4.1. Limit

For digital modulation systems, the minimum 6dB 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 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

<For Non-Beamforming Mode>

Temperature	23℃	Humidity	61%
Test Engineer	Clemens Fang		
Test Mode	Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 1TX)		

Mode	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11b	2412 MHz	8.52	11.89	500	Complies
	2437 MHz	9.04	12.32	500	Complies
	2462 MHz	8.05	11.98	500	Complies
802.11ac MCS0/Nss1 VHT20	2412 MHz	17.56	18.14	500	Complies
	2437 MHz	17.56	20.14	500	Complies
	2462 MHz	17.56	18.06	500	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	36.29	36.75	500	Complies
	2437 MHz	36.17	37.19	500	Complies
	2452 MHz	35.71	36.75	500	Complies

Temperature	23℃	Humidity	61%
Test Engineer	Clemens Fang		
Test Mode	Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 2TX)		

Mode	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11b	2412 MHz	8.52	11.98	500	Complies
	2437 MHz	8.52	12.16	500	Complies
	2462 MHz	8.99	11.92	500	Complies

Temperature	23°C	Humidity	61%
Test Engineer	Clemens Fang		
Test Mode	Mode 2 (Ant. 7 Polarized Panel / 11dBi / 1TX)		

Mode	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11b	2412 MHz	8.52	11.90	500	Complies
	2437 MHz	9.04	12.50	500	Complies
	2462 MHz	8.52	11.90	500	Complies
802.11ac MCS0/Nss1 VHT20	2412 MHz	17.57	17.97	500	Complies
	2437 MHz	17.57	18.67	500	Complies
	2462 MHz	17.57	18.06	500	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	35.48	36.32	500	Complies
	2437 MHz	36.06	36.32	500	Complies
	2452 MHz	36.41	36.76	500	Complies

Temperature	23°C	Humidity	61%
Test Engineer	Clemens Fang		
Test Mode	Mode 2 (Ant. 7 Polarized Panel / 11dBi / 2TX)		

Mode	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11b	2412 MHz	8.52	12.16	500	Complies
	2437 MHz	9.10	12.24	500	Complies
	2462 MHz	8.58	12.16	500	Complies

Temperature	23℃	Humidity	61%
Test Engineer	Clemens Fang		
Test Mode	Mode 3 (Ant. 8 Patch / 5dBi / 1TX)		

Mode	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11b	2412 MHz	8.52	12.33	500	Complies
	2437 MHz	8.99	12.42	500	Complies
	2462 MHz	8.52	11.98	500	Complies
802.11ac MCS0/Nss1 VHT20	2412 MHz	17.57	17.97	500	Complies
	2437 MHz	17.57	20.14	500	Complies
	2462 MHz	17.57	17.89	500	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	36.29	36.47	500	Complies
	2437 MHz	36.17	36.76	500	Complies
	2452 MHz	35.94	36.47	500	Complies

Temperature	23°C	Humidity	61%
Test Engineer	Clemens Fang		
Test Mode	Mode 3 (Ant. 8 Patch / 5dBi / 2TX)		

Mode	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11b	2412 MHz	8.52	12.07	500	Complies
	2437 MHz	8.52	12.24	500	Complies
	2462 MHz	8.99	12.16	500	Complies

<For Beamforming Mode>

Temperature	23℃	Humidity	61%
Test Engineer	Clemens Fang		
Test Mode	Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 2TX)		

Mode	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11ac MCS0/Nss1 VHT20	2412 MHz	16.99	17.89	500	Complies
	2437 MHz	16.64	18.06	500	Complies
	2462 MHz	16.41	17.80	500	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	35.13	36.47	500	Complies
	2437 MHz	35.71	36.61	500	Complies
	2452 MHz	36.29	36.61	500	Complies

Temperature	23°C	Humidity	61%
Test Engineer	Clemens Fang		
Test Mode	Mode 2 (Ant. 7 Polarized Panel / 11dBi / 2TX)		

Mode	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11ac MCS0/Nss1 VHT20	2412 MHz	16.58	17.89	500	Complies
	2437 MHz	16.64	18.06	500	Complies
	2462 MHz	17.04	17.80	500	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	35.36	36.32	500	Complies
	2437 MHz	36.29	36.61	500	Complies
	2452 MHz	35.71	36.61	500	Complies

Temperature	23℃	Humidity	61%
Test Engineer	Clemens Fang		
Test Mode	Mode 3 (Ant. 8 Patch / 5dBi / 2TX)		

Mode	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11ac MCS0/Nss1 VHT20	2412 MHz	16.87	17.89	500	Complies
	2437 MHz	16.99	18.23	500	Complies
	2462 MHz	16.41	17.80	500	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	35.13	36.47	500	Complies
	2437 MHz	36.29	36.61	500	Complies
	2452 MHz	36.17	36.76	500	Complies

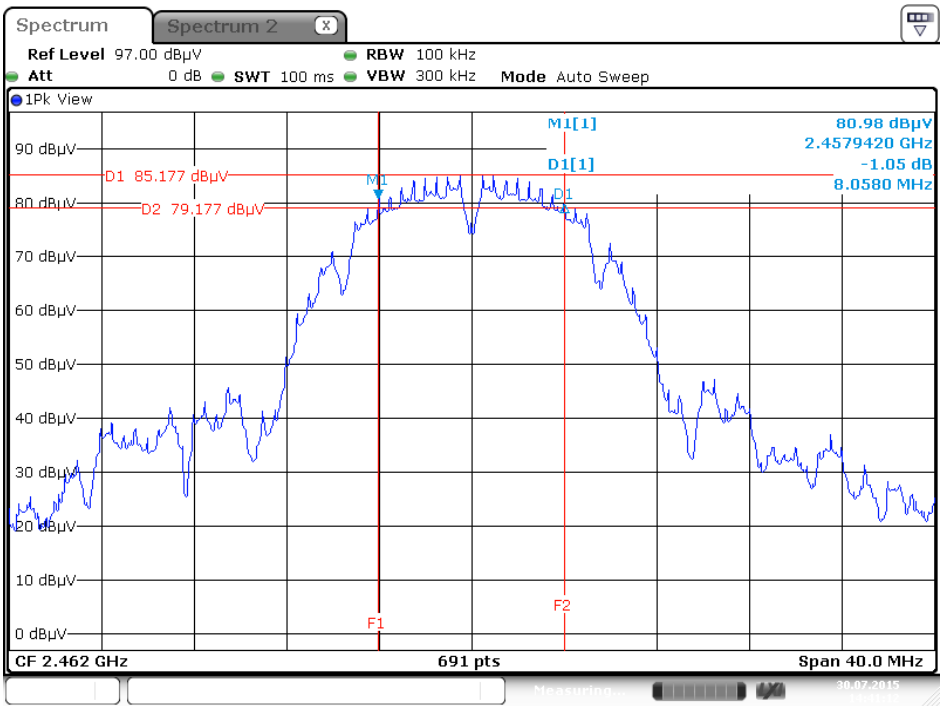
Note: All the test values were listed in the report.

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

<For Non-Beamforming Mode>

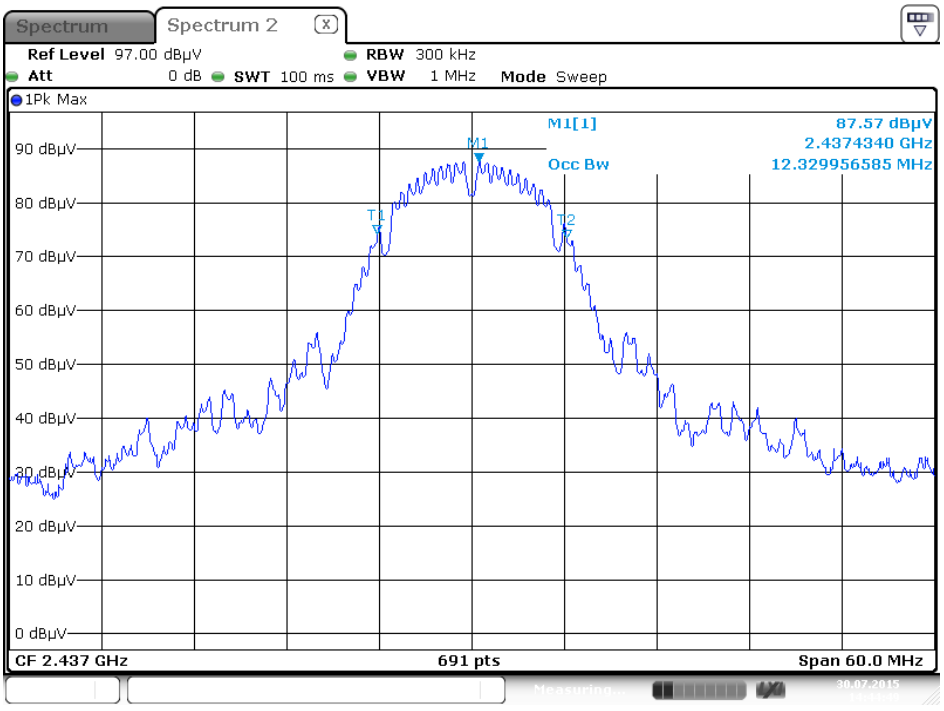
Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 1TX)

6 dB Bandwidth Plot on Configuration IEEE 802.11b / 2462 MHz / Chain 1



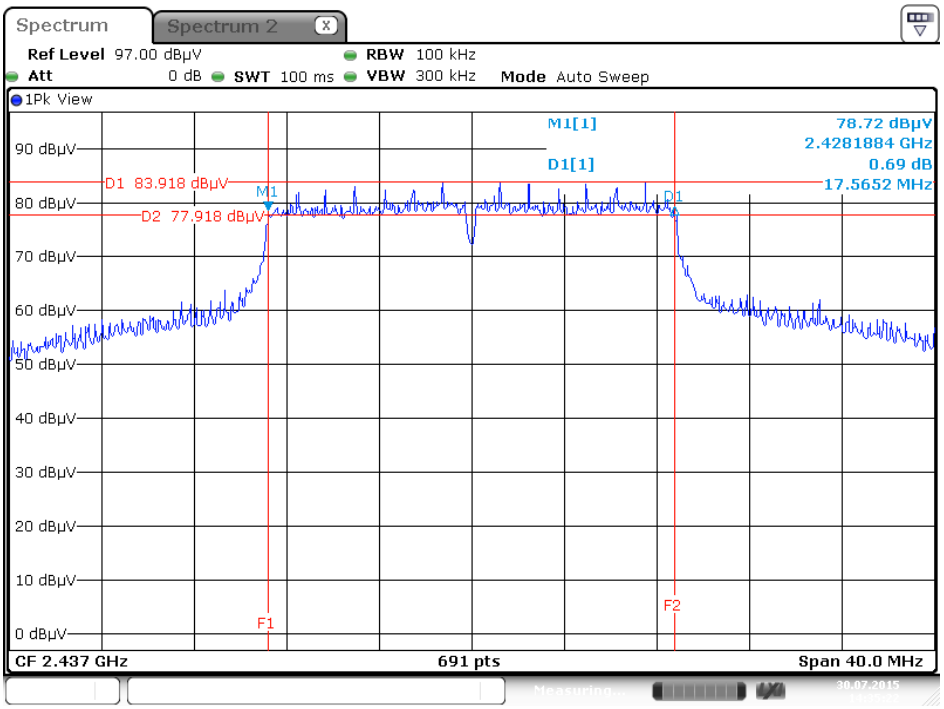
Date: 30.JUL.2015 14:41:11

99% Occupied Bandwidth Plot on Configuration IEEE 802.11b / 2437 MHz / Chain 1



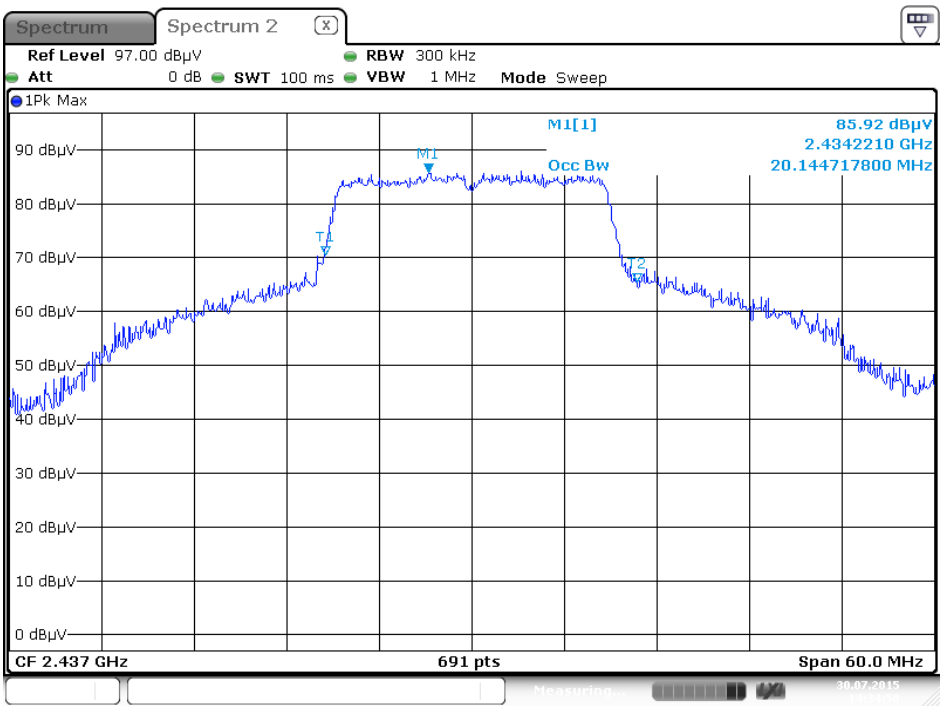
Date: 30.JUL.2015 14:44:48

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 2437 MHz / Chain 1



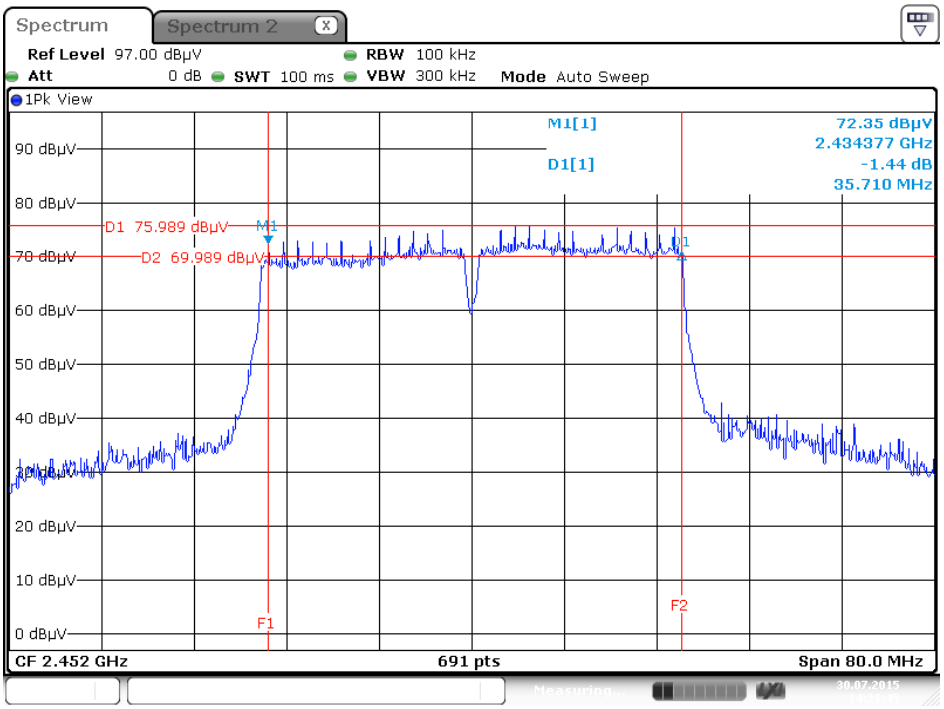
Date: 30.JUL.2015 14:35:22

99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 2437 MHz / Chain 1



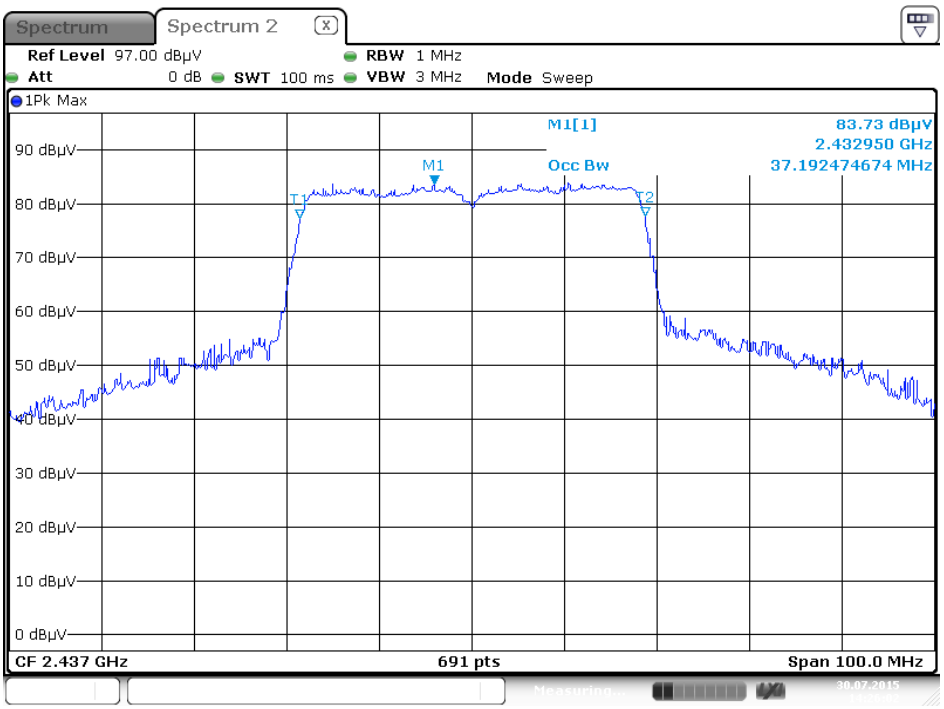
Date: 30.JUL.2015 14:34:50

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2452 MHz / Chain 1



Date: 30.JUL.2015 14:21:44

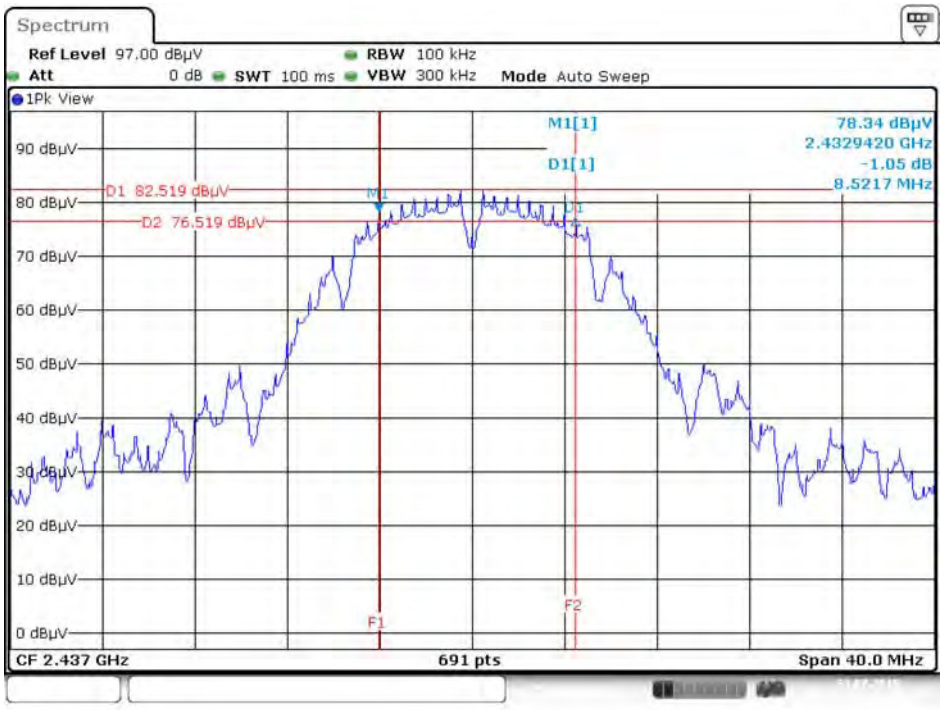
99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2437 MHz / Chain 1



Date: 30.JUL.2015 14:26:02

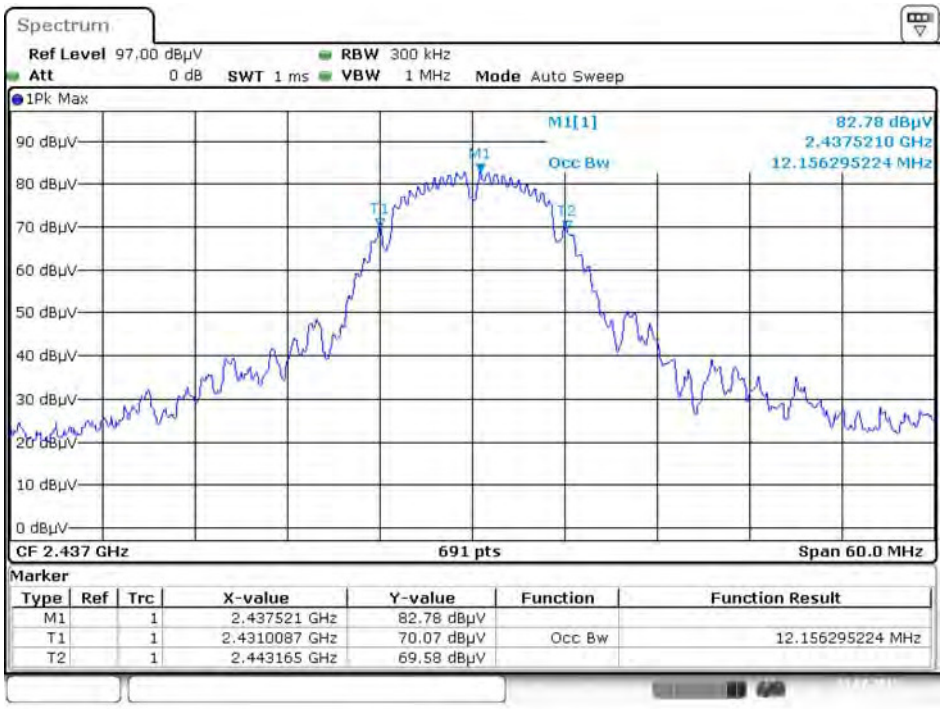
Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 2TX)

6 dB Bandwidth Plot on Configuration IEEE 802.11b / 2437 MHz / Chain 1 + Chain 2



Date: 31.JUL.2015 15:30:30

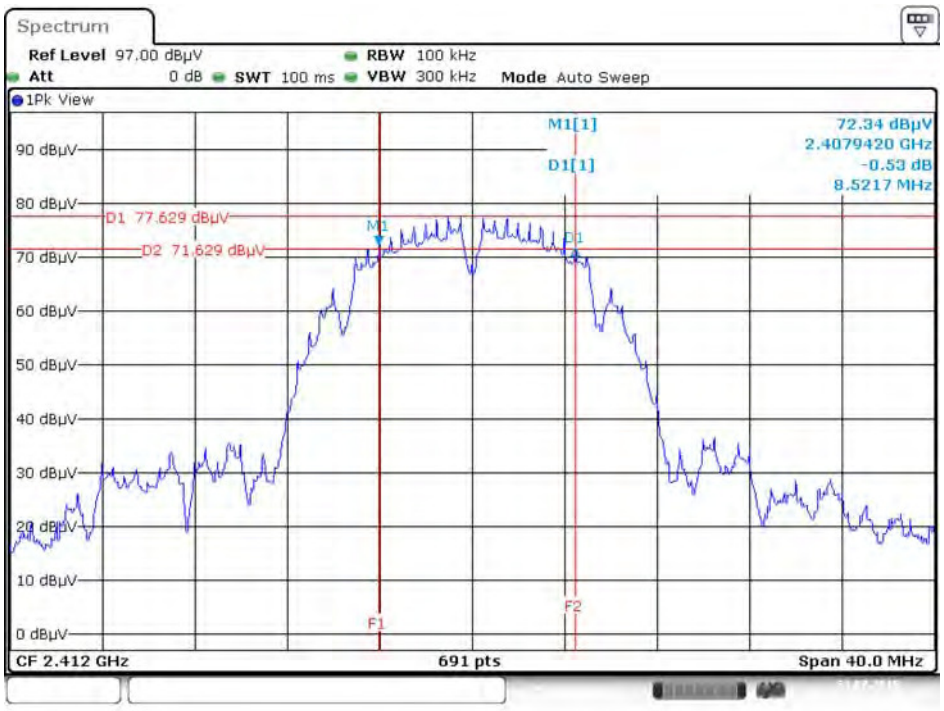
99% Occupied Bandwidth Plot on Configuration IEEE 802.11b / 2437 MHz / Chain 1 + Chain 2



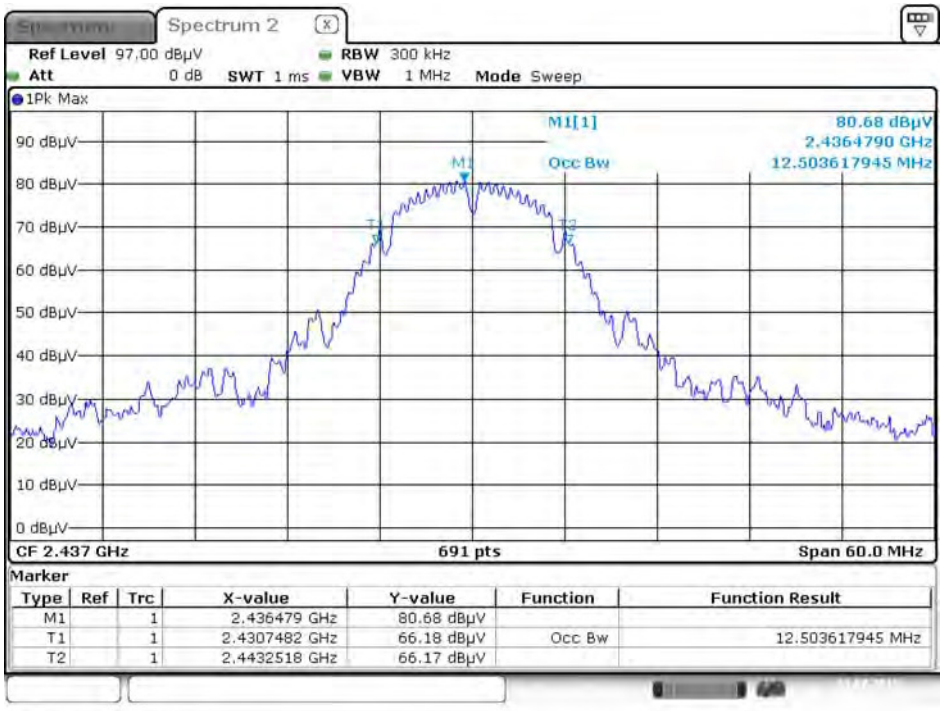
Date: 31.JUL.2015 19:28:20

Mode 2 (Ant. 7 Polarized Panel / 11dBi / 1TX)

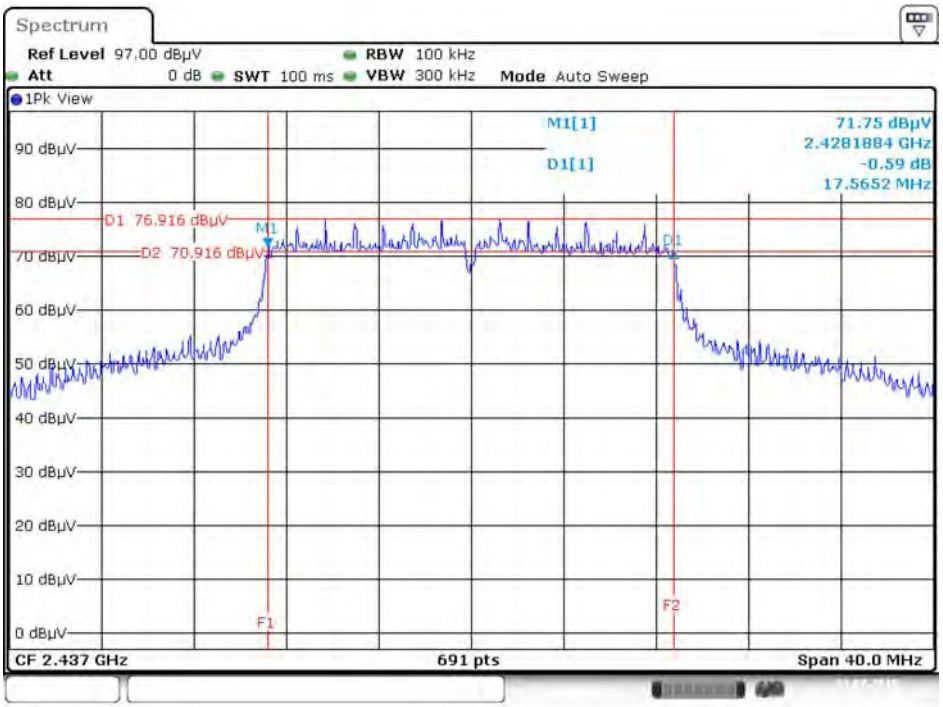
6 dB Bandwidth Plot on Configuration IEEE 802.11b / 2412 MHz / Chain 2



99% Occupied Bandwidth Plot on Configuration IEEE 802.11b / 2437 MHz / Chain 2

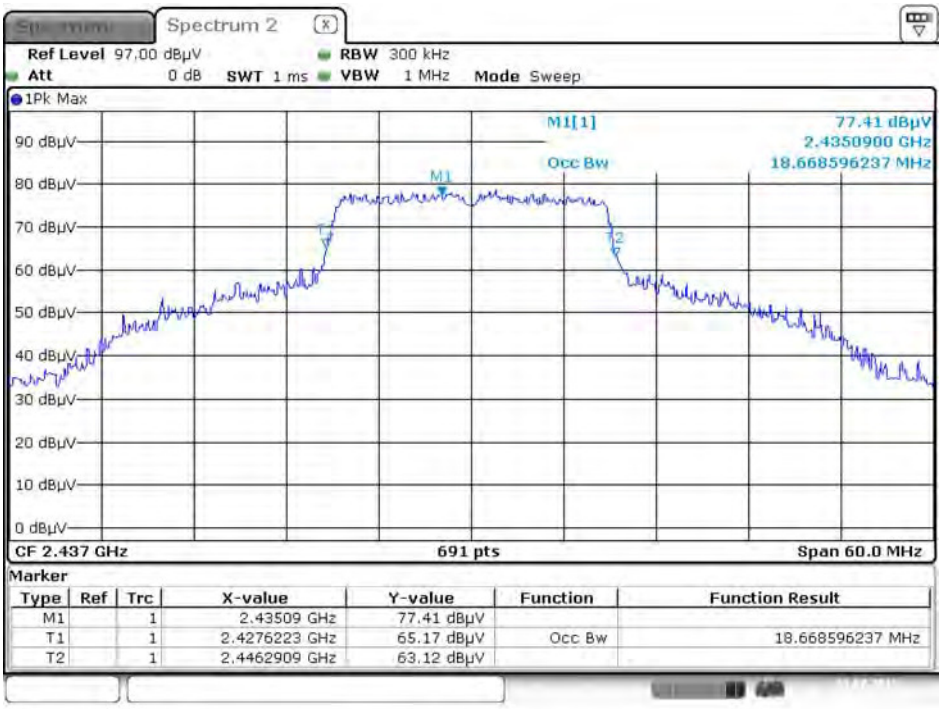


6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 2437 MHz / Chain 2



Date: 31.JUL.2015 15:50:09

99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 2437 MHz / Chain 2

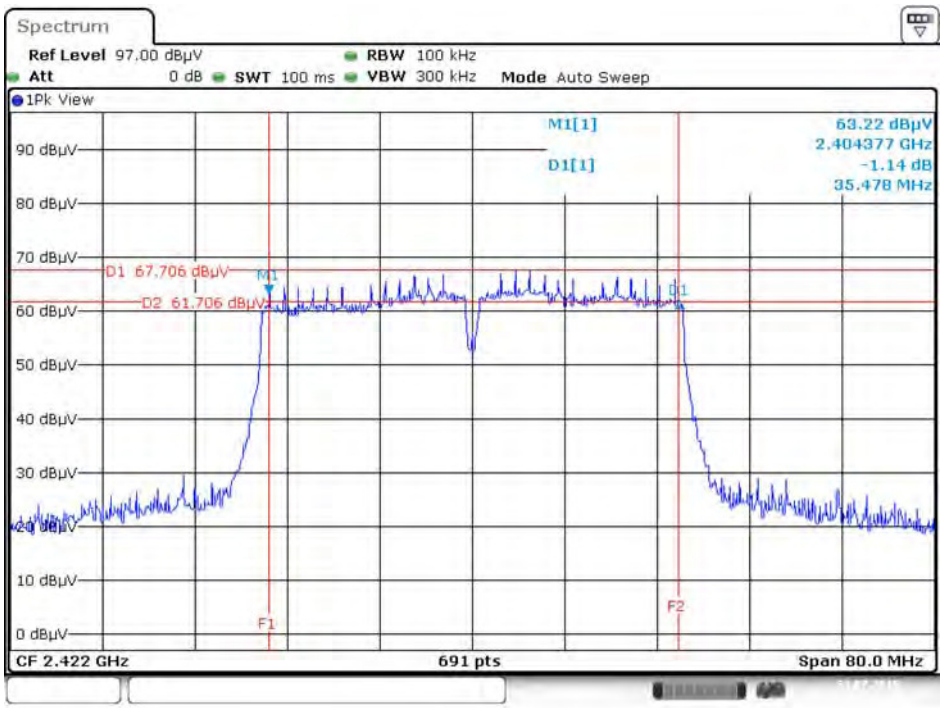


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.43509 GHz	77.41 dBµV		
T1		1	2.4276223 GHz	65.17 dBµV	Occ Bw	18.668596237 MHz
T2		1	2.4462909 GHz	63.12 dBµV		

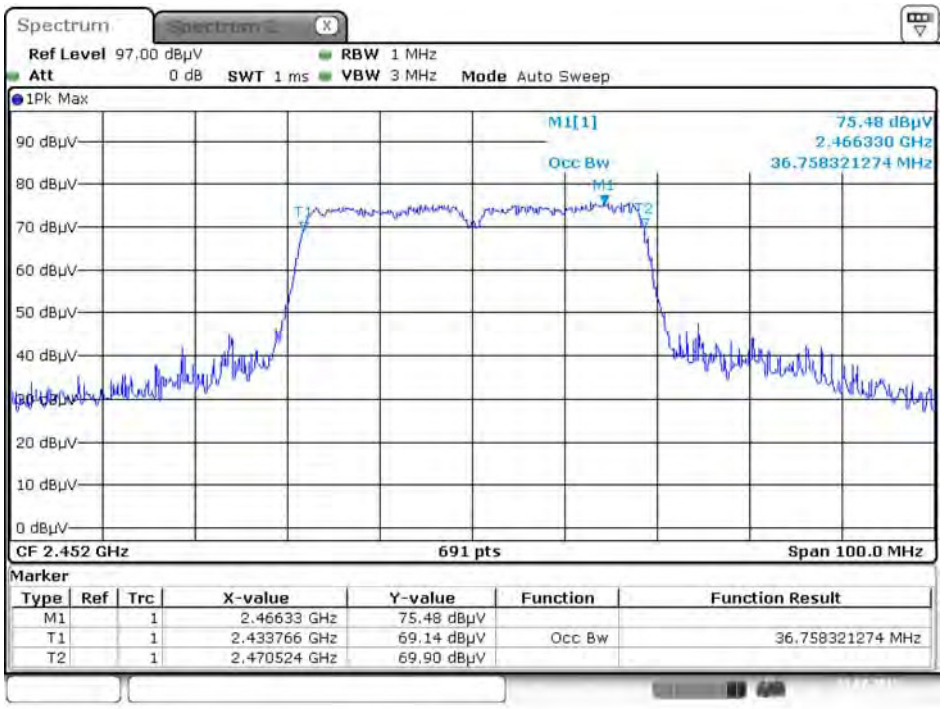
Date: 31.JUL.2015 20:30:33

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2422 MHz / Chain 2



Date: 31.JUL.2015 15:51:56

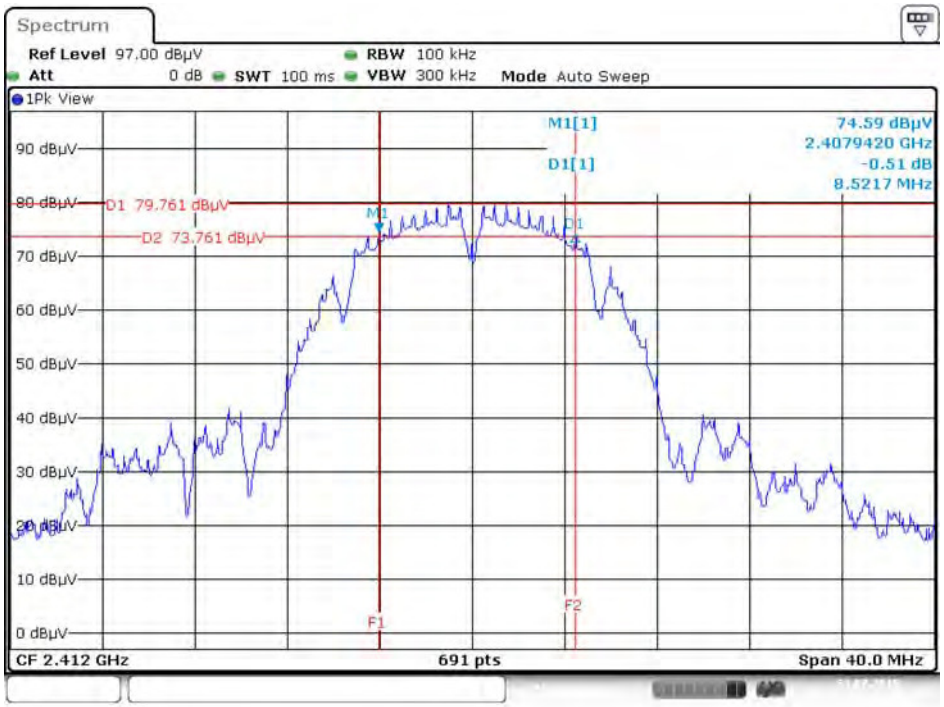
99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2452 MHz / Chain 2



Date: 31.JUL.2015 20:33:30

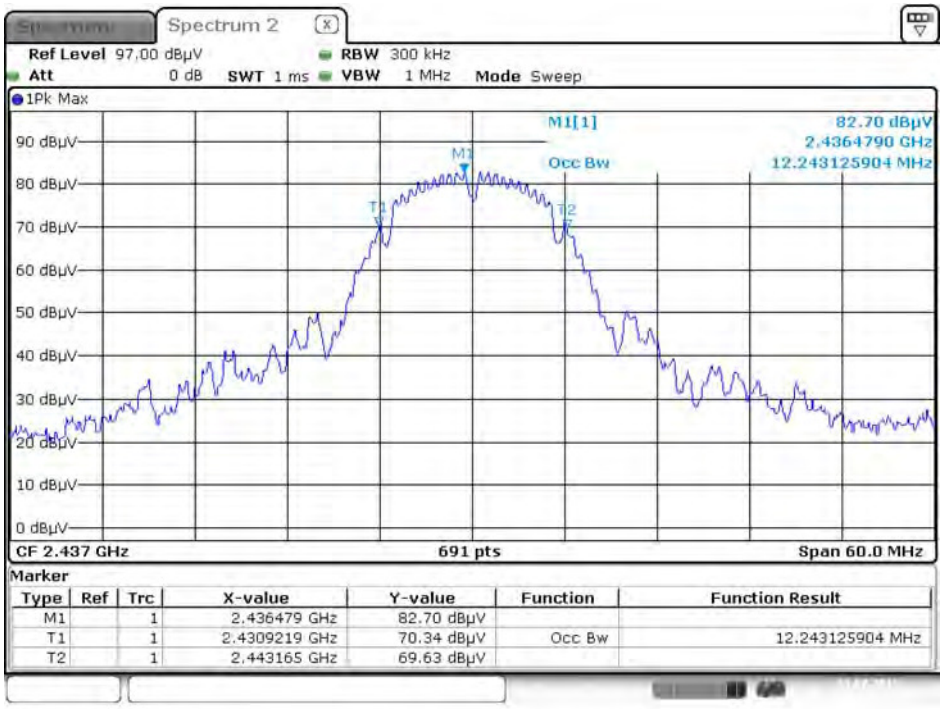
Mode 2 (Ant. 7 Polarized Panel / 11dBi / 2TX)

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



Date: 31.JUL.2015 16:14:43

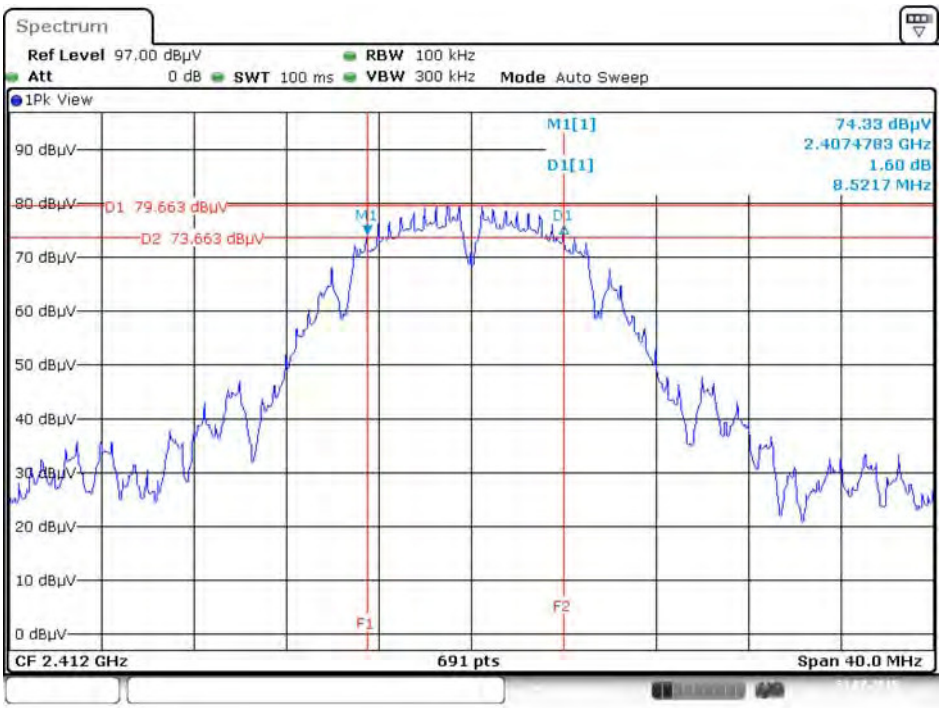
99% Occupied Bandwidth Plot on Configuration IEEE 802.11b / 2437 MHz / Chain 1 + Chain 2



Date: 31.JUL.2015 20:45:32

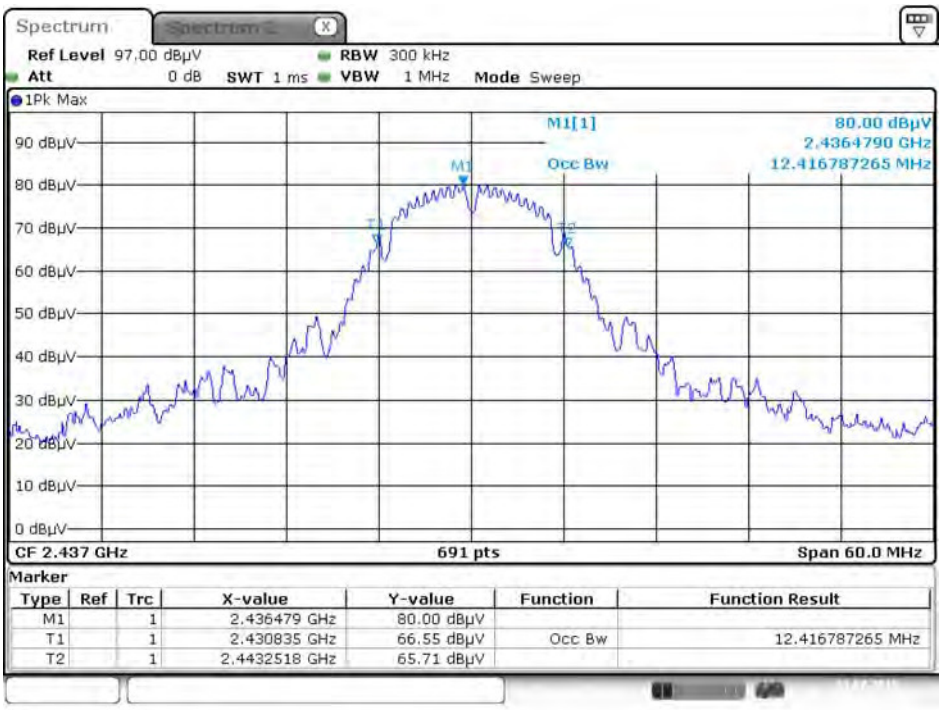
Mode 3 (Ant. 8 Patch / 5dBi / 1TX)

6 dB Bandwidth Plot on Configuration IEEE 802.11b / 2412 MHz / Chain 1



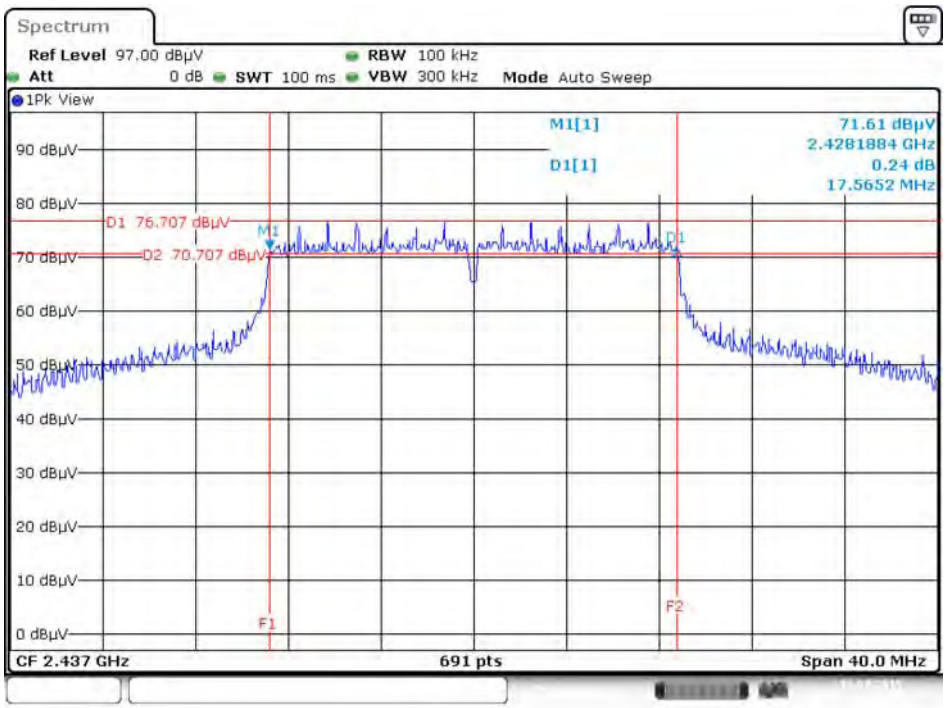
Date: 31.JUL.2015 16:30:26

99% Occupied Bandwidth Plot on Configuration IEEE 802.11b / 2437 MHz / Chain 1



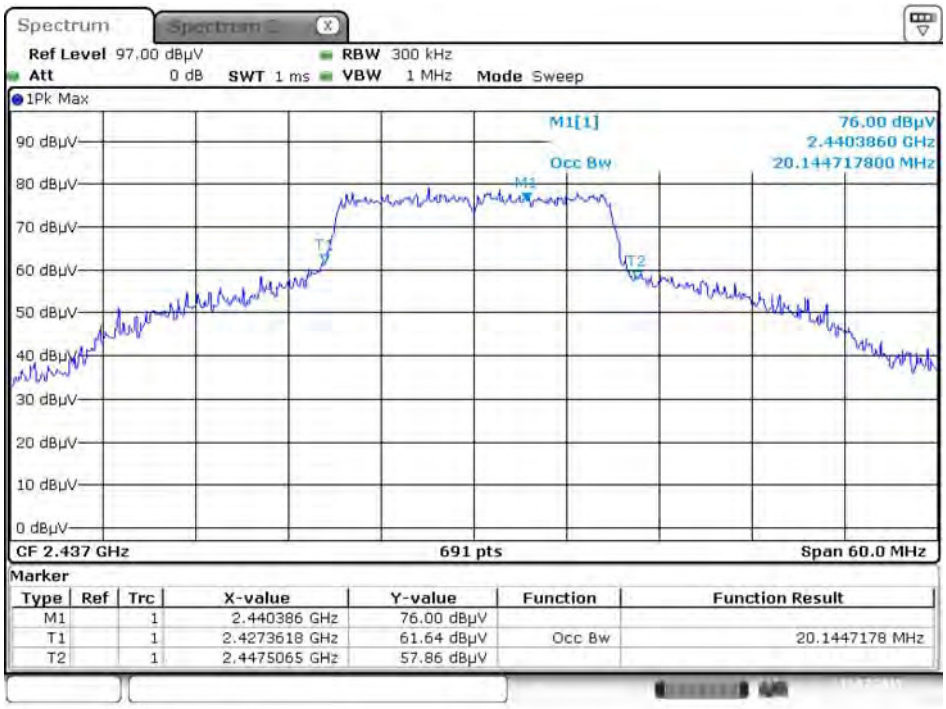
Date: 31.JUL.2015 21:17:39

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 2437 MHz / Chain 1



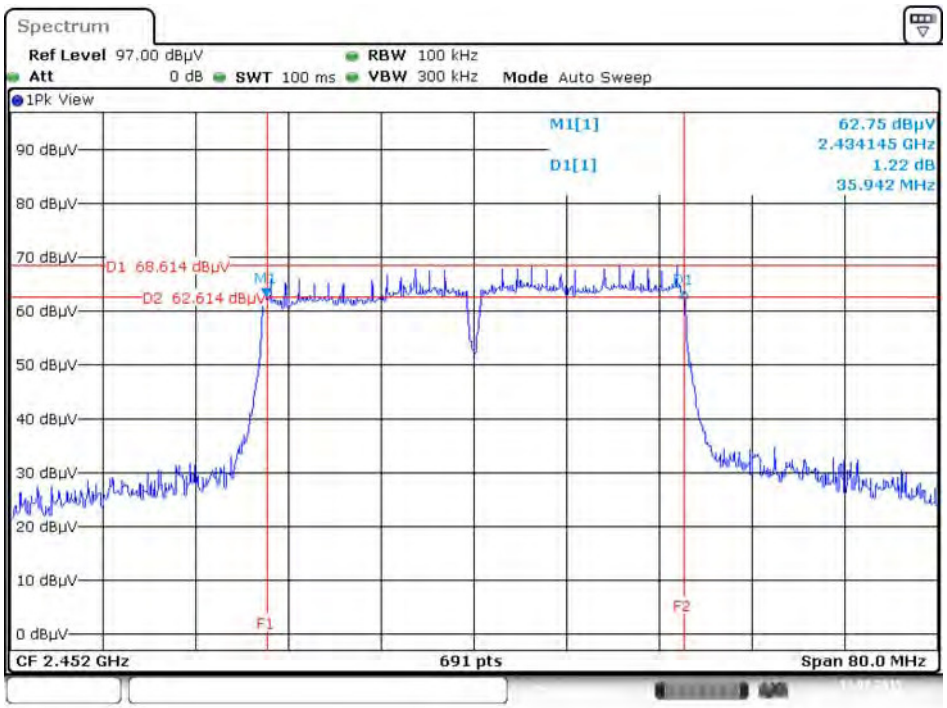
Date: 31.JUL.2015 16:36:34

99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 2437 MHz / Chain 1

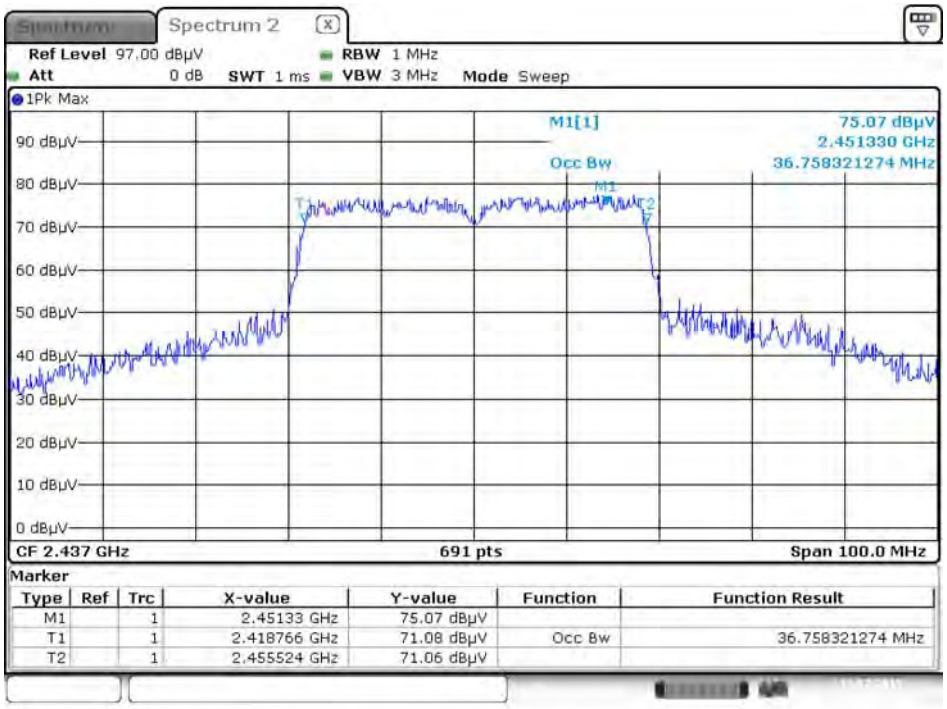


Date: 31.JUL.2015 21:22:45

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2452 MHz / Chain 1

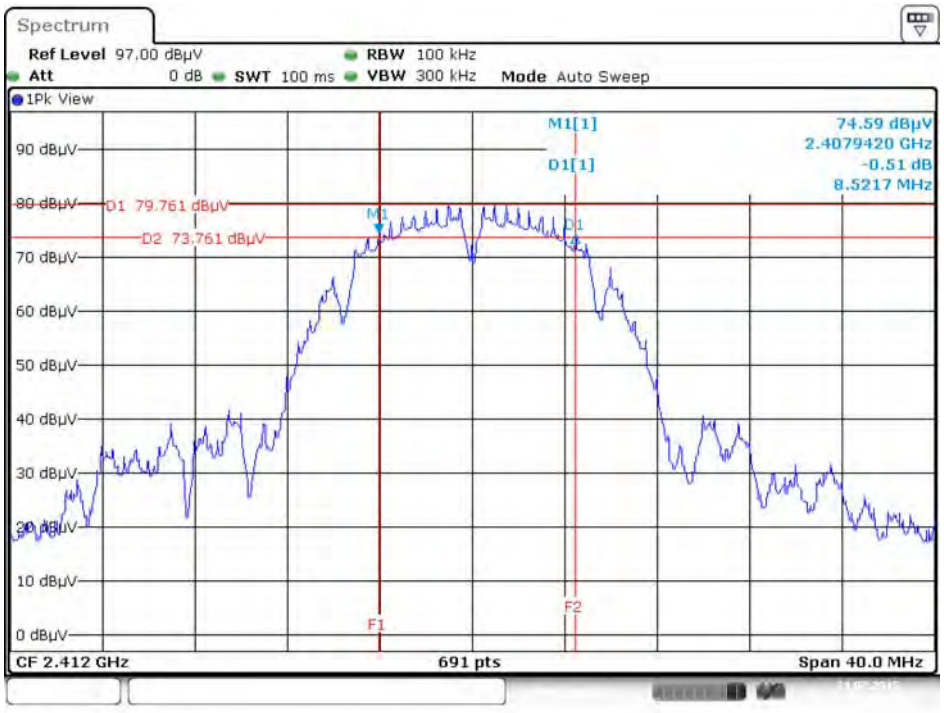


99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2437 MHz / Chain 1



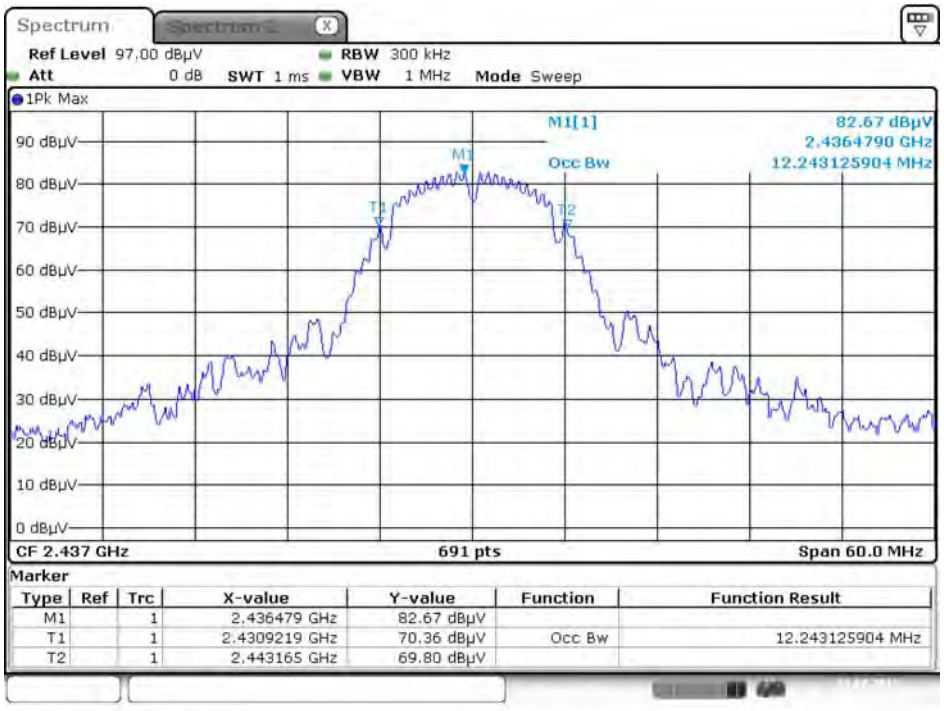
Mode 3 (Ant. 8 Patch / 5dBi / 2TX)

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



Date: 31.JUL.2015 16:14:43

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

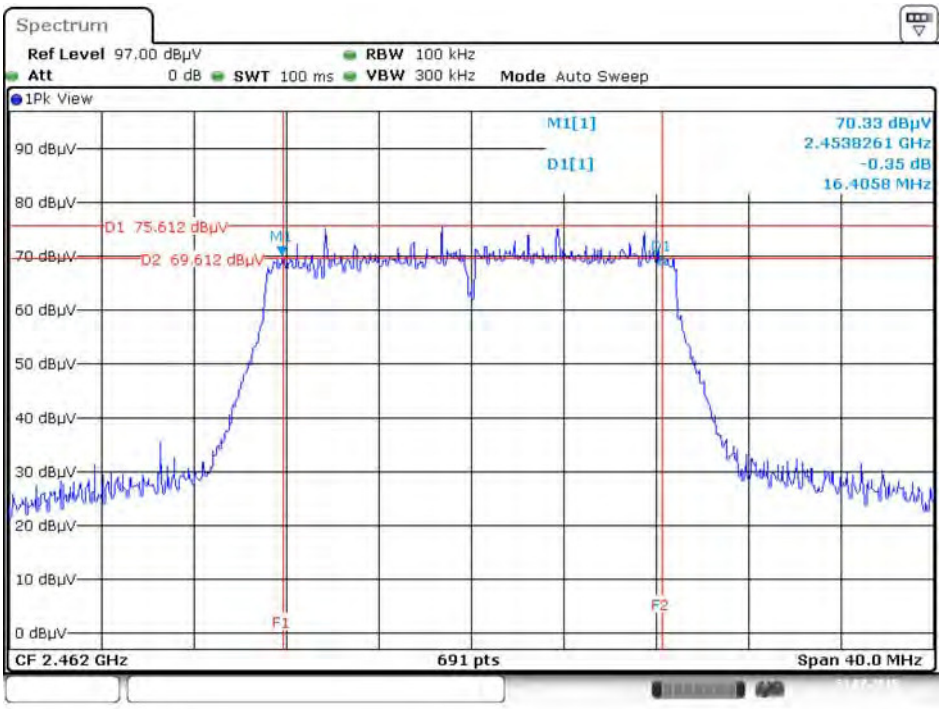


Date: 31.JUL.2015 21:34:15

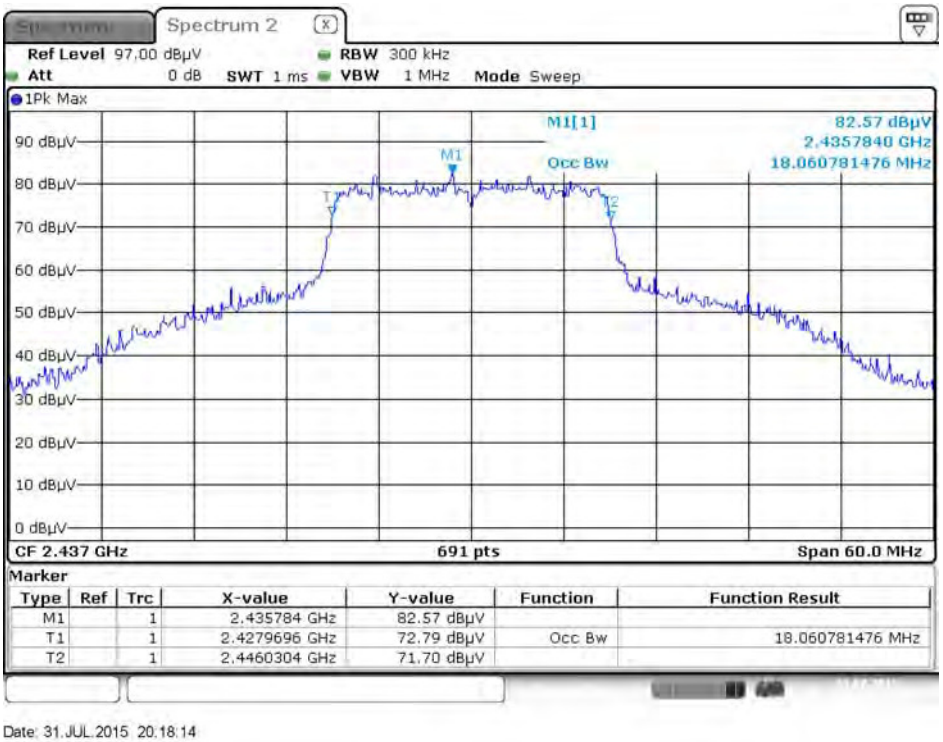
<For Beamforming Mode>

Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 2TX)

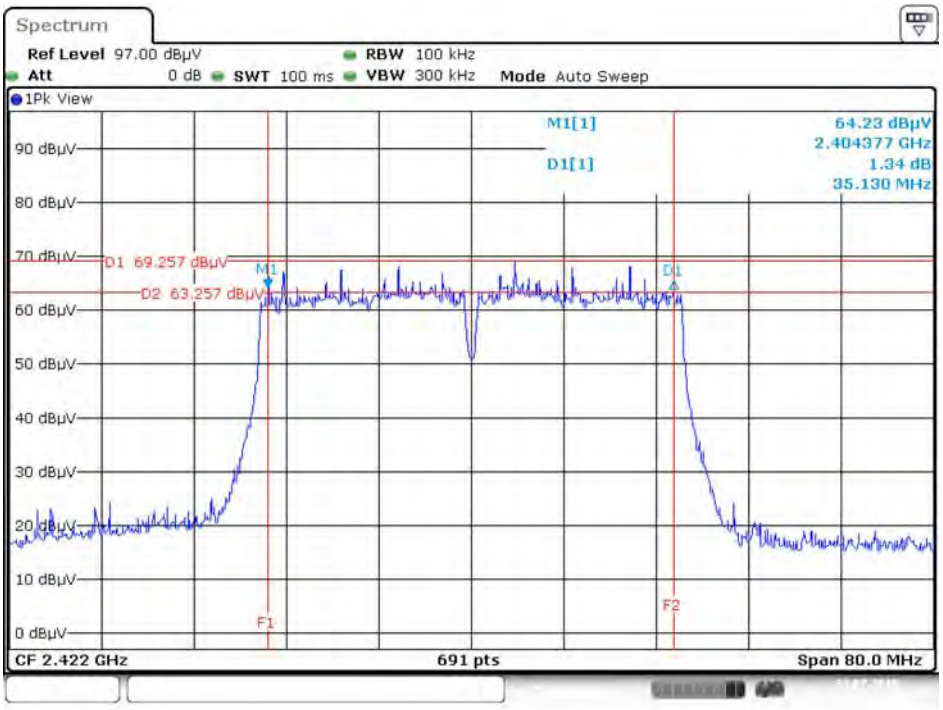
6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 2462 MHz / Chain 1 + Chain 2



99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 2437 MHz / Chain 1 + Chain 2

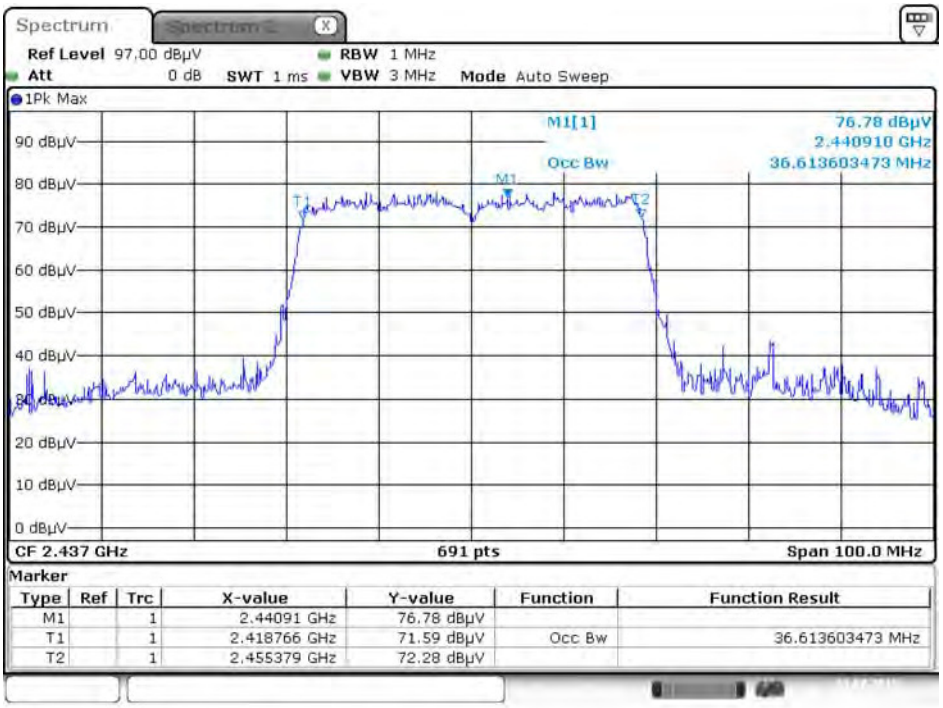


6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2422 MHz / Chain 1 + Chain 2



Date: 31.JUL.2015 15:37:40

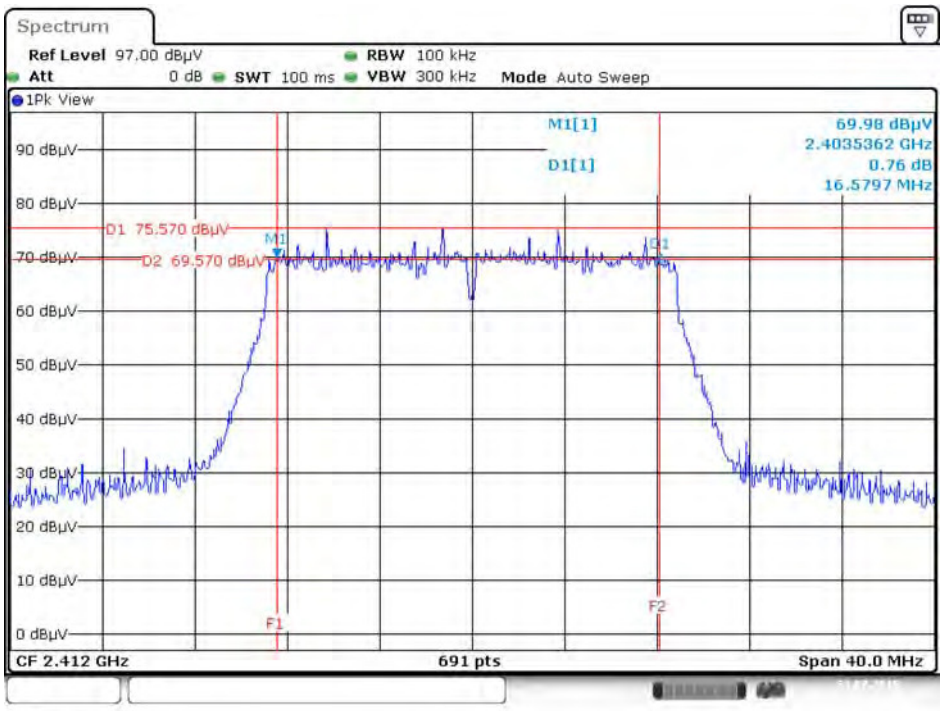
99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2437 MHz / Chain 1 + Chain 2



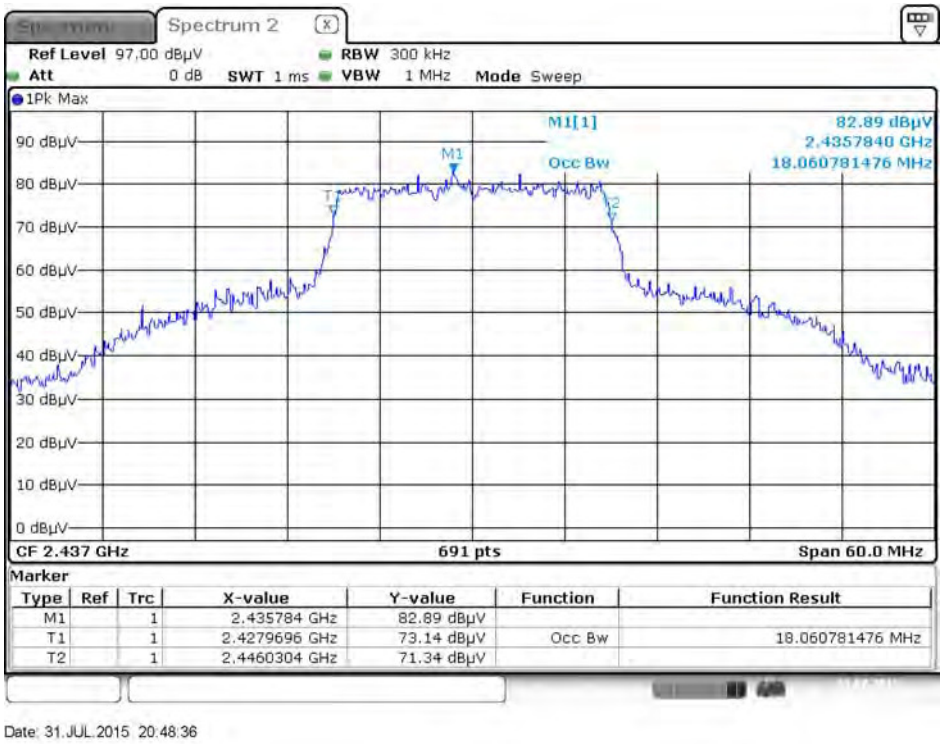
Date: 31.JUL.2015 20:21:45

Mode 2 (Ant. 7 Polarized Panel / 11dBi / 2TX)

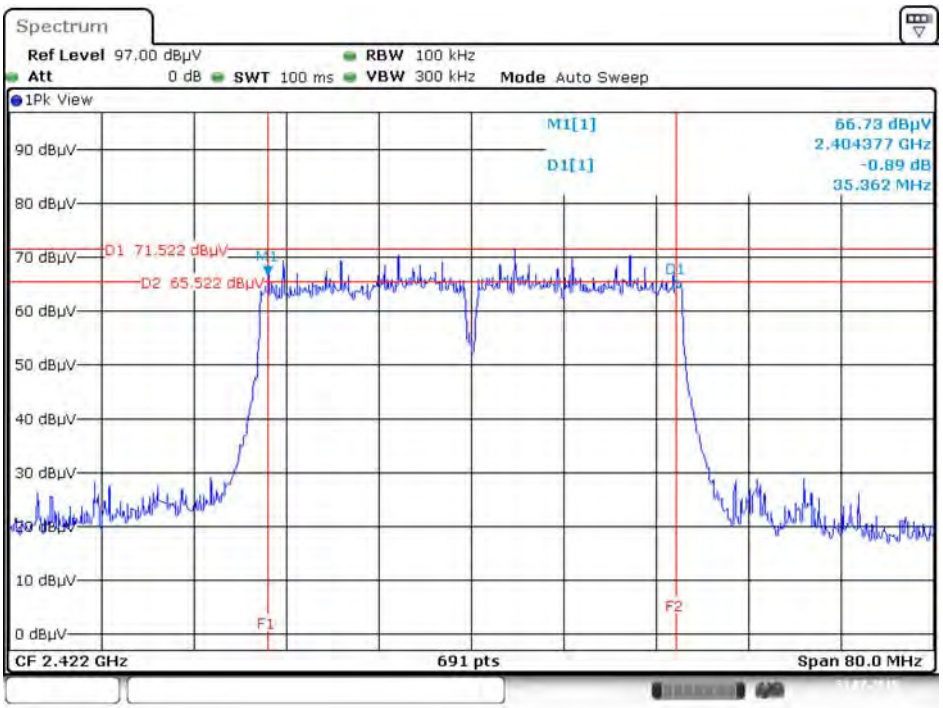
6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 2412 MHz / Chain 1 + Chain 2



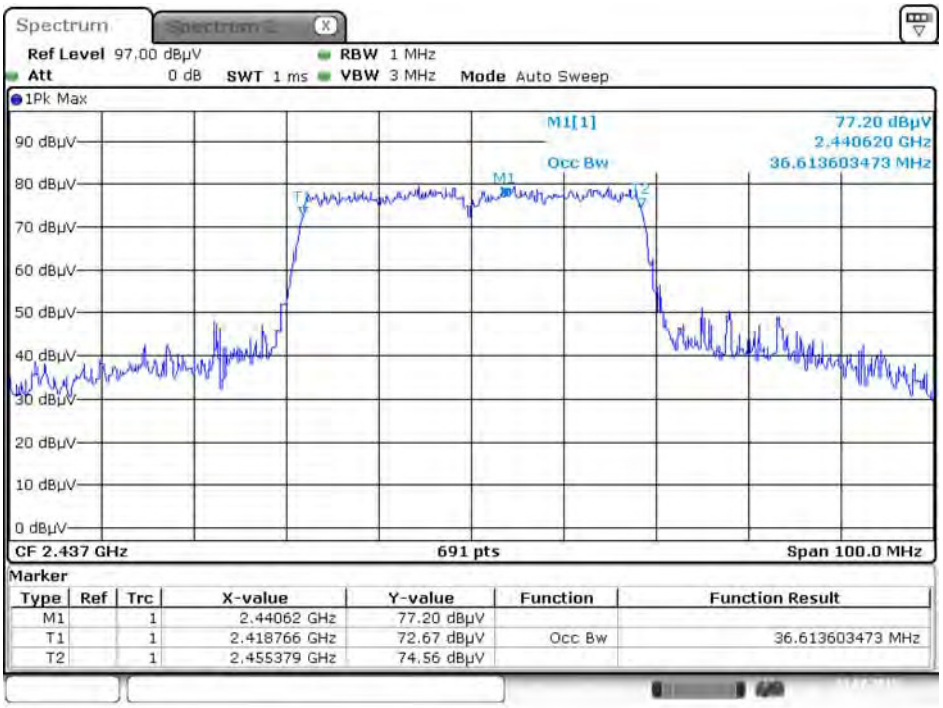
99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 2437 MHz / Chain 1 + Chain 2



6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2422 MHz / Chain 1 + Chain 2

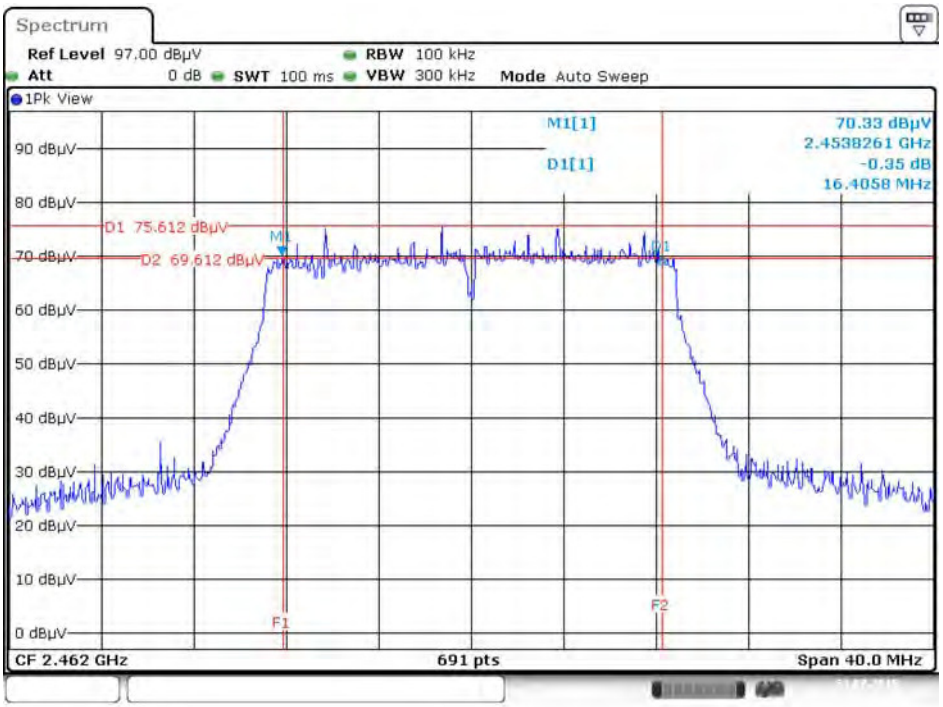


99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2437 MHz / Chain 1 + Chain 2



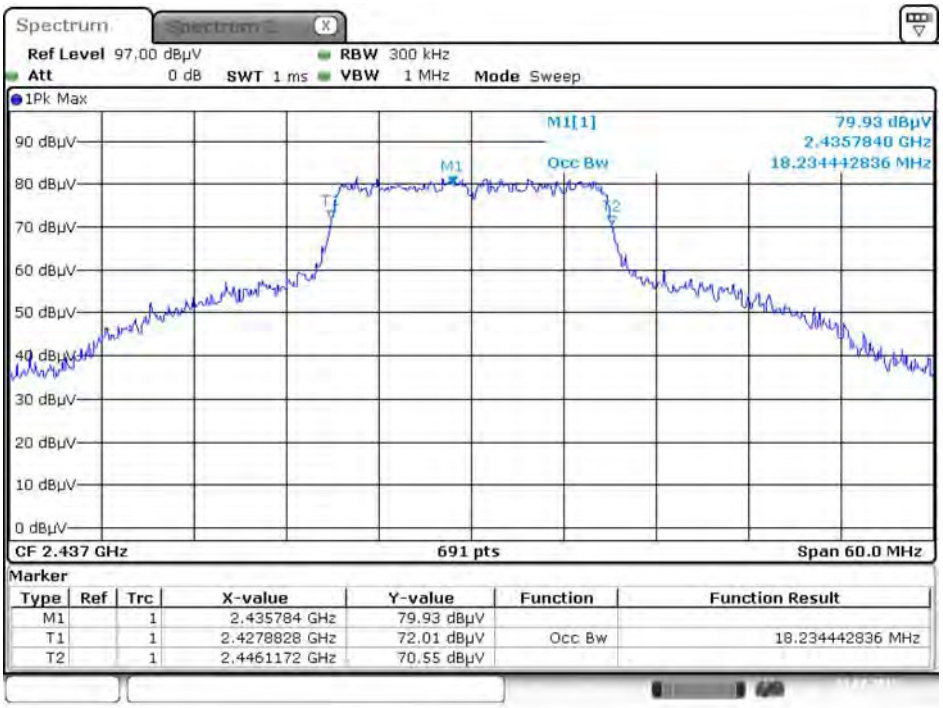
Mode 3 (Ant. 8 Patch / 5dBi / 2TX)

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 2462 MHz / Chain 1 + Chain 2



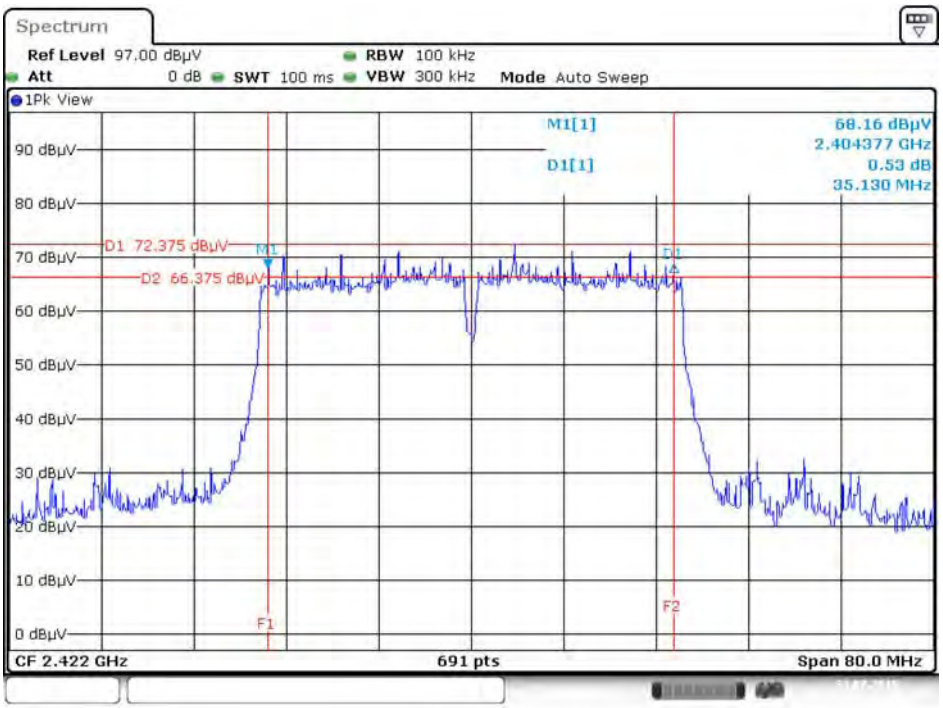
Date: 31.JUL.2015 15:36:45

99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 2437 MHz / Chain 1 + Chain 2

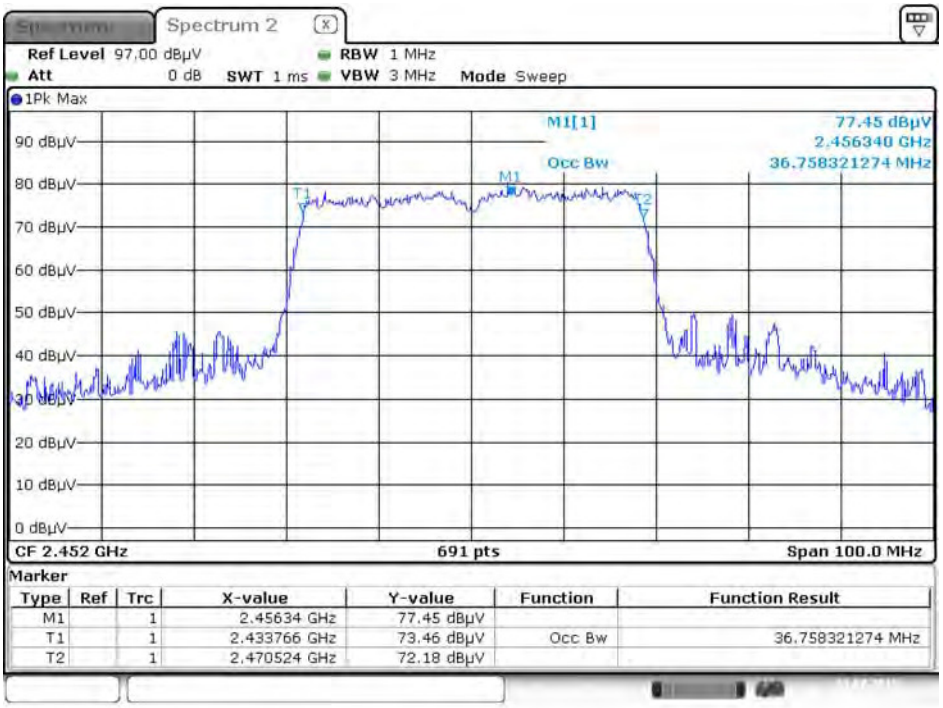


Date: 31.JUL.2015 21:36:13

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2422 MHz / Chain 1 + Chain 2



99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2452 MHz / Chain 1 + Chain 2



4.5. Radiated Emissions Measurement

4.5.1. Limit

30dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(kHz)	300
0.490~1.705	24000/F(kHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

4.5.2. Measuring Instruments and Setting

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

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RBW / VBW (Emission in restricted band)	1MHz / 3MHz for Peak, 1MHz / 1/T for Average
RBW / VBW (Emission in non-restricted band)	100kHz / 300kHz for peak

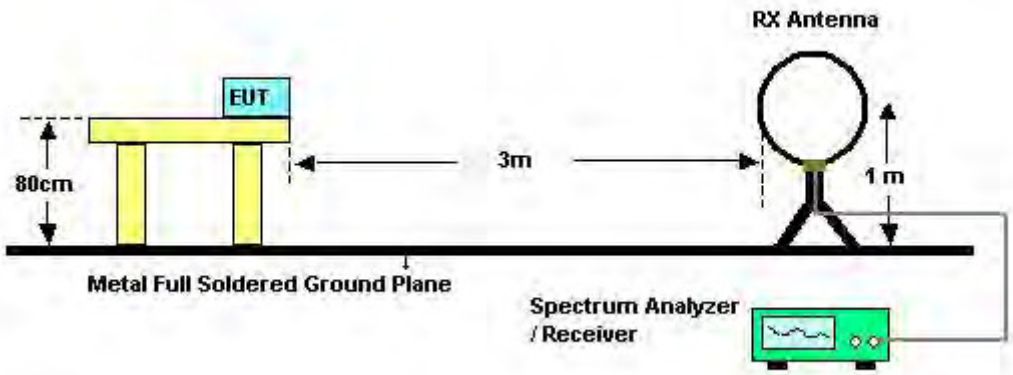
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RBW 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RBW 9kHz for QP
Start ~ Stop Frequency	30MHz~1GHz / RBW 120kHz for QP

4.5.3. Test Procedures

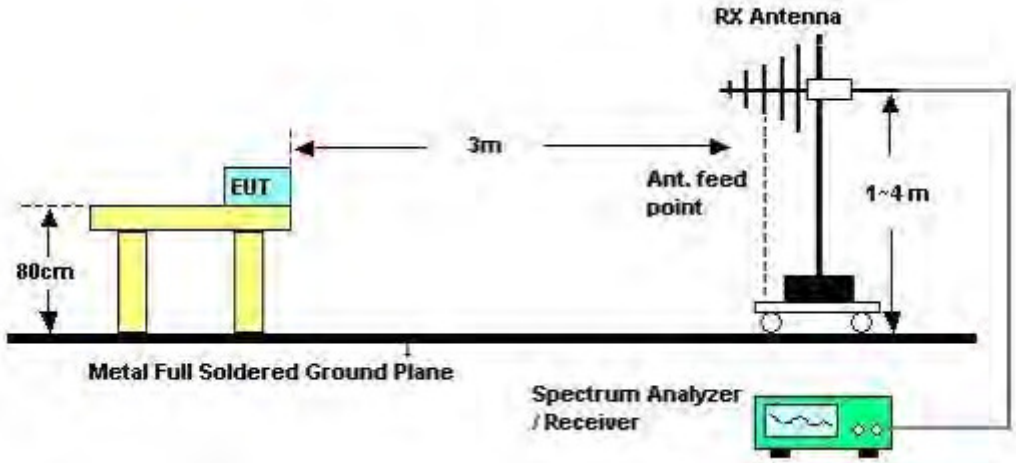
1. Configure the EUT according to ANSI C63.10. The EUT was placed on the top of the turntable 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 1m & 3m far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. For emissions above 1GHz, use 1MHz VBW and 3MHz RBW for peak reading. Then 1MHz RBW and 1/T VBW for average reading in spectrum analyzer.
7. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
8. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
9. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High – Low scan is not required in this case.

4.5.4. Test Setup Layout

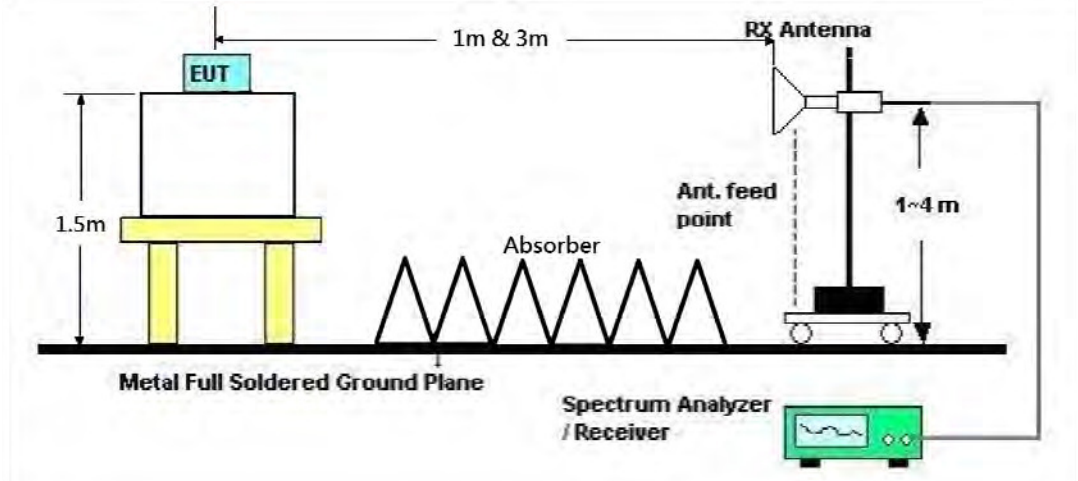
For Radiated Emissions: 9kHz ~30MHz



For Radiated Emissions: 30MHz~1GHz



For Radiated Emissions: Above 1GHz



4.5.5. Test Deviation

There is no deviation with the original standard.

4.5.6. EUT Operation during Test

For non-beamforming mode:

The EUT was programmed to be in continuously transmitting mode.

For beamforming mode:

The EUT was programmed to be in beamforming transmitting mode.

4.5.7. Results of Radiated Emissions (9kHz~30MHz)

Temperature	24°C	Humidity	57%
Test Engineer	Alvin Li	Configurations	Normal Link
Test Date	Jul. 13, 2015	Test Mode	Mode 2

Freq. (MHz)	Level (dBuV)	Over Limit (dB)	Limit Line (dBuV)	Remark
-	-	-	-	See Note

Note:

The amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

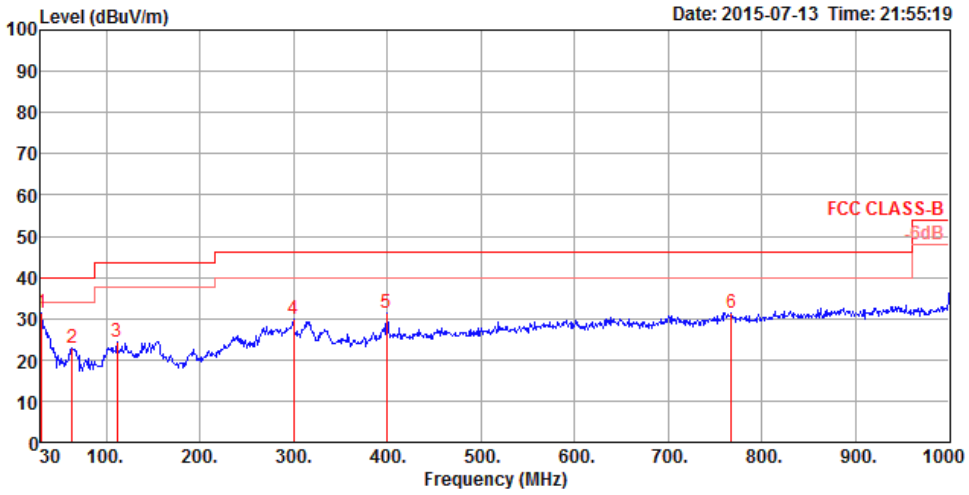
Distance extrapolation factor = 40 log (specific distance / test distance) (dB);

Limit line = specific limits (dBuV) + distance extrapolation factor.

4.5.8. Results of Radiated Emissions (30MHz~1GHz)

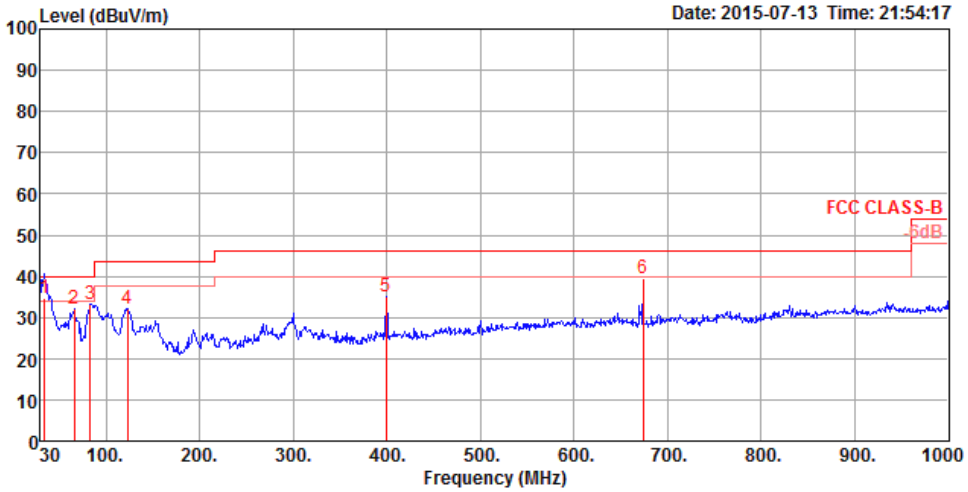
Temperature	24°C	Humidity	57%
Test Engineer	Alvin Li	Configurations	Normal Link
Test Mode	Mode 2		

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	30.97	31.19	40.00	-8.81	43.46	0.64	19.49	32.40	125	149	Peak	HORIZONTAL
2	63.95	22.88	40.00	-17.12	47.63	0.79	6.86	32.40	150	114	Peak	HORIZONTAL
3	111.48	24.35	43.50	-19.15	43.38	0.99	12.36	32.38	150	193	Peak	HORIZONTAL
4	299.66	29.97	46.00	-16.03	46.88	1.49	13.88	32.28	125	176	Peak	HORIZONTAL
5	399.57	31.41	46.00	-14.59	45.54	1.73	16.47	32.33	100	180	Peak	HORIZONTAL
6	767.20	31.48	46.00	-14.52	40.98	2.25	20.53	32.28	125	92	Peak	HORIZONTAL

Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	33.97	34.76	40.00	-5.24	48.81	0.64	17.71	32.40	100	248	QP	VERTICAL
2	65.89	32.28	40.00	-7.72	57.04	0.80	6.84	32.40	150	346	Peak	VERTICAL
3	83.35	33.17	40.00	-6.83	56.57	0.87	8.13	32.40	100	149	Peak	VERTICAL
4	123.12	32.23	43.50	-11.27	50.79	1.04	12.77	32.37	100	131	Peak	VERTICAL
5	399.57	34.96	46.00	-11.04	49.09	1.73	16.47	32.33	150	190	Peak	VERTICAL
6	674.08	39.36	46.00	-6.64	49.96	2.12	19.65	32.37	100	63	Peak	VERTICAL

Note:

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

4.5.9. Results for Radiated Emissions (1GHz~10th Harmonic)

<For Non-Beamforming Mode>

Temperature	23°C	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11b CH 1 / Chain 1
Test Date	Jul. 14, 2015		
Test Mode	Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 1TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4823.85	50.86	74.00	-23.14	44.71	6.11	33.12	33.08	174	307	Peak	HORIZONTAL
2	4823.96	43.87	54.00	-10.13	37.72	6.11	33.12	33.08	174	307	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4823.86	49.17	74.00	-24.83	43.02	6.11	33.12	33.08	199	135	Peak	VERTICAL
2	4823.98	40.51	54.00	-13.49	34.36	6.11	33.12	33.08	199	135	Average	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11b CH 6 / Chain 1
Test Date	Jul. 14, 2015		
Test Mode	Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 1TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4873.93	45.63	54.00	-8.37	39.40	6.08	33.23	33.08	204	66	Average	HORIZONTAL
2	4873.96	51.08	74.00	-22.92	44.85	6.08	33.23	33.08	204	66	Peak	HORIZONTAL
3	7309.92	56.33	74.00	-17.67	45.44	8.28	36.08	33.47	193	25	Peak	HORIZONTAL
4	7311.56	49.12	54.00	-4.88	38.21	8.30	36.08	33.47	193	25	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4873.98	40.99	54.00	-13.01	34.76	6.08	33.23	33.08	191	134	Average	VERTICAL
2	4873.99	48.33	74.00	-25.67	42.10	6.08	33.23	33.08	191	134	Peak	VERTICAL
3	7311.60	42.77	54.00	-11.23	31.86	8.30	36.08	33.47	182	262	Average	VERTICAL
4	7311.84	52.93	74.00	-21.07	42.02	8.30	36.08	33.47	182	262	Peak	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11b CH 11 / Chain 1
Test Date	Jul. 14, 2015		
Test Mode	Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 1TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4923.94	50.13	74.00	-23.87	43.79	6.05	33.35	33.06	176	73	Peak	HORIZONTAL
2	4923.95	43.14	54.00	-10.86	36.80	6.05	33.35	33.06	176	73	Average	HORIZONTAL
3	7383.64	54.13	74.00	-19.87	43.01	8.34	36.27	33.49	217	304	Peak	HORIZONTAL
4	7385.28	44.27	54.00	-9.73	33.15	8.34	36.27	33.49	217	304	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4923.89	47.13	74.00	-26.87	40.79	6.05	33.35	33.06	215	320	Peak	VERTICAL
2	4923.93	37.09	54.00	-16.91	30.75	6.05	33.35	33.06	215	320	Average	VERTICAL
3	7386.72	39.44	54.00	-14.56	28.32	8.34	36.27	33.49	150	129	Average	VERTICAL
4	7389.16	51.49	74.00	-22.51	40.34	8.37	36.27	33.49	150	129	Peak	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 1 / Chain 1
Test Date	Jul. 14, 2015		
Test Mode	Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 1TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4821.18	34.48	54.00	-19.52	28.33	6.11	33.12	33.08	156	265	Average	HORIZONTAL
2	4821.48	47.33	74.00	-26.67	41.18	6.11	33.12	33.08	156	265	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4819.00	34.18	54.00	-19.82	28.03	6.11	33.12	33.08	171	297	Average	VERTICAL
2	4819.44	48.12	74.00	-25.88	41.97	6.11	33.12	33.08	171	297	Peak	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 6 / Chain 1
Test Date	Jul. 14, 2015		
Test Mode	Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 1TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4874.22	36.51	54.00	-17.49	30.28	6.08	33.23	33.08	156	282	Average	HORIZONTAL
2	4876.64	49.57	74.00	-24.43	43.34	6.08	33.23	33.08	156	282	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4878.46	48.06	74.00	-25.94	41.83	6.08	33.23	33.08	195	147	Peak	VERTICAL
2	4878.80	34.96	54.00	-19.04	28.73	6.08	33.23	33.08	195	147	Average	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 11 / Chain 1
Test Date	Jul. 14, 2015		
Test Mode	Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 1TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4926.42	34.11	54.00	-19.89	27.77	6.05	33.35	33.06	165	44	Average	HORIZONTAL
2	4927.24	47.90	74.00	-26.10	41.56	6.05	33.35	33.06	165	44	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4923.64	46.99	74.00	-27.01	40.65	6.05	33.35	33.06	185	197	Peak	VERTICAL
2	4925.72	34.11	54.00	-19.89	27.77	6.05	33.35	33.06	185	197	Average	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 3 / Chain 1
Test Date	Jul. 14, 2015		
Test Mode	Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 1TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4821.66	34.46	54.00	-19.54	28.31	6.11	33.12	33.08	177	134	Average	HORIZONTAL
2	4822.06	47.42	74.00	-26.58	41.27	6.11	33.12	33.08	177	134	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4820.30	34.59	54.00	-19.41	28.44	6.11	33.12	33.08	162	174	Average	VERTICAL
2	4822.08	48.47	74.00	-25.53	42.32	6.11	33.12	33.08	162	174	Peak	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 6 / Chain 1
Test Date	Jul. 14, 2015		
Test Mode	Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 1TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4875.74	47.77	74.00	-26.23	41.54	6.08	33.23	33.08	188	87	Peak	HORIZONTAL
2	4878.90	34.83	54.00	-19.17	28.60	6.08	33.23	33.08	188	87	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4870.66	46.67	74.00	-27.33	40.44	6.08	33.23	33.08	191	279	Peak	VERTICAL
2	4877.98	34.60	54.00	-19.40	28.37	6.08	33.23	33.08	191	279	Average	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 9 / Chain 1
Test Date	Jul. 14, 2015		
Test Mode	Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 1TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4904.28	34.96	54.00	-19.04	28.65	6.07	33.31	33.07	202	308	Average	HORIZONTAL
2	4904.62	47.60	74.00	-26.40	41.29	6.07	33.31	33.07	202	308	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4902.50	34.84	54.00	-19.16	28.53	6.07	33.31	33.07	154	61	Average	VERTICAL
2	4904.68	48.01	74.00	-25.99	41.70	6.07	33.31	33.07	154	61	Peak	VERTICAL

Note:

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Temperature	23°C	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11b CH 1 / Chain 1 + Chain 2
Test Date	Jul. 14, 2015		
Test Mode	Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 2TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4823.89	44.17	54.00	-9.83	38.02	6.11	33.12	33.08	187	305	Average	HORIZONTAL
2	4824.00	50.61	74.00	-23.39	44.46	6.11	33.12	33.08	187	305	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4823.84	49.00	74.00	-25.00	42.85	6.11	33.12	33.08	186	135	Peak	VERTICAL
2	4823.90	41.20	54.00	-12.80	35.05	6.11	33.12	33.08	186	135	Average	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11b CH 6 / Chain 1 + Chain 2
Test Date	Jul. 14, 2015		
Test Mode	Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 2TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4873.89	48.08	54.00	-5.92	41.85	6.08	33.23	33.08	175	70	Average	HORIZONTAL
2	4874.03	52.69	74.00	-21.31	46.46	6.08	33.23	33.08	175	70	Peak	HORIZONTAL
3	7311.64	50.06	54.00	-3.94	39.15	8.30	36.08	33.47	197	324	Average	HORIZONTAL
4	7311.80	57.12	74.00	-16.88	46.21	8.30	36.08	33.47	197	324	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4873.92	42.62	54.00	-11.38	36.39	6.08	33.23	33.08	191	322	Average	VERTICAL
2	4873.96	50.03	74.00	-23.97	43.80	6.08	33.23	33.08	191	322	Peak	VERTICAL
3	7310.36	51.88	74.00	-22.12	40.99	8.28	36.08	33.47	186	233	Peak	VERTICAL
4	7311.64	41.50	54.00	-12.50	30.59	8.30	36.08	33.47	186	233	Average	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11b CH 11 / Chain 1 + Chain 2
Test Date	Jul. 14, 2015		
Test Mode	Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 2TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4923.77	50.81	74.00	-23.19	44.47	6.05	33.35	33.06	202	66	Peak	HORIZONTAL
2	4923.93	44.72	54.00	-9.28	38.38	6.05	33.35	33.06	202	66	Average	HORIZONTAL
3	7384.44	53.97	74.00	-20.03	42.85	8.34	36.27	33.49	192	328	Peak	HORIZONTAL
4	7386.56	44.42	54.00	-9.58	33.30	8.34	36.27	33.49	192	328	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4923.90	40.43	54.00	-13.57	34.09	6.05	33.35	33.06	195	149	Average	VERTICAL
2	4923.96	49.17	74.00	-24.83	42.83	6.05	33.35	33.06	195	149	Peak	VERTICAL
3	7386.48	39.97	54.00	-14.03	28.85	8.34	36.27	33.49	173	291	Average	VERTICAL
4	7388.96	51.62	74.00	-22.38	40.47	8.37	36.27	33.49	173	291	Peak	VERTICAL

Note:

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Temperature	23°C	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11b CH 1 / Chain 2
Test Date	Jul. 11, 2015		
Test Mode	Mode 2 (Ant. 7 Polarized Panel / 11dBi / 1TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4823.91	43.72	54.00	-10.28	39.44	5.87	33.42	35.01	Average	178	317	HORIZONTAL
2	4825.24	51.58	74.00	-22.42	47.30	5.87	33.42	35.01	Peak	178	317	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4823.66	53.08	74.00	-20.92	48.80	5.87	33.42	35.01	Peak	178	167	VERTICAL
2	4823.89	42.22	54.00	-11.78	37.94	5.87	33.42	35.01	Average	178	167	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11b CH 6 / Chain 2
Test Date	Jul. 11, 2015		
Test Mode	Mode 2 (Ant. 7 Polarized Panel / 11dBi / 1TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4874.51	39.79	54.00	-14.21	35.35	5.92	33.53	35.01	Average	160	109	HORIZONTAL
2	4874.51	45.79	74.00	-28.21	41.35	5.92	33.53	35.01	Peak	160	109	HORIZONTAL
3	7308.68	43.49	54.00	-10.51	35.26	7.13	36.38	35.28	Average	160	109	HORIZONTAL
4	7308.68	52.49	74.00	-21.51	44.26	7.13	36.38	35.28	Peak	160	109	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4873.24	40.23	54.00	-13.77	35.79	5.92	33.53	35.01	Average	160	54	VERTICAL
2	4874.70	50.03	74.00	-23.97	45.59	5.92	33.53	35.01	Peak	160	54	VERTICAL
3	7308.63	53.44	74.00	-20.56	45.21	7.13	36.38	35.28	Peak	160	54	VERTICAL
4	7309.20	41.60	54.00	-12.40	33.37	7.13	36.38	35.28	Average	160	54	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11b CH 11 / Chain 2
Test Date	Jul. 11, 2015		
Test Mode	Mode 2 (Ant. 7 Polarized Panel / 11dBi / 1TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4923.48	36.19	54.00	-17.81	31.58	5.97	33.65	35.01	Average	160	175	HORIZONTAL
2	4925.39	48.74	74.00	-25.26	44.13	5.97	33.65	35.01	Peak	160	175	HORIZONTAL
3	7383.51	53.24	74.00	-20.76	44.79	7.17	36.57	35.29	Peak	160	223	HORIZONTAL
4	7385.86	40.77	54.00	-13.23	32.32	7.17	36.57	35.29	Average	160	223	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4921.50	51.07	74.00	-22.93	46.46	5.97	33.65	35.01	Peak	160	194	VERTICAL
2	4923.88	38.49	54.00	-15.51	33.88	5.97	33.65	35.01	Average	160	194	VERTICAL
3	7387.18	53.21	74.00	-20.79	44.76	7.17	36.57	35.29	Peak	160	280	VERTICAL
4	7387.20	39.79	54.00	-14.21	31.34	7.17	36.57	35.29	Average	160	280	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 1 / Chain 2
Test Date	Jul. 11, 2015		
Test Mode	Mode 2 (Ant. 7 Polarized Panel / 11dBi / 1TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4823.05	33.97	54.00	-20.03	29.69	5.87	33.42	35.01	Average	160	114	HORIZONTAL
2	4825.05	44.60	74.00	-29.40	40.32	5.87	33.42	35.01	Peak	160	114	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4823.04	33.42	54.00	-20.58	29.14	5.87	33.42	35.01	Average	160	194	VERTICAL
2	4823.04	45.18	74.00	-28.82	40.90	5.87	33.42	35.01	Peak	160	194	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 6 / Chain 2
Test Date	Jul. 11, 2015		
Test Mode	Mode 2 (Ant. 7 Polarized Panel / 11dBi / 1TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4872.03	47.79	74.00	-26.21	43.35	5.92	33.53	35.01	Peak	160	160	HORIZONTAL
2	4872.52	36.09	54.00	-17.91	31.65	5.92	33.53	35.01	Average	160	160	HORIZONTAL
3	7310.16	48.49	74.00	-25.51	40.26	7.13	36.38	35.28	Peak	160	164	HORIZONTAL
4	7310.22	35.46	54.00	-18.54	27.23	7.13	36.38	35.28	Average	160	164	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4869.50	35.02	54.00	-18.98	30.58	5.92	33.53	35.01	Average	160	219	VERTICAL
2	4872.94	48.37	74.00	-25.63	43.93	5.92	33.53	35.01	Peak	160	219	VERTICAL
3	7302.00	37.89	54.00	-16.11	29.66	7.13	36.38	35.28	Average	160	219	VERTICAL
4	7307.40	52.07	74.00	-21.93	43.84	7.13	36.38	35.28	Peak	160	219	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 11 / Chain 2
Test Date	Jul. 11, 2015		
Test Mode	Mode 2 (Ant. 7 Polarized Panel / 11dBi / 1TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4924.04	34.40	54.00	-19.60	29.79	5.97	33.65	35.01	Average	160	245	HORIZONTAL
2	4925.02	44.22	74.00	-29.78	39.61	5.97	33.65	35.01	Peak	160	245	HORIZONTAL
3	7387.70	37.01	54.00	-16.99	28.56	7.17	36.57	35.29	Average	160	188	HORIZONTAL
4	7389.46	49.74	74.00	-24.26	41.29	7.17	36.57	35.29	Peak	160	188	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4923.86	47.37	74.00	-26.63	42.76	5.97	33.65	35.01	Peak	160	348	VERTICAL
2	4923.94	36.23	54.00	-17.77	31.62	5.97	33.65	35.01	Average	160	348	VERTICAL
3	7387.50	39.82	54.00	-14.18	31.37	7.17	36.57	35.29	Average	160	271	VERTICAL
4	7387.84	52.24	74.00	-21.76	43.79	7.17	36.57	35.29	Peak	160	271	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 3 / Chain 2
Test Date	Jul. 11, 2015		
Test Mode	Mode 2 (Ant. 7 Polarized Panel / 11dBi / 1TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4842.72	31.98	54.00	-22.02	27.65	5.88	33.46	35.01	Average	160	298	HORIZONTAL
2	4844.70	44.49	74.00	-29.51	40.16	5.88	33.46	35.01	Peak	160	298	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4842.86	46.39	74.00	-27.61	42.06	5.88	33.46	35.01	Peak	160	224	VERTICAL
2	4843.20	34.86	54.00	-19.14	30.53	5.88	33.46	35.01	Average	160	224	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 6 / Chain 2
Test Date	Jul. 11, 2015		
Test Mode	Mode 2 (Ant. 7 Polarized Panel / 11dBi / 1TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4870.18	45.53	74.00	-28.47	41.09	5.92	33.53	35.01	Peak	160	84	HORIZONTAL
2	4870.88	32.14	54.00	-21.86	27.70	5.92	33.53	35.01	Average	160	84	HORIZONTAL
3	7307.54	48.38	74.00	-25.62	40.15	7.13	36.38	35.28	Peak	160	2	HORIZONTAL
4	7310.30	35.35	54.00	-18.65	27.12	7.13	36.38	35.28	Average	160	2	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4869.00	31.80	54.00	-22.20	27.36	5.92	33.53	35.01	Average	160	181	VERTICAL
2	4869.44	44.50	74.00	-29.50	40.06	5.92	33.53	35.01	Peak	160	181	VERTICAL
3	7306.00	35.92	54.00	-18.08	27.69	7.13	36.38	35.28	Average	160	73	VERTICAL
4	7310.30	48.26	74.00	-25.74	40.03	7.13	36.38	35.28	Peak	160	73	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 9 / Chain 2
Test Date	Jul. 11, 2015		
Test Mode	Mode 2 (Ant. 7 Polarized Panel / 11dBi / 1TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4902.16	45.68	74.00	-28.32	41.13	5.95	33.61	35.01	Peak	160	136	HORIZONTAL
2	4903.14	32.85	54.00	-21.15	28.30	5.95	33.61	35.01	Average	160	136	HORIZONTAL
3	7352.98	49.90	74.00	-24.10	41.52	7.16	36.50	35.28	Peak	160	201	HORIZONTAL
4	7354.84	37.01	54.00	-16.99	28.63	7.16	36.50	35.28	Average	160	201	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4900.86	45.19	74.00	-28.81	40.70	5.93	33.57	35.01	Peak	160	190	VERTICAL
2	4903.16	32.85	54.00	-21.15	28.30	5.95	33.61	35.01	Average	160	190	VERTICAL
3	7355.52	48.92	74.00	-25.08	40.54	7.16	36.50	35.28	Peak	160	252	VERTICAL
4	7360.00	36.83	54.00	-17.17	28.45	7.16	36.50	35.28	Average	160	252	VERTICAL

Note:

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Temperature	23℃	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11b CH 1 / Chain 1 + Chain 2
Test Date	Jul. 11, 2015		
Test Mode	Mode 2 (Ant. 7 Polarized Panel / 11dBi / 2TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4823.96	52.85	74.00	-21.15	48.57	5.87	33.42	35.01	Peak	183	221	HORIZONTAL
2	4823.98	45.37	54.00	-8.63	41.09	5.87	33.42	35.01	Average	183	221	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4823.87	47.21	74.00	-26.79	42.93	5.87	33.42	35.01	Peak	178	142	VERTICAL
2	4823.91	43.31	54.00	-10.69	39.03	5.87	33.42	35.01	Average	178	142	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11b CH 6 / Chain 1 + Chain 2
Test Date	Jul. 11, 2015		
Test Mode	Mode 2 (Ant. 7 Polarized Panel / 11dBi / 2TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4873.95	47.19	54.00	-6.81	42.75	5.92	33.53	35.01	Average	192	216	HORIZONTAL
2	4873.95	60.61	74.00	-13.39	56.17	5.92	33.53	35.01	Peak	192	216	HORIZONTAL
3	7311.57	47.80	54.00	-6.20	39.57	7.13	36.38	35.28	Average	189	211	HORIZONTAL
4	7311.85	58.90	74.00	-15.10	50.67	7.13	36.38	35.28	Peak	189	211	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4873.95	44.78	54.00	-9.22	40.34	5.92	33.53	35.01	Average	175	209	VERTICAL
2	4873.95	50.01	74.00	-23.99	45.57	5.92	33.53	35.01	Peak	175	209	VERTICAL
3	7311.63	39.71	54.00	-14.29	31.48	7.13	36.38	35.28	Average	175	211	VERTICAL
4	7312.54	50.52	74.00	-23.48	42.29	7.13	36.38	35.28	Peak	175	211	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11b CH 11 / Chain 1 + Chain 2
Test Date	Jul. 11, 2015		
Test Mode	Mode 2 (Ant. 7 Polarized Panel / 11dBi / 2TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4923.94	44.66	54.00	-9.34	40.05	5.97	33.65	35.01	Average	187	219	HORIZONTAL
2	4924.06	49.78	74.00	-24.22	45.17	5.97	33.65	35.01	Peak	187	219	HORIZONTAL
3	7384.98	54.58	74.00	-19.42	46.13	7.17	36.57	35.29	Peak	189	210	HORIZONTAL
4	7385.18	46.70	54.00	-7.30	38.25	7.17	36.57	35.29	Average	189	210	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4923.94	43.36	54.00	-10.64	38.75	5.97	33.65	35.01	Average	162	277	VERTICAL
2	4924.26	52.44	74.00	-21.56	47.83	5.97	33.65	35.01	Peak	162	277	VERTICAL
3	7383.96	50.57	74.00	-23.43	42.12	7.17	36.57	35.29	Peak	168	170	VERTICAL
4	7386.74	38.54	54.00	-15.46	30.09	7.17	36.57	35.29	Average	168	170	VERTICAL

Note:

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Temperature	23°C	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11b CH 1 / Chain 1
Test Date	Jul. 15, 2015		
Test Mode	Mode 3 (Ant. 8 Patch / 5dBi / 1TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4823.96	51.71	74.00	-22.29	45.56	6.11	33.12	33.08	207	62	Peak	HORIZONTAL
2	4823.97	45.79	54.00	-8.21	39.64	6.11	33.12	33.08	207	62	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4823.87	39.14	54.00	-14.86	32.99	6.11	33.12	33.08	244	139	Average	VERTICAL
2	4824.00	49.19	74.00	-24.81	43.04	6.11	33.12	33.08	244	139	Peak	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11b CH 6 / Chain 1
Test Date	Jul. 16, 2015		
Test Mode	Mode 3 (Ant. 8 Patch / 5dBi / 1TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4873.92	51.85	74.00	-22.15	45.62	6.08	33.23	33.08	123	76	Peak	HORIZONTAL
2	4873.92	45.97	54.00	-8.03	39.74	6.08	33.23	33.08	123	76	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4873.82	50.01	74.00	-23.99	43.78	6.08	33.23	33.08	148	142	Peak	VERTICAL
2	4874.00	42.44	54.00	-11.56	36.21	6.08	33.23	33.08	148	142	Average	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11b CH 11 / Chain 1
Test Date	Jul. 16, 2015		
Test Mode	Mode 3 (Ant. 8 Patch / 5dBi / 1TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4923.84	49.75	74.00	-24.25	43.41	6.05	33.35	33.06	141	76	Peak	HORIZONTAL
2	4923.96	42.70	54.00	-11.30	36.36	6.05	33.35	33.06	141	76	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4923.89	38.90	54.00	-15.10	32.56	6.05	33.35	33.06	132	313	Average	VERTICAL
2	4924.00	48.30	74.00	-25.70	41.96	6.05	33.35	33.06	132	313	Peak	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 1 / Chain 1
Test Date	Jul. 16, 2015		
Test Mode	Mode 3 (Ant. 8 Patch / 5dBi / 1TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4823.48	47.19	74.00	-26.81	41.04	6.11	33.12	33.08	154	75	Peak	HORIZONTAL
2	4824.19	34.13	54.00	-19.87	27.98	6.11	33.12	33.08	154	75	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4823.38	47.68	74.00	-26.32	41.53	6.11	33.12	33.08	154	98	Peak	VERTICAL
2	4824.75	33.69	54.00	-20.31	27.54	6.11	33.12	33.08	154	98	Average	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 6 / Chain 1
Test Date	Jul. 16, 2015		
Test Mode	Mode 3 (Ant. 8 Patch / 5dBi / 1TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4873.80	34.16	54.00	-19.84	27.93	6.08	33.23	33.08	152	122	Average	HORIZONTAL
2	4874.44	47.65	74.00	-26.35	41.42	6.08	33.23	33.08	152	122	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4873.68	47.83	74.00	-26.17	41.60	6.08	33.23	33.08	156	328	Peak	VERTICAL
2	4873.68	33.88	54.00	-20.12	27.65	6.08	33.23	33.08	156	328	Average	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 11 / Chain 1
Test Date	Jul. 16, 2015		
Test Mode	Mode 3 (Ant. 8 Patch / 5dBi / 1TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4924.09	46.91	74.00	-27.09	40.57	6.05	33.35	33.06	153	334	Peak	HORIZONTAL
2	4924.99	33.75	54.00	-20.25	27.41	6.05	33.35	33.06	153	334	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4924.13	33.60	54.00	-20.40	27.26	6.05	33.35	33.06	153	310	Average	VERTICAL
2	4925.00	47.28	74.00	-26.72	40.94	6.05	33.35	33.06	153	310	Peak	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 3 / Chain 1
Test Date	Jul. 16, 2015		
Test Mode	Mode 3 (Ant. 8 Patch / 5dBi / 1TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4843.12	47.24	74.00	-26.76	41.06	6.10	33.16	33.08	149	288	Peak	HORIZONTAL
2	4844.40	33.85	54.00	-20.15	27.67	6.10	33.16	33.08	149	288	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4843.19	46.94	74.00	-27.06	40.76	6.10	33.16	33.08	151	268	Peak	VERTICAL
2	4844.23	33.66	54.00	-20.34	27.48	6.10	33.16	33.08	151	268	Average	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 6 / Chain 1
Test Date	Jul. 16, 2015		
Test Mode	Mode 3 (Ant. 8 Patch / 5dBi / 1TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4924.87	33.74	54.00	-20.26	27.40	6.05	33.35	33.06	154	250	Average	HORIZONTAL
2	4924.92	46.76	74.00	-27.24	40.42	6.05	33.35	33.06	154	250	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4923.26	47.13	74.00	-26.87	40.79	6.05	33.35	33.06	152	227	Peak	VERTICAL
2	4924.69	33.75	54.00	-20.25	27.41	6.05	33.35	33.06	152	227	Average	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 9 / Chain 1
Test Date	Jul. 16, 2015		
Test Mode	Mode 3 (Ant. 8 Patch / 5dBi / 1TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4904.39	33.96	54.00	-20.04	27.65	6.07	33.31	33.07	153	206	Average	HORIZONTAL
2	4904.57	47.33	74.00	-26.67	41.02	6.07	33.31	33.07	153	206	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4904.09	33.88	54.00	-20.12	27.57	6.07	33.31	33.07	151	180	Average	VERTICAL
2	4904.14	47.91	74.00	-26.09	41.60	6.07	33.31	33.07	151	180	Peak	VERTICAL

Note:

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Temperature	23℃	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11b CH 1 / Chain 1 + Chain 2
Test Date	Jul. 16, 2015		
Test Mode	Mode 3 (Ant. 8 Patch / 5dBi / 2TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4823.89	42.63	54.00	-11.37	36.48	6.11	33.12	33.08	150	80	Average	HORIZONTAL
2	4823.91	49.95	74.00	-24.05	43.80	6.11	33.12	33.08	150	80	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4823.86	39.14	54.00	-14.86	32.99	6.11	33.12	33.08	150	140	Average	VERTICAL
2	4824.01	48.48	74.00	-25.52	42.33	6.11	33.12	33.08	150	140	Peak	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11b CH 6 / Chain 1 + Chain 2
Test Date	Jul. 16, 2015		
Test Mode	Mode 3 (Ant. 8 Patch / 5dBi / 2TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4873.91	43.44	54.00	-10.56	37.21	6.08	33.23	33.08	145	141	Average	HORIZONTAL
2	4874.03	50.26	74.00	-23.74	44.03	6.08	33.23	33.08	145	141	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4873.89	52.85	74.00	-21.15	46.62	6.08	33.23	33.08	151	77	Peak	VERTICAL
2	4873.93	48.47	54.00	-5.53	42.24	6.08	33.23	33.08	151	77	Average	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11b CH 11 / Chain 1 + Chain 2
Test Date	Jul. 16, 2015		
Test Mode	Mode 3 (Ant. 8 Patch / 5dBi / 2TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4923.91	43.45	54.00	-10.55	37.11	6.05	33.35	33.06	150	73	Average	HORIZONTAL
2	4923.95	49.65	74.00	-24.35	43.31	6.05	33.35	33.06	150	73	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4923.87	38.32	54.00	-15.68	31.98	6.05	33.35	33.06	148	132	Average	VERTICAL
2	4923.93	48.66	74.00	-25.34	42.32	6.05	33.35	33.06	148	132	Peak	VERTICAL

Note:

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

<For Beamforming Mode>

Temperature	23°C	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 1 / Chain 1 + Chain 2
Test Date	Jul. 14, 2015		
Test Mode	Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 2TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4823.98	34.70	54.00	-19.30	28.55	6.11	33.12	33.08	152	178	Average	HORIZONTAL
2	4824.98	47.11	74.00	-26.89	40.96	6.11	33.12	33.08	152	178	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4823.80	47.54	74.00	-26.46	41.39	6.11	33.12	33.08	151	164	Peak	VERTICAL
2	4823.81	34.91	54.00	-19.09	28.76	6.11	33.12	33.08	151	164	Average	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 6 / Chain 1 + Chain 2
Test Date	Jul. 14, 2015		
Test Mode	Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 2TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4874.07	34.67	54.00	-19.33	28.44	6.08	33.23	33.08	152	189	Average	HORIZONTAL
2	4874.66	46.70	74.00	-27.30	40.47	6.08	33.23	33.08	152	189	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4873.88	34.61	54.00	-19.39	28.38	6.08	33.23	33.08	152	207	Average	VERTICAL
2	4873.92	47.10	74.00	-26.90	40.87	6.08	33.23	33.08	152	207	Peak	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 11 / Chain 1 + Chain 2
Test Date	Jul. 14, 2015		
Test Mode	Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 2TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4923.86	34.13	54.00	-19.87	27.79	6.05	33.35	33.06	151	221	Average	HORIZONTAL
2	4924.38	46.74	74.00	-27.26	40.40	6.05	33.35	33.06	151	221	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4923.83	34.42	54.00	-19.58	28.08	6.05	33.35	33.06	153	243	Average	VERTICAL
2	4924.58	47.16	74.00	-26.84	40.82	6.05	33.35	33.06	153	243	Peak	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 3 / Chain 1 + Chain 2
Test Date	Jul. 14, 2015		
Test Mode	Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 2TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4844.04	34.32	54.00	-19.68	28.14	6.10	33.16	33.08	153	311	Average	HORIZONTAL
2	4844.65	47.71	74.00	-26.29	41.53	6.10	33.16	33.08	153	311	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4843.06	34.11	54.00	-19.89	27.93	6.10	33.16	33.08	155	329	Average	VERTICAL
2	4843.81	47.38	74.00	-26.62	41.20	6.10	33.16	33.08	155	329	Peak	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 6 / Chain 1 + Chain 2
Test Date	Jul. 14, 2015		
Test Mode	Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 2TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4874.10	47.64	74.00	-26.36	41.41	6.08	33.23	33.08	155	279	Peak	HORIZONTAL
2	4874.12	34.44	54.00	-19.56	28.21	6.08	33.23	33.08	155	279	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4874.17	34.53	54.00	-19.47	28.30	6.08	33.23	33.08	156	292	Average	VERTICAL
2	4874.30	47.40	74.00	-26.60	41.17	6.08	33.23	33.08	156	292	Peak	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 9 / Chain 1 + Chain 2
Test Date	Jul. 14, 2015		
Test Mode	Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 2TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4903.40	47.46	74.00	-26.54	41.15	6.07	33.31	33.07	154	248	Peak	HORIZONTAL
2	4904.94	34.64	54.00	-19.36	28.33	6.07	33.31	33.07	154	248	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4904.61	34.44	54.00	-19.56	28.13	6.07	33.31	33.07	153	262	Average	VERTICAL
2	4904.88	48.89	74.00	-25.11	42.58	6.07	33.31	33.07	153	262	Peak	VERTICAL

Note:

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Temperature	23°C	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 1 / Chain 1 + Chain 2
Test Date	Jul. 13, 2015		
Test Mode	Mode 2 (Ant. 7 Polarized Panel / 11dBi / 2TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4822.36	33.74	54.00	-20.26	27.59	6.11	33.12	33.08	169	126	Average	HORIZONTAL
2	4823.76	47.89	74.00	-26.11	41.74	6.11	33.12	33.08	169	126	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4823.94	47.07	74.00	-26.93	40.92	6.11	33.12	33.08	174	67	Peak	VERTICAL
2	4824.50	33.81	54.00	-20.19	27.66	6.11	33.12	33.08	174	67	Average	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 6 / Chain 1 + Chain 2
Test Date	Jul. 13, 2015		
Test Mode	Mode 2 (Ant. 7 Polarized Panel / 11dBi / 2TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4873.88	45.89	54.00	-8.11	39.66	6.08	33.23	33.08	169	101	Average	HORIZONTAL
2	4876.14	51.63	74.00	-22.37	45.40	6.08	33.23	33.08	169	101	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4873.96	36.02	54.00	-17.98	29.79	6.08	33.23	33.08	153	248	Average	VERTICAL
2	4877.04	46.88	74.00	-27.12	40.65	6.08	33.23	33.08	153	248	Peak	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 11 / Chain 1 + Chain 2
Test Date	Jul. 13, 2015		
Test Mode	Mode 2 (Ant. 7 Polarized Panel / 11dBi / 2TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4925.80	46.21	74.00	-27.79	39.87	6.05	33.35	33.06	132	241	Peak	HORIZONTAL
2	4928.18	33.87	54.00	-20.13	27.53	6.05	33.35	33.06	132	241	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4926.50	33.69	54.00	-20.31	27.35	6.05	33.35	33.06	145	278	Average	VERTICAL
2	4926.50	48.37	74.00	-25.63	42.03	6.05	33.35	33.06	145	278	Peak	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 3 / Chain 1 + Chain 2
Test Date	Jul. 13, 2015		
Test Mode	Mode 2 (Ant. 7 Polarized Panel / 11dBi / 2TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4842.06	34.51	54.00	-19.49	28.33	6.10	33.16	33.08	165	131	Average	HORIZONTAL
2	4842.36	47.08	74.00	-26.92	40.90	6.10	33.16	33.08	165	131	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4839.68	47.14	74.00	-26.86	40.96	6.10	33.16	33.08	163	181	Peak	VERTICAL
2	4840.62	33.70	54.00	-20.30	27.52	6.10	33.16	33.08	163	181	Average	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 6 / Chain 1 + Chain 2
Test Date	Jul. 13, 2015		
Test Mode	Mode 2 (Ant. 7 Polarized Panel / 11dBi / 2TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4873.38	46.77	74.00	-27.23	40.54	6.08	33.23	33.08	178	247	Peak	HORIZONTAL
2	4878.94	34.04	54.00	-19.96	27.81	6.08	33.23	33.08	178	247	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4877.72	34.44	54.00	-19.56	28.21	6.08	33.23	33.08	181	320	Average	VERTICAL
2	4878.78	46.89	74.00	-27.11	40.66	6.08	33.23	33.08	181	320	Peak	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 9 / Chain 1 + Chain 2
Test Date	Jul. 13, 2015		
Test Mode	Mode 2 (Ant. 7 Polarized Panel / 11dBi / 2TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4900.02	47.78	74.00	-26.22	41.51	6.07	33.27	33.07	193	342	Peak	HORIZONTAL
2	4903.78	34.10	54.00	-19.90	27.79	6.07	33.31	33.07	193	342	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4901.46	46.11	74.00	-27.89	39.84	6.07	33.27	33.07	154	303	Peak	VERTICAL
2	4903.04	34.82	54.00	-19.18	28.51	6.07	33.31	33.07	154	303	Average	VERTICAL

Note:

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Temperature	23°C	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 1 / Chain 1 + Chain 2
Test Date	Jul. 16, 2015		
Test Mode	Mode 3 (Ant. 8 Patch / 5dBi / 2TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4823.32	46.74	74.00	-27.26	40.59	6.11	33.12	33.08	151	119	Peak	HORIZONTAL
2	4824.09	34.09	54.00	-19.91	27.94	6.11	33.12	33.08	151	119	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4823.51	33.98	54.00	-20.02	27.83	6.11	33.12	33.08	154	120	Average	VERTICAL
2	4824.34	46.87	74.00	-27.13	40.72	6.11	33.12	33.08	154	120	Peak	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 6 / Chain 1 + Chain 2
Test Date	Jul. 16, 2015		
Test Mode	Mode 3 (Ant. 8 Patch / 5dBi / 2TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4874.34	47.09	74.00	-26.91	40.86	6.08	33.23	33.08	152	135	Peak	HORIZONTAL
2	4874.35	33.88	54.00	-20.12	27.65	6.08	33.23	33.08	152	135	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4874.82	46.91	74.00	-27.09	40.68	6.08	33.23	33.08	151	118	Peak	VERTICAL
2	4874.88	33.98	54.00	-20.02	27.75	6.08	33.23	33.08	151	118	Average	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 11 / Chain 1 + Chain 2
Test Date	Jul. 16, 2015		
Test Mode	Mode 3 (Ant. 8 Patch / 5dBi / 2TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4924.27	33.90	54.00	-20.10	27.56	6.05	33.35	33.06	152	133	Average	HORIZONTAL
2	4924.62	46.65	74.00	-27.35	40.31	6.05	33.35	33.06	152	133	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4923.66	33.85	54.00	-20.15	27.51	6.05	33.35	33.06	152	119	Average	VERTICAL
2	4924.33	47.33	74.00	-26.67	40.99	6.05	33.35	33.06	152	119	Peak	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 3 / Chain 1 + Chain 2
Test Date	Jul. 16, 2015		
Test Mode	Mode 3 (Ant. 8 Patch / 5dBi / 2TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4843.50	47.03	74.00	-26.97	40.85	6.10	33.16	33.08	152	132	Peak	HORIZONTAL
2	4844.56	33.75	54.00	-20.25	27.57	6.10	33.16	33.08	152	132	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4843.89	33.78	54.00	-20.22	27.60	6.10	33.16	33.08	152	138	Average	VERTICAL
2	4843.99	47.03	74.00	-26.97	40.85	6.10	33.16	33.08	152	138	Peak	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 6 / Chain 1 + Chain 2
Test Date	Jul. 16, 2015		
Test Mode	Mode 3 (Ant. 8 Patch / 5dBi / 2TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4873.59	33.90	54.00	-20.10	27.67	6.08	33.23	33.08	152	156	Average	HORIZONTAL
2	4874.05	47.92	74.00	-26.08	41.69	6.08	33.23	33.08	152	156	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4874.29	33.93	54.00	-20.07	27.70	6.08	33.23	33.08	152	135	Average	VERTICAL
2	4874.44	46.56	74.00	-27.44	40.33	6.08	33.23	33.08	152	135	Peak	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 9 / Chain 1 + Chain 2
Test Date	Jul. 16, 2015		
Test Mode	Mode 3 (Ant. 8 Patch / 5dBi / 2TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4903.12	47.30	74.00	-26.70	40.99	6.07	33.31	33.07	152	119	Peak	HORIZONTAL
2	4903.54	34.12	54.00	-19.88	27.81	6.07	33.31	33.07	152	119	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4903.34	33.94	54.00	-20.06	27.63	6.07	33.31	33.07	152	135	Average	VERTICAL
2	4903.86	47.75	74.00	-26.25	41.44	6.07	33.31	33.07	152	135	Peak	VERTICAL

Note:

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

4.6. Emissions Measurement

4.6.1. Limit

30dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(kHz)	300
0.490~1.705	24000/F(kHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

4.6.2. 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	100 MHz
RBW / VBW (Emission in restricted band)	1MHz / 3MHz for Peak, 1MHz / 1/T for Average
RBW / VBW (30dBc in any 100 kHz bandwidth emission)	100 kHz / 300 kHz for Peak

4.6.3. Test Procedures

For Radiated band edges Measurement:

1. The test procedure is the same as section 4.5.3.

For Radiated Out of Band Emission Measurement:

1. Test was performed in accordance with KDB558074 D01 v03r03 for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247 section 10.1 Unwanted Emissions into Non-Restricted Frequency Bands Measurement Procedure

4.6.4. Test Setup Layout

For Radiated band edges Measurement:

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

For Radiated Out of Band Emission Measurement:

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

4.6.5. Test Deviation

There is no deviation with the original standard.

4.6.6. EUT Operation during Test

For non-beamforming mode:

The EUT was programmed to be in continuously transmitting mode.

For beamforming mode:

The EUT was programmed to be in beamforming transmitting mode.

4.6.7. Test Result of Band Edge and Fundamental Emissions

<For Non-Beamforming Mode>

Temperature	23°C	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11b CH 1, 6, 11 / Chain 1
Test Date	Jul. 14, 2015		
Test Mode	Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 1TX)		

Channel 1

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2389.40	52.32	54.00	-1.68	19.64	4.37	28.31	0.00	155	219	Average	VERTICAL
2	2389.80	61.00	74.00	-13.00	28.28	4.41	28.31	0.00	155	219	Peak	VERTICAL
3	2411.00	115.53			82.78	4.41	28.34	0.00	155	219	Peak	VERTICAL
4	2411.20	111.52			78.77	4.41	28.34	0.00	155	219	Average	VERTICAL

Item 3, 4 are the fundamental frequency at 2412 MHz.

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2386.20	57.60	74.00	-16.40	24.92	4.37	28.31	0.00	156	205	Peak	VERTICAL
2	2390.00	45.68	54.00	-8.32	12.96	4.41	28.31	0.00	156	205	Average	VERTICAL
3	2436.20	111.63			78.81	4.44	28.38	0.00	156	205	Average	VERTICAL
4	2436.20	115.56			82.74	4.44	28.38	0.00	156	205	Peak	VERTICAL
5	2483.50	47.18	54.00	-6.82	14.20	4.51	28.47	0.00	156	205	Average	VERTICAL
6	2499.00	58.56	74.00	-15.44	25.51	4.55	28.50	0.00	156	205	Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 11

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2462.80	110.95			78.03	4.48	28.44	0.00	168	220	Average	VERTICAL
2	2463.00	115.03			82.11	4.48	28.44	0.00	168	220	Peak	VERTICAL
3	2483.50	51.81	54.00	-2.19	18.83	4.51	28.47	0.00	168	220	Average	VERTICAL
4	2484.40	61.14	74.00	-12.86	28.16	4.51	28.47	0.00	168	220	Peak	VERTICAL

Item 1, 2 are the fundamental frequency at 2462 MHz.

Temperature	23°C	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 1, 6, 11 / Chain 1
Test date	Jul. 14, 2015		
Test Mode	Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 1TX)		

Channel 1

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2389.20	72.38	74.00	-1.62	39.70	4.37	28.31	0.00	154	218	Peak	VERTICAL
2	2390.00	52.86	54.00	-1.14	20.14	4.41	28.31	0.00	154	218	Average	VERTICAL
3	2406.80	112.18			79.43	4.41	28.34	0.00	154	218	Peak	VERTICAL
4	2410.80	101.41			68.66	4.41	28.34	0.00	154	218	Average	VERTICAL

Item 3, 4 are the fundamental frequency at 2412 MHz.

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2387.80	64.93	74.00	-9.07	32.25	4.37	28.31	0.00	158	203	Peak	VERTICAL
2	2390.00	49.57	54.00	-4.43	16.85	4.41	28.31	0.00	158	203	Average	VERTICAL
3	2435.00	116.81			83.99	4.44	28.38	0.00	158	203	Peak	VERTICAL
4	2435.40	105.36			72.54	4.44	28.38	0.00	158	203	Average	VERTICAL
5	2483.50	51.35	54.00	-2.65	18.37	4.51	28.47	0.00	158	203	Average	VERTICAL
6	2487.00	70.09	74.00	-3.91	37.11	4.51	28.47	0.00	158	203	Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 11

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2463.60	101.34			68.42	4.48	28.44	0.00	170	222	Average	VERTICAL
2	2464.40	111.91			78.99	4.48	28.44	0.00	170	222	Peak	VERTICAL
3	2483.50	52.96	54.00	-1.04	19.98	4.51	28.47	0.00	170	222	Average	VERTICAL
4	2496.80	63.52	74.00	-10.48	30.47	4.55	28.50	0.00	170	222	Peak	VERTICAL

Item 1, 2 are the fundamental frequency at 2462 MHz.

Temperature	23℃	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 3, 6, 9 / Chain 1
Test date	Jul. 14, 2015		
Test Mode	Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 1TX)		

Channel 3

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2389.60	66.13	74.00	-7.87	33.45	4.37	28.31	0.00	155	229	Peak	VERTICAL
2	2390.00	52.77	54.00	-1.23	20.05	4.41	28.31	0.00	155	229	Average	VERTICAL
3	2404.80	96.39			63.64	4.41	28.34	0.00	155	229	Average	VERTICAL
4	2410.40	106.18			73.43	4.41	28.34	0.00	155	229	Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 2422 MHz.

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2390.00	52.71	54.00	-1.29	19.99	4.41	28.31	0.00	179	225	Average	VERTICAL
2	2390.00	68.26	74.00	-5.74	35.54	4.41	28.31	0.00	179	225	Peak	VERTICAL
3	2453.00	109.00			76.11	4.48	28.41	0.00	179	225	Peak	VERTICAL
4	2454.60	99.85			66.93	4.48	28.44	0.00	179	225	Average	VERTICAL
5	2483.50	52.83	54.00	-1.17	19.85	4.51	28.47	0.00	179	225	Average	VERTICAL
6	2484.60	69.17	74.00	-4.83	36.19	4.51	28.47	0.00	179	225	Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 9

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2466.40	99.37			66.42	4.51	28.44	0.00	170	229	Average	VERTICAL
2	2466.40	99.37			66.42	4.51	28.44	0.00	170	229	Peak	VERTICAL
3	2483.50	52.81	54.00	-1.19	19.83	4.51	28.47	0.00	170	229	Average	VERTICAL
4	2484.00	53.09	74.00	-20.91	20.11	4.51	28.47	0.00	170	229	Peak	VERTICAL

Item 1, 2 are the fundamental frequency at 2452 MHz.

Note:

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Temperature	23℃	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11b CH 1, 6, 11 / Chain 1 + Chain 2
Test Date	Jul. 14, 2015		
Test Mode	Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 2TX)		

Channel 1

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2389.20	51.95	54.00	-2.05	19.27	4.37	28.31	0.00	202	336	Average	VERTICAL
2	2389.20	61.12	74.00	-12.88	28.44	4.37	28.31	0.00	202	336	Peak	VERTICAL
3	2411.20	115.81			83.06	4.41	28.34	0.00	202	336	Average	VERTICAL
4	2411.20	119.72			86.97	4.41	28.34	0.00	202	336	Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 2412 MHz.

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2389.80	47.57	54.00	-6.43	14.85	4.41	28.31	0.00	216	339	Average	VERTICAL
2	2390.00	58.09	74.00	-15.91	25.37	4.41	28.31	0.00	216	339	Peak	VERTICAL
3	2436.20	117.29			84.47	4.44	28.38	0.00	216	339	Average	VERTICAL
4	2436.20	121.28			88.46	4.44	28.38	0.00	216	339	Peak	VERTICAL
5	2483.50	48.94	54.00	-5.06	15.96	4.51	28.47	0.00	216	339	Average	VERTICAL
6	2485.00	61.40	74.00	-12.60	28.42	4.51	28.47	0.00	216	339	Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 11

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2462.80	115.84			82.92	4.48	28.44	0.00	203	335	Average	VERTICAL
2	2462.80	119.94			87.02	4.48	28.44	0.00	203	335	Peak	VERTICAL
3	2483.50	52.62	54.00	-1.38	19.64	4.51	28.47	0.00	203	335	Average	VERTICAL
4	2483.50	62.47	74.00	-11.53	29.49	4.51	28.47	0.00	203	335	Peak	VERTICAL

Item 1, 2 are the fundamental frequency at 2462 MHz.

Temperature	23℃	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11b CH 1, 6, 11 / Chain 2
Test Date	Jul. 11, 2015		
Test Mode	Mode 2 (Ant. 7 Polarized Panel / 11dBi / 1TX)		

Channel 1

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	2388.80	61.64	74.00	-12.36	29.34	4.09	28.21	0.00	Peak	180	4	HORIZONTAL
2	2389.20	52.58	54.00	-1.42	20.28	4.09	28.21	0.00	Average	180	4	HORIZONTAL
3	2411.20	110.85			78.50	4.11	28.24	0.00	Average	180	4	HORIZONTAL
4	2413.00	114.89			82.54	4.11	28.24	0.00	Peak	180	4	HORIZONTAL

Item 3, 4 are the fundamental frequency at 2412 MHz.

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	2389.20	58.21	74.00	-15.79	25.91	4.09	28.21	0.00	Peak	186	360	HORIZONTAL
2	2390.00	46.40	54.00	-7.60	14.10	4.09	28.21	0.00	Average	186	360	HORIZONTAL
3	2436.20	113.27			80.87	4.12	28.28	0.00	Average	186	360	HORIZONTAL
4	2436.20	117.21			84.81	4.12	28.28	0.00	Peak	186	360	HORIZONTAL
5	2483.50	47.76	54.00	-6.24	15.23	4.16	28.37	0.00	Average	186	360	HORIZONTAL
6	2483.50	59.18	74.00	-14.82	26.65	4.16	28.37	0.00	Peak	186	360	HORIZONTAL

Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 11

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	2383.60	58.88	74.00	-15.12	26.62	4.08	28.18	0.00	Peak	174	360	HORIZONTAL
2	2384.40	48.84	54.00	-5.16	16.58	4.08	28.18	0.00	Average	174	360	HORIZONTAL
3	2462.80	114.69			82.21	4.14	28.34	0.00	Peak	174	360	HORIZONTAL
4	2463.60	110.61			78.13	4.14	28.34	0.00	Average	174	360	HORIZONTAL
5	2483.50	52.56	54.00	-1.44	20.03	4.16	28.37	0.00	Average	174	360	HORIZONTAL
6	2483.50	62.05	74.00	-11.95	29.52	4.16	28.37	0.00	Peak	174	360	HORIZONTAL

Item 3, 4 are the fundamental frequency at 2462 MHz.

Temperature	23°C	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 1, 6, 11 / Chain 2
Test date	Jul. 11, 2015		
Test Mode	Mode 2 (Ant. 7 Polarized Panel / 11dBi / 1TX)		

Channel 1

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	2388.60	72.98	74.00	-1.02	40.68	4.09	28.21	0.00	Peak	177	360	HORIZONTAL
2	2390.00	52.96	54.00	-1.04	20.66	4.09	28.21	0.00	Average	177	360	HORIZONTAL
3	2418.40	112.46			80.11	4.11	28.24	0.00	Peak	177	360	HORIZONTAL
4	2419.20	101.28			68.93	4.11	28.24	0.00	Average	177	360	HORIZONTAL

Item 3, 4 are the fundamental frequency at 2412 MHz.

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	2390.00	52.30	54.00	-1.70	20.00	4.09	28.21	0.00	Average	189	358	HORIZONTAL
2	2390.00	70.93	74.00	-3.07	38.63	4.09	28.21	0.00	Peak	189	358	HORIZONTAL
3	2437.80	117.37			84.93	4.13	28.31	0.00	Peak	189	358	HORIZONTAL
4	2438.20	106.86			74.42	4.13	28.31	0.00	Average	189	358	HORIZONTAL
5	2483.50	51.37	54.00	-2.63	18.84	4.16	28.37	0.00	Average	189	358	HORIZONTAL
6	2484.70	65.39	74.00	-8.61	32.86	4.16	28.37	0.00	Peak	189	358	HORIZONTAL

Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 11

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	2468.40	111.77			79.29	4.14	28.34	0.00	Peak	172	360	HORIZONTAL
2	2469.80	100.79			68.31	4.14	28.34	0.00	Average	172	360	HORIZONTAL
3	2483.50	52.25	54.00	-1.75	19.72	4.16	28.37	0.00	Average	172	360	HORIZONTAL
4	2483.90	72.20	74.00	-1.80	39.67	4.16	28.37	0.00	Peak	172	360	HORIZONTAL

Item 1, 2 are the fundamental frequency at 2462 MHz.

Temperature	23℃	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 3, 6, 9 / Chain 2
Test date	Jul. 11, 2015		
Test Mode	Mode 2 (Ant. 7 Polarized Panel / 11dBi / 1TX)		

Channel 3

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	2386.00	67.61	74.00	-6.39	35.31	4.09	28.21	0.00	Peak	188	360	HORIZONTAL
2	2390.00	52.76	54.00	-1.24	20.46	4.09	28.21	0.00	Average	188	360	HORIZONTAL
3	2424.40	109.00			76.60	4.12	28.28	0.00	Peak	188	360	HORIZONTAL
4	2425.20	97.87			65.47	4.12	28.28	0.00	Average	188	360	HORIZONTAL

Item 3, 4 are the fundamental frequency at 2422 MHz.

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	2390.00	52.76	54.00	-1.24	20.46	4.09	28.21	0.00	Average	194	360	HORIZONTAL
2	2390.00	68.31	74.00	-5.69	36.01	4.09	28.21	0.00	Peak	194	360	HORIZONTAL
3	2424.60	98.08			65.68	4.12	28.28	0.00	Average	194	360	HORIZONTAL
4	2426.60	109.24			76.84	4.12	28.28	0.00	Peak	194	360	HORIZONTAL
5	2483.50	50.23	54.00	-3.77	17.70	4.16	28.37	0.00	Average	194	360	HORIZONTAL
6	2483.90	66.14	74.00	-7.86	33.61	4.16	28.37	0.00	Peak	194	360	HORIZONTAL

Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 9

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	2449.20	107.61			75.17	4.13	28.31	0.00	Peak	184	360	HORIZONTAL
2	2469.60	96.83			64.35	4.14	28.34	0.00	Average	184	360	HORIZONTAL
3	2483.50	52.26	54.00	-1.74	19.73	4.16	28.37	0.00	Average	184	360	HORIZONTAL
4	2489.10	72.42	74.00	-1.58	39.85	4.17	28.40	0.00	Peak	184	360	HORIZONTAL

Item 1, 2 are the fundamental frequency at 2452 MHz.

Note:

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Temperature	23℃	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11b CH 1, 6, 11 / Chain 1 + Chain 2
Test Date	Jul. 11, 2015		
Test Mode	Mode 2 (Ant. 7 Polarized Panel / 11dBi / 2TX)		

Channel 1

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	2389.60	61.27	74.00	-12.73	28.97	4.09	28.21	0.00	Peak	169	341	VERTICAL
2	2390.00	52.97	54.00	-1.03	20.67	4.09	28.21	0.00	Average	169	341	VERTICAL
3	2411.20	111.42			79.07	4.11	28.24	0.00	Average	169	341	VERTICAL
4	2413.00	115.50			83.15	4.11	28.24	0.00	Peak	169	341	VERTICAL

Item 3, 4 are the fundamental frequency at 2412 MHz.

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	2388.00	58.23	74.00	-15.77	25.93	4.09	28.21	0.00	Peak	184	360	HORIZONTAL
2	2390.00	46.79	54.00	-7.21	14.49	4.09	28.21	0.00	Average	184	360	HORIZONTAL
3	2436.20	113.72			81.32	4.12	28.28	0.00	Average	184	360	HORIZONTAL
4	2436.20	117.64			85.24	4.12	28.28	0.00	Peak	184	360	HORIZONTAL
5	2483.50	47.82	54.00	-6.18	15.29	4.16	28.37	0.00	Average	184	360	HORIZONTAL
6	2483.50	59.09	74.00	-14.91	26.56	4.16	28.37	0.00	Peak	184	360	HORIZONTAL

Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 11

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	2462.80	110.48			78.00	4.14	28.34	0.00	Average	175	16	VERTICAL
2	2463.00	114.61			82.13	4.14	28.34	0.00	Peak	175	16	VERTICAL
3	2483.50	52.70	54.00	-1.30	20.17	4.16	28.37	0.00	Average	175	16	VERTICAL
4	2483.50	61.10	74.00	-12.90	28.57	4.16	28.37	0.00	Peak	175	16	VERTICAL

Item 1, 2 are the fundamental frequency at 2462 MHz.

Temperature	23℃	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11b CH 1, 6, 11 / Chain 1
Test Date	Jul. 15, 2015 ~ Jul. 16, 2015		
Test Mode	Mode 3 (Ant. 8 Patch / 5dBi / 1TX)		

Channel 1

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2389.60	62.21	74.00	-11.79	29.53	4.37	28.31	0.00	179	64	Peak	HORIZONTAL
2	2390.00	52.92	54.00	-1.08	20.20	4.41	28.31	0.00	179	64	Average	HORIZONTAL
3	2411.20	109.48			76.73	4.41	28.34	0.00	179	64	Average	HORIZONTAL
4	2413.00	113.56			80.81	4.41	28.34	0.00	179	64	Peak	HORIZONTAL

Item 3, 4 are the fundamental frequency at 2412 MHz.

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2388.20	57.71	74.00	-16.29	25.03	4.37	28.31	0.00	128	286	Peak	HORIZONTAL
2	2390.00	45.57	54.00	-8.43	12.85	4.41	28.31	0.00	128	286	Average	HORIZONTAL
3	2437.80	109.63			76.78	4.44	28.41	0.00	128	286	Average	HORIZONTAL
4	2438.20	113.72			80.87	4.44	28.41	0.00	128	286	Peak	HORIZONTAL
5	2483.50	46.26	54.00	-7.74	13.28	4.51	28.47	0.00	128	286	Average	HORIZONTAL
6	2488.60	58.06	74.00	-15.94	25.05	4.51	28.50	0.00	128	286	Peak	HORIZONTAL

Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 11

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2461.20	107.44			74.52	4.48	28.44	0.00	139	42	Average	HORIZONTAL
2	2463.00	111.11			78.19	4.48	28.44	0.00	139	42	Peak	HORIZONTAL
3	2483.50	52.58	54.00	-1.42	19.60	4.51	28.47	0.00	139	42	Average	HORIZONTAL
4	2483.50	60.49	74.00	-13.51	27.51	4.51	28.47	0.00	139	42	Peak	HORIZONTAL

Item 1, 2 are the fundamental frequency at 2462 MHz.

Temperature	23°C	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 1, 6, 11 / Chain 1
Test date	Jul. 16, 2015		
Test Mode	Mode 3 (Ant. 8 Patch / 5dBi / 1TX)		

Channel 1

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2389.20	72.09	74.00	-1.91	39.41	4.37	28.31	0.00	178	70	Peak	HORIZONTAL
2	2390.00	52.91	54.00	-1.09	20.19	4.41	28.31	0.00	178	70	Average	HORIZONTAL
3	2411.00	99.62			66.87	4.41	28.34	0.00	178	70	Average	HORIZONTAL
4	2414.20	109.80			77.05	4.41	28.34	0.00	178	70	Peak	HORIZONTAL

Item 3, 4 are the fundamental frequency at 2412 MHz.

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2388.60	62.03	74.00	-11.97	29.35	4.37	28.31	0.00	131	60	Peak	HORIZONTAL
2	2390.00	48.67	54.00	-5.33	15.95	4.41	28.31	0.00	131	60	Average	HORIZONTAL
3	2435.80	102.03			69.21	4.44	28.38	0.00	131	60	Average	HORIZONTAL
4	2435.80	113.68			80.86	4.44	28.38	0.00	131	60	Peak	HORIZONTAL
5	2483.50	48.67	54.00	-5.33	15.69	4.51	28.47	0.00	131	60	Average	HORIZONTAL
6	2483.50	63.92	74.00	-10.08	30.94	4.51	28.47	0.00	131	60	Peak	HORIZONTAL

Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 11

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2462.20	108.10			75.18	4.48	28.44	0.00	141	43	Peak	HORIZONTAL
2	2463.20	97.29			64.37	4.48	28.44	0.00	141	43	Average	HORIZONTAL
3	2483.50	52.82	54.00	-1.18	19.84	4.51	28.47	0.00	141	43	Average	HORIZONTAL
4	2483.50	71.25	74.00	-2.75	38.27	4.51	28.47	0.00	141	43	Peak	HORIZONTAL

Item 1, 2 are the fundamental frequency at 2462 MHz.

Temperature	23℃	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 3, 6, 9 / Chain 1
Test date	Jul. 16, 2015		
Test Mode	Mode 3 (Ant. 8 Patch / 5dBi / 1TX)		

Channel 3

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2389.20	70.18	74.00	-3.82	37.50	4.37	28.31	0.00	118	62	Peak	HORIZONTAL
2	2390.00	52.84	54.00	-1.16	20.12	4.41	28.31	0.00	118	62	Average	HORIZONTAL
3	2416.40	96.36			63.58	4.44	28.34	0.00	118	62	Average	HORIZONTAL
4	2418.80	106.85			74.07	4.44	28.34	0.00	118	62	Peak	HORIZONTAL

Item 3, 4 are the fundamental frequency at 2422 MHz.

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2389.80	52.01	54.00	-1.99	19.29	4.41	28.31	0.00	141	66	Average	HORIZONTAL
2	2390.00	66.33	74.00	-7.67	33.61	4.41	28.31	0.00	141	66	Peak	HORIZONTAL
3	2419.80	96.09			63.27	4.44	28.38	0.00	141	66	Average	HORIZONTAL
4	2430.60	106.27			73.45	4.44	28.38	0.00	141	66	Peak	HORIZONTAL
5	2483.50	52.58	54.00	-1.42	19.60	4.51	28.47	0.00	141	66	Average	HORIZONTAL
6	2485.80	68.36	74.00	-5.64	35.38	4.51	28.47	0.00	141	66	Peak	HORIZONTAL

Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 9

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2457.20	104.50			71.58	4.48	28.44	0.00	100	54	Peak	HORIZONTAL
2	2457.60	95.21			62.29	4.48	28.44	0.00	100	54	Average	HORIZONTAL
3	2483.50	71.69	74.00	-2.31	38.71	4.51	28.47	0.00	100	54	Peak	HORIZONTAL
4	2484.80	52.82	54.00	-1.18	19.84	4.51	28.47	0.00	100	54	Average	HORIZONTAL

Item 1, 2 are the fundamental frequency at 2452 MHz.

Note:

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Temperature	23°C	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11b CH 1, 6, 11 / Chain 1 + Chain 2
Test Date	Jul. 16, 2015		
Test Mode	Mode 3 (Ant. 8 Patch / 5dBi / 2TX)		

Channel 1

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2389.20	52.84	54.00	-1.16	20.16	4.37	28.31	0.00	132	291	Average	HORIZONTAL
2	2390.00	61.37	74.00	-12.63	28.65	4.41	28.31	0.00	132	291	Peak	HORIZONTAL
3	2411.00	116.43			83.68	4.41	28.34	0.00	132	291	Peak	HORIZONTAL
4	2411.20	112.50			79.75	4.41	28.34	0.00	132	291	Average	HORIZONTAL

Item 3, 4 are the fundamental frequency at 2412 MHz.

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2384.60	57.17	74.00	-16.83	24.52	4.37	28.28	0.00	126	290	Peak	HORIZONTAL
2	2390.00	46.00	54.00	-8.00	13.28	4.41	28.31	0.00	126	290	Average	HORIZONTAL
3	2436.20	114.07			81.25	4.44	28.38	0.00	126	290	Average	HORIZONTAL
4	2436.20	118.08			85.26	4.44	28.38	0.00	126	290	Peak	HORIZONTAL
5	2483.80	46.82	54.00	-7.18	13.84	4.51	28.47	0.00	126	290	Average	HORIZONTAL
6	2491.00	58.41	74.00	-15.59	25.40	4.51	28.50	0.00	126	290	Peak	HORIZONTAL

Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 11

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2461.20	112.41			79.49	4.48	28.44	0.00	106	285	Average	HORIZONTAL
2	2463.00	116.46			83.54	4.48	28.44	0.00	106	285	Peak	HORIZONTAL
3	2483.50	52.84	54.00	-1.16	19.86	4.51	28.47	0.00	106	285	Average	HORIZONTAL
4	2483.50	61.75	74.00	-12.25	28.77	4.51	28.47	0.00	106	285	Peak	HORIZONTAL

Item 1, 2 are the fundamental frequency at 2462 MHz.

<For Beamforming Mode>

Temperature	23°C	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 1, 6, 11 / Chain 1 + Chain 2
Test date	Jul. 14, 2015		
Test Mode	Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 2TX)		

Channel 1

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2389.60	71.62	74.00	-2.38	38.94	4.37	28.31	0.00	211	333	Peak	VERTICAL
2	2390.00	52.53	54.00	-1.47	19.81	4.41	28.31	0.00	211	333	Average	VERTICAL
3	2411.20	114.92			82.17	4.41	28.34	0.00	211	333	Peak	VERTICAL
4	2413.60	110.19			77.44	4.41	28.34	0.00	211	333	Average	VERTICAL
5	2487.60	52.50	54.00	-1.50	19.49	4.51	28.50	0.00	211	333	Average	VERTICAL
6	2487.60	60.93	74.00	-13.07	27.92	4.51	28.50	0.00	211	333	Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 2412 MHz.

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2376.60	65.02	74.00	-8.98	32.37	4.37	28.28	0.00	212	341	Peak	VERTICAL
2	2390.00	52.62	54.00	-1.38	19.90	4.41	28.31	0.00	212	341	Average	VERTICAL
3	2431.40	120.63			87.81	4.44	28.38	0.00	212	341	Peak	VERTICAL
4	2436.60	117.25			84.40	4.44	28.41	0.00	212	341	Average	VERTICAL
5	2483.50	52.29	54.00	-1.71	19.31	4.51	28.47	0.00	212	341	Average	VERTICAL
6	2483.50	67.69	74.00	-6.31	34.71	4.51	28.47	0.00	212	341	Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 11

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2458.80	115.33			82.41	4.48	28.44	0.00	192	261	Peak	VERTICAL
2	2460.40	106.16			73.24	4.48	28.44	0.00	192	261	Average	VERTICAL
3	2483.50	51.57	54.00	-2.43	18.59	4.51	28.47	0.00	192	261	Average	VERTICAL
4	2484.80	72.98	74.00	-1.02	40.00	4.51	28.47	0.00	192	261	Peak	VERTICAL

Item 1, 2 are the fundamental frequency at 2462 MHz.

Temperature	23℃	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 3, 6, 9 / Chain 1 + Chain 2
Test date	Jul. 14, 2015		
Test Mode	Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 2TX)		

Channel 3

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2389.20	52.66	54.00	-1.34	19.98	4.37	28.31	0.00	223	332	Average	VERTICAL
2	2389.60	65.55	74.00	-8.45	32.87	4.37	28.31	0.00	223	332	Peak	VERTICAL
3	2414.40	111.12			78.37	4.41	28.34	0.00	223	332	Peak	VERTICAL
4	2416.40	106.31			73.53	4.44	28.34	0.00	223	332	Average	VERTICAL

Item 3, 4 are the fundamental frequency at 2422 MHz.

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2384.60	64.67	74.00	-9.33	32.02	4.37	28.28	0.00	230	331	Peak	VERTICAL
2	2389.40	52.67	54.00	-1.33	19.99	4.37	28.31	0.00	230	331	Average	VERTICAL
3	2424.20	109.95			77.13	4.44	28.38	0.00	230	331	Average	VERTICAL
4	2424.60	113.59			80.77	4.44	28.38	0.00	230	331	Peak	VERTICAL
5	2484.60	50.76	54.00	-3.24	17.78	4.51	28.47	0.00	230	331	Average	VERTICAL
6	2484.60	64.45	74.00	-9.55	31.47	4.51	28.47	0.00	230	331	Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 9

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2443.60	107.25			74.36	4.48	28.41	0.00	189	342	Average	VERTICAL
2	2469.60	112.47			79.52	4.51	28.44	0.00	189	342	Peak	VERTICAL
3	2484.00	52.78	54.00	-1.22	19.80	4.51	28.47	0.00	189	342	Average	VERTICAL
4	2486.80	69.13	74.00	-4.87	36.15	4.51	28.47	0.00	189	342	Peak	VERTICAL

Item 1, 2 are the fundamental frequency at 2452 MHz.

Note:

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Temperature	23°C	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 1, 6, 11 / Chain 1 + Chain 2
Test date	Jul. 13, 2015		
Test Mode	Mode 2 (Ant. 7 Polarized Panel / 11dBi / 2TX)		

Channel 1

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2389.80	71.94	74.00	-2.06	39.22	4.41	28.31	0.00	174	8	Peak	HORIZONTAL
2	2390.00	51.30	54.00	-2.70	18.58	4.41	28.31	0.00	174	8	Average	HORIZONTAL
3	2404.80	115.16			82.41	4.41	28.34	0.00	174	8	Peak	HORIZONTAL
4	2413.20	106.36			73.61	4.41	28.34	0.00	174	8	Average	HORIZONTAL

Item 3, 4 are the fundamental frequency at 2412 MHz.

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2389.00	62.90	74.00	-11.10	30.22	4.37	28.31	0.00	165	349	Peak	HORIZONTAL
2	2390.00	51.84	54.00	-2.16	19.12	4.41	28.31	0.00	165	349	Average	HORIZONTAL
3	2436.20	110.28			77.46	4.44	28.38	0.00	165	349	Average	HORIZONTAL
4	2441.00	118.28			85.39	4.48	28.41	0.00	165	349	Peak	HORIZONTAL
5	2483.80	52.85	54.00	-1.15	19.87	4.51	28.47	0.00	165	349	Average	HORIZONTAL
6	2491.40	66.86	74.00	-7.14	33.85	4.51	28.50	0.00	165	349	Peak	HORIZONTAL

Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 11

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2470.00	113.15			80.20	4.51	28.44	0.00	169	352	Peak	HORIZONTAL
2	2470.40	103.72			70.77	4.51	28.44	0.00	169	352	Average	HORIZONTAL
3	2483.80	50.12	54.00	-3.88	17.14	4.51	28.47	0.00	169	352	Average	HORIZONTAL
4	2485.00	72.93	74.00	-1.07	39.95	4.51	28.47	0.00	169	352	Peak	HORIZONTAL

Item 1, 2 are the fundamental frequency at 2462 MHz.

Temperature	23℃	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 3, 6, 9 / Chain 1 + Chain 2
Test date	Jul. 13, 2015		
Test Mode	Mode 2 (Ant. 7 Polarized Panel / 11dBi / 2TX)		

Channel 3

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2378.40	52.65	54.00	-1.35	20.00	4.37	28.28	0.00	195	5	Average	HORIZONTAL
2	2380.00	69.89	74.00	-4.11	37.24	4.37	28.28	0.00	195	5	Peak	HORIZONTAL
3	2436.00	112.29			79.47	4.44	28.38	0.00	195	5	Peak	HORIZONTAL
4	2436.40	103.01			70.19	4.44	28.38	0.00	195	5	Average	HORIZONTAL

Item 3, 4 are the fundamental frequency at 2422 MHz.

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2385.40	71.15	74.00	-2.85	38.50	4.37	28.28	0.00	137	5	Peak	HORIZONTAL
2	2389.00	52.98	54.00	-1.02	20.30	4.37	28.31	0.00	137	5	Average	HORIZONTAL
3	2430.20	106.87			74.05	4.44	28.38	0.00	137	5	Average	HORIZONTAL
4	2435.00	112.52			79.70	4.44	28.38	0.00	137	5	Peak	HORIZONTAL
5	2483.80	51.62	54.00	-2.38	18.64	4.51	28.47	0.00	137	5	Average	HORIZONTAL
6	2483.80	64.84	74.00	-9.16	31.86	4.51	28.47	0.00	137	5	Peak	HORIZONTAL

Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 9

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2445.20	103.97			71.08	4.48	28.41	0.00	167	4	Average	HORIZONTAL
2	2469.20	109.73			76.78	4.51	28.44	0.00	167	4	Peak	HORIZONTAL
3	2483.50	52.66	54.00	-1.34	19.68	4.51	28.47	0.00	167	4	Average	HORIZONTAL
4	2490.00	70.80	74.00	-3.20	37.79	4.51	28.50	0.00	167	4	Peak	HORIZONTAL

Item 1, 2 are the fundamental frequency at 2452 MHz.

Note:

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Temperature	23°C	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 1, 6, 11 / Chain 1 + Chain 2
Test date	Jul. 16, 2015		
Test Mode	Mode 3 (Ant. 8 Patch / 5dBi / 2TX)		

Channel 1

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2388.00	72.22	74.00	-1.78	39.54	4.37	28.31	0.00	227	257	Peak	VERTICAL
2	2390.00	52.64	54.00	-1.36	19.92	4.41	28.31	0.00	227	257	Average	VERTICAL
3	2404.00	107.37			74.62	4.41	28.34	0.00	227	257	Peak	VERTICAL
4	2404.40	98.08			65.33	4.41	28.34	0.00	227	257	Average	VERTICAL

Item 3, 4 are the fundamental frequency at 2412 MHz.

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2389.40	67.21	74.00	-6.79	34.53	4.37	28.31	0.00	130	293	Peak	HORIZONTAL
2	2390.00	52.15	54.00	-1.85	19.43	4.41	28.31	0.00	130	293	Average	HORIZONTAL
3	2444.60	108.98			76.09	4.48	28.41	0.00	130	293	Average	HORIZONTAL
4	2445.00	118.84			85.95	4.48	28.41	0.00	130	293	Peak	HORIZONTAL
5	2483.80	52.86	54.00	-1.14	19.88	4.51	28.47	0.00	130	293	Average	HORIZONTAL
6	2487.00	65.41	74.00	-8.59	32.43	4.51	28.47	0.00	130	293	Peak	HORIZONTAL

Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 11

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2463.60	102.80			69.88	4.48	28.44	0.00	120	51	Average	HORIZONTAL
2	2464.00	113.30			80.38	4.48	28.44	0.00	120	51	Peak	HORIZONTAL
3	2483.50	51.94	54.00	-2.06	18.96	4.51	28.47	0.00	120	51	Average	HORIZONTAL
4	2484.00	72.24	74.00	-1.76	39.26	4.51	28.47	0.00	120	51	Peak	HORIZONTAL

Item 1, 2 are the fundamental frequency at 2462 MHz.

Temperature	23℃	Humidity	61%
Test Engineer	Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 3, 6, 9 / Chain 1 + Chain 2
Test date	Jul. 16, 2015		
Test Mode	Mode 3 (Ant. 8 Patch / 5dBi / 2TX)		

Channel 3

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2389.20	65.94	74.00	-8.06	33.26	4.37	28.31	0.00	130	293	Peak	HORIZONTAL
2	2390.00	52.42	54.00	-1.58	19.70	4.41	28.31	0.00	130	293	Average	HORIZONTAL
3	2425.20	99.23			66.41	4.44	28.38	0.00	130	293	Average	HORIZONTAL
4	2428.00	109.11			76.29	4.44	28.38	0.00	130	293	Peak	HORIZONTAL

Item 3, 4 are the fundamental frequency at 2422 MHz.

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2388.20	66.03	74.00	-7.97	33.35	4.37	28.31	0.00	128	50	Peak	HORIZONTAL
2	2390.00	52.55	54.00	-1.45	19.83	4.41	28.31	0.00	128	50	Average	HORIZONTAL
3	2441.80	110.60			77.71	4.48	28.41	0.00	128	50	Peak	HORIZONTAL
4	2454.60	100.86			67.94	4.48	28.44	0.00	128	50	Average	HORIZONTAL
5	2483.50	52.38	54.00	-1.62	19.40	4.51	28.47	0.00	128	50	Average	HORIZONTAL
6	2483.50	68.55	74.00	-5.45	35.57	4.51	28.47	0.00	128	50	Peak	HORIZONTAL

Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 9

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2454.40	99.56			66.64	4.48	28.44	0.00	117	298	Average	HORIZONTAL
2	2456.80	110.33			77.41	4.48	28.44	0.00	117	298	Peak	HORIZONTAL
3	2487.20	52.85	54.00	-1.15	19.87	4.51	28.47	0.00	117	298	Average	HORIZONTAL
4	2487.60	72.87	74.00	-1.13	39.86	4.51	28.50	0.00	117	298	Peak	HORIZONTAL

Item 1, 2 are the fundamental frequency at 2452 MHz.

Note:

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

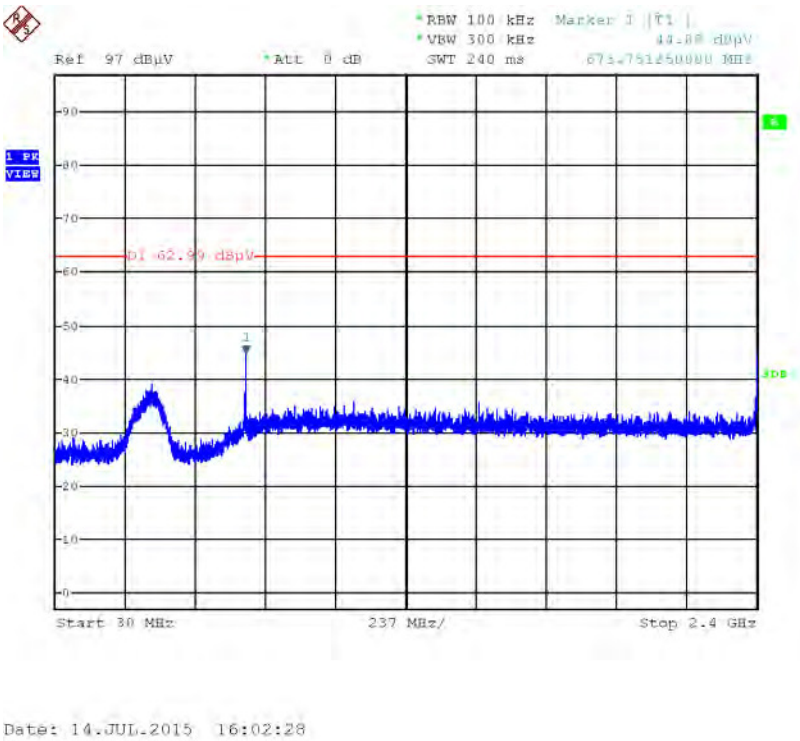
For Emission not in Restricted Band

<For Non-Beamforming Mode>

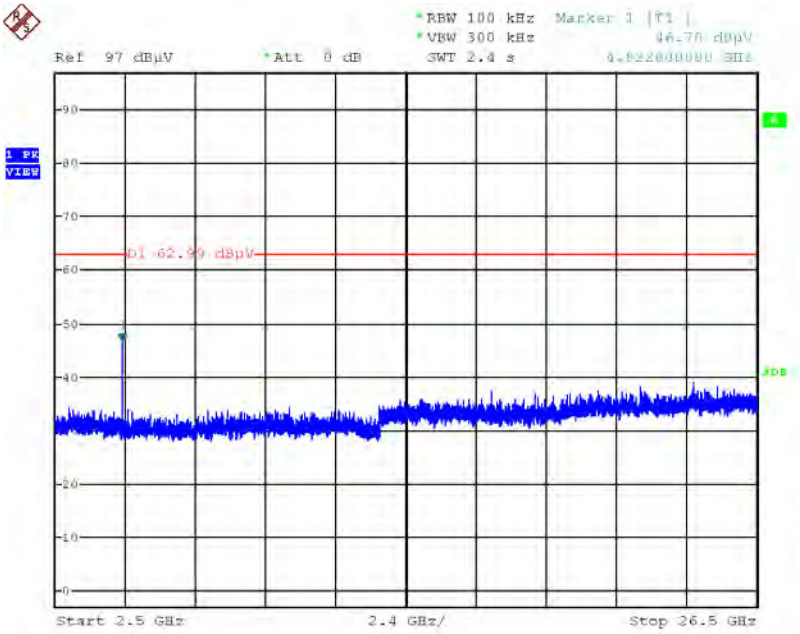
Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 1TX)

Plot on Configuration IEEE 802.11b / Reference Level

Plot on Configuration IEEE 802.11b / CH 1 / 30MHz~2400MHz (down 30dBc)

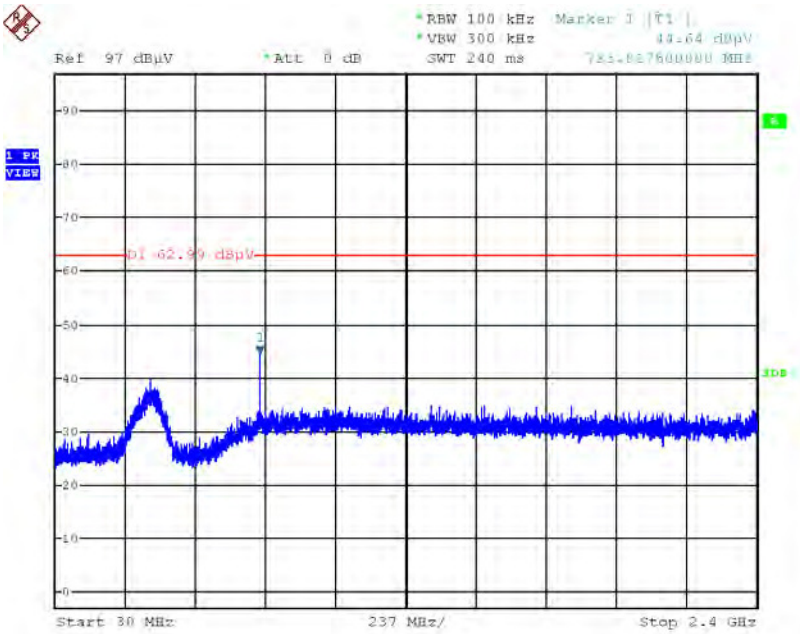


Plot on Configuration IEEE 802.11b / CH 1 / 2500MHz~26500MHz (down 30dBc)



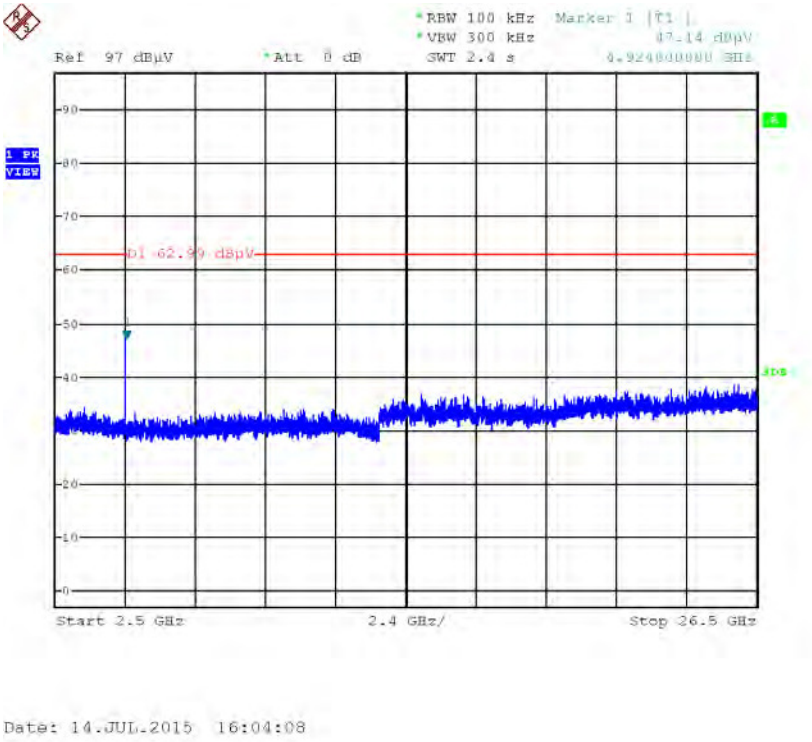
Date: 14.JUL.2015 16:03:09

Plot on Configuration IEEE 802.11b / CH 11 / 30MHz~2400MHz (down 30dBc)

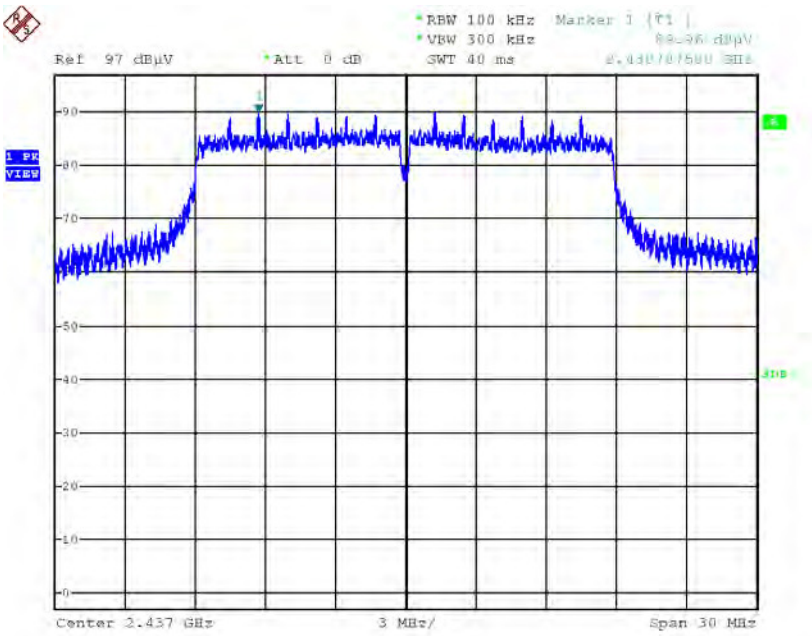


Date: 14.JUL.2015 16:04:38

Plot on Configuration IEEE 802.11b / CH 11 / 2500MHz~26500MHz (down 30dBc)

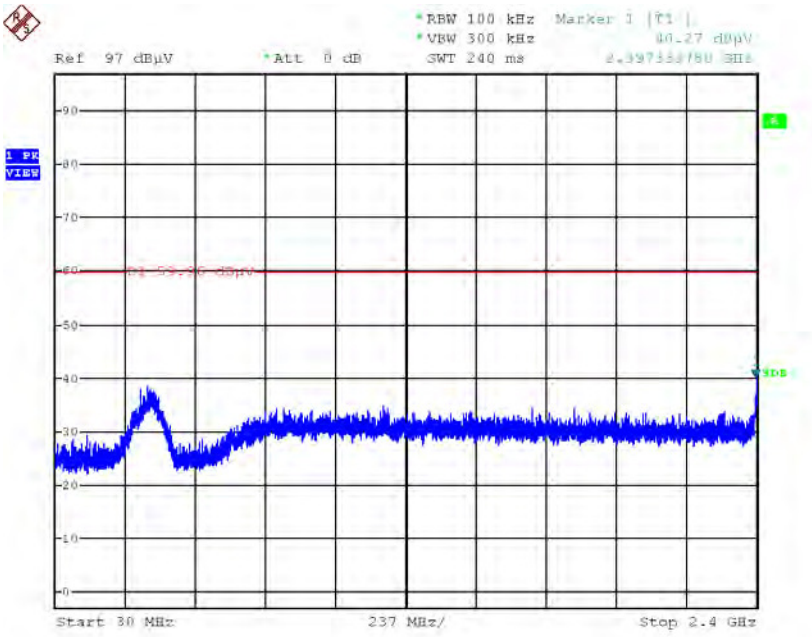


Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Reference Level



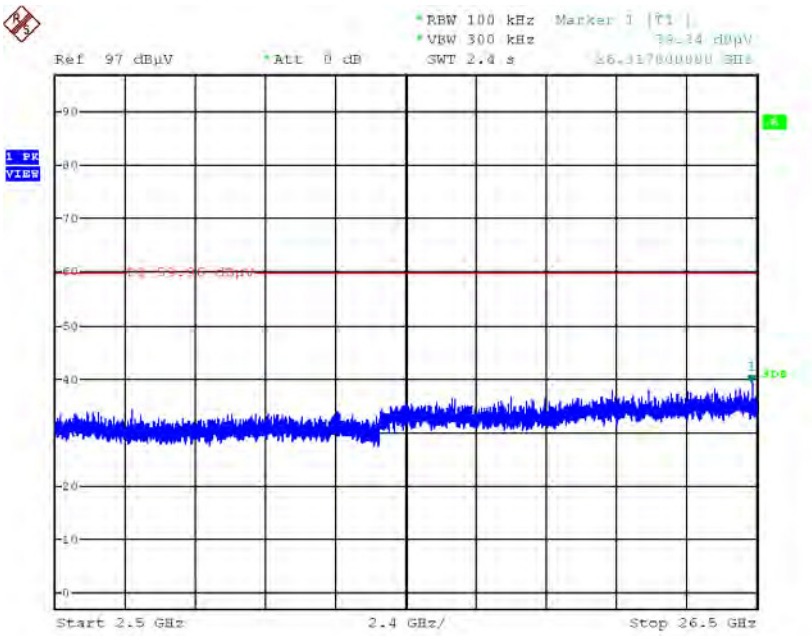
Date: 14.JUL.2015 16:05:46

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / CH 1 / 30MHz~2400MHz (down 30dBc)



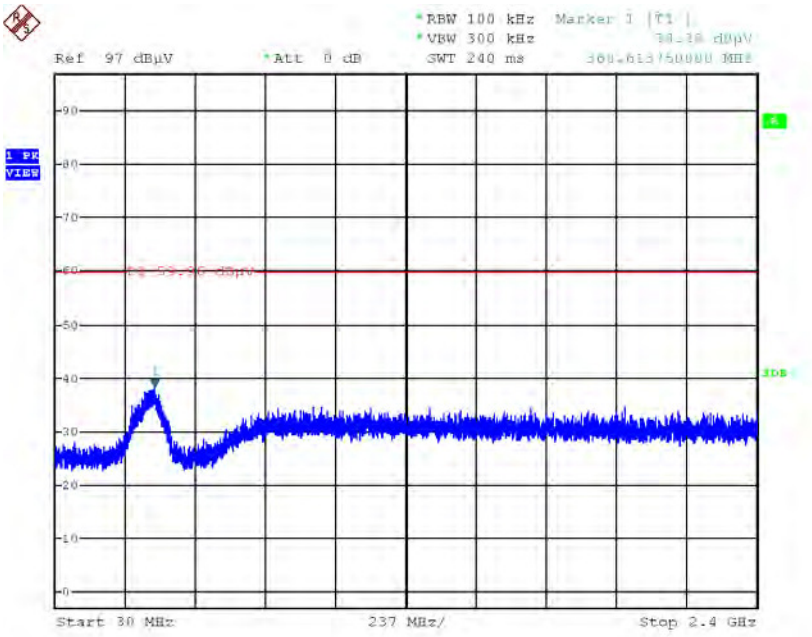
Date: 14.JUL.2015 16:06:44

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / CH 1 / 2500MHz~26500MHz (down 30dBc)



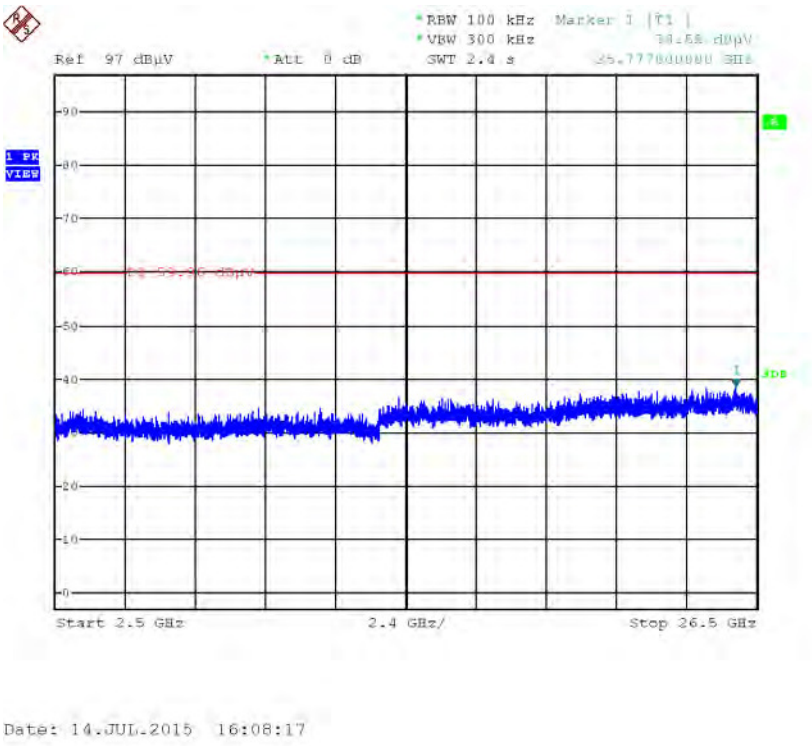
Date: 14.JUL.2015 16:07:21

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / CH 11 / 30MHz~2400MHz (down 30dBc)

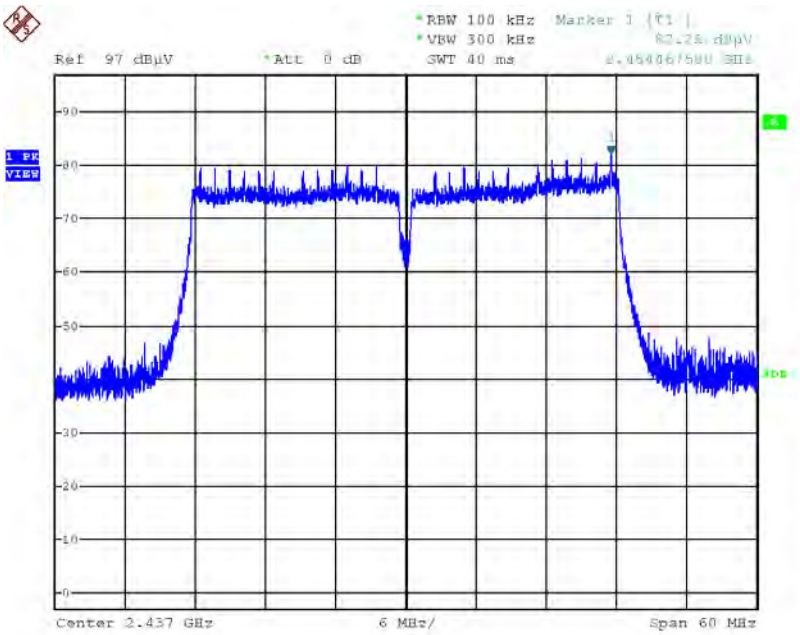


Date: 14.JUL.2015 16:08:42

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / CH 11 / 2500MHz~26500MHz (down 30dBc)

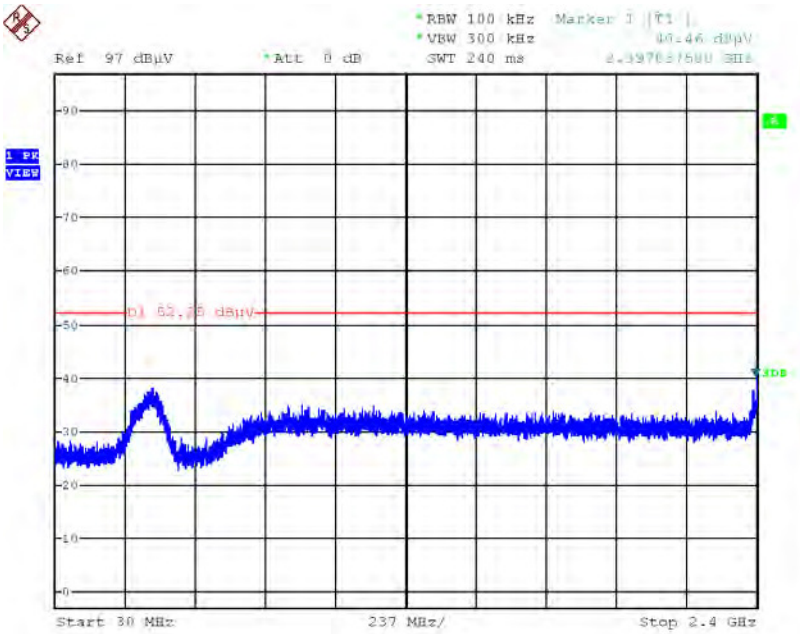


Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Reference Level



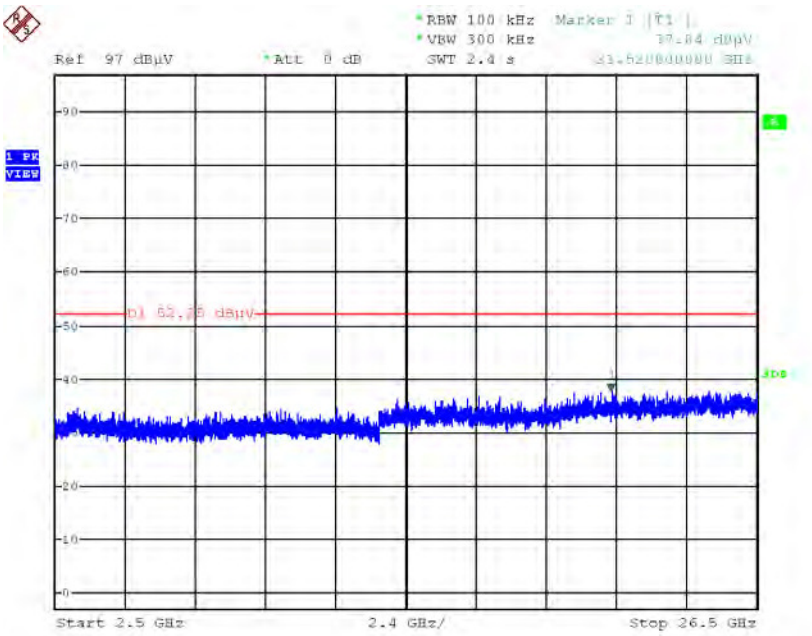
Date: 14.JUL.2015 16:10:10

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / CH 3 / 30MHz~2400MHz (down 30dBc)



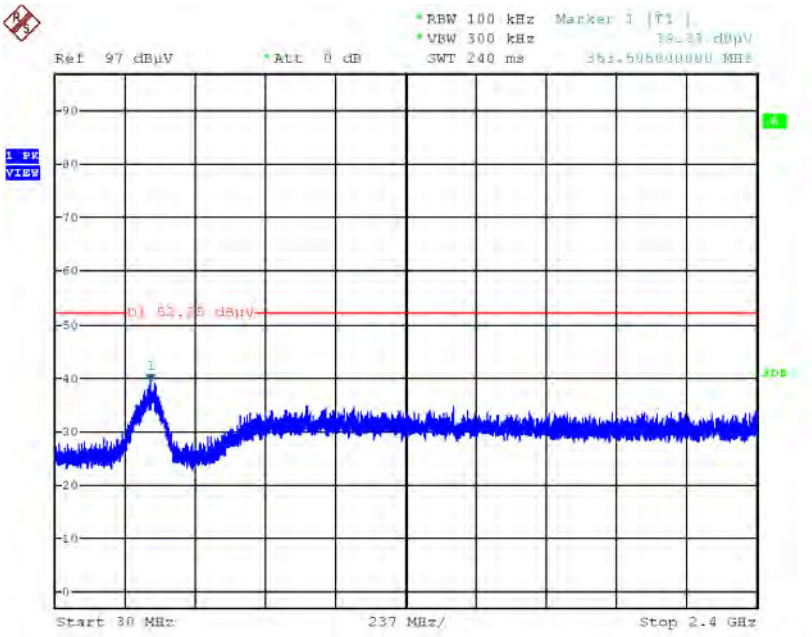
Date: 14.JUL.2015 16:11:12

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / CH 3 / 2500MHz~26500MHz (down 30dBc)



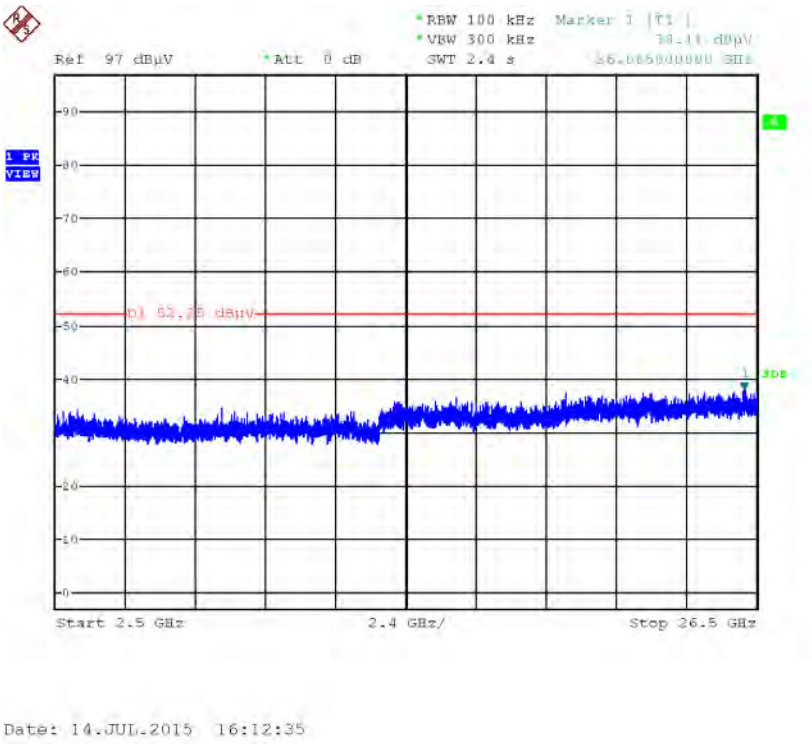
Date: 14.JUL.2015 16:11:52

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / CH 9 / 30MHz~2400MHz (down 30dBc)



Date: 14.JUL.2015 16:13:02

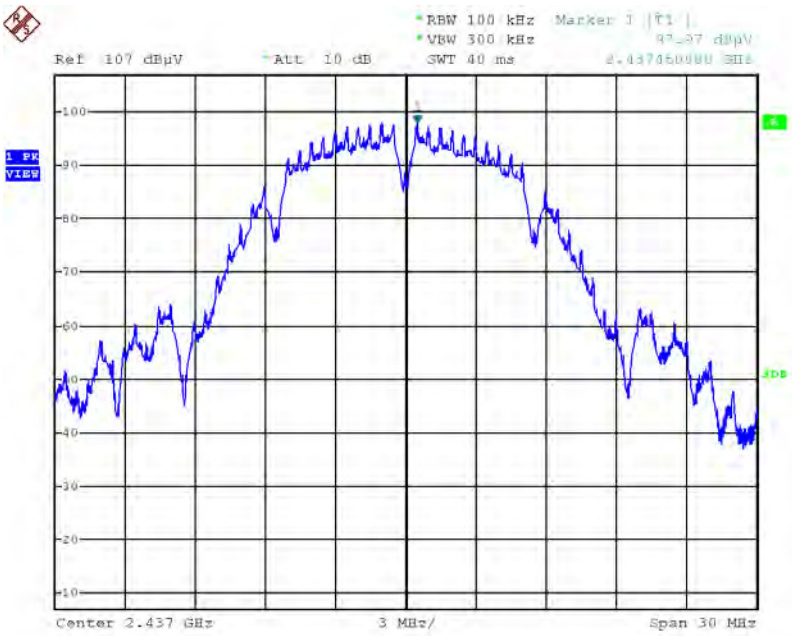
Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / CH 9 / 2500MHz~26500MHz (down 30dBc)



Date: 14.JUL.2015 16:12:35

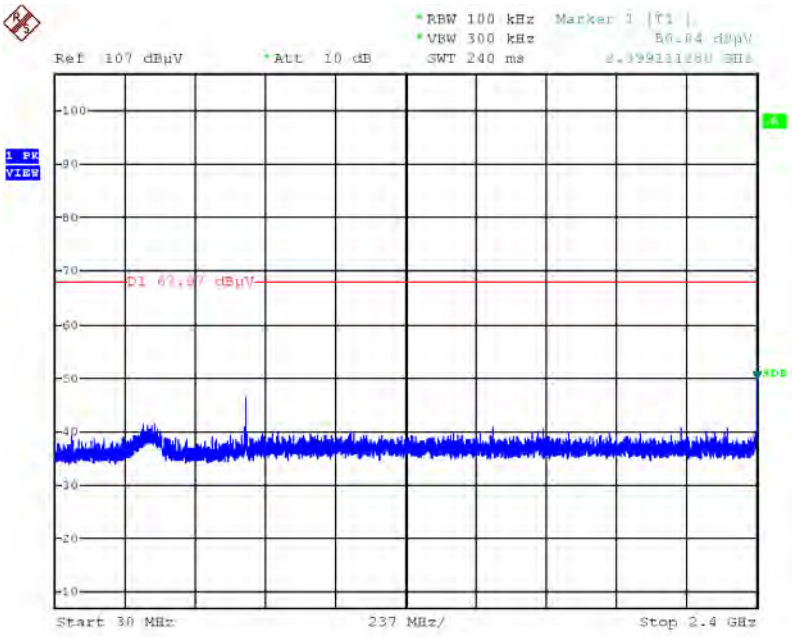
Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 2TX)

Plot on Configuration IEEE 802.11b / Reference Level



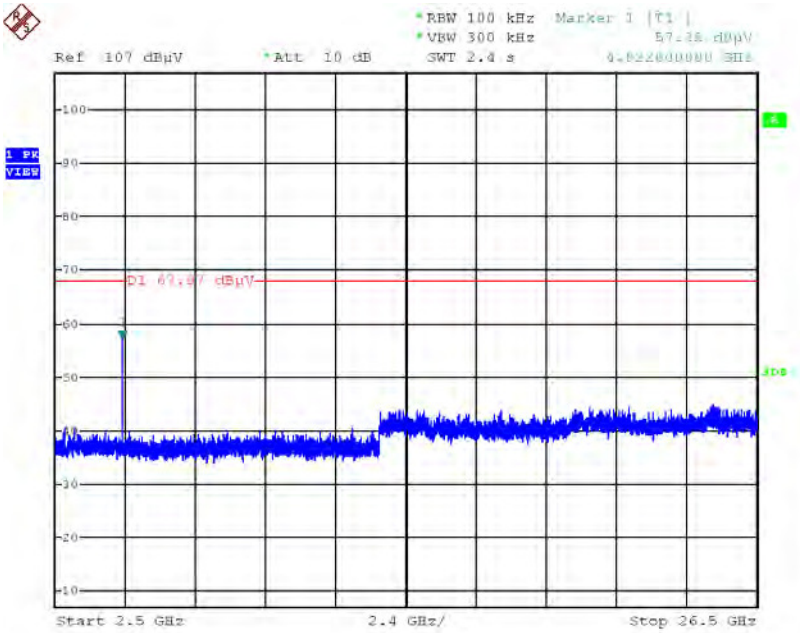
Date: 14.JUL.2015 18:32:44

Plot on Configuration IEEE 802.11b / CH 1 / 30MHz~2400MHz (down 30dBc)



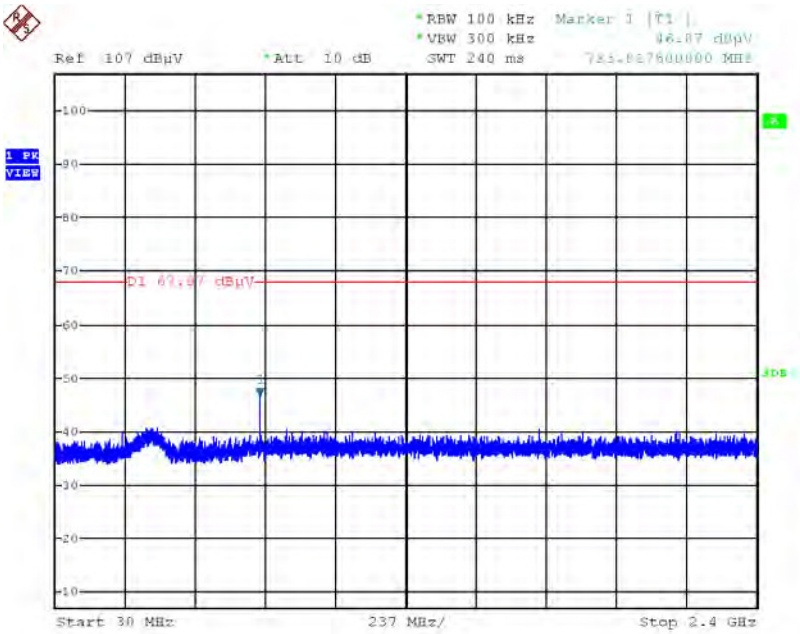
Date: 14.JUL.2015 18:33:57

Plot on Configuration IEEE 802.11b / CH 1 / 2500MHz~26500MHz (down 30dBc)



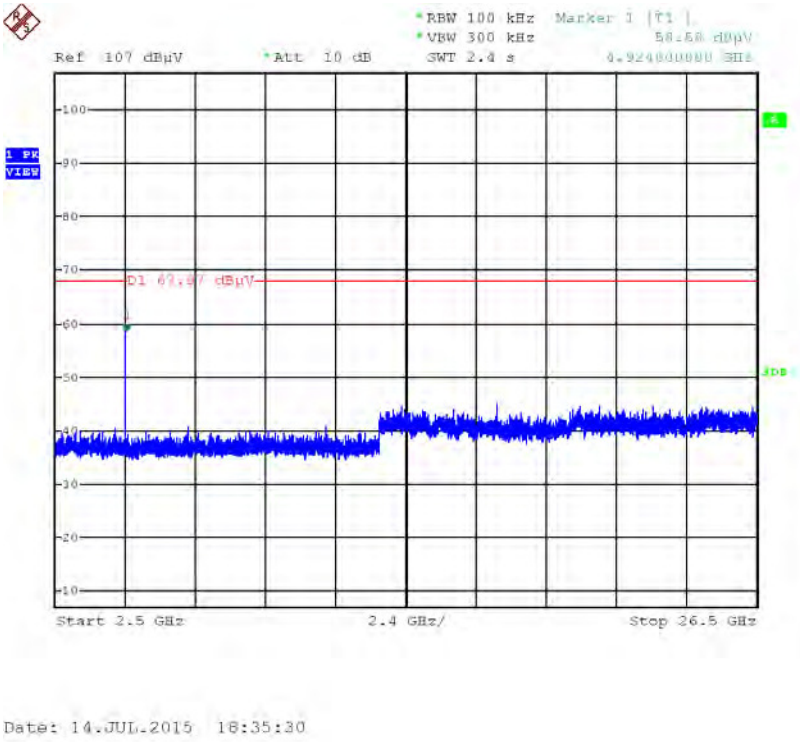
Date: 14.JUL.2015 18:34:40

Plot on Configuration IEEE 802.11b / CH 11 / 30MHz~2400MHz (down 30dBc)



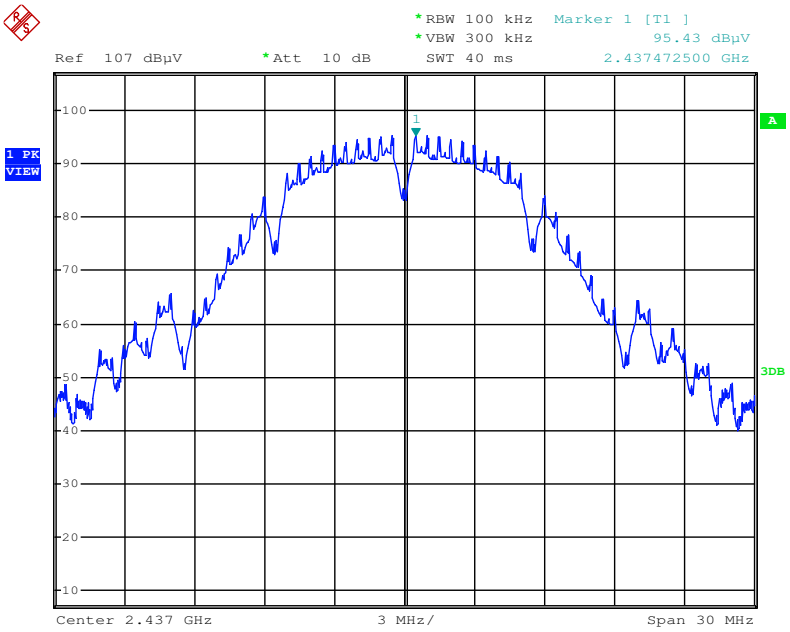
Date: 14.JUL.2015 18:36:14

Plot on Configuration IEEE 802.11b / CH 11 / 2500MHz~26500MHz (down 30dBc)



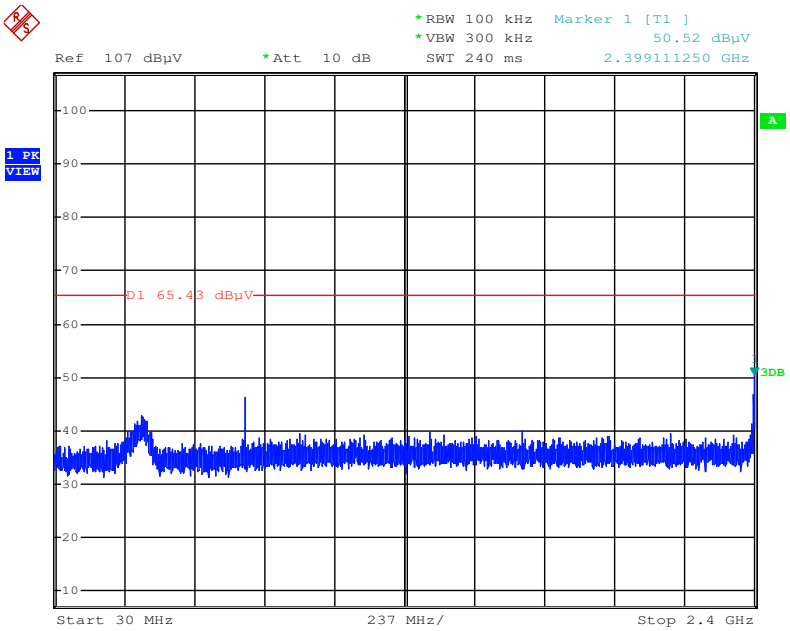
Mode 2 (Ant. 7 Polarized Panel / 11dBi / 1TX)

Plot on Configuration IEEE 802.11b / Reference Level



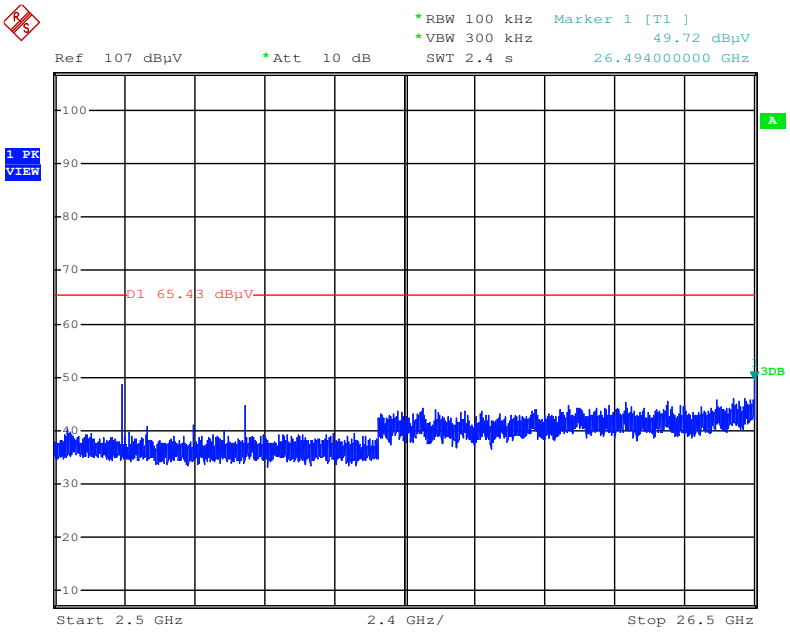
Date: 11.JUL.2015 15:29:41

Plot on Configuration IEEE 802.11b / CH 1 / 30MHz~2400MHz (down 30dBc)



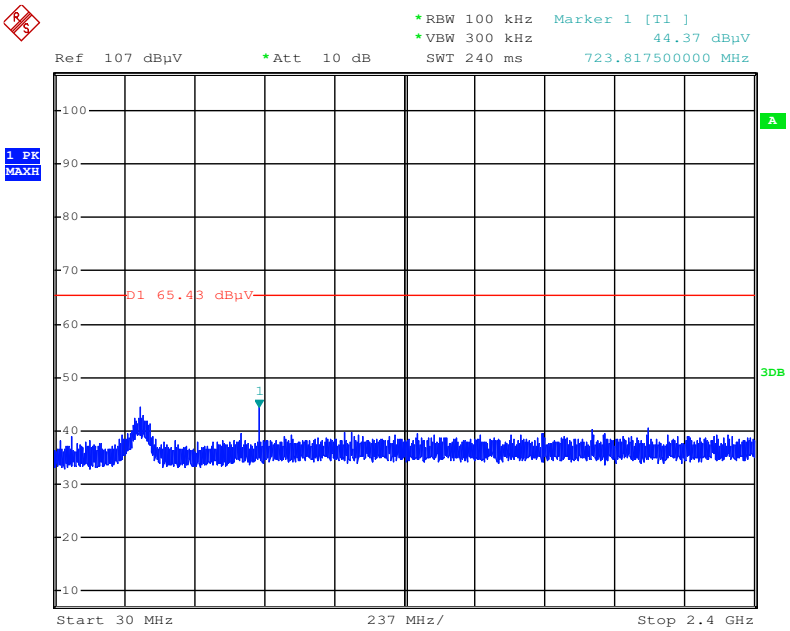
Date: 11.JUL.2015 15:30:50

Plot on Configuration IEEE 802.11b / CH 1 / 2500MHz~26500MHz (down 30dBc)



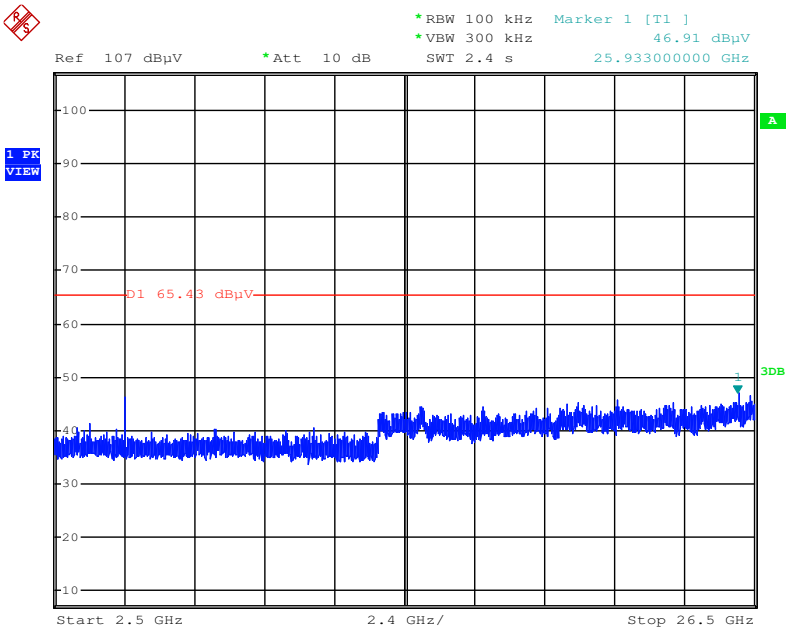
Date: 11.JUL.2015 15:31:22

Plot on Configuration IEEE 802.11b / CH 11 / 30MHz~2400MHz (down 30dBc)



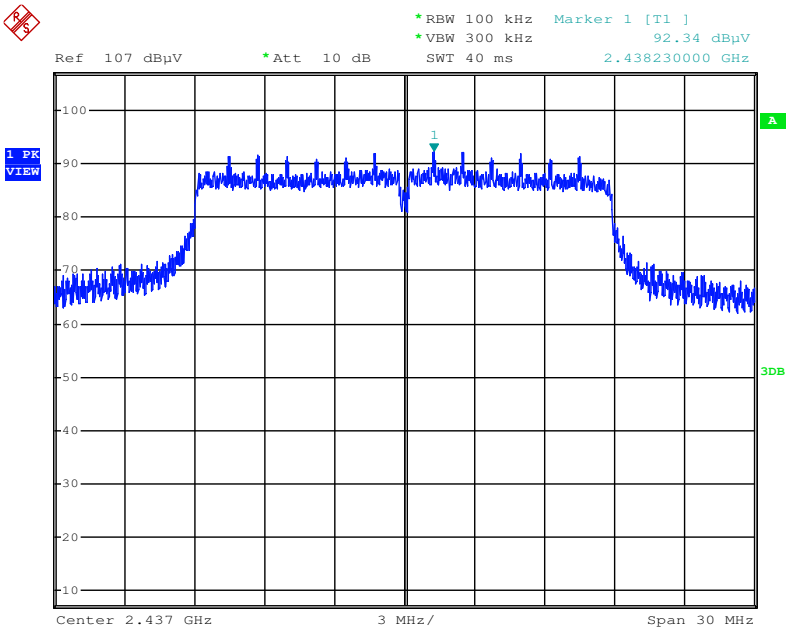
Date: 11.JUL.2015 15:32:40

Plot on Configuration IEEE 802.11b / CH 11 / 2500MHz~26500MHz (down 30dBc)



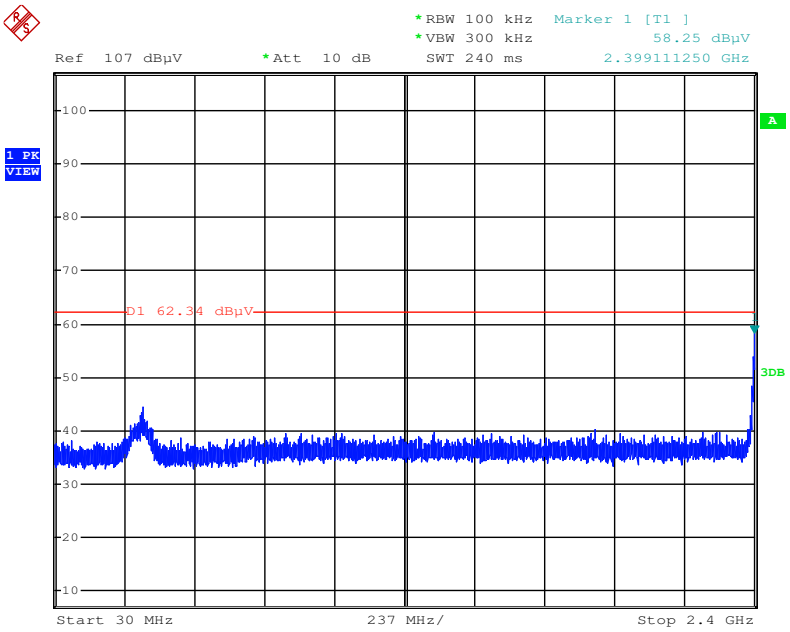
Date: 11.JUL.2015 15:31:50

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Reference Level



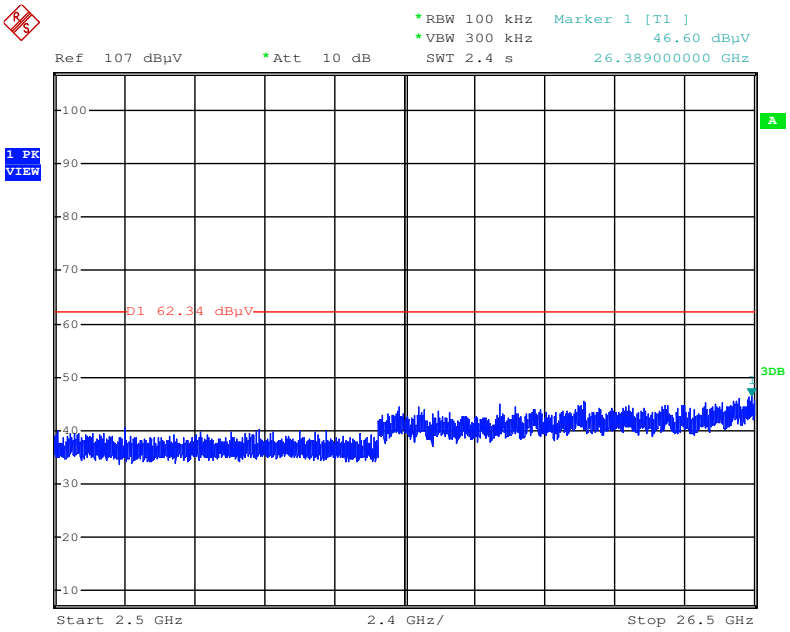
Date: 11.JUL.2015 15:34:15

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / CH 1 / 30MHz~2400MHz (down 30dBc)



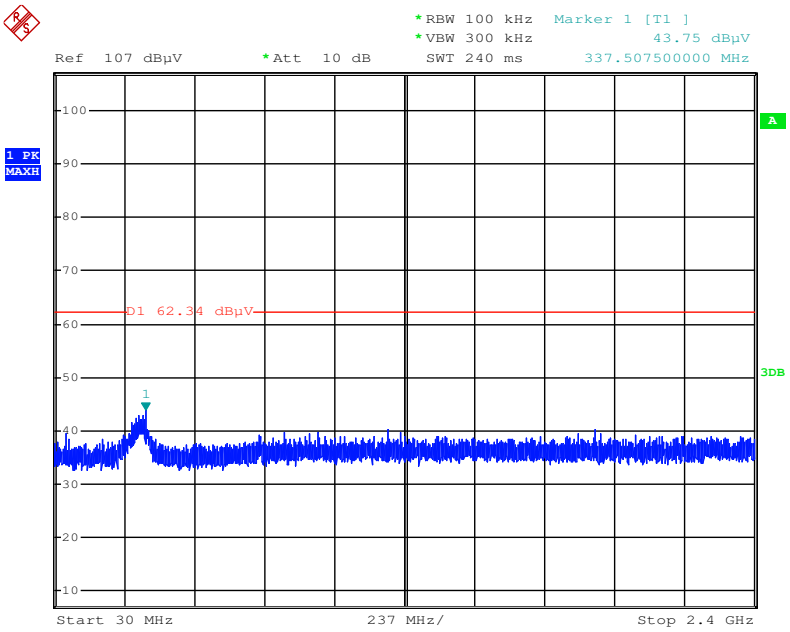
Date: 11.JUL.2015 15:34:58

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / CH 1 / 2500MHz~26500MHz (down 30dBc)



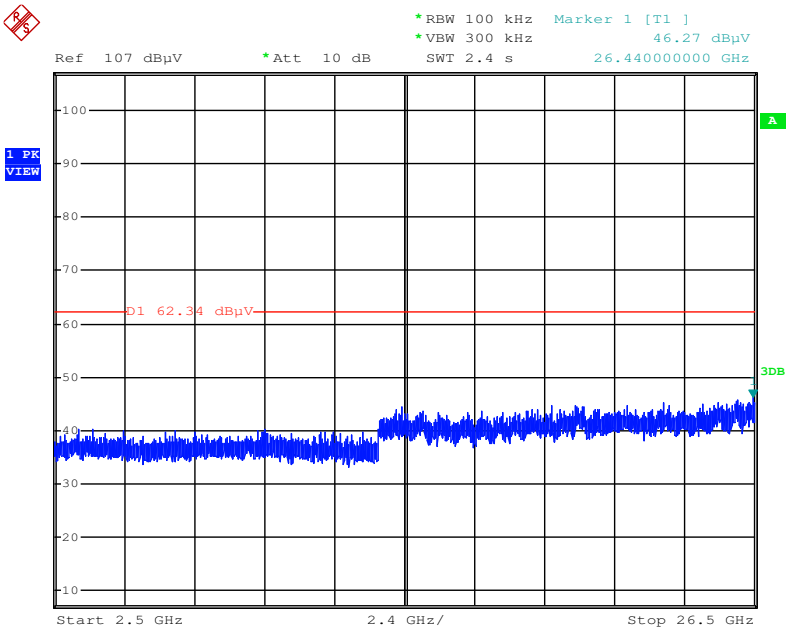
Date: 11.JUL.2015 15:35:58

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / CH 11 / 30MHz~2400MHz (down 30dBc)



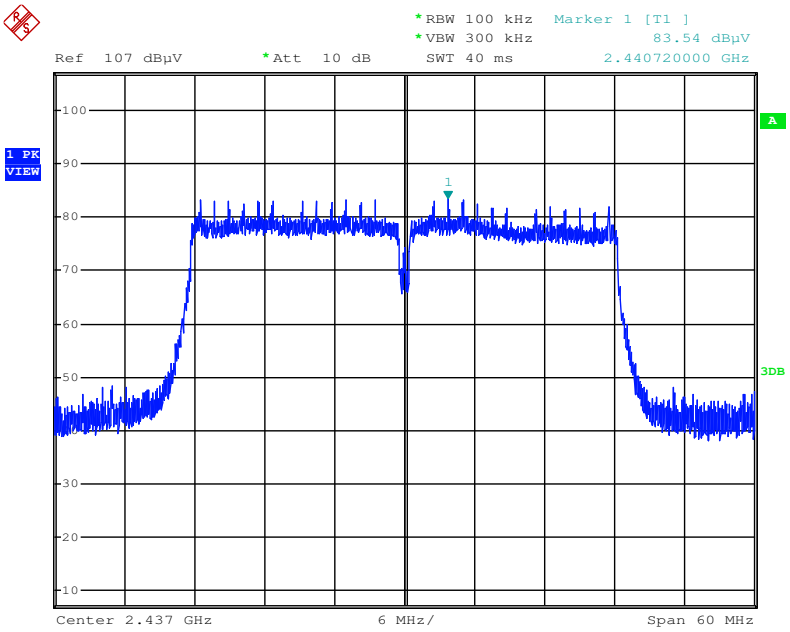
Date: 11.JUL.2015 15:37:10

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / CH 11 / 2500MHz~26500MHz (down 30dBc)



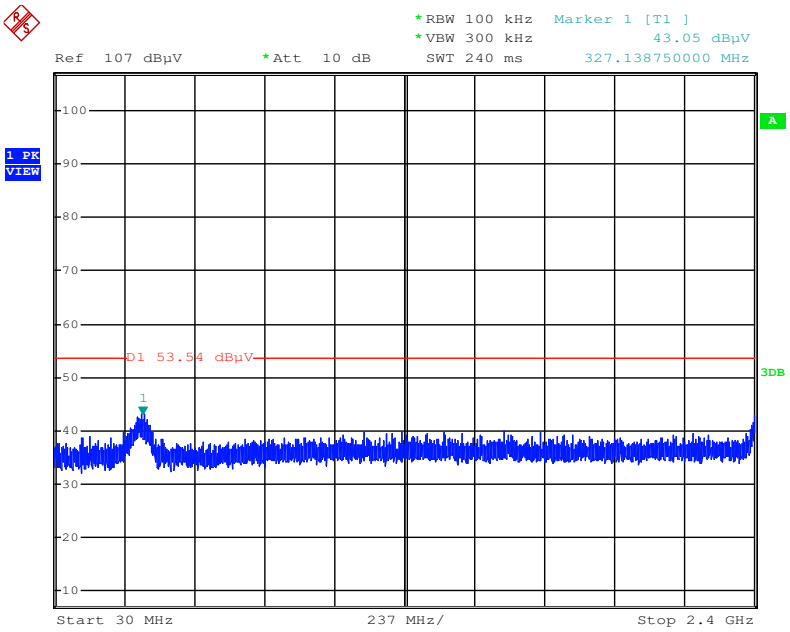
Date: 11.JUL.2015 15:36:40

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Reference Level



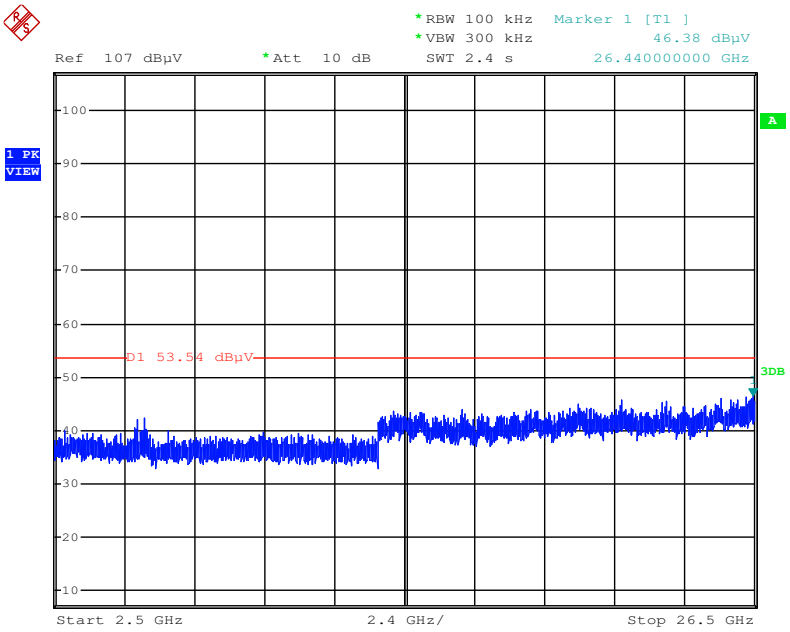
Date: 11.JUL.2015 15:38:28

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / CH 3 / 30MHz~2400MHz (down 30dBc)



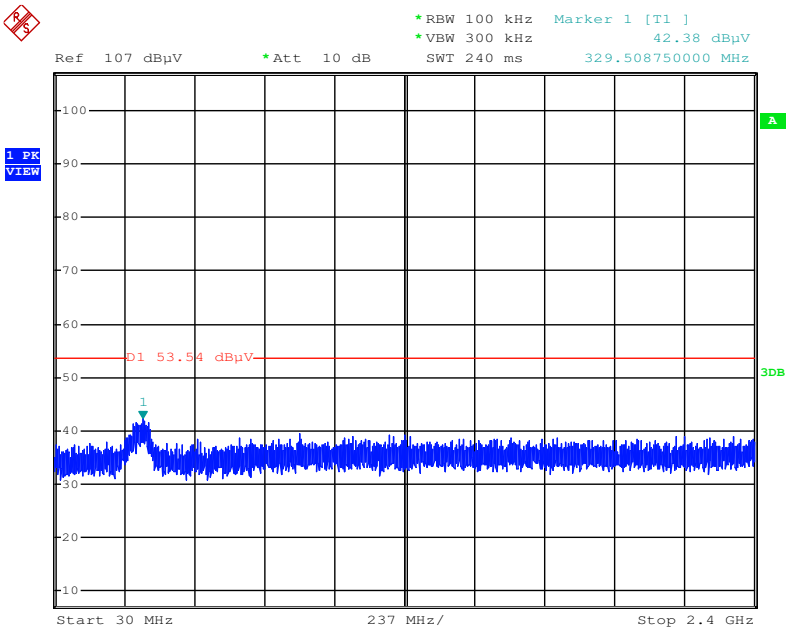
Date: 11.JUL.2015 15:40:50

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / CH 3 / 2500MHz~26500MHz (down 30dBc)



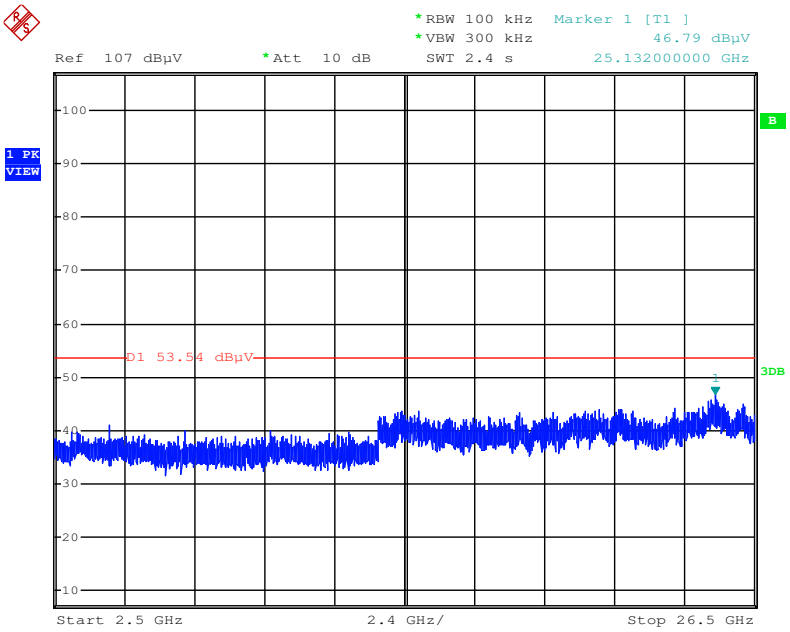
Date: 11.JUL.2015 15:41:51

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / CH 9 / 30MHz~2400MHz (down 30dBc)



Date: 11.JUL.2015 15:42:38

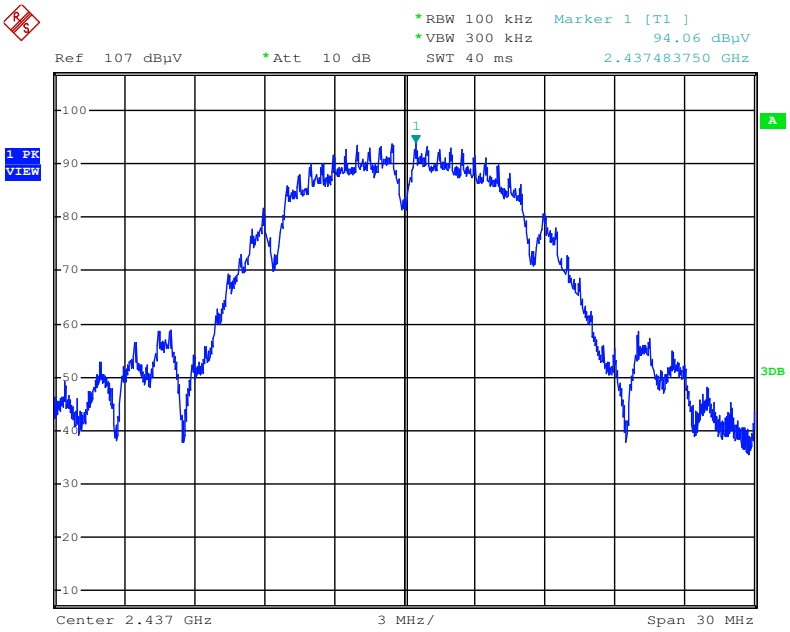
Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / CH 9 / 2500MHz~26500MHz (down 30dBc)



Date: 11.JUL.2015 15:44:53

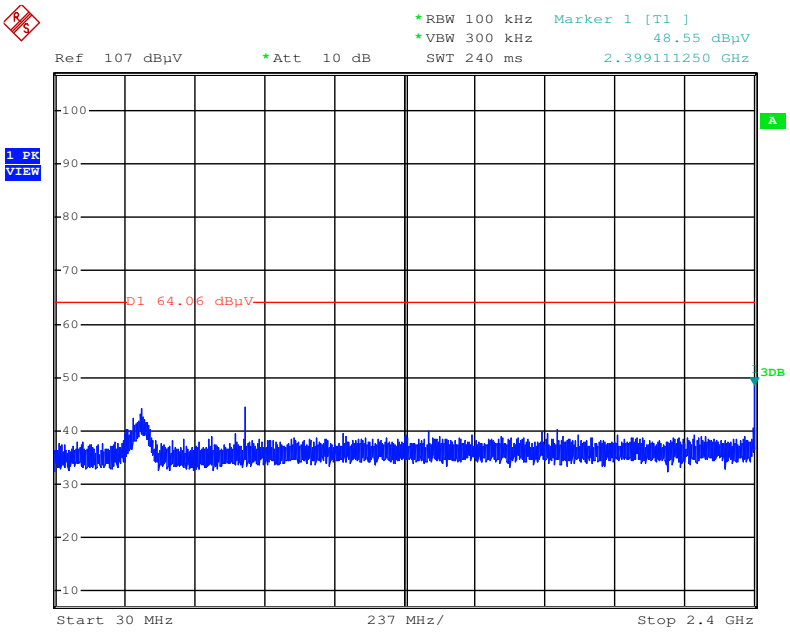
Mode 2 (Ant. 7 Polarized Panel / 11dBi / 2TX)

Plot on Configuration IEEE 802.11b / Reference Level



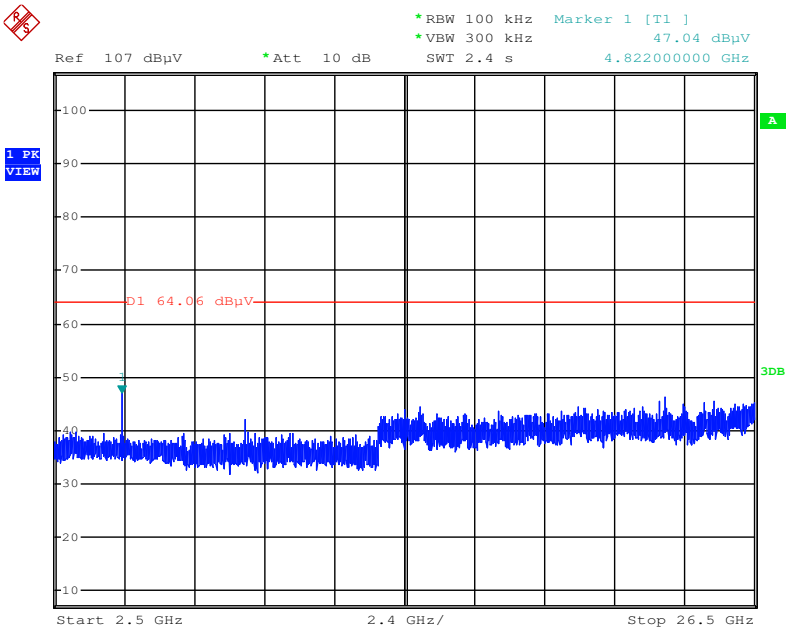
Date: 11.JUL.2015 15:45:31

Plot on Configuration IEEE 802.11b / CH 1 / 30MHz~2400MHz (down 30dBc)



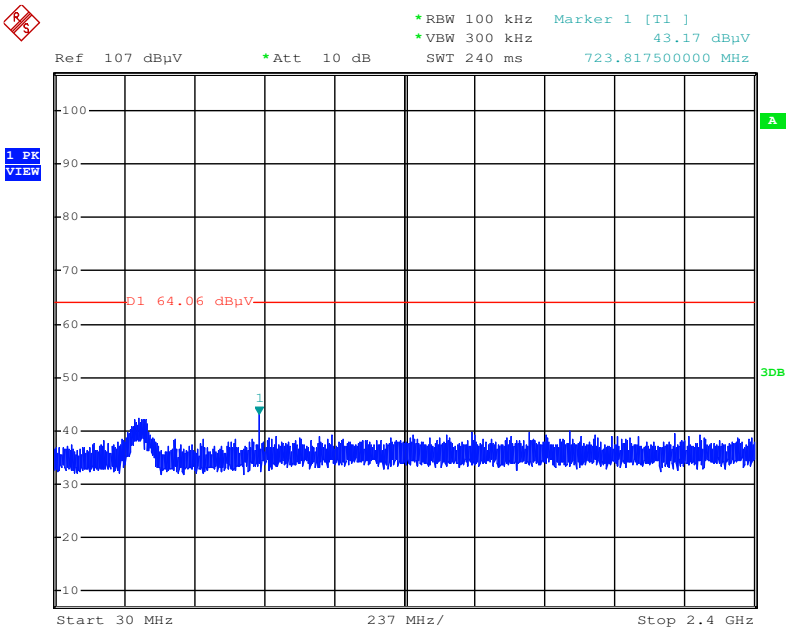
Date: 11.JUL.2015 15:47:09

Plot on Configuration IEEE 802.11b / CH 1 / 2500MHz~26500MHz (down 30dBc)



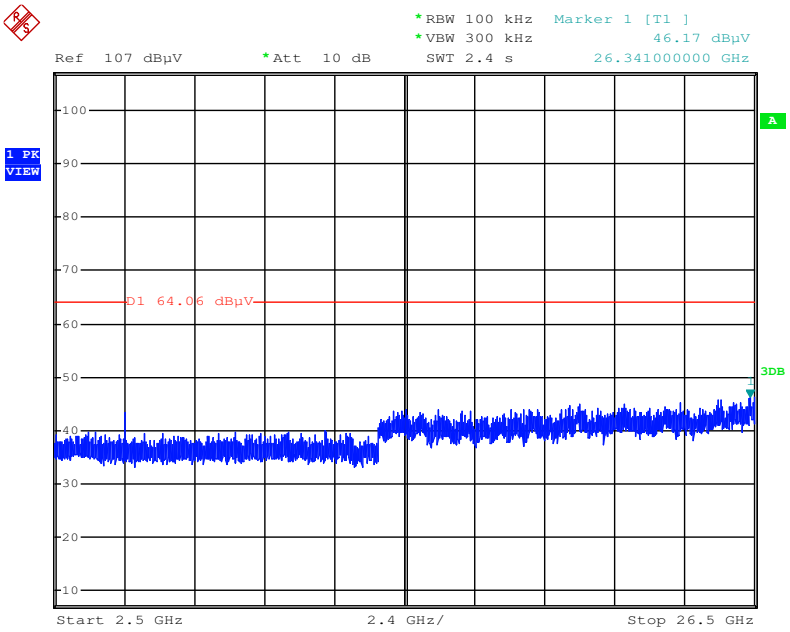
Date: 11.JUL.2015 15:47:32

Plot on Configuration IEEE 802.11b / CH 11 / 30MHz~2400MHz (down 30dBc)



Date: 11.JUL.2015 15:49:01

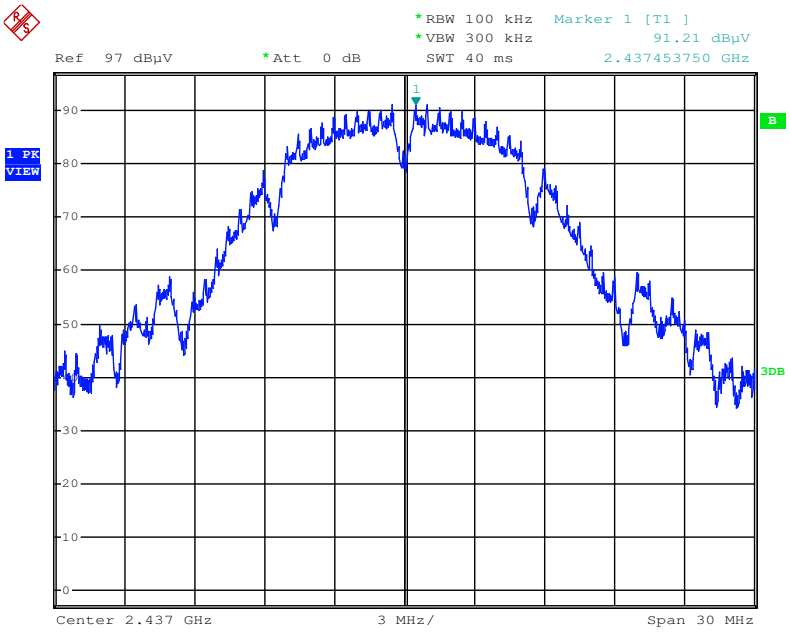
Plot on Configuration IEEE 802.11b / CH 11 / 2500MHz~26500MHz (down 30dBc)



Date: 11.JUL.2015 15:48:22

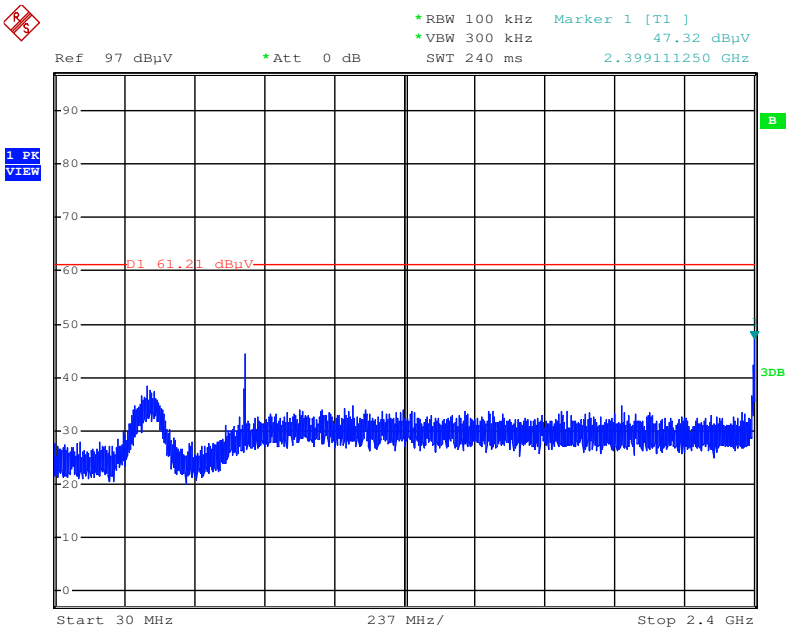
Mode 3 (Ant. 8 Patch / 5dBi / 1TX)

Plot on Configuration IEEE 802.11b / Reference Level



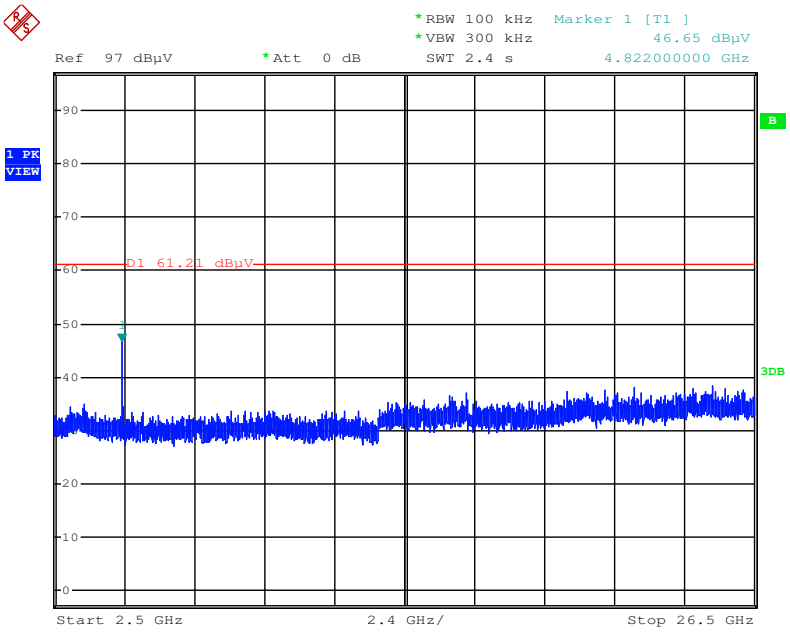
Date: 16.JUL.2015 01:36:44

Plot on Configuration IEEE 802.11b / CH 1 / 30MHz~2400MHz (down 30dBc)



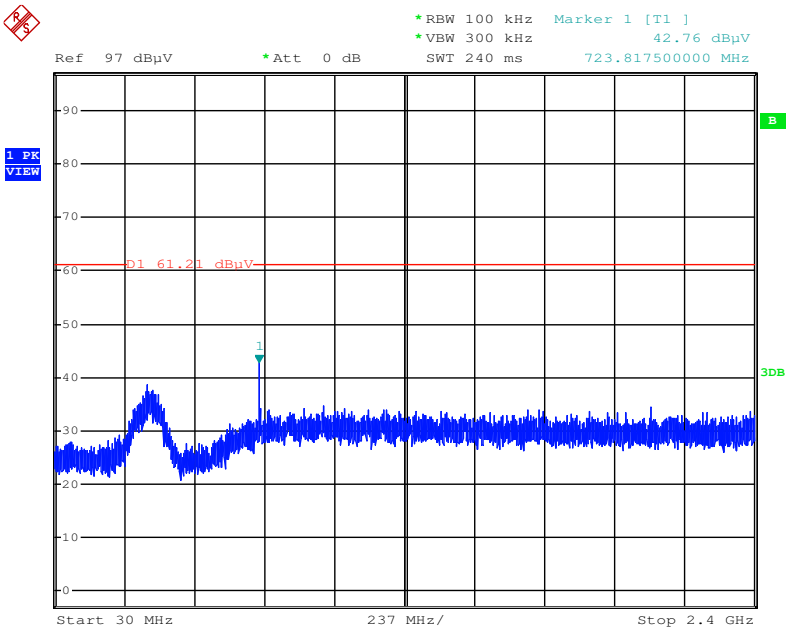
Date: 16.JUL.2015 01:38:46

Plot on Configuration IEEE 802.11b / CH 1 / 2500MHz~26500MHz (down 30dBc)



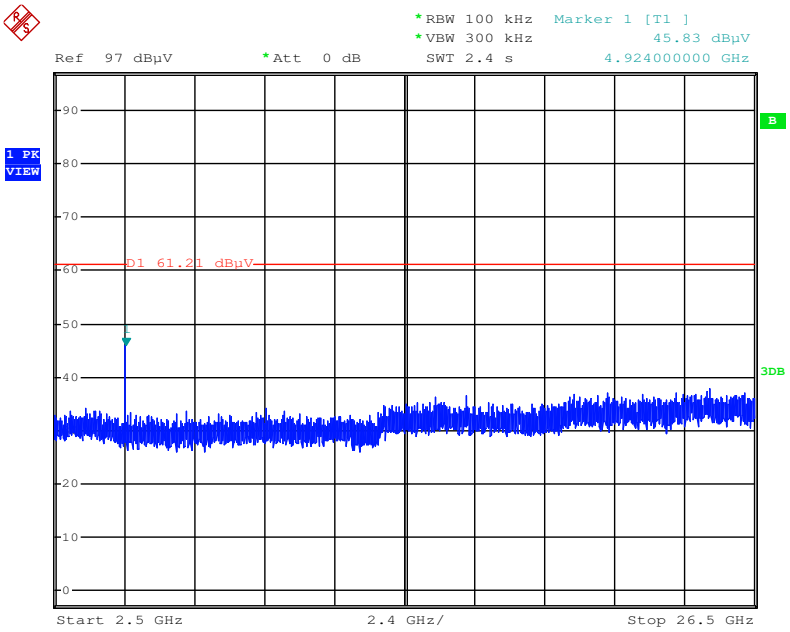
Date: 16.JUL.2015 01:39:13

Plot on Configuration IEEE 802.11b / CH 11 / 30MHz~2400MHz (down 30dBc)



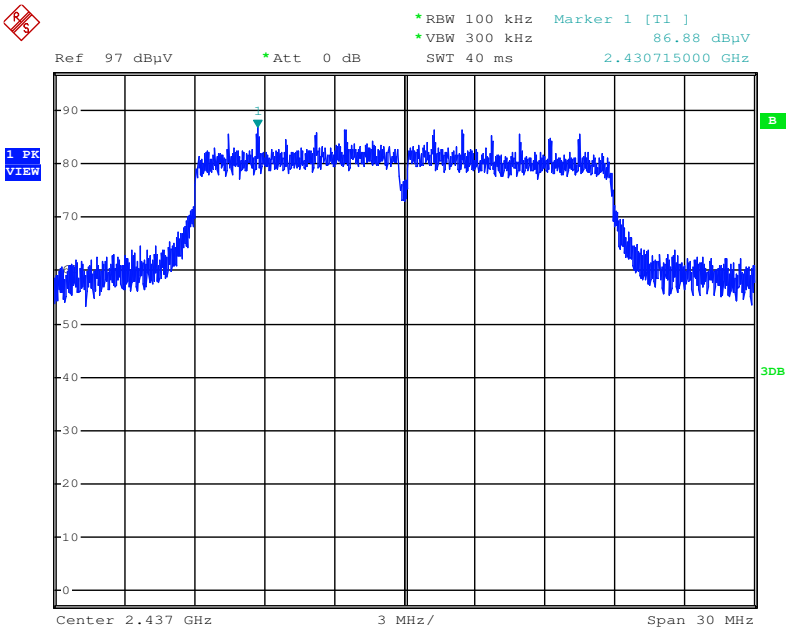
Date: 16.JUL.2015 01:40:09

Plot on Configuration IEEE 802.11b / CH 11 / 2500MHz~26500MHz (down 30dBc)



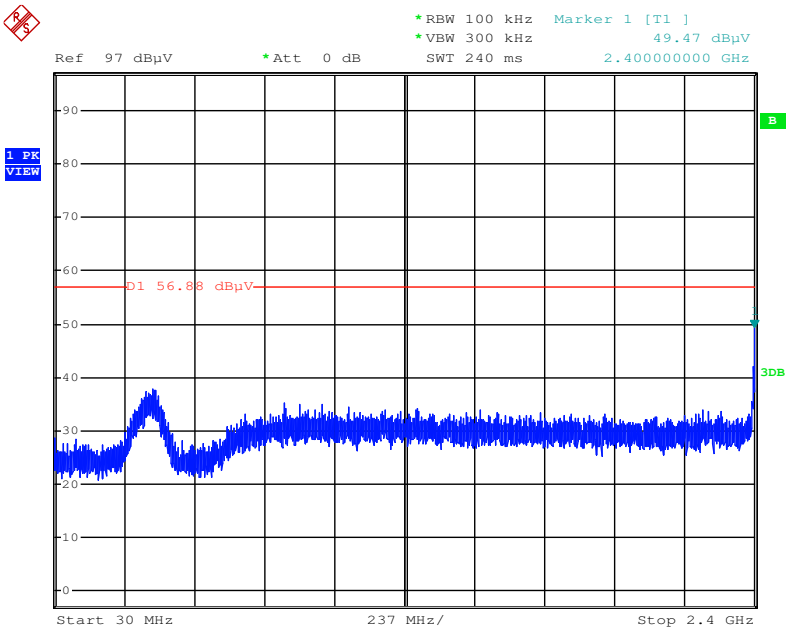
Date: 16.JUL.2015 01:39:48

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Reference Level



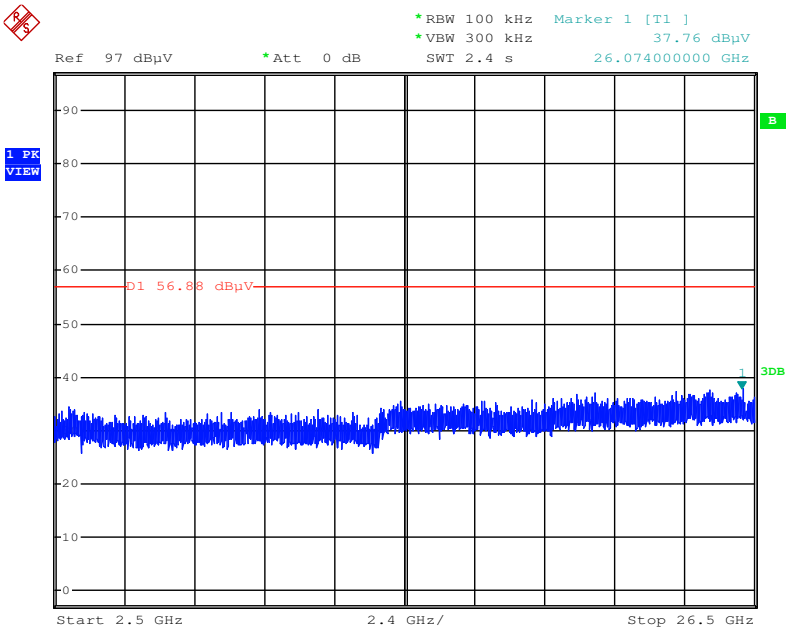
Date: 16.JUL.2015 01:41:52

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / CH 1 / 30MHz~2400MHz (down 30dBc)



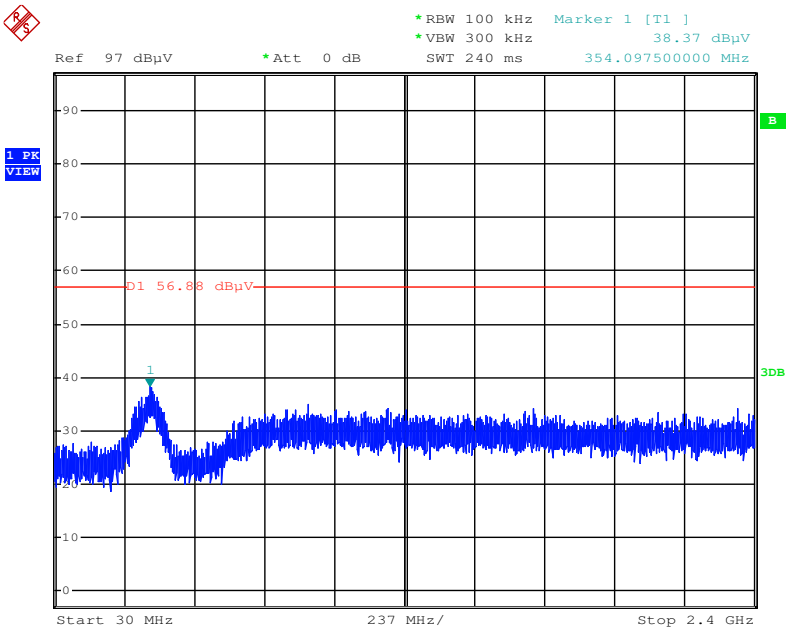
Date: 16.JUL.2015 01:42:57

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / CH 1 / 2500MHz~26500MHz (down 30dBc)



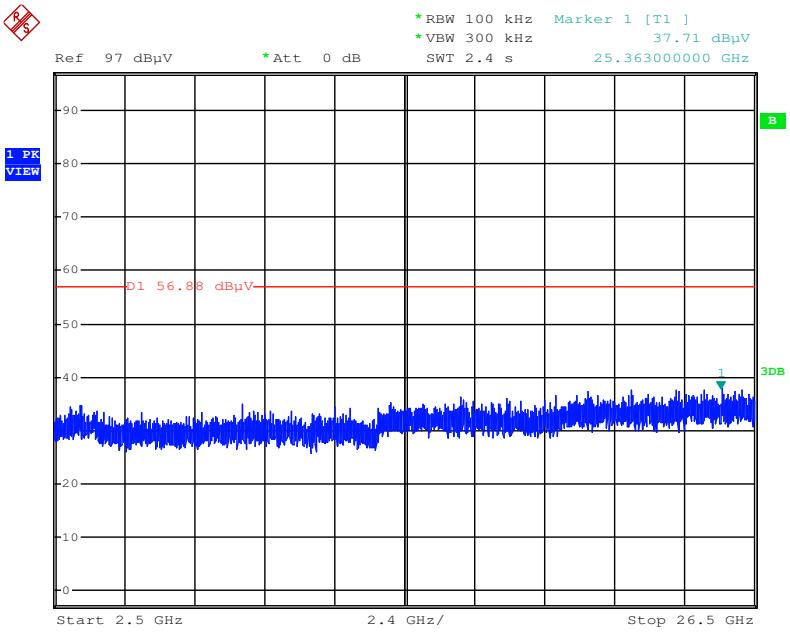
Date: 16.JUL.2015 01:43:40

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / CH 11 / 30MHz~2400MHz (down 30dBc)



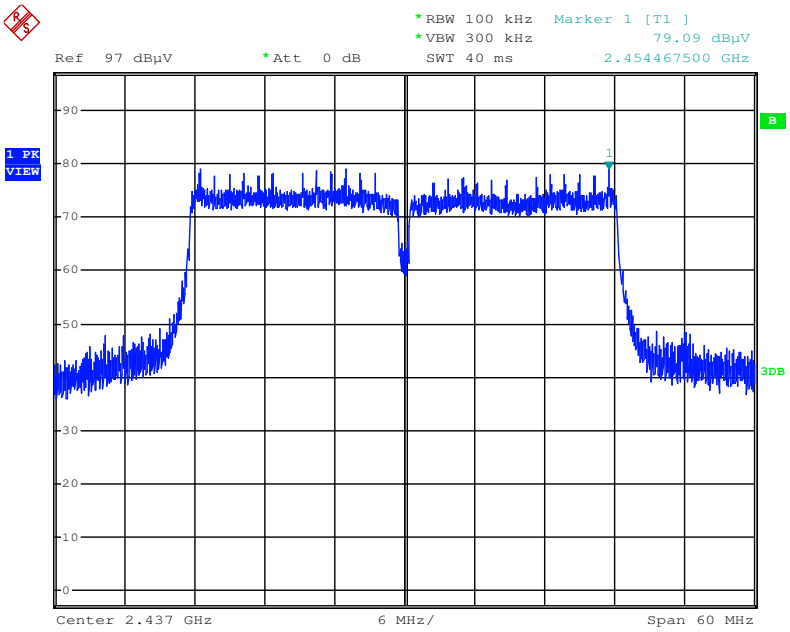
Date: 16.JUL.2015 01:44:35

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / CH 11 / 2500MHz~26500MHz (down 30dBc)



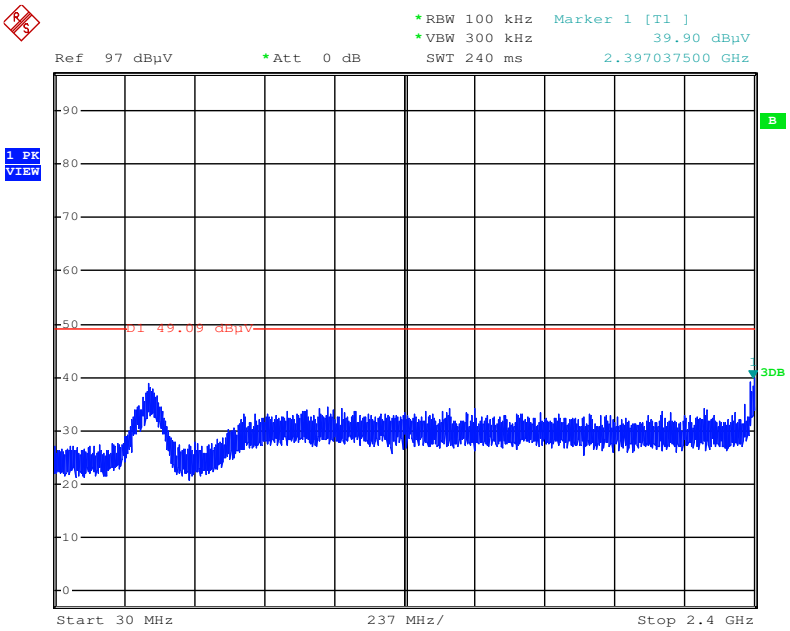
Date: 16.JUL.2015 01:44:13

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Reference Level



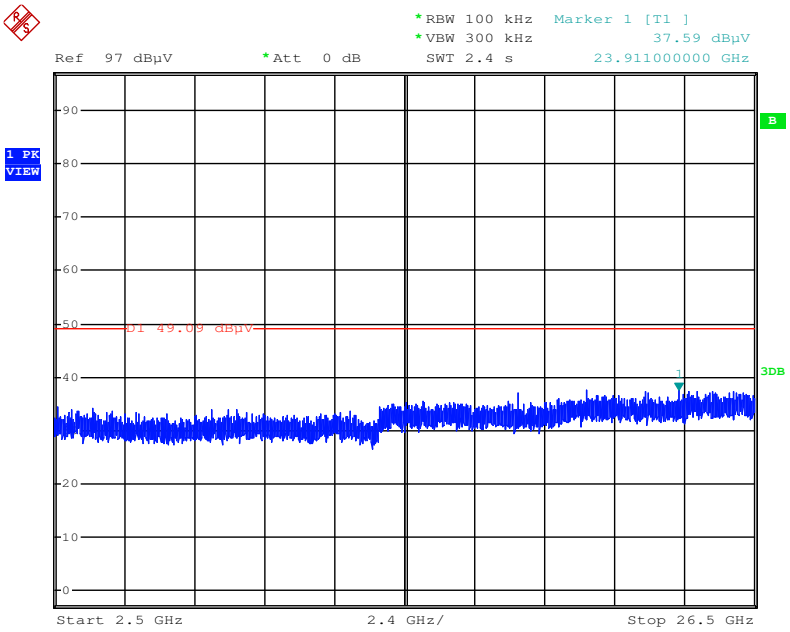
Date: 16.JUL.2015 01:46:02

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / CH 3 / 30MHz~2400MHz (down 30dBc)



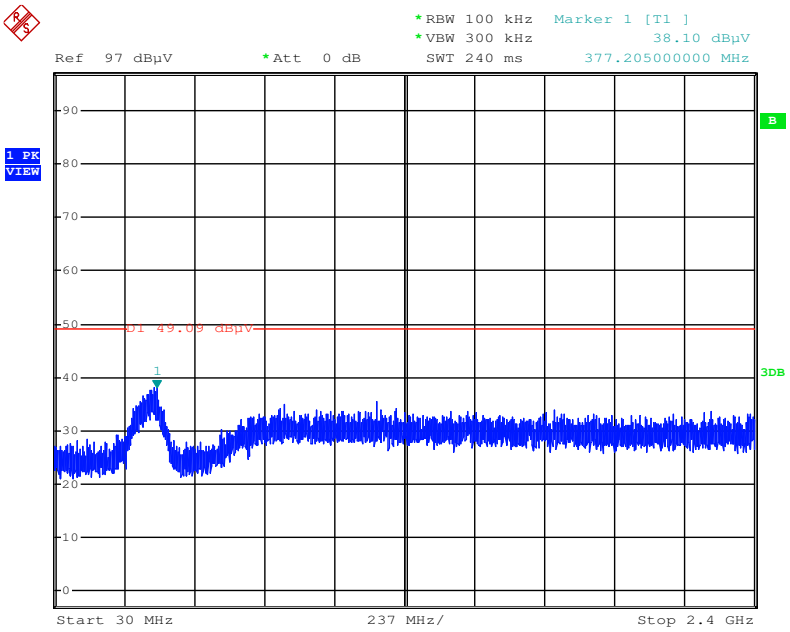
Date: 16.JUL.2015 01:49:15

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / CH 3 / 2500MHz~26500MHz (down 30dBc)



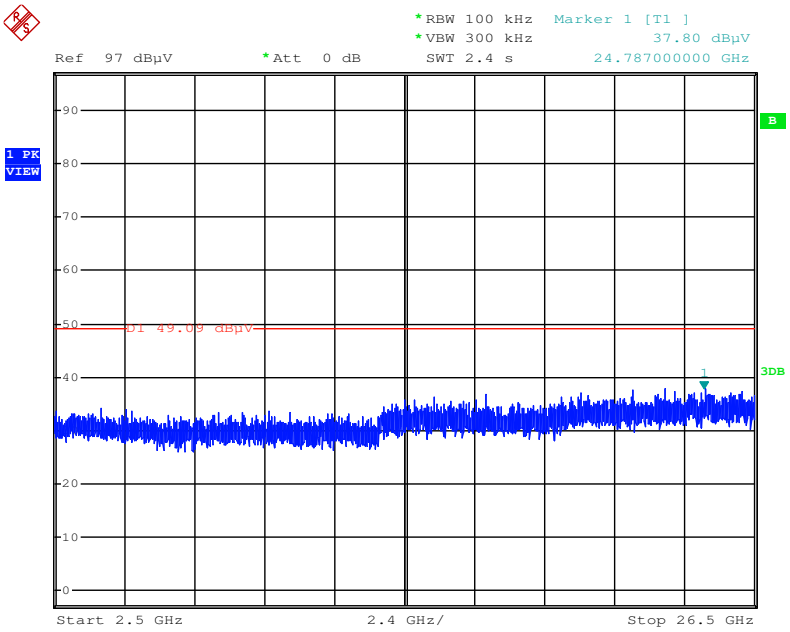
Date: 16.JUL.2015 01:49:45

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / CH 9 / 30MHz~2400MHz (down 30dBc)



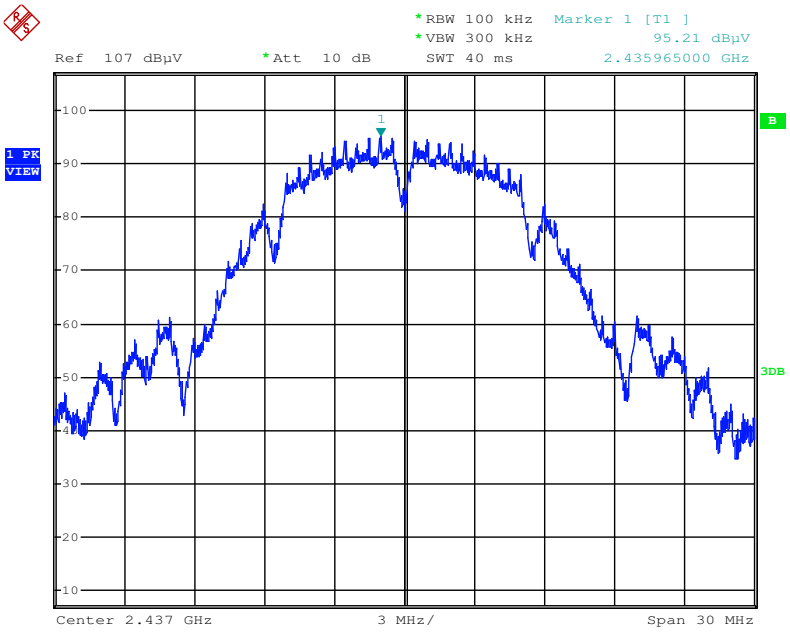
Date: 16.JUL.2015 01:50:59

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / CH 9 / 2500MHz~26500MHz (down 30dBc)



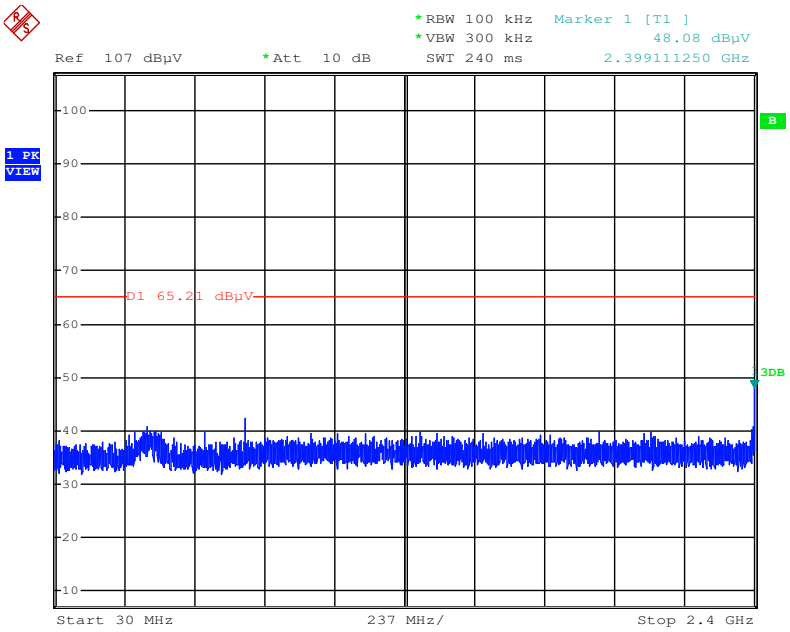
Mode 3 (Ant. 8 Patch / 5dBi / 2TX)

Plot on Configuration IEEE 802.11b / Reference Level



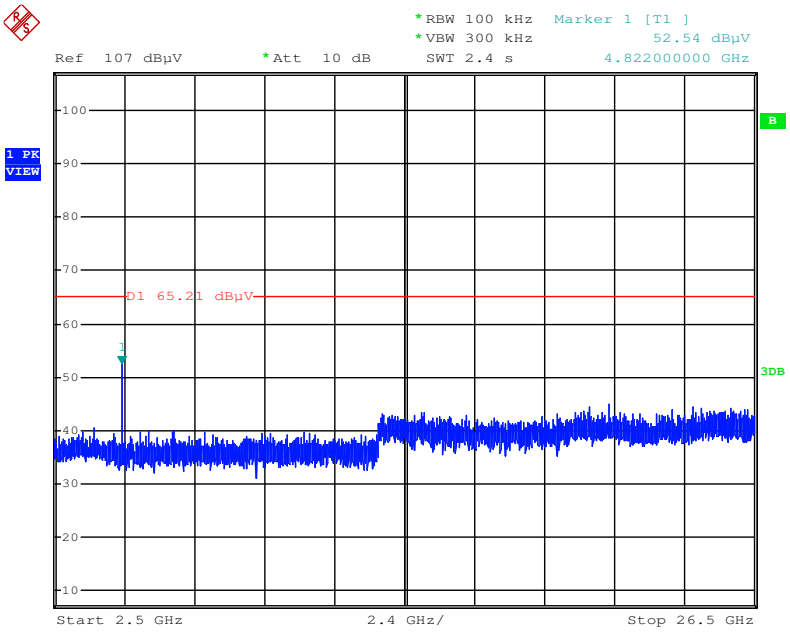
Date: 16.JUL.2015 04:02:28

Plot on Configuration IEEE 802.11b / CH 1 / 30MHz~2400MHz (down 30dBc)



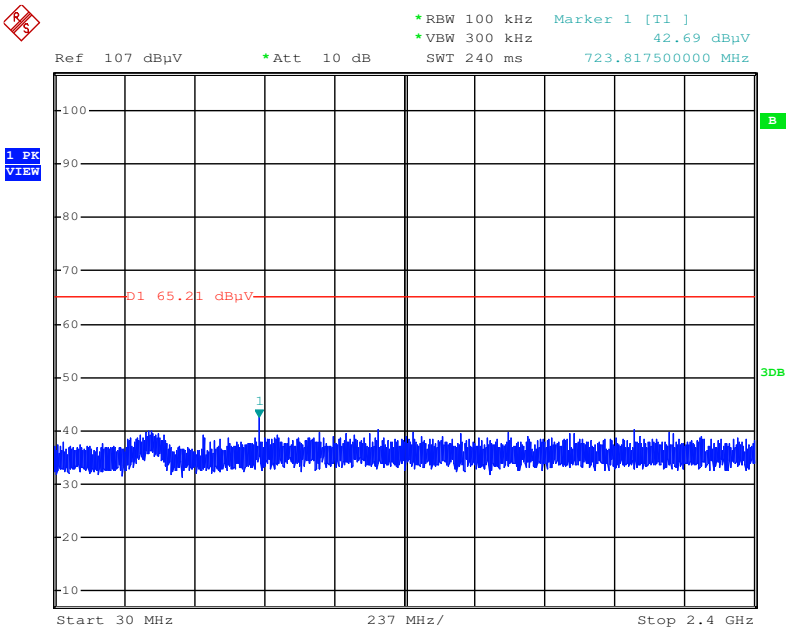
Date: 16.JUL.2015 04:04:02

Plot on Configuration IEEE 802.11b / CH 1 / 2500MHz~26500MHz (down 30dBc)



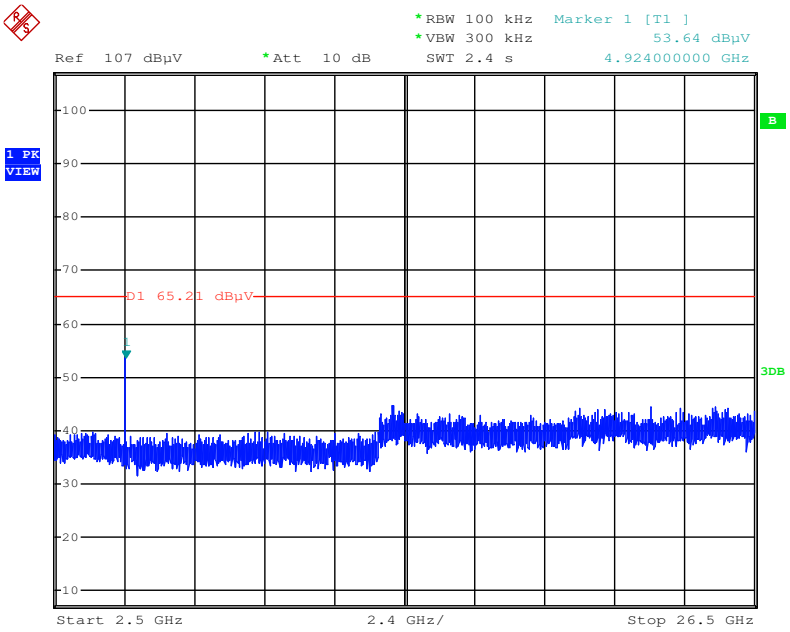
Date: 16.JUL.2015 04:04:32

Plot on Configuration IEEE 802.11b / CH 11 / 30MHz~2400MHz (down 30dBc)



Date: 16.JUL.2015 04:05:55

Plot on Configuration IEEE 802.11b / CH 11 / 2500MHz~26500MHz (down 30dBc)

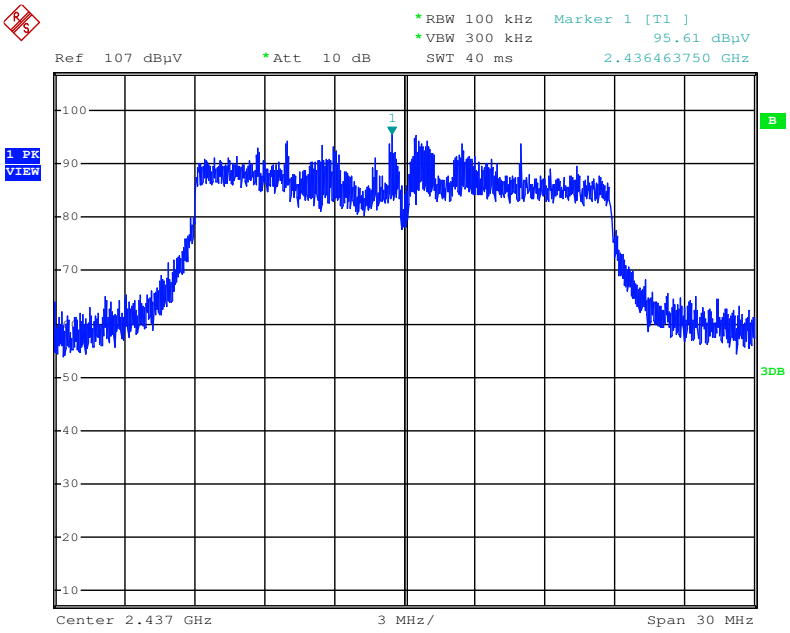


Date: 16.JUL.2015 04:06:28

<For Beamforming Mode>

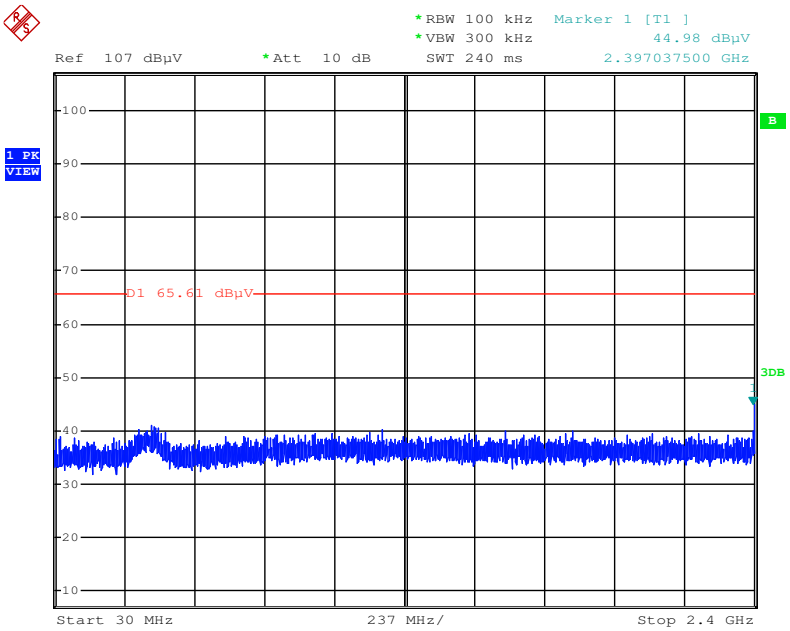
Mode 1 (Ant. 5 Dipole antenna / 4.6dBi / 2TX)

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Reference Level



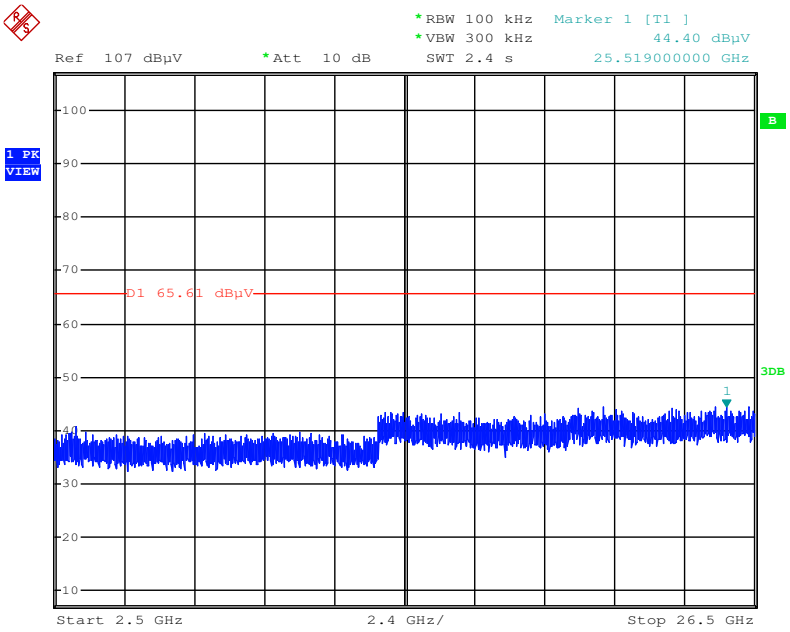
Date: 14.JUL.2015 22:43:03

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / CH 1 / 30MHz~2400MHz (down 30dBc)



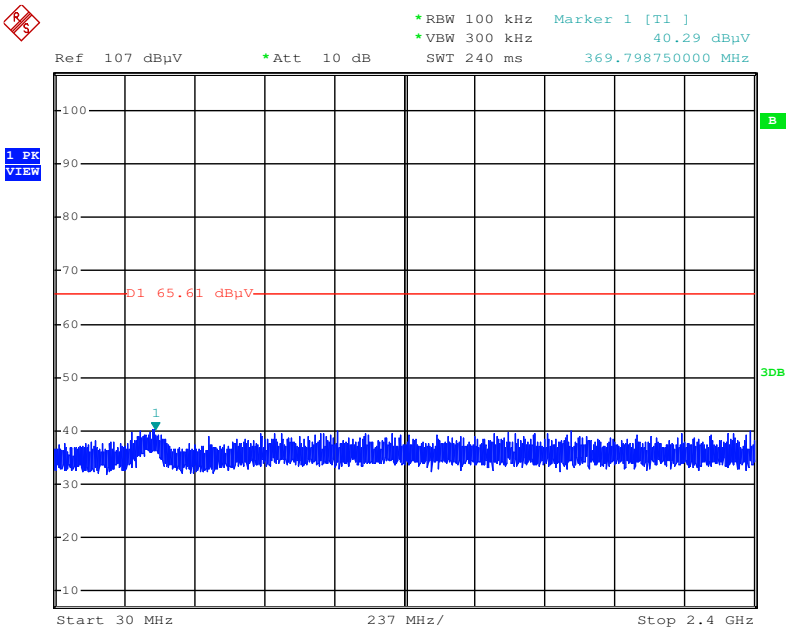
Date: 14.JUL.2015 22:44:52

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / CH 1 / 2500MHz~26500MHz (down 30dBc)



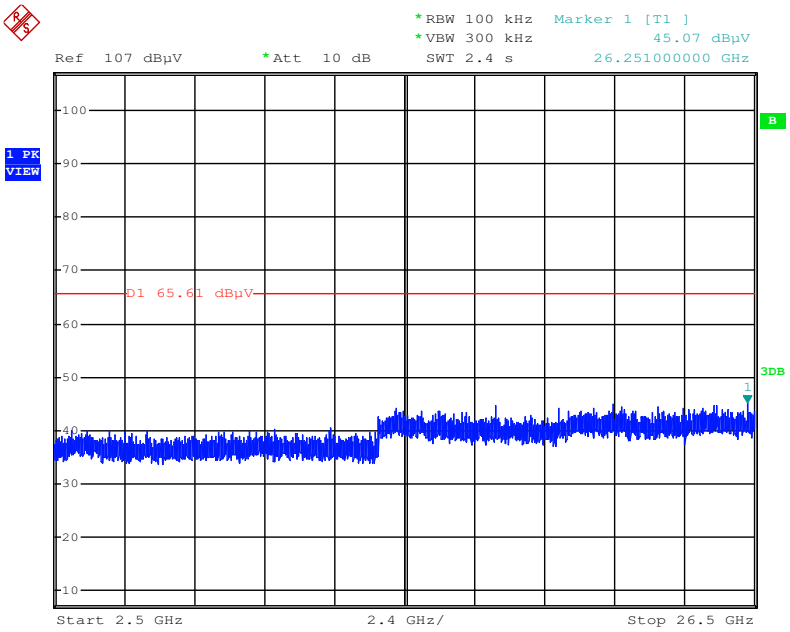
Date: 14.JUL.2015 22:46:12

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / CH 11 / 30MHz~2400MHz (down 30dBc)



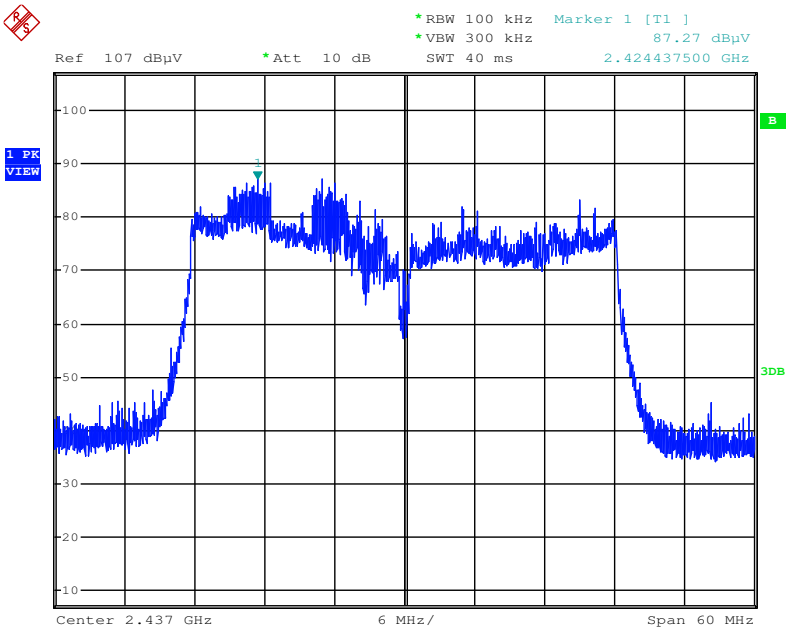
Date: 14.JUL.2015 22:47:37

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / CH 11 / 2500MHz~26500MHz (down 30dBc)



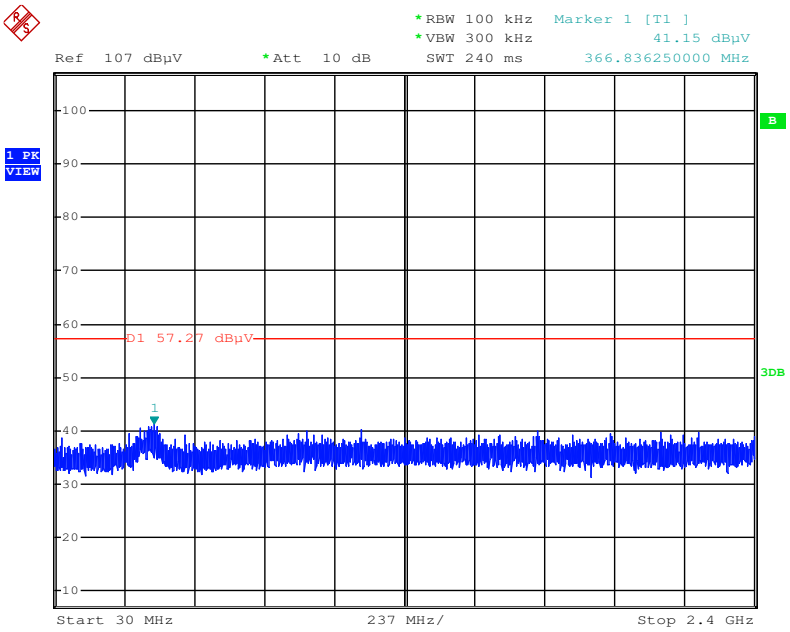
Date: 14.JUL.2015 22:47:08

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Reference Level



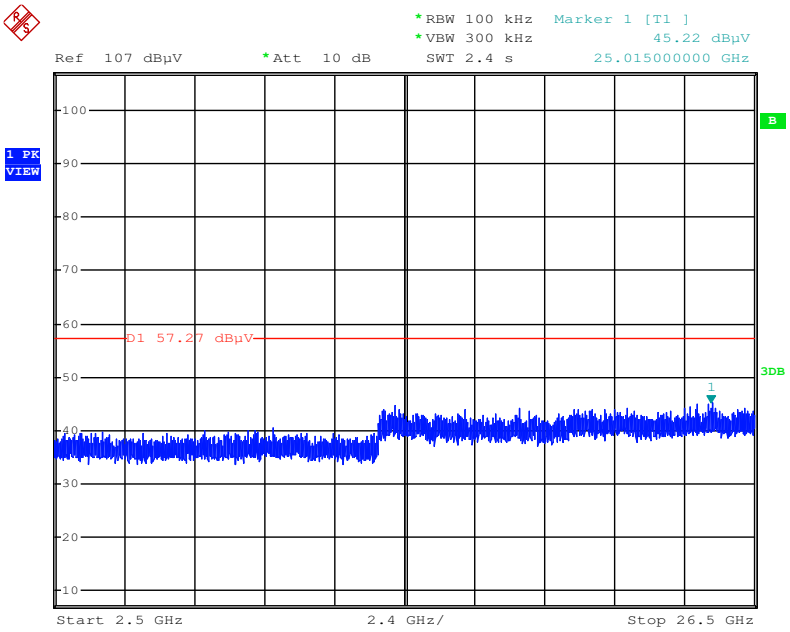
Date: 14.JUL.2015 22:49:55

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / CH 3 / 30MHz~2400MHz (down 30dBc)



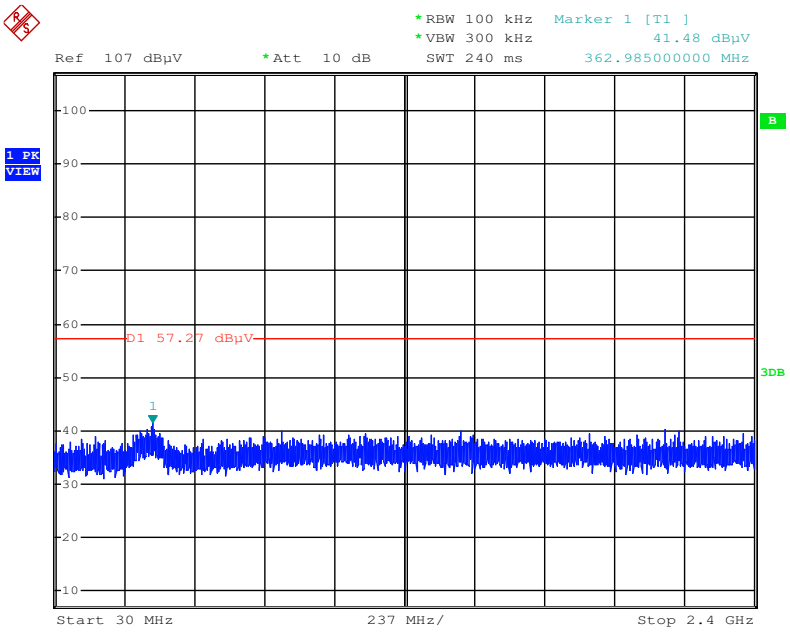
Date: 14.JUL.2015 22:51:32

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / CH 3 / 2500MHz~26500MHz (down 30dBc)



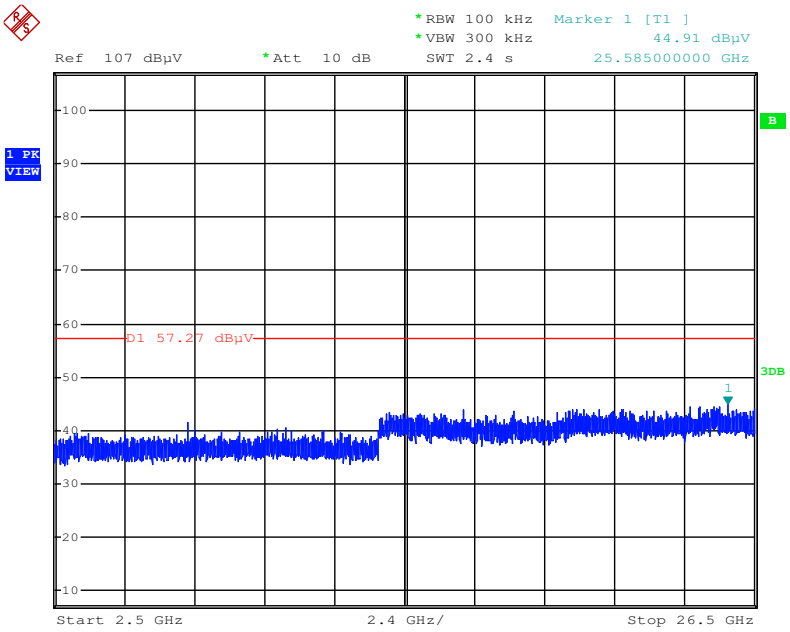
Date: 14.JUL.2015 22:52:04

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / CH 9 / 30MHz~2400MHz (down 30dBc)



Date: 14.JUL.2015 22:54:40

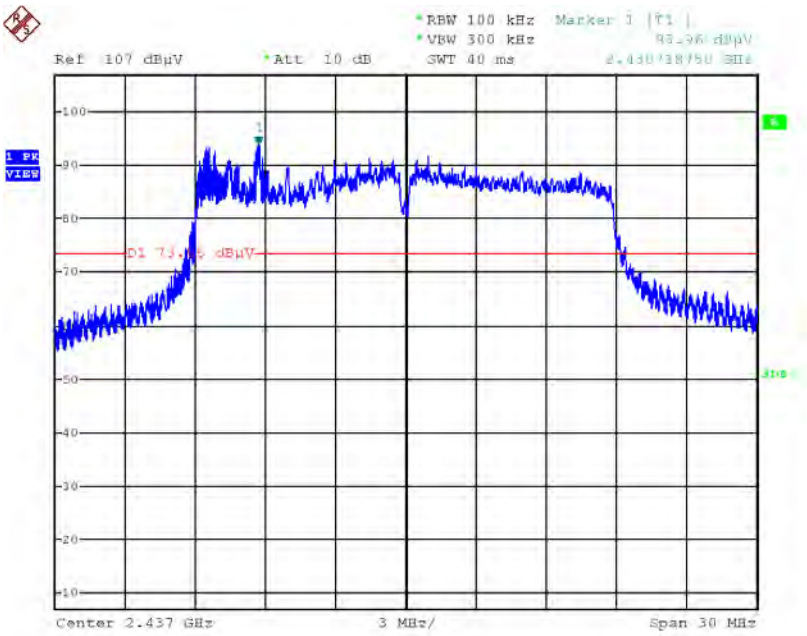
Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / CH 9 / 2500MHz~26500MHz (down 30dBc)



Date: 14.JUL.2015 22:54:09

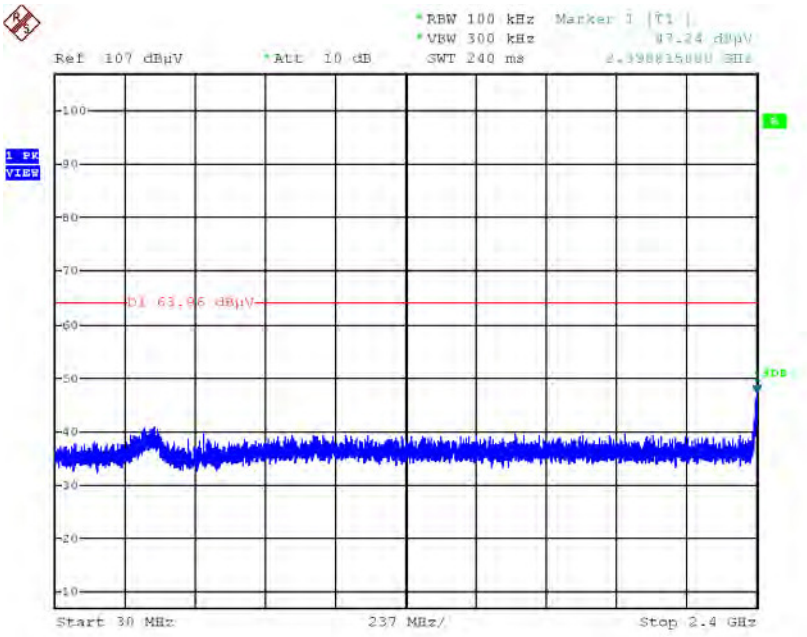
Mode 2 (Ant. 7 Polarized Panel / 11dBi / 2TX)

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Reference Level



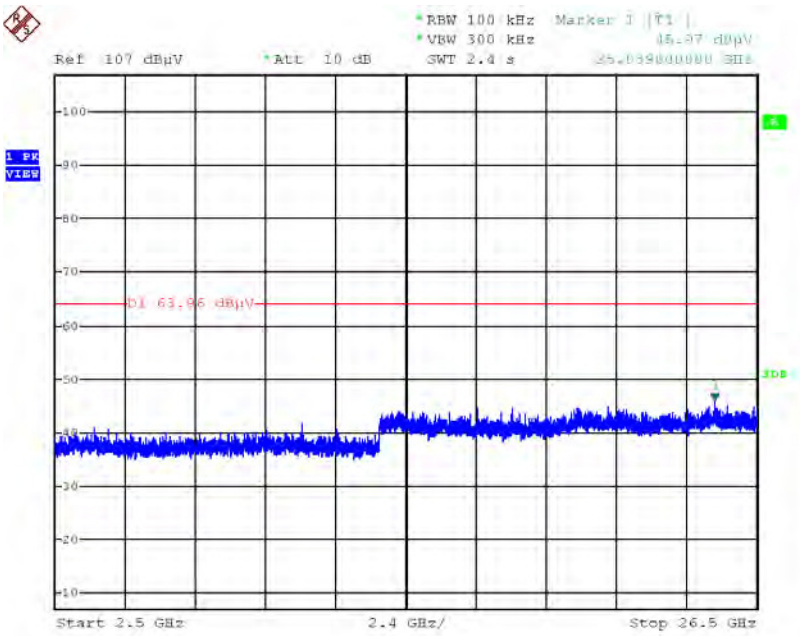
Date: 13.JUL.2015 20:16:27

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / CH 1 / 30MHz~2400MHz (down 30dBc)



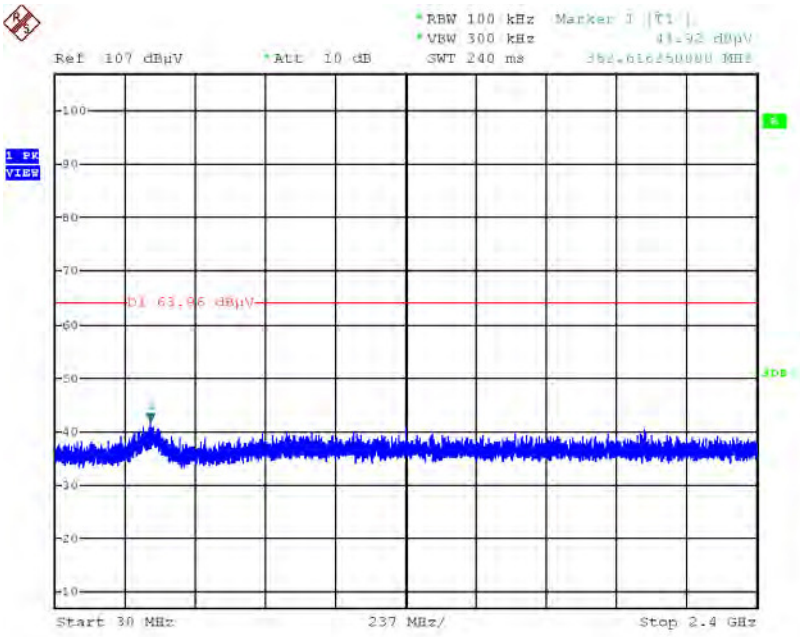
Date: 13.JUL.2015 20:17:35

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / CH 1 / 2500MHz~26500MHz (down 30dBc)



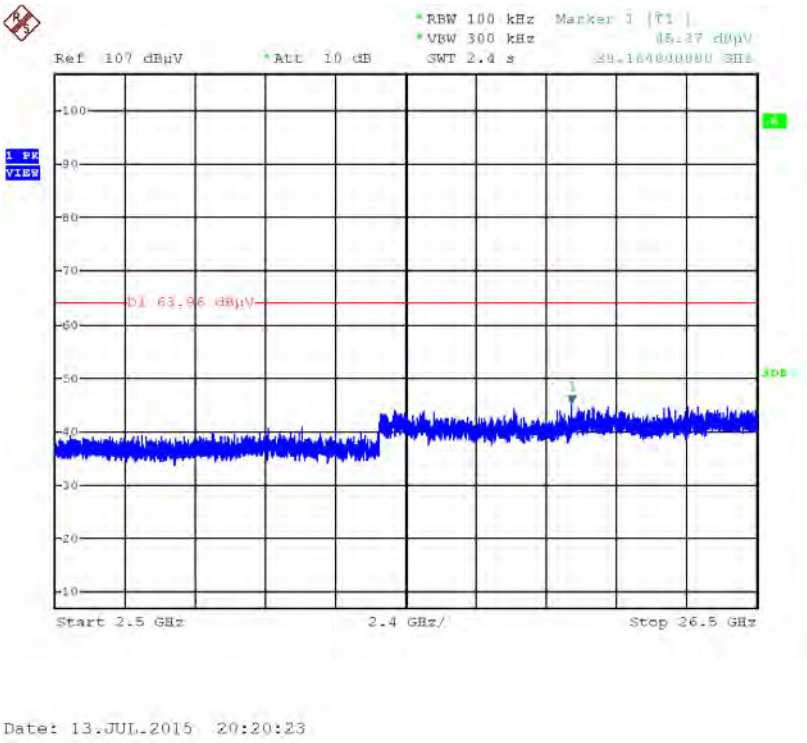
Date: 13.JUL.2015 20:19:18

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / CH 11 / 30MHz~2400MHz (down 30dBc)

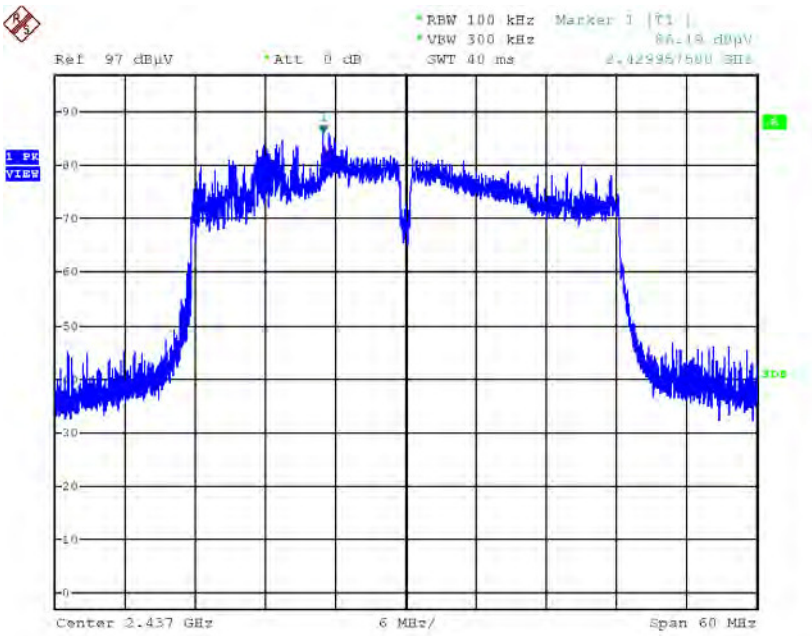


Date: 13.JUL.2015 20:20:58

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / CH 11 / 2500MHz~26500MHz (down 30dBc)

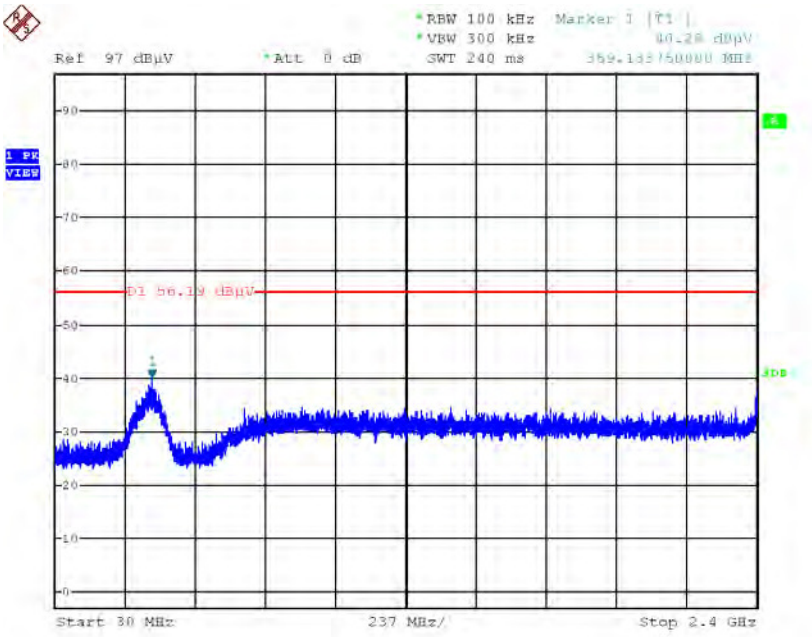


Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Reference Level



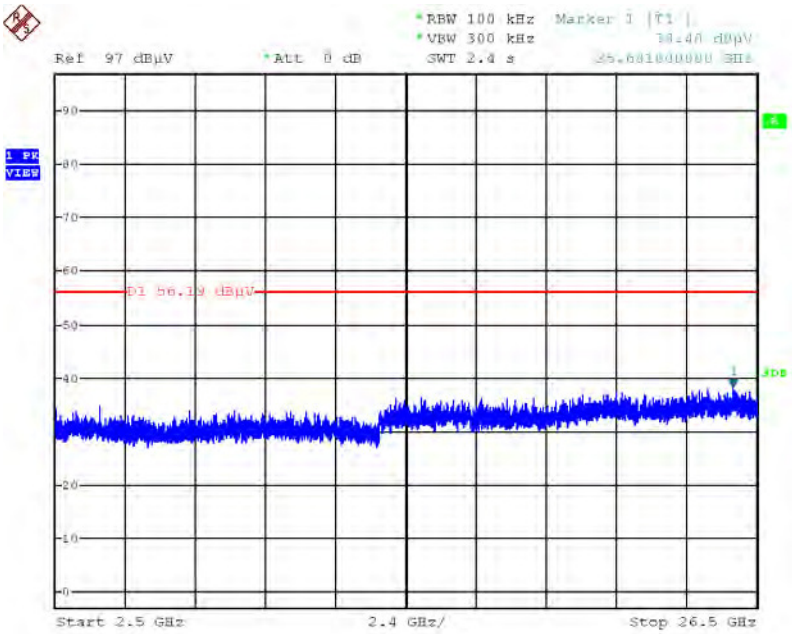
Date: 13.JUL.2015 20:22:42

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / CH 3 / 30MHz~2400MHz (down 30dBc)



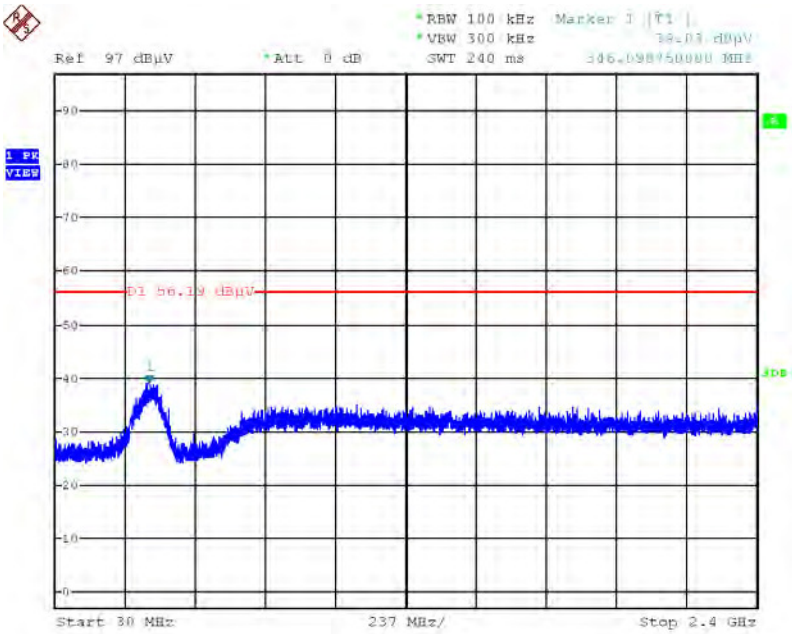
Date: 13.JUL.2015 20:23:53

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / CH 3 / 2500MHz~26500MHz (down 30dBc)



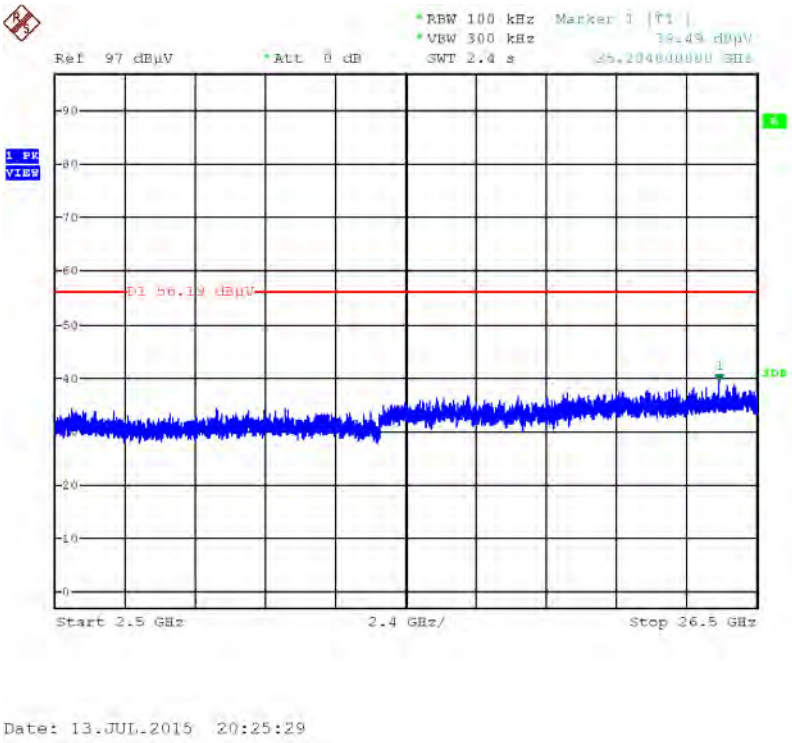
Date: 13.JUL.2015 20:24:45

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / CH 9 / 30MHz~2400MHz (down 30dBc)



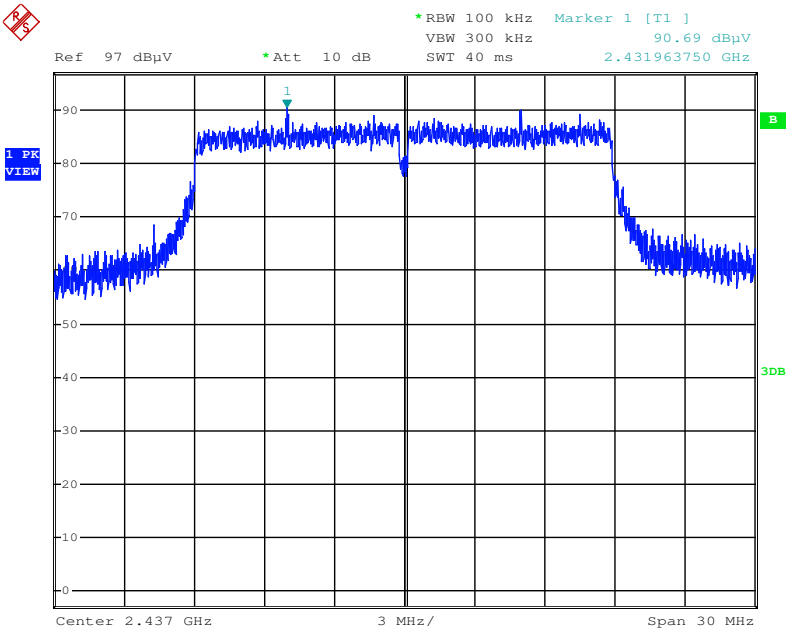
Date: 13.JUL.2015 20:26:20

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / CH 9 / 2500MHz~26500MHz (down 30dBc)



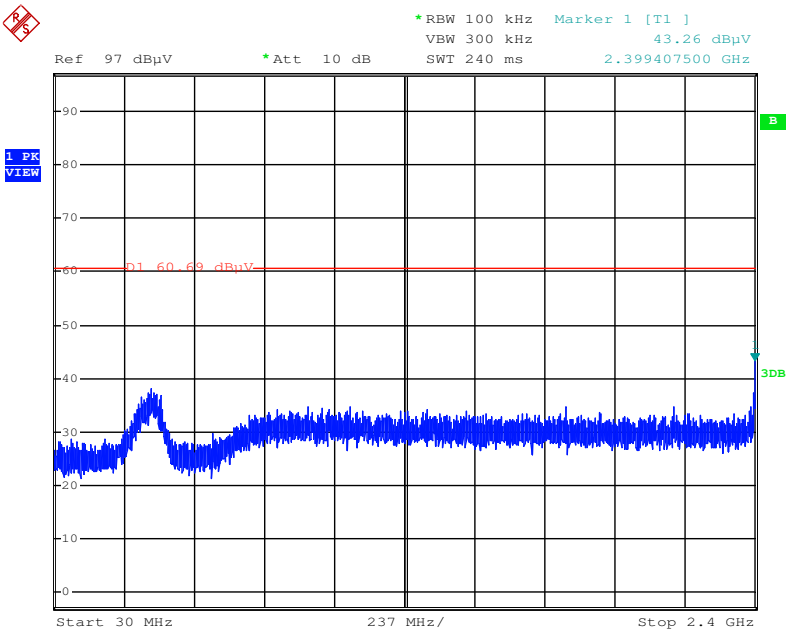
Mode 3 (Ant. 8 Patch / 5dBi / 2TX)

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Reference Level



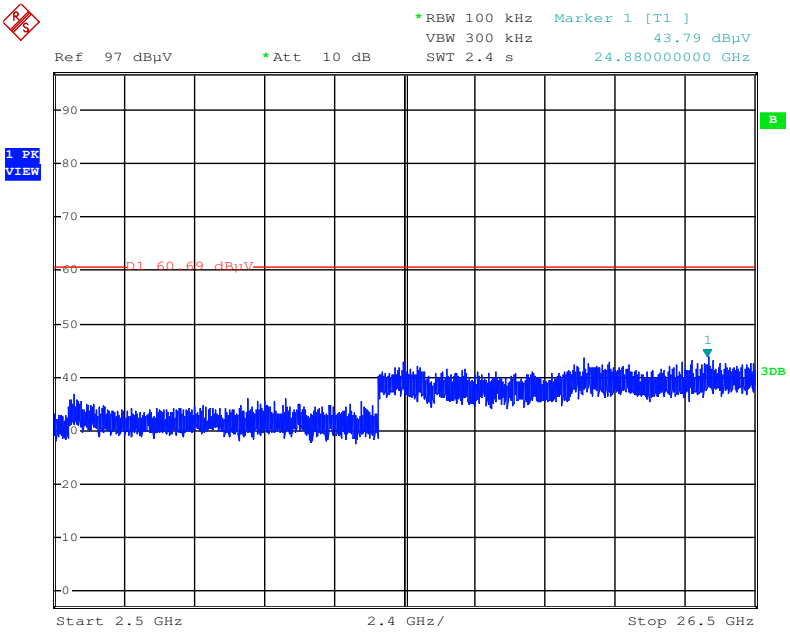
Date: 16.JUL.2015 19:42:28

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / CH 1 / 30MHz~2400MHz (down 30dBc)



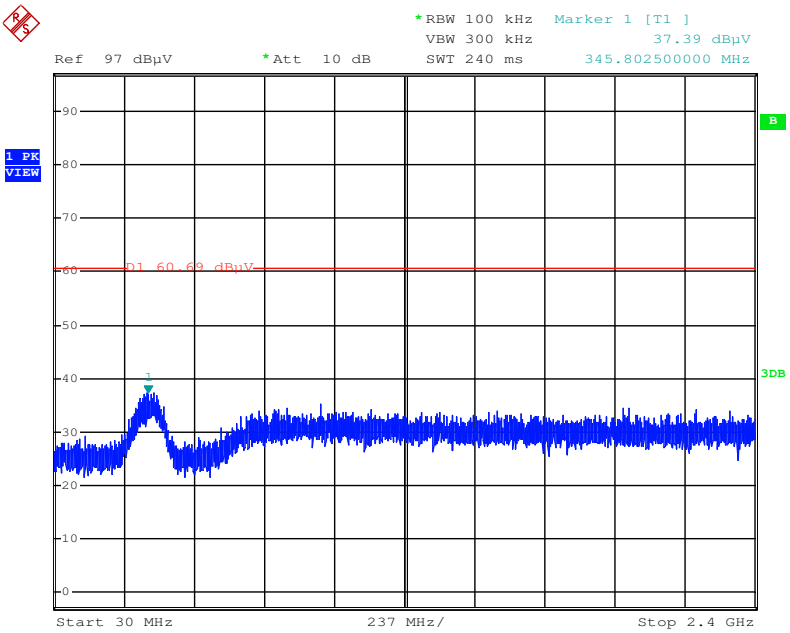
Date: 16.JUL.2015 19:45:39

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / CH 1 / 2500MHz~26500MHz (down 30dBc)



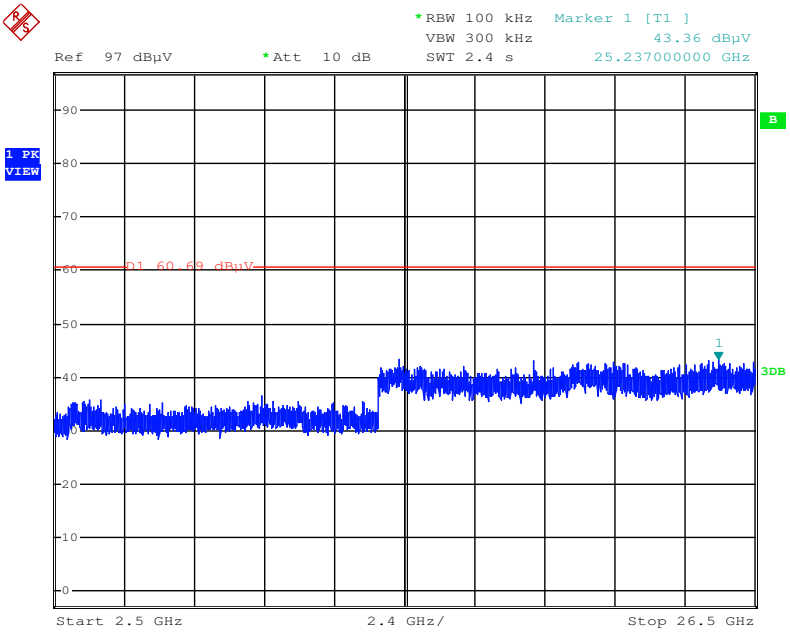
Date: 16.JUL.2015 19:46:32

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / CH 11 / 30MHz~2400MHz (down 30dBc)



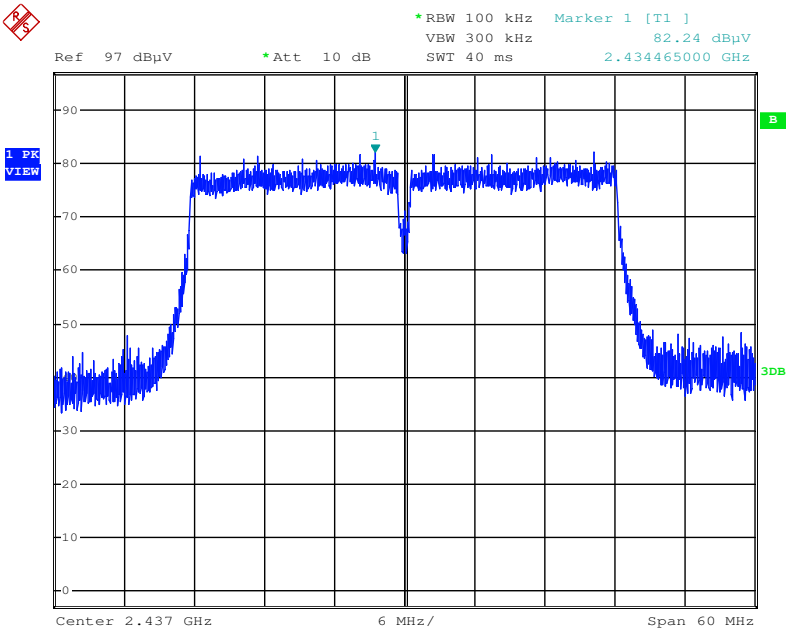
Date: 16.JUL.2015 19:48:07

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / CH 11 / 2500MHz~26500MHz (down 30dBc)



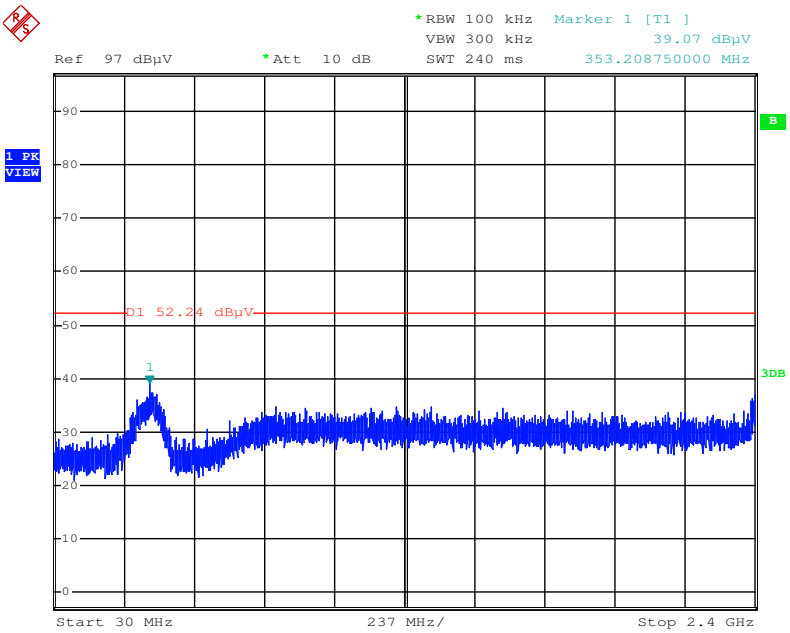
Date: 16.JUL.2015 19:47:41

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Reference Level



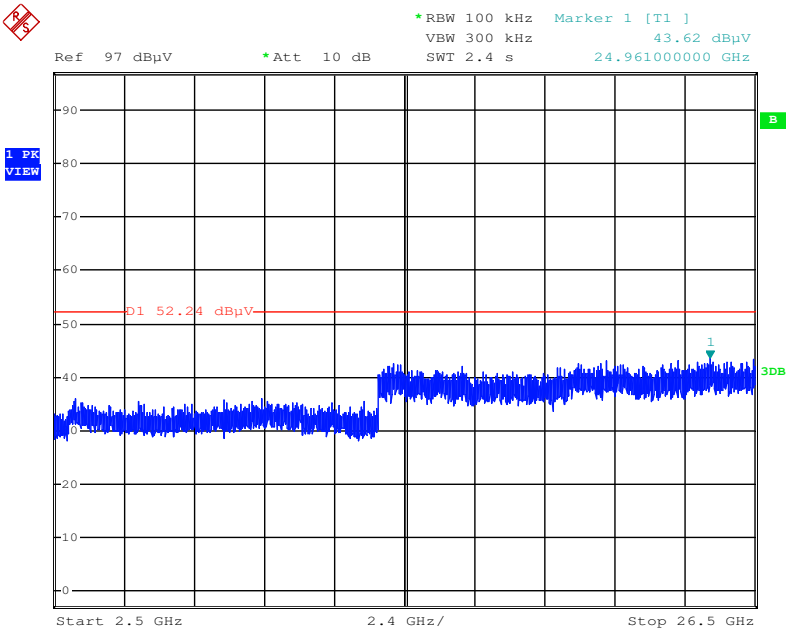
Date: 16.JUL.2015 19:51:29

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / CH 3 / 30MHz~2400MHz (down 30dBc)



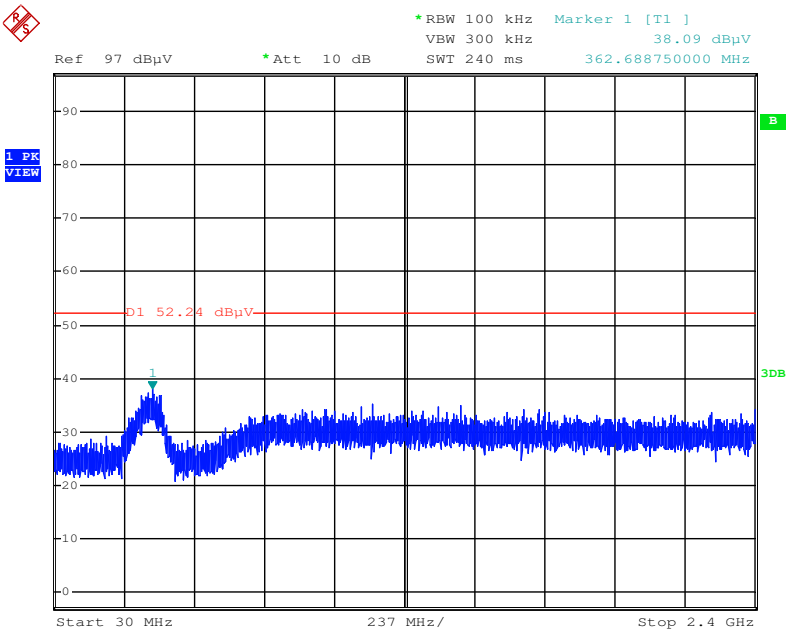
Date: 16.JUL.2015 19:52:44

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / CH 3 / 2500MHz~26500MHz (down 30dBc)



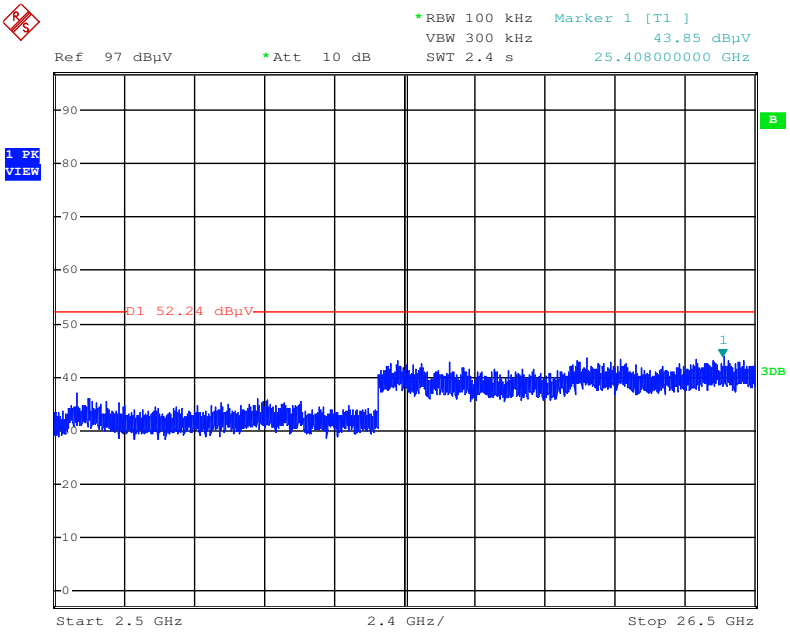
Date: 16.JUL.2015 19:53:11

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / CH 9 / 30MHz~2400MHz (down 30dBc)



Date: 16.JUL.2015 19:55:53

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / CH 9 / 2500MHz~26500MHz (down 30dBc)



Date: 16.JUL.2015 19:55:34

4.7. Antenna Requirements

4.7.1. Limit

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

4.7.2. Antenna Connector Construction

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

5. LIST OF MEASURING EQUIPMENTS

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
EMI Test Receiver	R&S	ESCS 30	100355	9kHz ~ 2.75GHz	Apr. 22, 2015	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-16-2	04083	150kHz ~ 100MHz	Dec. 02, 2014	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Dec. 02, 2014	Conduction (CO01-CB)
COND Cable	Woken	Cable	01	150kHz ~ 30MHz	Dec. 03, 2014	Conduction (CO01-CB)
Software	Audix	E3	5.410e	-	N.C.R.	Conduction (CO01-CB)
BILOG ANTENNA	Schaffner	CBL6112D	22021	20MHz ~ 2GHz	May 06, 2015	Radiation (03CH01-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Mar. 12, 2015	Radiation (03CH01-CB)
Horn Antenna	EMCO	3115	00075790	750MHz ~ 18GHz	Oct. 28, 2014	Radiation (03CH01-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Aug. 22, 2014	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8447D	2944A10991	0.1MHz ~ 1.3GHz	Feb. 24, 2015	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Jan. 12, 2015	Radiation (03CH01-CB)
Pre-Amplifier	WM	TF-130N-R1	923365	26GHz ~ 40GHz	Nov. 25, 2014	Radiation (03CH01-CB)
Spectrum Analyzer	R&S	FSP40	100056	9kHz ~ 40GHz	Nov. 06, 2014	Radiation (03CH01-CB)
EMI Receiver	Agilent	N9038A	MY52260123	9kHz ~ 8.4GHz	Jan. 21, 2015	Radiation (03CH01-CB)
RF Cable-low	Woken	Low Cable-1	N/A	30 MHz ~ 1 GHz	Nov. 15, 2014	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G-1	N/A	1 GHz ~ 40 GHz	Nov. 15, 2014	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G-2	N/A	1 GHz ~ 40 GHz	Nov. 15, 2014	Radiation (03CH01-CB)
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	Dec. 12, 2014	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-7	1 GHz – 26.5 GHz	Nov. 15, 2014	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-8	1 GHz – 26.5 GHz	Nov. 15, 2014	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-9	1 GHz – 26.5 GHz	Nov. 15, 2014	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz – 26.5 GHz	Nov. 15, 2014	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-6	1 GHz – 26.5 GHz	Nov. 15, 2014	Conducted (TH01-CB)
Power Sensor	Agilent	U2021XA	MY53410001	50MHz~18GHz	Nov. 03, 2014	Conducted (TH01-CB)

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

N.C.R. means Non-Calibration required.

6. MEASUREMENT UNCERTAINTY

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	2.4 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	3.6 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	3.7 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	3.5 dB	Confidence levels of 95%
Conducted Emission	1.7 dB	Confidence levels of 95%