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FCC RADIO TEST REPORT

Applicant's company	ZEBRA TECHNOLOGIES CORPORATION
Applicant Address	One Motorola Plaza Holtsville, NY 11742 USA
FCC ID	H9PAP7562
Manufacturer's company	Wistron NeWeb Corporation
Manufacturer Address	20 Park Avenue II, Hsinchu Science Park, Hsinchu 308 Taiwan

Product Name	802.11 abgn/ac Access Point
Brand Name	ZEBRA
Model No.	AP-7562
Test Rule Part(s)	47 CFR FCC Part 15 Subpart C § 15.247
Test Freq. Range	2400 ~ 2483.5MHz
Received Date	Dec. 04, 2014
Final Test Date	Jan. 30, 2015
Submission Type	Original Equipment

Statement

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

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

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

The measurements and test results shown in this test report were made in accordance with the procedures and found in compliance with the limit given in **ANSI C63.10-2013, 47 CFR FCC Part 15 Subpart C, KDB 558074 D01 v03r02, KDB 662911 D01 v02r01, KDB644545 D01 v01r02.**

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



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History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR4D0488AA	Rev. 01	Initial issue of report	Mar. 26, 2015

1. VERIFICATION OF COMPLIANCE

Product Name : 802.11 abgn/ac Access Point
Brand Name : ZEBRA
Model No. : AP-7562
Applicant : ZEBRA TECHNOLOGIES CORPORATION
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 Dec. 04, 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	4.14 dB
4.2	15.247(b)(3)	Maximum Conducted Output Power	Complies	0.2 dB
4.3	15.247(e)	Power Spectral Density	Complies	0.2 dB
4.4	15.247(a)(2)	6dB Spectrum Bandwidth	Complies	-
4.5	15.247(d)	Radiated Emissions	Complies	1.19 dB
4.6	15.247(d)	Band Edge Emissions	Complies	1.00 dB
4.7	15.203	Antenna Requirements	Complies	-

3. GENERAL INFORMATION

3.1. Product Details

Items	Description
Product Type	WLAN (1TX,2TX,3TX, 1RX,2RX,3RX)
Radio Type	Intentional Transceiver
Power Type	From PoE
Modulation	IEEE 802.11b: DSSS IEEE 802.11g: OFDM IEEE 802.11n/ac: see the below table
Data Modulation	IEEE 802.11b: DSSS (BPSK / QPSK / CCK) IEEE 802.11g/n: OFDM (BPSK / QPSK / 16QAM / 64QAM) IEEE 802.11ac: OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)
Data Rate (Mbps)	IEEE 802.11b: DSSS (1/ 2/ 5.5/11) IEEE 802.11g: OFDM (6/9/12/18/24/36/48/54) IEEE 802.11n/ac: see the below table
Frequency Range	2400 ~ 2483.5MHz
Channel Number	11 for 20MHz bandwidth ; 7 for 40MHz bandwidth

Channel Band Width (99%)	Mode 1 (Ant.6 Dipole antenna / 5.3 dBi) For Non-beamforming mode: 1TX: IEEE 802.11b: 12.50 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 18.58 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 36.32 MHz 2TX: IEEE 802.11b: 12.24 MHz 3TX: IEEE 802.11b: 12.24 MHz For Beamforming mode: 2TX:IEEE 802.11ac MCS0/Nss1 (VHT20): 18.06 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 36.32 MHz 3TX:IEEE 802.11ac MCS0/Nss1 (VHT20): 17.97 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 36.90 MHz Mode 2 (Ant.7 Panel antenna / 6.5 dBi) For Non-beamforming mode: 1TX: IEEE 802.11b: 12.32 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 19.45 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 36.32 MHz 2TX: IEEE 802.11b: 12.59 MHz 3TX: IEEE 802.11b: 12.41 MHz For Beamforming mode: 2TX:IEEE 802.11ac MCS0/Nss1 (VHT20): 18.23 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 36.61 MHz 3TX:IEEE 802.11ac MCS0/Nss1 (VHT20): 18.14 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 36.46 MHz Mode 3 (Ant.9 CROSS-POLARIZED PANEL ANTENNA/ Chain 1: 8.8, Chain 2: 5.9, Chain 3: 9 dB) For Non-beamforming mode: 1TX: IEEE 802.11b: 11.98 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 19.71 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 36.69 MHz 2TX: IEEE 802.11b: 11.98 MHz 3TX: IEEE 802.11b: 11.80 MHz For Beamforming mode: 2TX:IEEE 802.11ac MCS0/Nss2 (VHT20): 18.23 MHz IEEE 802.11ac MCS0/Nss2 (VHT40): 36.75 MHz 3TX:IEEE 802.11ac MCS0/Nss2 (VHT20): 17.80 MHz IEEE 802.11ac MCS0/Nss2 (VHT40): 36.32 MHz
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Maximum Conducted Output Power	Mode 1 (Ant.6 Dipole antenna / 5.3 dBi) For Non-beamforming mode: 1TX: IEEE 802.11b: 22.45 dBm IEEE 802.11g: 21.13 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 21.13 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 18.85 dBm 2TX: IEEE 802.11b: 24.69 dBm IEEE 802.11g: 23.38 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 23.51 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 17.64 dBm 3TX: IEEE 802.11b: 26.28 dBm IEEE 802.11g: 26.28 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 24.16 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 18.60 dBm For Beamforming mode: 2TX: IEEE 802.11g: 23.38 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 23.51 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 17.64 dBm 3TX: IEEE 802.11g: 24.20 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 24.16 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 18.60 dBm Mode 2 (Ant.7 Panel antenna / 6.5 dBi) For Non-beamforming mode: 1TX: IEEE 802.11b: 22.45 dBm IEEE 802.11g: 21.82 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 21.85 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 16.38 dBm 2TX: IEEE 802.11b: 25.08 dBm IEEE 802.11g: 23.91 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 23.87 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 18.49 dBm 3TX: IEEE 802.11b: 26.69 dBm IEEE 802.11g: 24.53 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 24.53 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 18.60 dBm
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	For Beamforming mode: 2TX: IEEE 802.11g: 23.91 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 23.87 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 18.49 dBm 3TX: IEEE 802.11g: 24.53 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 24.53 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 18.60 dBm Mode 3 (Ant.9 CROSS-POLARIZED PANEL ANTENNA/ Chain 1: 8.8, Chain 2: 5.9, Chain 3: 9 dB) For Non-beamforming mode: 1TX: IEEE 802.11b: 20.47 dBm IEEE 802.11g: 21.07 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 21.16 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 15.51 dBm 2TX: IEEE 802.11b: 23.20 dBm IEEE 802.11g: 23.74 dBm IEEE 802.11ac MCS0/Nss2 (VHT20): 23.78 dBm IEEE 802.11ac MCS0/Nss2 (VHT40): 18.53 dBm 3TX: IEEE 802.11b: 24.08 dBm IEEE 802.11g: 22.73 dBm IEEE 802.11ac MCS0/Nss2 (VHT20): 22.69 dBm IEEE 802.11ac MCS0/Nss2 (VHT40): 19.18 dBm For Beamforming mode: 2TX: IEEE 802.11g: 23.74 dBm IEEE 802.11ac MCS0/Nss2 (VHT20): 23.78 dBm IEEE 802.11ac MCS0/Nss2 (VHT40): 18.53 dBm 3TX: IEEE 802.11g: 22.73 dBm IEEE 802.11ac MCS0/Nss2 (VHT20): 22.69 dBm IEEE 802.11ac MCS0/Nss2 (VHT40): 19.18 dBm
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3

Items	Description	
Beamforming Function	☒ With beamforming	☐ Without beamforming
STBC Function	☒ With STBC	☐ Without STBC
LDPC Function	☒ With LDPC	☐ Without LDPC

Note 1: The product has beamforming function for 802.11g/n/ac in 2.4GHz and 802.11a/n/ac in 5GHz.

Note 2: The product has STBC and LDPC in 2TX/3TX function for 802.11n/ac in 2.4GHz and 802.11n/ac in 5GHz.

Antenna and Band width

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

IEEE 802.11n/ac Spec.

Protocol	Number of Transmit Chains (NTX)	Data Rate / MCS
802.11n (HT20)	1, 2, 3	MCS0-23
802.11n (HT40)	1, 2, 3	MCS0-23
802.11ac (VHT20)	1, 2, 3	MCS 0-9/Nss1-3
802.11ac (VHT40)	1, 2, 3	MCS 0-9/Nss1-3

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

Then 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/VHT80: IEEE 802.11ac

3.2. Accessories

N/A

3.3. Table for Filed Antenna

Ant.	Brand	Zebra P/N	Antenna Type	Connector	Indoor/ Outdoor	Antenna Gain (dBi)		Cable Loss (dB)		True Gain (dBi)	
						2.4G	5G	2.4G	5G	2.4G	5G
1	Zebra	ML-5299-HPA5-01	Dipole	N Male	Indoor/ Outdoor	-	5.6	-	0.9	-	4.7
2	Zebra	ML-2452-HPAG4A6-01	Dipole	N Male	Indoor/ Outdoor	4	7.3	-	-	4	7.3
3	Laird	ML-2499-FHPA5-01R	Dipole	N Male	Indoor/ Outdoor	5.3	-	0.7	-	4.6	-
4	Zebra	ML-2499-HPA4-01	Dipole	N Male	Indoor/ Outdoor	4.5	-	0.7	-	3.8	-
5	Zebra	ML-2452-HPA6X6-036	Dipole	N Male	Indoor/ Outdoor	4	6	0.7	0.9	3.3	5.1
6	Zebra	ML-2452-HPA6-01	Dipole	N Male	Indoor/ Outdoor	5.3	6.1	-	-	5.3	6.1
7	Zebra	ML-2499-5PNL-72-N	Panel	N Male	Indoor/ Outdoor	6.5	-	-	-	6.5	-
8	Zebra	ML-2452-PNA5-01R	Panel	N Male	Indoor/ Outdoor	5.5	6	0.7	0.9	4.8	5.1
9	Zebra	ML-2452-PNL3M3-1	CROSS-POLARIZED PANEL ANTENNA*	N Female	Indoor/ Outdoor	Note 1					

Note 1:

Antenna	Antenna Gain (dBi)		Cable loss (dB)		True Gain (dBi)	
	2.4GHz	5GHz	2.4GHz	5GHz	2.4GHz	5GHz
A	9.5	9.2	0.7	0.9	8.8	8.3
B	6.6	6.8	0.7	0.9	5.9	5.9
C	9.7	9.1	0.7	0.9	9	8.2

Note 2: Ant. 1~9 are the different antenna type in the antenna list. Only the highest gain antenna was selected from each different type of antenna to test and record in this report. Ant. 6, Ant. 7 and Ant. 9 for 2.4GHz and Ant. 2, Ant. 8 and Ant. 9 for 5GHz were selected to perform the test and recorded in this report.

Note 3: *This Antenna has 3 of the same CROSS-POLARIZED PANEL ANTENNA in a single housing

<For 2.4GHz Band>

For IEEE 802.11b/g/n/ac mode (1TX, 2TX, 3TX / 1RX, 2RX, 3RX):

The EUT can support 1TX, 2TX, 3TX and 1RX, 2RX, 3RX functions.

For 1TX (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.

For 3TX

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

<For 5GHz Band>

For IEEE 802.11a/n/ac mode (1TX, 2TX, 3TX / 1RX, 2RX, 3RX):

The EUT can support 1TX, 2TX, 3TX and 1RX, 2RX, 3RX functions.

For 1TX (Ant. 2)

Both Chain 4 and Chain 5 support transmit and receive functions, but only one of them will be used at one time. After evaluating, Chain 5 has been evaluated to be the worst case, so it's selected to record in this test report.

For 1TX (Ant. 8 and Ant. 9)

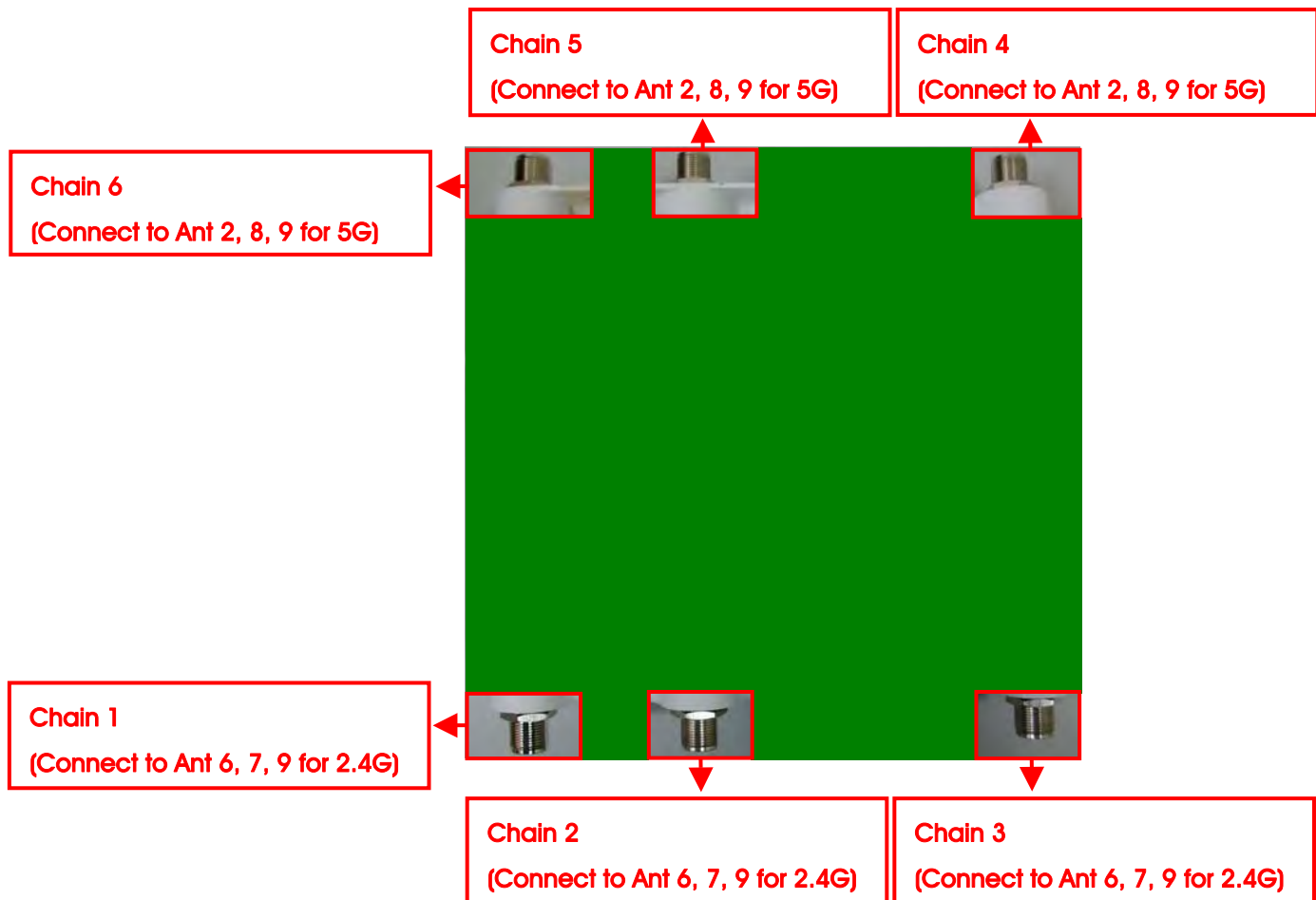
Both Chain 4 and Chain 5 support transmit and receive functions, but only one of them will be used at one time. After evaluating, Chain 4 has been evaluated to be the worst case, so it's selected to record in this test report.

For 2TX

Chain 4 and Chain 5 could transmit/receive simultaneously.

For 3TX

Chain 4, Chain 5 and Chain 6 could transmit/receive simultaneously.



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	Non-beamforming Mode			
	11b/CCK	1 Mbps	1/6/11	2 (Ant.6, 7) 1 (Ant.9) 1+2 (Ant.6, 7, 9) 1+2+3 (Ant.6, 7, 9)
	11g/BPSK	6 Mbps	1/6/11	2 (Ant.6, 7) 1 (Ant.9) 1+2 (Ant.6, 7, 9) 1+2+3 (Ant.6, 7, 9)
	11ac VHT20	MCS0/Nss1	1/6/11	2 (Ant.6, 7) 1 (Ant.9) 1+2 (Ant.6, 7) 1+2+3 (Ant.6, 7)
		MCS0/Nss2	1/6/11	1+2 (Ant.9) 1+2+3 (Ant.9)
	11ac VHT40	MCS0/Nss1	3/6/9	2 (Ant.6, 7) 1 (Ant.9) 1+2 (Ant.6, 7) 1+2+3 (Ant.6, 7)
		MCS0/Nss2	3/6/9	1+2 (Ant.9) 1+2+3 (Ant.9)
	Beamforming Mode			
	11g/BPSK	6 Mbps	1/6/11	1+2(Ant.6, 7, 9) 1+2+3(Ant.6, 7, 9)
	11ac VHT20	MCS0/Nss1	1/6/11	1+2 (Ant.6, 7) 1+2+3 (Ant.6, 7)
		MCS0/Nss2	1/6/11	1+2 (Ant.9) 1+2+3 (Ant.9)
	11ac VHT40	MCS0/Nss1	3/6/9	1+2 (Ant.6, 7) 1+2+3 (Ant.6, 7)

		MCS0/Nss2	3/6/9	1 + 2 (Ant.9) 1 + 2 + 3 (Ant.9)
Power Spectral Density	Non-beamforming Mode			
	11b/CCK	1 Mbps	1/6/11	2 (Ant.6, 7) 1 (Ant.9) 1 + 2 (Ant.6, 7, 9) 1 + 2 + 3 (Ant.6, 7, 9)
	11ac VHT20	MCS0/Nss1	1/6/11	2 (Ant.6, 7) 1 (Ant.9)
	11ac VHT40	MCS0/Nss1	3/6/9	2 (Ant.6, 7) 1 (Ant.9)
	Beamforming Mode			
	11ac VHT20	MCS0/Nss1	1/6/11	1 + 2 (Ant.6, 7) 1 + 2 + 3 (Ant.6, 7)
		MCS0/Nss2	1/6/11	1 + 2 (Ant.9) 1 + 2 + 3 (Ant.9)
	11ac VHT40	MCS0/Nss1	3/6/9	1 + 2 (Ant.6, 7) 1 + 2 + 3 (Ant.6, 7)
		MCS0/Nss2	3/6/9	1 + 2 (Ant.9) 1 + 2 + 3 (Ant.9)
6dB Spectrum Bandwidth	Non-beamforming Mode			
	11b/CCK	1 Mbps	1/6/11	2 (Ant.6, 7) 1 (Ant.9) 1 + 2 (Ant.6, 7, 9) 1 + 2 + 3 (Ant.6, 7, 9)
	11ac VHT20	MCS0/Nss1	1/6/11	2 (Ant.6, 7) 1 (Ant.9)
	11ac VHT40	MCS0/Nss1	3/6/9	2 (Ant.6, 7) 1 (Ant.9)
	Beamforming Mode			
	11ac VHT20	MCS0/Nss1	1/6/11	1 + 2 (Ant.6, 7) 1 + 2 + 3 (Ant.6, 7)
		MCS0/Nss2	1/6/11	1 + 2 (Ant.9) 1 + 2 + 3 (Ant.9)
	11ac VHT40	MCS0/Nss1	3/6/9	1 + 2 (Ant.6, 7) 1 + 2 + 3 (Ant.6, 7)
		MCS0/Nss2	3/6/9	1 + 2 (Ant.9) 1 + 2 + 3 (Ant.9)

Radiated Emissions Below 1GHz	Normal Link	-	-	-
Radiated Emissions Above 1GHz	Non-beamforming Mode			
	11b/CCK	1 Mbps	1/6/11	2 (Ant.6, 7) 1 (Ant.9) 1+2 (Ant.6, 7, 9) 1+2+3 (Ant.6, 7, 9)
	11ac VHT20	MCS0/Nss1	1/6/11	2 (Ant.6, 7) 1 (Ant.9)
	11ac VHT40	MCS0/Nss1	3/6/9	2 (Ant.6, 7) 1 (Ant.9)
	Beamforming Mode			
	11ac VHT20	MCS0/Nss1	1/6/11	1+2 (Ant.6, 7) 1+2+3 (Ant.6, 7)
		MCS0/Nss2	1/6/11	1+2 (Ant.9) 1+2+3 (Ant.9)
	11ac VHT40	MCS0/Nss1	3/6/9	1+2 (Ant.6, 7) 1+2+3 (Ant.6, 7)
		MCS0/Nss2	3/6/9	1+2 (Ant.9) 1+2+3 (Ant.9)
Band Edge Emissions	Non-beamforming Mode			
	11b/CCK	1 Mbps	1/6/11	2 (Ant.6, Ant. 7) 1 (Ant.9) 1+2 (Ant.6, 7, 9) 1+2+3 (Ant.6, 7, 9)
	11ac VHT20	MCS0/Nss1	1/6/11	2 (Ant.6, 7) 1 (Ant.9)
	11ac VHT40	MCS0/Nss1	3/6/9	2 (Ant.6, 7) 1 (Ant.9)
	Beamforming Mode			
	11ac VHT20	MCS0/Nss1	1/6/11	1+2 (Ant.6, 7) 1+2+3 (Ant.6, 7)
		MCS0/Nss2	1/6/11	1+2 (Ant.9) 1+2+3 (Ant.9)
	11ac VHT40	MCS0/Nss1	3/6/9	1+2 (Ant.6, 7) 1+2+3 (Ant.6, 7)
		MCS0/Nss2	3/6/9	1+2 (Ant.9) 1+2+3 (Ant.9)

Note 1: VHT20/VHT40 covers HT20/HT40, due to same modulation.

Note 2: Beam forming cover Non-Beam forming, STBC, LDPC.

Note 3: The EUT only can standing use.

Note 4: The PoE is for measurement only, would not be marketed.

The PoE information as below:

Power	Brand	Model	Rating
PoE	MOTOROLA	AP-PSBIAS-7161	Input: 100-240Vac, 50/60Hz, 1.0A Output: 55Vdc

Note 5: Point-to-Multiple covers point-to-point.

The following test modes were performed for all tests:

Ant. 9 is the higher gain antenna, so it was selected to perform Conducted Emission test and Radiated Emission below 1GHz test:

For Conducted Emission test:

Test Mode 1: Normal Link - EUT standing + PoE + Ant.9

For Radiated Emission below 1GHz test:

Test Mode 1: Normal Link - EUT standing + PoE + Ant.9

For Radiated Emission above 1GHz test:

Test Mode 1: CTX - EUT standing + Ant. 6

Test Mode 2: CTX - EUT standing + Ant. 7

Test Mode 3: CTX - EUT standing + Ant. 9

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 FA4D0488) and Radiated Emission Co-location (please refer to Appendix B) tests are added for simultaneously transmit between 2.4GHz WLAN function and 5GHz WLAN function.

3.6. Table for Testing Locations

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

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

Support Unit	Brand	Model	FCC ID
Notebook	DELL	M1330	E2K4965AGNM
Notebook	DELL	M1340	E2K4965AGNM
Notebook	DELL	E6430	DoC
Notebook	DELL	E6430	DoC
PoE	MOTOROLA	AP-PSBIAS-7161	DoC

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

<For Non-Beamforming Mode>

Support Unit	Brand	Model	FCC ID
Notebook	DELL	M1330	E2K4965AGNM
PoE	MOTOROLA	AP-PSBIAS-7161	DoC

<For Beamforming Mode>

Support Unit	Brand	Model	FCC ID
Notebook	DELL	M1330	E2K4965AGNM
Notebook	DELL	M1340	E2K4965AGNM
WLAN ac Dongle	Netgear	A6200	PY312200200
PoE	MOTOROLA	AP-PSBIAS-7161	DoC

For Test Site No: CO01-CB

Support Unit	Brand	Model	FCC ID
Notebook	DELL	E6430	DoC
Notebook	DELL	E6430	DoC
Notebook	DELL	E6430	DoC
Notebook	DELL	E6430	DoC
PoE	MOTOROLA	AP-PSBIAS-7161	DoC

For Test Site No: TH01-CB

Support Unit	Brand	Model	FCC ID
Notebook	DELL	E6220	DoC
PoE	MOTOROLA	AP-PSBIAS-7161	DoC

3.8. 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.6 Dipole antenna / 5.3 dBi / 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	85	-	-	-
802.11g	62	87	63	-	-	-
802.11ac MCS0/Nss1 VHT20	62	87	63	-	-	-
802.11ac MCS0/Nss1 VHT40	-	-	-	56	62	57

Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 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	78	85	78	-	-	-
802.11g	58	82	63	-	-	-
802.11ac MCS0/Nss1 VHT20	58	82	63	-	-	-
802.11ac MCS0/Nss1 VHT40	-	-	-	46	57	54

Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 3TX)

Test Software Version	MTool2.0.1.0					
Mode	Test Frequency (MHz)					
	NCB: 20MHz			NCB: 40MHz		
	2412 MHz	2437 MHz	2462 MHz	2422 MHz	2437 MHz	2452 MHz
802.11b	63	85	66	-	-	-
802.11g	43	78	61	-	-	-
802.11ac MCS0/Nss1 VHT20	43	78	61	-	-	-
802.11ac MCS0/Nss1 VHT40	-	-	-	40	54	54

Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 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	83	90	83	-	-	-
802.11g	12	12	12	-	-	-
802.11ac MCS0/Nss1 VHT20	65	90	64	-	-	-
802.11ac MCS0/Nss1 VHT40	-	-	-	57	64	57

Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 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	86	80	-	-	-
802.11g	60	84	60	-	-	-
802.11ac MCS0/Nss1 VHT20	60	84	60	-	-	-
802.11ac MCS0/Nss1 VHT40	-	-	-	55	61	52

Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 3TX)

Test Software Version	MTool2.0.1.0					
Mode	Test Frequency (MHz)					
	NCB: 20MHz			NCB: 40MHz		
	2412 MHz	2437 MHz	2462 MHz	2422 MHz	2437 MHz	2452 MHz
802.11b	79	86	79	-	-	-
802.11g	59	80	59	-	-	-
802.11ac MCS0/Nss1 VHT20	59	80	59	-	-	-
802.11ac MCS0/Nss1 VHT40	-	-	-	50	54	48

Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 1: 8.8, Chain 2: 5.9, Chain 3: 9 dBi / 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	79	80	-	-	-
802.11g	63	83	64	-	-	-
802.11ac MCS0/Nss1 VHT20	63	83	64	-	-	-
802.11ac MCS0/Nss1 VHT40	-	-	-	57	60	55

Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 1: 8.8, Chain 2: 5.9, Chain 3: 9 dBi / 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	79	79	80	-	-	-
802.11g	62	83	60	-	-	-
802.11ac MCS0/Nss2 VHT20	62	83	60	-	-	-
802.11ac MCS0/Nss2 VHT40	-	-	-	56	60	53

Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 1: 8.8, Chain 2: 5.9, Chain 3: 9 dBi / 3TX)

Test Software Version	MTool2.0.1.0					
Mode	Test Frequency (MHz)					
	NCB: 20MHz			NCB: 40MHz		
	2412 MHz	2437 MHz	2462 MHz	2422 MHz	2437 MHz	2452 MHz
802.11b	62	73	77	-	-	-
802.11g	52	72	57	-	-	-
802.11ac MCS0/Nss2 VHT20	52	72	57	-	-	-
802.11ac MCS0/Nss2 VHT40	-	-	-	48	55	50

<For Beamforming Mode>

Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 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	58	82	63	-	-	-
802.11ac MCS0/Nss1 VHT20	58	82	63	-	-	-
802.11ac MCS0/Nss1 VHT40	-	-	-	46	57	54

Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 3TX)

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	43	78	61	-	-	-
802.11ac MCS0/Nss1 VHT20	43	78	61	-	-	-
802.11ac MCS0/Nss1 VHT40	-	-	-	40	54	54

Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 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	52

Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 3TX)

Test Software Version	MTool2.0.1.0					
Mode	Test Frequency (MHz)					
	NCB: 20MHz			NCB: 40MHz		
	2412 MHz	2437 MHz	2462 MHz	2422 MHz	2437 MHz	2452 MHz
802.11g	59	80	59	-	-	-
802.11ac MCS0/Nss1 VHT20	59	80	59	-	-	-
802.11ac MCS0/Nss1 VHT40	-	-	-	50	54	48

Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 1: 8.8, Chain 2: 5.9, Chain 3: 9 dBi / 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	62	83	60	-	-	-
802.11ac MCS0/Nss2 VHT20	62	83	60	-	-	-
802.11ac MCS0/Nss2 VHT40	-	-	-	56	60	53

Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 1: 8.8, Chain 2: 5.9, Chain 3: 9 dBi / 3TX)

Test Software Version	MTool2.0.1.0					
Mode	Test Frequency (MHz)					
	NCB: 20MHz			NCB: 40MHz		
	2412 MHz	2437 MHz	2462 MHz	2422 MHz	2437 MHz	2452 MHz
802.11g	52	72	57	-	-	-
802.11ac MCS0/Nss2 VHT20	52	72	57	-	-	-
802.11ac MCS0/Nss2 VHT40	-	-	-	48	55	50

3.9. 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 ac dongle and transmit duty cycle no less 98%

3.10. Duty Cycle

<For Non-Beamforming Mode>

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
802.11ac MCS0/Nss1 VHT20	1.920	1.950	98.46%	0.07	0.01
802.11ac MCS0/Nss1 VHT40	0.952	0.984	96.75%	0.14	1.05

<For Beamforming Mode>

For 2TX

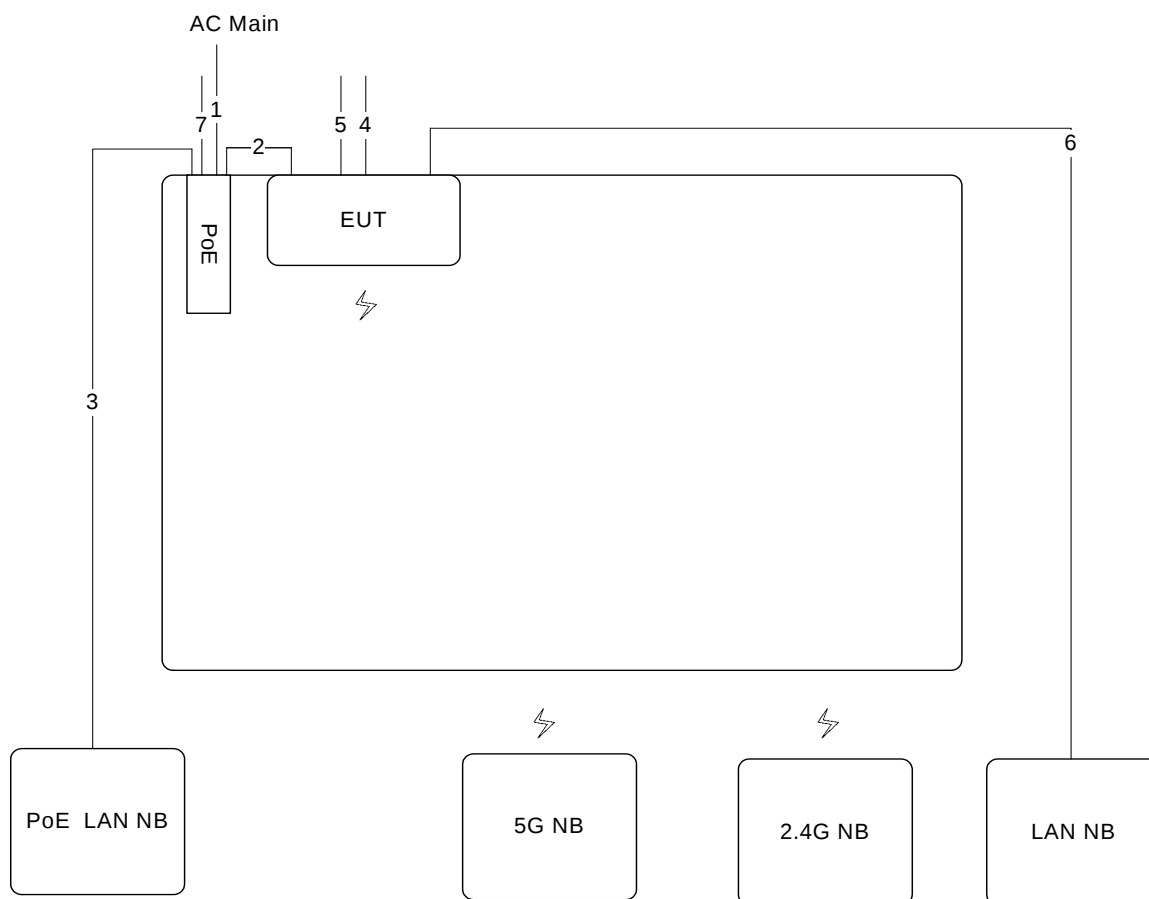
Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11ac MCS0/Nss1 VHT20	3.791	3.958	95.78%	0.19	0.26
802.11ac MCS0/Nss1 VHT40	4.536	4.750	95.49%	0.20	0.22

For 3TX

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11ac MCS0/Nss1 VHT20	3.814	3.954	96.46%	0.16	0.26
802.11ac MCS0/Nss1 VHT40	4.557	4.730	96.34%	0.16	0.22

3.11. Test Configurations

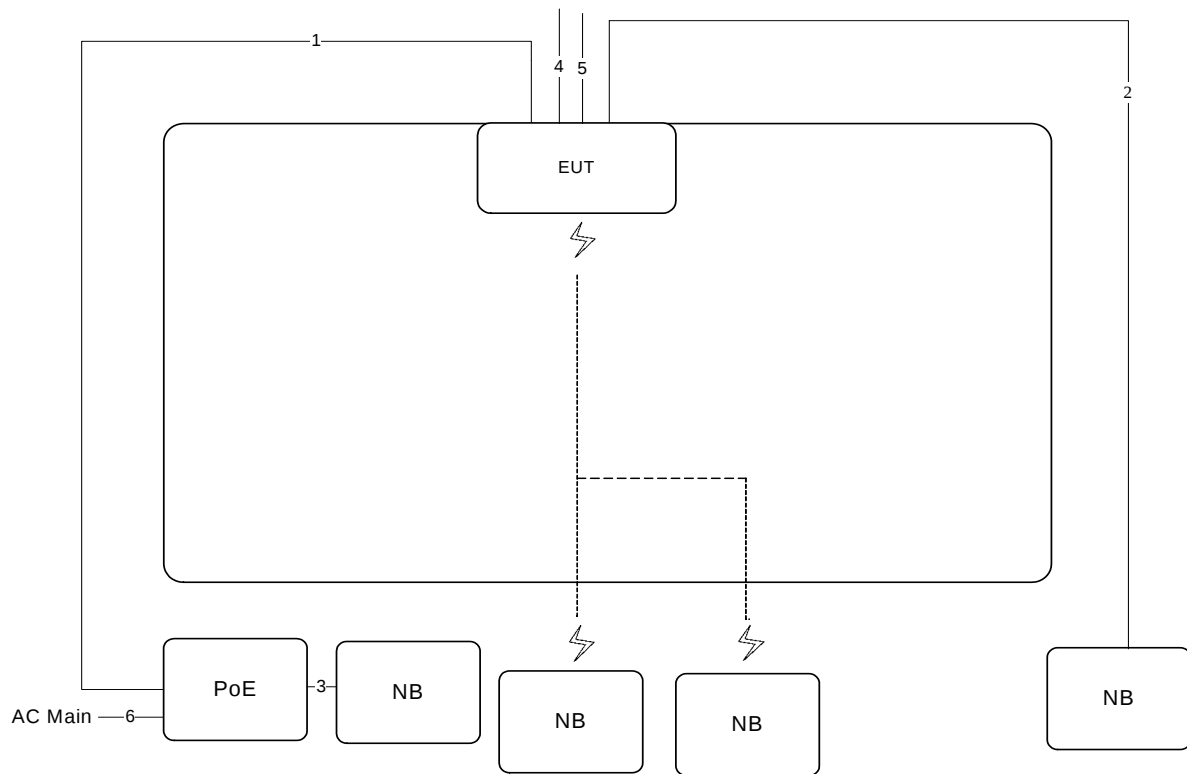
3.11.1. AC Power Line Conduction Emissions Test Configuration



Item	Connection	Shielded	Length(m)
1	Power cable	No	3
2	RJ-45 cable	No	1.5
3	RJ-45 cable	No	10
4	Ground cable	No	1.8
5	Console cable	No	1.5
6	RJ-45 cable	No	10
7	Ground cable	No	2

3.11.2. Radiation Emissions Test Configuration

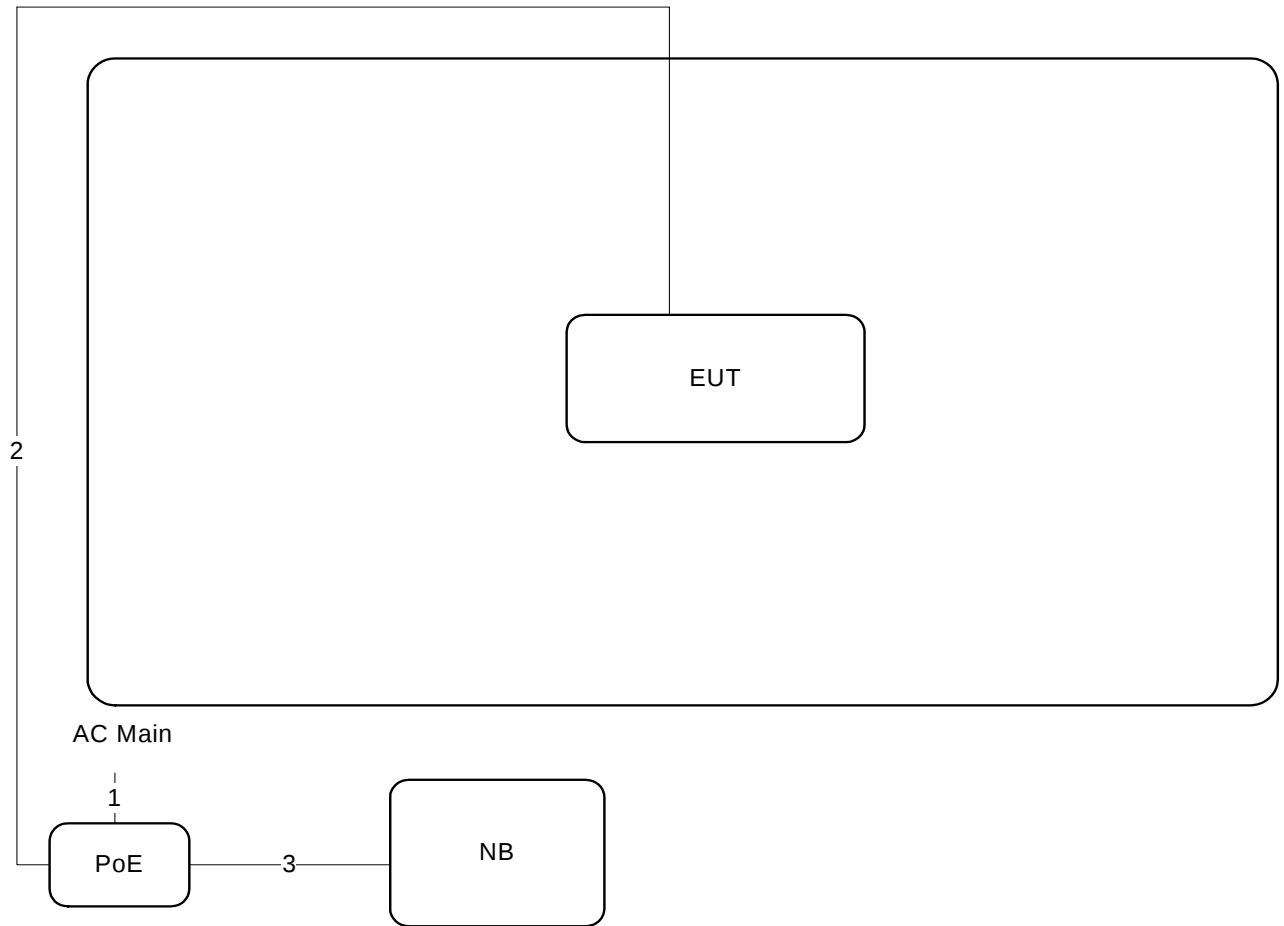
Test Configuration: 30MHz~1GHz



Item	Connection	Shielded	Length(m)
1	RJ-45 cable	No	50
2	RJ-45 cable	No	10
3	RJ-45 cable	No	1.5
4	Ground cable	No	1.8
5	Console cable	No	1.5
6	Power cable	No	1.5

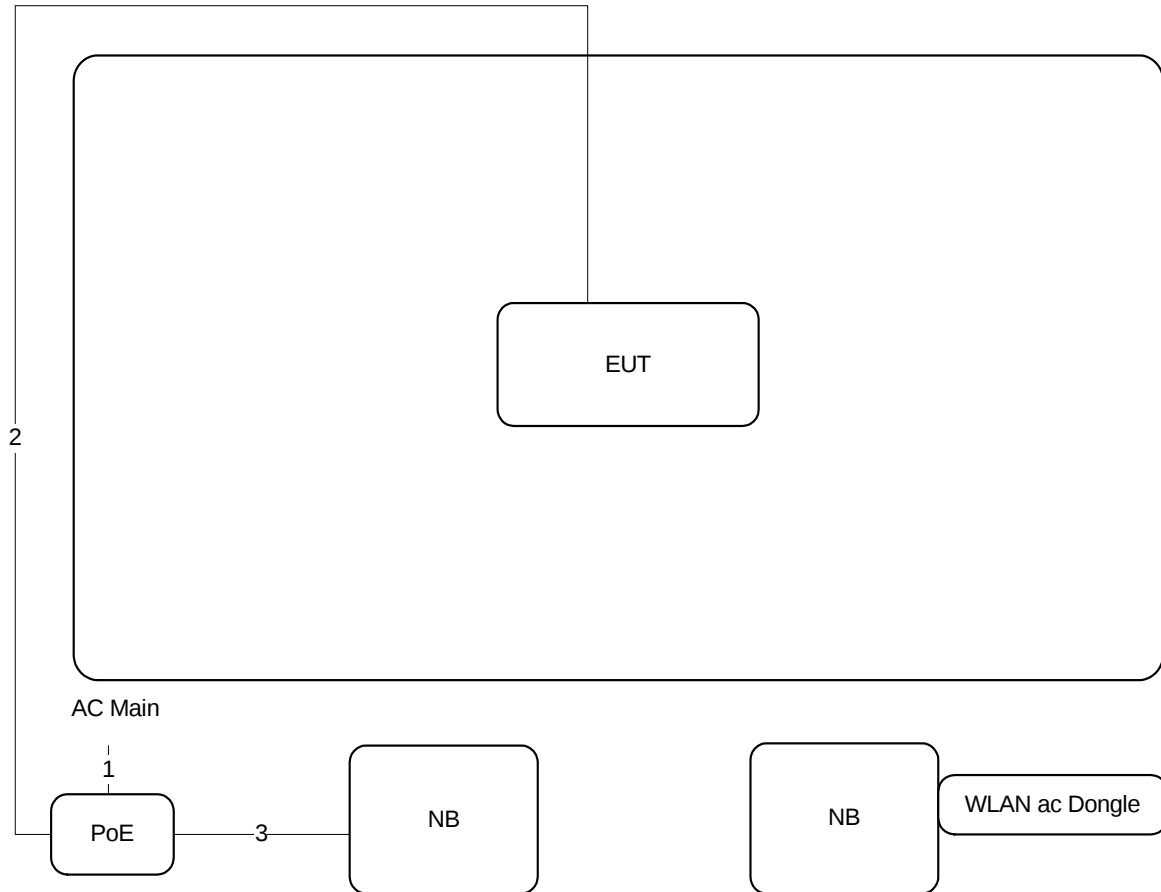
Test Configuration: above 1GHz

<For Non-Beamforming Mode>



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

<For Beamforming Mode>



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

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

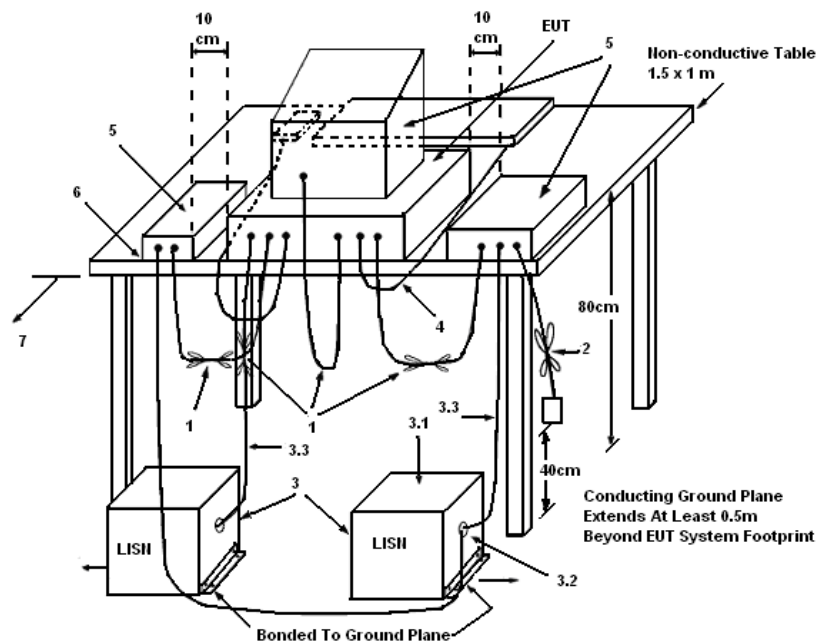
Please refer to section 5 of equipments list in this report. The following table is the setting of the receiver.

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

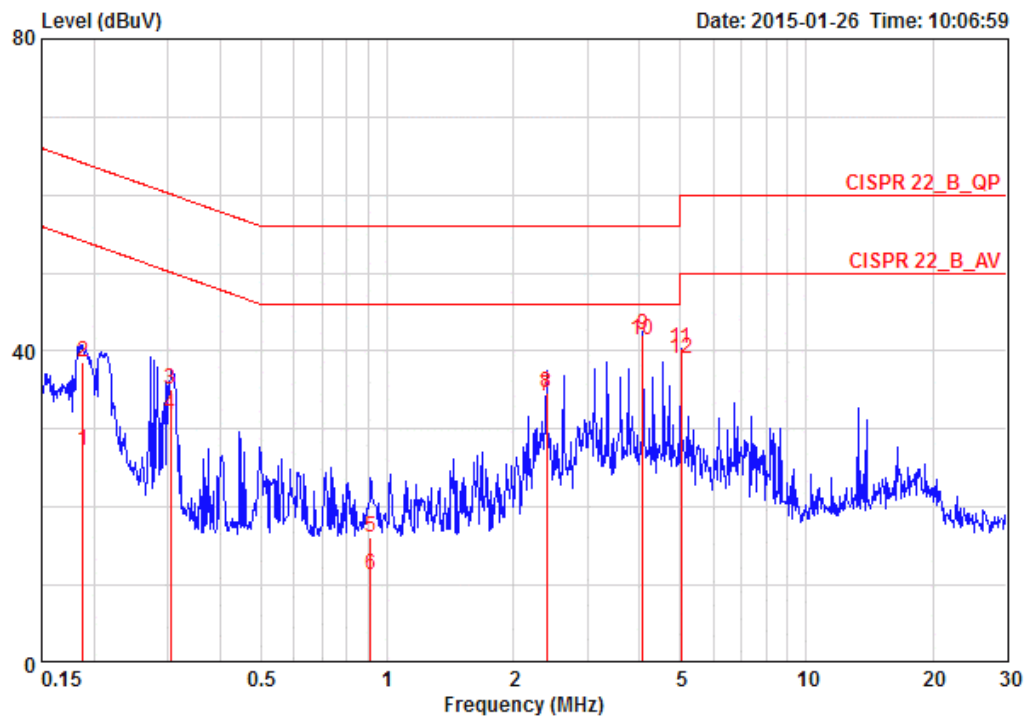
There is no deviation with the original standard.

4.1.6. EUT Operation during Test

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

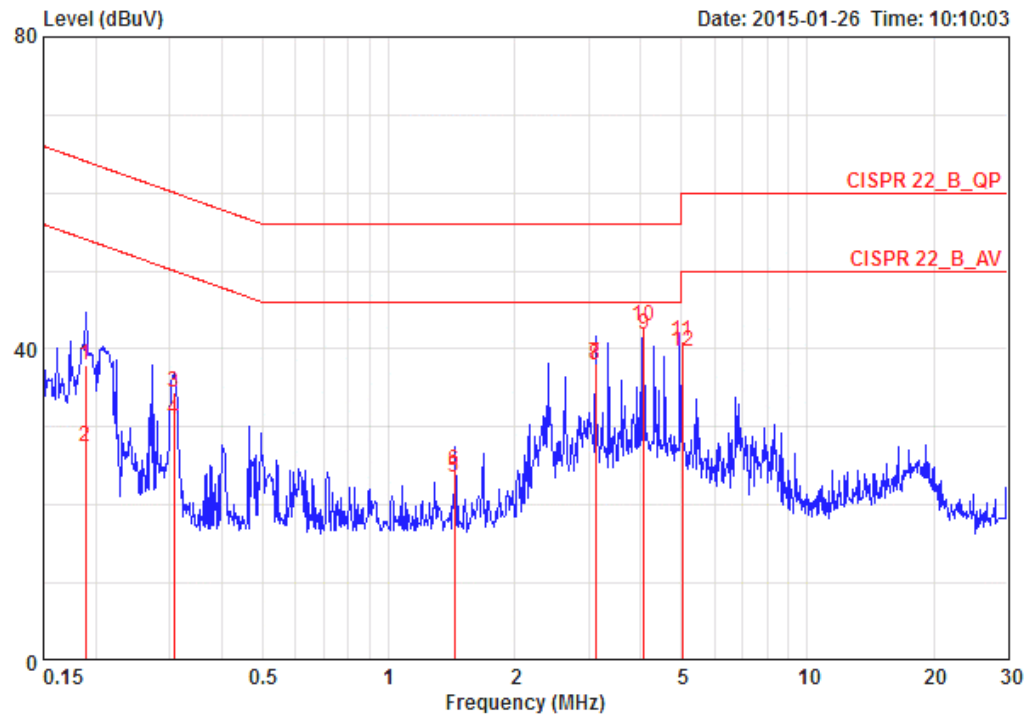
4.1.7. Results of AC Power Line Conducted Emissions Measurement

Temperature	23°C	Humidity	56%
Test Engineer	Parody Lin	Phase	Line
Configuration	Normal Link		



	Freq	Level	Over	Limit	Read	LISN	Cable		
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark	Pol/Phase
			dB	dBuV	dBuV	dB	dB		
1	0.18814	27.24	-26.88	54.12	17.22	9.78	0.24	AVERAGE	LINE
2	0.18814	38.55	-25.57	64.12	28.53	9.78	0.24	QP	LINE
3	0.30509	35.01	-25.09	60.10	24.96	9.77	0.28	QP	LINE
4	0.30509	31.73	-18.37	50.10	21.68	9.77	0.28	AVERAGE	LINE
5	0.91357	16.18	-39.82	56.00	6.08	9.77	0.33	QP	LINE
6	0.91357	11.38	-34.62	46.00	1.28	9.77	0.33	AVERAGE	LINE
7	2.396	34.16	-11.84	46.00	24.07	9.74	0.36	AVERAGE	LINE
8	2.396	34.55	-21.45	56.00	24.46	9.74	0.36	QP	LINE
9	4.073	42.14	-13.86	56.00	32.06	9.71	0.37	QP	LINE
10	4.073	41.43	-4.57	46.00	31.35	9.71	0.37	AVERAGE	LINE
11	5.031	40.30	-19.70	60.00	30.24	9.68	0.38	QP	LINE
12	5.031	39.03	-10.97	50.00	28.97	9.68	0.38	AVERAGE	LINE

Temperature	23°C	Humidity	56%
Test Engineer	Parody Lin	Phase	Neutral
Configuration	Normal Link		



	Freq	Level	Over	Limit	Read	LISN	Cable		
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark	Pol/Phase
			dB	dBuV	dBuV	dB	dB		
1	0.18938	38.02	-26.04	64.06	27.86	9.92	0.24	QP	NEUTRAL
2	0.18938	27.46	-26.60	54.06	17.30	9.92	0.24	AVERAGE	NEUTRAL
3	0.30671	34.50	-25.55	60.06	24.31	9.91	0.28	QP	NEUTRAL
4	0.30671	30.95	-19.10	50.06	20.76	9.91	0.28	AVERAGE	NEUTRAL
5	1.437	23.54	-22.46	46.00	13.29	9.91	0.34	AVERAGE	NEUTRAL
6	1.437	24.48	-31.52	56.00	14.23	9.91	0.34	QP	NEUTRAL
7	3.114	38.12	-17.88	56.00	27.88	9.87	0.36	QP	NEUTRAL
8	3.114	37.86	-8.14	46.00	27.62	9.87	0.36	AVERAGE	NEUTRAL
9 @	4.072	41.86	-4.14	46.00	31.63	9.86	0.37	AVERAGE	NEUTRAL
10	4.072	42.99	-13.01	56.00	32.76	9.86	0.37	QP	NEUTRAL
11	5.029	40.92	-19.08	60.00	30.70	9.84	0.38	QP	NEUTRAL
12	5.029	39.58	-10.42	50.00	29.36	9.84	0.38	AVERAGE	NEUTRAL

Note:

Level = Read Level + LISN Factor + Cable Loss

4.2. Maximum Conducted Output Power Measurement

4.2.1. Limit

For systems using digital modulation in the 2400-2483.5MHz, the limit for output power is 30dBm. The limited has to be reduced by the amount in dB that the gain of the antenna exceed 6dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3dB that the directional gain of the antenna exceeds 6dBi.

4.2.2. Measuring Instruments and Setting

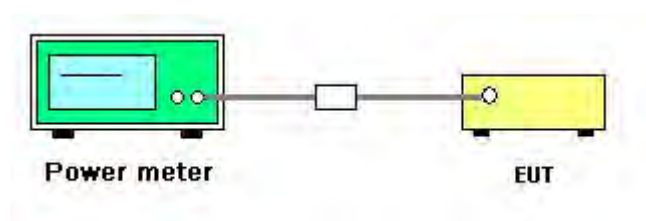
Please refer to section 5 of equipments list in this report. The following table is the setting of the power meter.

Power Meter Parameter	Setting
Detector	Average

4.2.3. Test Procedures

1. Test procedures refer KDB 558074 D01 v03r02 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	22°C	Humidity	63%
Test Engineer	Nick Peng	Test Date	Jan. 06, 2015
Test Mode	Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 1TX)		

Mode	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
		Chain 2		
802.11b	2412 MHz	20.05	30.00	Complies
	2437 MHz	22.45	30.00	Complies
	2462 MHz	20.95	30.00	Complies
802.11g	2412 MHz	15.50	30.00	Complies
	2437 MHz	21.13	30.00	Complies
	2462 MHz	15.52	30.00	Complies
802.11ac MCS0/Nss1 VHT20	2412 MHz	15.51	30.00	Complies
	2437 MHz	21.13	30.00	Complies
	2462 MHz	15.42	30.00	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	14.41	30.00	Complies
	2437 MHz	15.85	30.00	Complies
	2452 MHz	14.45	30.00	Complies

Temperature	22°C	Humidity	63%
Test Engineer	Nick Peng	Test Date	Jan. 06, 2015
Test Mode	Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 2TX)		

Mode	Frequency	Conducted Power (dBm)			Max. Limit (dBm)	Result
		Chain 1	Chain 2	Total		
802.11b	2412 MHz	19.86	19.53	22.71	30.00	Complies
	2437 MHz	21.96	21.39	24.69	30.00	Complies
	2462 MHz	19.42	19.18	22.31	30.00	Complies
802.11g	2412 MHz	14.56	14.50	17.54	30.00	Complies
	2437 MHz	20.59	20.13	23.38	30.00	Complies
	2462 MHz	15.24	15.52	18.39	30.00	Complies
802.11ac MCS0/Nss1 VHT20	2412 MHz	14.51	14.36	17.45	30.00	Complies
	2437 MHz	20.84	20.12	23.51	30.00	Complies
	2462 MHz	15.17	15.42	18.31	30.00	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	12.15	11.83	15.00	30.00	Complies
	2437 MHz	14.62	14.63	17.64	30.00	Complies
	2452 MHz	13.68	13.69	16.70	30.00	Complies

Temperature	22°C	Humidity	63%
Test Engineer	Nick Peng	Test Date	Jan. 06, 2015
Test Mode	Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 3TX)		

Mode	Frequency	Conducted Power (dBm)				Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Total		
802.11b	2412 MHz	15.62	15.82	15.94	20.57	30.00	Complies
	2437 MHz	21.96	21.09	21.42	26.28	30.00	Complies
	2462 MHz	16.05	16.32	16.50	21.07	30.00	Complies
802.11g	2412 MHz	15.62	15.82	15.94	20.57	30.00	Complies
	2437 MHz	21.96	21.09	21.42	26.28	30.00	Complies
	2462 MHz	16.05	16.32	16.50	21.07	30.00	Complies
802.11ac MCS0/Nss1 VHT20	2412 MHz	11.06	10.50	11.16	15.69	30.00	Complies
	2437 MHz	19.62	19.05	19.49	24.16	30.00	Complies
	2462 MHz	14.73	14.86	15.12	19.68	30.00	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	10.94	10.13	10.72	15.38	30.00	Complies
	2437 MHz	13.84	13.66	13.99	18.60	30.00	Complies
	2452 MHz	13.58	13.59	14.02	18.51	30.00	Complies

Temperature	22°C	Humidity	63%
Test Engineer	Nick Peng	Test Date	Jan. 06, 2015
Test Mode	Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 1TX)		

Mode	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
		Chain 2		
802.11b	2412 MHz	20.58	29.50	Complies
	2437 MHz	22.45	29.50	Complies
	2462 MHz	20.51	29.50	Complies
802.11g	2412 MHz	16.25	29.50	Complies
	2437 MHz	21.82	29.50	Complies
	2462 MHz	15.83	29.50	Complies
802.11ac MCS0/Nss1 VHT20	2412 MHz	16.13	29.50	Complies
	2437 MHz	21.85	29.50	Complies
	2462 MHz	15.76	29.50	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	14.68	29.50	Complies
	2437 MHz	16.38	29.50	Complies
	2452 MHz	14.45	29.50	Complies

Note: Antenna gain = 6.50dBi > 6dBi, So Power Limit = 30-(6.50-6)=29.50dBm

Temperature	22°C	Humidity	63%
Test Engineer	Nick Peng	Test Date	Jan. 06, 2015
Test Mode	Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 2TX)		

Mode	Frequency	Conducted Power (dBm)			Max. Limit (dBm)	Result
		Chain 1	Chain 2	Total		
802.11b	2412 MHz	20.40	19.75	23.10	29.50	Complies
	2437 MHz	22.79	21.21	25.08	29.50	Complies
	2462 MHz	20.14	19.64	22.91	29.50	Complies
802.11g	2412 MHz	15.03	14.98	18.02	29.50	Complies
	2437 MHz	21.29	20.46	23.91	29.50	Complies
	2462 MHz	14.59	14.59	17.60	29.50	Complies
802.11ac MCS0/Nss1 VHT20	2412 MHz	15.01	14.84	17.94	29.50	Complies
	2437 MHz	21.23	20.45	23.87	29.50	Complies
	2462 MHz	14.58	14.57	17.59	29.50	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	14.15	14.12	17.15	29.50	Complies
	2437 MHz	15.47	15.49	18.49	29.50	Complies
	2452 MHz	13.20	13.27	16.25	29.50	Complies

Note: Antenna gain=6.5dBi > 6dBi, So Power Limit = 30-(6.5-6)=29.50dBm

Temperature	22°C	Humidity	63%
Test Engineer	Nick Peng	Test Date	Jan. 06, 2015
Test Mode	Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 3TX)		

Mode	Frequency	Conducted Power (dBm)				Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Total		
802.11b	2412 MHz	20.00	19.70	20.01	24.68	29.50	Complies
	2437 MHz	22.79	21.21	21.61	26.69	29.50	Complies
	2462 MHz	19.73	19.29	19.71	24.35	29.50	Complies
802.11g	2412 MHz	14.73	14.63	15.02	19.57	29.50	Complies
	2437 MHz	20.06	19.39	19.81	24.53	29.50	Complies
	2462 MHz	14.40	14.47	14.72	19.30	29.50	Complies
802.11ac MCS0/Nss1 VHT20	2412 MHz	14.72	14.74	15.04	19.61	29.50	Complies
	2437 MHz	20.06	19.39	19.81	24.53	29.50	Complies
	2462 MHz	14.33	14.34	14.64	19.21	29.50	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	13.03	12.89	13.38	17.88	29.50	Complies
	2437 MHz	13.84	13.66	13.99	18.60	29.50	Complies
	2452 MHz	12.31	12.20	12.50	17.11	29.50	Complies

Note: Antenna gain=6.5dBi > 6dBi, So Power Limit = 30-(6.5-6)=29.50dBm

Temperature	22°C	Humidity	63%
Test Engineer	Lucas Huang	Test Date	Jan. 06, 2015
Test Mode	Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 1: 8.8, Chain 2: 5.9, Chain 3: 9 dBi / 1TX)		

Mode	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
		Chain 1		
802.11b	2412 MHz	20.17	27.20	Complies
	2437 MHz	20.47	27.20	Complies
	2462 MHz	20.23	27.20	Complies
802.11g	2412 MHz	15.93	27.20	Complies
	2437 MHz	21.07	27.20	Complies
	2462 MHz	15.76	27.20	Complies
802.11ac MCS0/Nss1 VHT20	2412 MHz	16.07	27.20	Complies
	2437 MHz	21.16	27.20	Complies
	2462 MHz	15.83	27.20	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	15.13	27.20	Complies
	2437 MHz	15.51	27.20	Complies
	2452 MHz	14.61	27.20	Complies

Note: Antenna gain = 8.8dBi > 6dBi, So Power Limit = 30-(8.8-6)=27.20dBm

Temperature	22°C	Humidity	63%
Test Engineer	Nick Peng	Test Date	Jan. 06, 2015
Test Mode	Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 1: 8.8, Chain 2: 5.9, Chain 3: 9 dBi / 2TX)		

Mode	Frequency	Conducted Power (dBm)			Max. Limit (dBm)	Result
		Chain 1	Chain 2	Total		
802.11b	2412 MHz	20.17	19.81	23.00	27.20	Complies
	2437 MHz	20.47	19.89	23.20	27.20	Complies
	2462 MHz	20.23	19.64	22.96	27.20	Complies
802.11g	2412 MHz	15.57	15.49	18.54	27.20	Complies
	2437 MHz	21.07	20.36	23.74	27.20	Complies
	2462 MHz	14.91	14.70	17.82	27.20	Complies
802.11ac MCS0/Nss2 VHT20	2412 MHz	15.54	15.49	18.53	27.20	Complies
	2437 MHz	21.16	20.35	23.78	27.20	Complies
	2462 MHz	14.93	14.81	17.88	27.20	Complies
802.11ac MCS0/Nss2 VHT40	2422 MHz	14.64	14.59	17.63	27.20	Complies
	2437 MHz	15.51	15.53	18.53	27.20	Complies
	2452 MHz	13.88	13.72	16.81	27.20	Complies

Note: Antenna gain = 8.8dBi > 6dBi, So Power Limit = 30-(8.8-6)=27.20dBm

Temperature	22°C	Humidity	63%
Test Engineer	Nick Peng	Test Date	Jan. 06, 2015
Test Mode	Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 1: 8.8, Chain 2: 5.9, Chain 3: 9 dBi / 3TX)		

Mode	Frequency	Conducted Power (dBm)				Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Total		
802.11b	2412 MHz	15.52	15.62	15.82	20.43	27.00	Complies
	2437 MHz	18.45	18.48	18.50	23.25	27.00	Complies
	2462 MHz	19.45	19.02	19.45	24.08	27.00	Complies
802.11g	2412 MHz	13.22	13.21	13.57	18.11	27.00	Complies
	2437 MHz	18.06	17.85	17.95	22.73	27.00	Complies
	2462 MHz	14.05	13.92	14.46	18.92	27.00	Complies
802.11ac MCS0/Nss2 VHT20	2412 MHz	13.25	13.13	13.45	18.05	27.00	Complies
	2437 MHz	17.95	17.87	17.93	22.69	27.00	Complies
	2462 MHz	14.20	14.05	14.37	18.98	27.00	Complies
802.11ac MCS0/Nss2 VHT40	2422 MHz	13.02	12.56	13.14	17.68	27.00	Complies
	2437 MHz	14.45	14.20	14.57	19.18	27.00	Complies
	2452 MHz	13.12	13.08	13.38	17.97	27.00	Complies

Note: Antenna gain = 9dBi > 6dBi, So Power Limit = 30-(9-6)=27.00dBm

<For Beamforming Mode>

Temperature	22°C	Humidity	63%
Test Engineer	Nick Peng	Test Date	Jan. 06, 2015
Test Mode	Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 2TX)		

Mode	Frequency	Conducted Power (dBm)			Max. Limit (dBm)	Result
		Chain 1	Chain 2	Total		
802.11g	2412 MHz	14.56	14.50	17.54	27.69	Complies
	2437 MHz	20.59	20.13	23.38	27.69	Complies
	2462 MHz	15.24	15.52	18.39	27.69	Complies
802.11ac MCS0/Nss1 VHT20	2412 MHz	14.51	14.36	17.45	27.69	Complies
	2437 MHz	20.84	20.12	23.51	27.69	Complies
	2462 MHz	15.17	15.42	18.31	27.69	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	12.15	11.83	15.00	27.69	Complies
	2437 MHz	14.62	14.63	17.64	27.69	Complies
	2452 MHz	13.58	13.59	16.60	27.69	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{ss}} \left\{ \sum_{k=1}^{N_{ant}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 8.31 \text{ dBi} > 6 \text{ dBi}$, So Power Limit = 30-(8.31-6)=27.69dBm

Temperature	22°C	Humidity	63%
Test Engineer	Nick Peng	Test Date	Jan. 06, 2015
Test Mode	Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 3TX)		

Mode	Frequency	Conducted Power (dBm)				Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Total		
802.11g	2412 MHz	11.10	10.55	11.14	15.71	25.93	Complies
	2437 MHz	19.58	19.26	19.43	24.20	25.93	Complies
	2462 MHz	14.84	14.87	15.23	19.75	25.93	Complies
802.11ac MCS0/Nss1 VHT20	2412 MHz	11.06	10.50	11.16	15.69	25.93	Complies
	2437 MHz	19.62	19.05	19.49	24.16	25.93	Complies
	2462 MHz	14.73	14.86	15.12	19.68	25.93	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	10.94	10.13	10.72	15.38	25.93	Complies
	2437 MHz	13.84	13.66	13.99	18.60	25.93	Complies
	2452 MHz	13.58	13.59	14.02	18.51	25.93	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{ss}} \left\{ \sum_{k=1}^{N_{ant}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 10.07 \text{ dBi} > 6 \text{ dBi}$, So Power Limit = 30-(10.07-6)=25.93dBm

Temperature	22°C	Humidity	63%
Test Engineer	Nick Peng	Test Date	Jan. 06, 2015
Test Mode	Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 2TX)		

Mode	Frequency	Conducted Power (dBm)			Max. Limit (dBm)	Result
		Chain 1	Chain 2	Total		
802.11g	2412 MHz	15.03	14.98	18.02	26.49	Complies
	2437 MHz	21.29	20.46	23.91	26.49	Complies
	2462 MHz	14.59	14.59	17.60	26.49	Complies
802.11ac MCS0/Nss1 VHT20	2412 MHz	15.01	14.84	17.94	26.49	Complies
	2437 MHz	21.23	20.45	23.87	26.49	Complies
	2462 MHz	14.58	14.57	17.59	26.49	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	14.15	14.12	17.15	26.49	Complies
	2437 MHz	15.47	15.49	18.49	26.49	Complies
	2452 MHz	13.20	13.27	16.25	26.49	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{sub}} \left\{ \sum_{k=1}^{N_{ant}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 9.51 \text{ dBi} > 6 \text{ dBi}$, So Power Limit = 30-(9.51-6)=26.49dBm

Temperature	22°C	Humidity	63%
Test Engineer	Nick Peng	Test Date	Jan. 06, 2015
Test Mode	Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 3TX)		

Mode	Frequency	Conducted Power (dBm)				Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Total		
802.11g	2412 MHz	14.73	14.63	15.02	19.57	24.73	Complies
	2437 MHz	20.06	19.39	19.81	24.53	24.73	Complies
	2462 MHz	14.40	14.47	14.72	19.30	24.73	Complies
802.11ac MCS0/Nss1 VHT20	2412 MHz	14.72	14.74	15.04	19.61	24.73	Complies
	2437 MHz	20.06	19.39	19.81	24.53	24.73	Complies
	2462 MHz	14.33	14.34	14.64	19.21	24.73	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	13.03	12.89	13.38	17.88	24.73	Complies
	2437 MHz	13.84	13.66	13.99	18.60	24.73	Complies
	2452 MHz	12.31	12.20	12.50	17.11	24.73	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{sub}} \left\{ \sum_{k=1}^{N_{ant}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 11.27 \text{ dBi} > 6 \text{ dBi}$, So Power Limit = 30-(11.27-6)=24.73dBm

Temperature	22°C	Humidity	63%
Test Engineer	Nick Peng	Test Date	Jan. 08, 2015
Test Mode	Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 1: 8.8, Chain 2: 5.9, Chain 3: 9 dBi / 2TX)		

Mode	Frequency	Conducted Power (dBm)			Max. Limit (dBm)	Result
		Chain 1	Chain 2	Total		
802.11g	2412 MHz	15.57	15.49	18.54	28.41	Complies
	2437 MHz	21.07	20.36	23.74	28.41	Complies
	2462 MHz	14.91	14.70	17.82	28.41	Complies
802.11ac MCS0/Nss2 VHT20	2412 MHz	15.54	15.49	18.53	28.41	Complies
	2437 MHz	21.16	20.35	23.78	28.41	Complies
	2462 MHz	14.93	14.81	17.88	28.41	Complies
802.11ac MCS0/Nss2 VHT40	2422 MHz	14.64	14.59	17.63	28.41	Complies
	2437 MHz	15.51	15.53	18.53	28.41	Complies
	2452 MHz	13.88	13.72	16.81	28.41	Complies

Note: Antenna gain = 7.59dBi > 6dBi, So Power Limit = 30-(7.59-6)=28.41dBm

Temperature	22°C	Humidity	63%
Test Engineer	Lucas Huang	Test Date	Jan. 06, 2015
Test Mode	Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 1: 8.8, Chain 2: 5.9, Chain 3: 9 dBi / 3TX)		

Mode	Frequency	Conducted Power (dBm)				Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Total		
802.11g	2412 MHz	13.22	13.21	13.57	18.11	26.13	Complies
	2437 MHz	18.06	17.85	17.95	22.73	26.13	Complies
	2462 MHz	14.05	13.92	14.46	18.92	26.13	Complies
802.11ac MCS0/Nss2 VHT20	2412 MHz	13.25	13.13	13.45	18.05	26.13	Complies
	2437 MHz	17.95	17.87	17.93	22.69	26.13	Complies
	2462 MHz	14.20	14.05	14.37	18.98	26.13	Complies
802.11ac MCS0/Nss2 VHT40	2422 MHz	13.02	12.56	13.14	17.68	26.13	Complies
	2437 MHz	14.45	14.20	14.57	19.18	26.13	Complies
	2452 MHz	13.12	13.08	13.38	17.97	26.13	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SB}} \left\{ \sum_{k=1}^{N_{DET}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 9.87\text{dBi} > 6\text{dBi}$, So Power Limit = 30-(9.87-6)=26.13dBm

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

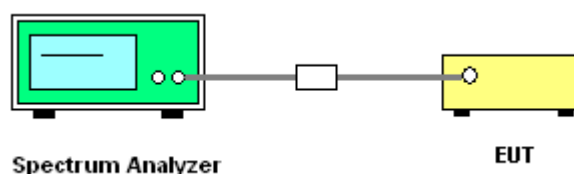
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Set the span to 1.5 times the DTS channel bandwidth.
RBW	$3 \text{ kHz} \leq \text{RBW} \leq 100\text{kHz}$
VBW	$\geq 3 \times \text{RBW}$
Detector	Peak
Trace	Max Hold
Sweep Time	Auto couple

4.3.3. Test Procedures

1. Test was performed in accordance with KDB 558074 D01 v03r02 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 $\geq 2 \times \text{span/RBW}$ (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 $\leq 8 \text{ dBm}$.

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	22°C	Humidity	63%
Test Engineer	Nick Peng		
Test Mode	Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 1TX)		

Mode	Frequency	Power Density (dBm/3kHz)	Power Density Limit (dBm/3kHz)	Result
		Chain 2		
802.11b	2412 MHz	-1.18	8.00	Complies
	2437 MHz	0.00	8.00	Complies
	2462 MHz	-1.91	8.00	Complies
802.11ac MCS0/Nss1 VHT20	2412 MHz	-9.25	8.00	Complies
	2437 MHz	-3.84	8.00	Complies
	2462 MHz	-9.72	8.00	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	-12.66	8.00	Complies
	2437 MHz	-11.02	8.00	Complies
	2452 MHz	-13.66	8.00	Complies

Temperature	22°C	Humidity	63%
Test Engineer	Nick Peng		
Test Mode	Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 2TX)		

Mode	Frequency	Power Density (dBm/3kHz)			Power Density Limit (dBm/3kHz)	Result
		Chain 1	Chain 2	Total		
802.11b	2412 MHz	-2.35	-3.85	-0.03	5.69	Complies
	2437 MHz	0.11	-1.69	2.31	5.69	Complies
	2462 MHz	-3.14	-4.74	-0.86	5.69	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{AQ}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 8.31 \text{ dBi} > 6 \text{ dBi}$, So Power Density Limit = $8 - (8.31 - 6) = 5.69 \text{ dBm/3kHz}$

Temperature	22°C	Humidity	63%
Test Engineer	Nick Peng		
Test Mode	Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 3TX)		

Mode	Frequency	Power Density (dBm/3kHz)				Power Density Limit (dBm/3kHz)	Result
		Chain 1	Chain 2	Chain 3	Total		
802.11b	2412 MHz	-4.92	-7.31	-5.63	-1.07	3.93	Complies
	2437 MHz	-1.26	-0.57	-1.07	3.81	3.93	Complies
	2462 MHz	-6.18	-6.28	-5.87	-1.34	3.93	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{ant}} \left\{ \sum_{k=1}^{N_{freq}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 10.07 \text{dBi} > 6 \text{dBi}$, So Power Density Limit = $8 - (10.07 - 6) = 3.93 \text{dBm/3kHz}$

Temperature	22°C	Humidity	63%
Test Engineer	Nick Peng		
Test Mode	Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 1TX)		

Mode	Frequency	Power Density (dBm/3kHz)	Power Density Limit (dBm/3kHz)	Result
		Chain 2		
802.11b	2412 MHz	-2.42	7.50	Complies
	2437 MHz	-1.13	7.50	Complies
	2462 MHz	-2.46	7.50	Complies
802.11ac MCS0/Nss1 VHT20	2412 MHz	-9.28	7.50	Complies
	2437 MHz	-4.38	7.50	Complies
	2462 MHz	-10.23	7.50	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	-13.74	7.50	Complies
	2437 MHz	-11.98	7.50	Complies
	2452 MHz	-14.49	7.50	Complies

Antenna Gain=6.5dBi>6dBi, so Power Density Limit=8-(6.50-6)=7.50dBm/3kHz

Temperature	22°C	Humidity	63%
Test Engineer	Nick Peng		
Test Mode	Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 2TX)		

Mode	Frequency	Power Density (dBm/3kHz)			Power Density Limit (dBm/3kHz)	Result
		Chain 1	Chain 2	Total		
802.11b	2412 MHz	-1.96	-0.41	1.89	4.49	Complies
	2437 MHz	0.89	-0.73	3.17	4.49	Complies
	2462 MHz	-1.76	-1.65	1.31	4.49	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{ch}} \left\{ \sum_{k=1}^{N_{ch}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 9.51 \text{ dBi} > 6 \text{ dBi}$, So Power Density Limit = $8 - (9.51 - 6) = 4.49 \text{ dBm/3kHz}$

Temperature	22°C	Humidity	63%
Test Engineer	Nick Peng		
Test Mode	Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 3TX)		

Mode	Frequency	Power Density (dBm/3kHz)				Power Density Limit (dBm/3kHz)	Result
		Chain 1	Chain 2	Chain 3	Total		
802.11b	2412 MHz	-2.92	-1.98	-2.26	2.40	2.73	Complies
	2437 MHz	-1.25	-2.41	-3.28	2.54	2.73	Complies
	2462 MHz	-3.43	-3.18	-2.50	1.75	2.73	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{ch}} \left\{ \sum_{k=1}^{N_{ch}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 11.27 \text{ dBi} > 6 \text{ dBi}$, So Power Density Limit = $8 - (11.27 - 6) = 2.73 \text{ dBm/3kHz}$

Temperature	22°C	Humidity	63%
Test Engineer	Lucas Huang		
Test Mode	Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 1: 8.8, Chain 2: 5.9, Chain 3: 9 dBi / 1TX)		

Mode	Frequency	Power Density (dBm/3kHz)	Power Density Limit (dBm/3kHz)	Result
		Chain 1		
802.11b	2412 MHz	-0.90	5.20	Complies
	2437 MHz	-0.38	5.20	Complies
	2462 MHz	-1.40	5.20	Complies
802.11ac MCS0/Nss1 VHT20	2412 MHz	-8.60	5.20	Complies
	2437 MHz	-4.01	5.20	Complies
	2462 MHz	-9.19	5.20	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	-12.75	5.20	Complies
	2437 MHz	-12.37	5.20	Complies
	2452 MHz	-10.85	5.20	Complies

Antenna Gain=8.8dBi>6dBi, so Power Density Limit=8-(8.8-6)=5.20dBm/3kHz

Temperature	22°C	Humidity	63%
Test Engineer	Nick Peng		
Test Mode	Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 1: 8.8, Chain 2: 5.9, Chain 3: 9 dBi / 2TX)		

Mode	Frequency	Power Density (dBm/3kHz)			Power Density Limit (dBm/3kHz)	Result
		Chain 1	Chain 2	Total		
802.11b	2412 MHz	-2.01	-3.44	0.34	6.41	Complies
	2437 MHz	-1.77	-2.39	0.94	6.41	Complies
	2462 MHz	-2.44	-3.59	0.03	6.41	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{AS}} \left\{ \sum_{k=1}^{N_{AQ}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 7.59\text{dBi} > 6\text{dBi}$, So Power Density Limit = 8-(7.59-6)=6.41 dBm/3kHz

Temperature	22°C	Humidity	63%
Test Engineer	Nick Peng		
Test Mode	Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 1: 8.8, Chain 2: 5.9, Chain 3: 9 dBi / 3TX)		

Mode	Frequency	Power Density (dBm/3kHz)				Power Density Limit (dBm/3kHz)	Result
		Chain 1	Chain 2	Chain 3	Total		
802.11b	2412 MHz	-4.19	-5.81	-6.45	-0.61	4.13	Complies
	2437 MHz	-3.74	-4.26	-4.88	0.50	4.13	Complies
	2462 MHz	-3.40	-3.35	-4.36	1.09	4.13	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{sk}} \left\{ \sum_{k=1}^{N_{sk}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 9.87\text{dBi} > 6\text{dBi}$, So Power Density Limit = $8 - (9.87 - 6) = 4.13\text{dBm/3kHz}$

<For Beamforming Mode>

Temperature	22°C	Humidity	63%
Test Engineer	Nick Peng		
Test Mode	Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 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	-11.24	-11.67	-8.44	5.69	Complies
	2437 MHz	-4.42	-5.92	-2.10	5.69	Complies
	2462 MHz	-10.26	-10.58	-7.41	5.69	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	-16.59	-17.21	-13.88	5.69	Complies
	2437 MHz	-13.87	-13.54	-10.69	5.69	Complies
	2452 MHz	-13.74	-14.19	-10.95	5.69	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SA}} \left\{ \sum_{k=1}^{N_{AQ}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 8.31 \text{ dBi} > 6 \text{ dBi}$, So Power Density Limit = $8 - (8.31 - 6) = 5.69 \text{ dBm/3kHz}$

Temperature	22°C	Humidity	63%
Test Engineer	Nick Peng		
Test Mode	Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 3TX)		

Mode	Frequency	Power Density (dBm/3kHz)				Power Density Limit (dBm/3kHz)	Result
		Chain 1	Chain 2	Chain 3	Total		
802.11ac MCS0/Nss1 VHT20	2412 MHz	-13.69	-14.57	-13.83	-9.24	3.93	Complies
	2437 MHz	-5.85	-5.83	-6.16	-1.17	3.93	Complies
	2462 MHz	-9.27	-9.72	-9.69	-4.78	3.93	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	-16.95	-16.95	-17.05	-12.21	3.93	Complies
	2437 MHz	-14.34	-13.10	-13.18	-8.73	3.93	Complies
	2452 MHz	-14.00	-13.99	-12.83	-8.80	3.93	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SA}} \left\{ \sum_{k=1}^{N_{AQ}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 10.07 \text{ dBi} > 6 \text{ dBi}$, So Power Density Limit = $8 - (10.07 - 6) = 3.93 \text{ dBm/3kHz}$

Temperature	22°C	Humidity	63%
Test Engineer	Nick Peng		
Test Mode	Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 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	-9.50	-10.39	-6.91	4.49	Complies
	2437 MHz	-3.60	-4.95	-1.21	4.49	Complies
	2462 MHz	-10.47	-8.70	-6.49	4.49	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	-11.57	-12.60	-9.04	4.49	Complies
	2437 MHz	-11.59	-10.41	-7.95	4.49	Complies
	2452 MHz	-14.66	-13.44	-11.00	4.49	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{ch}} \left\{ \sum_{k=1}^{N_{ant}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 9.51 \text{ dBi} > 6 \text{ dBi}$, So Power Density Limit = $8 - (9.51 - 6) = 4.49 \text{ dBm/3kHz}$

Temperature	22°C	Humidity	63%
Test Engineer	Nick Peng		
Test Mode	Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 3TX)		

Mode	Frequency	Power Density (dBm/3kHz)				Power Density Limit (dBm/3kHz)	Result
		Chain 1	Chain 2	Chain 3	Total		
802.11ac MCS0/Nss1 VHT20	2412 MHz	-9.68	-9.17	-9.94	-4.81	2.73	Complies
	2437 MHz	-4.82	-6.01	-6.48	-0.94	2.73	Complies
	2462 MHz	-8.94	-9.70	-9.96	-4.74	2.73	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	-13.21	-12.38	-13.54	-8.24	2.73	Complies
	2437 MHz	-13.18	-12.71	-13.97	-8.48	2.73	Complies
	2452 MHz	-13.96	-14.60	-15.21	-9.79	2.73	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{ch}} \left\{ \sum_{k=1}^{N_{ant}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 11.27 \text{ dBi} > 6 \text{ dBi}$, So Power Density Limit = $8 - (11.27 - 6) = 2.73 \text{ dBm/3kHz}$

Temperature	22°C	Humidity	63%
Test Engineer	Nick Peng		
Test Mode	Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 1: 8.8, Chain 2: 5.9, Chain 3: 9 dBi / 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	-9.97	-8.86	-6.37	6.41	Complies
	2437 MHz	-4.69	-5.57	-2.10	6.41	Complies
	2462 MHz	-10.35	-9.70	-7.00	6.41	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	-13.04	-13.05	-10.03	6.41	Complies
	2437 MHz	-12.51	-13.12	-9.79	6.41	Complies
	2452 MHz	-14.78	-14.84	-11.80	6.41	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{ANT}} \left\{ \sum_{k=1}^{N_{CH}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 7.59\text{dBi} > 6\text{dBi}$, So Power Density Limit = $8 - (7.59 - 6) = 6.41\text{dBm/3kHz}$

Temperature	22°C	Humidity	63%
Test Engineer	Lucas Huang		
Test Mode	Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 1: 8.8, Chain 2: 5.9, Chain 3: 9 dBi / 3TX)		

Mode	Frequency	Power Density (dBm/3kHz)				Power Density Limit (dBm/3kHz)	Result
		Chain 1	Chain 2	Chain 3	Total		
802.11ac MCS0/Nss1 VHT20	2412 MHz	-11.69	-11.67	-10.95	-6.65	4.13	Complies
	2437 MHz	-5.93	-6.78	-6.68	-1.68	4.13	Complies
	2462 MHz	-11.23	-10.51	-10.48	-5.96	4.13	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	-14.78	-13.99	-15.74	-10.01	4.13	Complies
	2437 MHz	-13.76	-13.12	-12.30	-8.25	4.13	Complies
	2452 MHz	-13.61	-14.96	-13.54	-9.22	4.13	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{ANT}} \left\{ \sum_{k=1}^{N_{CH}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 9.87\text{dBi} > 6\text{dBi}$, So Power Density Limit = $8 - (9.87 - 6) = 4.13\text{dBm/3kHz}$

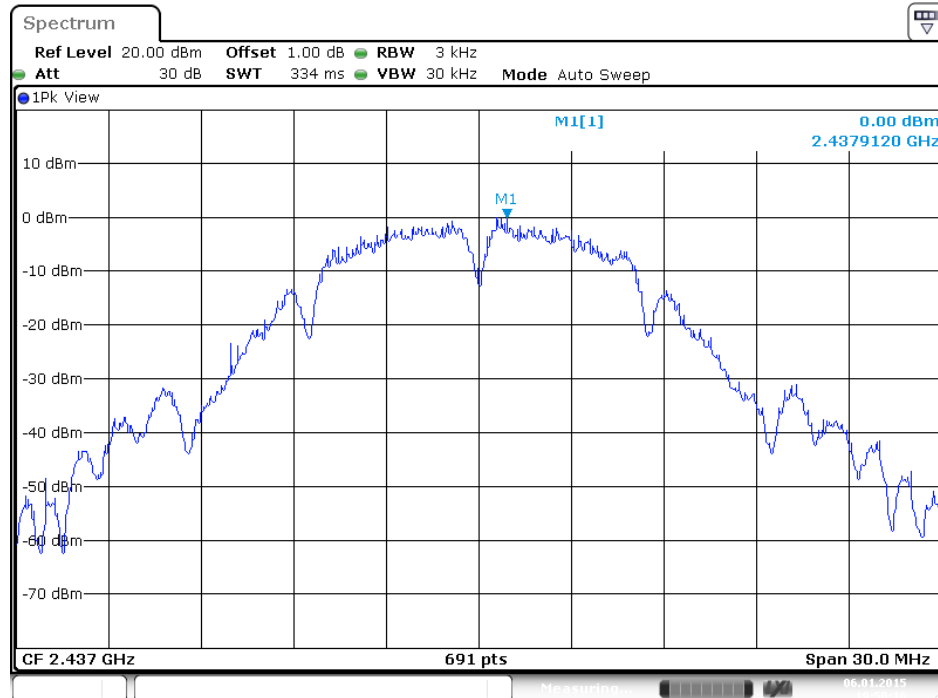
Note: All the test values were listed in the report.

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

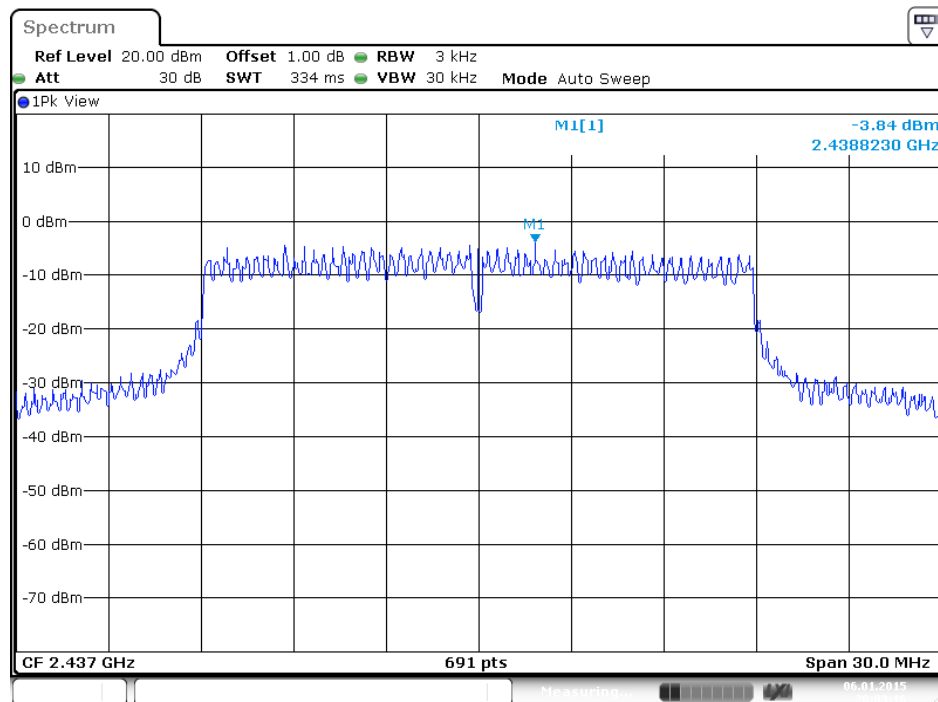
<For Non-Beamforming Mode>

Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 1TX)

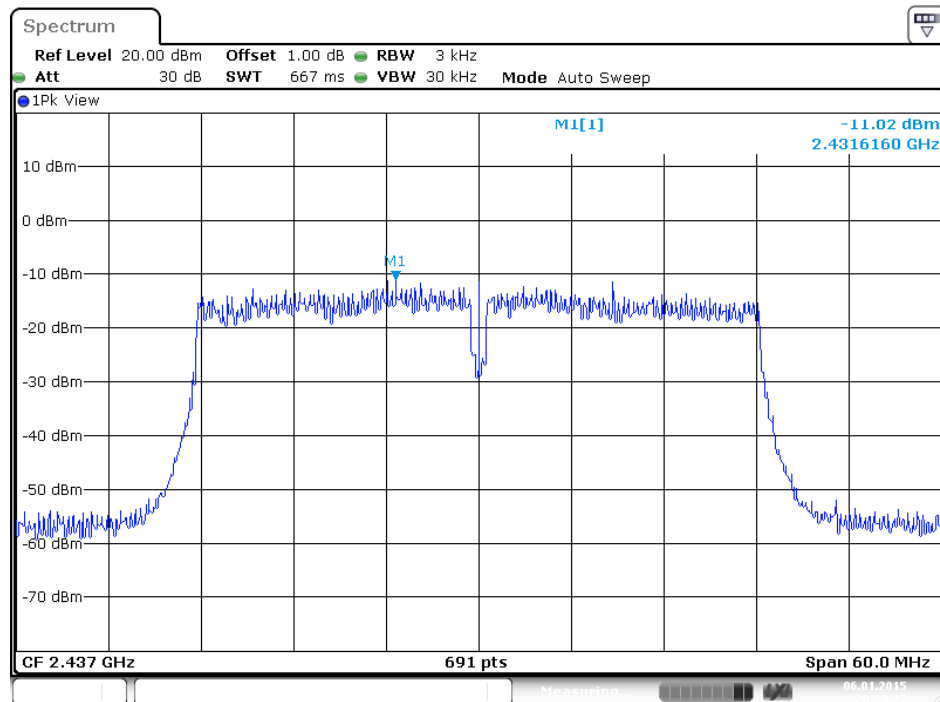
Power Density Plot on Configuration IEEE 802.11b / 2437 MHz / Chain 2



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



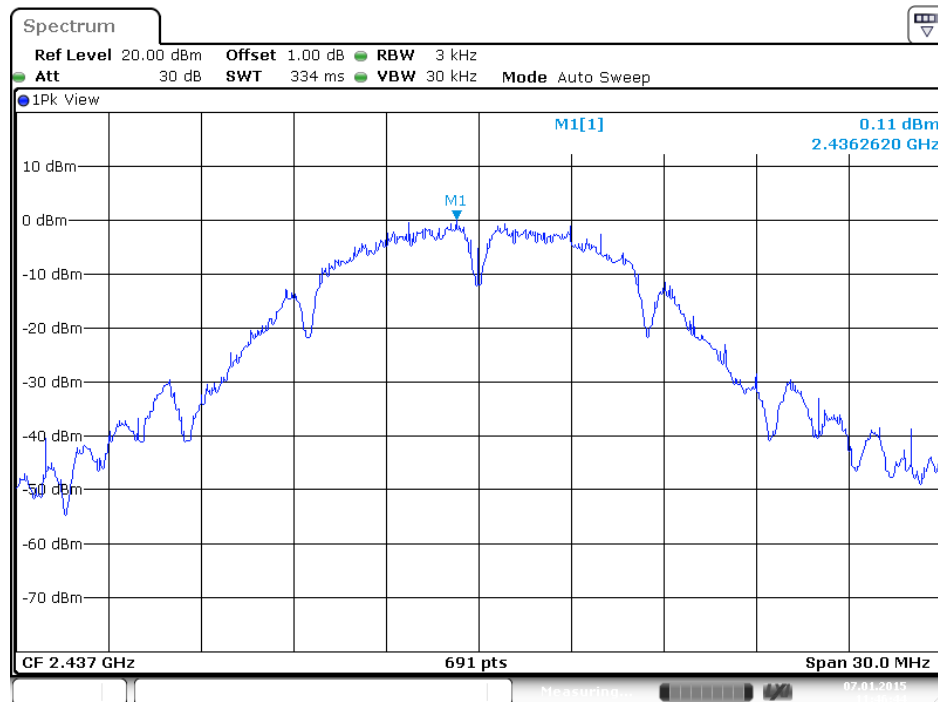
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2437 MHz / Chain 2



Date: 6 JAN 2015 20:09:27

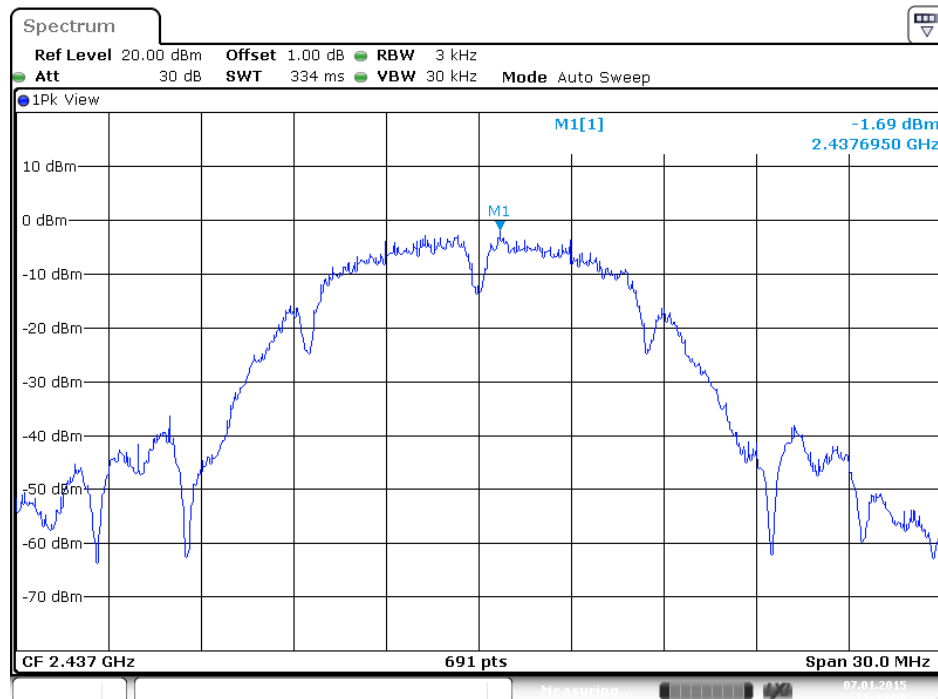
Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 2TX)

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



Date: 7.JAN 2015 11:46:44

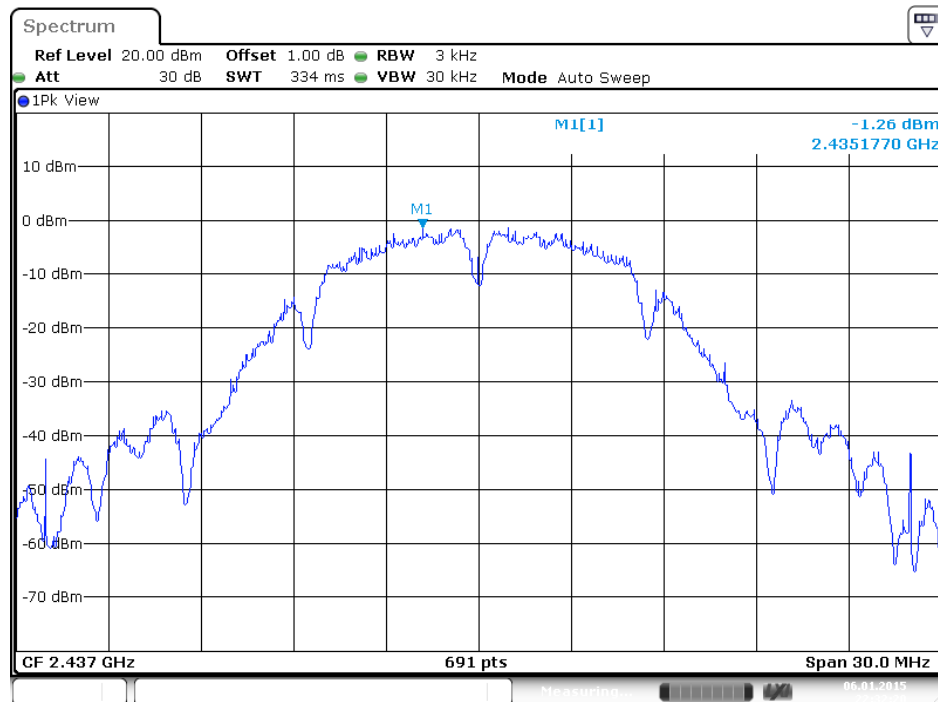
Power Density Plot on Configuration IEEE 802.11b / 2437 MHz / Chain 2



Date: 7.JAN 2015 11:44:58

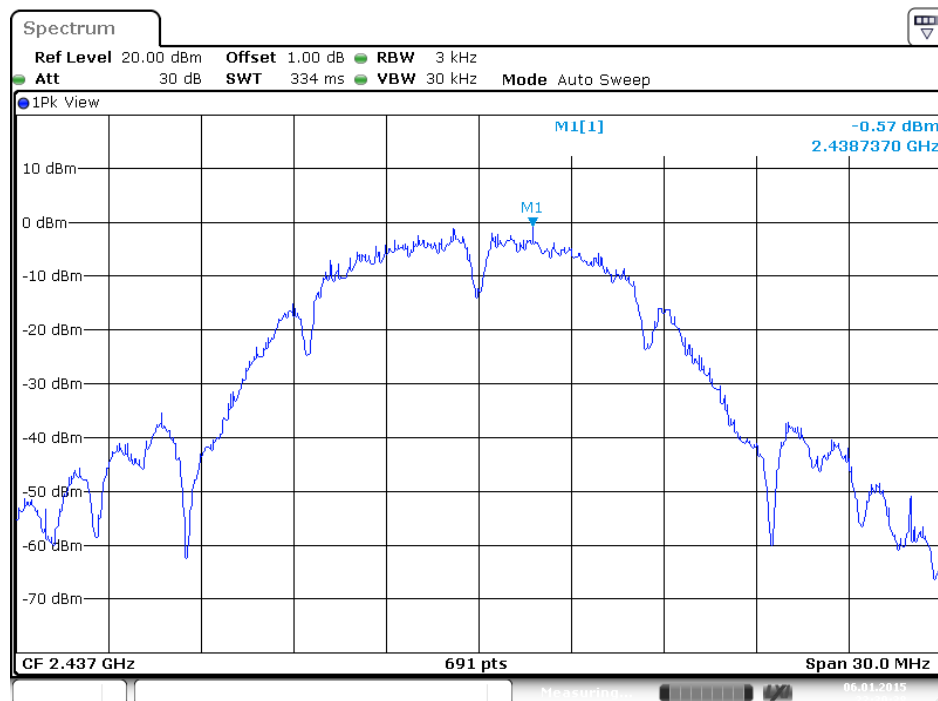
Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 3TX)

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



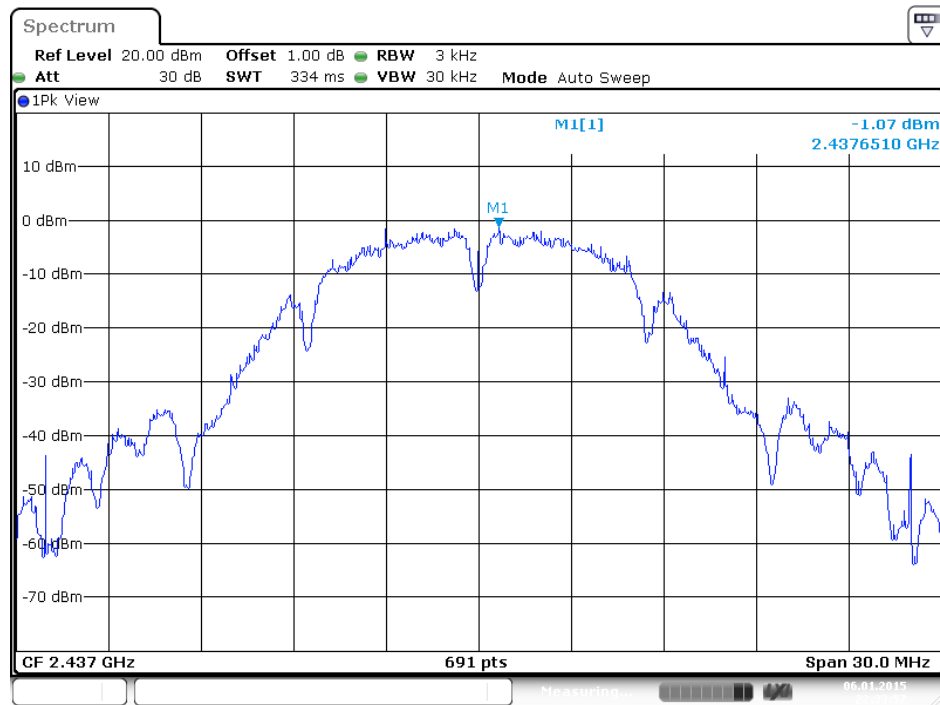
Date: 6 JAN 2015 22:32:20

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



Date: 6 JAN 2015 22:30:38

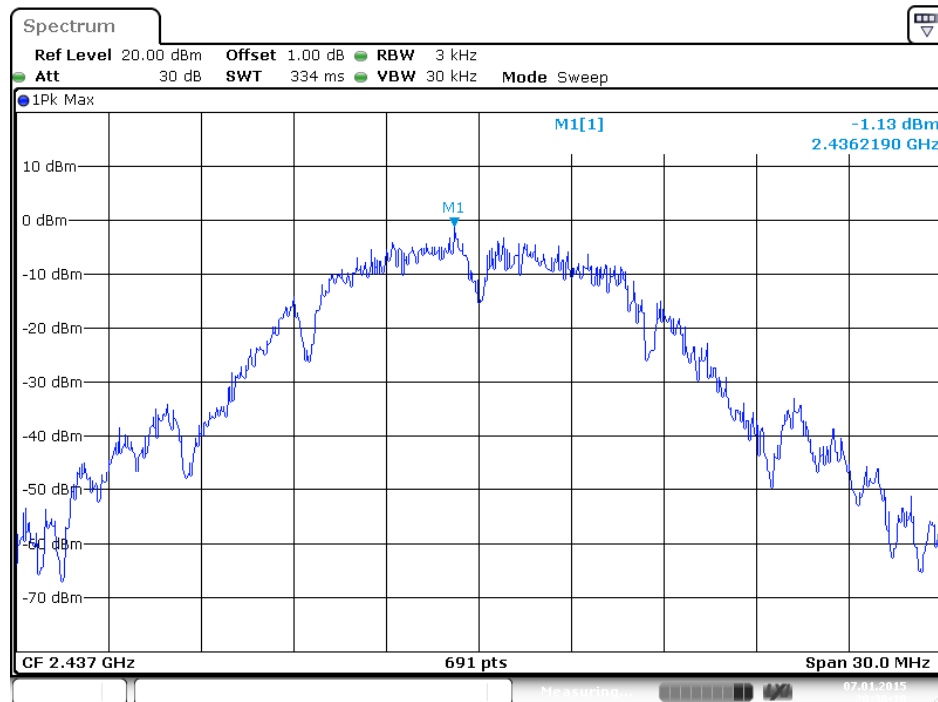
Power Density Plot on Configuration IEEE 802.11b / 2437 MHz / Chain 3



Date: 6 JAN 2015 22:33:57

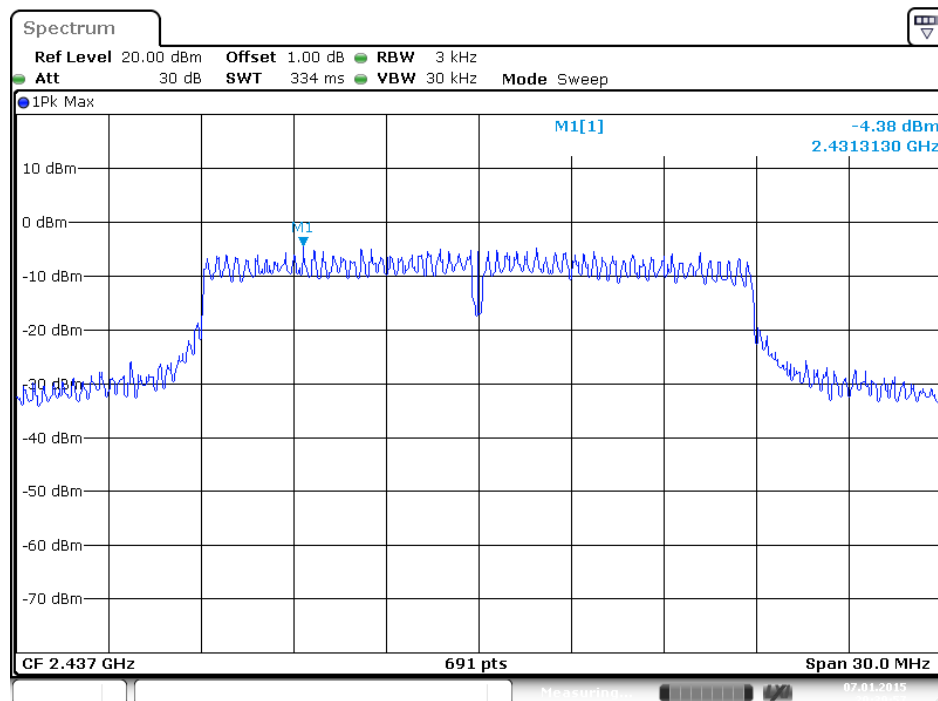
Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 1TX)

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



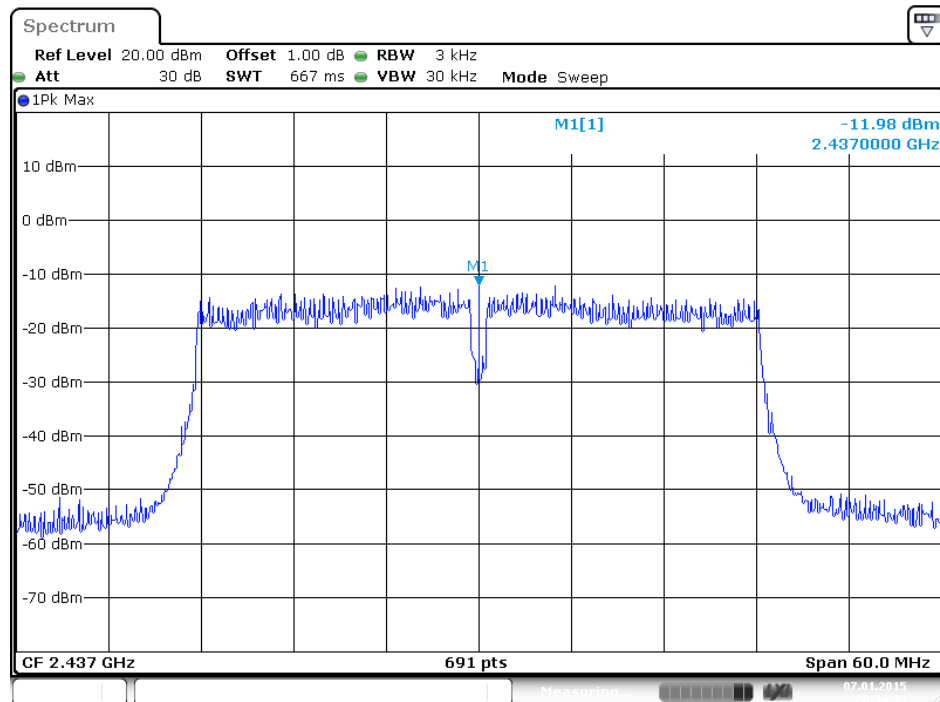
Date: 7.JAN 2015 20:38:11

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



Date: 7.JAN 2015 20:39:57

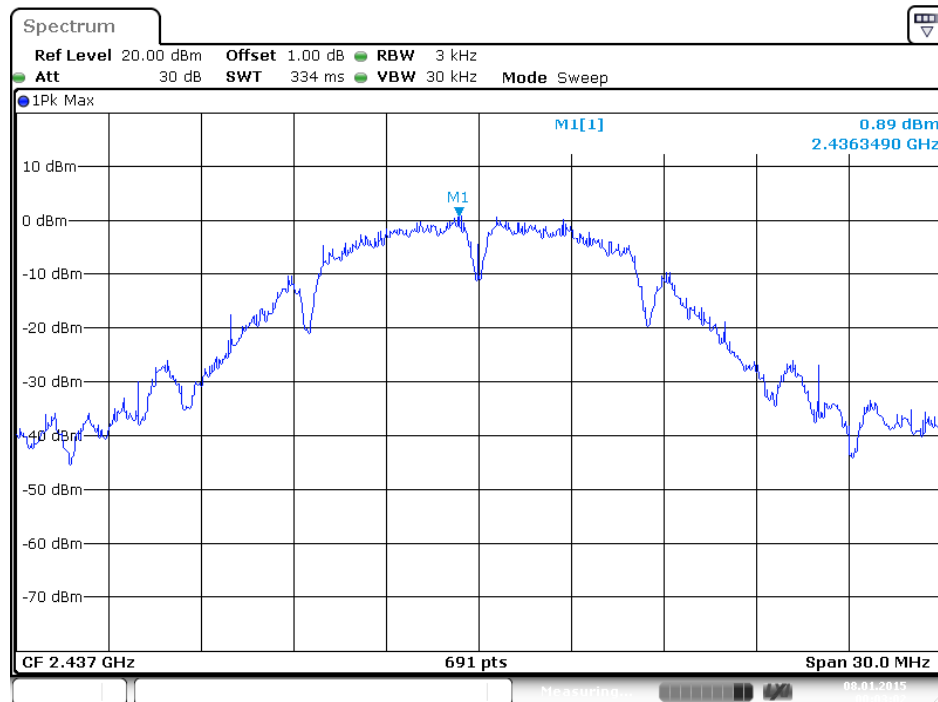
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2437 MHz / Chain 2



Date: 7.JAN.2015 20:44:33

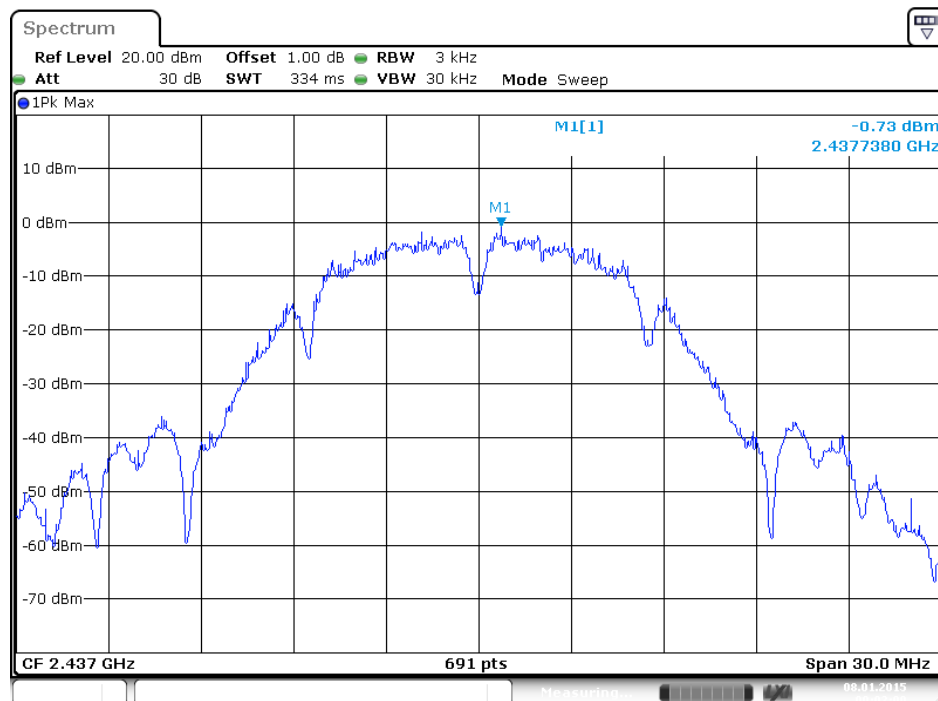
Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 2TX)

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



Date: 8 JAN 2015 00:03:02

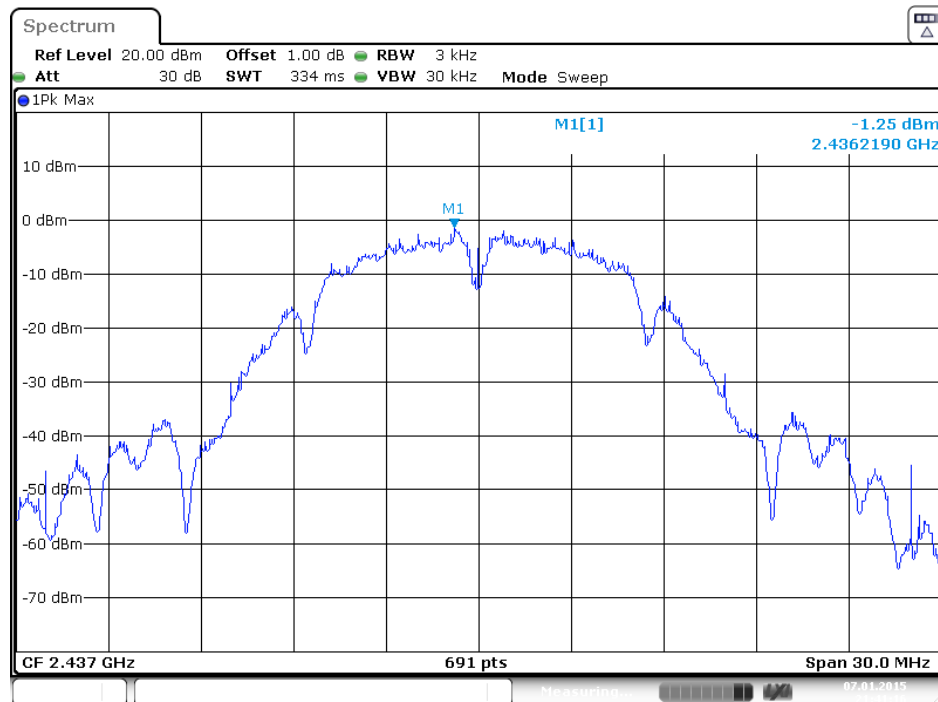
Power Density Plot on Configuration IEEE 802.11b / 2437 MHz / Chain 2



Date: 8 JAN 2015 00:02:01

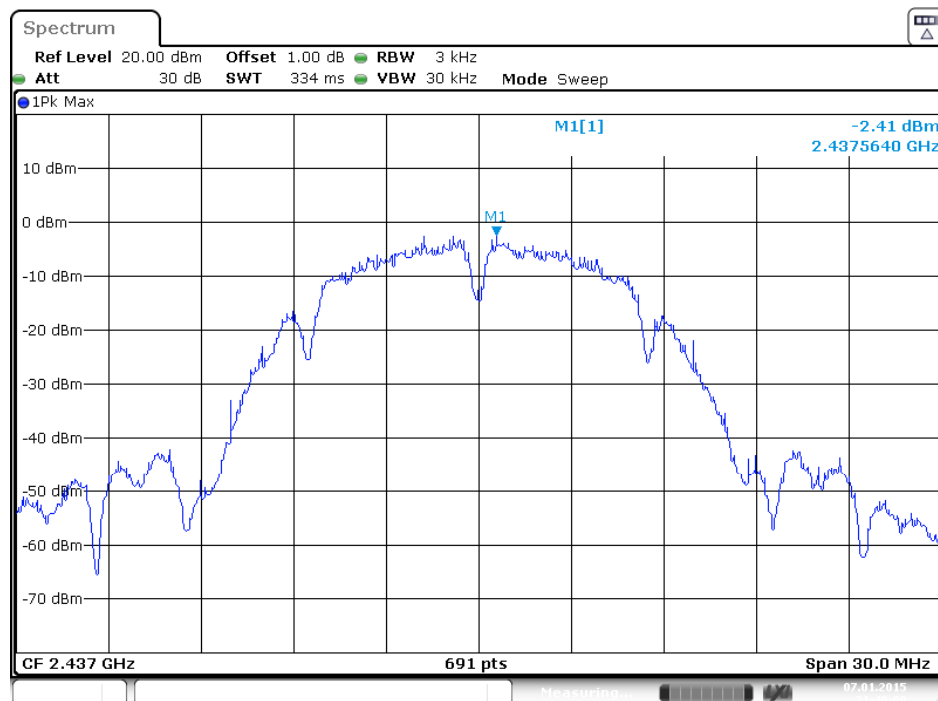
Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 3TX)

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



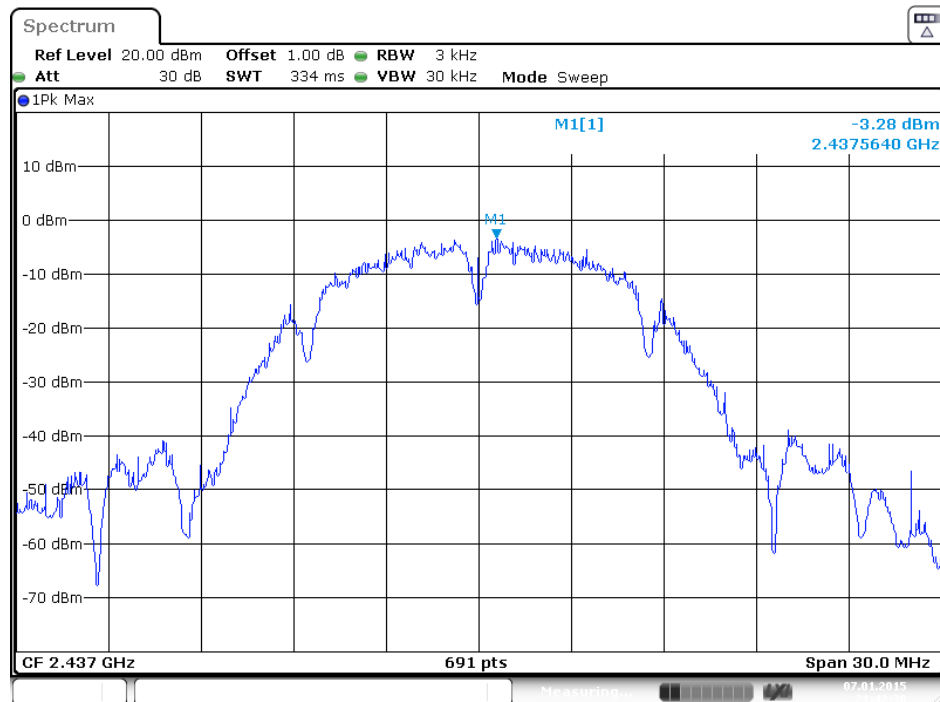
Date: 7.JAN 2015 21:41:16

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



Date: 7.JAN 2015 21:40:00

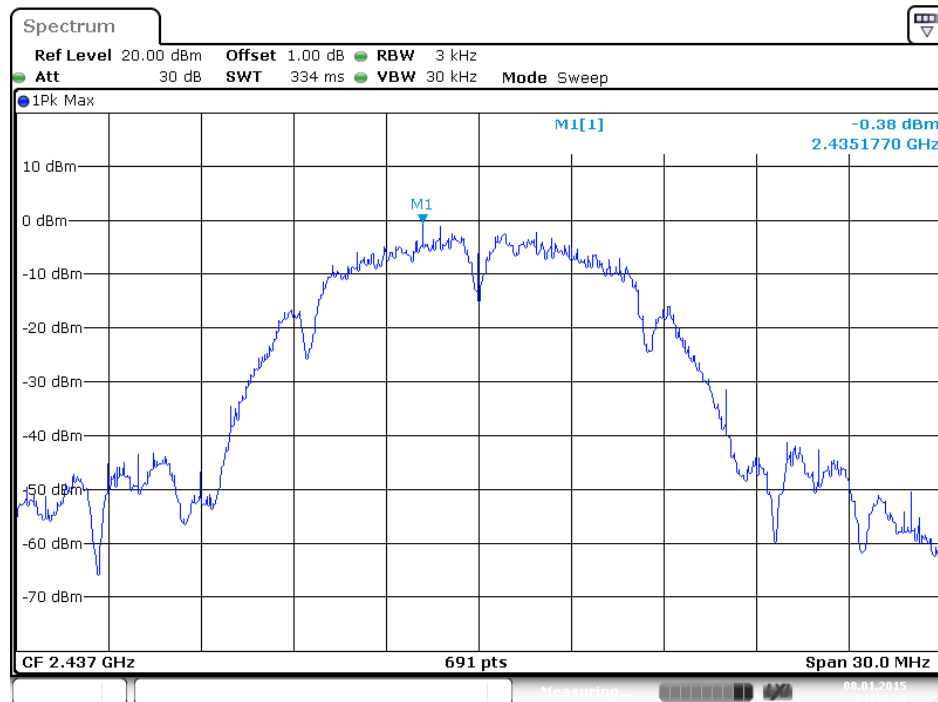
Power Density Plot on Configuration IEEE 802.11b / 2437 MHz / Chain 3



Date: 7.JAN.2015 21:42:30

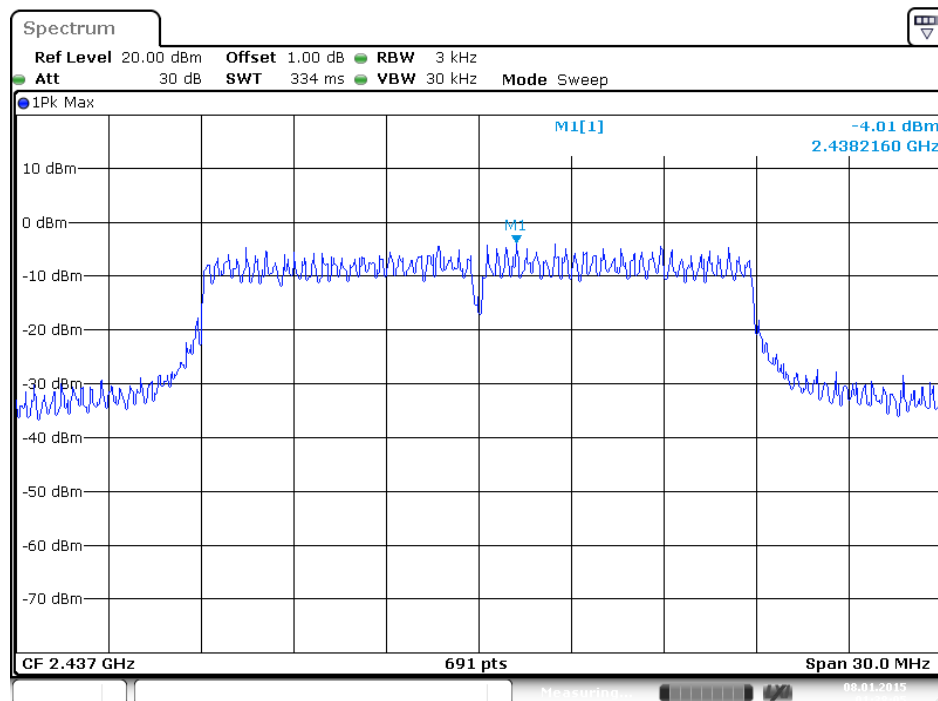
Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 1: 8.8, Chain 2: 5.9, Chain 3: 9 dBi / 1TX)

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



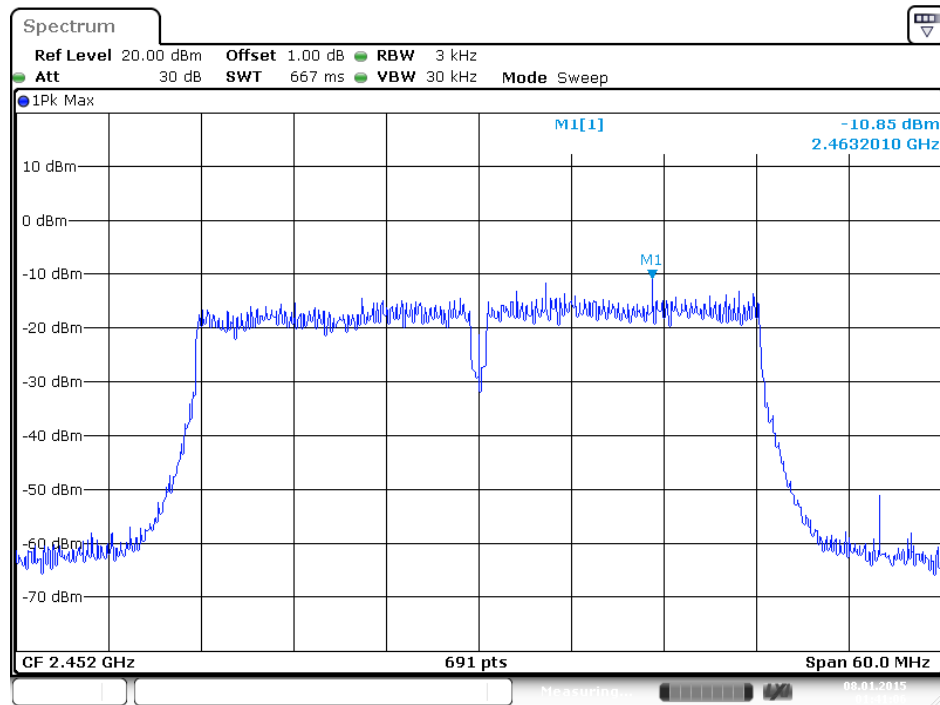
Date: 8 JAN 2015 01:35:23

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



Date: 8 JAN 2015 01:38:05

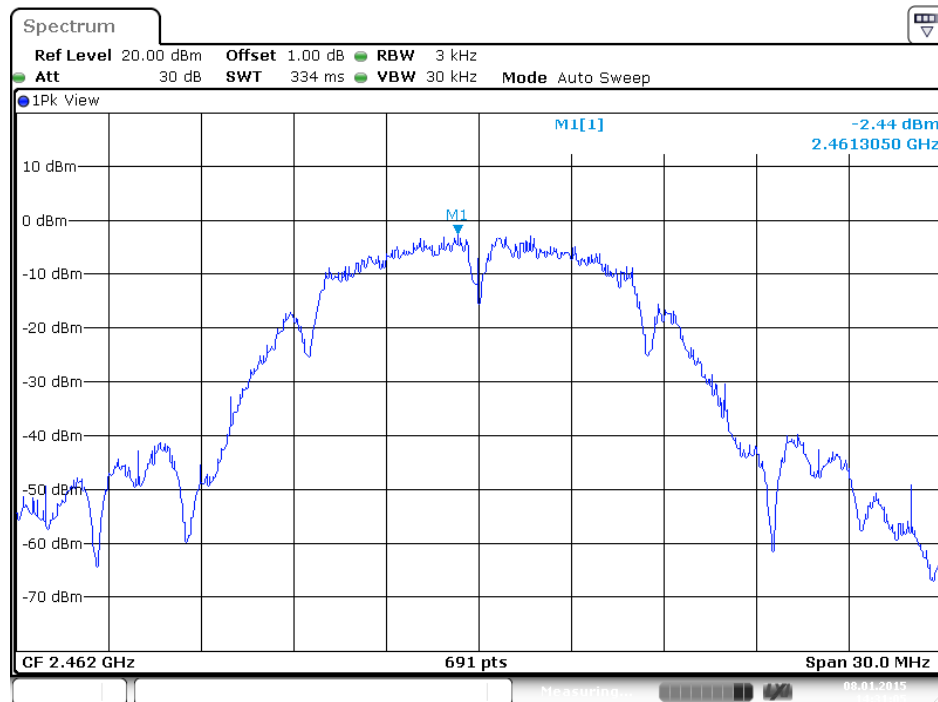
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2452 MHz / Chain 1



Date: 8 JAN 2015 01:41:05

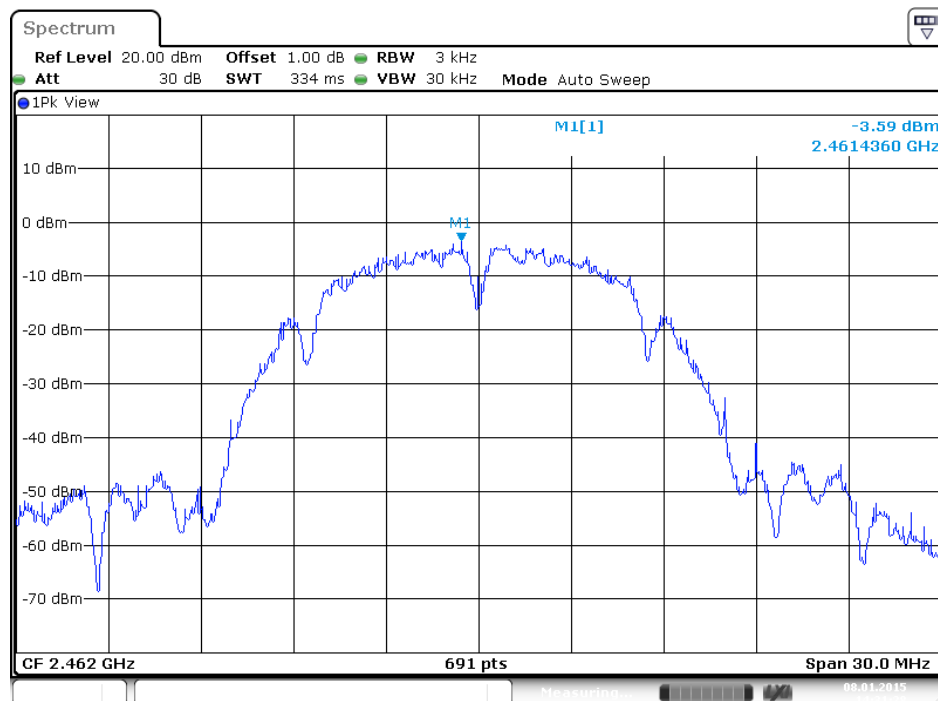
Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 1: 8.8, Chain 2: 5.9, Chain 3: 9 dBi / 2TX)

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



Date: 8 JAN 2015 14:31:05

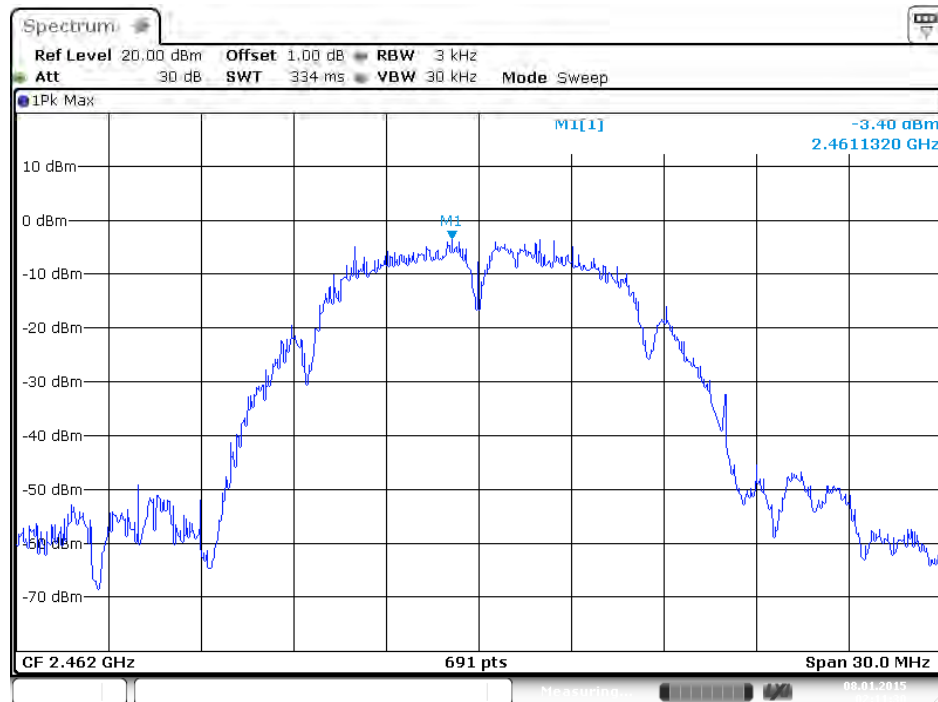
Power Density Plot on Configuration IEEE 802.11b / 2462 MHz / Chain 2



Date: 8 JAN 2015 14:31:28

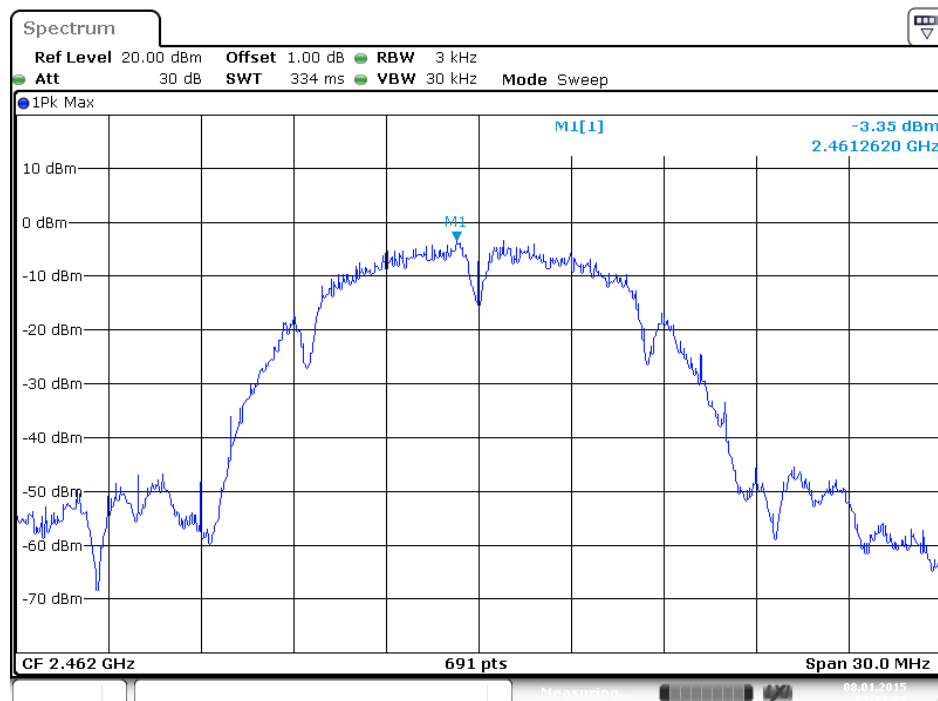
Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 1: 8.8, Chain 2: 5.9, Chain 3: 9 dBi / 3TX)

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



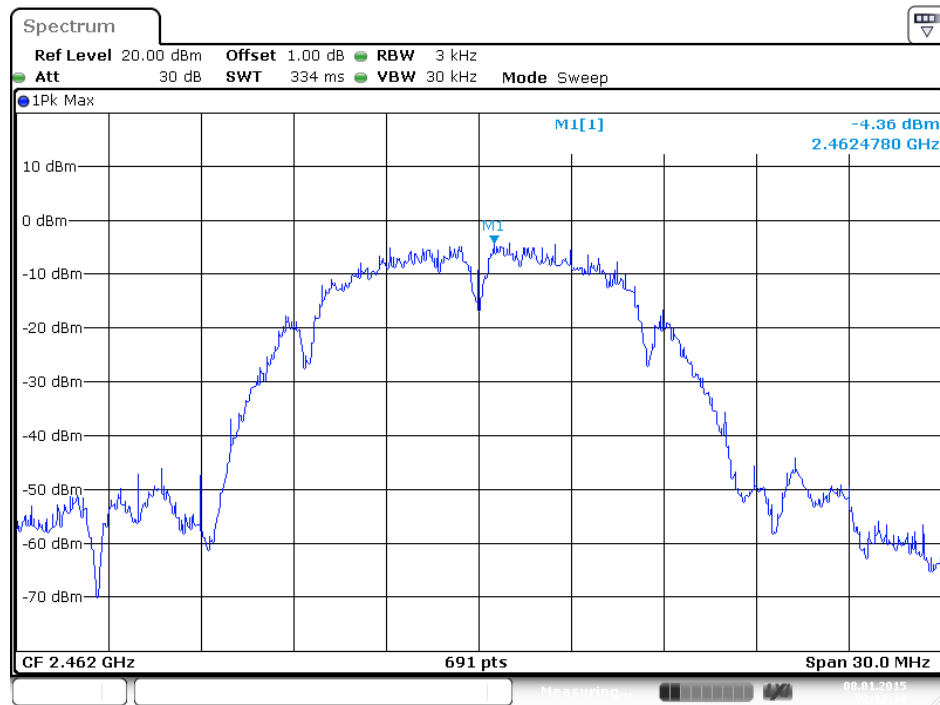
Date: 8 JAN 2015 02:11:30

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



Date: 8 JAN 2015 02:12:05

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

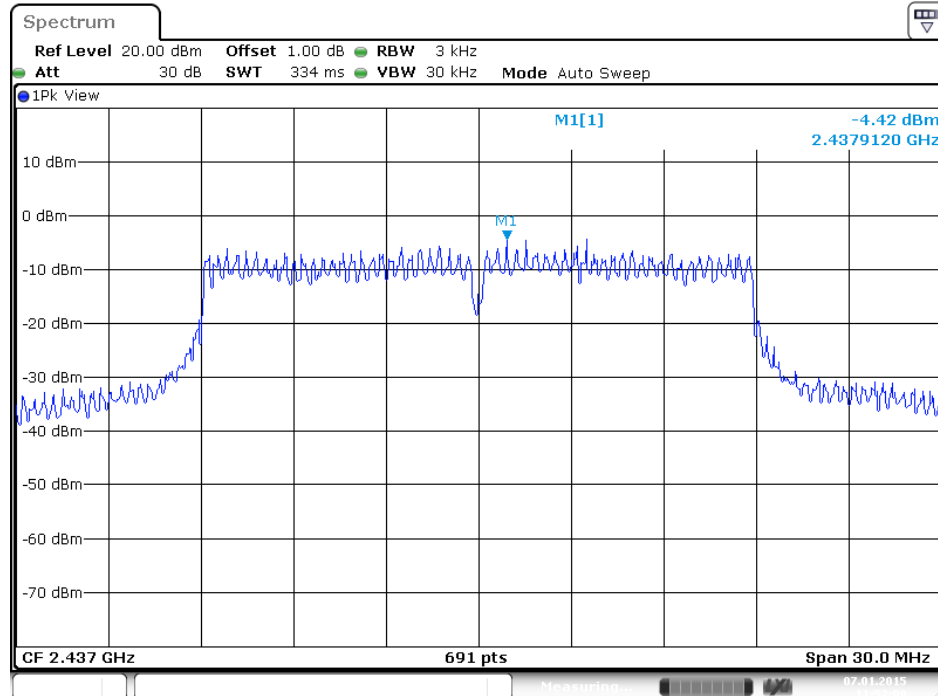


Date: 8 JAN 2015 02:12:34

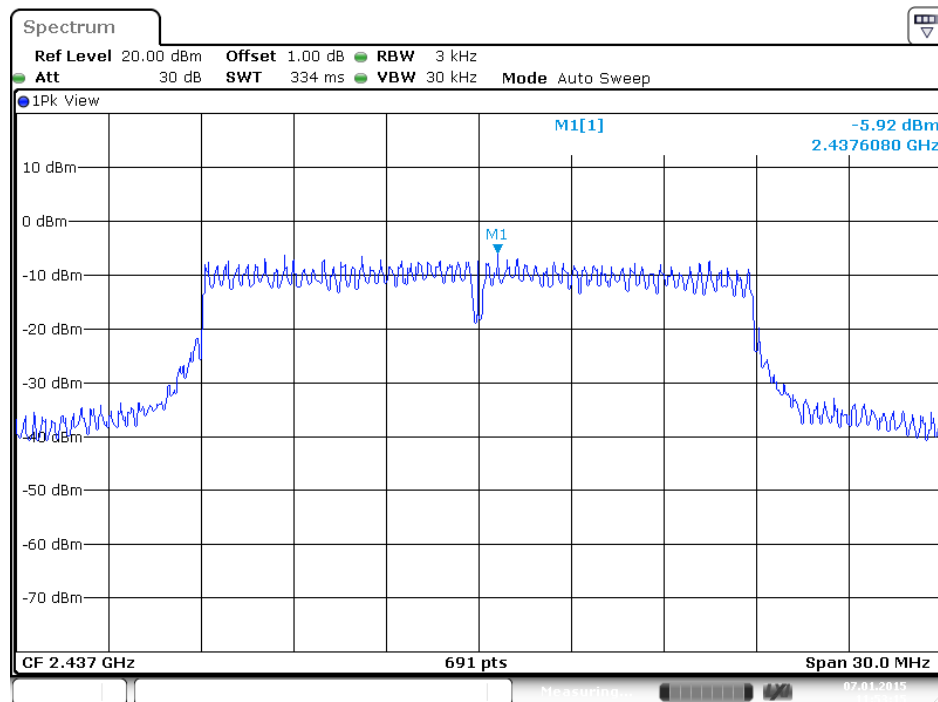
<For Beamforming Mode>

Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 2TX)

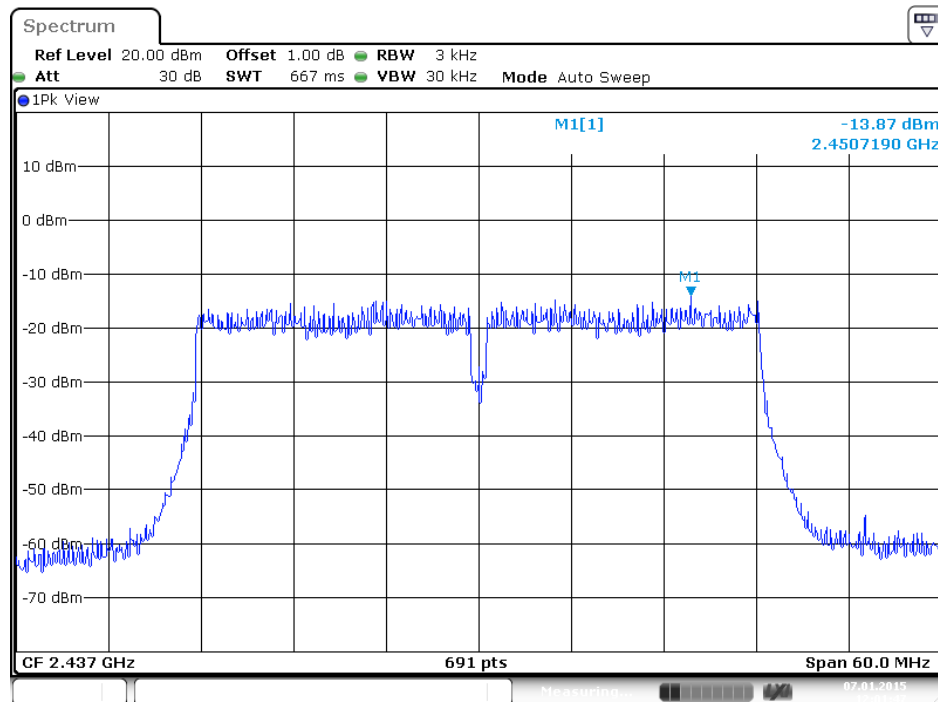
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 2437 MHz / Chain 1



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

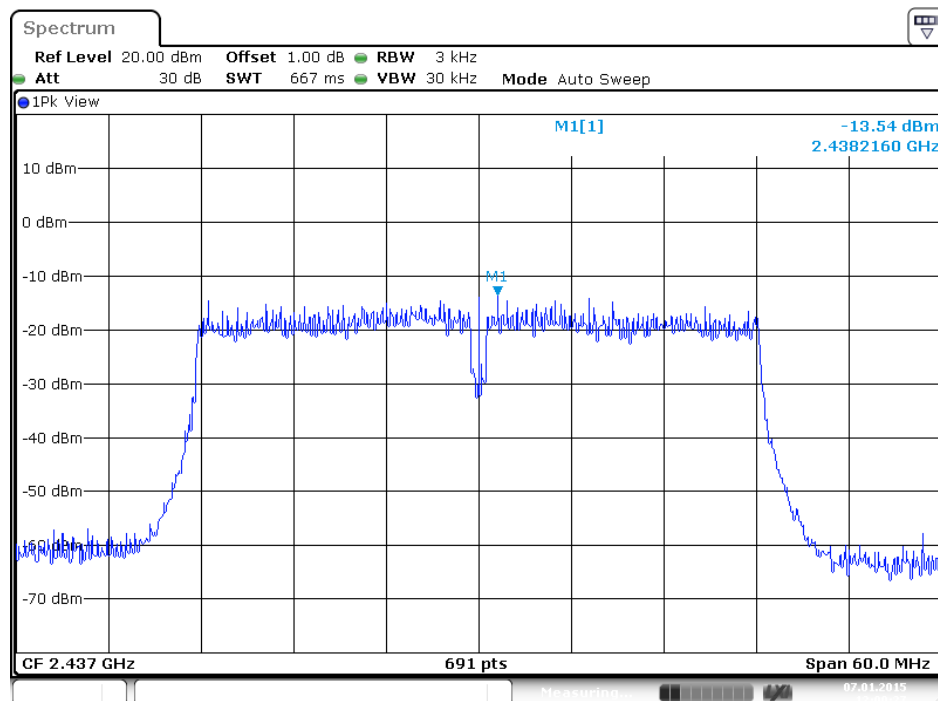


Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2437 MHz / Chain 1



Date: 7.JAN 2015 12:01:47

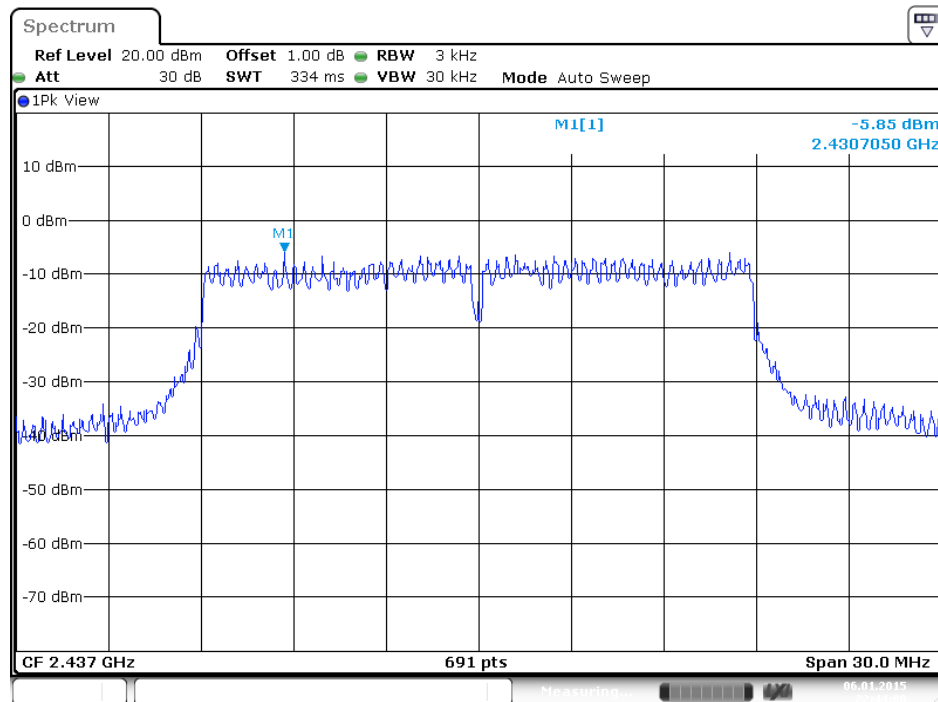
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2437 MHz / Chain 2



Date: 7.JAN 2015 12:00:27

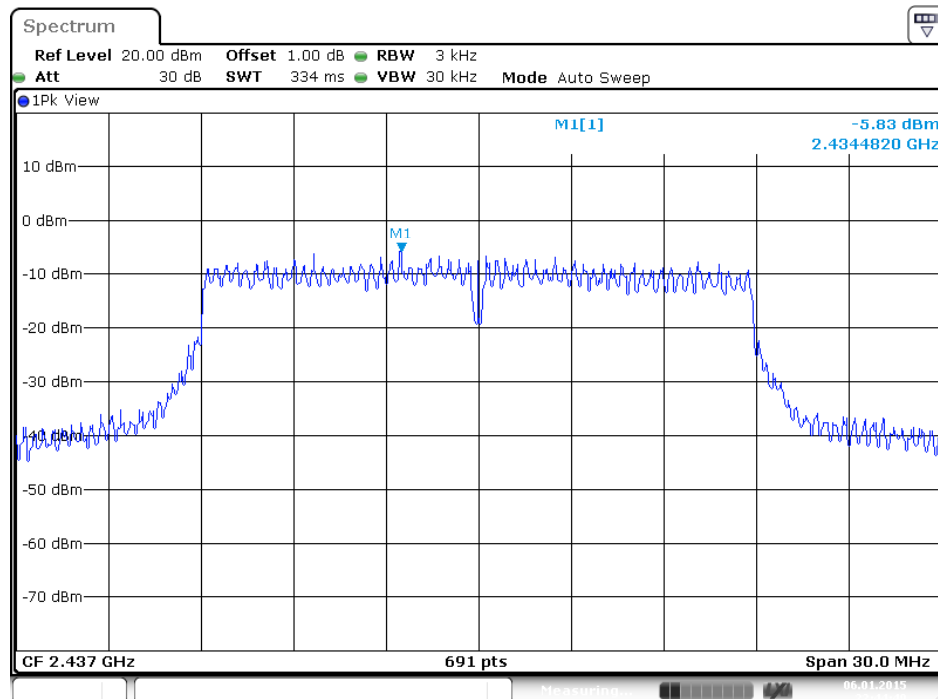
Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 3TX)

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



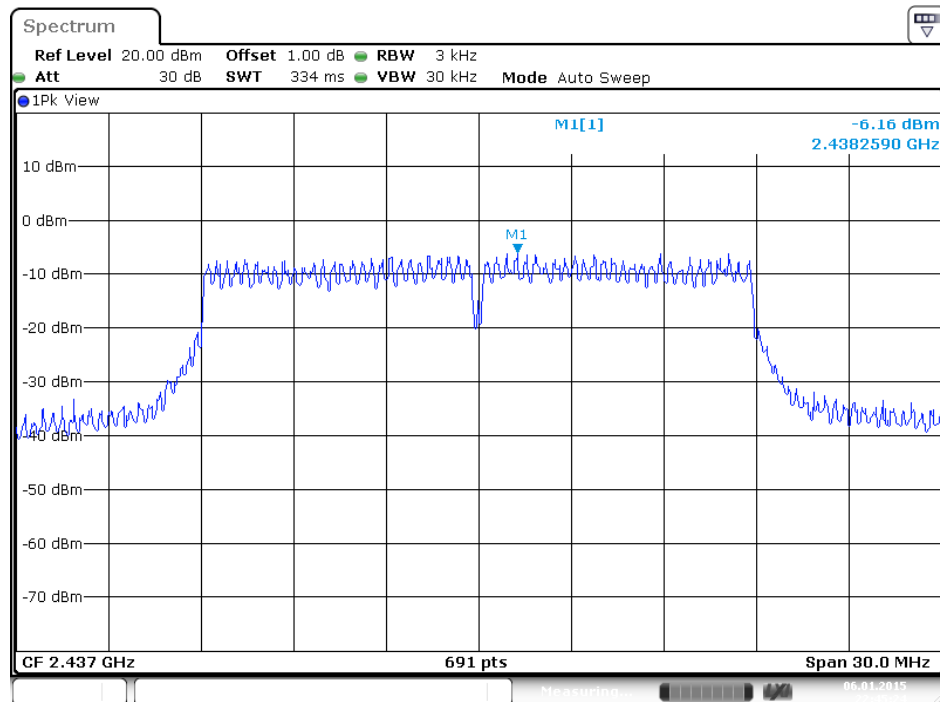
Date: 6 JAN 2015 22:44:01

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



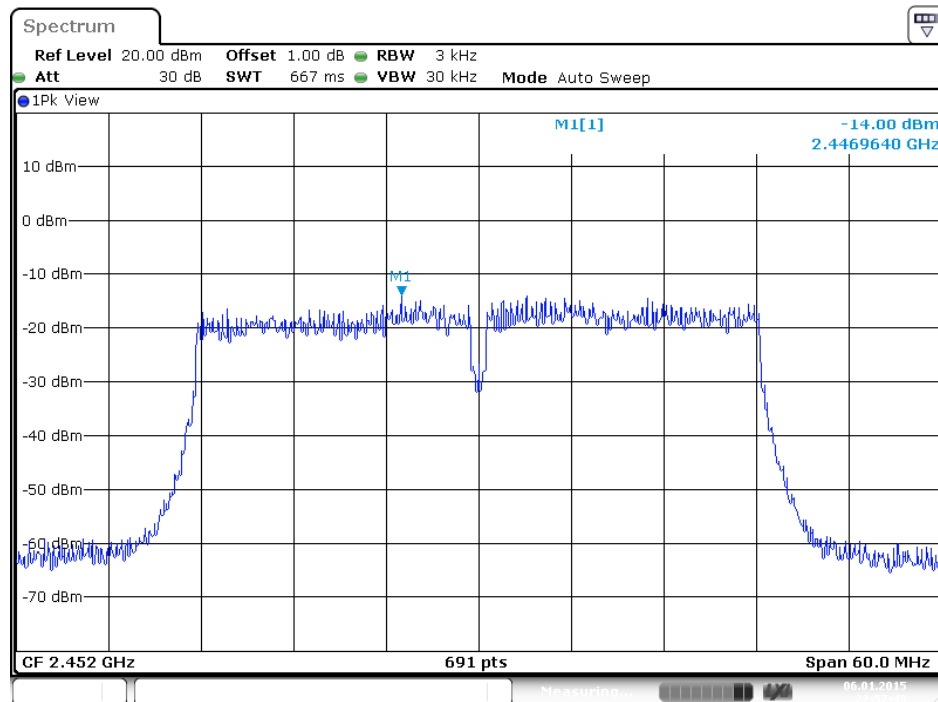
Date: 6 JAN 2015 22:44:49

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 2437 MHz / Chain 3

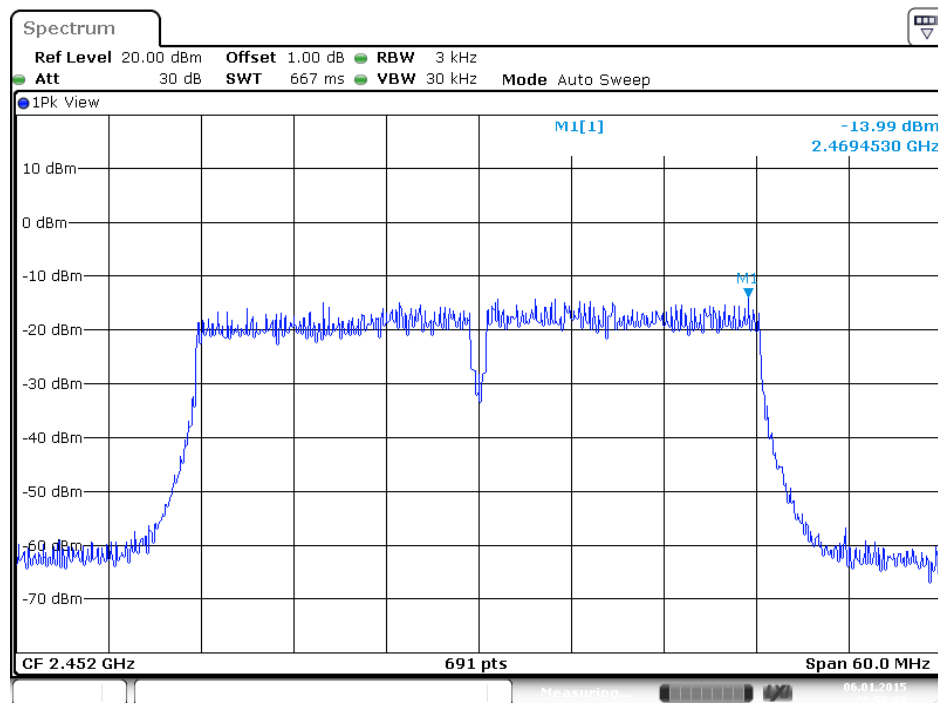


Date: 6 JAN 2015 22:45:25

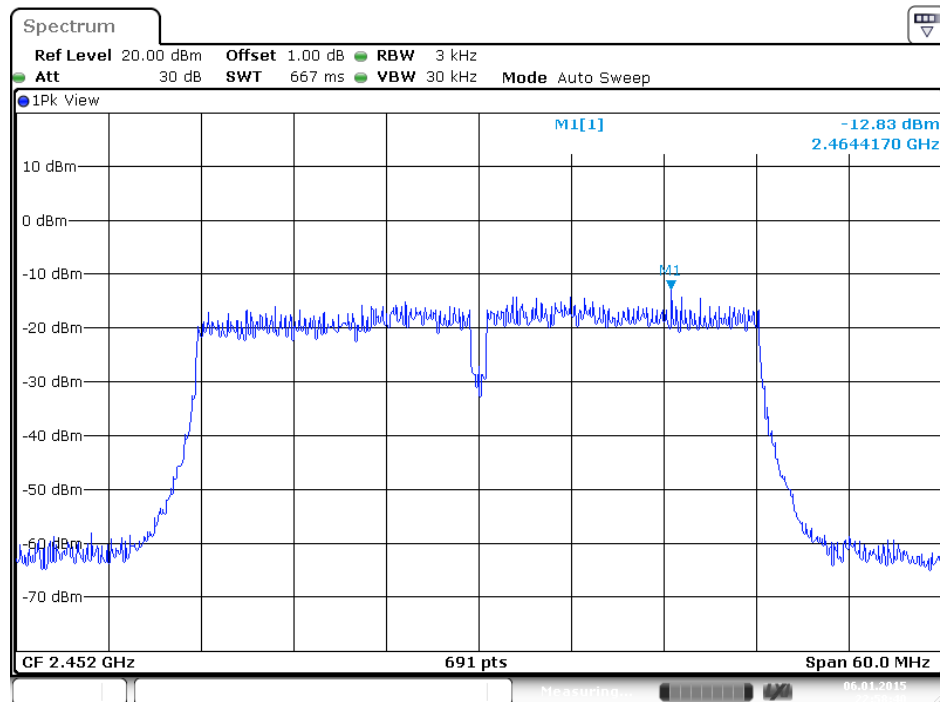
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2452 MHz / Chain 1



Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2452 MHz / Chain 2



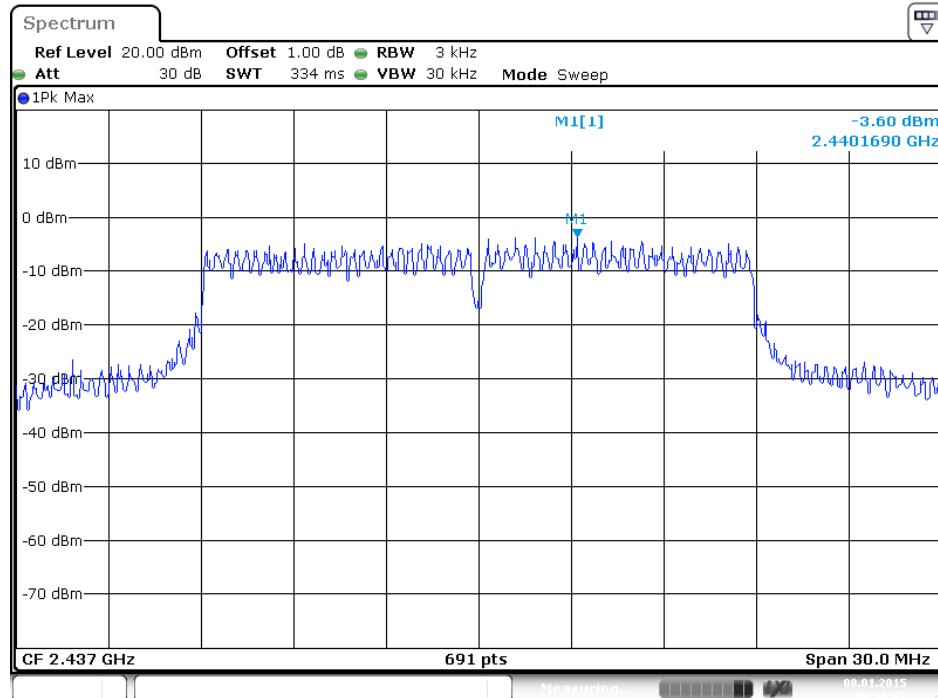
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2452 MHz / Chain 3



Date: 6 JAN 2015 22:58:40

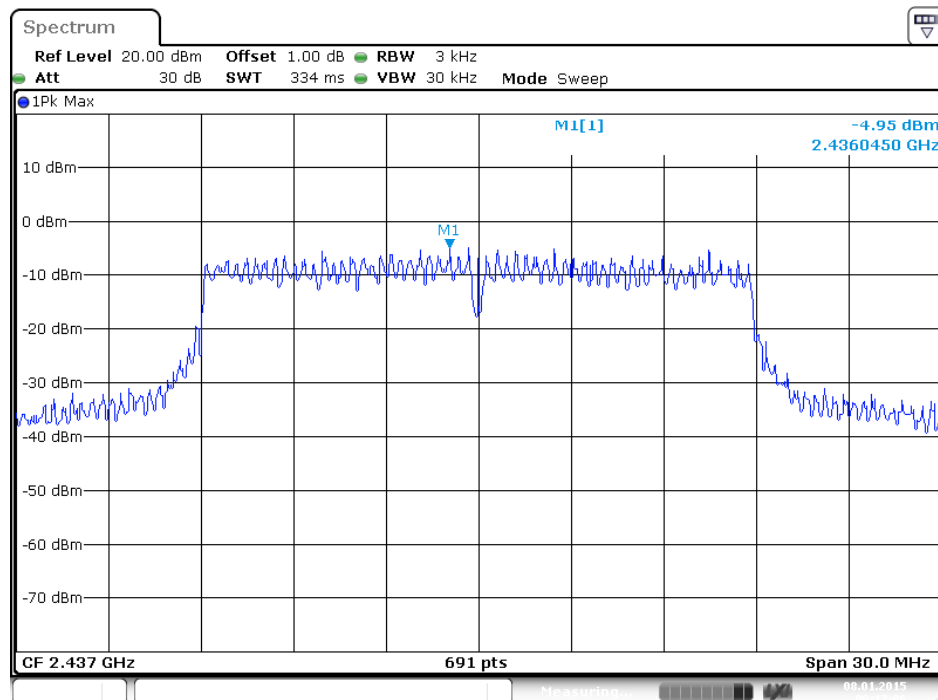
Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 2TX)

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



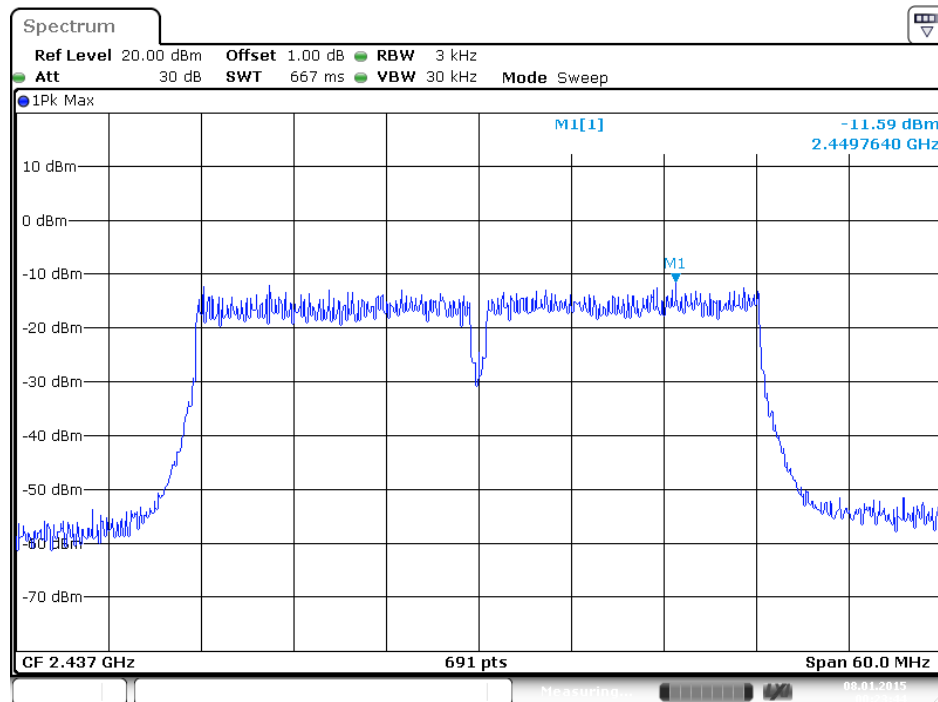
Date: 8 JAN 2015 00:16:07

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



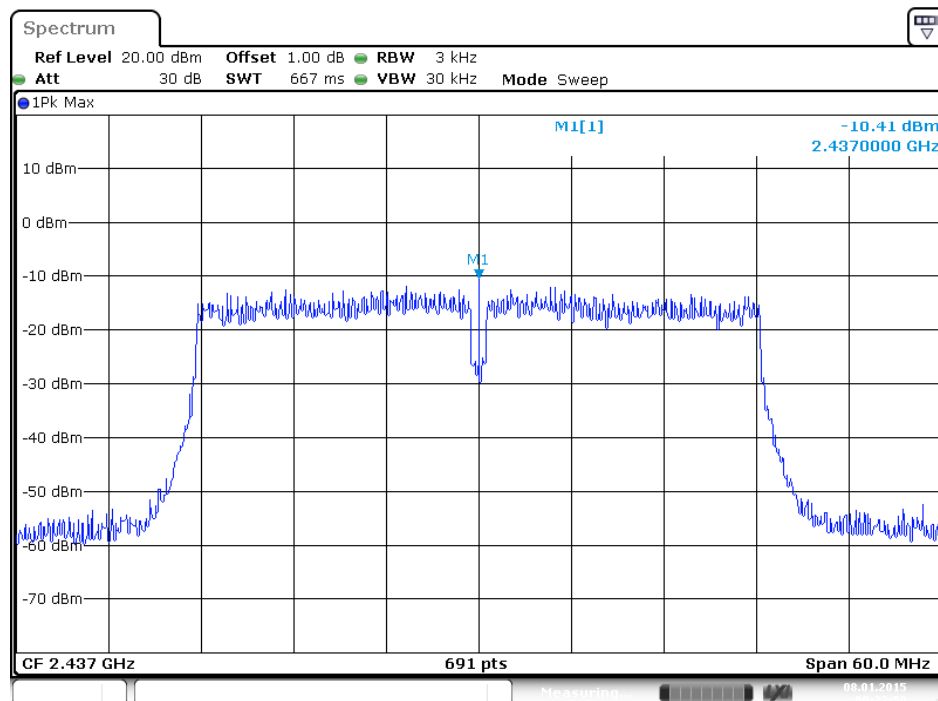
Date: 8 JAN 2015 00:17:06

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



Date: 8 JAN 2015 00:23:45

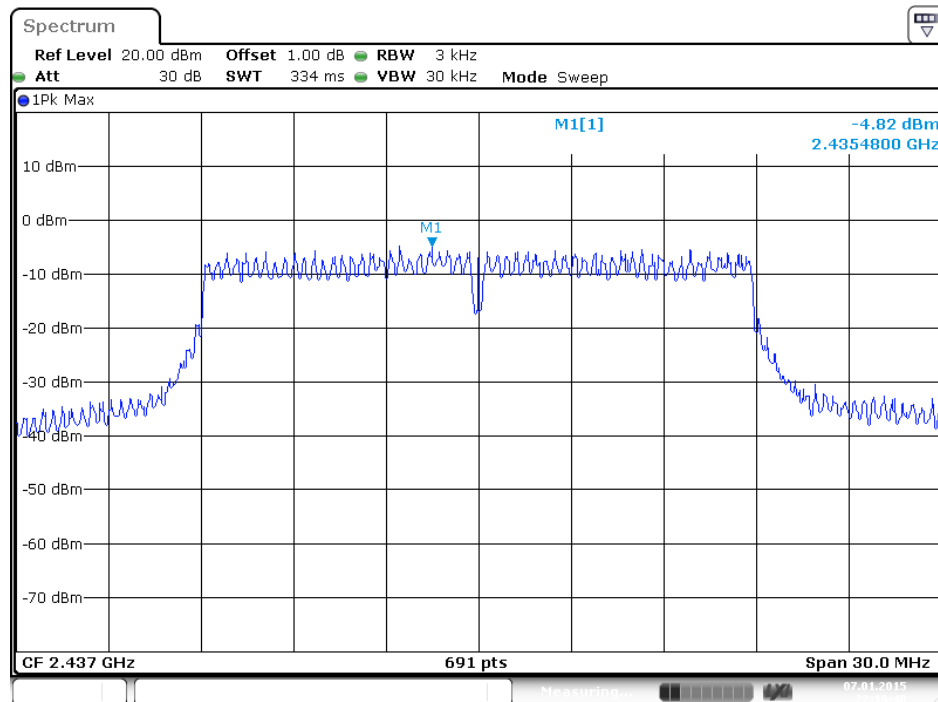
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2437 MHz / Chain 2



Date: 8 JAN 2015 00:22:58

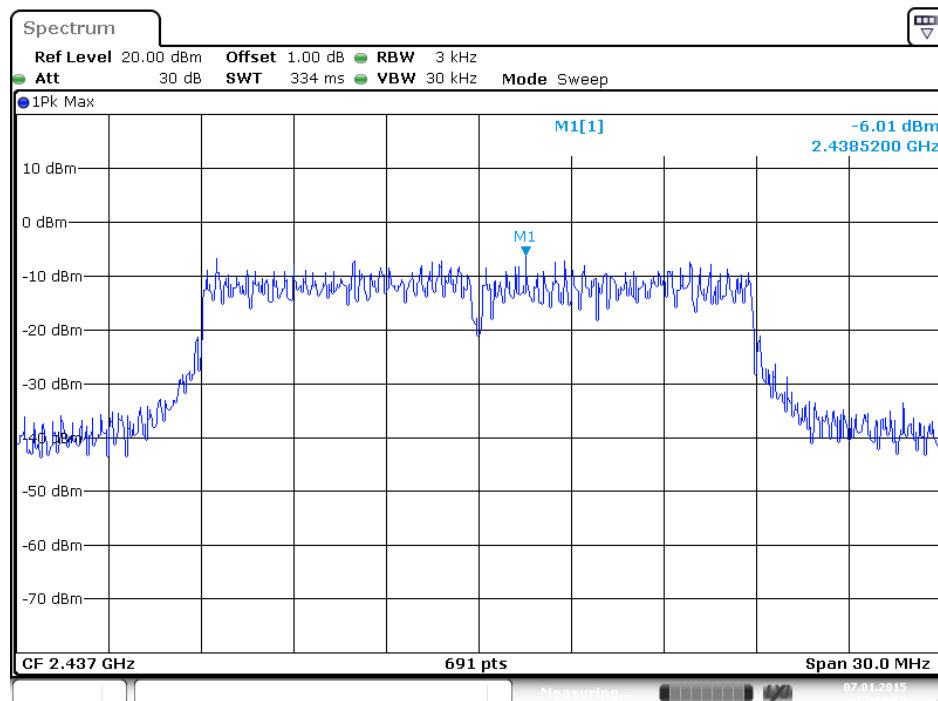
Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 3TX)

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



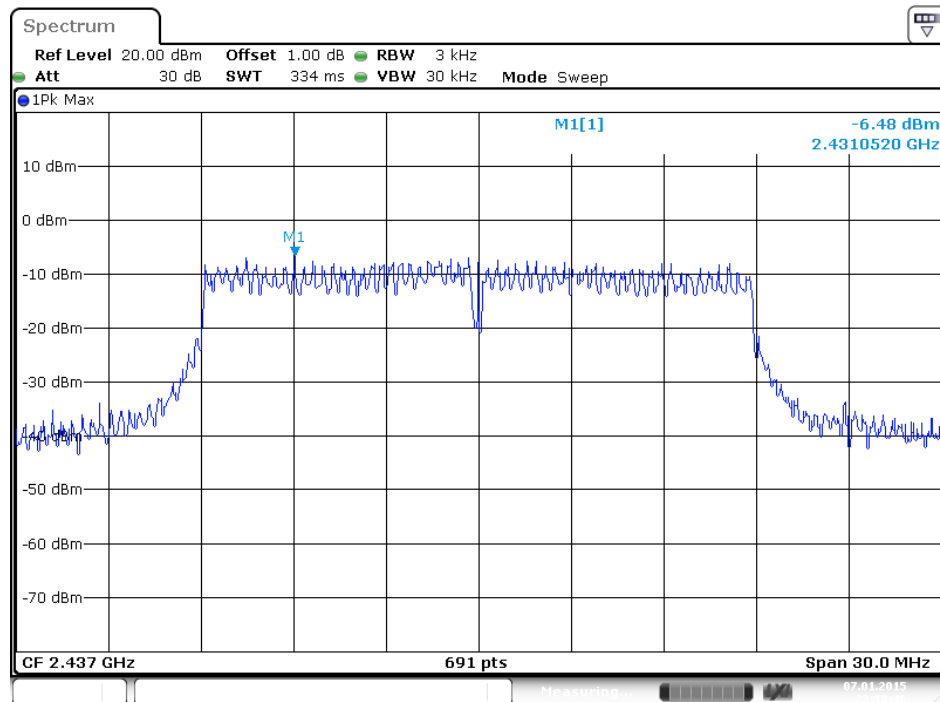
Date: 7.JAN 2015 22:19:40

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



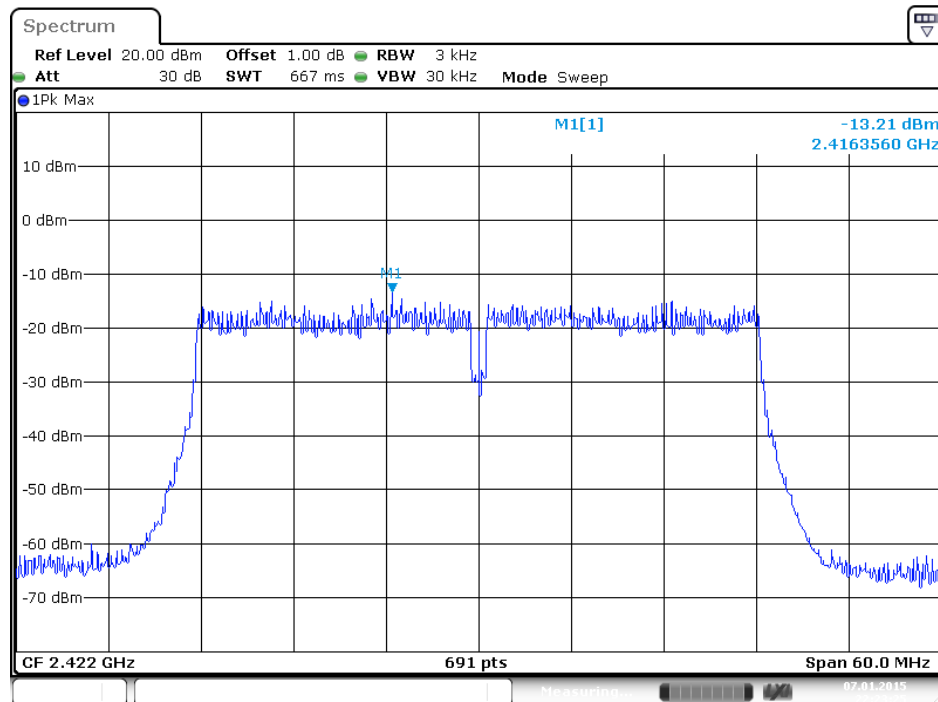
Date: 7.JAN 2015 22:18:13

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 2437 MHz / Chain 3



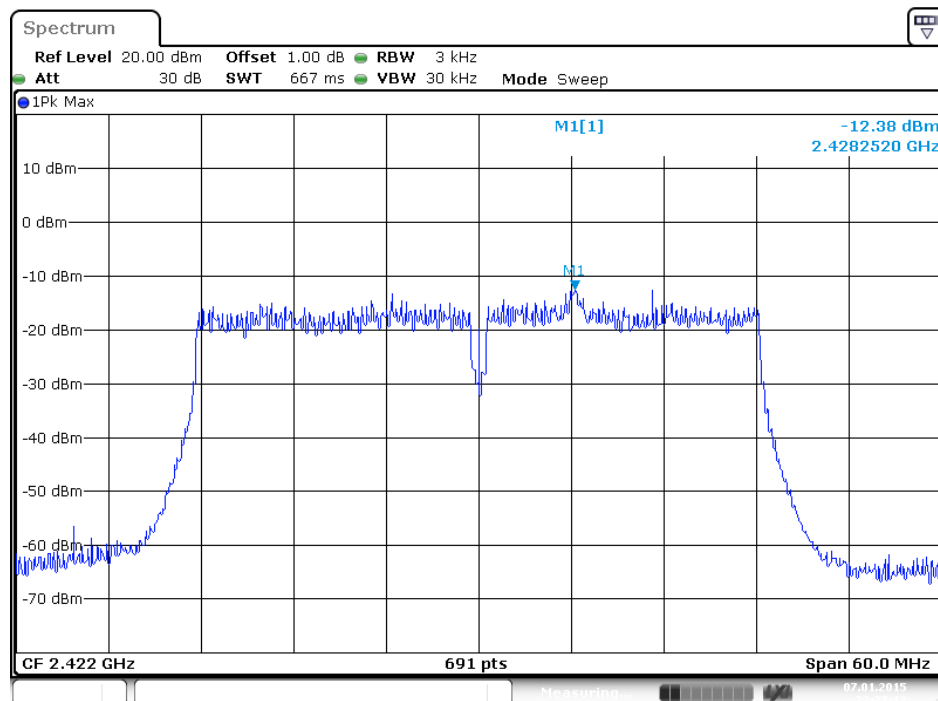
Date: 7.JAN.2015 22:18:46

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2422 MHz / Chain 1



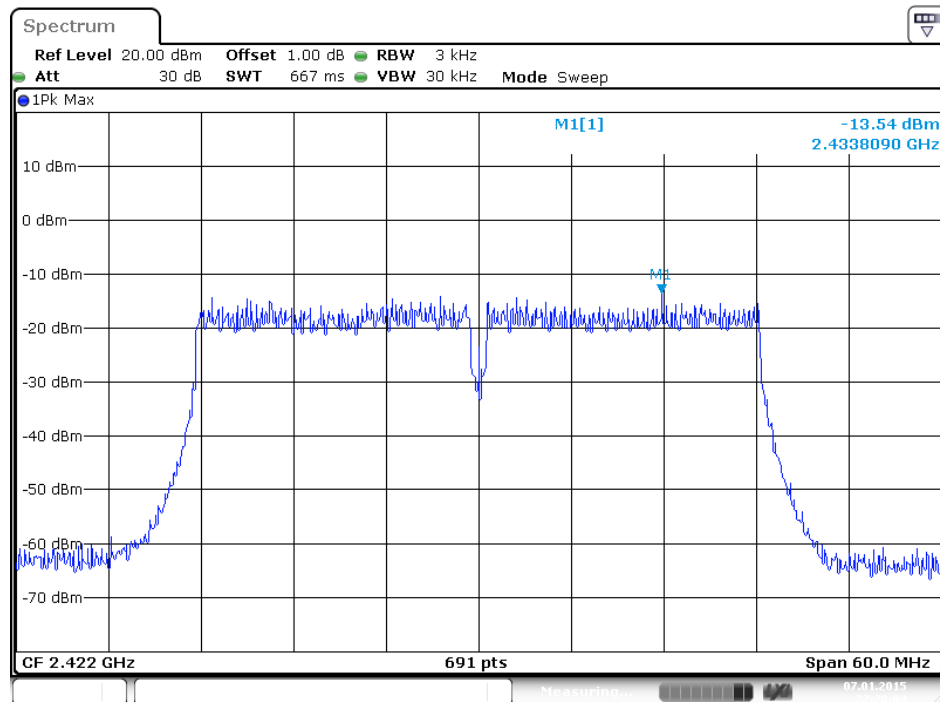
Date: 7.JAN 2015 22:23:25

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2422 MHz / Chain 2



Date: 7.JAN 2015 22:27:12

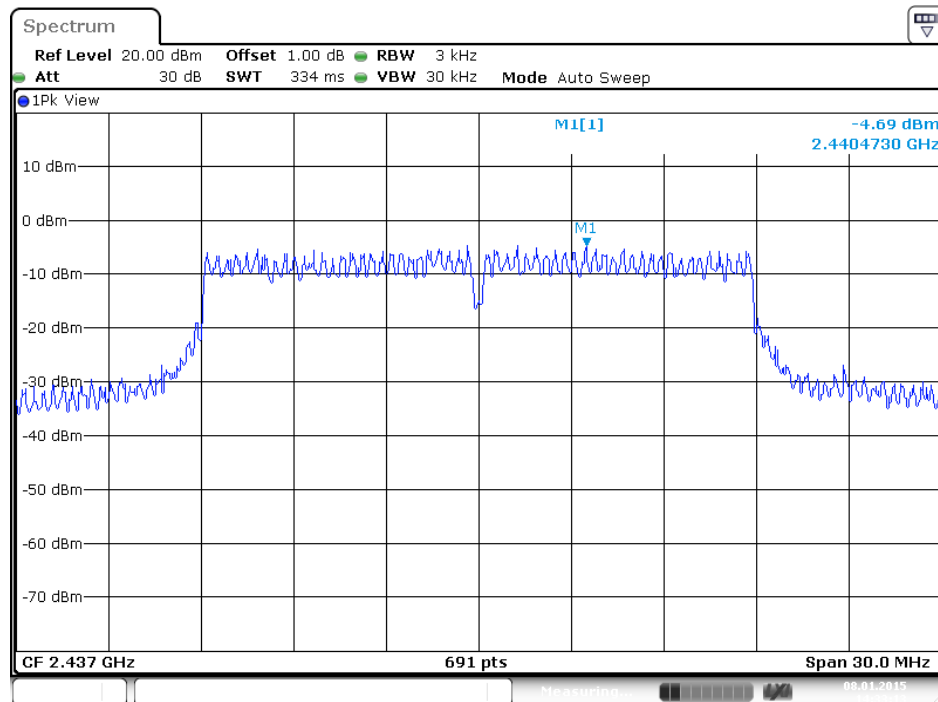
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2422 MHz / Chain 3



Date: 7.JAN.2015 22:28:04

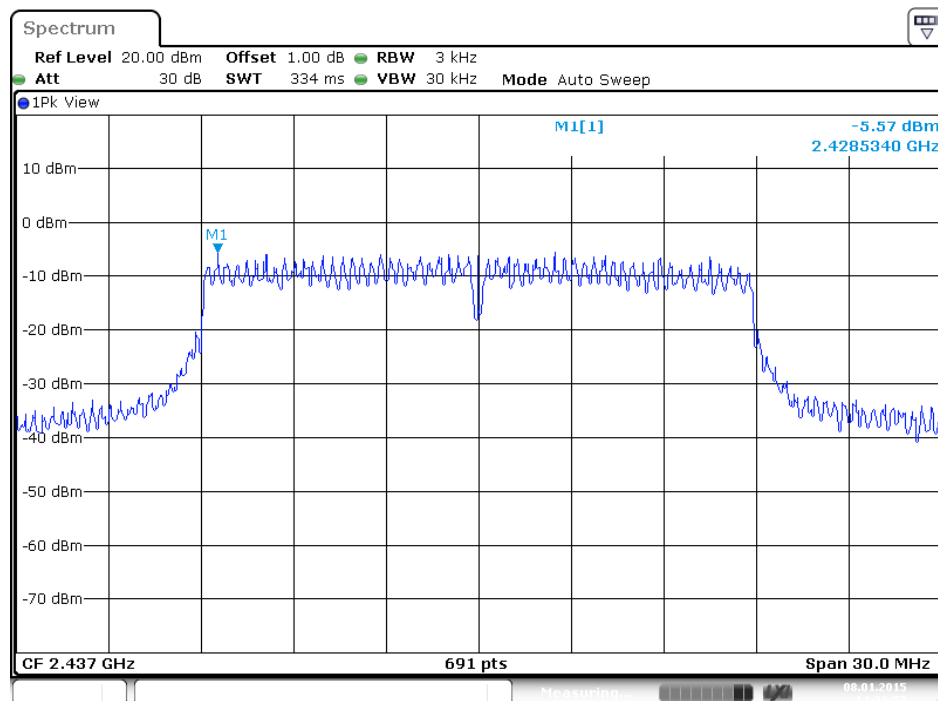
Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 1: 8.8, Chain 2: 5.9, Chain 3: 9 dBi / 2TX)

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



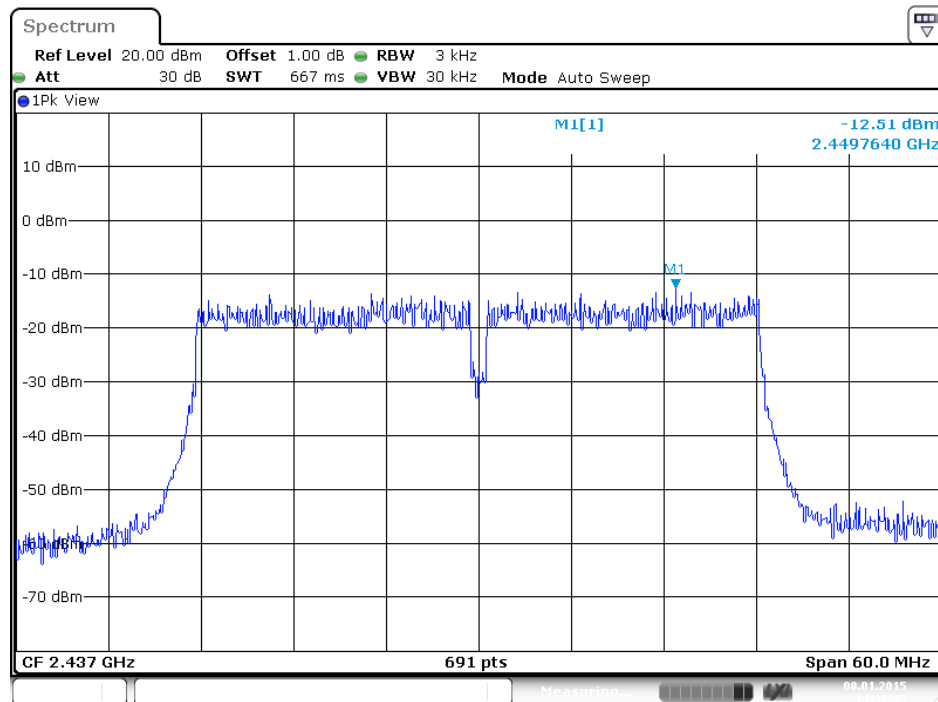
Date: 8 JAN 2015 14:33:14

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

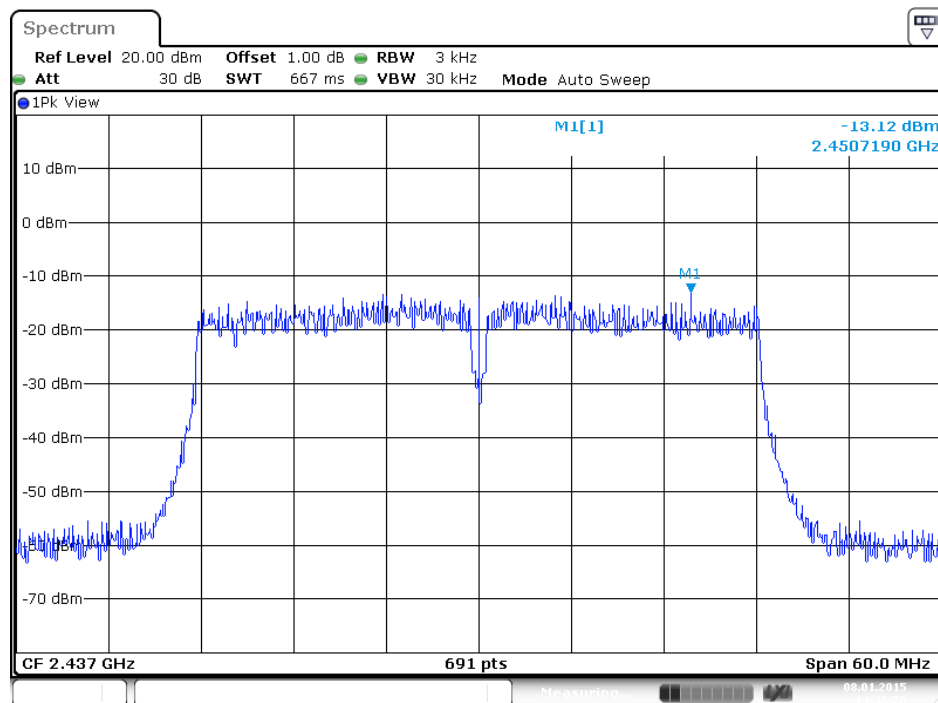


Date: 8 JAN 2015 14:33:52

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

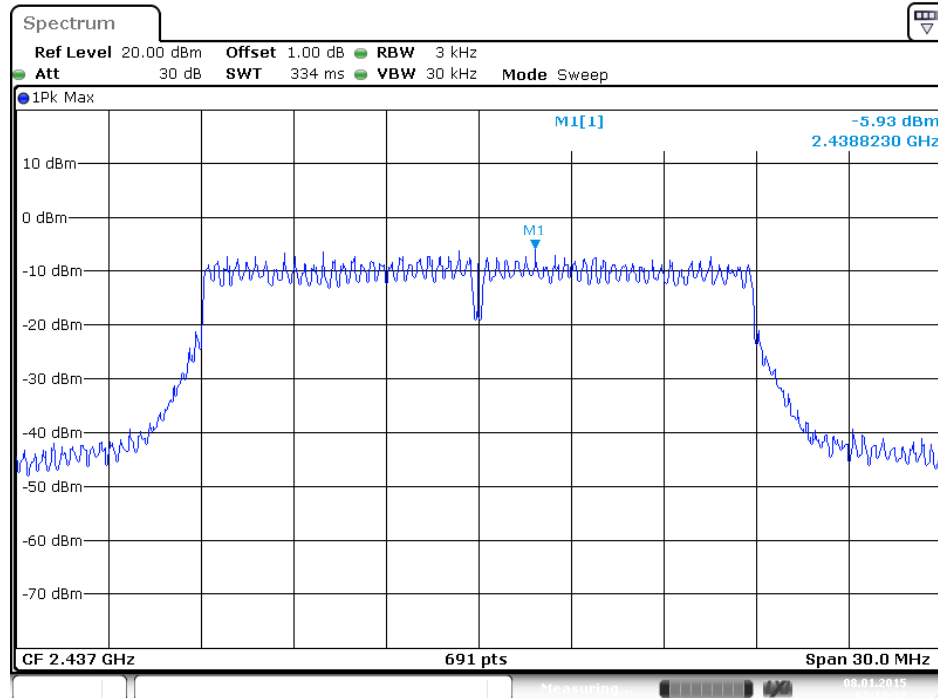


Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2437 MHz / Chain 2



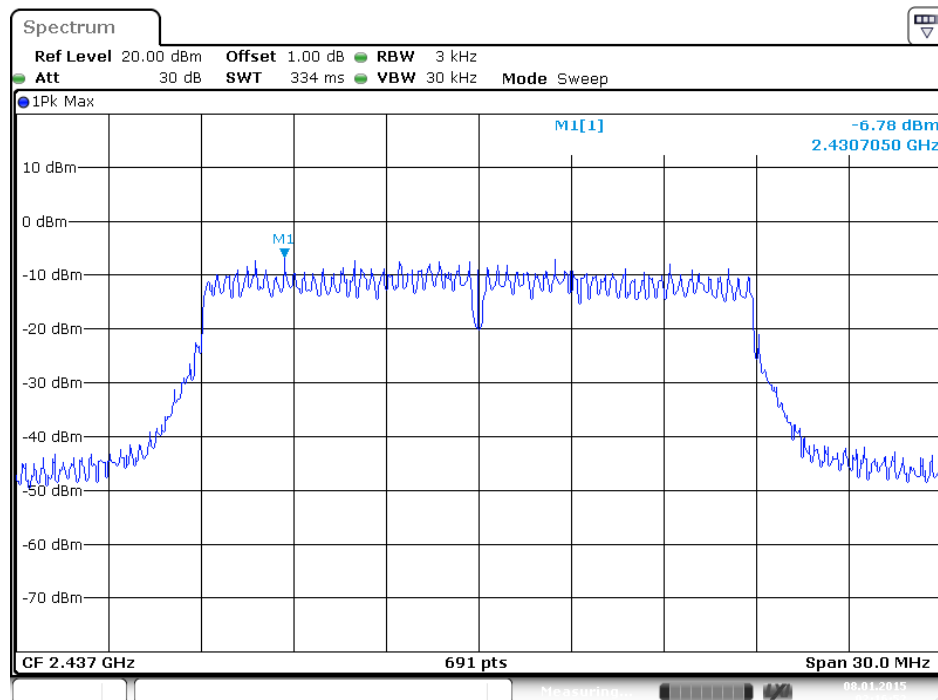
Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 1: 8.8, Chain 2: 5.9, Chain 3: 9 dBi / 3TX)

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



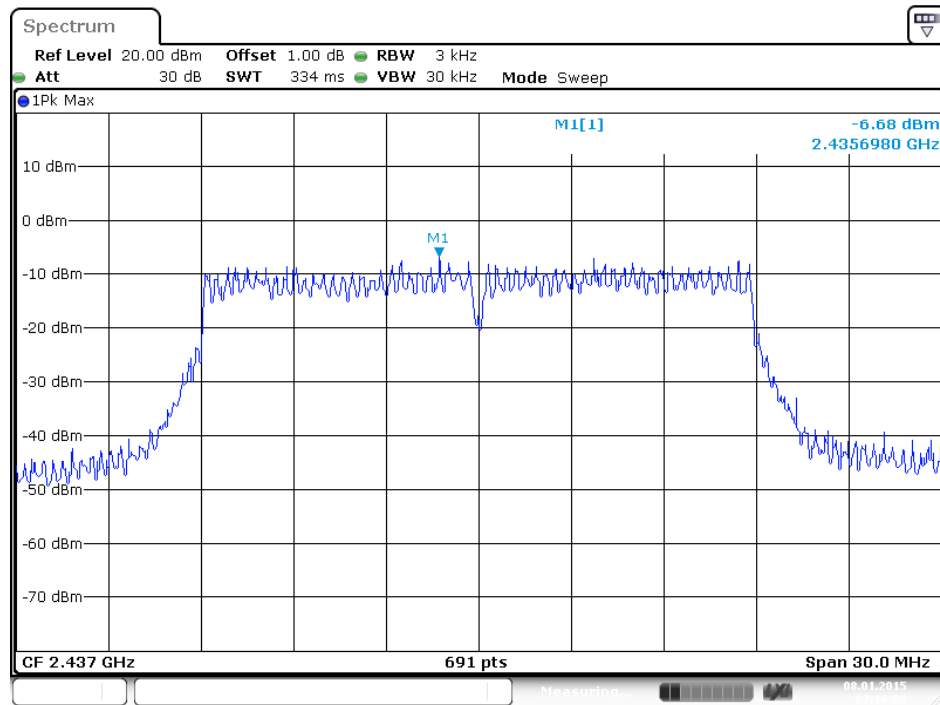
Date: 8 JAN 2015 02:17:37

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



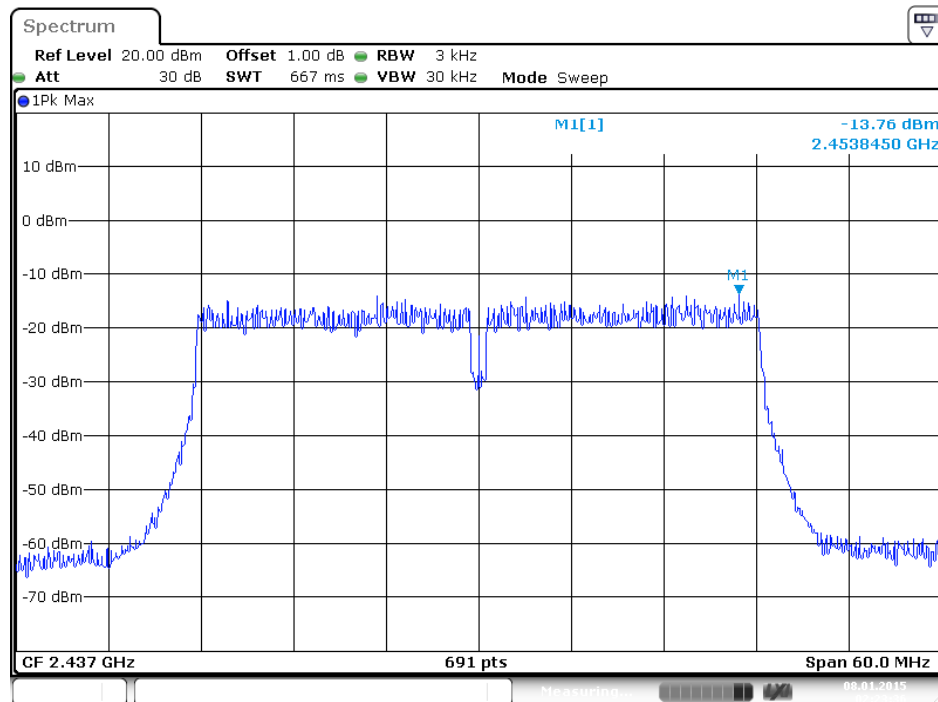
Date: 8 JAN 2015 02:16:52

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 2437 MHz / Chain 3



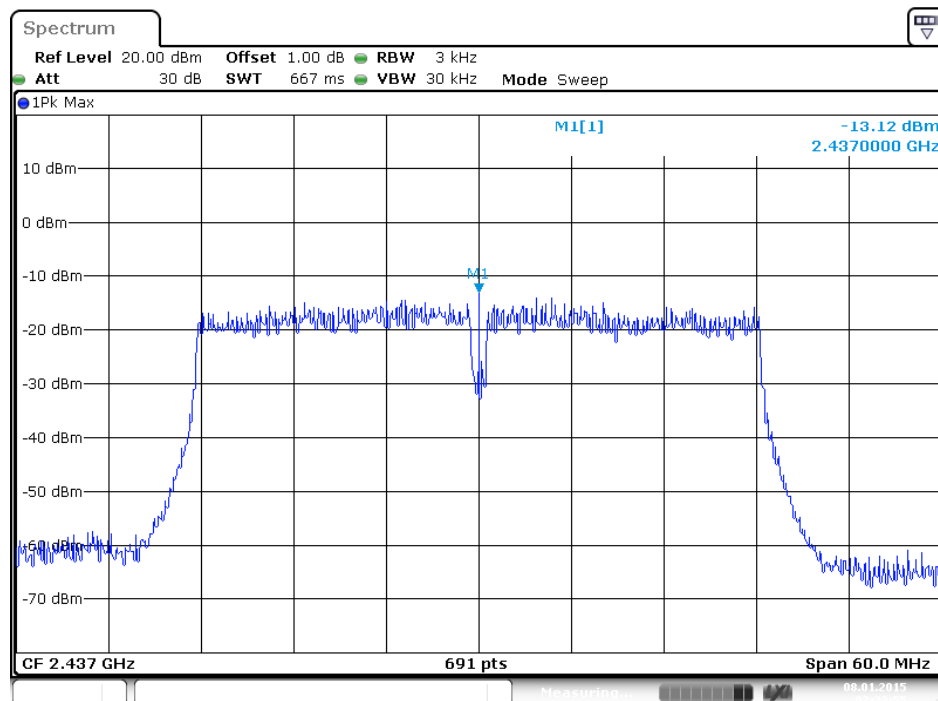
Date: 8 JAN 2015 02:16:08

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



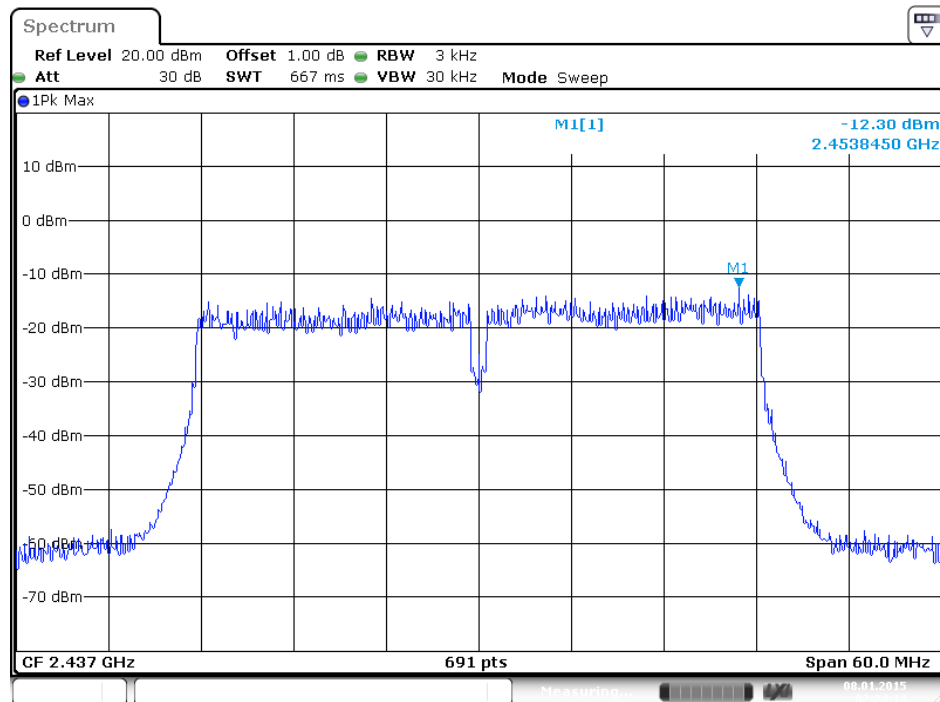
Date: 8 JAN 2015 02:23:36

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



Date: 8 JAN 2015 02:22:55

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2437 MHz / Chain 3



Date: 8 JAN 2015 02:24:15

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	$\geq 3 \times \text{RBW}$
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	$\geq 3 \times \text{RBW}$
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 KDB 558074 D01 v03r02 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	22°C	Humidity	63%
Test Engineer	Nick Peng		
Test Mode	Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 1TX)		

For Chain 2

Mode	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11b	2412 MHz	9.04	11.98	500	Complies
	2437 MHz	9.04	12.50	500	Complies
	2462 MHz	8.57	12.06	500	Complies
802.11n MCS0/Nss1 VHT20	2412 MHz	17.56	17.97	500	Complies
	2437 MHz	17.27	18.58	500	Complies
	2462 MHz	17.56	17.97	500	Complies
802.11n MCS0/Nss1 VHT40	2422 MHz	35.71	36.17	500	Complies
	2437 MHz	35.71	36.17	500	Complies
	2452 MHz	36.40	36.32	500	Complies

Temperature	22°C	Humidity	63%
Test Engineer	Nick Peng		
Test Mode	Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 2TX)		

For Chain 1 + Chain 2

Mode	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11b	2412 MHz	8.98	12.06	500	Complies
	2437 MHz	8.98	12.24	500	Complies
	2462 MHz	9.04	11.89	500	Complies

Temperature	22°C	Humidity	63%
Test Engineer	Nick Peng		
Test Mode	Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 3TX)		

For Chain 1 + Chain 2 + Chain 3

Mode	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11b	2412 MHz	8.98	11.80	500	Complies
	2437 MHz	8.57	12.24	500	Complies
	2462 MHz	8.52	11.80	500	Complies

Temperature	22°C	Humidity	63%
Test Engineer	Nick Peng		
Test Mode	Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 1TX)		

For Chain 2

Mode	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11b	2412 MHz	8.98	12.07	500	Complies
	2437 MHz	9.04	12.32	500	Complies
	2462 MHz	9.04	11.98	500	Complies
802.11n MCS0/Nss1 VHT20	2412 MHz	17.56	17.93	500	Complies
	2437 MHz	17.56	19.45	500	Complies
	2462 MHz	17.56	17.88	500	Complies
802.11n MCS0/Nss1 VHT40	2422 MHz	35.71	36.32	500	Complies
	2437 MHz	35.82	36.17	500	Complies
	2452 MHz	36.40	36.32	500	Complies

Temperature	22°C	Humidity	63%
Test Engineer	Nick Peng		
Test Mode	Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 2TX)		

For Chain 1 + Chain 2

Mode	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11b	2412 MHz	8.52	12.06	500	Complies
	2437 MHz	8.98	12.59	500	Complies
	2462 MHz	8.57	11.98	500	Complies

Temperature	22°C	Humidity	63%
Test Engineer	Nick Peng		
Test Mode	Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 3TX)		

For Chain 1 + Chain 2 + Chain 3

Mode	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11b	2412 MHz	8.52	12.15	500	Complies
	2437 MHz	8.52	12.41	500	Complies
	2462 MHz	8.05	11.89	500	Complies

Temperature	22°C	Humidity	63%
Test Engineer	Lucas Huang		
Test Mode	Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 1: 8.8, Chain 2: 5.9, Chain 3: 9 dBi / 1TX)		

For Chain 1

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	9.04	11.89	500	Complies
	2462 MHz	8.05	11.98	500	Complies
802.11n MCS0/Nss1 VHT20	2412 MHz	17.56	17.88	500	Complies
	2437 MHz	17.50	19.71	500	Complies
	2462 MHz	17.56	17.97	500	Complies
802.11n MCS0/Nss1 VHT40	2422 MHz	36.29	36.90	500	Complies
	2437 MHz	36.40	36.90	500	Complies
	2452 MHz	36.17	36.75	500	Complies

Temperature	22°C	Humidity	63%
Test Engineer	Nick Peng		
Test Mode	Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 1: 8.8, Chain 2: 5.9, Chain 3: 9 dBi / 2TX)		

For Chain 1 + Chain 2

Mode	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11b	2412 MHz	8.57	11.72	500	Complies
	2437 MHz	8.52	11.89	500	Complies
	2462 MHz	8.52	11.98	500	Complies

Temperature	22°C	Humidity	63%
Test Engineer	Nick Peng		
Test Mode	Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 1: 8.8, Chain 2: 5.9, Chain 3: 9 dBi / 3TX)		

For Chain 1 + Chain 2 + Chain 3

Mode	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11b	2412 MHz	8.98	11.80	500	Complies
	2437 MHz	8.52	11.80	500	Complies
	2462 MHz	8.98	11.72	500	Complies

<For Beamforming Mode>

Temperature	22°C	Humidity	63%
Test Engineer	Nick Peng		
Test Mode	Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 2TX)		

For Chain 1 + Chain 2

Mode	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11n MCS0/Nss1 VHT20	2412 MHz	17.27	17.88	500	Complies
	2437 MHz	16.28	18.06	500	Complies
	2462 MHz	16.69	17.80	500	Complies
802.11n MCS0/Nss1 VHT40	2422 MHz	35.01	36.32	500	Complies
	2437 MHz	36.29	36.17	500	Complies
	2452 MHz	36.40	36.17	500	Complies

Temperature	22°C	Humidity	63%
Test Engineer	Nick Peng		
Test Mode	Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 3TX)		

For Chain 1 + Chain 2 + Chain 3

Mode	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11n MCS0/Nss1 VHT20	2412 MHz	17.73	17.88	500	Complies
	2437 MHz	17.62	17.97	500	Complies
	2462 MHz	17.62	17.88	500	Complies
802.11n MCS0/Nss1 VHT40	2422 MHz	36.40	36.61	500	Complies
	2437 MHz	36.40	36.61	500	Complies
	2452 MHz	36.40	36.90	500	Complies

Temperature	22°C	Humidity	63%
Test Engineer	Nick Peng		
Test Mode	Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 2TX)		

For Chain 1 + Chain 2

Mode	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11n MCS0/Nss1 VHT20	2412 MHz	17.33	17.88	500	Complies
	2437 MHz	16.63	18.23	500	Complies
	2462 MHz	17.56	17.80	500	Complies
802.11n MCS0/Nss1 VHT40	2422 MHz	35.01	36.46	500	Complies
	2437 MHz	35.47	36.61	500	Complies
	2452 MHz	35.94	36.61	500	Complies

Temperature	22°C	Humidity	63%
Test Engineer	Nick Peng		
Test Mode	Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 3TX)		

For Chain 1 + Chain 2 + Chain 3

Mode	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11n MCS0/Nss1 VHT20	2412 MHz	17.27	17.71	500	Complies
	2437 MHz	13.56	18.14	500	Complies
	2462 MHz	16.92	17.62	500	Complies
802.11n MCS0/Nss1 VHT40	2422 MHz	33.73	35.89	500	Complies
	2437 MHz	29.10	36.17	500	Complies
	2452 MHz	33.04	36.46	500	Complies

Temperature	22°C	Humidity	63%
Test Engineer	Nick Peng		
Test Mode	Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 1: 8.8, Chain 2: 5.9, Chain 3: 9 dBi / 2TX)		

For Chain 1 + Chain 2

Mode	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11n MCS0/Nss1 VHT20	2412 MHz	17.04	17.88	500	Complies
	2437 MHz	16.63	18.23	500	Complies
	2462 MHz	16.92	17.80	500	Complies
802.11n MCS0/Nss1 VHT40	2422 MHz	35.01	36.61	500	Complies
	2437 MHz	35.71	36.75	500	Complies
	2452 MHz	36.05	36.75	500	Complies

Temperature	22°C	Humidity	63%
Test Engineer	Lucas Huang		
Test Mode	Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 1: 8.8, Chain 2: 5.9, Chain 3: 9 dBi / 3TX)		

For Chain 1 + Chain 2 + Chain 3

Mode	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11n MCS0/Nss1 VHT20	2412 MHz	16.63	17.62	500	Complies
	2437 MHz	15.07	17.80	500	Complies
	2462 MHz	16.28	17.62	500	Complies
802.11n MCS0/Nss1 VHT40	2422 MHz	33.73	36.32	500	Complies
	2437 MHz	33.73	36.17	500	Complies
	2452 MHz	32.58	36.32	500	Complies

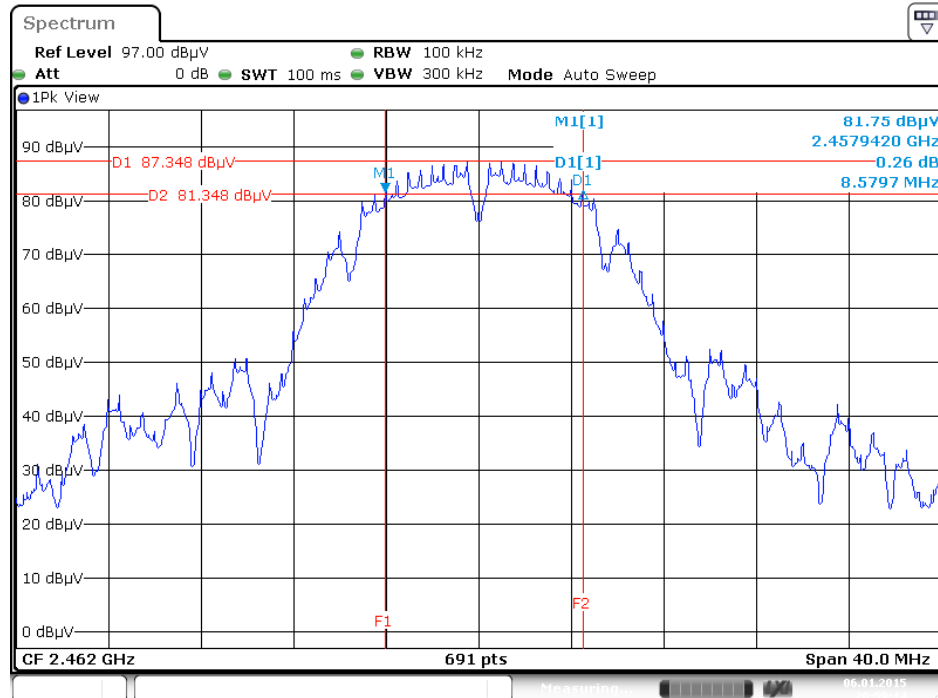
Note: All the test values were listed in the report.

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

<For Non-Beamforming Mode>

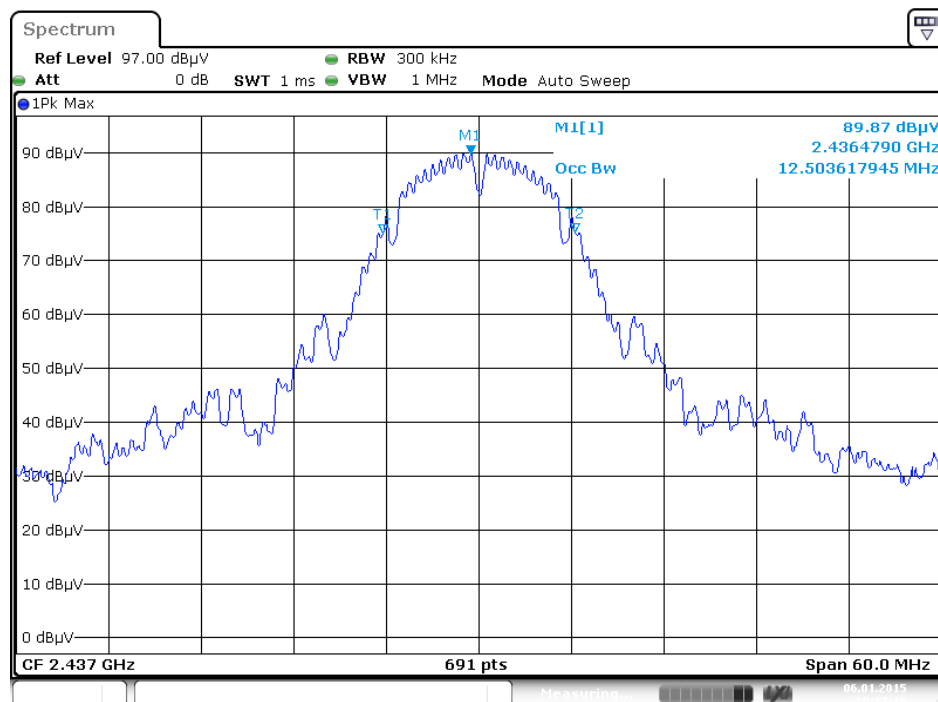
Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 1TX)

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



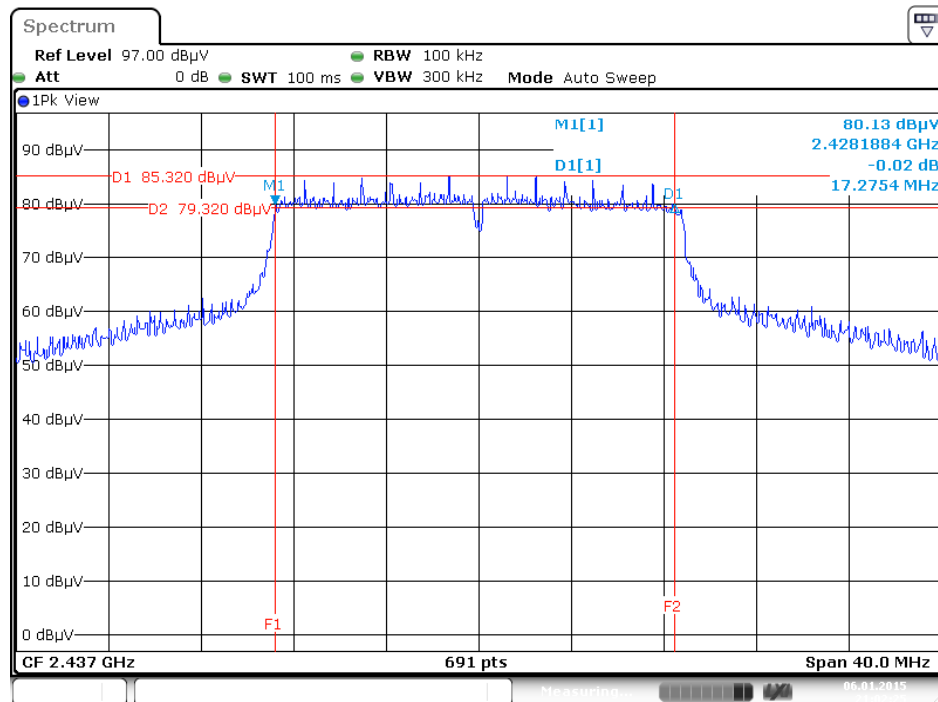
Date: 6 JAN 2015 20:59:14

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



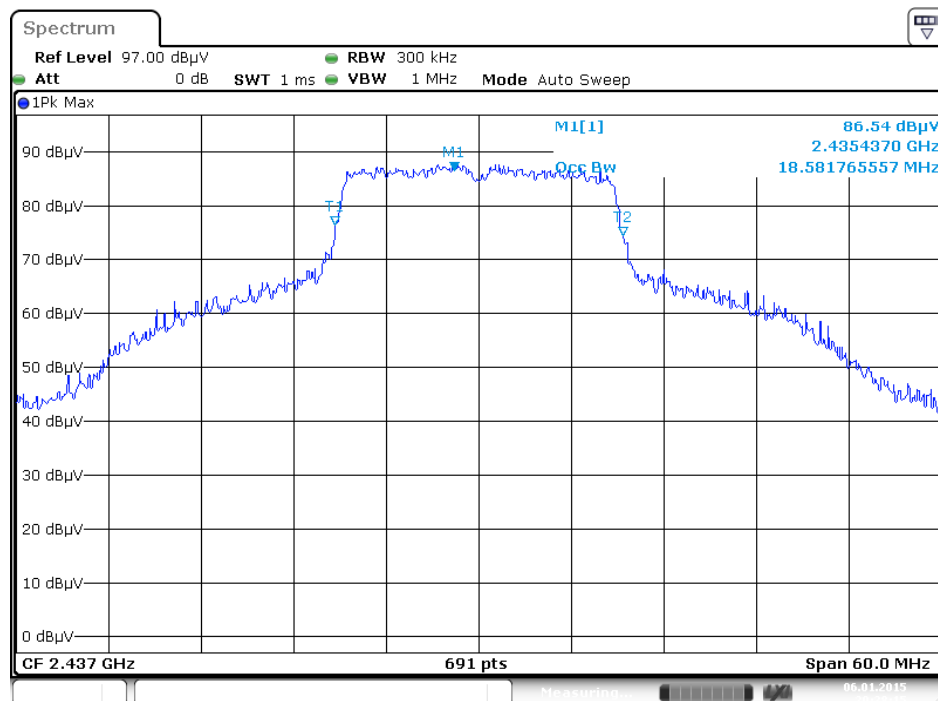
Date: 6 JAN 2015 20:17:30

6 dB Bandwidth Plot on Configuration IEEE 802. MCS0/Nss1 VHT20 / 2437 MHz / Chain 2



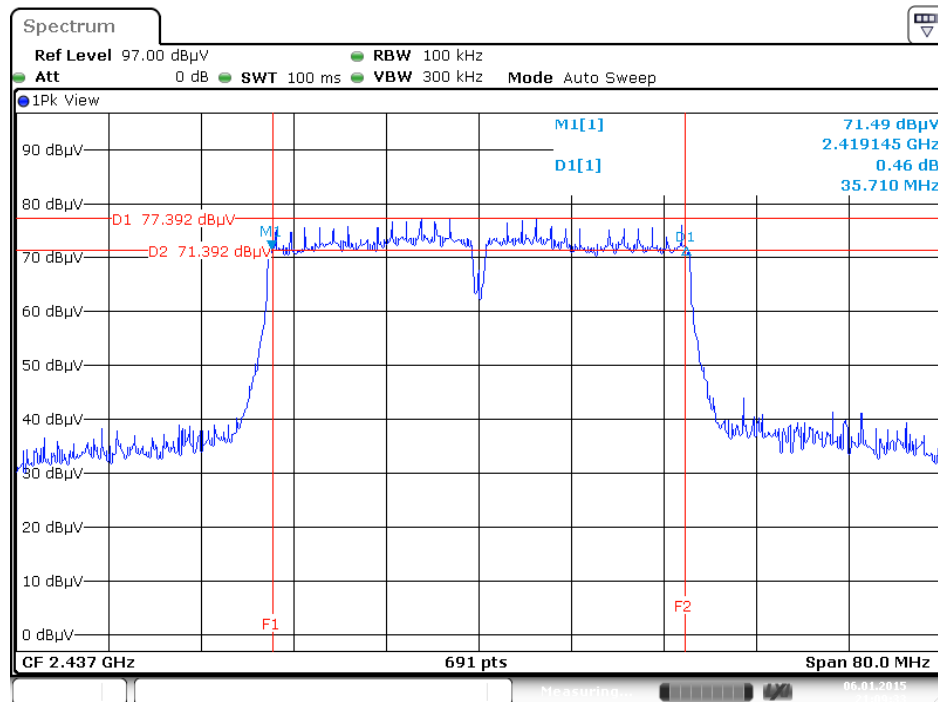
Date: 6 JAN 2015 21:02:25

99% Occupied Bandwidth Plot on Configuration IEEE 802. MCS0/Nss1 VHT20 / 2437 MHz / Chain 2



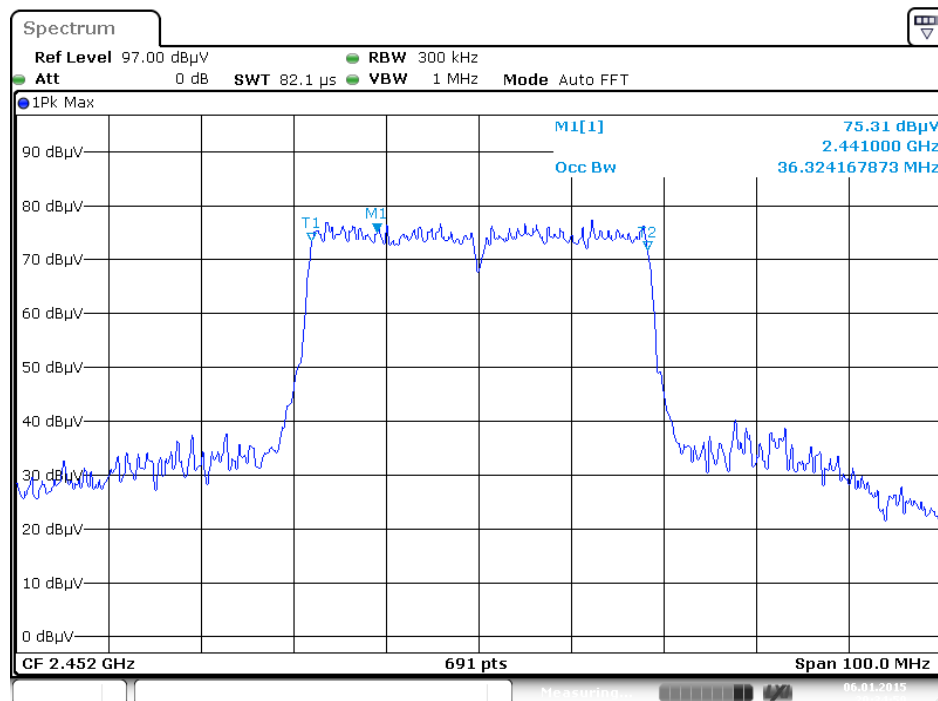
Date: 6 JAN 2015 20:28:15

6 dB Bandwidth Plot on Configuration IEEE 802. MCS0/Nss1 VHT40 / 2437 MHz / Chain 2



Date: 6 JAN 2015 21:09:33

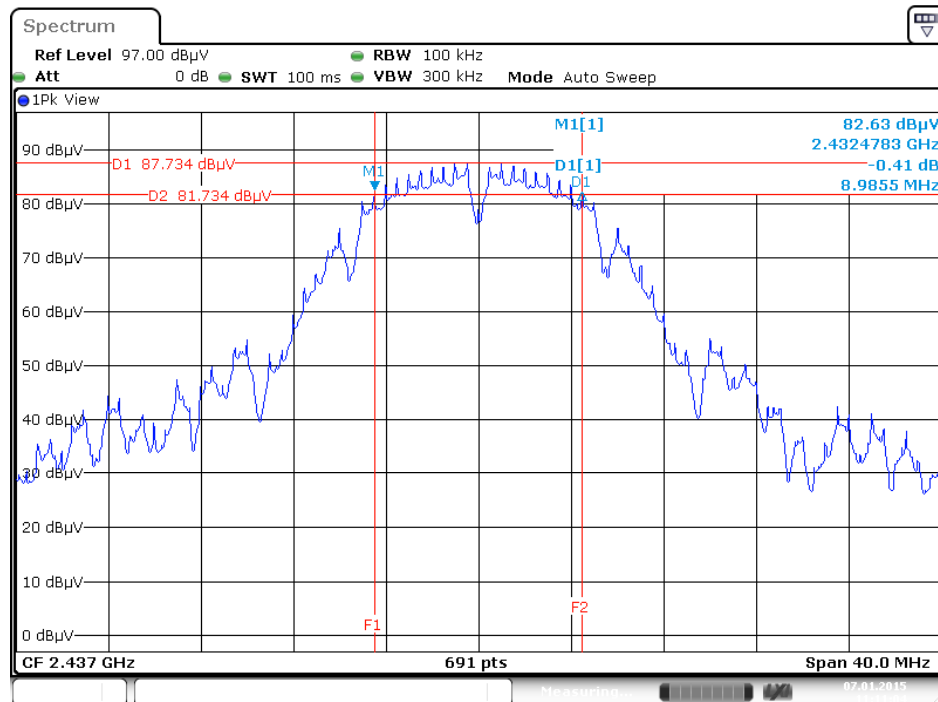
99% Occupied Bandwidth Plot on Configuration IEEE 802. MCS0/Nss1 VHT40 / 2452 MHz / Chain 2



Date: 6 JAN 2015 20:35:00

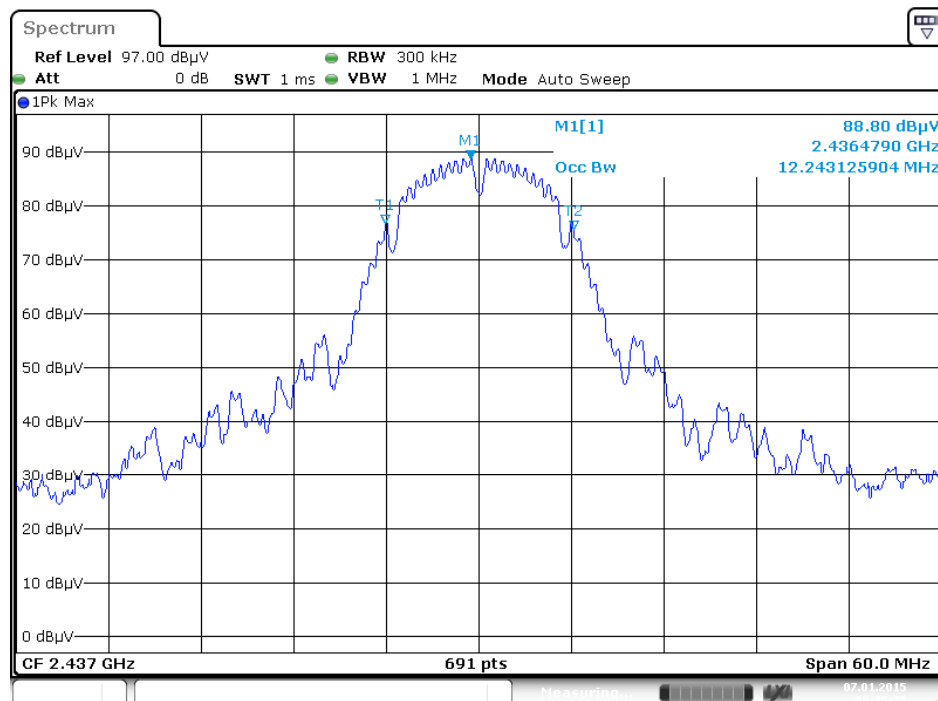
Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 2TX)

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



Date: 7.JAN 2015 11:11:04

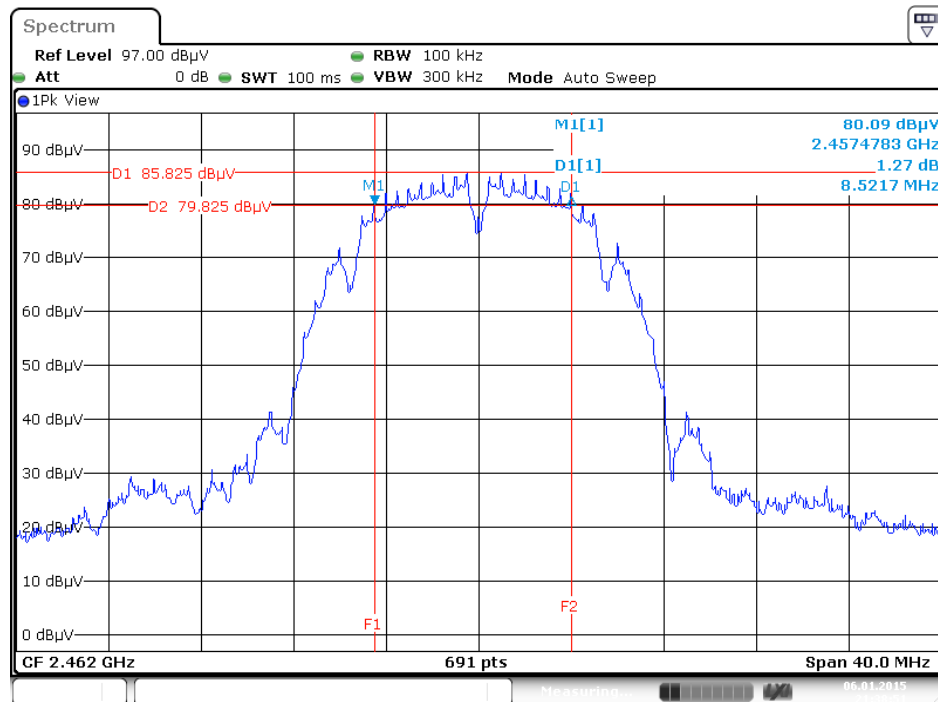
99% Occupied Bandwidth Plot on Configuration IEEE 802.11b / 2437 MHz / Chain 1 + Chain 2



Date: 7.JAN 2015 09:35:25

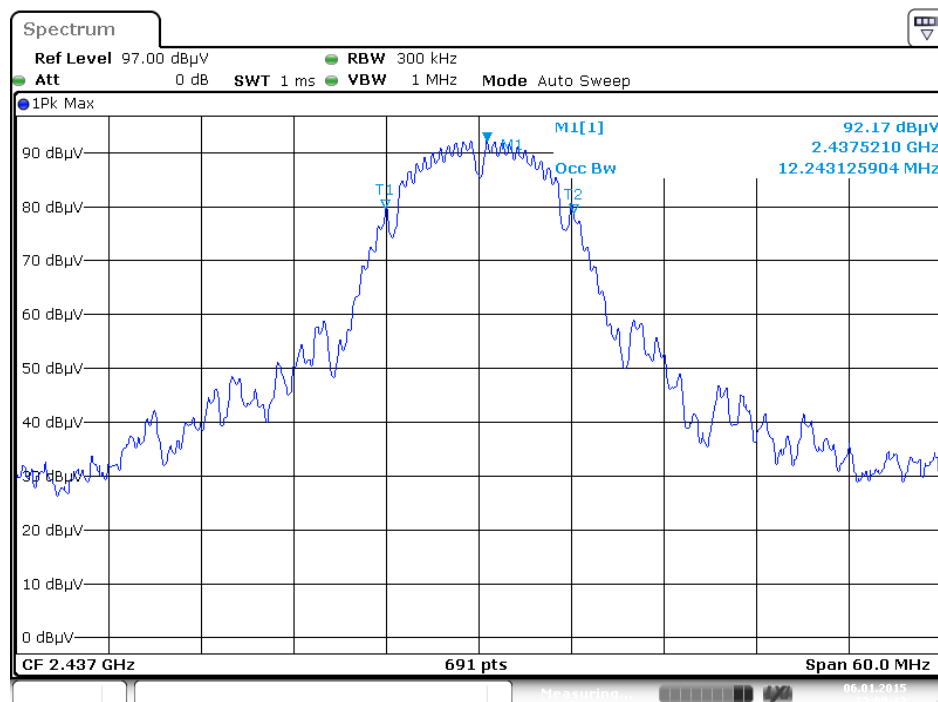
Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 3TX)

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



Date: 6 JAN 2015 21:38:52

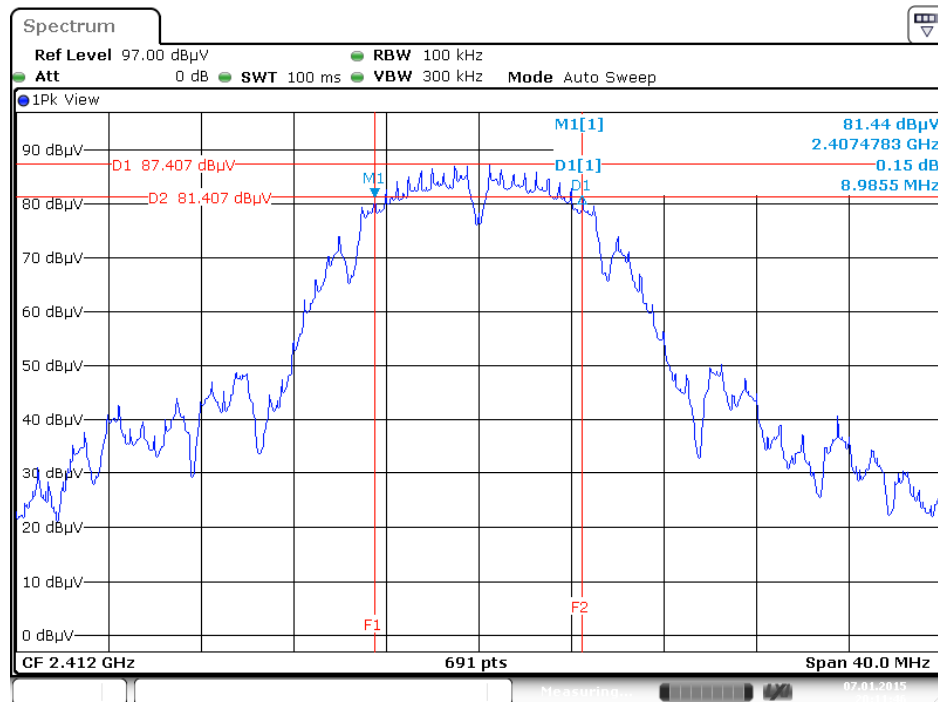
99% Occupied Bandwidth Plot on Configuration IEEE 802.11b / 2437 MHz / Chain 1 + Chain 2 + Chain 3



Date: 6 JAN 2015 22:09:31

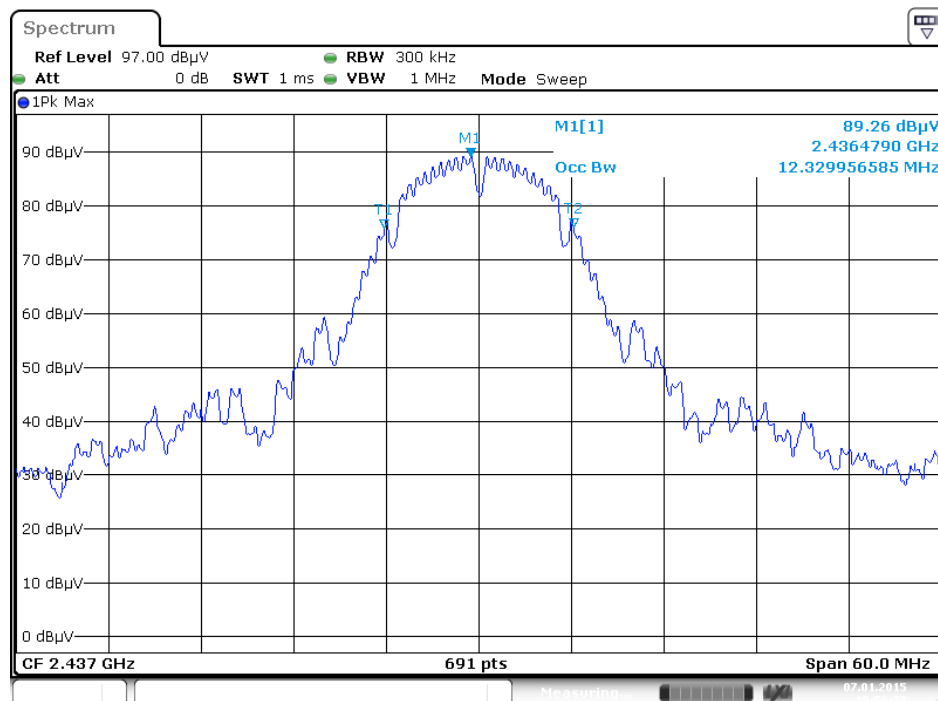
Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 1TX)

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



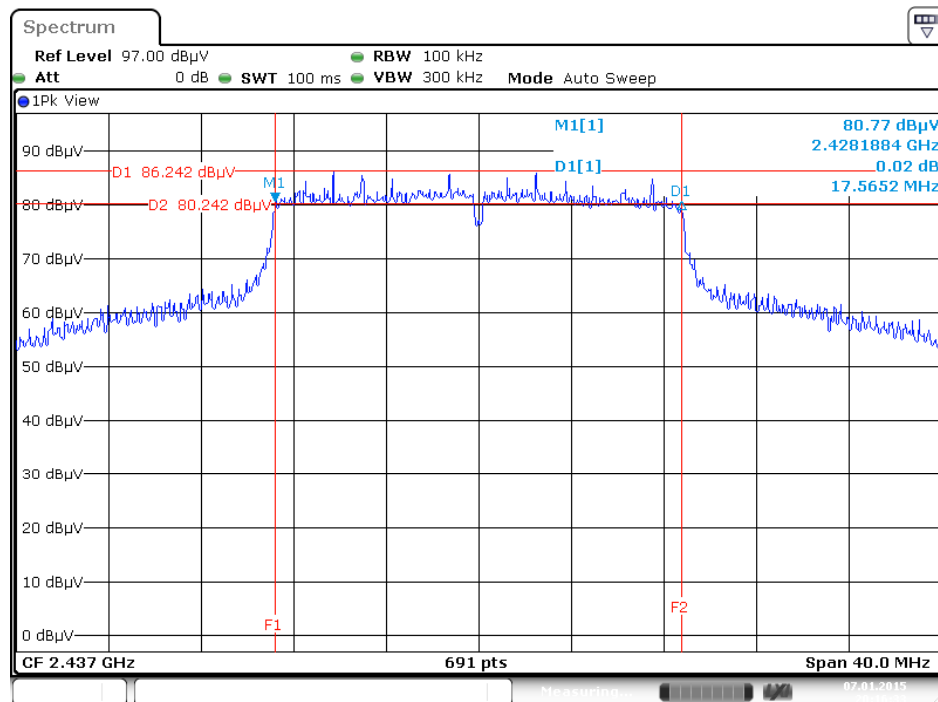
Date: 7.JAN 2015 20:11:46

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



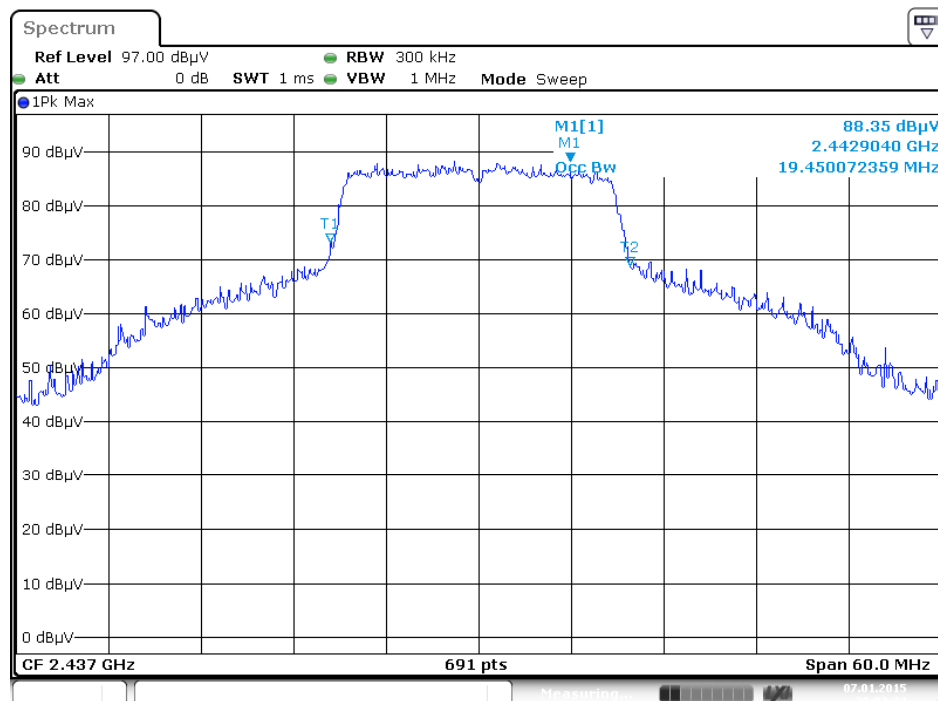
Date: 7.JAN 2015 19:58:22

6 dB Bandwidth Plot on Configuration IEEE 802. MCS0/Nss1 VHT20 / 2437 MHz / Chain 2



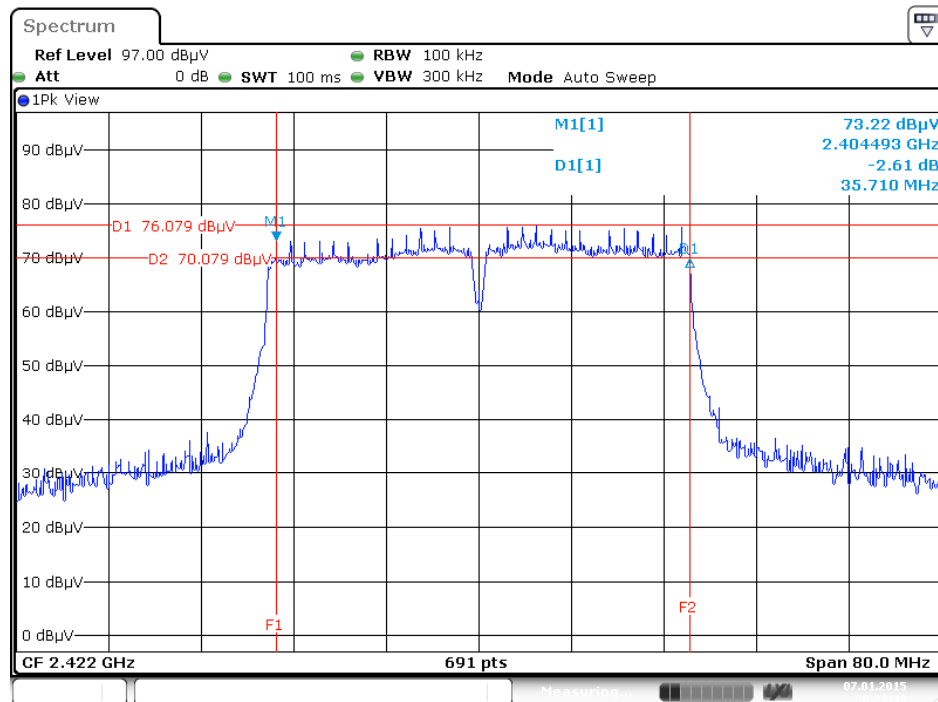
Date: 7 JAN 2015 20:16:32

99% Occupied Bandwidth Plot on Configuration IEEE 802. MCS0/Nss1 VHT20 / 2437 MHz / Chain 2



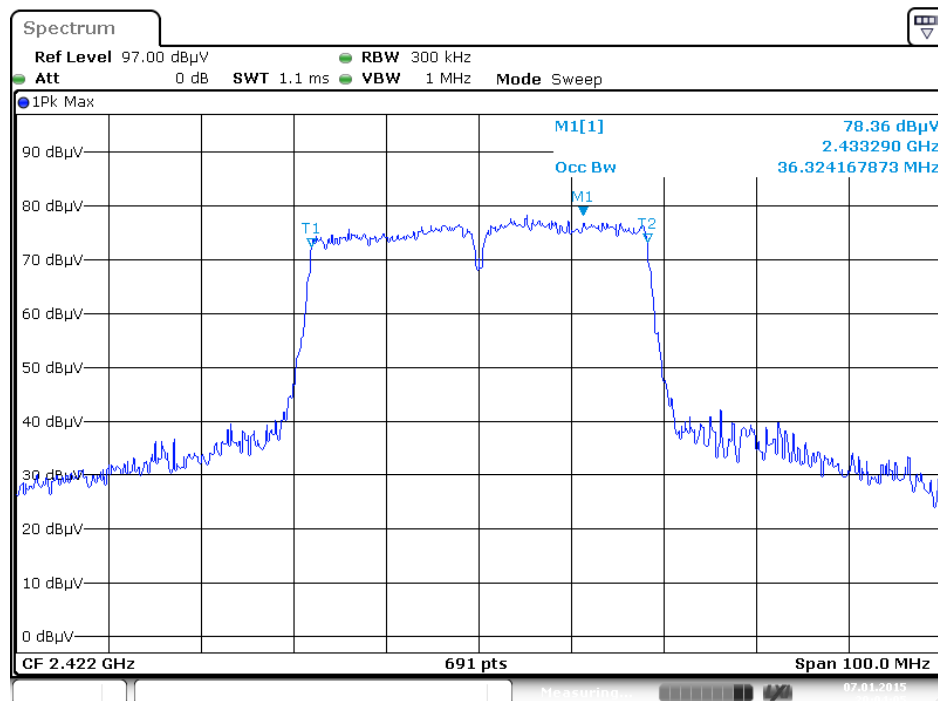
Date: 7 JAN 2015 20:02:34

6 dB Bandwidth Plot on Configuration IEEE 802. MCS0/Nss1 VHT40 / 2422 MHz / Chain 2



Date: 7.JAN 2015 20:27:43

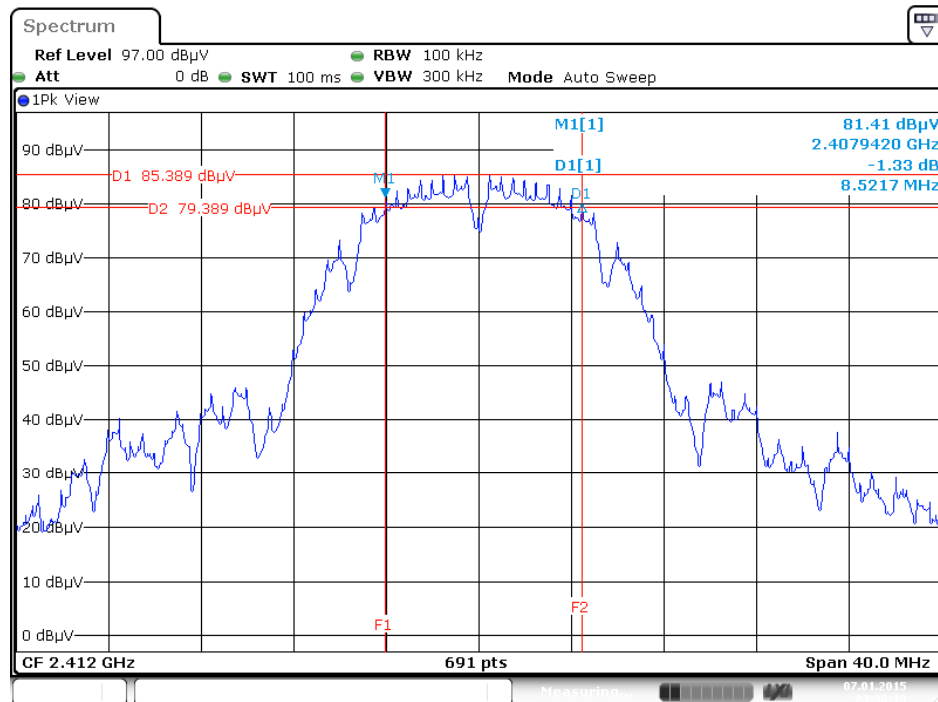
99% Occupied Bandwidth Plot on Configuration IEEE 802. MCS0/Nss1 VHT40 / 2422 MHz / Chain 2



Date: 7.JAN 2015 20:34:05

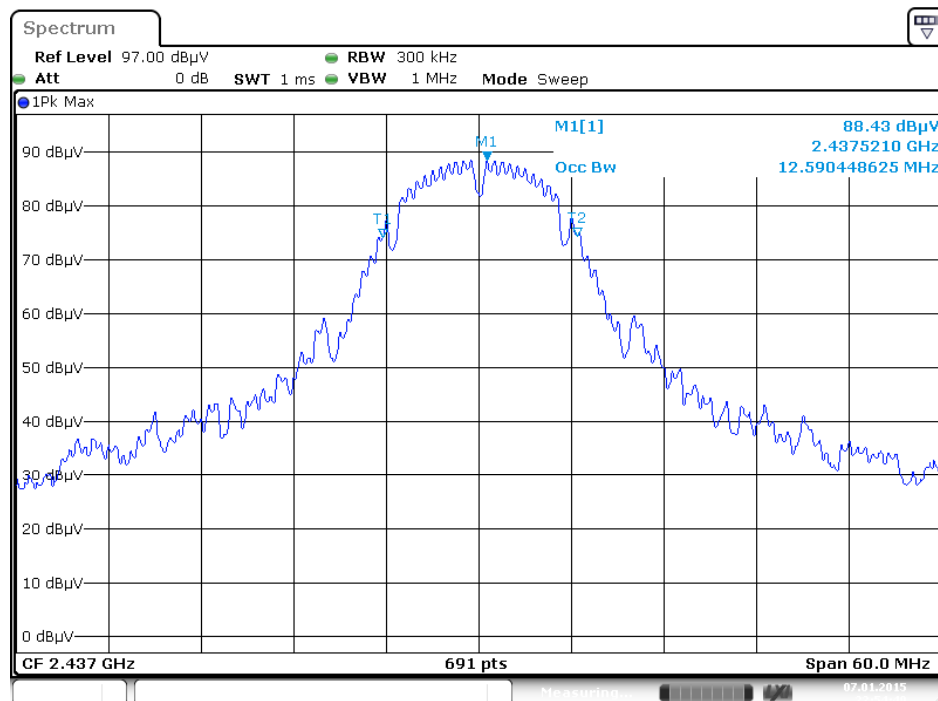
Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 2TX)

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



Date: 7.JAN 2015 23:36:19

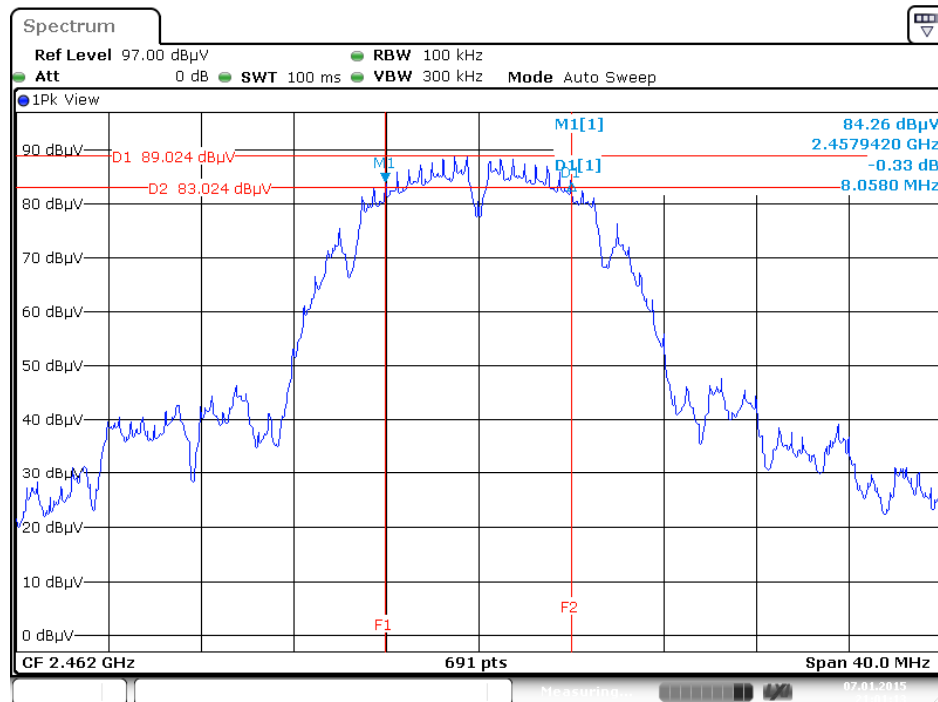
99% Occupied Bandwidth Plot on Configuration IEEE 802.11b / 2437 MHz / Chain 1 + Chain 2



Date: 7.JAN 2015 22:54:49

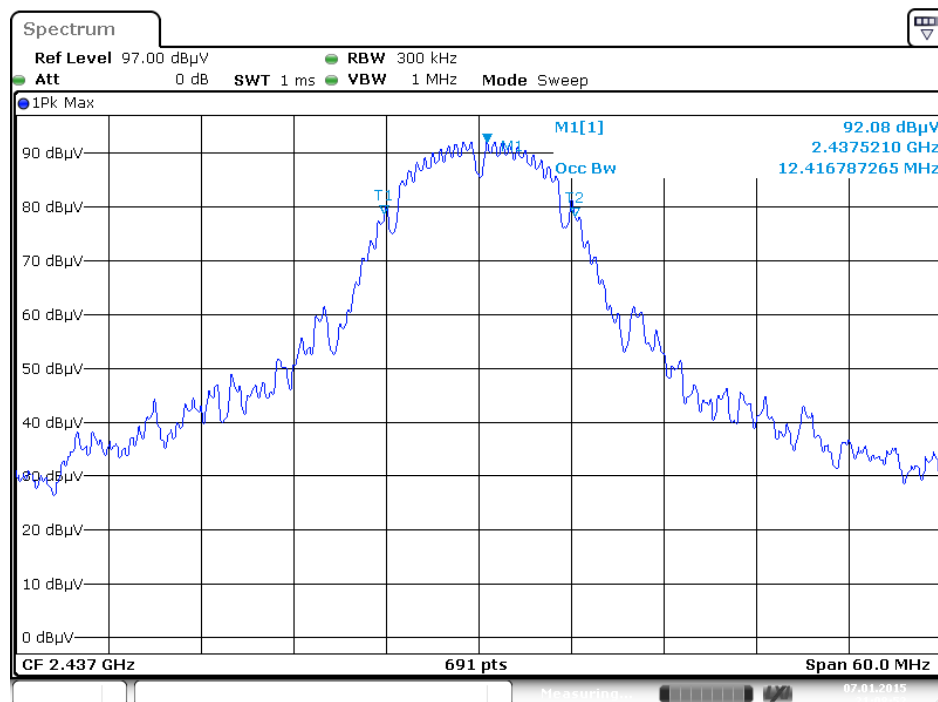
Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 3TX)

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



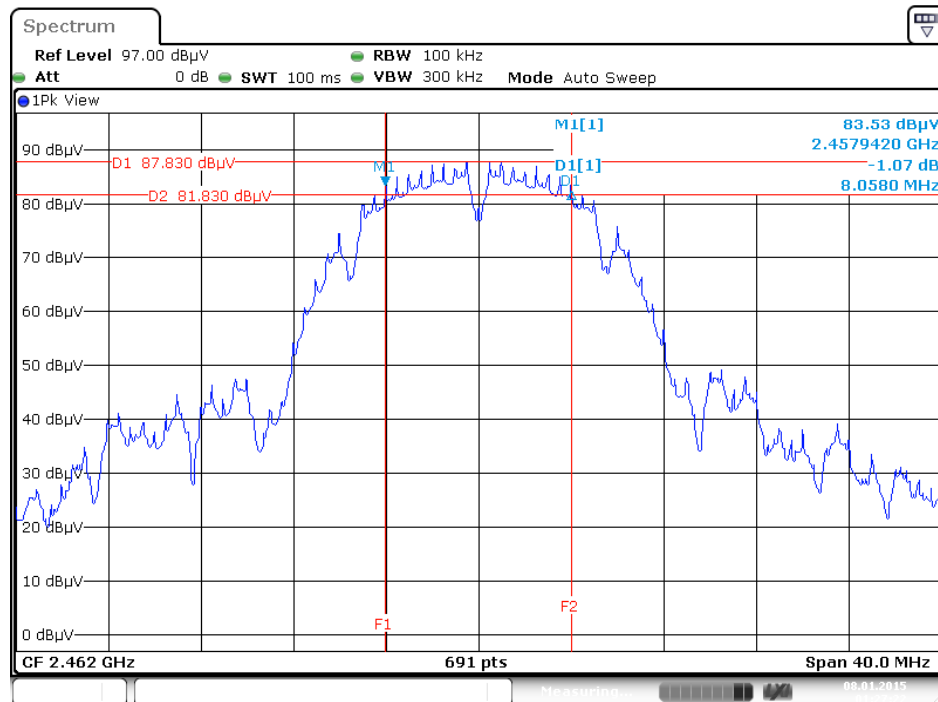
Date: 7.JAN 2015 21:01:13

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



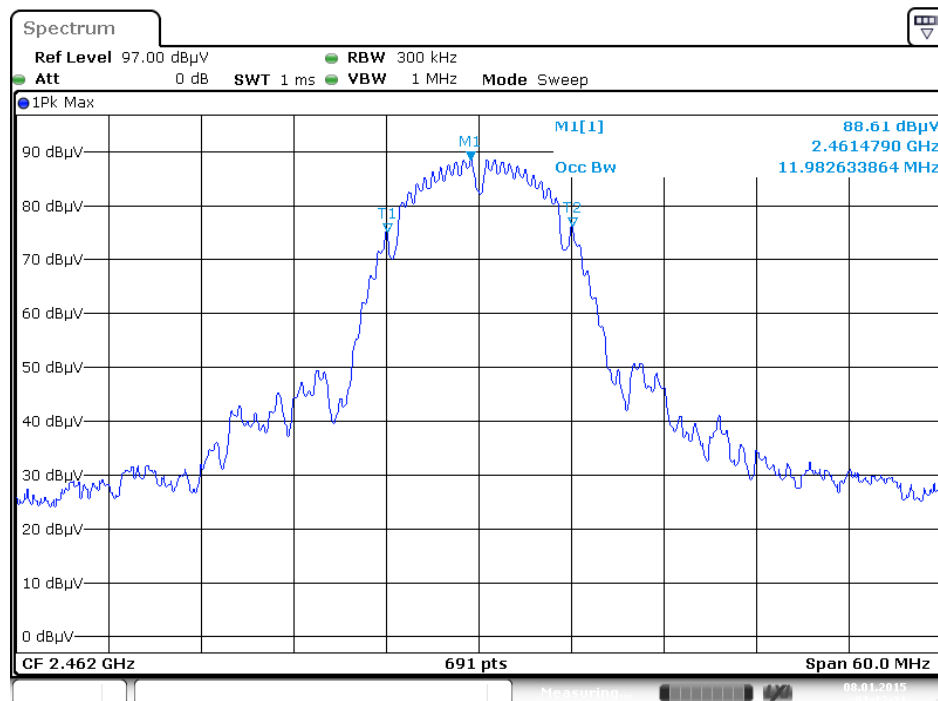
Date: 7.JAN 2015 21:08:52

Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 1: 8.8, Chain 2: 5.9, Chain 3: 9 dBi / 1TX)
6 dB Bandwidth Plot on Configuration IEEE 802.11b / 2462 MHz / Chain 1



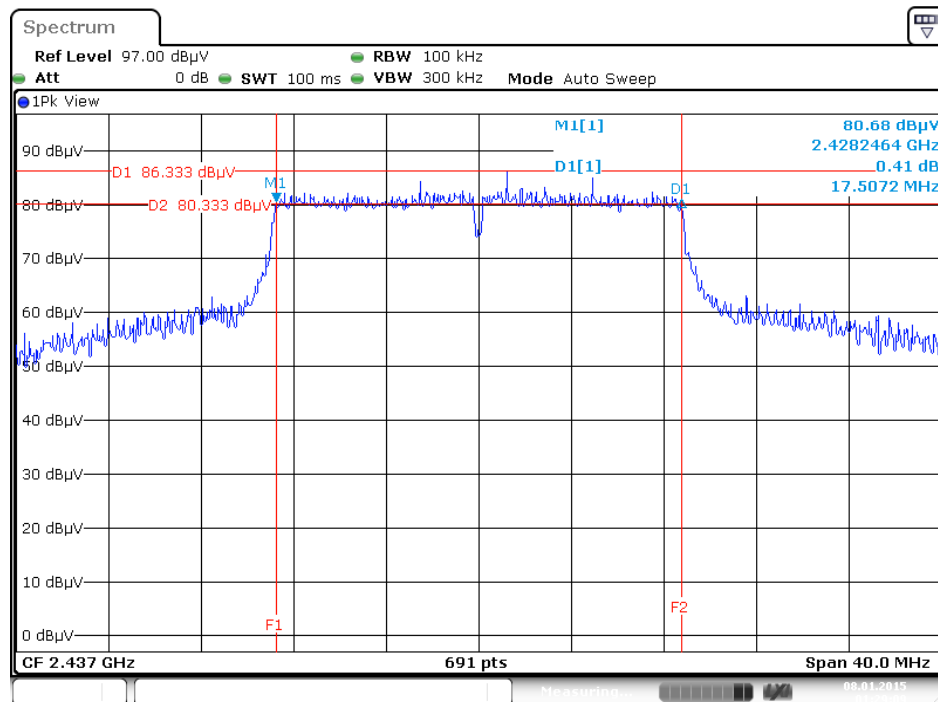
Date: 8 JAN 2015 01:27:22

99% Occupied Bandwidth Plot on Configuration IEEE 802.11b / 2462 MHz / Chain 1

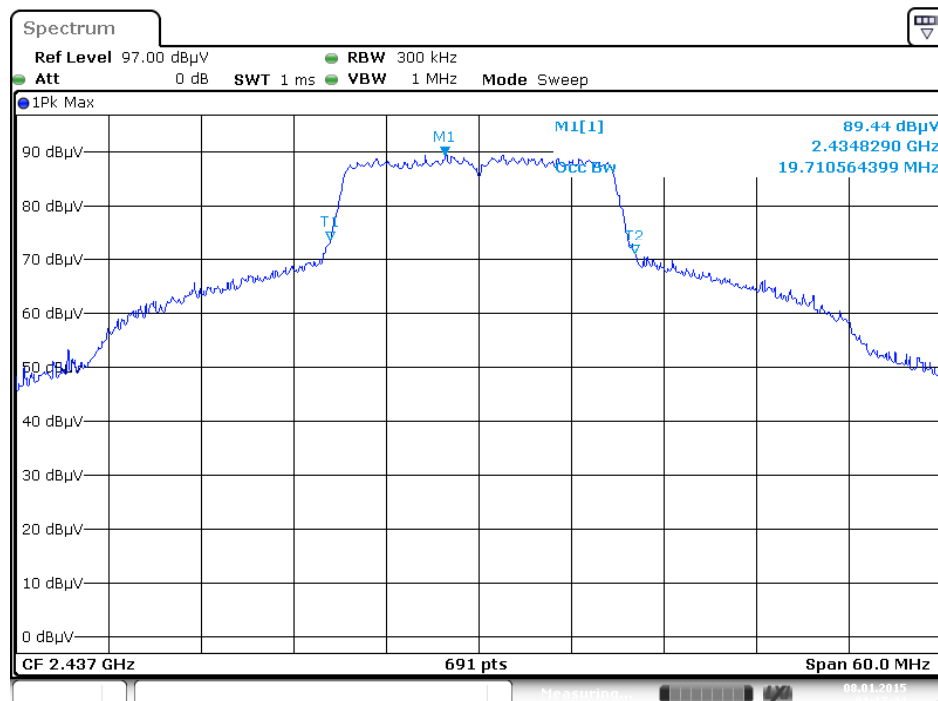


Date: 8 JAN 2015 01:12:21

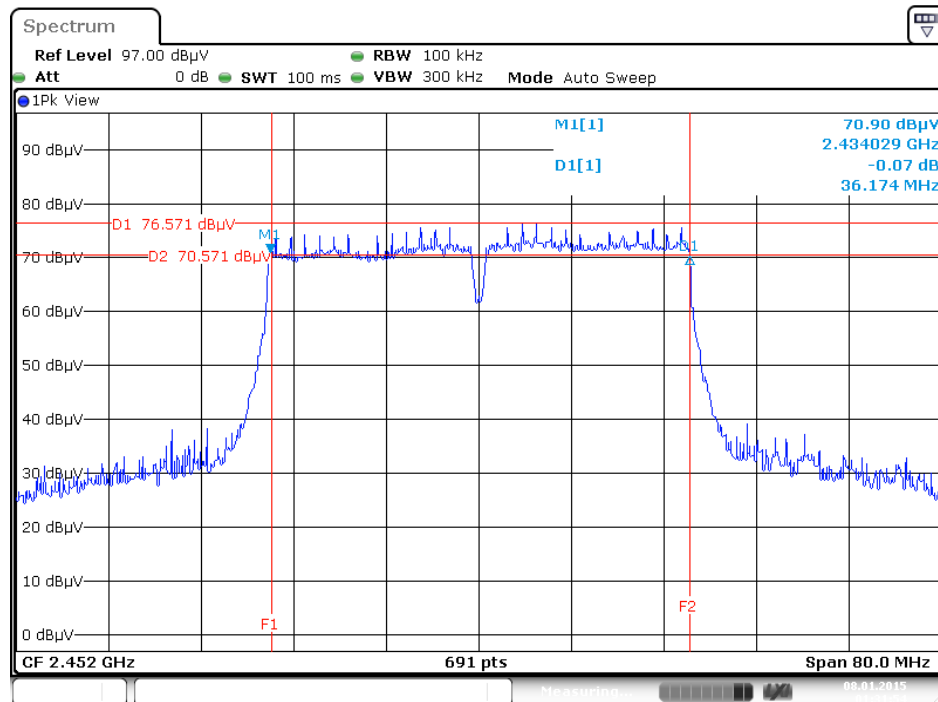
6 dB Bandwidth Plot on Configuration IEEE 802. MCS0/Nss1 VHT20 / 2437 MHz / Chain 1



99% Occupied Bandwidth Plot on Configuration IEEE 802. MCS0/Nss1 VHT20 / 2437 MHz / Chain 1

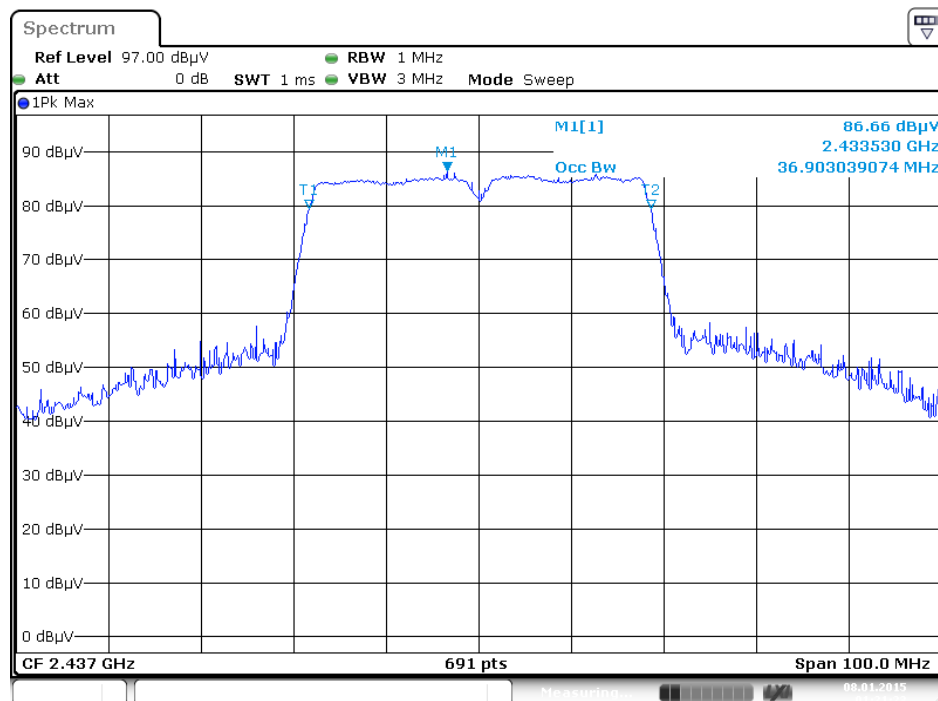


6 dB Bandwidth Plot on Configuration IEEE 802. MCS0/Nss1 VHT40 / 2452 MHz / Chain 1



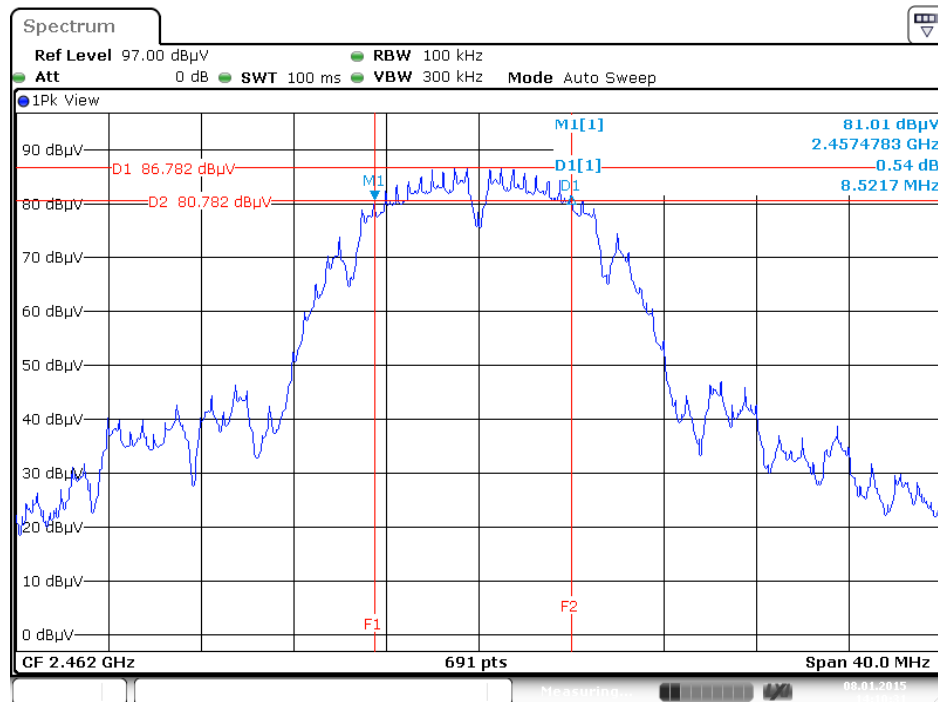
Date: 8 JAN 2015 01:31:54

99% Occupied Bandwidth Plot on Configuration IEEE 802. MCS0/Nss1 VHT40 / 2437 MHz / Chain 1



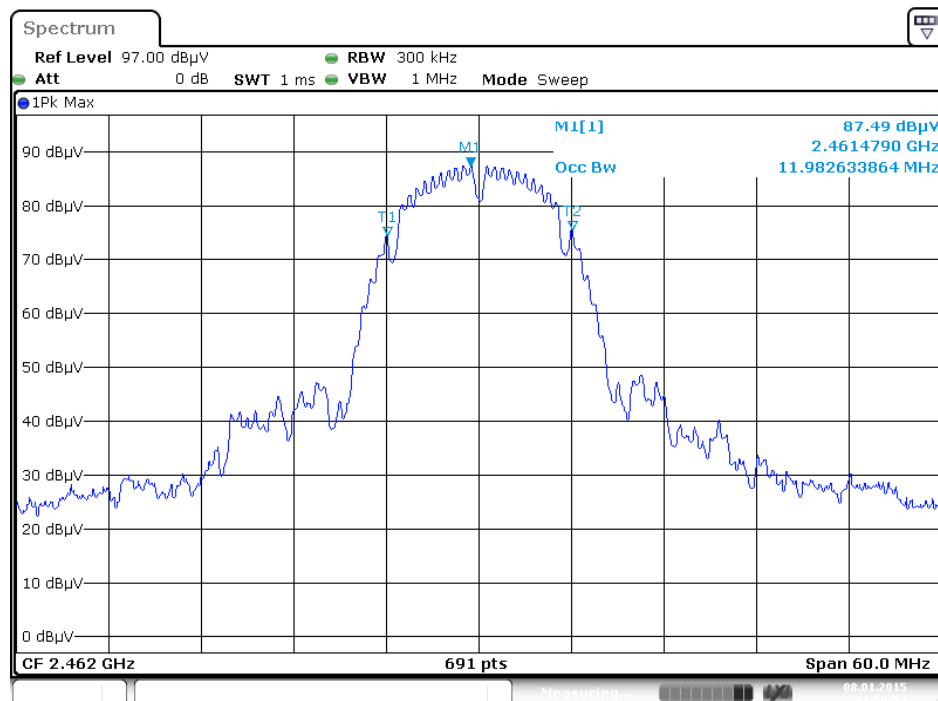
Date: 8 JAN 2015 01:21:24

Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 1: 8.8, Chain 2: 5.9, Chain 3: 9 dBi / 2TX)
6 dB Bandwidth Plot on Configuration IEEE 802.11b / 2462 MHz / Chain 1 + Chain 2



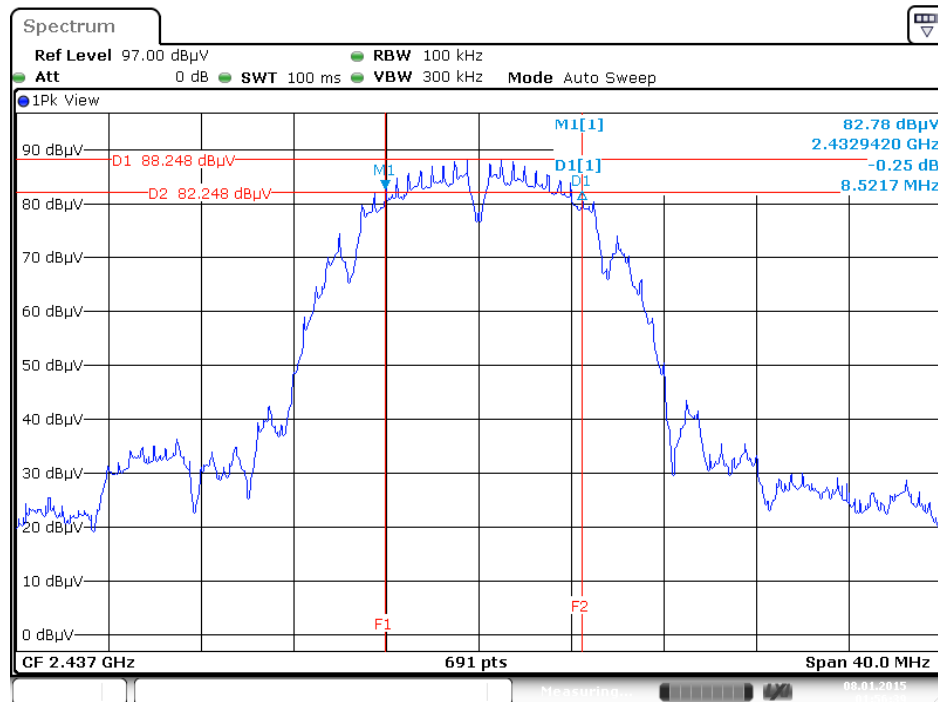
Date: 8 JAN 2015 14:10:32

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



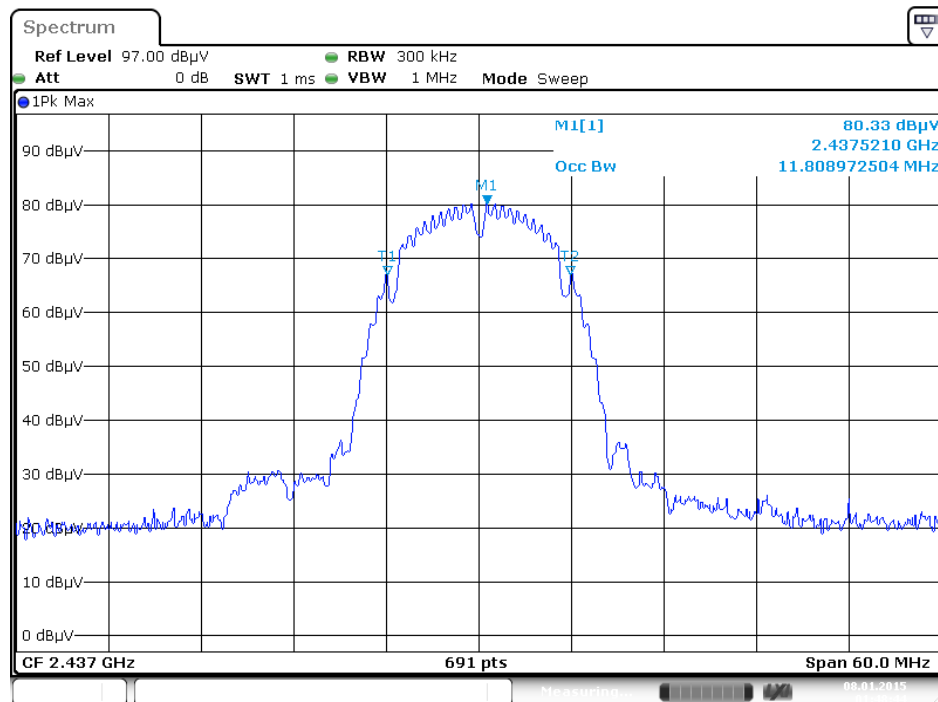
Date: 8 JAN 2015 11:50:54

Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 1: 8.8, Chain 2: 5.9, Chain 3: 9 dBi / 3TX)
6 dB Bandwidth Plot on Configuration IEEE 802.11b / 2437 MHz / Chain 1 + Chain 2 + Chain 3



Date: 8 JAN 2015 01:56:40

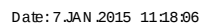
99% Occupied Bandwidth Plot on Configuration IEEE 802.11b / 2437 MHz / Chain 1 + Chain 2 + Chain 3



Date: 8 JAN 2015 01:48:44

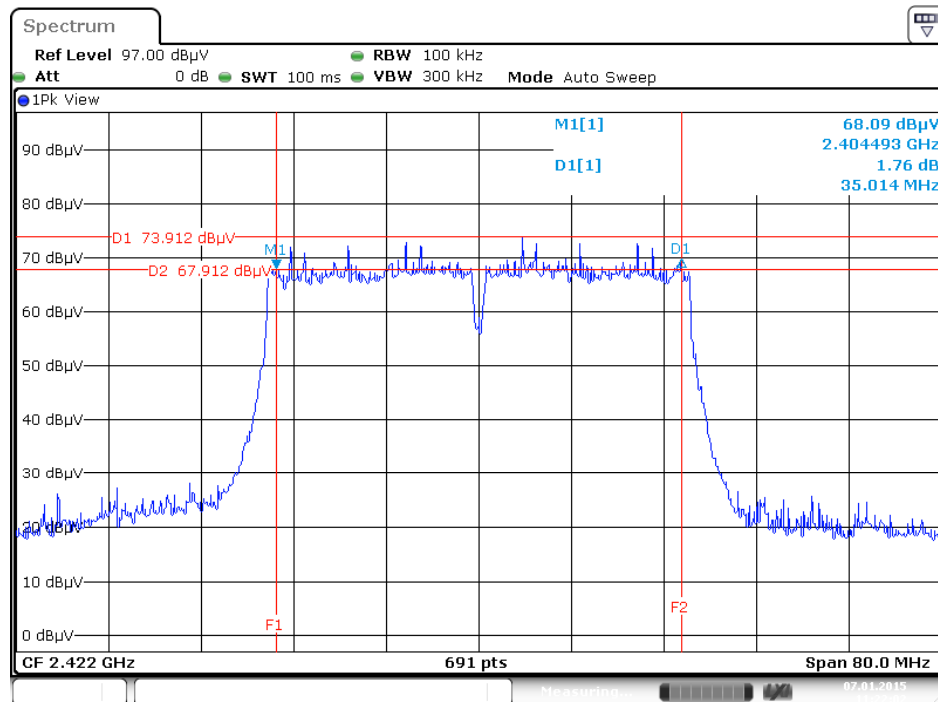


6 dB Bandwidth Plot on Configuration IEEE 802. MCS0/Nss1 VHT20 / 2437 MHz / Chain 1 + Chain 2



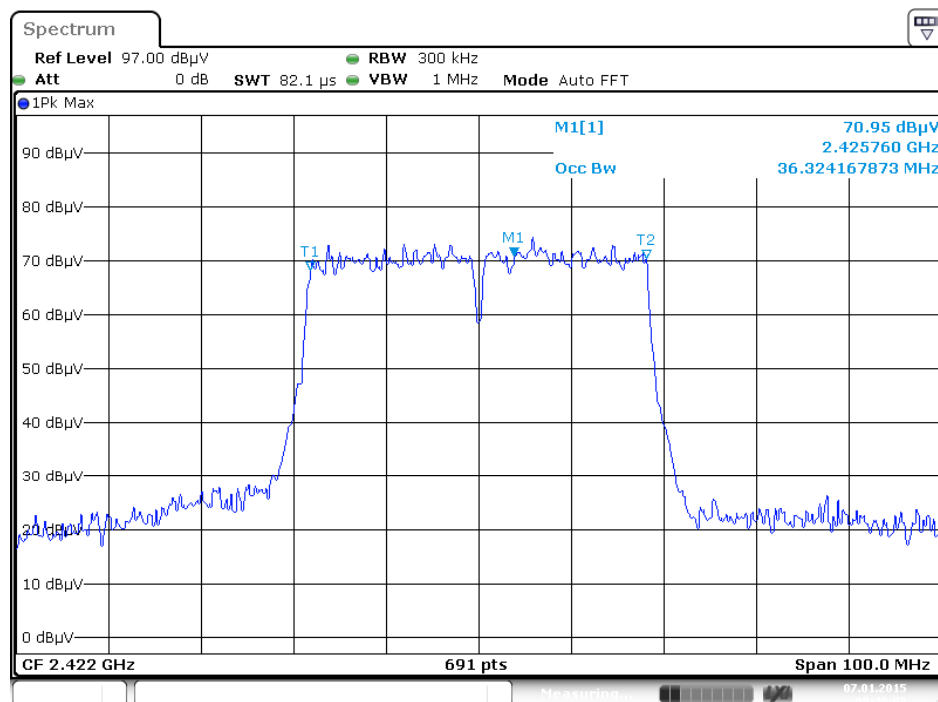
Date: 7 JAN 2015 09:42:37

6 dB Bandwidth Plot on Configuration IEEE 802. MCS0/Nss1 VHT40 / 2422 MHz / Chain 1 + Chain 2



Date: 7.JAN.2015 11:22:01

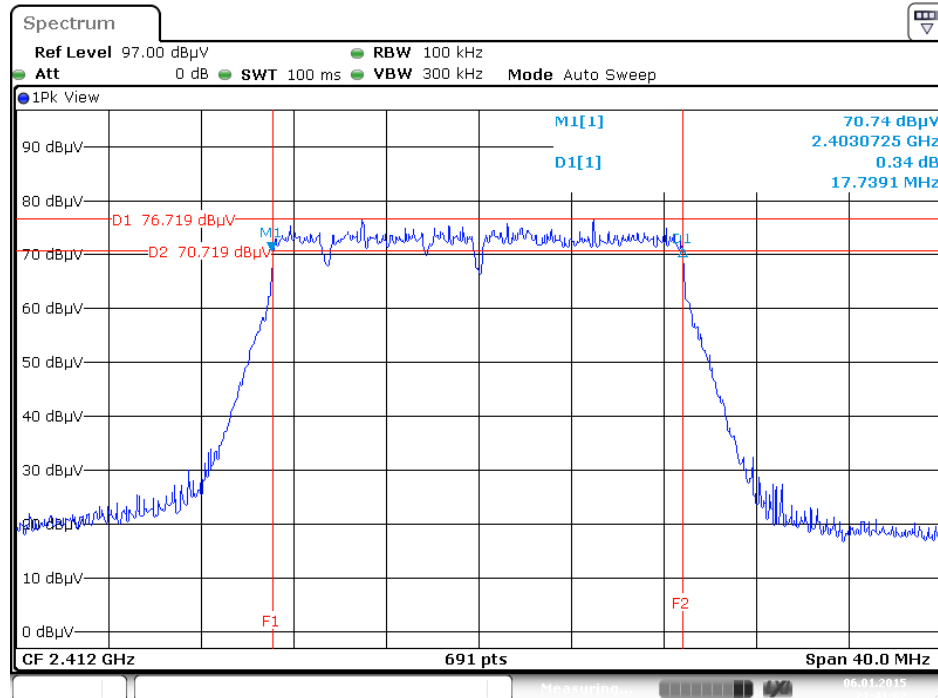
99% Occupied Bandwidth Plot on Configuration IEEE 802. MCS0/Nss1 VHT40 / 2422 MHz / Chain 1 + Chain 2



Date: 7.JAN.2015 09:46:03

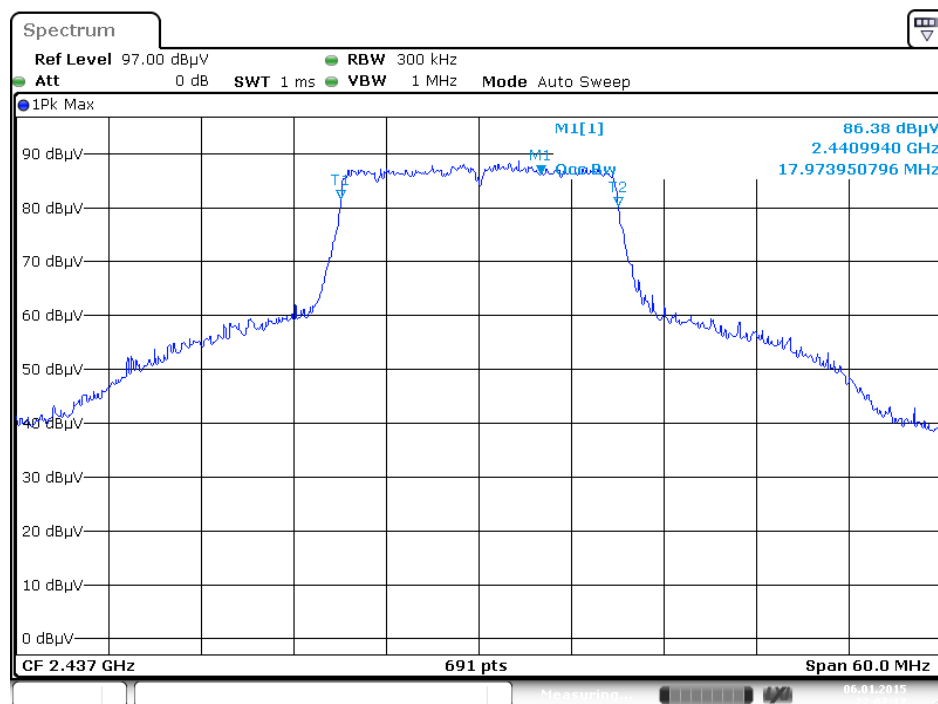
Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 3TX)

6 dB Bandwidth Plot on Configuration IEEE 802. MCS0/Nss1 VHT20 / 2412 MHz / Chain 1 + Chain 2 + Chain 3



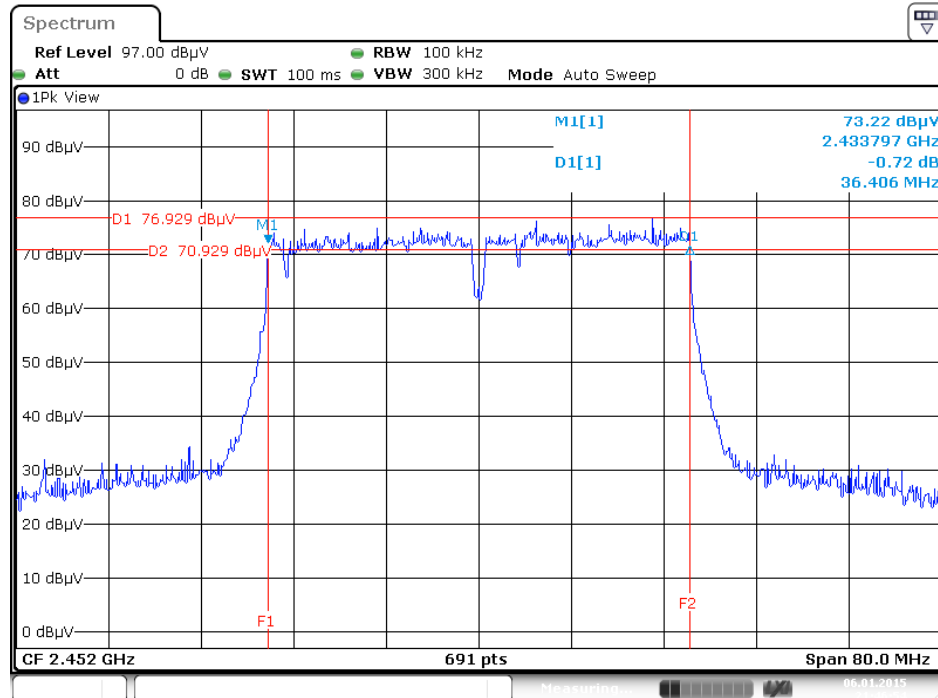
Date: 6 JAN 2015 21:41:03

99% Occupied Bandwidth Plot on Configuration IEEE 802. MCS0/Nss1 VHT20 / 2437 MHz / Chain 1 + Chain 2 + Chain 3



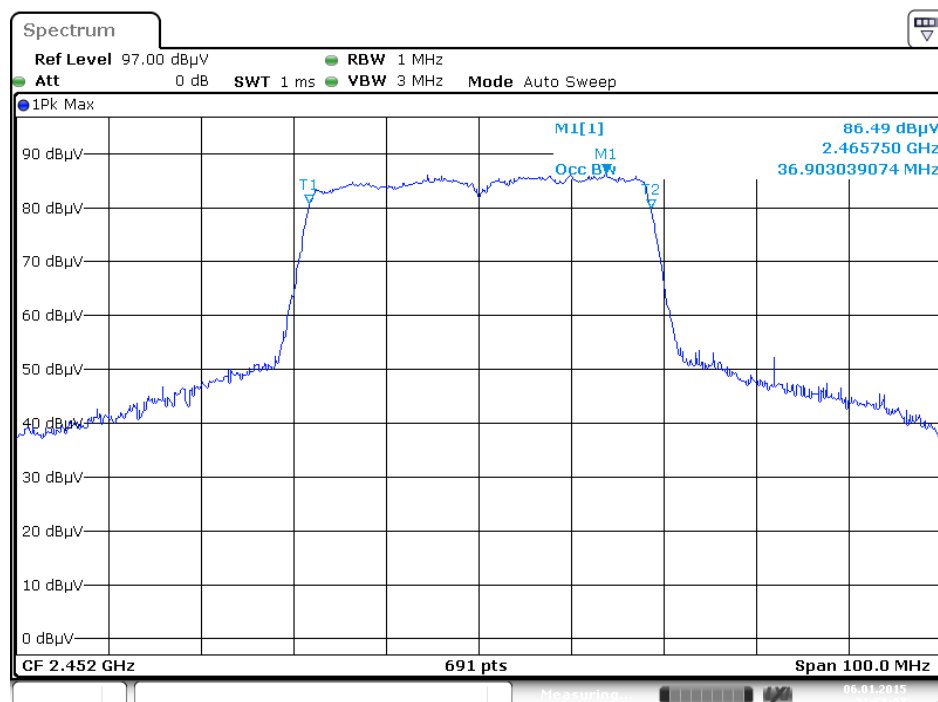
Date: 6 JAN 2015 22:07:17

6 dB Bandwidth Plot on Configuration IEEE 802. MCS0/Nss1 VHT40 / 2452 MHz / Chain 1 + Chain 2 + Chain 3



Date: 6 JAN 2015 21:46:54

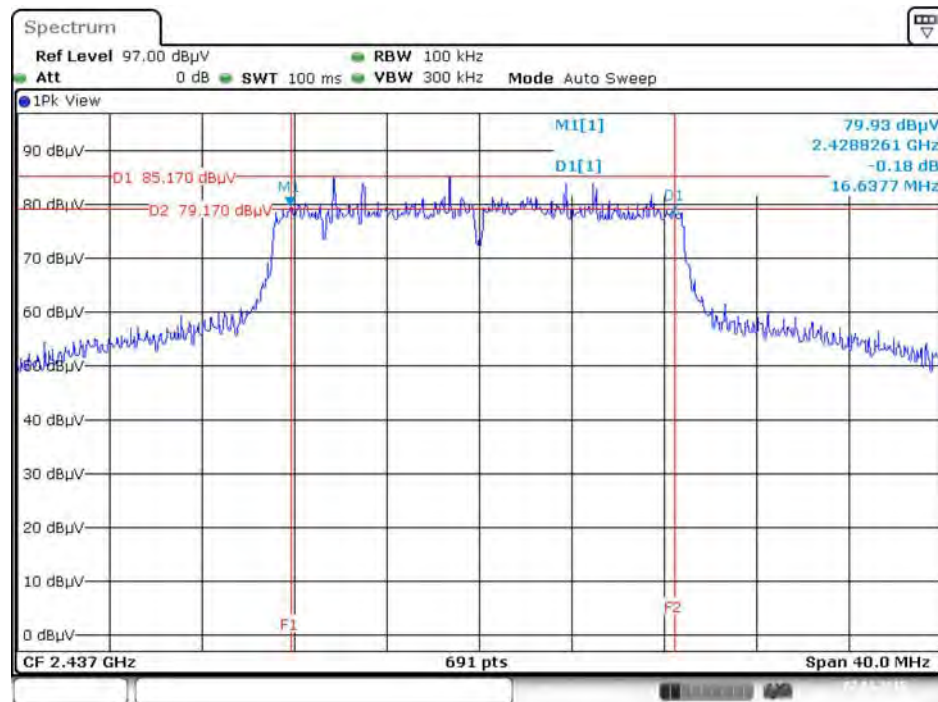
99% Occupied Bandwidth Plot on Configuration IEEE 802. MCS0/Nss1 VHT40 / 2452 MHz / Chain 1 + Chain 2 + Chain 3



Date: 6 JAN 2015 21:51:08

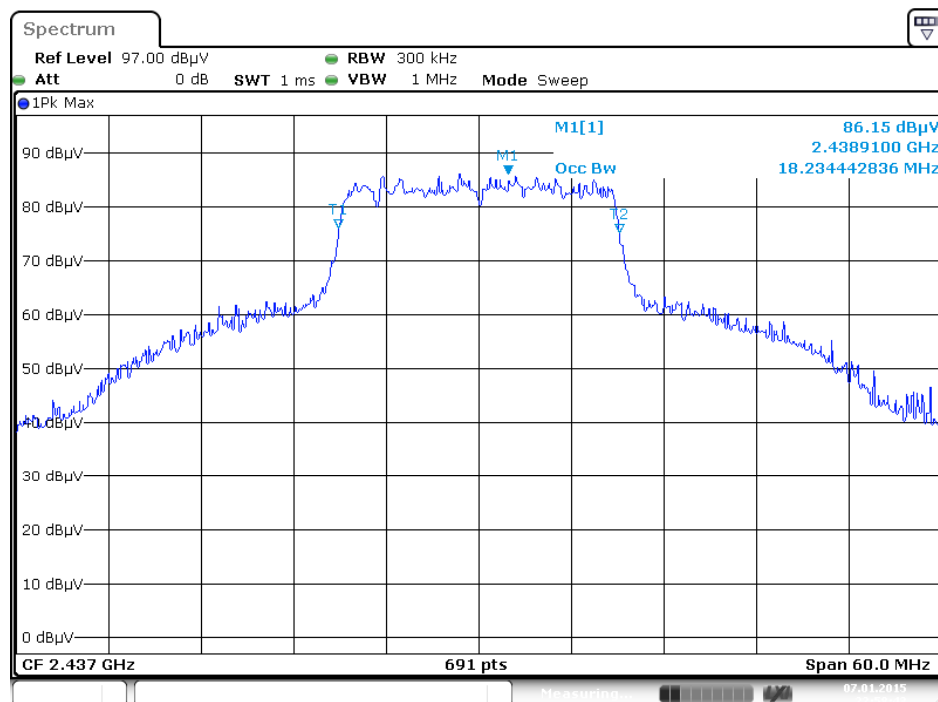
Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 2TX)

6 dB Bandwidth Plot on Configuration IEEE 802. MCS0/Nss1 VHT20 / 2437 MHz / Chain 1 + Chain 2



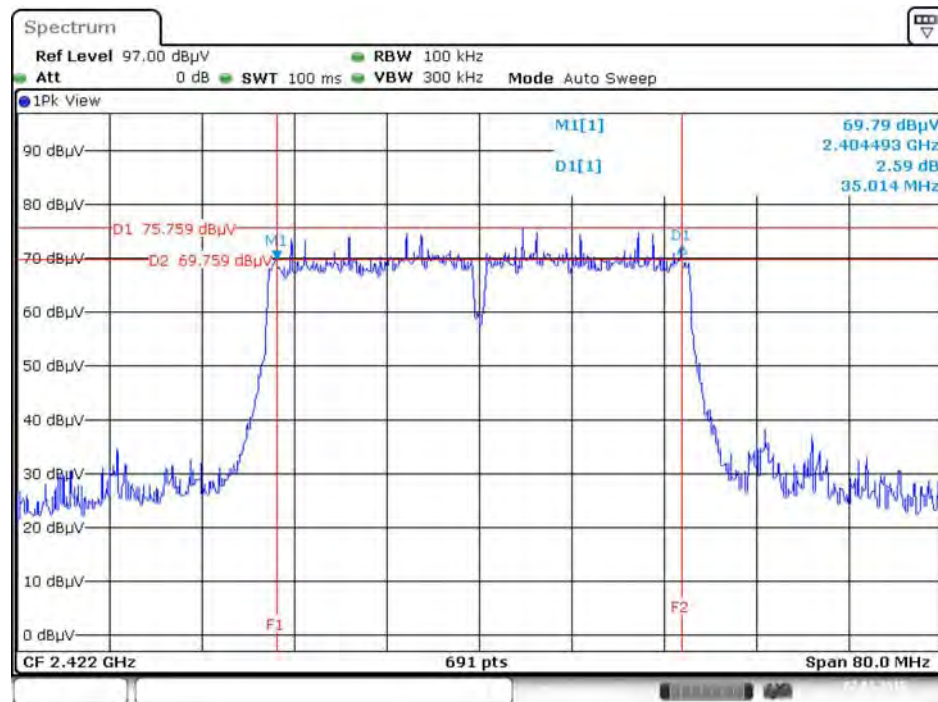
Date: 7. JAN. 2015 23:51:28

99% Occupied Bandwidth Plot on Configuration IEEE 802. MCS0/Nss1 VHT20 / 2437 MHz / Chain 1 + Chain 2



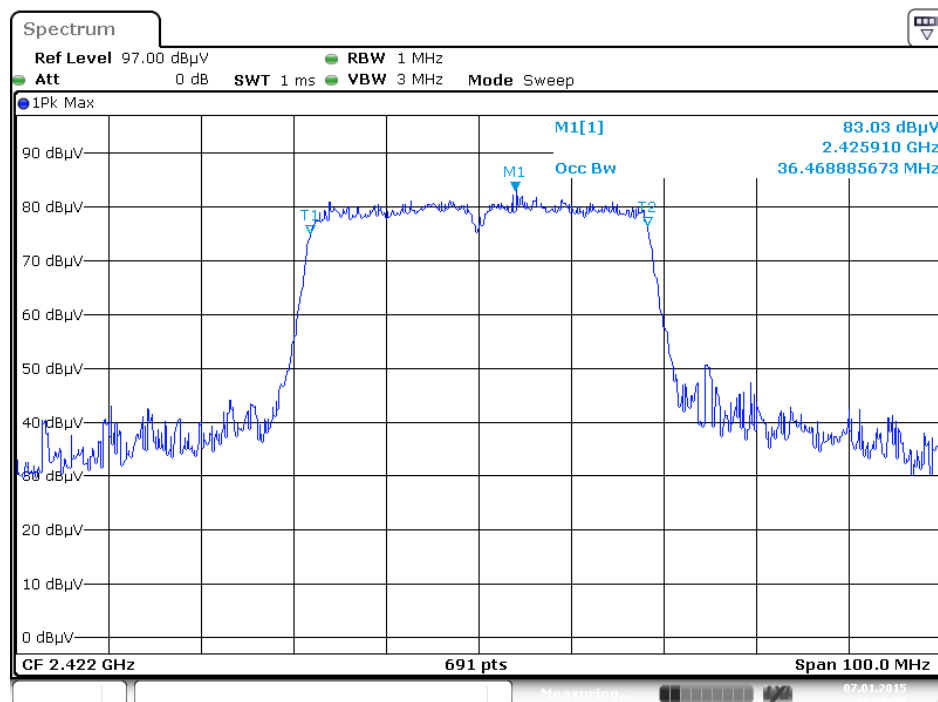
Date: 7. JAN. 2015 22:58:43

6 dB Bandwidth Plot on Configuration IEEE 802. MCS0/Nss1 VHT40 / 2422 MHz / Chain 1 + Chain 2



Date: 7. JAN. 2015 23:53:22

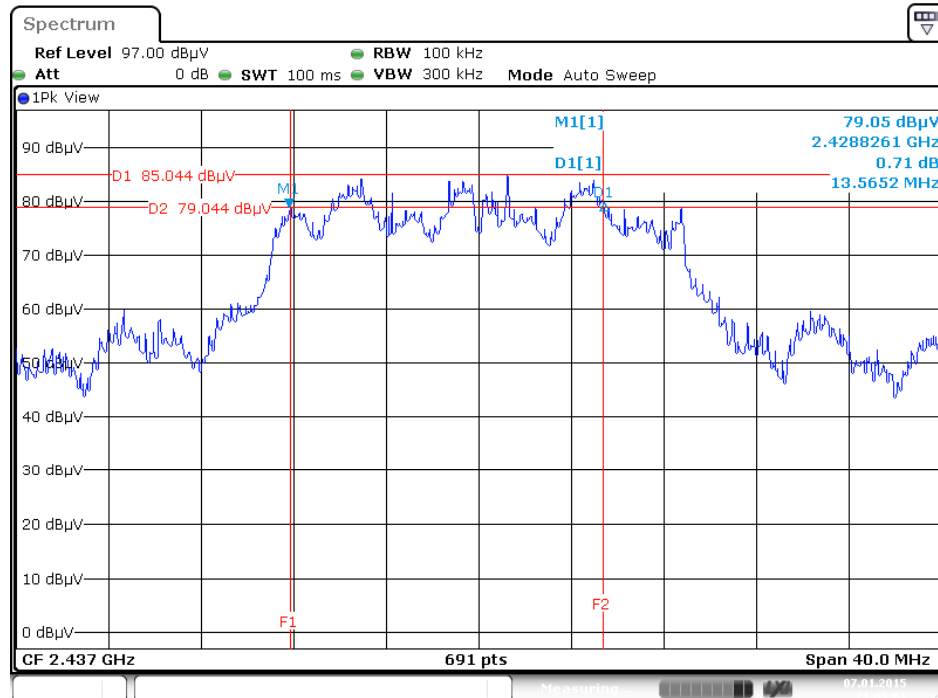
99% Occupied Bandwidth Plot on Configuration IEEE 802. MCS0/Nss1 VHT40 / 2422 MHz / Chain 1 + Chain 2



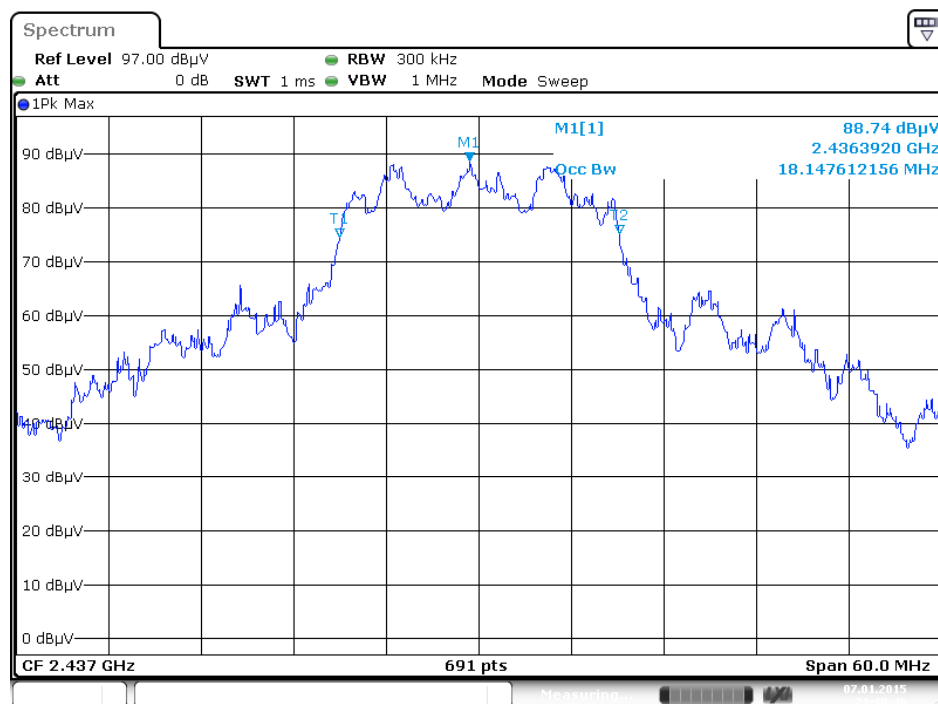
Date: 7. JAN. 2015 23:28:55

Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 3TX)

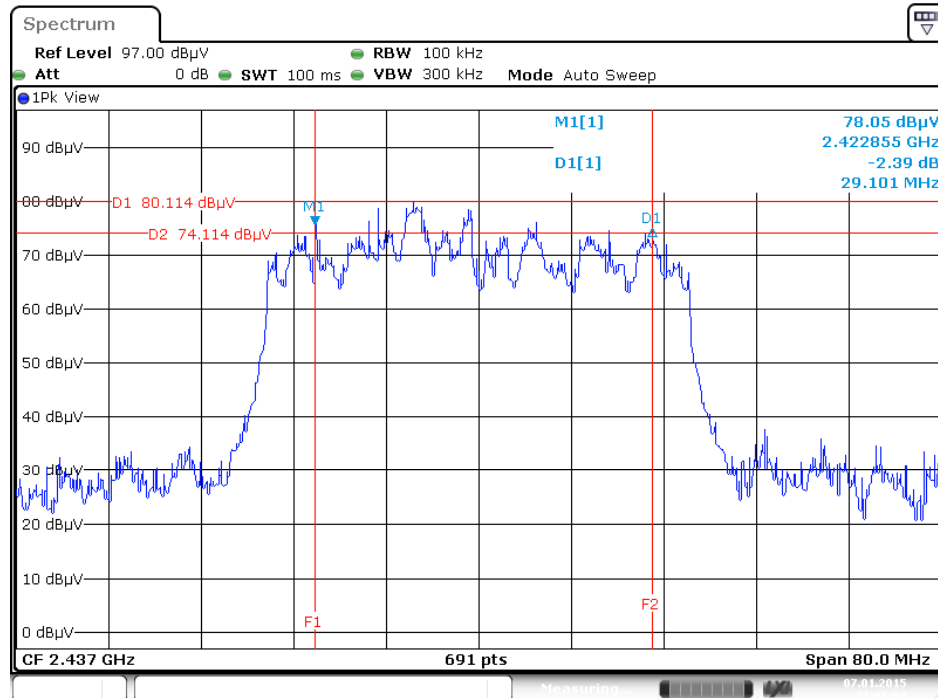
6 dB Bandwidth Plot on Configuration IEEE 802. MCS0/Nss1 VHT20 / 2437 MHz / Chain 1 + Chain 2 + Chain 3



99% Occupied Bandwidth Plot on Configuration IEEE 802. MCS0/Nss1 VHT20 / 2437 MHz / Chain 1 + Chain 2 + Chain 3

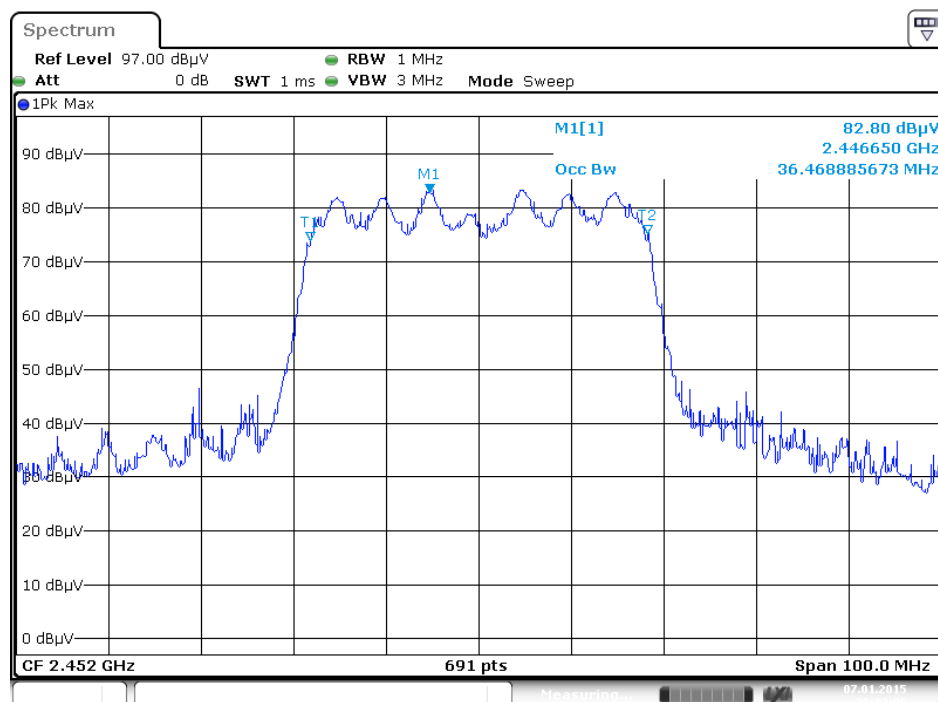


6 dB Bandwidth Plot on Configuration IEEE 802. MCS0/Nss1 VHT40 / 2437 MHz / Chain 1 + Chain 2 + Chain 3



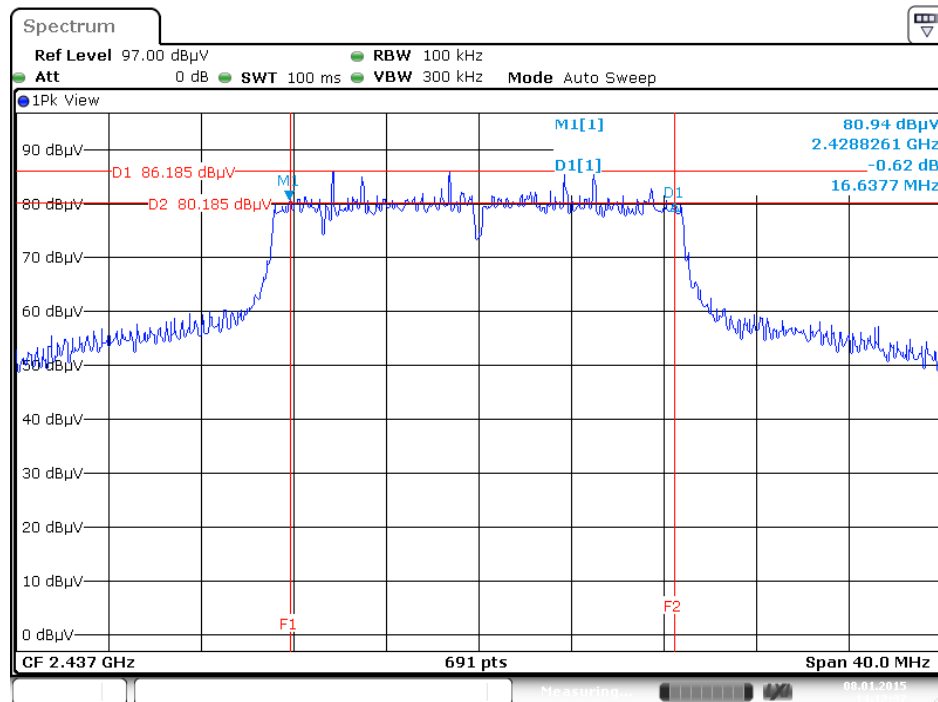
Date: 7.JAN.2015 21:06:04

99% Occupied Bandwidth Plot on Configuration IEEE 802. MCS0/Nss1 VHT40 / 2452 MHz / Chain 1 + Chain 2 + Chain 3



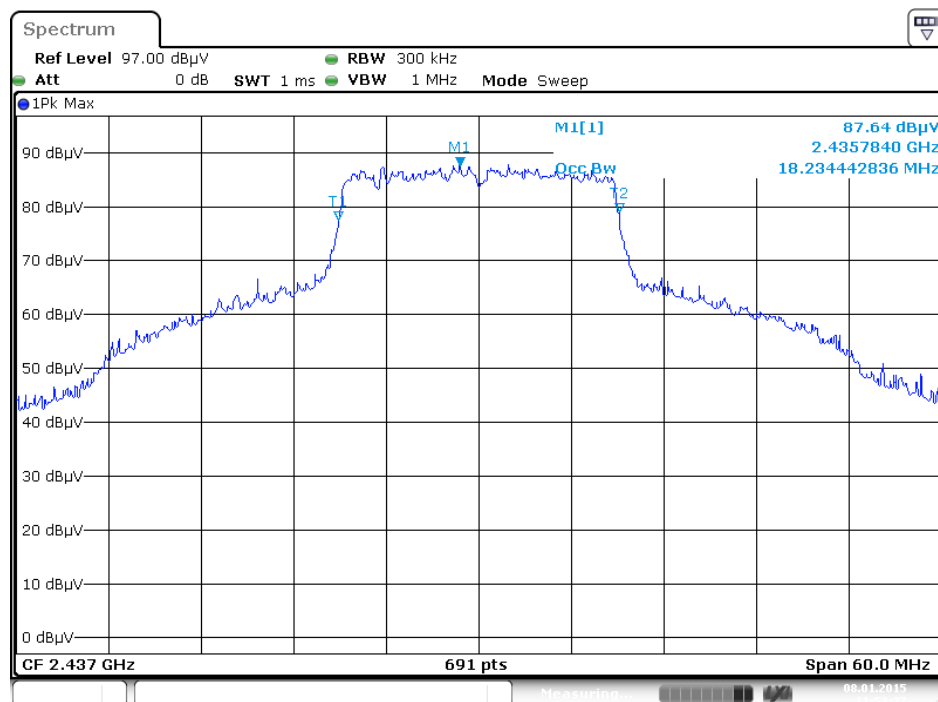
Date: 7.JAN.2015 21:23:06

Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 1: 8.8, Chain 2: 5.9, Chain 3: 9 dBi / 2TX)
6 dB Bandwidth Plot on Configuration IEEE 802. MCS0/Nss1 VHT20 / 2437 MHz / Chain 1 + Chain 2



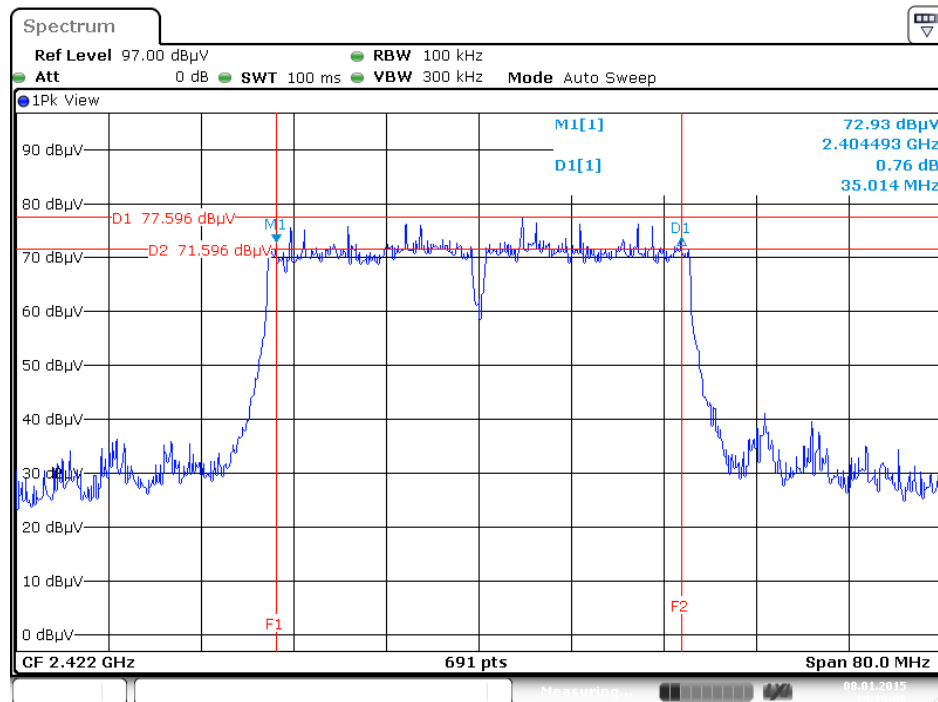
Date: 8 JAN 2015 14:12:37

99% Occupied Bandwidth Plot on Configuration IEEE 802. MCS0/Nss1 VHT20 / 2437 MHz / Chain 1 + Chain 2



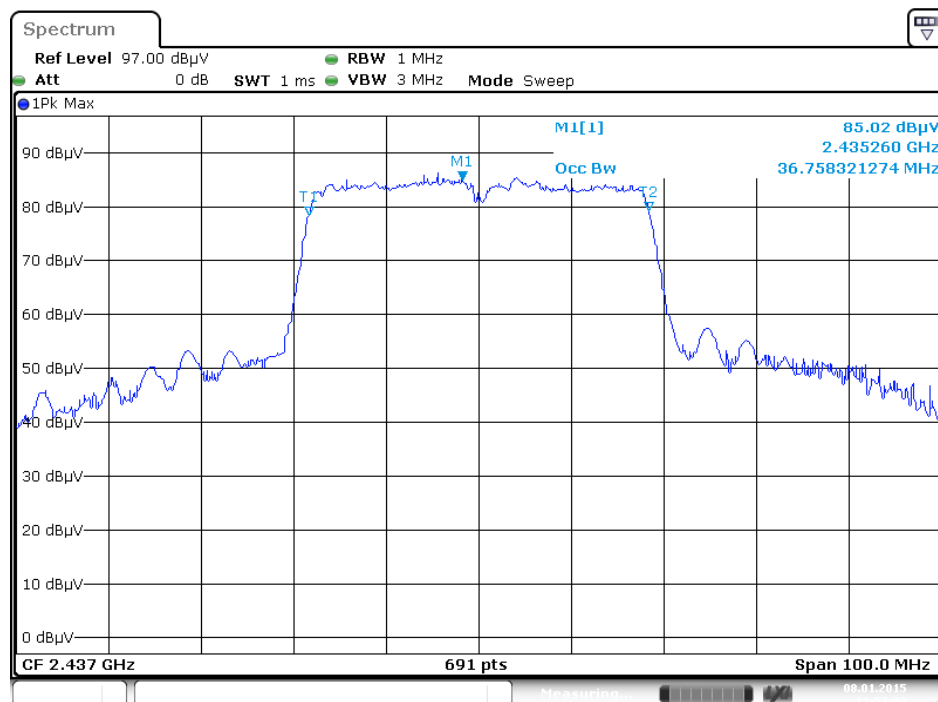
Date: 8 JAN 2015 11:53:27

6 dB Bandwidth Plot on Configuration IEEE 802. MCS0/Nss1 VHT40 / 2422 MHz / Chain 1 + Chain 2



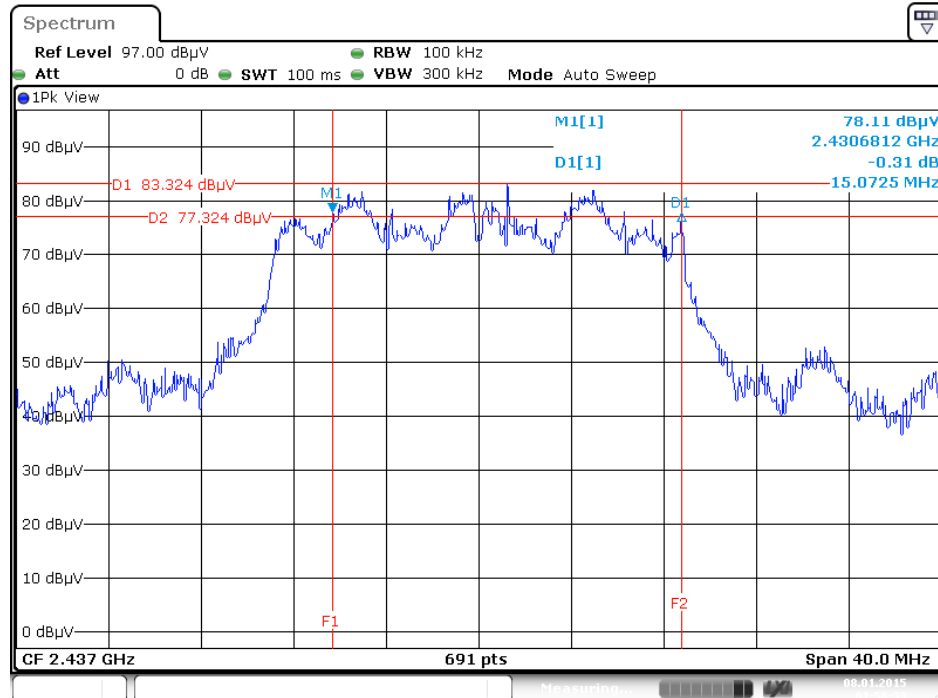
Date: 8 JAN 2015 14:15:01

99% Occupied Bandwidth Plot on Configuration IEEE 802. MCS0/Nss1 VHT40 / 2437 MHz / Chain 1 + Chain 2



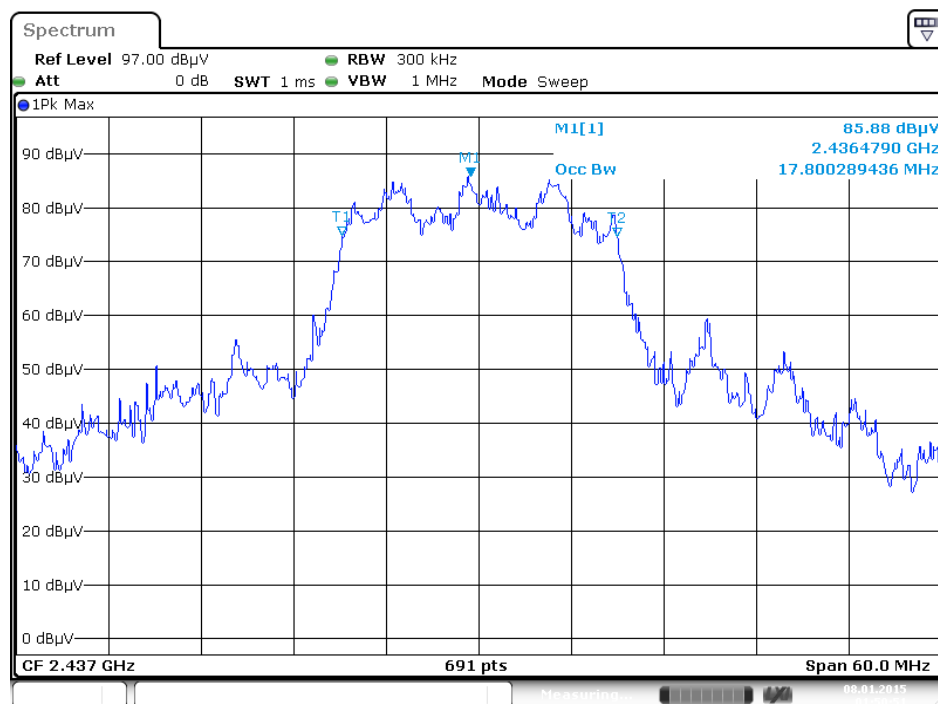
Date: 8 JAN 2015 11:57:03

Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 1: 8.8, Chain 2: 5.9, Chain 3: 9 dBi / 3TX)
6 dB Bandwidth Plot on Configuration IEEE 802. MCS0/Nss1 VHT20 / 2437 MHz / Chain 1 + Chain 2 +
Chain 3



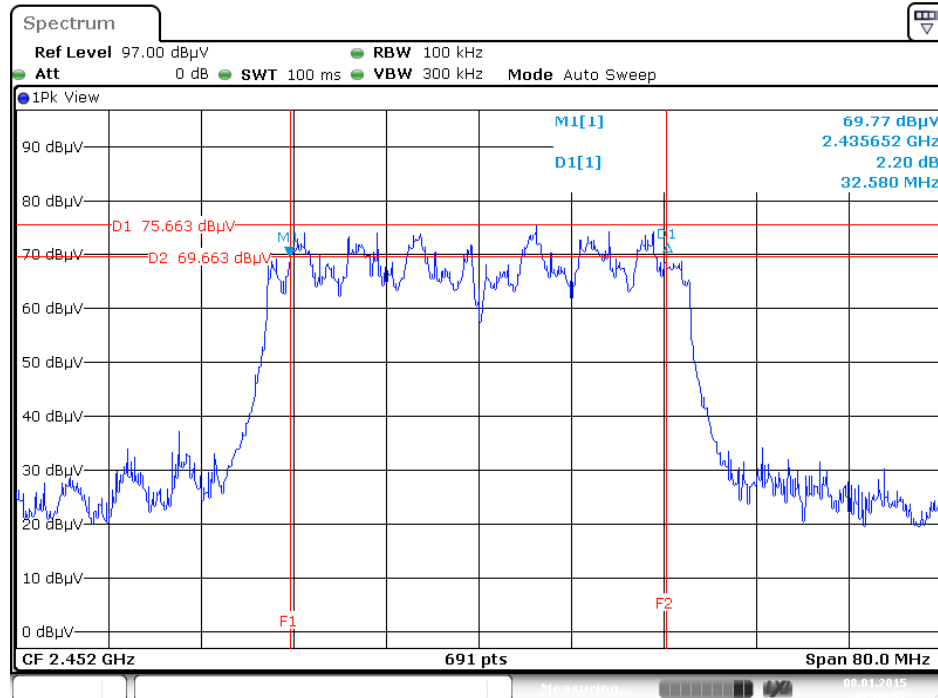
Date: 8 JAN 2015 01:58:34

99% Occupied Bandwidth Plot on Configuration IEEE 802. MCS0/Nss1 VHT20 / 2437 MHz / Chain 1 +
Chain 2 + Chain 3



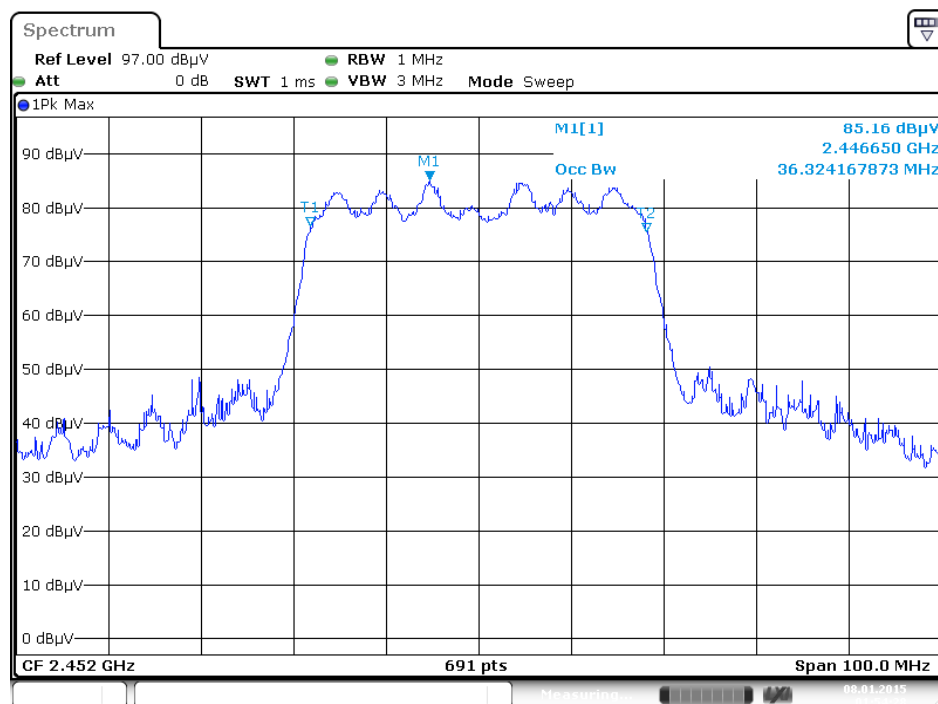
Date: 8 JAN 2015 01:50:50

6 dB Bandwidth Plot on Configuration IEEE 802. MCS0/Nss1 VHT40 / 2452 MHz / Chain 1 + Chain 2 + Chain 3



Date: 8 JAN 2015 02:00:57

99% Occupied Bandwidth Plot on Configuration IEEE 802. MCS0/Nss1 VHT40 / 2452 MHz / Chain 1 + Chain 2 + Chain 3



Date: 8 JAN 2015 01:54:28

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	1 000 MHz
Stop Frequency	10th carrier harmonic
RBW / VBW (Emission in restricted band)	1 MHz / 3MHz for Peak, 1 MHz / 1/T for Average
RBW / VBW (Emission in non-restricted band)	100kHz / 300kHz for peak

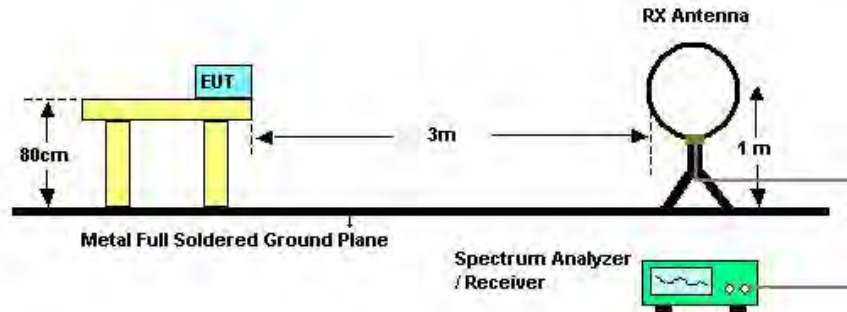
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RBW 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RBW 9kHz for QP
Start ~ Stop Frequency	30MHz~1GHz / RBW 120kHz for QP

4.5.3. Test Procedures

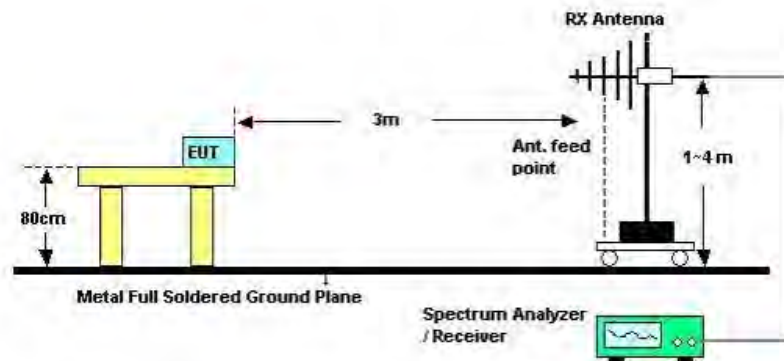
1. Configure the EUT according to ANSI C63.10. The EUT was placed on the top of the turntable 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting 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

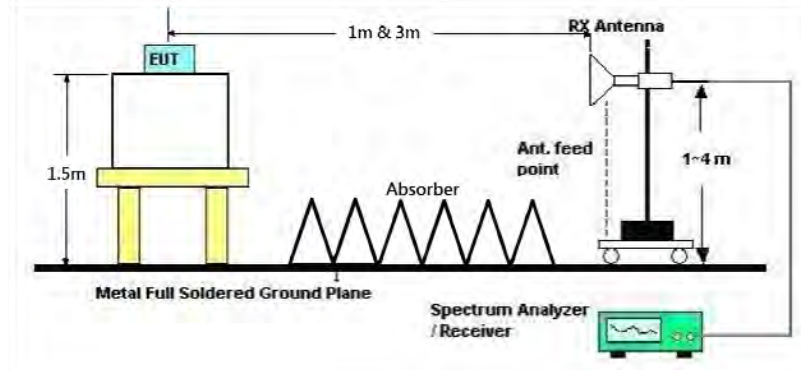
For Radiated Emissions: 9kHz ~30MHz



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	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	Normal Link
Test Date	Jan. 14, 2015		

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.

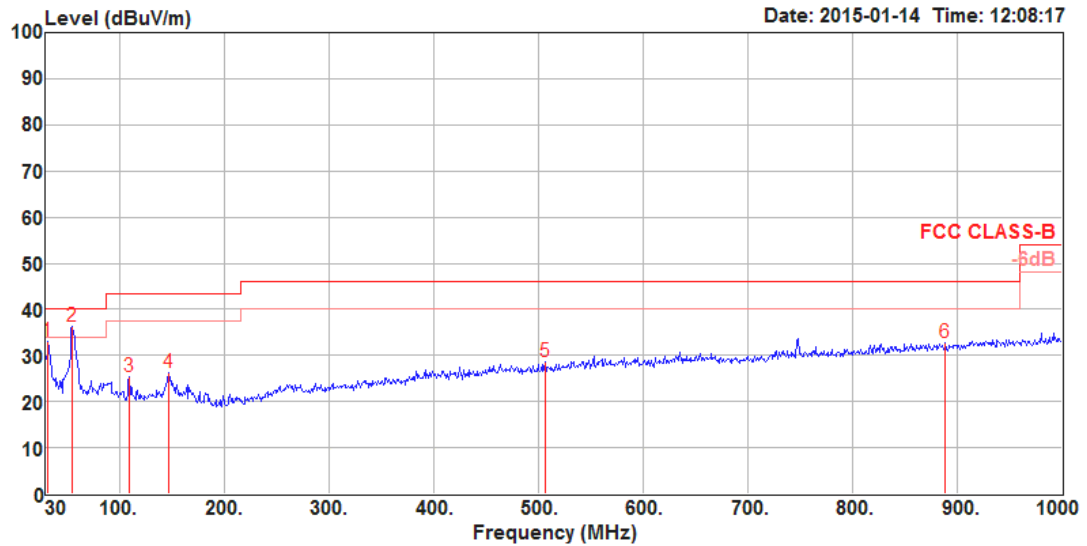
Distance extrapolation factor = $40 \log (\text{specific distance} / \text{test distance})$ (dB);

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

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

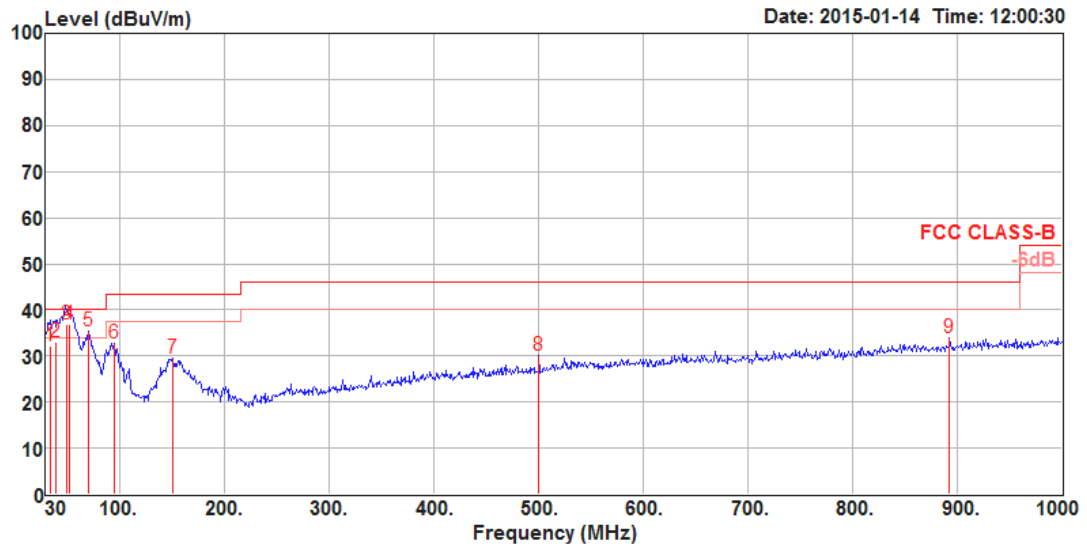
Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	Normal Link

Horizontal



	Freq	Level	Limit	Over	Read	CableAntenna	Preamp		A/Pos	T/Pos	
	MHz	dBuV/m	Line	Limit	Level	Loss	Factor	Factor	Remark	cm	deg
1	31.94	33.12	40.00	-6.88	46.00	0.46	18.90	32.24	Peak	300	0 HORIZONTAL
2	55.22	36.16	40.00	-3.84	59.87	0.64	7.95	32.30	Peak	400	177 HORIZONTAL
3	109.54	25.44	43.50	-18.06	44.49	0.91	12.30	32.26	Peak	200	119 HORIZONTAL
4	147.37	26.26	43.50	-17.24	45.91	1.06	11.45	32.16	Peak	100	157 HORIZONTAL
5	506.27	28.49	46.00	-17.51	40.78	1.97	17.91	32.17	Peak	300	265 HORIZONTAL
6	888.45	32.66	46.00	-13.34	40.02	2.61	21.61	31.58	Peak	200	279 HORIZONTAL

Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	33.88	32.29	40.00	-7.71	46.30	0.49	17.73	32.23 QP	125	171	VERTICAL
2	38.73	33.18	40.00	-6.82	50.10	0.55	14.82	32.29 QP	100	236	VERTICAL
3	50.31	36.81	40.00	-3.19	59.60	0.61	8.93	32.33 QP	125	245	VERTICAL
4	52.43	36.96	40.00	-3.04	60.21	0.62	8.45	32.32 QP	125	350	VERTICAL
5	70.74	35.35	40.00	-4.65	60.07	0.73	6.86	32.31 Peak	150	311	VERTICAL
6	94.99	32.87	43.50	-10.63	54.00	0.85	10.17	32.15 Peak	100	14	VERTICAL
7	151.25	29.41	43.50	-14.09	49.34	1.07	11.15	32.15 Peak	100	0	VERTICAL
8	500.45	30.13	46.00	-15.87	42.51	1.96	17.81	32.15 Peak	100	158	VERTICAL
9	892.33	33.91	46.00	-12.09	41.19	2.62	21.64	31.54 Peak	125	122	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	Mars Lin, Hank Yang	Configurations	IEEE 802.11b CH 1 / Chain 2
Test Date	Dec. 17, 2014		
Test Mode	Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 1TX)		

Horizontal

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp		A/Pos	T/Pos	
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor	Remark	cm	deg	Pol/Phase
1	4817.96	45.70	74.00	-28.30	41.67	5.87	33.36	35.20	Peak	165	261	HORIZONTAL
2	4826.96	32.35	54.00	-21.65	28.29	5.87	33.39	35.20	Average	165	261	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp		A/Pos	T/Pos	
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor	Remark	cm	deg	Pol/Phase
1	4820.96	34.71	54.00	-19.29	30.65	5.87	33.39	35.20	Average	181	133	VERTICAL
2	4821.12	46.51	74.00	-27.49	42.45	5.87	33.39	35.20	Peak	181	133	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11b CH 6 / Chain 2
Test Date	Dec. 17, 2014		
Test Mode	Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 1TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamplifier Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4873.94	44.82	54.00	-9.18	40.62	5.92	33.48	35.20	Average	165	259	HORIZONTAL
2	4873.97	51.37	74.00	-22.63	47.17	5.92	33.48	35.20	Peak	165	259	HORIZONTAL
3	7310.16	38.39	54.00	-15.61	30.18	7.13	36.51	35.43	Average	117	177	HORIZONTAL
4	7312.28	50.53	74.00	-23.47	42.32	7.13	36.51	35.43	Peak	117	177	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamplifier Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4873.82	55.37	74.00	-18.63	51.17	5.92	33.48	35.20	Peak	175	132	VERTICAL
2	4873.93	51.95	54.00	-2.05	47.75	5.92	33.48	35.20	Average	175	132	VERTICAL
3	7309.96	52.54	74.00	-21.46	44.33	7.13	36.51	35.43	Peak	117	183	VERTICAL
4	7310.16	43.76	54.00	-10.24	35.55	7.13	36.51	35.43	Average	117	183	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11b CH 11 / Chain 2
Test Date	Dec. 17, 2014		
Test Mode	Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 1TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamplifier Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4923.94	47.50	74.00	-26.50	43.15	5.97	33.58	35.20	Peak	165	257	HORIZONTAL
2	4923.94	36.48	54.00	-17.52	32.13	5.97	33.58	35.20	Average	165	257	HORIZONTAL
3	7385.56	50.06	74.00	-23.94	41.74	7.17	36.61	35.46	Peak	126	92	HORIZONTAL
4	7394.68	36.67	54.00	-17.33	28.32	7.17	36.64	35.46	Average	126	92	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamplifier Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4923.96	42.32	54.00	-11.68	37.97	5.97	33.58	35.20	Average	174	189	VERTICAL
2	4924.10	50.05	74.00	-23.95	45.70	5.97	33.58	35.20	Peak	174	189	VERTICAL
3	7386.68	43.77	54.00	-10.23	35.45	7.17	36.61	35.46	Average	114	184	VERTICAL
4	7387.00	53.19	74.00	-20.81	44.87	7.17	36.61	35.46	Peak	114	184	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 1 / Chain 2
Test Date	Dec. 17, 2014		
Test Mode	Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 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	4815.00	31.94	54.00	-22.06	27.93	5.85	33.36	35.20	Average	165	280	HORIZONTAL
2	4833.68	45.66	74.00	-28.34	41.59	5.88	33.39	35.20	Peak	165	280	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	4823.36	45.53	74.00	-28.47	41.47	5.87	33.39	35.20	Peak	165	180	VERTICAL
2	4826.80	32.03	54.00	-21.97	27.97	5.87	33.39	35.20	Average	165	180	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802. 11ac MCS0/Nss1 VHT20 CH 6 / Chain 2
Test Date	Dec. 17, 2014		
Test Mode	Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 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	4865.70	48.31	74.00	-25.69	44.16	5.90	33.45	35.20	Peak	165	262	HORIZONTAL
2	4874.30	34.12	54.00	-19.88	29.92	5.92	33.48	35.20	Average	165	262	HORIZONTAL
3	7291.40	49.81	74.00	-24.19	41.63	7.12	36.48	35.42	Peak	100	280	HORIZONTAL
4	7330.30	36.36	54.00	-17.64	28.12	7.14	36.53	35.43	Average	100	280	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	52.81	74.00	-21.19	48.64	5.92	33.45	35.20	Peak	184	131	VERTICAL
2	4875.00	37.81	54.00	-16.19	33.61	5.92	33.48	35.20	Average	184	131	VERTICAL
3	7301.70	50.56	74.00	-23.44	42.37	7.13	36.48	35.42	Peak	100	192	VERTICAL
4	7313.00	37.36	54.00	-16.64	29.15	7.13	36.51	35.43	Average	100	192	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 11 / Chain 2
Test Date	Dec. 17, 2014		
Test Mode	Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 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	4928.76	45.64	74.00	-28.36	41.29	5.97	33.58	35.20	Peak	100	120	HORIZONTAL
2	4933.16	32.49	54.00	-21.51	28.14	5.97	33.58	35.20	Average	100	120	HORIZONTAL
3	7394.60	49.92	74.00	-24.08	41.57	7.17	36.64	35.46	Peak	100	250	HORIZONTAL
4	7394.84	36.57	54.00	-17.43	28.22	7.17	36.64	35.46	Average	100	250	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	4924.76	46.60	74.00	-27.40	42.25	5.97	33.58	35.20	Peak	100	83	VERTICAL
2	4945.40	32.81	54.00	-21.19	28.42	5.98	33.61	35.20	Average	100	83	VERTICAL
3	7394.72	36.64	54.00	-17.36	28.29	7.17	36.64	35.46	Average	100	237	VERTICAL
4	7395.64	50.26	74.00	-23.74	41.91	7.17	36.64	35.46	Peak	100	237	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 3 / Chain 2
Test Date	Dec. 17, 2014		
Test Mode	Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 1TX)		

Horizontal

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp		A/Pos	T/Pos	
	MHz	dBuV/m	Line	Limit	Level	Loss	Factor	Factor	Remark	cm	deg	Pol/Phase
1	4841.92	33.32	54.00	-20.68	29.22	5.88	33.42	35.20	Average	100	220	HORIZONTAL
2	4853.28	46.01	74.00	-27.99	41.89	5.90	33.42	35.20	Peak	100	220	HORIZONTAL
3	7269.80	49.26	74.00	-24.74	41.13	7.11	36.43	35.41	Peak	100	150	HORIZONTAL
4	7275.96	36.81	54.00	-17.19	28.66	7.11	36.45	35.41	Average	100	150	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp		A/Pos	T/Pos	
	MHz	dBuV/m	Line	Limit	Level	Loss	Factor	Factor	Remark	cm	deg	Pol/Phase
1	4843.68	45.98	74.00	-28.02	41.88	5.88	33.42	35.20	Peak	100	232	VERTICAL
2	4852.88	33.44	54.00	-20.56	29.32	5.90	33.42	35.20	Average	100	232	VERTICAL
3	7265.08	49.73	74.00	-24.27	41.60	7.11	36.43	35.41	Peak	100	123	VERTICAL
4	7271.04	36.87	54.00	-17.13	28.74	7.11	36.43	35.41	Average	100	123	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 6 / Chain 2
Test Date	Dec. 17, 2014		
Test Mode	Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 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	4876.32	45.94	74.00	-28.06	41.74	5.92	33.48	35.20	Peak	100	221	HORIZONTAL
2	4883.00	33.06	54.00	-20.94	28.86	5.92	33.48	35.20	Average	100	221	HORIZONTAL
3	7302.64	49.44	74.00	-24.56	41.25	7.13	36.48	35.42	Peak	100	175	HORIZONTAL
4	7311.80	36.86	54.00	-17.14	28.65	7.13	36.51	35.43	Average	100	175	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	4875.32	45.71	74.00	-28.29	41.51	5.92	33.48	35.20	Peak	100	247	VERTICAL
2	4881.56	33.06	54.00	-20.94	28.86	5.92	33.48	35.20	Average	100	247	VERTICAL
3	7311.44	37.06	54.00	-16.94	28.85	7.13	36.51	35.43	Average	100	150	VERTICAL
4	7320.88	49.42	74.00	-24.58	41.20	7.14	36.51	35.43	Peak	100	150	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802. 11ac MCS0/Nss1 VHT40 CH 9 / Chain 2
Test Date	Dec. 17, 2014		
Test Mode	Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 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	4895.56	46.69	74.00	-27.31	42.45	5.93	33.51	35.20	Peak	100	230	HORIZONTAL
2	4906.40	33.41	54.00	-20.59	29.12	5.95	33.54	35.20	Average	100	230	HORIZONTAL
3	7354.40	36.88	54.00	-17.12	28.60	7.16	36.56	35.44	Average	100	111	HORIZONTAL
4	7361.48	50.07	74.00	-23.93	41.77	7.16	36.59	35.45	Peak	100	111	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	4903.72	33.25	54.00	-20.75	28.99	5.95	33.51	35.20	Average	100	244	VERTICAL
2	4908.72	45.99	74.00	-28.01	41.70	5.95	33.54	35.20	Peak	100	244	VERTICAL
3	7351.04	50.27	74.00	-23.73	41.99	7.16	36.56	35.44	Peak	100	120	VERTICAL
4	7351.32	36.93	54.00	-17.07	28.65	7.16	36.56	35.44	Average	100	120	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11b CH 1 / Chain 1 + Chain 2
Test Date	Dec. 17, 2014		
Test Mode	Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 2TX)		

Horizontal

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp		A/Pos	T/Pos	
	MHz	dBuV/m	Line	Limit	Level	Loss	Factor	Factor	Remark	cm	deg	Pol/Phase
1	4823.97	33.71	54.00	-20.29	29.65	5.87	33.39	35.20	Average	165	200	HORIZONTAL
2	4824.08	47.39	74.00	-26.61	43.33	5.87	33.39	35.20	Peak	165	200	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp		A/Pos	T/Pos	
	MHz	dBuV/m	Line	Limit	Level	Loss	Factor	Factor	Remark	cm	deg	Pol/Phase
1	4823.86	49.58	74.00	-24.42	45.52	5.87	33.39	35.20	Peak	172	135	VERTICAL
2	4823.96	41.40	54.00	-12.60	37.34	5.87	33.39	35.20	Average	172	135	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11b CH 6 / Chain 1 + Chain 2
Test Date	Dec. 17, 2014		
Test Mode	Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 2TX)		

Horizontal

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp		A/Pos	T/Pos	
	MHz	dBuV/m	Line	Limit	Level	Loss	Factor	Factor	Remark	cm	deg
			dBuV/m	dB	dBuV	dB	dB/m	dB			Pol/Phase
1	4873.93	40.00	54.00	-14.00	35.80	5.92	33.48	35.20	Average	100	202 HORIZONTAL
2	4874.24	49.27	74.00	-24.73	45.07	5.92	33.48	35.20	Peak	100	202 HORIZONTAL
3	7310.12	37.97	54.00	-16.03	29.76	7.13	36.51	35.43	Average	100	184 HORIZONTAL
4	7318.88	49.97	74.00	-24.03	41.75	7.14	36.51	35.43	Peak	100	184 HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp		A/Pos	T/Pos	
	MHz	dBuV/m	Line	Limit	Level	Loss	Factor	Factor	Remark	cm	deg
			dBuV/m	dB	dBuV	dB	dB/m	dB			Pol/Phase
1	4873.92	50.81	54.00	-3.19	46.61	5.92	33.48	35.20	Average	165	148 VERTICAL
2	4873.93	55.16	74.00	-18.84	50.96	5.92	33.48	35.20	Peak	165	148 VERTICAL
3	7311.64	46.01	54.00	-7.99	37.80	7.13	36.51	35.43	Average	100	203 VERTICAL
4	7311.76	54.16	74.00	-19.84	45.95	7.13	36.51	35.43	Peak	100	203 VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11b CH 11 / Chain 1 + Chain 2
Test Date	Dec. 17, 2014		
Test Mode	Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 2TX)		

Horizontal

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp		A/Pos	T/Pos	
	MHz	dBuV/m	Line	Limit	Level	Loss	Factor	Factor	Remark	cm	deg
			dBuV/m	dB	dBuV	dB	dB/m	dB			Pol/Phase
1	4923.86	47.31	74.00	-26.69	42.96	5.97	33.58	35.20	Peak	180	257 HORIZONTAL
2	4923.96	34.91	54.00	-19.09	30.56	5.97	33.58	35.20	Average	180	257 HORIZONTAL
3	7394.12	50.35	74.00	-23.65	42.00	7.17	36.64	35.46	Peak	100	225 HORIZONTAL
4	7394.84	36.71	54.00	-17.29	28.36	7.17	36.64	35.46	Average	100	225 HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp		A/Pos	T/Pos	
	MHz	dBuV/m	Line	Limit	Level	Loss	Factor	Factor	Remark	cm	deg
			dBuV/m	dB	dBuV	dB	dB/m	dB			Pol/Phase
1	4923.94	43.55	54.00	-10.45	39.20	5.97	33.58	35.20	Average	165	136 VERTICAL
2	4923.95	50.57	74.00	-23.43	46.22	5.97	33.58	35.20	Peak	165	136 VERTICAL
3	7385.16	43.81	54.00	-10.19	35.49	7.17	36.61	35.46	Average	100	205 VERTICAL
4	7385.20	53.77	74.00	-20.23	45.45	7.17	36.61	35.46	Peak	100	205 VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11b CH 1 / Chain 1 + Chain 2 + Chain 3
Test Date	Dec. 17, 2014		
Test Mode	Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 3TX)		

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	4823.92	37.14	54.00	-16.86	33.08	5.87	33.39	35.20	Average	164	85	HORIZONTAL
2	4824.01	47.56	74.00	-26.44	43.50	5.87	33.39	35.20	Peak	164	85	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	53.09	74.00	-20.91	49.03	5.87	33.39	35.20	Peak	161	136	VERTICAL
2	4823.93	48.36	54.00	-5.64	44.30	5.87	33.39	35.20	Average	161	136	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11b CH 6 / Chain 1 + Chain 2 + Chain 3
Test Date	Dec. 17, 2014		
Test Mode	Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 3TX)		

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	4873.93	41.92	54.00	-12.08	37.72	5.92	33.48	35.20	Average	167	201	HORIZONTAL
2	4873.96	50.06	74.00	-23.94	45.86	5.92	33.48	35.20	Peak	167	201	HORIZONTAL
3	7310.16	51.07	74.00	-22.93	42.86	7.13	36.51	35.43	Peak	202	228	HORIZONTAL
4	7311.60	39.59	54.00	-14.41	31.38	7.13	36.51	35.43	Average	202	228	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	4873.96	52.80	54.00	-1.20	48.60	5.92	33.48	35.20	Average	188	137	VERTICAL
2	4873.97	56.92	74.00	-17.08	52.72	5.92	33.48	35.20	Peak	188	137	VERTICAL
3	7311.64	48.20	54.00	-5.80	39.99	7.13	36.51	35.43	Average	100	120	VERTICAL
4	7311.80	55.80	74.00	-18.20	47.59	7.13	36.51	35.43	Peak	100	120	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11b CH 11 / Chain 1 + Chain 2 + Chain 3
Test Date	Dec. 17, 2014		
Test Mode	Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 3TX)		

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	4923.79	48.86	74.00	-25.14	44.51	5.97	33.58	35.20	Peak	154	213	HORIZONTAL
2	4923.94	38.47	54.00	-15.53	34.12	5.97	33.58	35.20	Average	154	213	HORIZONTAL
3	7394.36	36.66	54.00	-17.34	28.31	7.17	36.64	35.46	Average	100	272	HORIZONTAL
4	7395.48	49.98	74.00	-24.02	41.63	7.17	36.64	35.46	Peak	100	272	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	50.30	54.00	-3.70	45.95	5.97	33.58	35.20	Average	188	137	VERTICAL
2	4923.96	54.25	74.00	-19.75	49.90	5.97	33.58	35.20	Peak	188	137	VERTICAL
3	7385.20	40.62	54.00	-13.38	32.30	7.17	36.61	35.46	Average	100	118	VERTICAL
4	7387.00	51.32	74.00	-22.68	43.00	7.17	36.61	35.46	Peak	100	118	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11b CH 1 / Chain 2
Test Date	Dec. 15, 2014		
Test Mode	Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 1TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4823.78	45.89	74.00	-28.11	42.76	5.74	33.70	31.09	HORIZONTAL	0	146	Peak
2	4823.86	34.73	54.00	-19.27	31.60	5.74	33.70	31.09	HORIZONTAL	0	146	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4823.93	36.70	54.00	-17.30	33.58	5.74	33.70	31.08	VERTICAL	308	186	Average
2	4823.93	46.51	74.00	-27.49	43.39	5.74	33.70	31.08	VERTICAL	308	186	Peak

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11b CH 6 / Chain 2
Test Date	Dec. 13, 2014		
Test Mode	Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 1TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4873.90	51.53	74.00	-22.47	44.35	9.69	35.31	32.80	HORIZONTAL	344	189	Peak
2	4873.97	44.67	54.00	-9.33	37.49	9.69	35.31	32.80	HORIZONTAL	344	189	Average
3	7311.98	43.04	54.00	-10.96	30.14	11.14	35.36	37.12	HORIZONTAL	310	215	Average
4	7311.98	54.29	74.00	-19.71	41.39	11.14	35.36	37.12	HORIZONTAL	310	215	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4873.91	43.20	54.00	-10.80	36.02	9.69	35.31	32.80	VERTICAL	323	100	Average
2	4874.00	51.31	74.00	-22.69	44.13	9.69	35.31	32.80	VERTICAL	323	100	Peak
3	7307.56	55.48	74.00	-18.52	42.59	11.13	35.36	37.12	VERTICAL	21	100	Peak
4	7309.76	45.25	54.00	-8.75	32.36	11.13	35.36	37.12	VERTICAL	21	100	Average

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11b CH 11 / Chain 2
Test Date	Dec. 15, 2014		
Test Mode	Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 1TX)		

Horizontal

	Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4924.01	32.49	54.00	-21.51	29.10	5.79	33.67	31.27	HORIZONTAL	360	156	Average
2	4924.65	45.10	74.00	-28.90	41.71	5.79	33.67	31.27	HORIZONTAL	360	156	Peak
3	7383.32	50.06	74.00	-23.94	40.65	7.25	34.07	36.23	HORIZONTAL	284	100	Peak
4	7386.90	38.79	54.00	-15.21	29.37	7.25	34.07	36.24	HORIZONTAL	284	100	Average

Vertical

	Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4923.51	31.73	54.00	-22.27	28.36	5.79	33.67	31.25	VERTICAL	77	159	Average
2	4924.55	43.06	74.00	-30.94	39.66	5.79	33.67	31.28	VERTICAL	77	159	Peak
3	7386.61	40.23	54.00	-13.77	30.80	7.25	34.07	36.25	VERTICAL	279	100	Average
4	7387.62	52.52	74.00	-21.48	43.09	7.25	34.07	36.25	VERTICAL	279	100	Peak

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 1 / Chain 2
Test Date	Dec. 15, 2014		
Test Mode	Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 1TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4821.84	44.98	74.00	-29.02	41.85	5.74	33.70	31.09	HORIZONTAL	110	100	Peak
2	4825.81	31.76	54.00	-22.24	28.62	5.74	33.70	31.10	HORIZONTAL	110	100	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4819.20	45.00	74.00	-29.00	41.88	5.74	33.70	31.08	VERTICAL	45	100	Peak
2	4826.37	31.72	54.00	-22.28	28.57	5.74	33.70	31.11	VERTICAL	45	100	Average

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 6 / Chain 2
Test Date	Dec. 15, 2014		
Test Mode	Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 1TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4871.57	30.71	54.00	-23.29	27.45	5.77	33.69	31.18	HORIZONTAL	130	100	Average
2	4876.88	45.38	74.00	-28.62	42.10	5.77	33.68	31.19	HORIZONTAL	130	100	Peak
3	7307.93	51.60	74.00	-22.40	42.36	7.19	34.00	36.05	HORIZONTAL	190	100	Peak
4	7309.15	37.92	54.00	-16.08	28.68	7.19	34.00	36.05	HORIZONTAL	190	100	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4872.21	31.64	54.00	-22.36	28.38	5.77	33.69	31.18	VERTICAL	258	100	Average
2	4873.52	43.62	74.00	-30.38	40.35	5.77	33.68	31.18	VERTICAL	258	100	Peak
3	7307.24	51.46	74.00	-22.54	42.22	7.19	34.00	36.05	VERTICAL	223	100	Peak
4	7308.21	38.02	54.00	-15.98	28.78	7.19	34.00	36.05	VERTICAL	223	100	Average

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 11 / Chain 2
Test Date	Dec. 15, 2014		
Test Mode	Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 1TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4944.51	31.70	54.00	-22.30	28.26	5.80	33.66	31.30	HORIZONTAL	5	100	Average
2	4948.04	43.28	74.00	-30.72	39.83	5.80	33.66	31.31	HORIZONTAL	5	100	Peak
3	7412.60	38.99	54.00	-15.01	29.53	7.25	34.09	36.30	HORIZONTAL	333	100	Average
4	7418.36	52.37	74.00	-21.63	42.91	7.25	34.10	36.31	HORIZONTAL	333	100	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4944.17	31.96	54.00	-22.04	28.52	5.80	33.66	31.30	VERTICAL	283	100	Average
2	4948.41	44.69	74.00	-29.31	41.25	5.80	33.66	31.30	VERTICAL	283	100	Peak
3	7412.22	38.80	54.00	-15.20	29.34	7.25	34.09	36.30	VERTICAL	301	100	Average
4	7418.92	52.80	74.00	-21.20	43.35	7.25	34.10	36.30	VERTICAL	301	100	Peak

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 3 / Chain 2
Test Date	Dec. 15, 2014		
Test Mode	Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 1TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4839.24	44.65	74.00	-29.35	41.48	5.75	33.70	31.12	HORIZONTAL	34	100	Peak
2	4844.10	31.36	54.00	-22.64	28.18	5.75	33.70	31.13	HORIZONTAL	34	100	Average
3	7262.48	38.22	54.00	-15.78	29.07	7.16	33.95	35.94	HORIZONTAL	98	100	Average
4	7270.40	49.95	74.00	-24.05	40.79	7.16	33.96	35.96	HORIZONTAL	98	100	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4842.22	31.32	54.00	-22.68	28.14	5.75	33.70	31.13	VERTICAL	87	100	Average
2	4844.58	43.93	74.00	-30.07	40.75	5.75	33.70	31.13	VERTICAL	87	100	Peak
3	7262.63	51.80	74.00	-22.20	42.64	7.16	33.95	35.95	VERTICAL	146	100	Peak
4	7266.33	38.06	54.00	-15.94	28.91	7.16	33.96	35.95	VERTICAL	146	100	Average

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 6 / Chain 2
Test Date	Dec. 15, 2014		
Test Mode	Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 1TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4870.60	45.67	74.00	-28.33	42.41	5.77	33.69	31.18	HORIZONTAL	162	100	Peak
2	4878.18	31.86	54.00	-22.14	28.58	5.77	33.68	31.19	HORIZONTAL	162	100	Average
3	7310.12	37.87	54.00	-16.13	28.63	7.19	34.00	36.05	HORIZONTAL	227	100	Average
4	7313.23	52.17	74.00	-21.83	42.92	7.19	34.00	36.06	HORIZONTAL	227	100	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4871.54	43.21	74.00	-30.79	39.95	5.77	33.69	31.18	VERTICAL	198	100	Peak
2	4878.07	31.83	54.00	-22.17	28.56	5.77	33.68	31.18	VERTICAL	198	100	Average
3	7309.83	38.08	54.00	-15.92	28.84	7.19	34.00	36.05	VERTICAL	278	100	Average
4	7311.42	52.05	74.00	-21.95	42.81	7.19	34.00	36.05	VERTICAL	278	100	Peak

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 9 / Chain 2
Test Date	Dec. 15, 2014		
Test Mode	Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 1TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4906.62	31.59	54.00	-22.41	28.23	5.79	33.67	31.24	HORIZONTAL	152	100	Average
2	4908.02	42.75	74.00	-31.25	39.39	5.79	33.67	31.24	HORIZONTAL	152	100	Peak
3	7357.69	52.60	74.00	-21.40	43.25	7.22	34.04	36.17	HORIZONTAL	237	100	Peak
4	7357.72	38.94	54.00	-15.06	29.59	7.22	34.04	36.17	HORIZONTAL	237	100	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4899.54	30.86	54.00	-23.14	27.52	5.79	33.68	31.23	VERTICAL	181	100	Average
2	4908.20	44.63	74.00	-29.37	41.28	5.79	33.67	31.23	VERTICAL	181	100	Peak
3	7351.36	49.61	74.00	-24.39	40.28	7.22	34.04	36.15	VERTICAL	270	100	Peak
4	7360.79	38.86	54.00	-15.14	29.49	7.22	34.05	36.20	VERTICAL	270	100	Average

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11b CH 1 / Chain 1 + Chain 2
Test Date	Dec. 13, 2014		
Test Mode	Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 2TX)		

Horizontal

	Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna		T/Pos	A/Pos	
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor	Pol/Phase	deg	cm	Remark
1	4821.42	47.81	74.00	-26.19	40.73	9.62	35.30	32.76	HORIZONTAL	162	100	Peak
2	4831.18	34.06	54.00	-19.94	26.96	9.63	35.30	32.77	HORIZONTAL	161	100	Average

Vertical

	Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna		T/Pos	A/Pos	
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor	Pol/Phase	deg	cm	Remark
1	4823.49	47.45	74.00	-26.55	40.37	9.62	35.30	32.76	VERTICAL	101	100	Peak
2	4823.99	34.53	54.00	-19.47	27.45	9.62	35.30	32.76	VERTICAL	101	100	Average

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11b CH 6 / Chain 1 + Chain 2
Test Date	Dec. 13, 2014		
Test Mode	Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 2TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4873.93	43.89	54.00	-10.11	36.71	9.69	35.31	32.80	HORIZONTAL	352	100	Average
2	4874.06	50.92	74.00	-23.08	43.74	9.69	35.31	32.80	HORIZONTAL	352	100	Peak
3	7310.22	55.85	74.00	-18.15	42.96	11.13	35.36	37.12	HORIZONTAL	308	214	Peak
4	7311.70	46.51	54.00	-7.49	33.61	11.14	35.36	37.12	HORIZONTAL	308	214	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4873.90	45.99	54.00	-8.01	38.81	9.69	35.31	32.80	VERTICAL	36	100	Average
2	4873.94	51.65	74.00	-22.35	44.47	9.69	35.31	32.80	VERTICAL	36	100	Peak
3	7310.19	45.66	54.00	-8.34	32.77	11.13	35.36	37.12	VERTICAL	332	100	Average
4	7313.72	54.92	74.00	-19.08	42.02	11.14	35.36	37.12	VERTICAL	332	100	Peak

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11b CH 11 / Chain 1 + Chain 2
Test Date	Dec. 13, 2014		
Test Mode	Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 2TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4921.02	34.93	54.00	-19.07	27.67	9.76	35.33	32.83	HORIZONTAL	57	197	Average
2	4921.05	47.36	74.00	-26.64	40.10	9.76	35.33	32.83	HORIZONTAL	57	197	Peak
3	7386.64	44.43	54.00	-9.57	31.39	11.20	35.32	37.16	HORIZONTAL	308	213	Average
4	7386.96	55.18	74.00	-18.82	42.14	11.20	35.32	37.16	HORIZONTAL	308	213	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4926.87	35.59	54.00	-18.41	28.31	9.77	35.33	32.84	VERTICAL	340	100	Average
2	4927.04	47.41	74.00	-26.59	40.13	9.77	35.33	32.84	VERTICAL	340	100	Peak
3	7386.64	43.93	54.00	-10.07	30.89	11.20	35.32	37.16	VERTICAL	28	100	Average
4	7386.98	55.63	74.00	-18.37	42.59	11.20	35.32	37.16	VERTICAL	28	100	Peak

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11b CH 1 / Chain 1 + Chain 2 + Chain 3
Test Date	Dec. 13, 2014		
Test Mode	Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 3TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4823.97	34.74	54.00	-19.26	27.66	9.62	35.30	32.76	HORIZONTAL	2	116	Average
2	4827.76	47.52	74.00	-26.48	40.43	9.62	35.30	32.77	HORIZONTAL	2	116	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4817.31	46.72	74.00	-27.28	39.64	9.61	35.29	32.76	VERTICAL	314	100	Peak
2	4823.91	36.40	54.00	-17.60	29.32	9.62	35.30	32.76	VERTICAL	314	100	Average

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11b CH 6 / Chain 1 + Chain 2 + Chain 3
Test Date	Dec. 13, 2014		
Test Mode	Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 3TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4873.94	52.11	74.00	-21.89	44.93	9.69	35.31	32.80	HORIZONTAL	10	100	Peak
2	4873.95	46.65	54.00	-7.35	39.47	9.69	35.31	32.80	HORIZONTAL	10	100	Average
3	7310.13	46.83	54.00	-7.17	33.94	11.13	35.36	37.12	HORIZONTAL	310	100	Average
4	7310.19	56.34	74.00	-17.66	43.45	11.13	35.36	37.12	HORIZONTAL	310	100	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4873.88	47.18	54.00	-6.82	40.00	9.69	35.31	32.80	VERTICAL	35	100	Average
2	4874.00	52.57	74.00	-21.43	45.39	9.69	35.31	32.80	VERTICAL	35	100	Peak
3	7308.95	55.85	74.00	-18.15	42.96	11.13	35.36	37.12	VERTICAL	331	100	Peak
4	7310.05	47.16	54.00	-6.84	34.27	11.13	35.36	37.12	VERTICAL	331	100	Average

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11b CH 11 / Chain 1 + Chain 2 + Chain 3
Test Date	Dec. 13, 2014		
Test Mode	Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 3TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4920.79	48.30	74.00	-25.70	41.04	9.76	35.33	32.83	HORIZONTAL	20	124	Peak
2	4920.87	35.76	54.00	-18.24	28.50	9.76	35.33	32.83	HORIZONTAL	20	124	Average
3	7383.31	54.77	74.00	-19.23	41.73	11.20	35.32	37.16	HORIZONTAL	298	145	Peak
4	7386.91	41.99	54.00	-12.01	28.95	11.20	35.32	37.16	HORIZONTAL	298	145	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4918.62	48.08	74.00	-25.92	40.83	9.75	35.33	32.83	VERTICAL	330	130	Peak
2	4921.02	35.54	54.00	-18.46	28.28	9.76	35.33	32.83	VERTICAL	330	130	Average
3	7386.64	55.54	74.00	-18.46	42.50	11.20	35.32	37.16	VERTICAL	74	132	Peak
4	7386.75	45.75	54.00	-8.25	32.71	11.20	35.32	37.16	VERTICAL	74	132	Average

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11b CH 1 / Chain 1
Test Date	Dec. 30, 2014		
Test Mode	Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 1: 8.8, Chain 2: 5.9, Chain 3: 9 dBi / 1TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4823.44	31.35	54.00	-22.65	28.22	5.74	33.70	31.09	HORIZONTAL	87	100	Average
2	4823.62	44.51	74.00	-29.49	41.38	5.74	33.70	31.09	HORIZONTAL	87	100	Peak
3	12059.39	59.76	74.00	-14.24	46.68	9.27	35.03	38.84	HORIZONTAL	54	194	Peak
4	12060.64	50.48	54.00	-3.52	37.40	9.27	35.03	38.84	HORIZONTAL	54	194	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4823.91	45.73	74.00	-28.27	42.61	5.74	33.70	31.08	VERTICAL	13	190	Peak
2	4823.93	34.32	54.00	-19.68	31.20	5.74	33.70	31.08	VERTICAL	13	190	Average
3	12059.38	44.44	54.00	-9.56	31.34	9.27	35.03	38.86	VERTICAL	253	100	Average
4	12059.93	57.33	74.00	-16.67	44.23	9.27	35.03	38.86	VERTICAL	253	100	Peak

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11b CH 6 / Chain 1
Test Date	Dec. 30, 2014		
Test Mode	Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 1: 8.8, Chain 2: 5.9, Chain 3: 9 dBi / 1TX)		

Horizontal

	Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna		T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	Pol/Phase	deg	cm	
1	4873.97	32.94	54.00	-21.06	29.67	5.77	33.68	31.18	HORIZONTAL	97	100	Average
2	4874.24	45.48	74.00	-28.52	42.21	5.77	33.68	31.18	HORIZONTAL	97	100	Peak
3	7311.67	51.48	74.00	-22.52	42.23	7.19	34.00	36.06	HORIZONTAL	76	209	Peak
4	7311.71	39.46	54.00	-14.54	30.21	7.19	34.00	36.06	HORIZONTAL	76	209	Average
5	12185.25	61.66	74.00	-12.34	48.58	9.36	34.99	38.71	HORIZONTAL	56	195	Peak
6	12185.59	52.81	54.00	-1.19	39.73	9.36	34.99	38.71	HORIZONTAL	56	195	Average

Vertical

	Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna		T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	Pol/Phase	deg	cm	
1	4874.01	34.00	54.00	-20.00	30.73	5.77	33.68	31.18	VERTICAL	16	179	Average
2	4876.50	45.03	74.00	-28.97	41.76	5.77	33.68	31.18	VERTICAL	16	179	Peak
3	7311.57	55.47	74.00	-18.53	46.23	7.19	34.00	36.05	VERTICAL	15	100	Peak
4	7311.70	46.97	54.00	-7.03	37.73	7.19	34.00	36.05	VERTICAL	15	100	Average
5	12182.73	57.91	74.00	-16.09	44.82	9.36	34.99	38.72	VERTICAL	15	170	Peak
6	12185.57	46.23	54.00	-7.77	33.14	9.36	34.99	38.72	VERTICAL	15	170	Average

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11b CH 11 / Chain 1
Test Date	Dec. 30, 2014		
Test Mode	Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 1: 8.8, Chain 2: 5.9, Chain 3: 9 dBi / 1TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4923.96	31.45	54.00	-22.55	28.06	5.79	33.67	31.27	HORIZONTAL	88	100	Average
2	4924.15	45.24	74.00	-28.76	41.85	5.79	33.67	31.27	HORIZONTAL	88	100	Peak
3	7385.32	52.51	74.00	-21.49	43.10	7.25	34.07	36.23	HORIZONTAL	333	245	Peak
4	7386.49	38.75	54.00	-15.25	29.34	7.25	34.07	36.23	HORIZONTAL	333	245	Average
5	12309.71	60.30	74.00	-13.70	47.20	9.46	34.95	38.59	HORIZONTAL	50	194	Peak
6	12310.59	50.21	54.00	-3.79	37.11	9.46	34.95	38.59	HORIZONTAL	50	194	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4923.88	49.53	74.00	-24.47	46.13	5.79	33.67	31.28	VERTICAL	17	184	Peak
2	4923.94	43.68	54.00	-10.32	40.28	5.79	33.67	31.28	VERTICAL	17	184	Average
3	7386.65	47.41	54.00	-6.59	37.98	7.25	34.07	36.25	VERTICAL	10	118	Average
4	7386.84	56.04	74.00	-17.96	46.61	7.25	34.07	36.25	VERTICAL	10	118	Peak
5	12309.66	57.70	74.00	-16.30	44.61	9.46	34.95	38.58	VERTICAL	338	182	Peak
6	12310.51	44.38	54.00	-9.62	31.29	9.46	34.95	38.58	VERTICAL	338	182	Average

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802. 11ac MCS0/Nss1 VHT20 CH 1 / Chain 1
Test Date	Dec. 28, 2014		
Test Mode	Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 1: 8.8, Chain 2: 5.9, Chain 3: 9 dBi / 1TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4827.37	44.65	74.00	-29.35	41.51	5.74	33.70	31.10	HORIZONTAL	218	100	Peak
2	4828.38	31.37	54.00	-22.63	28.23	5.74	33.70	31.10	HORIZONTAL	218	100	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4820.15	45.44	74.00	-28.56	42.32	5.74	33.70	31.08	VERTICAL	206	100	Peak
2	4828.09	31.42	54.00	-22.58	28.27	5.74	33.70	31.11	VERTICAL	206	100	Average

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 6 / Chain 1
Test Date	Dec. 28, 2014		
Test Mode	Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 1: 8.8, Chain 2: 5.9, Chain 3: 9 dBi / 1TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4873.49	53.69	74.00	-20.31	50.42	5.77	33.68	31.18	HORIZONTAL	67	185	Peak
2	4875.09	36.60	54.00	-17.40	33.33	5.77	33.68	31.18	HORIZONTAL	67	185	Average
3	7309.72	50.47	74.00	-23.53	41.23	7.19	34.00	36.05	HORIZONTAL	322	100	Peak
4	7315.71	36.71	54.00	-17.29	27.45	7.19	34.00	36.07	HORIZONTAL	322	100	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4873.20	45.86	74.00	-28.14	42.59	5.77	33.68	31.18	VERTICAL	187	100	Peak
2	4880.80	32.03	54.00	-21.97	28.76	5.77	33.68	31.18	VERTICAL	187	100	Average
3	7311.58	50.17	74.00	-23.83	40.93	7.19	34.00	36.05	VERTICAL	57	100	Peak
4	7320.23	36.83	54.00	-17.17	27.55	7.19	34.01	36.10	VERTICAL	57	100	Average

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 11 / Chain 1
Test Date	Dec. 28, 2014		
Test Mode	Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 1: 8.8, Chain 2: 5.9, Chain 3: 9 dBi / 1TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4929.00	43.81	74.00	-30.19	40.39	5.80	33.66	31.28	HORIZONTAL	92	100	Peak
2	4933.81	29.96	54.00	-24.04	26.53	5.80	33.66	31.29	HORIZONTAL	92	100	Average
3	7386.39	51.24	74.00	-22.76	41.83	7.25	34.07	36.23	HORIZONTAL	206	100	Peak
4	7395.33	37.36	54.00	-16.64	27.93	7.25	34.08	36.26	HORIZONTAL	206	100	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4918.01	44.71	74.00	-29.29	41.34	5.79	33.67	31.25	VERTICAL	150	100	Peak
2	4931.85	29.86	54.00	-24.14	26.44	5.80	33.66	31.28	VERTICAL	150	100	Average
3	7383.72	50.36	74.00	-23.64	40.93	7.25	34.07	36.25	VERTICAL	307	100	Peak
4	7391.03	37.30	54.00	-16.70	27.87	7.25	34.07	36.25	VERTICAL	307	100	Average

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 3 / Chain 1
Test Date	Dec. 28, 2014		
Test Mode	Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 1: 8.8, Chain 2: 5.9, Chain 3: 9 dBi / 1TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4841.69	31.76	54.00	-22.24	28.58	5.75	33.70	31.13	HORIZONTAL	61	100	Average
2	4849.77	43.42	74.00	-30.58	40.22	5.75	33.69	31.14	HORIZONTAL	61	100	Peak
3	7259.56	51.33	74.00	-22.67	42.19	7.16	33.95	35.93	HORIZONTAL	224	100	Peak
4	7279.51	38.28	54.00	-15.72	29.11	7.16	33.97	35.98	HORIZONTAL	224	100	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4834.61	44.37	74.00	-29.63	41.22	5.74	33.70	31.11	VERTICAL	302	100	Peak
2	4836.72	31.57	54.00	-22.43	28.41	5.75	33.70	31.11	VERTICAL	302	100	Average
3	7260.09	38.26	54.00	-15.74	29.10	7.16	33.95	35.95	VERTICAL	149	100	Average
4	7260.33	50.77	74.00	-23.23	41.61	7.16	33.95	35.95	VERTICAL	149	100	Peak

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 6 / Chain 1
Test Date	Dec. 28, 2014		
Test Mode	Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 1: 8.8, Chain 2: 5.9, Chain 3: 9 dBi / 1TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4863.71	30.85	54.00	-23.15	27.63	5.75	33.69	31.16	HORIZONTAL	64	100	Average
2	4871.31	44.21	74.00	-29.79	40.95	5.77	33.69	31.18	HORIZONTAL	64	100	Peak
3	7316.05	38.20	54.00	-15.80	28.94	7.19	34.00	36.07	HORIZONTAL	323	100	Average
4	7321.29	50.99	74.00	-23.01	41.73	7.19	34.01	36.08	HORIZONTAL	323	100	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4860.11	31.40	54.00	-22.60	28.18	5.75	33.69	31.16	VERTICAL	251	100	Average
2	4861.36	44.02	74.00	-29.98	40.80	5.75	33.69	31.16	VERTICAL	251	100	Peak
3	7296.77	50.74	74.00	-23.26	41.49	7.19	33.99	36.05	VERTICAL	117	100	Peak
4	7319.46	38.28	54.00	-15.72	29.00	7.19	34.01	36.10	VERTICAL	117	100	Average

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 9 / Chain 1
Test Date	Dec. 28, 2014		
Test Mode	Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 1: 8.8, Chain 2: 5.9, Chain 3: 9 dBi / 1TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4903.42	30.96	54.00	-23.04	27.61	5.79	33.67	31.23	HORIZONTAL	97	100	Average
2	4909.58	44.54	74.00	-29.46	41.18	5.79	33.67	31.24	HORIZONTAL	97	100	Peak
3	7350.33	38.55	54.00	-15.45	29.22	7.22	34.04	36.15	HORIZONTAL	76	100	Average
4	7364.21	51.61	74.00	-22.39	42.26	7.22	34.05	36.18	HORIZONTAL	76	100	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4894.19	44.62	74.00	-29.38	41.32	5.77	33.68	31.21	VERTICAL	238	100	Peak
2	4898.71	31.05	54.00	-22.95	27.71	5.79	33.68	31.23	VERTICAL	238	100	Average
3	7350.62	51.80	74.00	-22.20	42.47	7.22	34.04	36.15	VERTICAL	101	100	Peak
4	7350.78	38.59	54.00	-15.41	29.26	7.22	34.04	36.15	VERTICAL	101	100	Average

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11b CH 1 / Chain 1 + Chain 2
Test Date	Dec. 28, 2014		
Test Mode	Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 1: 8.8, Chain 2: 5.9, Chain 3: 9 dBi / 2TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4820.96	39.92	54.00	-14.08	36.79	5.74	33.70	31.09	HORIZONTAL	69	177	Average
2	4821.10	46.82	74.00	-27.18	43.69	5.74	33.70	31.09	HORIZONTAL	69	177	Peak
3	12059.10	49.20	54.00	-4.80	36.12	9.27	35.03	38.84	HORIZONTAL	313	155	Average
4	12060.48	58.46	74.00	-15.54	45.38	9.27	35.03	38.84	HORIZONTAL	313	155	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4820.62	45.28	74.00	-28.72	42.16	5.74	33.70	31.08	VERTICAL	24	170	Peak
2	4820.94	36.00	54.00	-18.00	32.88	5.74	33.70	31.08	VERTICAL	24	170	Average
3	12059.01	45.28	54.00	-8.72	32.18	9.27	35.03	38.86	VERTICAL	344	142	Average
4	12061.15	57.44	74.00	-16.56	44.34	9.27	35.03	38.86	VERTICAL	344	142	Peak

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11b CH 6 / Chain 1 + Chain 2
Test Date	Dec. 28, 2014		
Test Mode	Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 1: 8.8, Chain 2: 5.9, Chain 3: 9 dBi / 2TX)		

Horizontal

	Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna		T/Pos	A/Pos	
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor	Pol/Phase	deg	cm	Remark
1	4870.83	47.63	74.00	-26.37	44.37	5.77	33.69	31.18	HORIZONTAL	67	188	Peak
2	4873.94	40.62	54.00	-13.38	37.35	5.77	33.68	31.18	HORIZONTAL	67	188	Average
3	7309.83	52.49	74.00	-21.51	43.25	7.19	34.00	36.05	HORIZONTAL	71	145	Peak
4	7311.72	39.38	54.00	-14.62	30.13	7.19	34.00	36.06	HORIZONTAL	71	145	Average
5	12184.44	60.71	74.00	-13.29	47.63	9.36	34.99	38.71	HORIZONTAL	291	141	Peak
6	12185.59	52.35	54.00	-1.65	39.27	9.36	34.99	38.71	HORIZONTAL	291	141	Average

Vertical

	Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna		T/Pos	A/Pos	
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor	Pol/Phase	deg	cm	Remark
1	4870.94	40.66	54.00	-13.34	37.40	5.77	33.69	31.18	VERTICAL	26	171	Average
2	4873.98	46.85	74.00	-27.15	43.58	5.77	33.68	31.18	VERTICAL	26	171	Peak
3	7311.67	49.65	54.00	-4.35	40.41	7.19	34.00	36.05	VERTICAL	3	167	Average
4	7311.69	56.88	74.00	-17.12	47.64	7.19	34.00	36.05	VERTICAL	3	167	Peak
5	12185.61	48.03	54.00	-5.97	34.94	9.36	34.99	38.72	VERTICAL	347	116	Average
6	12185.61	58.22	74.00	-15.78	45.13	9.36	34.99	38.72	VERTICAL	347	116	Peak

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11b CH 11 / Chain 1 + Chain 2
Test Date	Dec. 28, 2014		
Test Mode	Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 1: 8.8, Chain 2: 5.9, Chain 3: 9 dBi / 2TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamplifier Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4920.70	45.61	74.00	-28.39	42.23	5.79	33.67	31.26	HORIZONTAL	69	191	Peak
2	4920.96	39.24	54.00	-14.76	35.86	5.79	33.67	31.26	HORIZONTAL	69	191	Average
3	7384.61	51.32	74.00	-22.68	41.91	7.25	34.07	36.23	HORIZONTAL	61	159	Peak
4	7386.58	38.47	54.00	-15.53	29.06	7.25	34.07	36.23	HORIZONTAL	61	159	Average
5	12309.70	59.98	74.00	-14.02	46.88	9.46	34.95	38.59	HORIZONTAL	317	148	Peak
6	12310.54	50.73	54.00	-3.27	37.63	9.46	34.95	38.59	HORIZONTAL	317	148	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamplifier Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4920.67	45.82	74.00	-28.18	42.45	5.79	33.67	31.25	VERTICAL	23	172	Peak
2	4920.92	38.80	54.00	-15.20	35.43	5.79	33.67	31.25	VERTICAL	23	172	Average
3	7386.69	47.49	54.00	-6.51	38.06	7.25	34.07	36.25	VERTICAL	360	185	Average
4	7386.82	54.97	74.00	-19.03	45.54	7.25	34.07	36.25	VERTICAL	360	185	Peak
5	12309.74	56.78	74.00	-17.22	43.69	9.46	34.95	38.58	VERTICAL	6	108	Peak
6	12310.61	45.03	54.00	-8.97	31.94	9.46	34.95	38.58	VERTICAL	6	108	Average

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11b CH 1 / Chain 1 + Chain 2 + Chain 3
Test Date	Dec. 30, 2014		
Test Mode	Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 1: 8.8, Chain 2: 5.9, Chain 3: 9 dBi / 3TX)		

Horizontal

	Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna		T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	Pol/Phase	deg	cm	
1	4823.90	40.83	54.00	-13.17	37.70	5.74	33.70	31.09	HORIZONTAL	300	151	Average
2	4823.94	48.07	74.00	-25.93	44.94	5.74	33.70	31.09	HORIZONTAL	300	151	Peak
3	12059.05	44.67	54.00	-9.33	31.59	9.27	35.03	38.84	HORIZONTAL	75	212	Average
4	12059.42	57.99	74.00	-16.01	44.91	9.27	35.03	38.84	HORIZONTAL	75	212	Peak

Vertical

	Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna		T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	Pol/Phase	deg	cm	
1	4823.87	52.64	74.00	-21.36	49.52	5.74	33.70	31.08	VERTICAL	6	177	Peak
2	4823.94	48.82	54.00	-5.18	45.70	5.74	33.70	31.08	VERTICAL	6	177	Average
3	12059.12	57.31	74.00	-16.69	44.21	9.27	35.03	38.86	VERTICAL	333	100	Peak
4	12059.20	43.94	54.00	-10.06	30.84	9.27	35.03	38.86	VERTICAL	333	100	Average

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11b CH 6 / Chain 1 + Chain 2 + Chain 3
Test Date	Dec. 30, 2014		
Test Mode	Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 1: 8.8, Chain 2: 5.9, Chain 3: 9 dBi / 3TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4873.94	43.70	54.00	-10.30	40.43	5.77	33.68	31.18	HORIZONTAL	300	168	Average
2	4873.98	49.16	74.00	-24.84	45.89	5.77	33.68	31.18	HORIZONTAL	300	168	Peak
3	7310.69	52.65	74.00	-21.35	43.40	7.19	34.00	36.06	HORIZONTAL	40	129	Peak
4	7311.62	40.23	54.00	-13.77	30.98	7.19	34.00	36.06	HORIZONTAL	40	129	Average
5	12183.96	61.02	74.00	-12.98	47.94	9.36	34.99	38.71	HORIZONTAL	56	194	Peak
6	12185.57	52.64	54.00	-1.36	39.56	9.36	34.99	38.71	HORIZONTAL	56	194	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4873.91	48.61	74.00	-25.39	45.34	5.77	33.68	31.18	VERTICAL	74	181	Peak
2	4873.96	43.35	54.00	-10.65	40.08	5.77	33.68	31.18	VERTICAL	74	181	Average
3	7311.44	59.24	74.00	-14.76	50.00	7.19	34.00	36.05	VERTICAL	9	100	Peak
4	7311.65	50.75	54.00	-3.25	41.51	7.19	34.00	36.05	VERTICAL	9	100	Average
5	12184.69	60.21	74.00	-13.79	47.12	9.36	34.99	38.72	VERTICAL	4	158	Peak
6	12185.54	49.02	54.00	-4.98	35.93	9.36	34.99	38.72	VERTICAL	4	158	Average

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11b CH 11 / Chain 1 + Chain 2 + Chain 3
Test Date	Dec. 30, 2014		
Test Mode	Mode 3: (Ant.9 CROSS-POLARIZED PANEL ANTENNA / Chain 1: 8.8, Chain 2: 5.9, Chain 3: 9 dBi / 3TX)		

Horizontal

	Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna		T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	Pol/Phase	deg	cm	
1	4923.98	40.17	54.00	-13.83	36.78	5.79	33.67	31.27	HORIZONTAL	308	195	Average
2	4924.06	47.38	74.00	-26.62	43.99	5.79	33.67	31.27	HORIZONTAL	308	195	Peak
3	7386.51	41.54	54.00	-12.46	32.13	7.25	34.07	36.23	HORIZONTAL	46	206	Average
4	7387.30	53.09	74.00	-20.91	43.67	7.25	34.07	36.24	HORIZONTAL	46	206	Peak
5	12308.97	60.51	74.00	-13.49	47.41	9.46	34.95	38.59	HORIZONTAL	64	198	Peak
6	12310.54	50.75	54.00	-3.25	37.65	9.46	34.95	38.59	HORIZONTAL	64	198	Average

Vertical

	Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna		T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	Pol/Phase	deg	cm	
1	4923.92	44.98	54.00	-9.02	41.58	5.79	33.67	31.28	VERTICAL	22	197	Average
2	4923.99	50.00	74.00	-24.00	46.60	5.79	33.67	31.28	VERTICAL	22	197	Peak
3	7386.61	50.79	54.00	-3.21	41.36	7.25	34.07	36.25	VERTICAL	9	100	Average
4	7386.67	58.00	74.00	-16.00	48.57	7.25	34.07	36.25	VERTICAL	9	100	Peak
5	12308.75	59.30	74.00	-14.70	46.21	9.46	34.95	38.58	VERTICAL	9	165	Peak
6	12310.54	48.27	54.00	-5.73	35.18	9.46	34.95	38.58	VERTICAL	9	165	Average

<For Beamforming Mode>

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 1 / Chain 1 + Chain 2
Test Date	Dec. 17, 2014		
Test Mode	Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 2TX)		

Horizontal

	Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna		T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	Pol/Phase	deg	cm	
1	4840.92	31.33	54.00	-22.67	28.16	5.75	33.70	31.12	HORIZONTAL	360	179	Average
2	4841.12	44.15	74.00	-29.85	40.98	5.75	33.70	31.12	HORIZONTAL	360	179	Peak

Vertical

	Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna		T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	Pol/Phase	deg	cm	
1	4845.83	31.32	54.00	-22.68	28.13	5.75	33.69	31.13	VERTICAL	326	218	Average
2	4850.41	45.12	74.00	-28.88	41.93	5.75	33.69	31.13	VERTICAL	326	218	Peak

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802. 11ac MCS0/Nss1 VHT20 CH 6 / Chain 1 + Chain 2
Test Date	Dec. 17, 2014		
Test Mode	Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 2TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4870.99	44.66	74.00	-29.34	41.40	5.77	33.69	31.18	HORIZONTAL	234	149	Peak
2	4881.50	31.20	54.00	-22.80	27.91	5.77	33.68	31.20	HORIZONTAL	234	149	Average
3	7310.87	51.80	74.00	-22.20	42.55	7.19	34.00	36.06	HORIZONTAL	164	182	Peak
4	7319.43	38.38	54.00	-15.62	29.12	7.19	34.01	36.08	HORIZONTAL	164	182	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4874.06	32.16	54.00	-21.84	28.89	5.77	33.68	31.18	VERTICAL	262	229	Average
2	4878.42	45.03	74.00	-28.97	41.76	5.77	33.68	31.18	VERTICAL	262	229	Peak
3	7309.27	38.35	54.00	-15.65	29.11	7.19	34.00	36.05	VERTICAL	217	234	Average
4	7321.00	51.32	74.00	-22.68	42.04	7.19	34.01	36.10	VERTICAL	217	234	Peak

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802. 11ac MCS0/Nss1 VHT20 CH 11 / Chain 1 + Chain 2
Test Date	Dec. 17, 2014		
Test Mode	Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 2TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4931.66	44.84	74.00	-29.16	41.42	5.80	33.66	31.28	HORIZONTAL	182	198	Peak
2	4933.84	31.16	54.00	-22.84	27.73	5.80	33.66	31.29	HORIZONTAL	182	198	Average
3	7381.96	51.36	74.00	-22.64	41.96	7.25	34.07	36.22	HORIZONTAL	127	235	Peak
4	7389.65	38.59	54.00	-15.41	29.17	7.25	34.07	36.24	HORIZONTAL	127	235	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4923.94	31.22	54.00	-22.78	27.82	5.79	33.67	31.28	VERTICAL	118	141	Average
2	4928.30	44.61	74.00	-29.39	41.21	5.79	33.67	31.28	VERTICAL	118	141	Peak
3	7395.78	52.02	74.00	-21.98	42.60	7.25	34.08	36.25	VERTICAL	188	215	Peak
4	7395.87	38.62	54.00	-15.38	29.20	7.25	34.08	36.25	VERTICAL	188	215	Average

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 3 / Chain 1 + Chain 2
Test Date	Dec. 17, 2014		
Test Mode	Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 2TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4835.38	31.35	54.00	-22.65	28.19	5.75	33.70	31.11	HORIZONTAL	140	152	Average
2	4844.10	44.16	74.00	-29.84	40.98	5.75	33.70	31.13	HORIZONTAL	140	152	Peak
3	7266.83	51.30	74.00	-22.70	42.15	7.16	33.96	35.95	HORIZONTAL	226	235	Peak
4	7273.69	38.16	54.00	-15.84	28.99	7.16	33.96	35.97	HORIZONTAL	226	235	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4841.12	31.55	54.00	-22.45	28.37	5.75	33.70	31.13	VERTICAL	219	219	Average
2	4844.58	44.89	74.00	-29.11	41.71	5.75	33.70	31.13	VERTICAL	219	219	Peak
3	7267.22	51.16	74.00	-22.84	42.01	7.16	33.96	35.95	VERTICAL	174	167	Peak
4	7275.68	38.25	54.00	-15.75	29.06	7.16	33.97	36.00	VERTICAL	174	167	Average

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802. 11ac MCS0/Nss1 VHT40 CH 6 / Chain 1 + Chain 2
Test Date	Dec. 17, 2014		
Test Mode	Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 2TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4876.76	44.37	74.00	-29.63	41.09	5.77	33.68	31.19	HORIZONTAL	162	166	Peak
2	4878.62	30.80	54.00	-23.20	27.52	5.77	33.68	31.19	HORIZONTAL	162	166	Average
3	7313.76	51.28	74.00	-22.72	42.03	7.19	34.00	36.06	HORIZONTAL	211	114	Peak
4	7318.92	38.38	54.00	-15.62	29.13	7.19	34.01	36.07	HORIZONTAL	211	114	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4864.58	43.94	74.00	-30.06	40.72	5.75	33.69	31.16	VERTICAL	320	212	Peak
2	4867.05	31.07	54.00	-22.93	27.81	5.77	33.69	31.18	VERTICAL	320	212	Average
3	7313.56	51.03	74.00	-22.97	41.79	7.19	34.00	36.05	VERTICAL	266	162	Peak
4	7320.90	38.45	54.00	-15.55	29.17	7.19	34.01	36.10	VERTICAL	266	162	Average

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 9 / Chain 1 + Chain 2
Test Date	Dec. 17, 2014		
Test Mode	Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 2TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4899.96	44.20	74.00	-29.80	40.86	5.79	33.68	31.23	HORIZONTAL	313	245	Peak
2	4910.80	31.24	54.00	-22.76	27.87	5.79	33.67	31.25	HORIZONTAL	313	245	Average
3	7348.37	52.49	74.00	-21.51	43.16	7.22	34.03	36.14	HORIZONTAL	220	152	Peak
4	7348.69	38.99	54.00	-15.01	29.65	7.22	34.03	36.15	HORIZONTAL	220	152	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4897.94	43.99	74.00	-30.01	40.65	5.79	33.68	31.23	VERTICAL	308	138	Peak
2	4907.40	31.11	54.00	-22.89	27.76	5.79	33.67	31.23	VERTICAL	308	138	Average
3	7346.90	38.91	54.00	-15.09	29.57	7.22	34.03	36.15	VERTICAL	253	188	Average
4	7348.85	52.09	74.00	-21.91	42.76	7.22	34.04	36.15	VERTICAL	253	188	Peak

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 1 / Chain 1 + Chain 2 + Chain 3
Test Date	Dec. 17, 2014		
Test Mode	Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 3TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4819.99	31.60	54.00	-22.40	28.47	5.74	33.70	31.09	HORIZONTAL	202	159	Average
2	4829.64	45.29	74.00	-28.71	42.15	5.74	33.70	31.10	HORIZONTAL	202	159	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4844.55	31.54	54.00	-22.46	28.36	5.75	33.70	31.13	VERTICAL	268	126	Average
2	4850.12	44.63	74.00	-29.37	41.44	5.75	33.69	31.13	VERTICAL	268	126	Peak

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802. 11ac MCS0/Nss1 VHT20 CH 6 / Chain 1 + Chain 2 + Chain 3
Test Date	Dec. 17, 2014		
Test Mode	Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 3TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4882.33	31.02	54.00	-22.98	27.73	5.77	33.68	31.20	HORIZONTAL	120	222	Average
2	4882.49	43.84	74.00	-30.16	40.55	5.77	33.68	31.20	HORIZONTAL	120	222	Peak
3	7305.23	51.29	74.00	-22.71	42.05	7.19	33.99	36.04	HORIZONTAL	260	117	Peak
4	7320.30	38.53	54.00	-15.47	29.27	7.19	34.01	36.08	HORIZONTAL	260	117	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4874.83	31.66	54.00	-22.34	28.39	5.77	33.68	31.18	VERTICAL	323	241	Average
2	4877.56	44.89	74.00	-29.11	41.62	5.77	33.68	31.18	VERTICAL	323	241	Peak
3	7301.19	38.31	54.00	-15.69	29.06	7.19	33.99	36.05	VERTICAL	284	203	Average
4	7311.83	50.99	74.00	-23.01	41.75	7.19	34.00	36.05	VERTICAL	284	203	Peak

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802. 11ac MCS0/Nss1 VHT20 CH 11 / Chain 1 + Chain 2 + Chain 3
Test Date	Dec. 17, 2014		
Test Mode	Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 3TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4919.64	31.45	54.00	-22.55	28.07	5.79	33.67	31.26	HORIZONTAL	249	232	Average
2	4923.84	44.74	74.00	-29.26	41.35	5.79	33.67	31.27	HORIZONTAL	249	232	Peak
3	7389.78	39.17	54.00	-14.83	29.75	7.25	34.07	36.24	HORIZONTAL	289	197	Average
4	7393.08	52.11	74.00	-21.89	42.69	7.25	34.08	36.25	HORIZONTAL	289	197	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4914.64	44.50	74.00	-29.50	41.13	5.79	33.67	31.25	VERTICAL	235	206	Peak
2	4931.63	31.56	54.00	-22.44	28.14	5.80	33.66	31.28	VERTICAL	235	206	Average
3	7380.90	51.82	74.00	-22.18	42.39	7.25	34.07	36.25	VERTICAL	270	178	Peak
4	7393.69	38.82	54.00	-15.18	29.40	7.25	34.08	36.25	VERTICAL	270	178	Average

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 3 / Chain 1 + Chain 2 + Chain 3
Test Date	Dec. 17, 2014		
Test Mode	Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 3TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4835.12	44.47	74.00	-29.53	41.31	5.75	33.70	31.11	HORIZONTAL	213	202	Peak
2	4845.15	31.68	54.00	-22.32	28.49	5.75	33.69	31.13	HORIZONTAL	213	202	Average
3	7266.67	51.39	74.00	-22.61	42.24	7.16	33.96	35.95	HORIZONTAL	177	166	Peak
4	7274.88	38.62	54.00	-15.38	29.46	7.16	33.97	35.97	HORIZONTAL	177	166	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4837.75	45.11	74.00	-28.89	41.95	5.75	33.70	31.11	VERTICAL	169	227	Peak
2	4839.22	31.84	54.00	-22.16	28.66	5.75	33.70	31.13	VERTICAL	169	227	Average
3	7260.74	52.30	74.00	-21.70	43.14	7.16	33.95	35.95	VERTICAL	213	186	Peak
4	7266.19	38.44	54.00	-15.56	29.29	7.16	33.96	35.95	VERTICAL	213	186	Average

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 6 / Chain 1 + Chain 2 + Chain 3
Test Date	Dec. 17, 2014		
Test Mode	Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 3TX)		

Horizontal

	Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna		T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	Pol/Phase	deg	cm	
1	4879.61	44.54	74.00	-29.46	41.26	5.77	33.68	31.19	HORIZONTAL	262	240	Peak
2	4880.28	31.25	54.00	-22.75	27.97	5.77	33.68	31.19	HORIZONTAL	262	240	Average
3	7303.72	51.81	74.00	-22.19	42.57	7.19	33.99	36.04	HORIZONTAL	160	188	Peak
4	7317.06	38.94	54.00	-15.06	29.69	7.19	34.01	36.07	HORIZONTAL	160	188	Average

Vertical

	Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna		T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	Pol/Phase	deg	cm	
1	2460.26	117.22	74.00	43.22	85.97	4.05	0.00	27.20	VERTICAL	36	194	Peak
2	2460.55	106.39	54.00	52.39	75.12	4.05	0.00	27.22	VERTICAL	36	194	Average
3	2483.50	72.61	74.00	-1.39	41.27	4.07	0.00	27.27	VERTICAL	36	194	Peak
4	2483.79	51.05	54.00	-2.95	19.71	4.07	0.00	27.27	VERTICAL	36	194	Average

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 9 / Chain 1 + Chain 2 + Chain 3
Test Date	Dec. 17, 2014		
Test Mode	Mode 1: (Ant.6 Dipole antenna / 5.3 dBi / 3TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4908.68	31.63	54.00	-22.37	28.27	5.79	33.67	31.24	HORIZONTAL	156	166	Average
2	4909.55	44.93	74.00	-29.07	41.57	5.79	33.67	31.24	HORIZONTAL	156	166	Peak
3	7346.51	39.46	54.00	-14.54	30.13	7.22	34.03	36.14	HORIZONTAL	195	150	Average
4	7350.55	52.44	74.00	-21.56	43.11	7.22	34.04	36.15	HORIZONTAL	195	150	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4900.06	46.29	74.00	-27.71	42.95	5.79	33.68	31.23	VERTICAL	271	196	Peak
2	4910.70	31.90	54.00	-22.10	28.53	5.79	33.67	31.25	VERTICAL	271	196	Average
3	7353.15	39.65	54.00	-14.35	30.32	7.22	34.04	36.15	VERTICAL	108	136	Average
4	7360.46	52.26	74.00	-21.74	42.89	7.22	34.05	36.20	VERTICAL	108	136	Peak

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802. 11ac MCS0/Nss1 VHT20 CH 1 / Chain 1 + Chain 2
Test Date	Dec. 15, 2014		
Test Mode	Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 2TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4823.85	30.83	54.00	-23.17	27.70	5.74	33.70	31.09	HORIZONTAL	123	100	Average
2	4824.27	44.67	74.00	-29.33	41.54	5.74	33.70	31.09	HORIZONTAL	123	100	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4824.13	30.82	54.00	-23.18	27.70	5.74	33.70	31.08	VERTICAL	108	100	Average
2	4824.69	44.92	74.00	-29.08	41.80	5.74	33.70	31.08	VERTICAL	108	100	Peak

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802. 11ac MCS0/Nss1 VHT20 CH 6 / Chain 1 + Chain 2
Test Date	Dec. 15, 2014		
Test Mode	Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 2TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4879.59	46.33	74.00	-27.67	43.05	5.77	33.68	31.19	HORIZONTAL	172	100	Peak
2	4880.37	32.15	54.00	-21.85	28.87	5.77	33.68	31.19	HORIZONTAL	172	100	Average
3	7301.28	37.42	54.00	-16.58	28.19	7.19	33.99	36.03	HORIZONTAL	239	100	Average
4	7311.58	51.53	74.00	-22.47	42.28	7.19	34.00	36.06	HORIZONTAL	239	100	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4872.96	45.39	74.00	-28.61	42.12	5.77	33.68	31.18	VERTICAL	159	100	Peak
2	4879.56	32.01	54.00	-21.99	28.74	5.77	33.68	31.18	VERTICAL	159	100	Average
3	7301.19	52.03	74.00	-21.97	42.78	7.19	33.99	36.05	VERTICAL	215	102	Peak
4	7301.39	38.42	54.00	-15.58	29.17	7.19	33.99	36.05	VERTICAL	215	102	Average

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 11 / Chain 1 + Chain 2
Test Date	Dec. 15, 2014		
Test Mode	Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 2TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4920.41	31.74	74.00	-42.26	28.36	5.79	33.67	31.26	HORIZONTAL	213	100	Peak
2	4927.42	44.55	74.00	-29.45	41.15	5.79	33.67	31.28	HORIZONTAL	213	100	Peak
3	7384.47	52.86	74.00	-21.14	43.45	7.25	34.07	36.23	HORIZONTAL	267	100	Peak
4	7393.24	38.89	54.00	-15.11	29.47	7.25	34.08	36.25	HORIZONTAL	267	100	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4922.50	43.07	74.00	-30.93	39.70	5.79	33.67	31.25	VERTICAL	128	100	Peak
2	4930.74	31.67	54.00	-22.33	28.25	5.80	33.66	31.28	VERTICAL	128	100	Average
3	7382.15	52.51	74.00	-21.49	43.08	7.25	34.07	36.25	VERTICAL	244	100	Peak
4	7391.96	39.10	54.00	-14.90	29.68	7.25	34.08	36.25	VERTICAL	244	100	Average

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 3 / Chain 1 + Chain 2
Test Date	Dec. 15, 2014		
Test Mode	Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 2TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4837.78	31.31	54.00	-22.69	28.14	5.75	33.70	31.12	HORIZONTAL	236	100	Average
2	4845.56	44.94	74.00	-29.06	41.75	5.75	33.69	31.13	HORIZONTAL	236	100	Peak
3	7275.06	38.51	54.00	-15.49	29.35	7.16	33.97	35.97	HORIZONTAL	164	100	Average
4	7275.06	53.51	74.00	-20.49	44.35	7.16	33.97	35.97	HORIZONTAL	164	100	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4837.31	31.28	54.00	-22.72	28.12	5.75	33.70	31.11	VERTICAL	152	100	Average
2	4839.60	44.84	74.00	-29.16	41.66	5.75	33.70	31.13	VERTICAL	152	100	Peak
3	7267.62	38.31	54.00	-15.69	29.16	7.16	33.96	35.95	VERTICAL	219	100	Average
4	7271.59	51.91	74.00	-22.09	42.76	7.16	33.96	35.95	VERTICAL	219	100	Peak

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802. 11ac MCS0/Nss1 VHT40 CH 6 / Chain 1 + Chain 2
Test Date	Dec. 15, 2014		
Test Mode	Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 2TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4878.49	45.40	74.00	-28.60	42.12	5.77	33.68	31.19	HORIZONTAL	219	100	Peak
2	4881.21	32.02	54.00	-21.98	28.74	5.77	33.68	31.19	HORIZONTAL	219	100	Average
3	7301.36	51.49	74.00	-22.51	42.26	7.19	33.99	36.03	HORIZONTAL	311	100	Peak
4	7303.39	38.30	54.00	-15.70	29.06	7.19	33.99	36.04	HORIZONTAL	311	100	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4873.91	42.08	74.00	-31.92	38.81	5.77	33.68	31.18	VERTICAL	86	100	Peak
2	4879.27	31.88	54.00	-22.12	28.61	5.77	33.68	31.18	VERTICAL	86	100	Average
3	7304.11	38.55	54.00	-15.45	29.30	7.19	33.99	36.05	VERTICAL	357	100	Average
4	7309.15	52.62	74.00	-21.38	43.38	7.19	34.00	36.05	VERTICAL	357	100	Peak

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 9 / Chain 1 + Chain 2
Test Date	Dec. 15, 2014		
Test Mode	Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 2TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4901.95	31.79	54.00	-22.21	28.44	5.79	33.67	31.23	HORIZONTAL	198	100	Average
2	4906.87	45.52	74.00	-28.48	42.16	5.79	33.67	31.24	HORIZONTAL	198	100	Peak
3	7353.69	38.94	54.00	-15.06	29.60	7.22	34.04	36.16	HORIZONTAL	143	100	Average
4	7355.19	52.46	74.00	-21.54	43.12	7.22	34.04	36.16	HORIZONTAL	143	100	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4903.24	31.60	54.00	-22.40	28.25	5.79	33.67	31.23	VERTICAL	275	100	Average
2	4904.06	44.77	74.00	-29.23	41.42	5.79	33.67	31.23	VERTICAL	275	100	Peak
3	7346.00	38.52	54.00	-15.48	29.18	7.22	34.03	36.15	VERTICAL	163	100	Average
4	7357.53	52.36	74.00	-21.64	43.03	7.22	34.04	36.15	VERTICAL	163	100	Peak

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802. 11ac MCS0/Nss1 VHT20 CH 1 / Chain 1 + Chain 2 + Chain 3
Test Date	Dec. 15, 2014		
Test Mode	Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 3TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4853.11	31.90	54.00	-22.10	28.69	5.75	33.69	31.15	HORIZONTAL	155	129	Average
2	4855.69	44.76	74.00	-29.24	41.55	5.75	33.69	31.15	HORIZONTAL	155	129	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4840.38	44.54	74.00	-29.46	41.36	5.75	33.70	31.13	VERTICAL	128	145	Peak
2	4849.61	31.75	54.00	-22.25	28.56	5.75	33.69	31.13	VERTICAL	128	145	Average

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 6 / Chain 1 + Chain 2 + Chain 3
Test Date	Dec. 15, 2014		
Test Mode	Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 3TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4873.48	47.84	74.00	-26.16	44.57	5.77	33.68	31.18	HORIZONTAL	122	147	Peak
2	4876.46	37.47	54.00	-16.53	34.19	5.77	33.68	31.19	HORIZONTAL	122	147	Average
3	7305.96	55.07	74.00	-18.93	45.83	7.19	33.99	36.04	HORIZONTAL	313	247	Peak
4	7311.70	48.95	54.00	-5.05	39.70	7.19	34.00	36.06	HORIZONTAL	313	247	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4871.22	38.38	54.00	-15.62	35.12	5.77	33.69	31.18	VERTICAL	320	121	Average
2	4880.98	53.07	74.00	-20.93	49.80	5.77	33.68	31.18	VERTICAL	320	121	Peak
3	7311.70	46.69	54.00	-7.31	37.45	7.19	34.00	36.05	VERTICAL	81	159	Average
4	7316.08	55.86	74.00	-18.14	46.57	7.19	34.00	36.10	VERTICAL	81	159	Peak

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 11 / Chain 1 + Chain 2 + Chain 3
Test Date	Dec. 15, 2014		
Test Mode	Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 3TX)		

Horizontal

	Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna		T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	Pol/Phase	deg	cm	
1	4919.66	45.29	74.00	-28.71	41.91	5.79	33.67	31.26	HORIZONTAL	177	174	Peak
2	4931.64	32.54	54.00	-21.46	29.12	5.80	33.66	31.28	HORIZONTAL	177	174	Average
3	7378.85	51.74	74.00	-22.26	42.33	7.25	34.06	36.22	HORIZONTAL	198	185	Peak
4	7379.95	39.41	54.00	-14.59	30.00	7.25	34.06	36.22	HORIZONTAL	198	185	Average

Vertical

	Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna		T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	Pol/Phase	deg	cm	
1	4920.93	45.64	74.00	-28.36	42.27	5.79	33.67	31.25	VERTICAL	178	234	Peak
2	4933.73	32.60	54.00	-21.40	29.18	5.80	33.66	31.28	VERTICAL	178	234	Average
3	7380.53	52.79	74.00	-21.21	43.35	7.25	34.06	36.25	VERTICAL	224	185	Peak
4	7394.54	39.25	54.00	-14.75	29.83	7.25	34.08	36.25	VERTICAL	224	185	Average

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 3 / Chain 1 + Chain 2 + Chain 3
Test Date	Dec. 15, 2014		
Test Mode	Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 3TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4844.81	45.02	74.00	-28.98	41.84	5.75	33.70	31.13	HORIZONTAL	165	179	Peak
2	4846.14	31.61	54.00	-22.39	28.42	5.75	33.69	31.13	HORIZONTAL	165	179	Average
3	7268.89	51.40	74.00	-22.60	42.24	7.16	33.96	35.96	HORIZONTAL	202	183	Peak
4	7275.18	38.87	54.00	-15.13	29.71	7.16	33.97	35.97	HORIZONTAL	202	183	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4834.30	45.33	74.00	-28.67	42.18	5.74	33.70	31.11	VERTICAL	118	163	Peak
2	4852.28	32.06	54.00	-21.94	28.87	5.75	33.69	31.13	VERTICAL	118	163	Average
3	7265.83	52.70	74.00	-21.30	43.55	7.16	33.96	35.95	VERTICAL	175	198	Peak
4	7275.12	38.60	54.00	-15.40	29.41	7.16	33.97	36.00	VERTICAL	175	198	Average

Temperature	23°C	Humidity	61%
Test Engineer	Mars Lin, Hank Yang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 6 / Chain 1 + Chain 2 + Chain 3
Test Date	Dec. 15, 2014		
Test Mode	Mode 2: (Ant.7 Panel antenna / 6.5 dBi / 3TX)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4869.95	32.69	54.00	-21.31	29.44	5.77	33.69	31.17	HORIZONTAL	143	124	Average
2	4874.38	45.62	74.00	-28.38	42.35	5.77	33.68	31.18	HORIZONTAL	143	124	Peak
3	7316.64	52.64	74.00	-21.36	43.38	7.19	34.00	36.07	HORIZONTAL	165	121	Peak
4	7318.64	39.29	54.00	-14.71	30.04	7.19	34.01	36.07	HORIZONTAL	165	121	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4873.16	46.31	74.00	-27.69	43.04	5.77	33.68	31.18	VERTICAL	157	101	Peak
2	4883.03	32.95	54.00	-21.05	29.65	5.77	33.68	31.21	VERTICAL	157	101	Average
3	7315.43	52.11	74.00	-21.89	42.87	7.19	34.00	36.05	VERTICAL	141	110	Peak
4	7315.89	39.46	54.00	-14.54	30.17	7.19	34.00	36.10	VERTICAL	141	110	Average