SPORTON International Inc.
No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.
Ph: 886-3-327-3456 / FAX: 886-3-327-0973 / www.sporton.com.tw

FCC RADIO TEST REPORT

Applicant's company	**Cisco Systems, Inc.**
Applicant Address	170 West Tasman Drive, San Jose, CA 95134 USA
FCC ID	**UDX-60039010**
Manufacturer's company	**Cisco Systems, Inc.**
Manufacturer Address	170 West Tasman Drive, San Jose, CA 95134 USA

Product Name	Wireless 802.11 abgn/ac AP
Brand Name	CISCO
Model No.	MR42-HW
Test Rule Part(s)	47 CFR FCC Part 15 Subpart C § 15.247
Test Freq. Range	2400 ~ 2483.5MHz
Received Date	Jun. 24, 2015
Final Test Date	Jul. 23, 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**, **KDB558074 D01 v03r03**, **KDB 662911 D01 v02r01**, **KDB644545 D01 v01r02.**

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

TAF
Testing Laboratory
1190

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History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR561822AA	Rev. 01	Initial issue of report	Aug. 17, 2015

1. VERIFICATION OF COMPLIANCE

Product Name	:	Wireless 802.11 abgn/ac AP
Brand Name	:	CISCO
Model No.	:	MR42-HW
Applicant	:	Cisco Systems, Inc.
Test Rule Part(s)	:	47 CFR FCC Part 15 Subpart C § 15.247

Sporton International as requested by the applicant to evaluate the EMC performance of the product sample received on Jun. 24, 2015 would like to declare that the tested sample has been evaluated and found to be in compliance with the tested rule parts. The data recorded as well as the test configuration specified is true and accurate for showing the sample's EMC nature.

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	7.42 dB
4.2	15.247(b)(3)	Maximum Conducted Output Power	Complies	3.31 dB
4.3	15.247(e)	Power Spectral Density	Complies	6.62 dB
4.4	15.247(a)(2)	6dB Spectrum Bandwidth	Complies	-
4.5	15.247(d)	Radiated Emissions	Complies	0.15 dB
4.6	15.247(d)	Band Edge Emissions	Complies	0.03 dB
4.7	15.203	Antenna Requirements	Complies	-

3. GENERAL INFORMATION

3.1. Product Details

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

Channel Band Width (99%)	**For Radio 1** **For Non-Beamforming Mode** 1TX: IEEE 802.11b: 13.20 MHz IEEE 802.11g: 16.92 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 17.88 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 36.60 MHz 2TX: IEEE 802.11b: 10.80 MHz IEEE 802.11g: 16.68 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 17.76 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 36.60 MHz IEEE 802.11ac MCS0/Nss2 (VHT20): 17.88 MHz IEEE 802.11ac MCS0/Nss2 (VHT40): 36.80 MHz 3TX: IEEE 802.11b: 12.60 MHz IEEE 802.11g: 16.80 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 18.00 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 34.80 MHz IEEE 802.11ac MCS0/Nss2 (VHT20): 17.88 MHz IEEE 802.11ac MCS0/Nss2 (VHT40): 37.00 MHz IEEE 802.11ac MCS0/Nss3 (VHT20): 18.48 MHz IEEE 802.11ac MCS0/Nss3 (VHT40): 37.40 MHz **For Beamforming Mode** 2TX: IEEE 802.11ac MCS0/Nss1 (VHT20): 17.63 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.77 MHz 3TX: IEEE 802.11ac MCS0/Nss1 (VHT20): 17.89 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 38.21 MHz IEEE 802.11ac MCS0/Nss2 (VHT20): 17.80 MHz IEEE 802.11ac MCS0/Nss2 (VHT40): 38.35 MHz **For Radio 3** IEEE 802.11b: 12.07 MHz IEEE 802.11g: 18.41 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 19.54 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.05 MHz

Maximum Conducted Output Power	**For Radio 1** **For Non-Beamforming Mode** 1TX: IEEE 802.11b: 20.98 dBm IEEE 802.11g: 20.96 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 20.98 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 17.06 dBm 2TX: IEEE 802.11b: 23.58 dBm IEEE 802.11g: 23.56 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 23.87 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 18.81 dBm IEEE 802.11ac MCS0/Nss2 (VHT20): 23.98 dBm IEEE 802.11ac MCS0/Nss2 (VHT40): 18.60 dBm 3TX: IEEE 802.11b: 25.23 dBm IEEE 802.11g: 25.64 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 25.33 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 20.49 dBm IEEE 802.11ac MCS0/Nss2 (VHT20): 25.30 dBm IEEE 802.11ac MCS0/Nss2 (VHT40): 19.84 dBm IEEE 802.11ac MCS0/Nss3 (VHT20): 25.44 dBm IEEE 802.11ac MCS0/Nss3 (VHT40): 19.67 dBm **For Beamforming Mode** 2TX: IEEE 802.11ac MCS0/Nss1 (VHT20): 23.69 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 17.80 dBm 3TX: IEEE 802.11ac MCS0/Nss1 (VHT20): 25.51 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 19.19 dBm IEEE 802.11ac MCS0/Nss2 (VHT20): 25.55 dBm IEEE 802.11ac MCS0/Nss2 (VHT40): 20.29 dBm **For Radio 3** IEEE 802.11b: 15.21 dBm IEEE 802.11g: 16.66 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 16.72 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 16.13 dBm

Carrier Frequencies	Please refer to section 3.3
Antenna	Please refer to section 3.2

Items	Description	
Beamforming Function	☒ With beamforming For 802.11n/ac in 2.4GHz /5GHz.	☐ Without beamforming

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
Radio 1	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
Radio 3	802.11n (HT20)	1	MCS0-7
	802.11n (HT40)	1	MCS0-7
	802.11ac (VHT20)	1	MCS 0-9/Nss1
	802.11ac (VHT40)	1	MCS 0-9/Nss1

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

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

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

3.2. Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector
1	Cisco-Meraki	610-3910	PIFA Antenna	I-PEX
2	Cisco-Meraki	610-3910	PIFA Antenna	I-PEX
3	Cisco-Meraki	610-3910	PIFA Antenna	I-PEX
4	Cisco-Meraki	610-3910	PIFA Antenna	I-PEX
5	Cisco-Meraki	610-3910	PIFA Antenna	I-PEX
6	Cisco-Meraki	610-3910	PIFA Antenna	I-PEX
7	Cisco-Meraki	EAAJ-53 (Scanning)	PIFA Antenna	I-PEX
8	Cisco-Meraki	EAAH-53 (BLE)	PIFA Antenna	I-PEX

Radio	TX Function	Antenna	Chain	Antenna Gain (dBi)		
				2.4GHz	5GHz	Bluetooth
1	1	Ant. 6	1	3.73	-	-
	2	Ant. 6 + 5	1 + 2	1.69	-	-
	3	Ant. 6 + 5 + 4	1 + 2 + 3	2.41	-	-
2	1	Ant. 3	4	-	5.52	-
	2	Ant. 3 + 2	4 + 5	-	4.03	-
	3	Ant. 3 + 2 + 1	4 + 5 + 6	-	3.77	-
3	1	Ant. 7	7	3.33	5.59	-
4	1	Ant. 8	8	-	-	3.48

Note: The EUT has eight antennas.

The EUT has four radios, Radio 1 supports WLAN 2.4GHz, Radio 2 supports WLAN 5GHz, Radio 3 supports WLAN 2.4GHz + 5GHz (scanning radio) and Radio 4 supports Bluetooth function.

<For Radio 1 / 2.4GHz Function>

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

For 1TX (Ant. 6)

Only Chain 1 could transmit/receive.

For 2TX (Ant. 6 + 5)

Only Chain 1 and Chain 2 could transmit/receive simultaneously.

For 3TX (Ant. 6 + 5 + 4)

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

<For Radio 2 / 5GHz Function>

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

For 1TX (Ant. 3)

Only Chain 4 could transmit/receive.

For 2TX (Ant. 3 + 2)

Only Chain 4 and Chain 5 could transmit/receive simultaneously.

For 3TX (Ant. 3 + 2 + 1)

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

<For Radio 3 / 2.4GHz + 5GHz Functions>

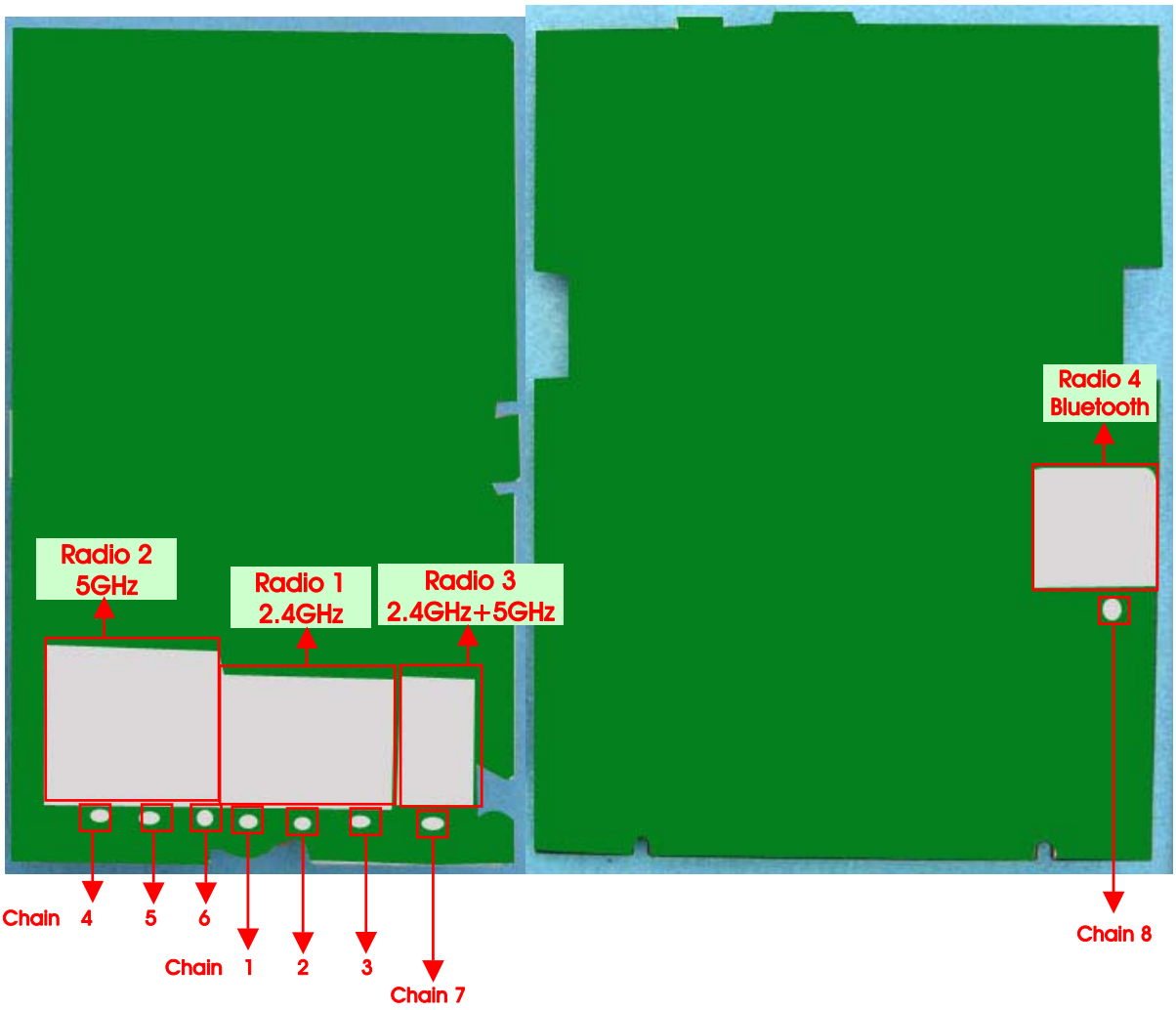
For IEEE 802.11a/b/g/n/ac mode (1TX/ 1RX):

Only Chain 7 could transmit/receive.

<For Radio 4 / Bluetooth Functions>

For Bluetooth function (1TX/1RX):

Only Chain 8 could transmit/receive.


Radio 2
5GHz
Radio 1
2.4GHz
Radio 3
2.4GHz+5GHz
Radio 4
Bluetooth
Chain 4
5
6
Chain 1
2
3
Chain 7
Chain 8

3.3. 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	-	-

3.4. Accessories

Power	Brand	Model	Rating
Adapter	CISCO	KSAS03612002500HU	Input:100-240V~50/60Hz 1.0A Output:12V, 2.5A

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.

For Radio 1

Test Items	Mode	Data Rate	Channel	TX	Chain
AC Power Line Conducted Emissions	Normal Link	-	-	-	-
Maximum Conducted Output Power	For Non-Beamforming Mode				
	11b/CCK	1 Mbps	1/6/11	1	1
	11g/BPSK	6 Mbps	1/6/11	1	1
	11ac VHT20	MCS0/Nss1	1/6/11	1	1
	11ac VHT40	MCS0/Nss1	3/6/9	1	1
	11b/CCK	1 Mbps	1/6/11	2	1+2
	11g/BPSK	6 Mbps	1/6/11	2	1+2
	11ac VHT20	MCS0/Nss1	1/6/11	2	1+2
	11ac VHT40	MCS0/Nss1	3/6/9	2	1+2
	11ac VHT20	MCS0/Nss2	1/6/11	2	1+2
	11ac VHT40	MCS0/Nss2	3/6/9	2	1+2
	11b/CCK	1 Mbps	1/6/11	3	1+2+3
	11g/BPSK	6 Mbps	1/6/11	3	1+2+3
	11ac VHT20	MCS0/Nss1	1/6/11	3	1+2+3
	11ac VHT40	MCS0/Nss1	3/6/9	3	1+2+3
	11ac VHT20	MCS0/Nss2	1/6/11	3	1+2+3
	11ac VHT40	MCS0/Nss2	3/6/9	3	1+2+3
	11ac VHT20	MCS0/Nss3	1/6/11	3	1+2+3
	11ac VHT40	MCS0/Nss3	3/6/9	3	1+2+3
	For Beamforming Mode				
	11ac VHT20	MCS0/Nss1	1/6/11	2	1+2
	11ac VHT40	MCS0/Nss1	3/6/9	2	1+2
	11ac VHT20	MCS0/Nss1	1/6/11	3	1+2+3
	11ac VHT40	MCS0/Nss1	3/6/9	3	1+2+3
	11ac VHT20	MCS0/Nss2	1/6/11	3	1+2+3
	11ac VHT40	MCS0/Nss2	3/6/9	3	1+2+3

Power Spectral Density	For Non-Beamforming Mode				
	11b/CCK	1 Mbps	1/6/11	1	1
	11g/BPSK	6 Mbps	1/6/11	1	1
	11ac VHT20	MCS0/Nss1	1/6/11	1	1
	11ac VHT40	MCS0/Nss1	3/6/9	1	1
	11b/CCK	1 Mbps	1/6/11	2	1+2
	11g/BPSK	6 Mbps	1/6/11	2	1+2
	11ac VHT20	MCS0/Nss1	1/6/11	2	1+2
	11ac VHT40	MCS0/Nss1	3/6/9	2	1+2
	11ac VHT20	MCS0/Nss2	1/6/11	2	1+2
	11ac VHT40	MCS0/Nss2	3/6/9	2	1+2
	11b/CCK	1 Mbps	1/6/11	3	1+2+3
	11g/BPSK	6 Mbps	1/6/11	3	1+2+3
	11ac VHT20	MCS0/Nss1	1/6/11	3	1+2+3
	11ac VHT40	MCS0/Nss1	3/6/9	3	1+2+3
	11ac VHT20	MCS0/Nss2	1/6/11	3	1+2+3
	11ac VHT40	MCS0/Nss2	3/6/9	3	1+2+3
	11ac VHT20	MCS0/Nss3	1/6/11	3	1+2+3
	11ac VHT40	MCS0/Nss3	3/6/9	3	1+2+3
	For Beamforming Mode				
	11ac VHT20	MCS0/Nss1	1/6/11	2	1+2
	11ac VHT40	MCS0/Nss1	3/6/9	2	1+2
	11ac VHT20	MCS0/Nss1	1/6/11	3	1+2+3
	11ac VHT40	MCS0/Nss1	3/6/9	3	1+2+3
	11ac VHT20	MCS0/Nss2	1/6/11	3	1+2+3
	11ac VHT40	MCS0/Nss2	3/6/9	3	1+2+3

6dB Spectrum Bandwidth	For Non-Beamforming Mode				
	11b/CCK	1 Mbps	1/6/11	1	1
	11g/BPSK	6 Mbps	1/6/11	1	1
	11ac VHT20	MCS0/Nss1	1/6/11	1	1
	11ac VHT40	MCS0/Nss1	3/6/9	1	1
	11b/CCK	1 Mbps	1/6/11	2	1+2
	11g/BPSK	6 Mbps	1/6/11	2	1+2
	11ac VHT20	MCS0/Nss1	1/6/11	2	1+2
	11ac VHT40	MCS0/Nss1	3/6/9	2	1+2
	11ac VHT20	MCS0/Nss2	1/6/11	2	1+2
	11ac VHT40	MCS0/Nss2	3/6/9	2	1+2
	11b/CCK	1 Mbps	1/6/11	3	1+2+3
	11g/BPSK	6 Mbps	1/6/11	3	1+2+3
	11ac VHT20	MCS0/Nss1	1/6/11	3	1+2+3
	11ac VHT40	MCS0/Nss1	3/6/9	3	1+2+3
	11ac VHT20	MCS0/Nss2	1/6/11	3	1+2+3
	11ac VHT40	MCS0/Nss2	3/6/9	3	1+2+3
	11ac VHT20	MCS0/Nss3	1/6/11	3	1+2+3
	11ac VHT40	MCS0/Nss3	3/6/9	3	1+2+3
	For Beamforming Mode				
	11ac VHT20	MCS0/Nss1	1/6/11	2	1+2
	11ac VHT40	MCS0/Nss1	3/6/9	2	1+2
	11ac VHT20	MCS0/Nss1	1/6/11	3	1+2+3
	11ac VHT40	MCS0/Nss1	3/6/9	3	1+2+3
	11ac VHT20	MCS0/Nss2	1/6/11	3	1+2+3
	11ac VHT40	MCS0/Nss2	3/6/9	3	1+2+3
Radiated Emissions Below 1GHz	Normal Link	-	-	-	-
Radiated Emissions Above 1GHz	For Non-Beamforming Mode				
	11b/CCK	1 Mbps	1/6/11	3	1+2+3
	11g/BPSK	6 Mbps	1/6/11	3	1+2+3
	11ac VHT20	MCS0/Nss1	1/6/11	3	1+2+3
	11ac VHT40	MCS0/Nss1	3/6/9	3	1+2+3
	For Beamforming Mode				
	11ac VHT20	MCS0/Nss1	1/6/11	3	1+2+3
	11ac VHT40	MCS0/Nss1	3/6/9	3	1+2+3

Band Edge Emissions	For Non-Beamforming Mode				
	11g/BPSK	6 Mbps	1/6/11	1	1
	11ac VHT20	MCS0/Nss1	1/6/11	1	1
	11ac VHT40	MCS0/Nss1	3/6/9	1	1
	11g/BPSK	6 Mbps	1/6/11	2	1+2
	11ac VHT20	MCS0/Nss1	1/6/11	2	1+2
	11ac VHT40	MCS0/Nss1	3/6/9	2	1+2
	11ac VHT20	MCS0/Nss2	1/6/11	2	1+2
	11ac VHT40	MCS0/Nss2	3/6/9	2	1+2
	11b/CCK	1 Mbps	1/6/11	3	1+2+3
	11g/BPSK	6 Mbps	1/6/11	3	1+2+3
	11ac VHT20	MCS0/Nss1	1/6/11	3	1+2+3
	11ac VHT40	MCS0/Nss1	3/6/9	3	1+2+3
	11ac VHT20	MCS0/Nss2	1/6/11	3	1+2+3
	11ac VHT40	MCS0/Nss2	3/6/9	3	1+2+3
	11ac VHT20	MCS0/Nss3	1/6/11	3	1+2+3
	11ac VHT40	MCS0/Nss3	3/6/9	3	1+2+3
	For Beamforming Mode				
	11ac VHT20	MCS0/Nss1	1/6/11	2	1+2
	11ac VHT40	MCS0/Nss1	3/6/9	2	1+2
	11ac VHT20	MCS0/Nss1	1/6/11	3	1+2+3
	11ac VHT40	MCS0/Nss1	3/6/9	3	1+2+3
	11ac VHT20	MCS0/Nss2	1/6/11	3	1+2+3
	11ac VHT40	MCS0/Nss2	3/6/9	3	1+2+3

For Radio 3

Test Items	Mode	Data Rate	Channel	TX	Chain
AC Power Line Conducted Emissions	Normal Link	-	-	-	-
Maximum Conducted Output Power	11b/CCK	1 Mbps	1/6/11	1	7
	11g/BPSK	6 Mbps	1/6/11	1	7
	11ac VHT20	MCS0/Nss1	1/6/11	1	7
	11ac VHT40	MCS0/Nss1	3/6/9	1	7
Power Spectral Density	11b/CCK	1 Mbps	1/6/11	1	7
	11g/BPSK	6 Mbps	1/6/11	1	7
	11ac VHT20	MCS0/Nss1	1/6/11	1	7
	11ac VHT40	MCS0/Nss1	3/6/9	1	7
6dB Spectrum Bandwidth	11b/CCK	1 Mbps	1/6/11	1	7
	11g/BPSK	6 Mbps	1/6/11	1	7
	11ac VHT20	MCS0/Nss1	1/6/11	1	7
	11ac VHT40	MCS0/Nss1	3/6/9	1	7
Radiated Emissions Below 1GHz	Normal Link	-	-	-	-
Radiated Emissions Above 1GHz	11b/CCK	1 Mbps	1/6/11	1	7
	11g/BPSK	6 Mbps	1/6/11	1	7
	11ac VHT20	MCS0/Nss1	1/6/11	1	7
	11ac VHT40	MCS0/Nss1	3/6/9	1	7
Band Edge Emissions	11b/CCK	1 Mbps	1/6/11	1	7
	11g/BPSK	6 Mbps	1/6/11	1	7
	11ac VHT20	MCS0/Nss1	1/6/11	1	7
	11ac VHT40	MCS0/Nss1	3/6/9	1	7

Note 1: VHT20/VHT40 covers HT20/HT40, due to same modulation. The power setting for 802.11n HT20 and HT40 are the same or lower than 802.11ac VHT20 and VHT40.

Note 2: There are two modes of EUT, one is beamforming mode, and the other is non-beamforming mode for 802.11n/ac. All test results were recorded in the report.

Note 3: For radio 1, The directional gain of 2T2S & 3T3S are the same. Thus, Beamforming on and Beamforming off will have same power limit. As a result, Beamforming on is covered by Beamforming off.

Note 4: For Radio 1, Harmonic was covered by 3T1S because 3T1S was tested under max. power setting.

Note 5: For Radio 1, 11b Band-edge was covered by 3T1S because 3T1S was tested under max. power setting.

Note 6: The PoE is for measurement only, would not be marketed.

The PoE information as below:

Power	Brand	Model
PoE	Meraki	POE20U-560(G)

The following test modes were performed for all tests:

For Conducted Emission test:

Mode 1. Radio 1 (2.4GHz WLAN function) + Radio 2 (5GHz WLAN function) + Radio 3 (2.4GHz WLAN function) + Bluetooth with Adapter

Mode 2. Radio 1 (2.4GHz WLAN function) + Radio 2 (5GHz WLAN function) + Radio 3 (5GHz WLAN function) + Bluetooth with Adapter

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

For Radiated Emission test (Below 1GHz):

Mode 1. Radio 1 (2.4GHz WLAN function) + Radio 2 (5GHz WLAN function) + Radio 3 (2.4GHz WLAN function) + Bluetooth with Adapter - X axis

Mode 2. Radio 1 (2.4GHz WLAN function) + Radio 2 (5GHz WLAN function) + Radio 3 (2.4GHz WLAN function) + Bluetooth with Adapter - Y axis

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

Mode 3. Radio 1 (2.4GHz WLAN function) + Radio 2 (5GHz WLAN function) + Radio 3 (2.4GHz WLAN function) + Bluetooth with PoE - X axis

Mode 3 has been evaluated to be the worst case among Mode 1~3, thus measurement for Mode 4 will follow this same test mode.

Mode 4. Radio 1 (2.4GHz WLAN function) + Radio 2 (5GHz WLAN function) + Radio 3 (5GHz WLAN function)+ Bluetooth with PoE - X axis

Mode 3 is the worst case, so it was selected to record in this test report.

For Radiated Emission test (Above 1GHz):

The EUT was performed at X axis, Y axis and Z axis position for Radiated emission above 1GHz test, and the worst case was found at Y axis. So the measurement will follow this same test configuration.

Mode1. CTX - Y axis

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

Mode 1 Radio 1 (2.4GHz WLAN function) + Radio 2 (5GHz WLAN function) + Radio 3 (2.4GHz WLAN function) + Bluetooth

Mode 2. Radio 1 (2.4GHz WLAN function) + Radio 2 (5GHz WLAN function) + Radio 3 (5GHz WLAN function) + Bluetooth

Therefore Co-location Maximum Permissible Exposure (Please refer to Appendix B) and Radiated Emission Co-location (please refer to Appendix C) tests are added for simultaneously transmit.

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 (Below 1GHz)

Support Unit	Brand	Model	FCC ID
Notebook*5	DELL	E4300	DoC
Device	CISCO	MR38-HW / RNAQ-MR1	N/A
PoE	Meraki	POE20U-560(G)	N/A

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

<For Non-beamforming Mode>

Support Unit	Brand	Model	FCC ID
Notebook	DELL	E4300	DoC

<For Beamforming Mode>

Support Unit	Brand	Model	FCC ID
Notebook*2	DELL	E4300	DoC
Device	CISCO	MR38-HW / RNAQ-MR1	N/A

For Test Site No: CO01-CB

Support Unit	Brand	Model	FCC ID
Notebook*5	DELL	E6430	DoC
Device	CISCO	MR38-HW / RNAQ-MR1	N/A

For Test Site No: TH01-CB

Support Unit	Brand	Model	FCC ID
Notebook	DELL	E4300	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

For Conducted Test:

<For Radio 1 Non-beamforming Mode>: 1TX, 1S

Test Software Version	QCARCT 3.0.93.0					
Mode	Test Frequency (MHz)					
	NCB: 20MHz			NCB: 40MHz		
	2412 MHz	2437 MHz	2462 MHz	2422 MHz	2437 MHz	2452 MHz
802.11b	20	20	20	-	-	-
802.11g	17.5	21	17	-	-	-
802.11ac MCS0/Nss1 VHT20	17	21	17	-	-	-
802.11ac MCS0/Nss1 VHT40	-	-	-	12.5	15.5	16

<For Radio 1 Non-beamforming Mode>: 2TX, 1S

Test Software Version	QCARCT 3.0.93.0					
Mode	Test Frequency (MHz)					
	NCB: 20MHz			NCB: 40MHz		
	2412 MHz	2437 MHz	2462 MHz	2422 MHz	2437 MHz	2452 MHz
802.11b	20	20	20	-	-	-
802.11g	17	20.5	16.5	-	-	-
802.11ac MCS0/Nss1 VHT20	17	21	16	-	-	-
802.11ac MCS0/Nss1 VHT40	-	-	-	11.5	15	14.5

<For Radio 1 Non-beamforming Mode>: 2TX, 2S

Test Software Version	QCARCT 3.0.93.0					
Mode	Test Frequency (MHz)					
	NCB: 20MHz			NCB: 40MHz		
	2412 MHz	2437 MHz	2462 MHz	2422 MHz	2437 MHz	2452 MHz
802.11ac MCS0/Nss2 VHT20	16	21	16	-	-	-
802.11ac MCS0/Nss2 VHT40	-	-	-	12.5	15	14

<For Radio 1 Non-beamforming Mode>: 3TX, 1S

Test Software Version	QCARCT 3.0.93.0					
Mode	Test Frequency (MHz)					
	NCB: 20MHz			NCB: 40MHz		
	2412 MHz	2437 MHz	2462 MHz	2422 MHz	2437 MHz	2452 MHz
802.11b	20	20	20	-	-	-
802.11g	17	21	16	-	-	-
802.11ac MCS0/Nss1 VHT20	15	21	17	-	-	-
802.11ac MCS0/Nss1 VHT40	-	-	-	11	15	15

<For Radio 1 Non-beamforming Mode>: 3TX, 2S

Test Software Version	QCARCT 3.0.93.0					
Mode	Test Frequency (MHz)					
	NCB: 20MHz			NCB: 40MHz		
	2412 MHz	2437 MHz	2462 MHz	2422 MHz	2437 MHz	2452 MHz
802.11ac MCS0/Nss2 VHT20	15.5	20.5	17	-	-	-
802.11ac MCS0/Nss2 VHT40	-	-	-	11	14	14.5

<For Radio 1 Non-beamforming Mode>: 3TX, 3S

Test Software Version	QCARCT 3.0.93.0					
Mode	Test Frequency (MHz)					
	NCB: 20MHz			NCB: 40MHz		
	2412 MHz	2437 MHz	2462 MHz	2422 MHz	2437 MHz	2452 MHz
802.11ac MCS0/Nss3 VHT20	15.5	20	15.5	-	-	-
802.11ac MCS0/Nss3 VHT40	-	-	-	12.5	14	14.5

<For Radio 1 Beamforming Mode>: 2TX, 1S

Test Software Version	QCARCT 3.0.93.0					
Mode	Test Frequency (MHz)					
	NCB: 20MHz			NCB: 40MHz		
	2412 MHz	2437 MHz	2462 MHz	2422 MHz	2437 MHz	2452 MHz
802.11ac MCS0/Nss1 VHT20	15	20.5	16	-	-	-
802.11ac MCS0/Nss1 VHT40	-	-	-	11	13.5	13.5

<For Radio 1 Beamforming Mode>: 3TX, 1S

Test Software Version	QCARCT 3.0.93.0					
Mode	Test Frequency (MHz)					
	NCB: 20MHz			NCB: 40MHz		
	2412 MHz	2437 MHz	2462 MHz	2422 MHz	2437 MHz	2452 MHz
802.11ac MCS0/Nss1 VHT20	15	20.5	17	-	-	-
802.11ac MCS0/Nss1 VHT40	-	-	-	10	13	12.5

<For Radio 1 Beamforming Mode>: 3TX, 2S

Test Software Version	QCARCT 3.0.93.0					
Mode	Test Frequency (MHz)					
	NCB: 20MHz			NCB: 40MHz		
	2412 MHz	2437 MHz	2462 MHz	2422 MHz	2437 MHz	2452 MHz
802.11ac MCS0/Nss2 VHT20	15.5	20.5	16	-	-	-
802.11ac MCS0/Nss2 VHT40	-	-	-	11	14	14

<For Radio 3>

Test Software Version	QCAMSL 3.0.93.0					
Mode	Test Frequency (MHz)					
	NCB: 20MHz			NCB: 40MHz		
	2412 MHz	2437 MHz	2462 MHz	2422 MHz	2437 MHz	2452 MHz
802.11b	14	14	11.5	-	-	-
802.11g	16.5	16.5	15.5	-	-	-
802.11ac MCS0/Nss1 VHT20	16.5	17	15	-	-	-
802.11ac MCS0/Nss1 VHT40	-	-	-	16	17	11.5

For Radiated Emission Test:

<For Radio 1 Non-beamforming Mode>: 3TX, 1S

Test Software Version	QCARCT 3.0.93.0					
Mode	Test Frequency (MHz)					
	NCB: 20MHz			NCB: 40MHz		
	2412 MHz	2437 MHz	2462 MHz	2422 MHz	2437 MHz	2452 MHz
802.11b	20	20	20	-	-	-
802.11g	21	21	21	-	-	-
802.11ac MCS0/Nss1 VHT20	21	21	21	-	-	-
802.11ac MCS0/Nss1 VHT40	-	-	-	20	20	20

<For Radio 1 Beamforming Mode>: 3TX, 1S

Test Software Version	QCARCT 3.0.93.0					
Mode	Test Frequency (MHz)					
	NCB: 20MHz			NCB: 40MHz		
	2412 MHz	2437 MHz	2462 MHz	2422 MHz	2437 MHz	2452 MHz
802.11ac MCS0/Nss1 VHT20	15	21	16	11	-	-
802.11ac MCS0/Nss1 VHT40	-	-	-	10	13.5	13.5

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 Device and transmit duty cycle no less 98%

3.10. Duty Cycle

<For Radio 1 Non-beamforming Mode>: 1TX, 1S

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11g	2.063	2.135	96.62%	0.15	0.48
802.11ac MCS0/Nss1 VHT20	5.019	5.083	98.74%	0.06	0.01
802.11ac MCS0/Nss1 VHT40	2.420	2.500	96.79%	0.14	0.41

<For Radio 1 Non-beamforming Mode>: 2TX, 1S

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11g	2.063	2.123	97.16%	0.13	0.48
802.11ac MCS0/Nss1 VHT20	4.998	5.072	98.55%	0.06	0.01
802.11ac MCS0/Nss1 VHT40	2.399	2.443	98.19%	0.08	0.01

<For Radio 1 Non-beamforming Mode>: 2TX, 2S

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11ac MCS0/Nss2 VHT20	2.530	2.611	96.93%	0.14	0.40
802.11ac MCS0/Nss2 VHT40	1.208	1.304	92.63%	0.33	0.83

<For Radio 1 Non-beamforming Mode>: 3TX, 1S

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11b	1.000	1.000	100.00%	0.00	0.01
802.11g	2.039	2.127	95.86%	0.18	0.49
802.11ac MCS0/Nss1 VHT20	5.000	5.048	99.05%	0.04	0.01
802.11ac MCS0/Nss1 VHT40	2.409	2.476	97.28%	0.12	0.42

<For Radio 1 Non-beamforming Mode>: 3TX, 2S

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11ac MCS0/Nss2 VHT20	2.514	2.588	97.15%	0.13	0.40
802.11ac MCS0/Nss2 VHT40	1.208	1.298	93.09%	0.31	0.83

<For Radio 1 Non-beamforming Mode>: 3TX, 3S

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11ac MCS0/Nss3 VHT20	1.705	1.761	96.81%	0.14	0.59
802.11ac MCS0/Nss3 VHT40	0.823	0.920	89.54%	0.48	1.21

<For Radio 1 Beamforming Mode>: 2TX, 1S

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11ac MCS0/Nss1 VHT20	1.763	1.923	91.67%	0.38	0.57
802.11ac MCS0/Nss1 VHT40	1.691	1.851	91.34%	0.39	0.59

<For Radio 1 Beamforming Mode>: 3TX, 1S

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11ac MCS0/Nss1 VHT20	1.794	1.915	93.68%	0.28	0.56
802.11ac MCS0/Nss1 VHT40	1.642	1.842	89.14%	0.50	0.61

<For Radio 1 Beamforming Mode>: 3TX, 2S

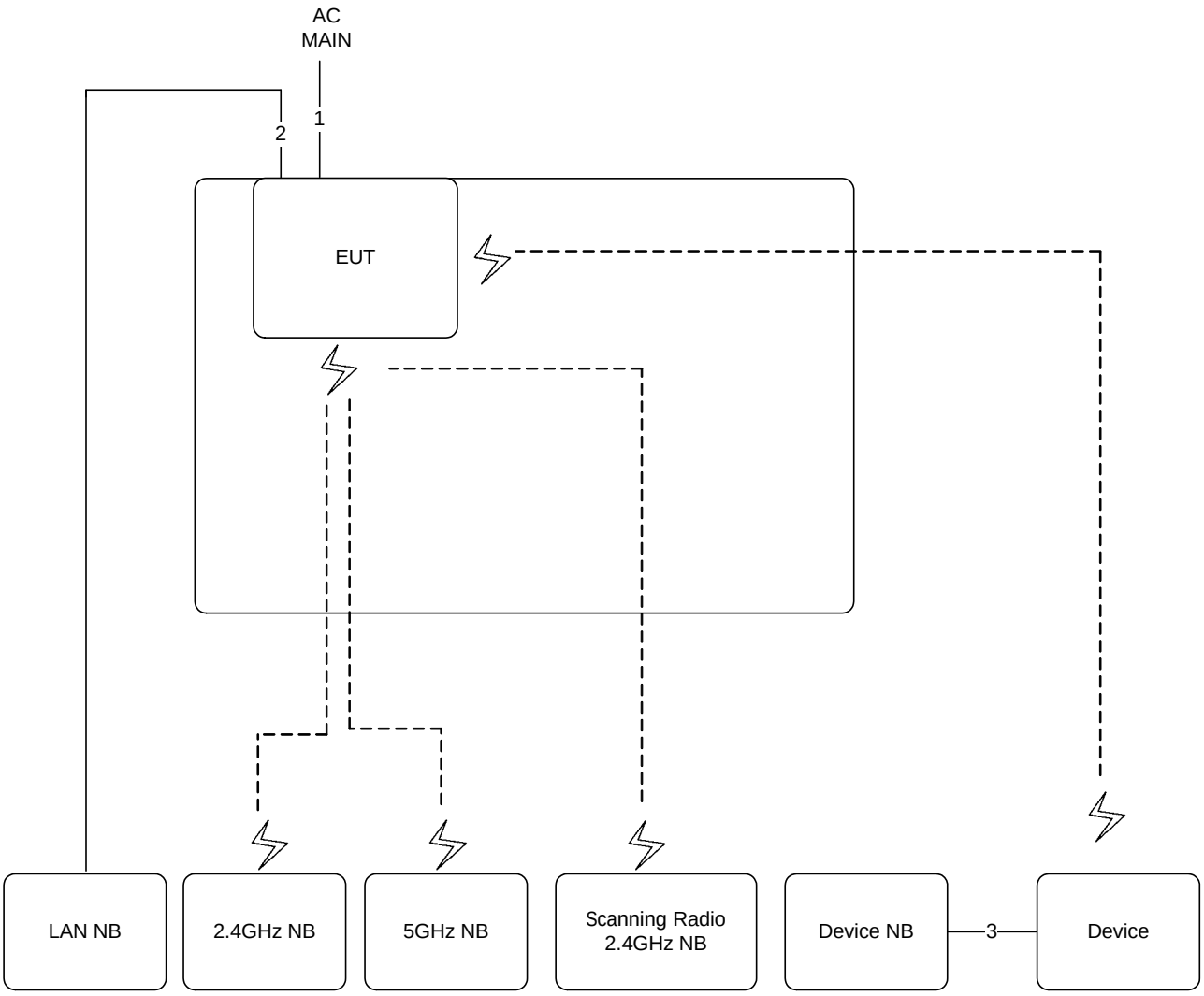
Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11ac MCS0/Nss2 VHT20	1.763	1.915	92.05%	0.36	0.57
802.11ac MCS0/Nss2 VHT40	1.686	1.862	90.53%	0.43	0.59

<For Radio 3>

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11b	1.000	1.000	100.00%	0.00	0.01
802.11g	2.064	2.136	96.62%	0.15	0.48
802.11ac MCS0/Nss1 VHT20	1.928	2.000	96.39%	0.16	0.52
802.11ac MCS0/Nss1 VHT40	0.955	1.018	93.85%	0.28	1.05

3.11. Test Configurations

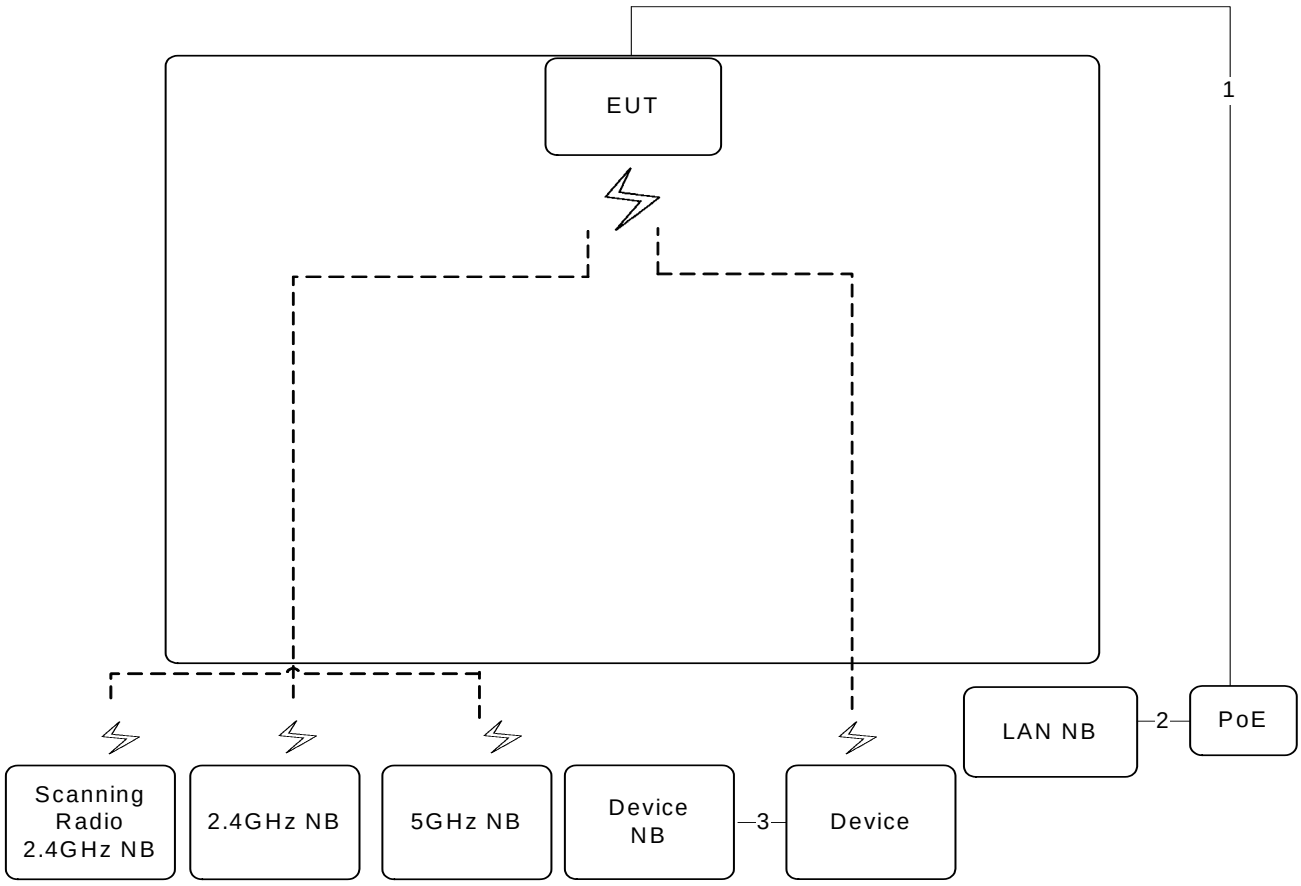
3.11.1. AC Power Line Conduction Emissions Test Configuration



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

3.11.2. Radiation Emissions Test Configuration

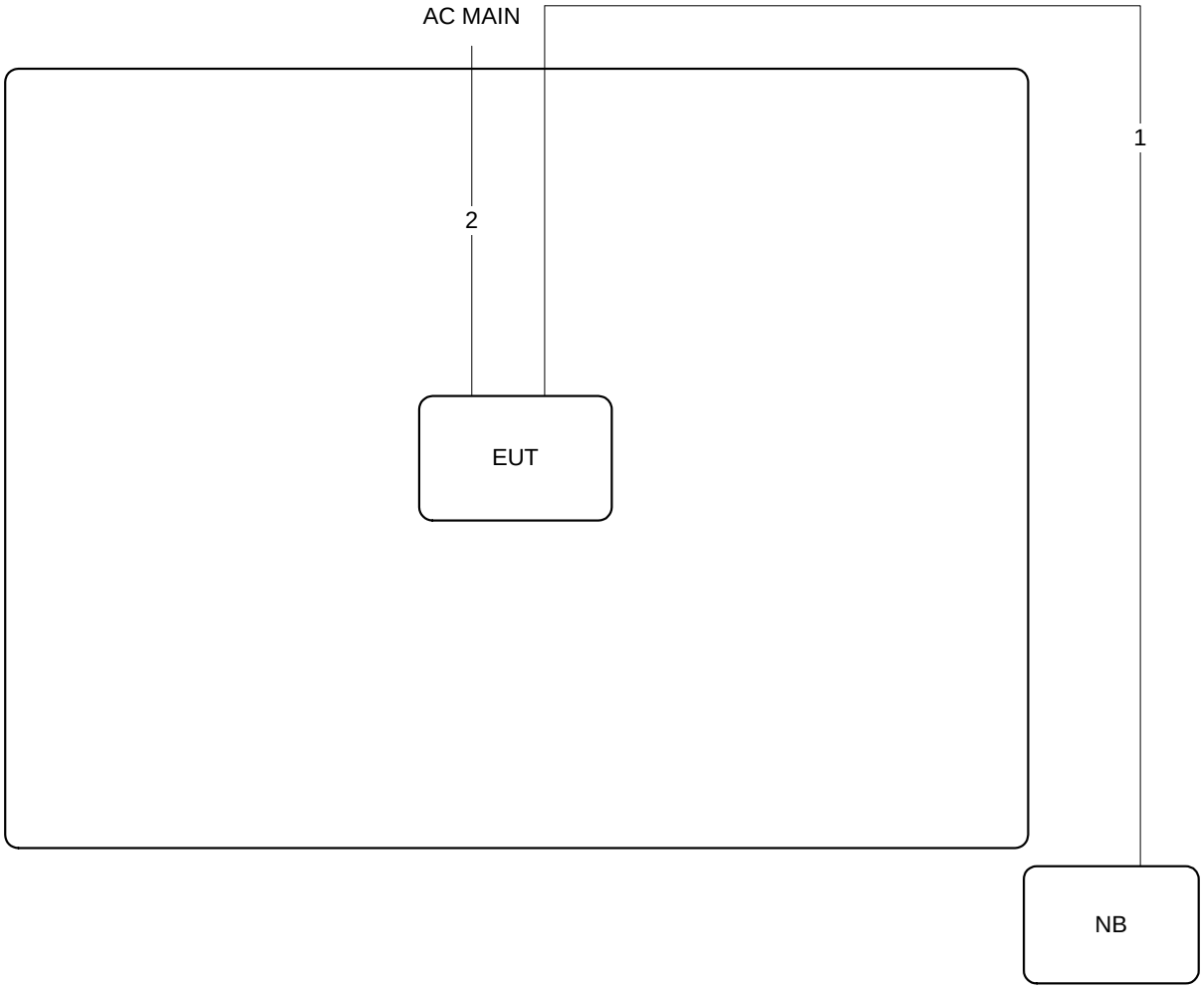
Test Configuration: 30MHz~1GHz



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

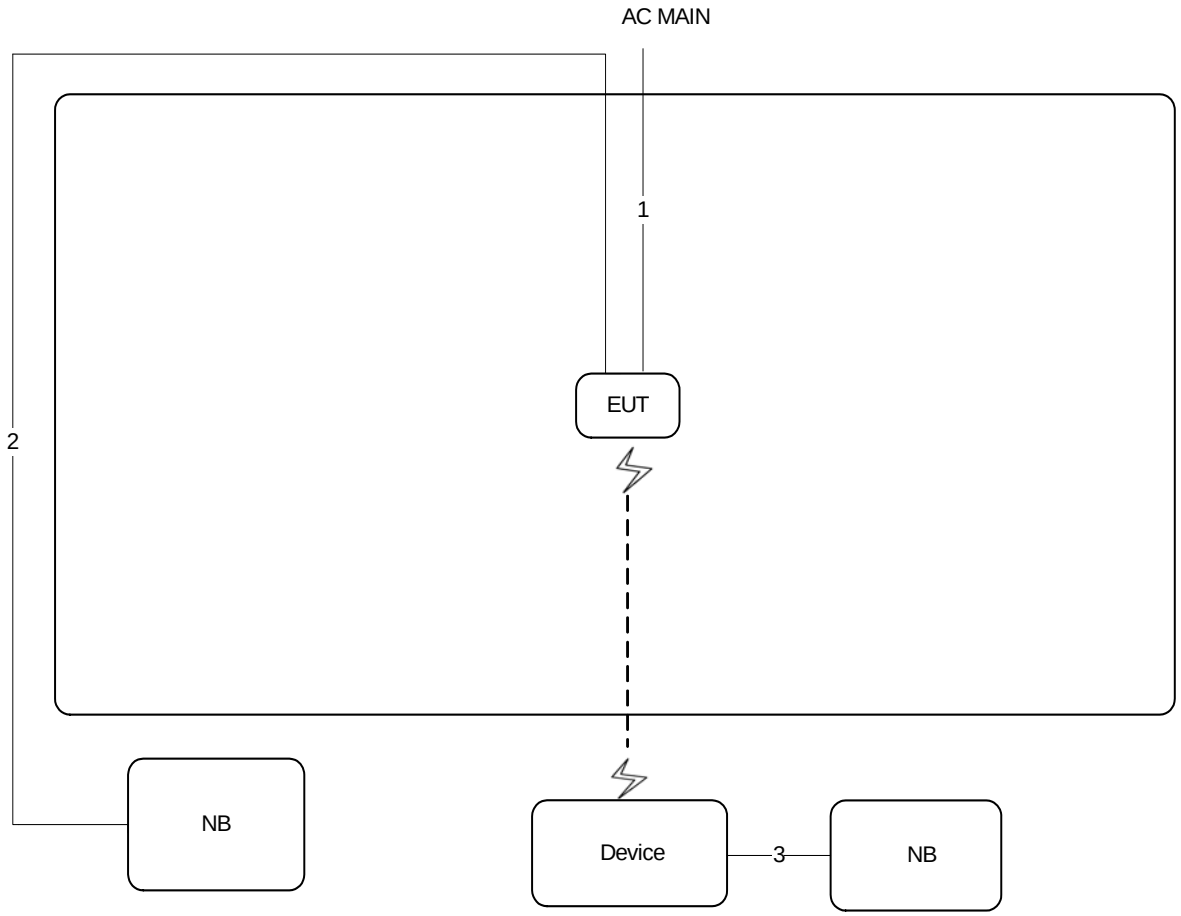
Test Configuration: above 1GHz

<For Non-beamforming Mode>



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

<For Beamforming Mode>



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

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

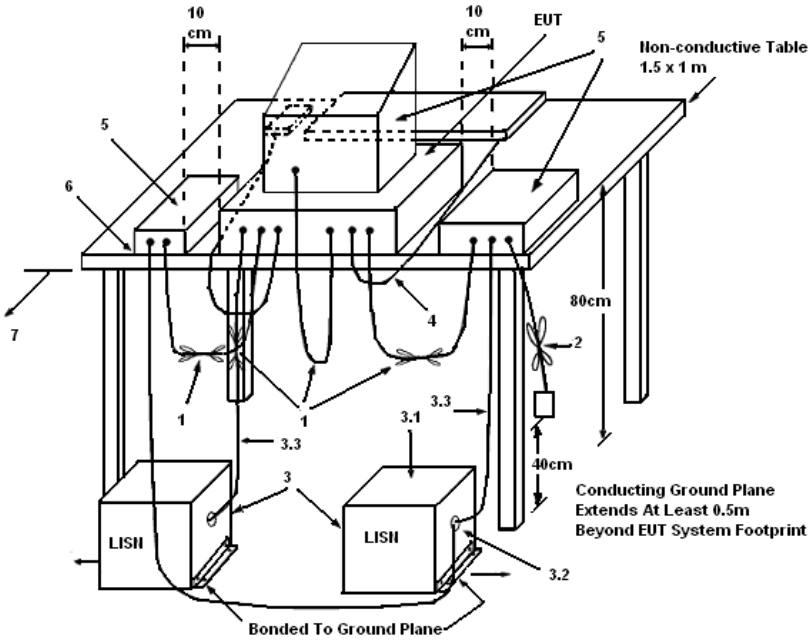
Please refer to section 5 of equipments list in this report. The following table is the setting of the receiver.

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

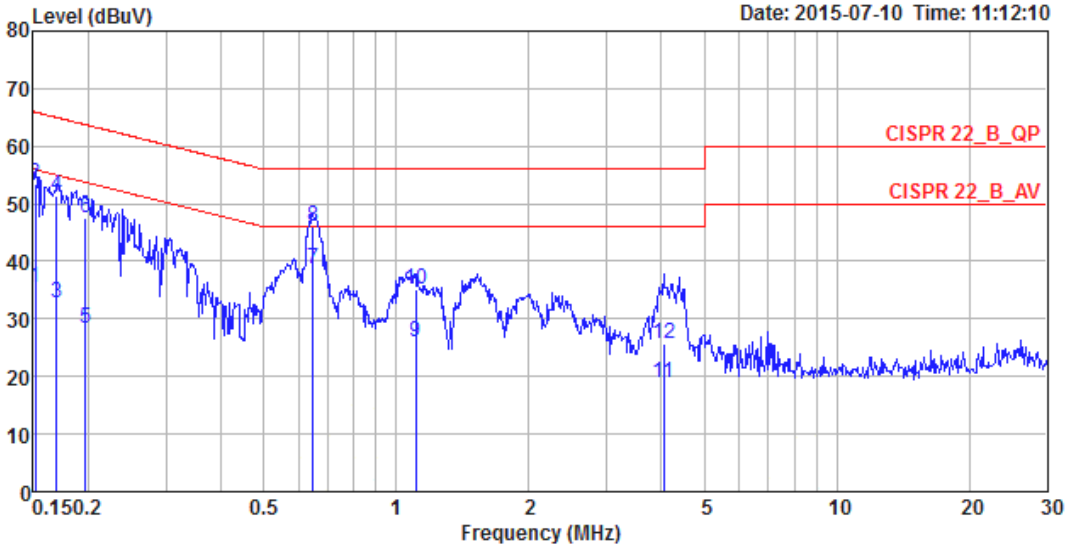
There is no deviation with the original standard.

4.1.6. EUT Operation during Test

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

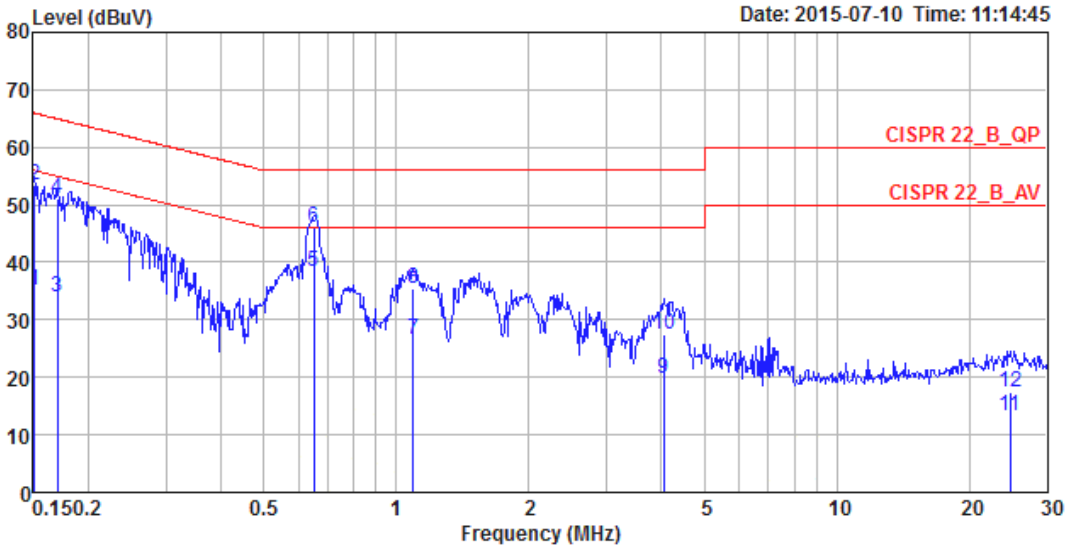
4.1.7. Results of AC Power Line Conducted Emissions Measurement

Temperature	24°C	Humidity	73%
Test Engineer	Deven Huang	Phase	Line
Configuration	Normal Link / Mode 1		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Pol/Phase	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.1516	35.57	-20.34	55.91	25.62	9.93	0.02	LINE	Average
2	0.1516	53.52	-12.39	65.91	43.57	9.93	0.02	LINE	QP
3	0.1694	32.76	-22.23	54.99	22.81	9.93	0.02	LINE	Average
4	0.1694	51.26	-13.73	64.99	41.31	9.93	0.02	LINE	QP
5	0.1965	28.41	-25.35	53.76	18.46	9.93	0.02	LINE	Average
6	0.1965	47.59	-16.17	63.76	37.64	9.93	0.02	LINE	QP
7	0.6474	38.58	-7.42	46.00	28.59	9.95	0.04	LINE	Average
8	0.6474	46.05	-9.95	56.00	36.06	9.95	0.04	LINE	QP
9	1.1056	26.04	-19.96	46.00	16.03	9.96	0.05	LINE	Average
10	1.1056	35.16	-20.84	56.00	25.15	9.96	0.05	LINE	QP
11	4.0489	18.87	-27.13	46.00	8.78	10.02	0.07	LINE	Average
12	4.0489	25.61	-30.39	56.00	15.52	10.02	0.07	LINE	QP

Temperature	24°C	Humidity	73%
Test Engineer	Deven Huang	Phase	Neutral
Configuration	Normal Link / Mode 1		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Pol/Phase	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.1508	35.04	-20.92	55.96	25.24	9.78	0.02	NEUTRAL	Average
2	0.1508	53.55	-12.41	65.96	43.75	9.78	0.02	NEUTRAL	QP
3	0.1703	33.86	-21.08	54.94	24.06	9.78	0.02	NEUTRAL	Average
4	0.1703	50.97	-13.97	64.94	41.17	9.78	0.02	NEUTRAL	QP
5	0.6508	38.43	-7.57	46.00	28.59	9.80	0.04	NEUTRAL	Average
6	0.6508	46.08	-9.92	56.00	36.24	9.80	0.04	NEUTRAL	QP
7	1.0939	26.48	-19.52	46.00	16.62	9.81	0.05	NEUTRAL	Average
8	1.0939	35.41	-20.59	56.00	25.55	9.81	0.05	NEUTRAL	QP
9	4.0489	19.64	-26.36	46.00	9.70	9.87	0.07	NEUTRAL	Average
10	4.0489	27.42	-28.58	56.00	17.48	9.87	0.07	NEUTRAL	QP
11	24.7904	13.20	-36.80	50.00	2.65	10.27	0.28	NEUTRAL	Average
12	24.7904	17.35	-42.65	60.00	6.80	10.27	0.28	NEUTRAL	QP

Note:

Level = Read Level + LISN Factor + Cable Loss

4.2. Maximum Conducted Output Power Measurement

4.2.1. Limit

The limit for output power is 30dBm.

4.2.2. Measuring Instruments and Setting

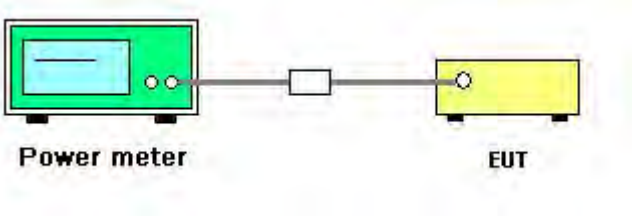
Please refer to section 5 of equipments list in this report. The following table is the setting of the power meter.

Power Meter Parameter	Setting
Detector	Average

4.2.3. Test Procedures

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

4.2.4. Test Setup Layout



4.2.5. Test Deviation

There is no deviation with the original standard.

4.2.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.2.7. Test Result of Maximum Conducted Output Power

Temperature	25°C	Humidity	55%
Test Engineer	Serway Li	Test Date	Jul. 07, 2015

<For Radio 1 Non-beamforming Mode>: 1TX, 1S

Mode	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
802.11b	2412 MHz	20.95	30.00	Complies
	2437 MHz	20.98	30.00	Complies
	2462 MHz	20.97	30.00	Complies
802.11g	2412 MHz	17.68	30.00	Complies
	2437 MHz	20.96	30.00	Complies
	2462 MHz	17.35	30.00	Complies
802.11ac MCS0/Nss1 VHT20	2412 MHz	17.01	30.00	Complies
	2437 MHz	20.98	30.00	Complies
	2462 MHz	17.18	30.00	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	13.62	30.00	Complies
	2437 MHz	16.52	30.00	Complies
	2452 MHz	17.06	30.00	Complies

Temperature	25°C	Humidity	55%
Test Engineer	Serway Li	Test Date	Jul. 07, 2015

<For Radio 1 Non-beamforming Mode>: 2TX, 1S

Mode	Frequency	Conducted Power (dBm)			Max. Limit (dBm)	Result
		Chain 1	Chain 2	Total		
802.11b	2412 MHz	20.69	20.24	23.48	30.00	Complies
	2437 MHz	20.75	20.38	23.58	30.00	Complies
	2462 MHz	20.68	20.33	23.52	30.00	Complies
802.11g	2412 MHz	17.28	17.25	20.28	30.00	Complies
	2437 MHz	20.52	20.58	23.56	30.00	Complies
	2462 MHz	16.92	16.89	19.92	30.00	Complies
802.11ac MCS0/Nss1 VHT20	2412 MHz	17.03	16.97	20.01	30.00	Complies
	2437 MHz	20.93	20.78	23.87	30.00	Complies
	2462 MHz	16.18	16.13	19.17	30.00	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	12.16	12.27	15.23	30.00	Complies
	2437 MHz	15.72	15.88	18.81	30.00	Complies
	2452 MHz	15.24	14.98	18.12	30.00	Complies

Temperature	25°C	Humidity	55%
Test Engineer	Serway Li	Test Date	Jul. 07, 2015

<For Radio 1 Non-beamforming Mode>: 2TX, 2S

Mode	Frequency	Conducted Power (dBm)			Max. Limit (dBm)	Result
		Chain 1	Chain 2	Total		
802.11ac MCS0/Nss2 VHT20	2412 MHz	15.91	15.82	18.88	30.00	Complies
	2437 MHz	20.95	20.98	23.98	30.00	Complies
	2462 MHz	16.02	15.95	19.00	30.00	Complies
802.11ac MCS0/Nss2 VHT40	2422 MHz	13.25	13.08	16.18	30.00	Complies
	2437 MHz	15.74	15.44	18.60	30.00	Complies
	2452 MHz	14.61	14.52	17.58	30.00	Complies

Temperature	25°C	Humidity	55%
Test Engineer	Lucas Huang	Test Date	Jul. 07, 2015

<For Radio 1 Non-beamforming Mode>: 3TX, 1S

Mode	Frequency	Conducted Power (dBm)				Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Total		
802.11b	2412 MHz	20.55	20.73	20.08	25.23	30.00	Complies
	2437 MHz	20.31	20.06	20.39	25.03	30.00	Complies
	2462 MHz	20.13	20.03	20.91	25.15	30.00	Complies
802.11g	2412 MHz	17.62	17.19	17.40	22.18	30.00	Complies
	2437 MHz	20.81	20.92	20.87	25.64	30.00	Complies
	2462 MHz	16.61	16.66	16.57	21.38	30.00	Complies
802.11ac MCS0/Nss1 VHT20	2412 MHz	15.39	15.38	15.25	20.11	30.00	Complies
	2437 MHz	20.61	20.59	20.49	25.33	30.00	Complies
	2462 MHz	17.39	17.21	17.26	22.06	30.00	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	11.69	12.15	11.87	16.68	30.00	Complies
	2437 MHz	15.79	15.55	15.74	20.47	30.00	Complies
	2452 MHz	15.68	15.72	15.77	20.49	30.00	Complies

Temperature	25°C	Humidity	55%
Test Engineer	Lucas Huang	Test Date	Jul. 07, 2015

<For Radio 1 Non-beamforming Mode>: 3TX, 2S

Mode	Frequency	Conducted Power (dBm)				Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Total		
802.11ac MCS0/Nss2 VHT20	2412 MHz	15.71	15.25	15.3	20.20	30.00	Complies
	2437 MHz	20.27	20.75	20.55	25.30	30.00	Complies
	2462 MHz	17.39	17.54	17.24	22.16	30.00	Complies
802.11ac MCS0/Nss2 VHT40	2422 MHz	11.53	11.45	11.65	16.32	30.00	Complies
	2437 MHz	14.52	14.73	14.68	19.42	30.00	Complies
	2452 MHz	14.97	15.21	15.02	19.84	30.00	Complies

Temperature	25°C	Humidity	55%
Test Engineer	Serway Li	Test Date	Jul. 07, 2015

<For Radio 1 Non-beamforming Mode>: 3TX, 3S

Mode	Frequency	Conducted Power (dBm)				Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Total		
802.11ac MCS0/Nss3 VHT20	2412 MHz	15.76	15.72	16.09	20.63	30.00	Complies
	2437 MHz	20.41	20.88	20.69	25.44	30.00	Complies
	2462 MHz	15.82	16.12	16.22	20.83	30.00	Complies
802.11ac MCS0/Nss3 VHT40	2422 MHz	12.92	12.68	13.05	17.66	30.00	Complies
	2437 MHz	14.45	14.63	14.57	19.32	30.00	Complies
	2452 MHz	14.66	15.09	14.95	19.67	30.00	Complies

Temperature	25°C	Humidity	55%
Test Engineer	Eddie Weng	Test Date	Jul. 23, 2015

<For Radio 1 Beamforming Mode>: 2TX, 1S

Mode	Frequency	Conducted Power (dBm)			Max. Limit (dBm)	Result
		Chain 1	Chain 2	Total		
802.11ac MCS0/Nss1 VHT20	2412 MHz	15.19	15.12	18.17	30.00	Complies
	2437 MHz	20.77	20.59	23.69	30.00	Complies
	2462 MHz	16.35	16.27	19.32	30.00	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	12.27	12.06	15.18	30.00	Complies
	2437 MHz	14.85	14.72	17.80	30.00	Complies
	2452 MHz	14.86	14.68	17.78	30.00	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$ =4.70dBi <6dBi, so the limit doesn't reduce.

Temperature	25°C	Humidity	55%
Test Engineer	Eddie Weng	Test Date	Jul. 23, 2015

<For Radio 1 Beamforming Mode>: 3TX, 1S

Mode	Frequency	Conducted Power (dBm)				Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Total		
802.11ac MCS0/Nss1 VHT20	2412 MHz	15.32	15.01	15.25	19.97	28.82	Complies
	2437 MHz	20.82	20.66	20.74	25.51	28.82	Complies
	2462 MHz	17.37	17.29	17.36	22.11	28.82	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	11.31	11.38	11.44	16.15	28.82	Complies
	2437 MHz	14.42	14.51	14.32	19.19	28.82	Complies
	2452 MHz	13.98	13.84	13.77	18.64	28.82	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$ =7.18dBi, so limit =30(7.18-6)=28.82 dBm.

Temperature	25°C	Humidity	55%
Test Engineer	Eddie Weng	Test Date	Jul. 23, 2015

<For Radio 1 Beamforming Mode>: 3TX, 2S

Mode	Frequency	Conducted Power (dBm)				Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Total		
802.11ac MCS0/Nss2 VHT20	2412 MHz	15.35	15.01	15.12	19.93	30.00	Complies
	2437 MHz	20.85	20.80	20.70	25.55	30.00	Complies
	2462 MHz	16.42	16.53	16.32	21.20	30.00	Complies
802.11ac MCS0/Nss2 VHT40	2422 MHz	12.46	12.48	12.43	17.23	30.00	Complies
	2437 MHz	15.45	15.61	15.48	20.29	30.00	Complies
	2452 MHz	15.42	15.32	15.18	20.08	30.00	Complies

Note: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =4.17dBi <6dBi, so the limit doesn't reduce.

Temperature	25°C	Humidity	55%
Test Engineer	Eddie Weng	Test Date	Jul. 23, 2015

<For Radio 3>

Mode	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
802.11b	2412 MHz	15.21	30.00	Complies
	2437 MHz	14.81	30.00	Complies
	2462 MHz	11.98	30.00	Complies
802.11g	2412 MHz	16.66	30.00	Complies
	2437 MHz	16.61	30.00	Complies
	2462 MHz	15.63	30.00	Complies
802.11ac MCS0/Nss1 VHT20	2412 MHz	16.68	30.00	Complies
	2437 MHz	16.72	30.00	Complies
	2462 MHz	15.03	30.00	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	15.77	30.00	Complies
	2437 MHz	16.13	30.00	Complies
	2452 MHz	11.56	30.00	Complies

4.3. Power Spectral Density Measurement

4.3.1. Limit

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

4.3.2. Measuring Instruments and Setting

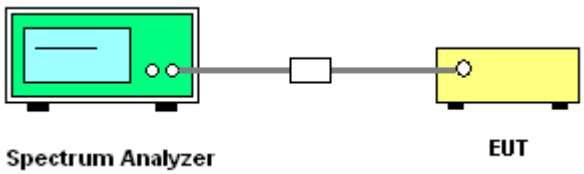
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

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

4.3.3. Test Procedures

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

4.3.4. Test Setup Layout



4.3.5. Test Deviation

There is no deviation with the original standard.

4.3.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.3.7. Test Result of Power Spectral Density

Temperature	25°C	Humidity	55%
Test Engineer	Serway Li	Test Date	Jul. 07, 2015

<For Radio 1 Non-beamforming Mode>: 1TX, 1S

Mode	Frequency	Power Density (dBm/3kHz)	Power Density Limit (dBm/3kHz)	Result
802.11b	2412 MHz	-3.49	8.00	Complies
	2437 MHz	-3.11	8.00	Complies
	2462 MHz	-3.20	8.00	Complies
802.11g	2412 MHz	-10.25	8.00	Complies
	2437 MHz	-6.10	8.00	Complies
	2462 MHz	-10.81	8.00	Complies
802.11ac MCS0/Nss1 VHT20	2412 MHz	-10.73	8.00	Complies
	2437 MHz	-6.42	8.00	Complies
	2462 MHz	-10.55	8.00	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	-16.81	8.00	Complies
	2437 MHz	-13.80	8.00	Complies
	2452 MHz	-13.38	8.00	Complies

Temperature	25°C	Humidity	55%
Test Engineer	Serway Li	Test Date	Jul. 07, 2015

<For Radio 1 Non-beamforming Mode>: 2TX, 1S

Mode	Frequency	Power Density (dBm/3kHz)			Power Density Limit (dBm/3kHz)	Result
		Chain 1	Chain 2	Total		
802.11b	2412 MHz	-4.20	-4.76	-1.46	8.00	Complies
	2437 MHz	-3.71	-4.49	-1.07	8.00	Complies
	2462 MHz	-4.12	-4.35	-1.22	8.00	Complies
802.11g	2412 MHz	-10.56	-10.77	-7.65	8.00	Complies
	2437 MHz	-6.84	-7.23	-4.02	8.00	Complies
	2462 MHz	-11.04	-11.25	-8.13	8.00	Complies
802.11ac MCS0/Nss1 VHT20	2412 MHz	-10.34	-10.52	-7.42	8.00	Complies
	2437 MHz	-6.08	-6.28	-3.17	8.00	Complies
	2462 MHz	-11.30	-11.46	-8.37	8.00	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	-16.50	-16.08	-13.27	8.00	Complies
	2437 MHz	-14.84	-14.32	-11.56	8.00	Complies
	2452 MHz	-14.31	-14.61	-11.45	8.00	Complies

Note: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =4.70dBi <6dBi, so the limit doesn't reduce.

Temperature	25°C	Humidity	55%
Test Engineer	Serway Li	Test Date	Jul. 07, 2015

<For Radio 1 Non-beamforming Mode>: 2TX, 2S

Mode	Frequency	Power Density (dBm/3kHz)			Power Density Limit (dBm/3kHz)	Result
		Chain 1	Chain 2	Total		
802.11ac MCS0/Nss2 VHT20	2412 MHz	-10.68	-10.75	-7.70	8.00	Complies
	2437 MHz	-5.80	-5.65	-2.71	8.00	Complies
	2462 MHz	-10.21	-10.71	-7.44	8.00	Complies
802.11ac MCS0/Nss2 VHT40	2422 MHz	-15.24	-15.69	-12.45	8.00	Complies
	2437 MHz	-12.42	-12.69	-9.54	8.00	Complies
	2452 MHz	-13.47	-13.77	-10.61	8.00	Complies

Temperature	25°C	Humidity	55%
Test Engineer	Lucas Huang	Test Date	Jul. 07, 2015

<For Radio 1 Non-beamforming Mode>: 3TX, 1S

Mode	Frequency	Power Density (dBm/3kHz)				Power Density Limit (dBm/3kHz)	Result
		Chain 1	Chain 2	Chain 3	Total		
802.11b	2412 MHz	-4.60	-4.86	-5.54	-0.21	6.82	Complies
	2437 MHz	-5.08	-5.88	-5.88	-0.83	6.82	Complies
	2462 MHz	-5.54	-4.70	-4.13	0.02	6.82	Complies
802.11g	2412 MHz	-9.48	-9.48	-10.04	-4.89	6.82	Complies
	2437 MHz	-5.73	-6.14	-6.43	-1.32	6.82	Complies
	2462 MHz	-11.89	-11.66	-10.74	-6.63	6.82	Complies
802.11ac MCS0/Nss1 VHT20	2412 MHz	-13.11	-11.93	-13.16	-7.92	6.82	Complies
	2437 MHz	-6.80	-6.36	-5.79	-1.53	6.82	Complies
	2462 MHz	-10.20	-9.88	-10.29	-5.35	6.82	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	-18.58	-18.11	-18.41	-13.59	6.82	Complies
	2437 MHz	-13.39	-13.85	-14.43	-9.10	6.82	Complies
	2452 MHz	-14.57	-14.59	-14.44	-9.76	6.82	Complies

Note: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =7.18dBi, so limit=30(7.18-6)=6.82 dBm/3kHz.

Temperature	25°C	Humidity	55%
Test Engineer	Lucas Huang	Test Date	Jul. 07, 2015

<For Radio 1 Non-beamforming Mode>: 3TX, 2S

Mode	Frequency	Power Density (dBm/3kHz)				Power Density Limit (dBm/3kHz)	Result
		Chain 1	Chain 2	Chain 3	Total		
802.11ac MCS0/Nss2 VHT20	2412 MHz	-11.14	-9.30	-10.35	-5.43	8.00	Complies
	2437 MHz	-5.34	-5.30	-4.65	-0.31	8.00	Complies
	2462 MHz	-11.82	-12.65	-13.68	-7.88	8.00	Complies
802.11ac MCS0/Nss2 VHT40	2422 MHz	-16.88	-16.50	-16.90	-11.98	8.00	Complies
	2437 MHz	-13.67	-13.57	-13.27	-8.73	8.00	Complies
	2452 MHz	-13.59	-12.34	-11.98	-7.81	8.00	Complies

Note: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =4.17dBi <6dBi, so the limit doesn't reduce.

Temperature	25°C	Humidity	55%
Test Engineer	Serway Li	Test Date	Jul. 07, 2015

<For Radio 1 Non-beamforming Mode>: 3TX, 3S

Mode	Frequency	Power Density (dBm/3kHz)				Power Density Limit (dBm/3kHz)	Result
		Chain 1	Chain 2	Chain 3	Total		
802.11ac MCS0/Nss3 VHT20	2412 MHz	-7.50	-7.66	-7.08	-2.64	8.00	Complies
	2437 MHz	-3.49	-3.17	-3.53	1.38	8.00	Complies
	2462 MHz	-7.78	-7.27	-7.22	-2.64	8.00	Complies
802.11ac MCS0/Nss3 VHT40	2422 MHz	-13.63	-13.69	-13.44	-8.81	8.00	Complies
	2437 MHz	-11.96	-11.84	-11.90	-7.13	8.00	Complies
	2452 MHz	-11.42	-10.97	-11.13	-6.40	8.00	Complies

Temperature	25°C	Humidity	55%
Test Engineer	Eddie Weng	Test Date	Jul. 23, 2015

<For Radio 1 Beamforming Mode>: 2TX, 1S

Mode	Frequency	Power Density (dBm/3kHz)			Power Density Limit (dBm/3kHz)	Result
		Chain 1	Chain 2	Total		
802.11ac MCS0/Nss1 VHT20	2412 MHz	-11.19	-12.46	-8.77	8.00	Complies
	2437 MHz	-6.17	-6.30	-3.22	8.00	Complies
	2462 MHz	-11.55	-11.07	-8.29	8.00	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	-17.27	-18.21	-14.70	8.00	Complies
	2437 MHz	-15.27	-15.22	-12.23	8.00	Complies
	2452 MHz	-14.22	-15.05	-11.60	8.00	Complies

Note: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =4.70dBi <6dBi, so the limit doesn't reduce.

Temperature	25°C	Humidity	55%
Test Engineer	Eddie Weng	Test Date	Jul. 23, 2015

<For Radio 1 Beamforming Mode>: 3TX, 1S

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	-11.93	-10.87	-11.62	-6.68	6.82	Complies
	2437 MHz	-5.50	-6.35	-9.60	-2.05	6.82	Complies
	2462 MHz	-9.32	-9.34	-10.13	-4.81	6.82	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	-17.75	-18.45	-18.84	-13.55	6.82	Complies
	2437 MHz	-15.42	-14.10	-14.59	-9.90	6.82	Complies
	2452 MHz	-15.27	-15.27	-16.40	-10.84	6.82	Complies

Note: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =7.18dBi, so limit=30(7.18-6)=6.82 dBm/3kHz.

Temperature	25°C	Humidity	55%
Test Engineer	Eddie Weng	Test Date	Jul. 23, 2015

<For Radio 1 Beamforming Mode>: 3TX, 2S

Mode	Frequency	Power Density (dBm/3kHz)				Power Density Limit (dBm/3kHz)	Result
		Chain 1	Chain 2	Chain 3	Total		
802.11ac MCS0/Nss2 VHT20	2412 MHz	-10.06	-10.25	-10.10	-5.36	8.00	Complies
	2437 MHz	-4.85	-4.67	-4.65	0.05	8.00	Complies
	2462 MHz	-9.41	-10.18	-14.44	-6.08	8.00	Complies
802.11ac MCS0/Nss2 VHT40	2422 MHz	-15.65	-17.76	-15.41	-11.38	8.00	Complies
	2437 MHz	-12.88	-12.49	-13.05	-8.03	8.00	Complies
	2452 MHz	-12.63	-12.69	-12.84	-7.95	8.00	Complies

Note: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =4.17dBi <6dBi, so the limit doesn't reduce.

Temperature	25°C	Humidity	55%
Test Engineer	Eddie Weng	Test Date	Jul. 23, 2015

<For Radio 3>

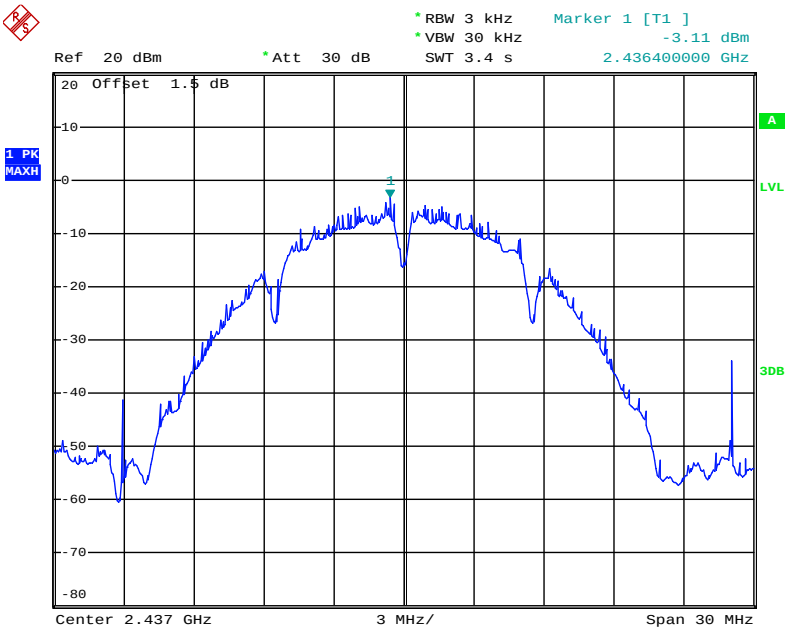
Mode	Frequency	Power Density (dBm/3kHz)	Power Density Limit (dBm/3kHz)	Result
802.11b	2412 MHz	-11.79	8.00	Complies
	2437 MHz	-12.39	8.00	Complies
	2462 MHz	-15.37	8.00	Complies
802.11g	2412 MHz	-14.75	8.00	Complies
	2437 MHz	-14.98	8.00	Complies
	2462 MHz	-15.81	8.00	Complies
802.11ac MCS0/Nss1 VHT20	2412 MHz	-15.04	8.00	Complies
	2437 MHz	-15.41	8.00	Complies
	2462 MHz	-15.49	8.00	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	-18.39	8.00	Complies
	2437 MHz	-18.33	8.00	Complies
	2452 MHz	-17.49	8.00	Complies

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

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

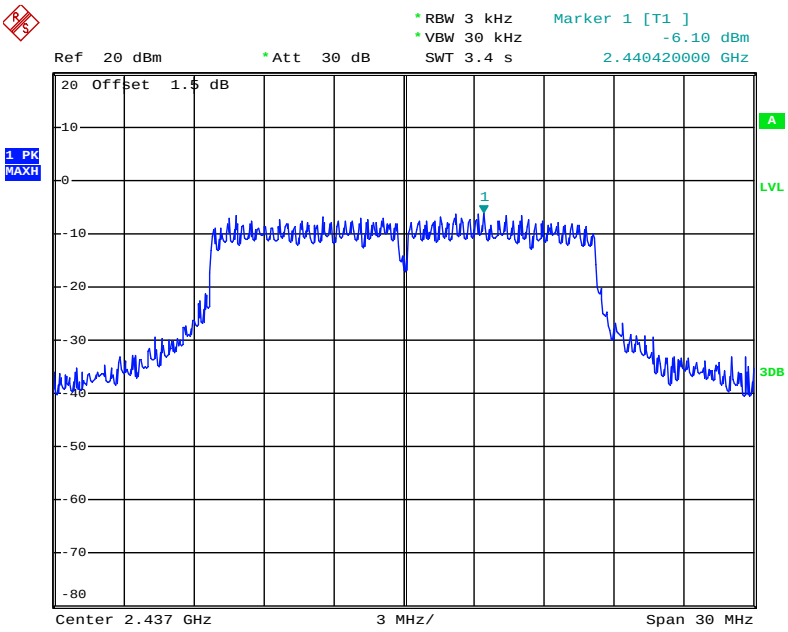
<For Radio 1 Non-beamforming Mode>: 1TX, 1S

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



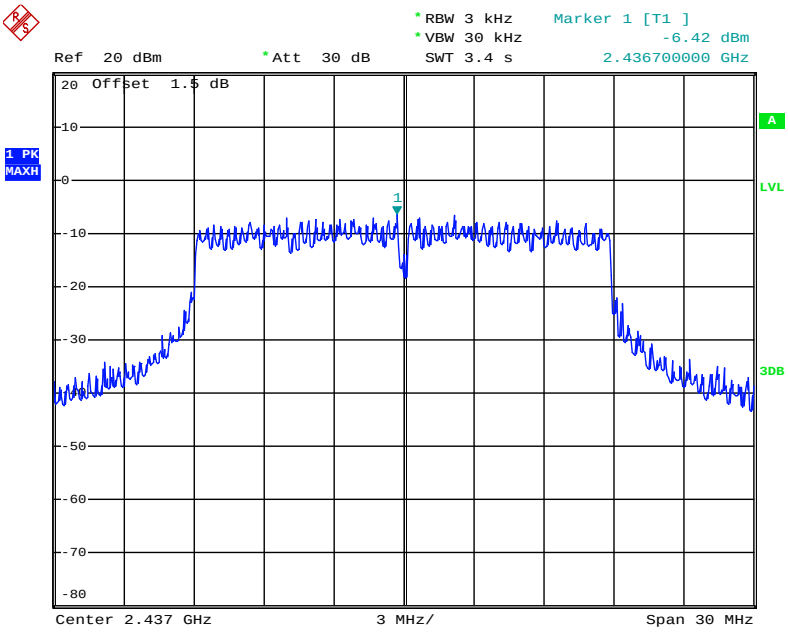
Date: 8.JUL.2015 01:40:02

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



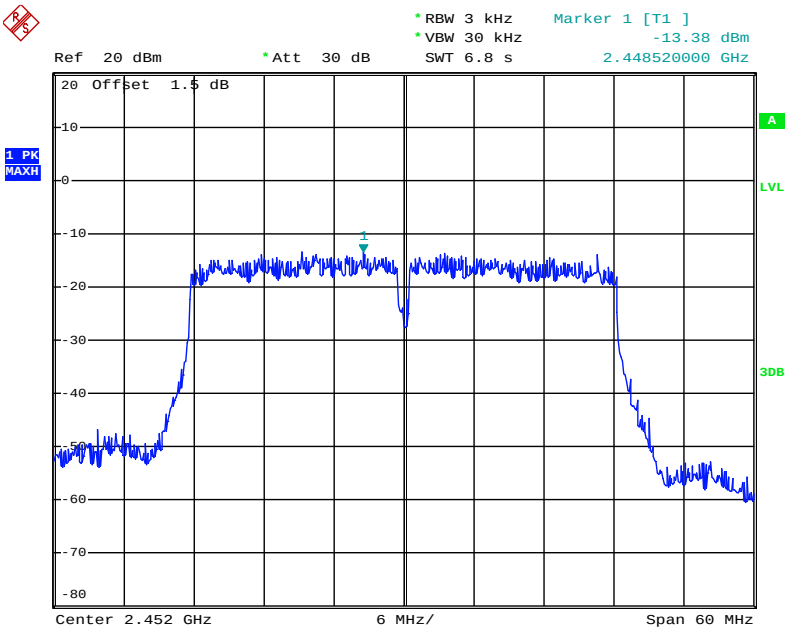
Date: 8.JUL.2015 01:44:35

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



Date: 8.JUL.2015 01:48:54

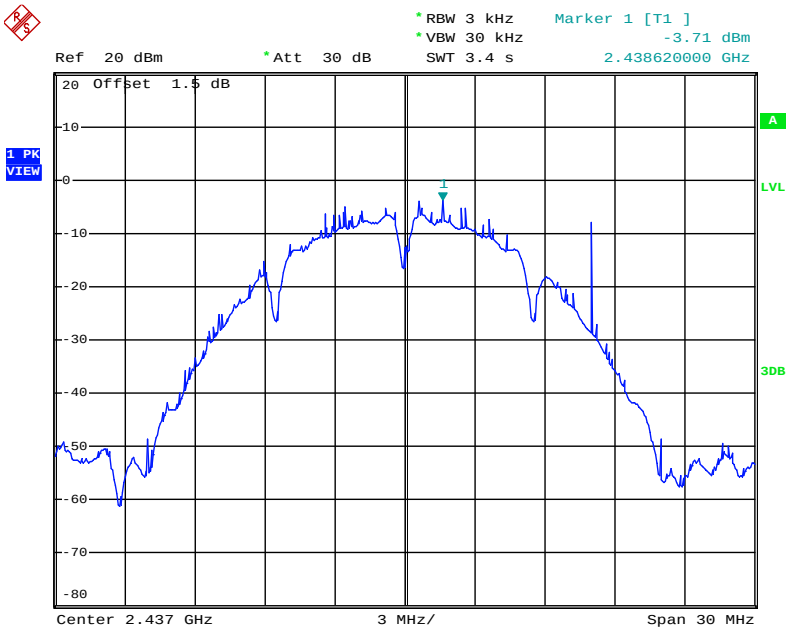
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2452 MHz / Chain 1



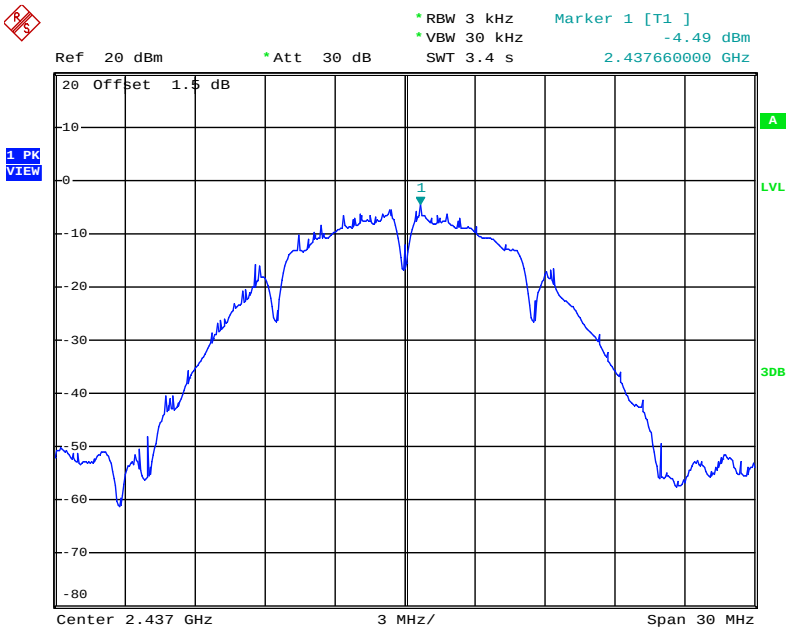
Date: 8.JUL.2015 01:56:26

<For Radio 1 Non-beamforming Mode>: 2TX, 1S

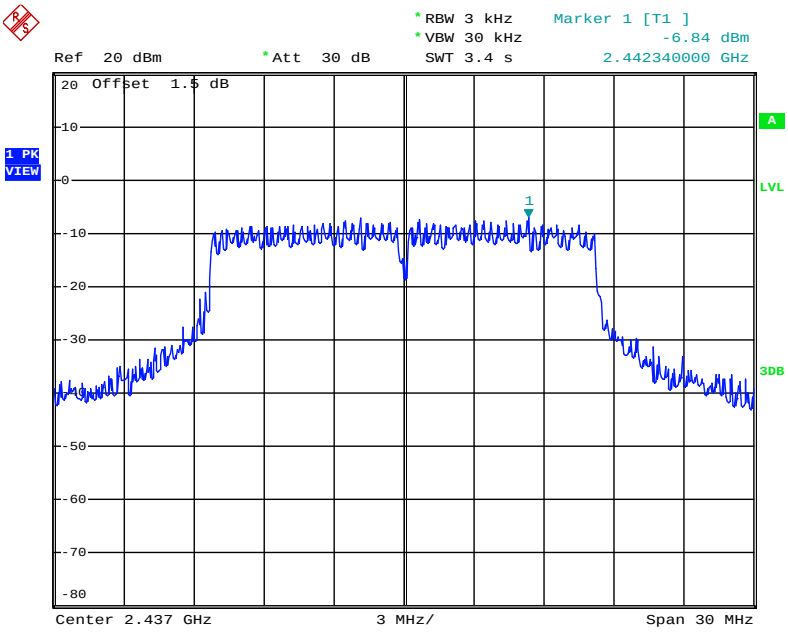
Power Density Plot on Configuration IEEE 802.11b / 2437 MHz / Chain 1



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

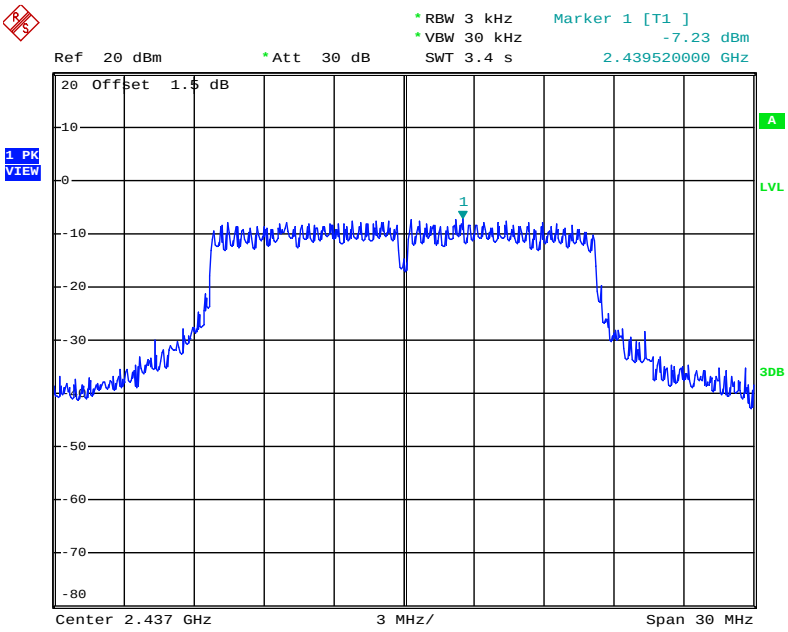


Power Density Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 1



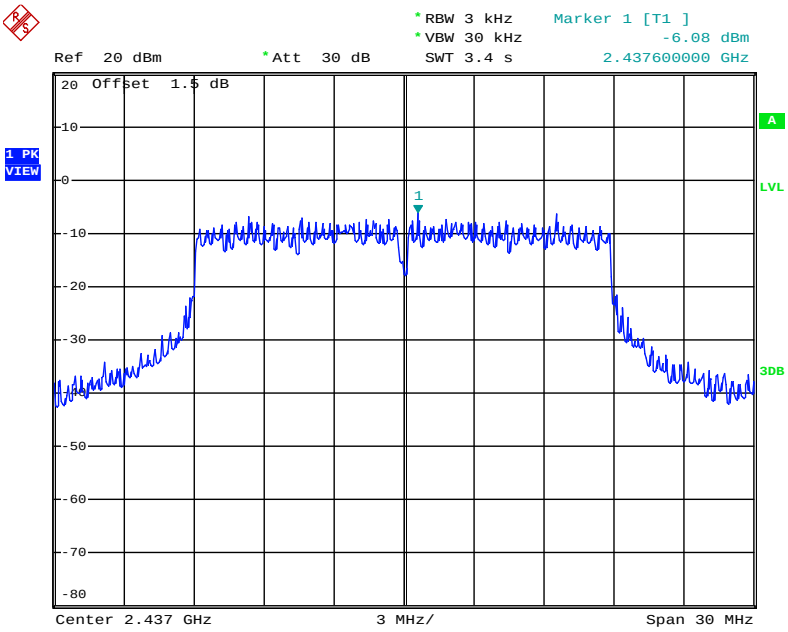
Date: 8.JUL.2015 00:02:37

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



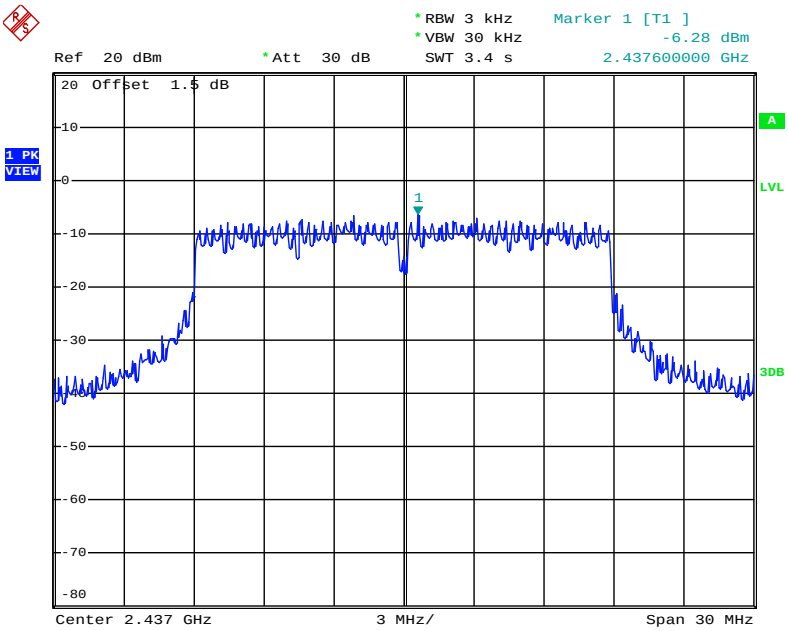
Date: 8.JUL.2015 00:03:38

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



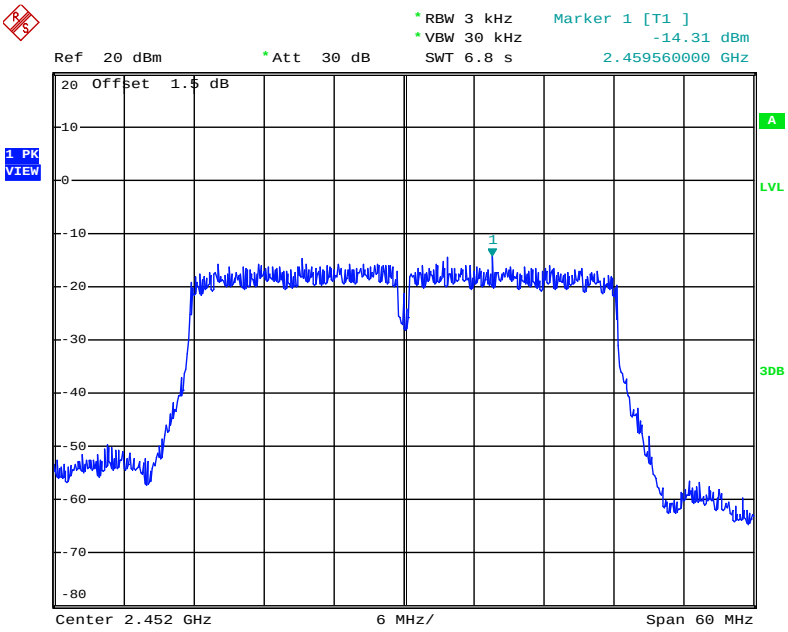
Date: 8.JUL.2015 00:11:26

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



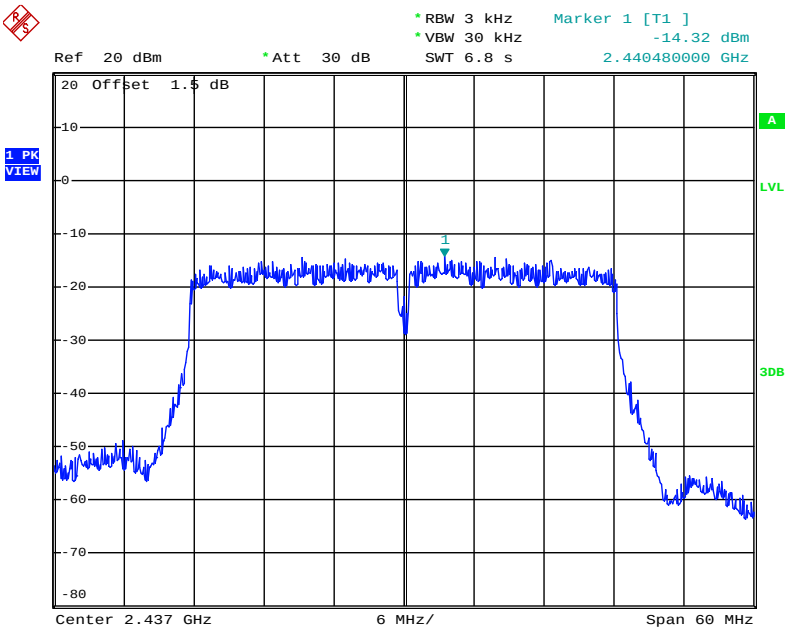
Date: 8.JUL.2015 00:10:31

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



Date: 8.JUL.2015 00:22:13

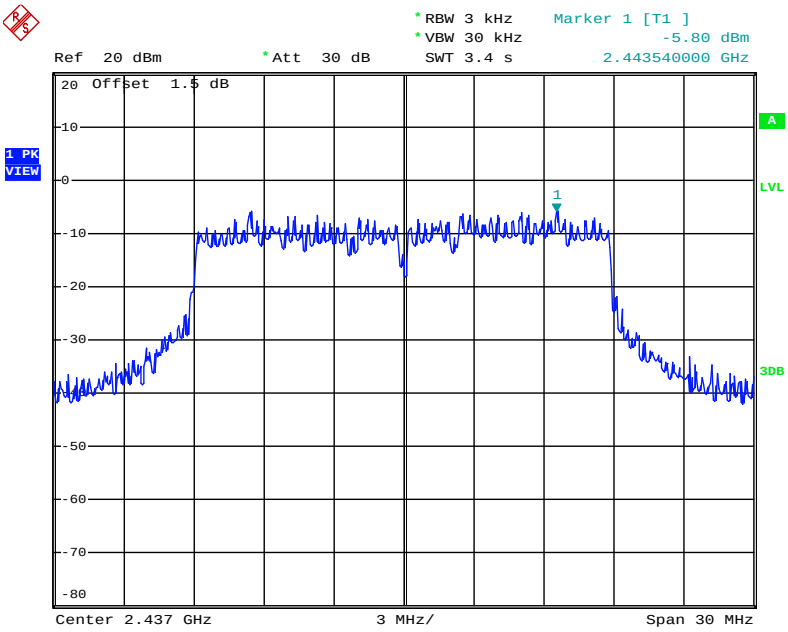
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2452 MHz / Chain 2



Date: 8.JUL.2015 00:19:34

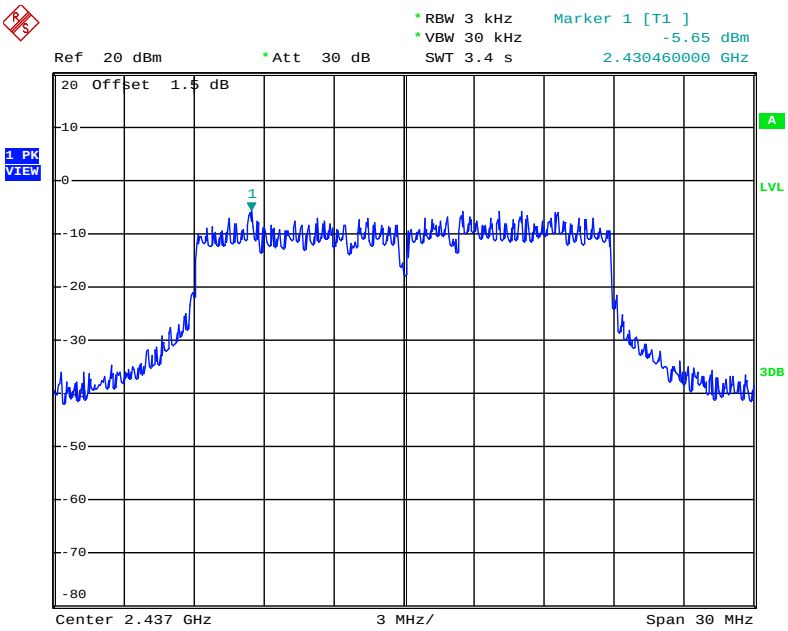
<For Radio 1 Non-beamforming Mode>: 2TX, 2S

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT20 / 2437 MHz / Chain 1



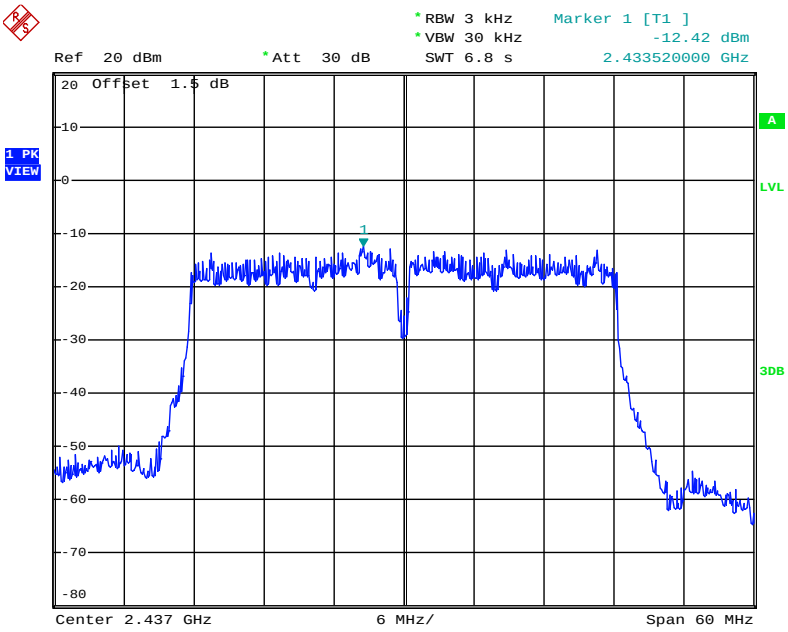
Date: 8.JUL.2015 00:38:27

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT20 / 2437 MHz / Chain 2



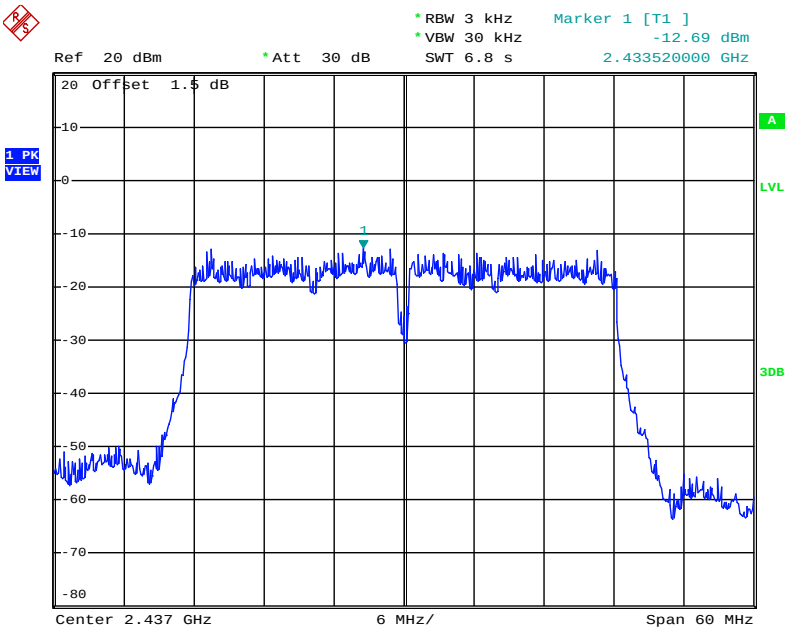
Date: 8.JUL.2015 00:37:52

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT40 / 2437 MHz / Chain 1



Date: 8.JUL.2015 00:30:17

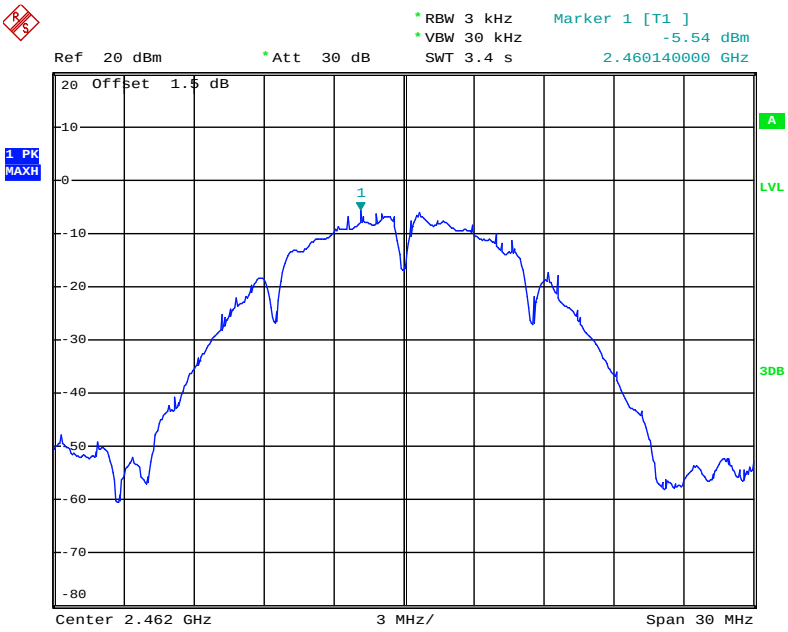
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT40 / 2437 MHz / Chain 2



Date: 8.JUL.2015 00:29:36

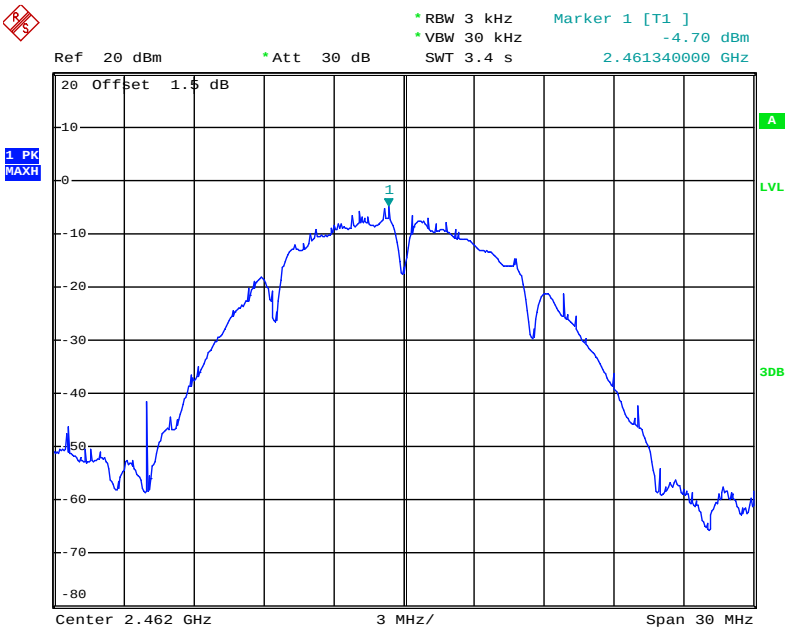
<For Radio 1 Non-beamforming Mode>: 3TX, 1S

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



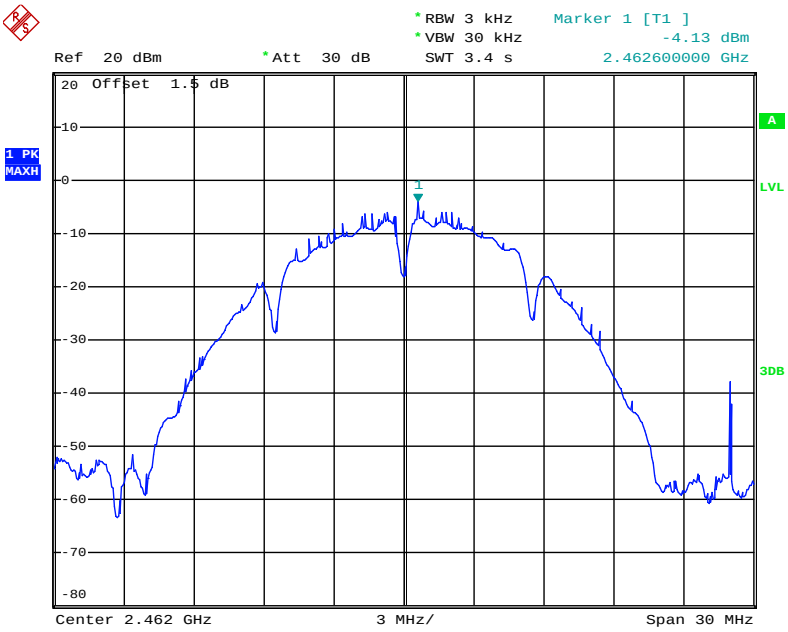
Date: 7.JUL.2015 21:06:21

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



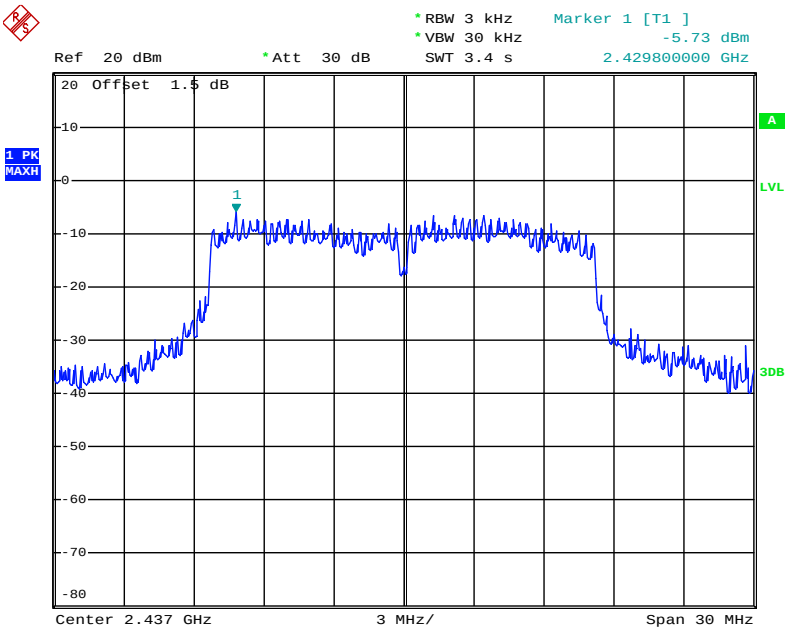
Date: 7.JUL.2015 21:06:50

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



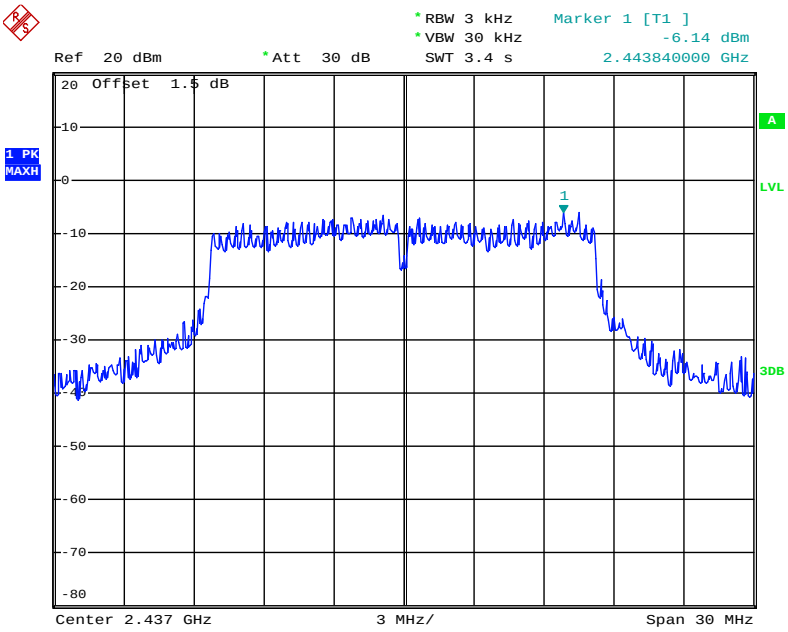
Date: 7.JUL.2015 21:07:22

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



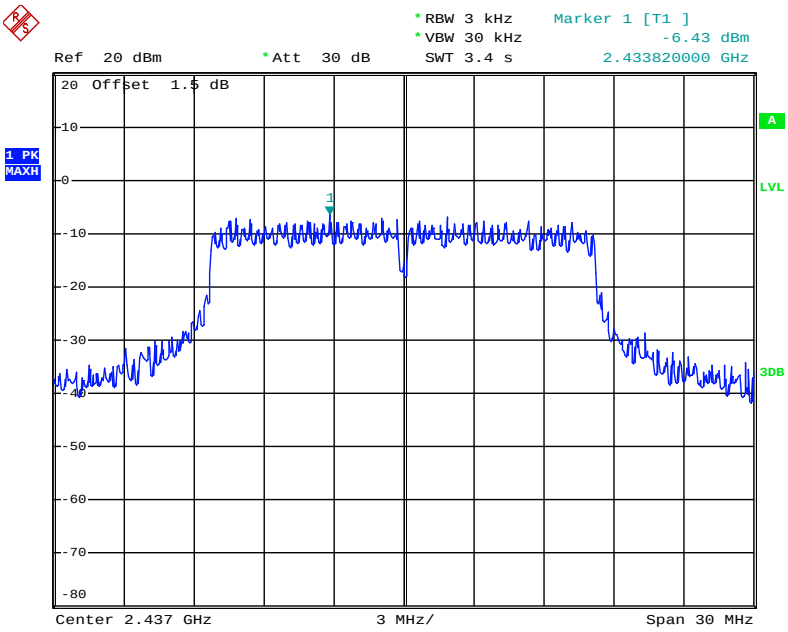
Date: 7.JUL.2015 21:10:36

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



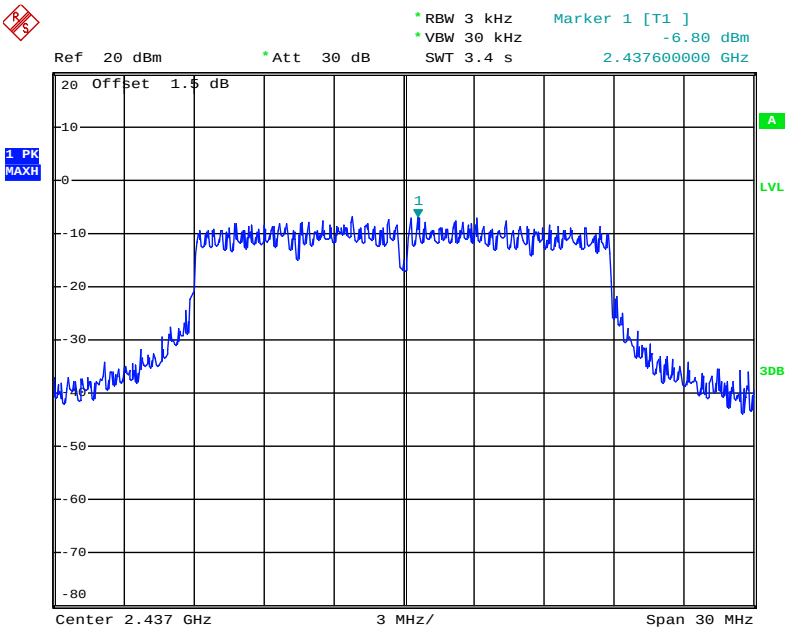
Date: 7.JUL.2015 21:10:15

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



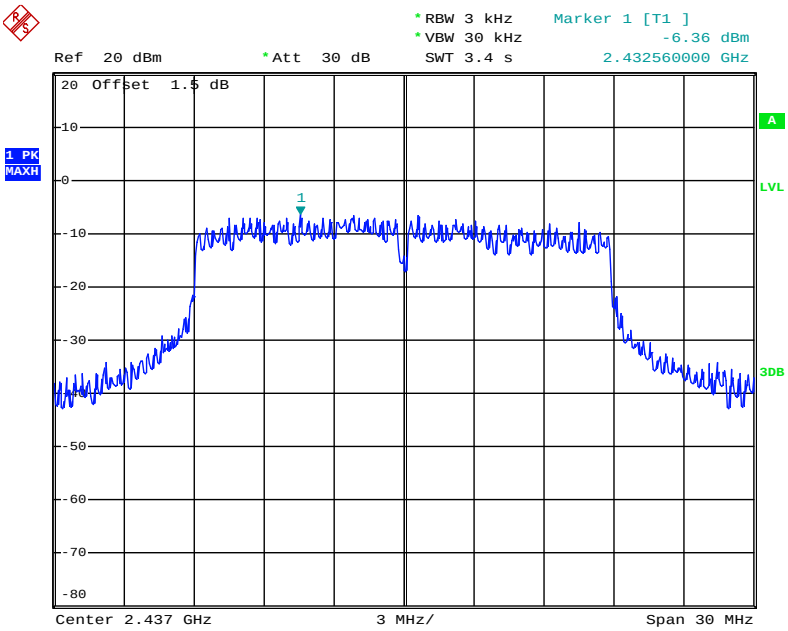
Date: 7.JUL.2015 21:09:48

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



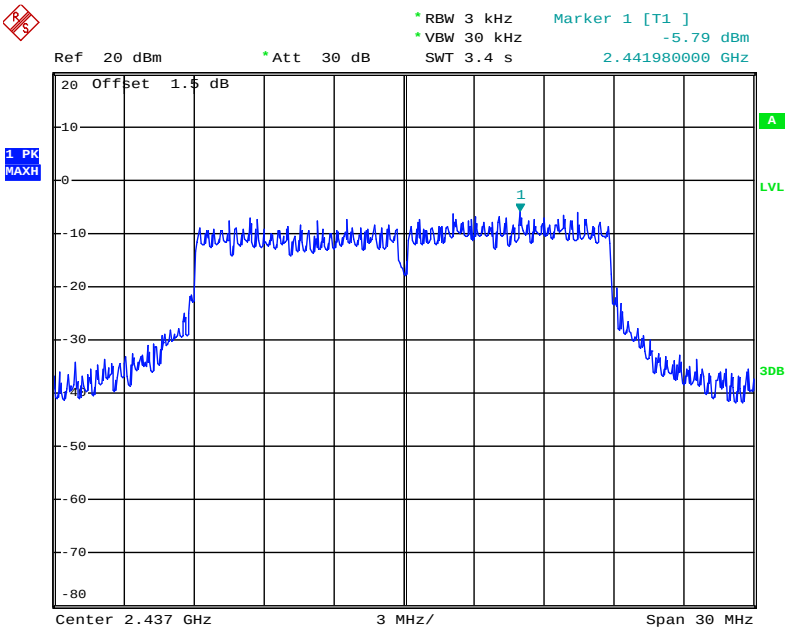
Date: 7.JUL.2015 21:16:04

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



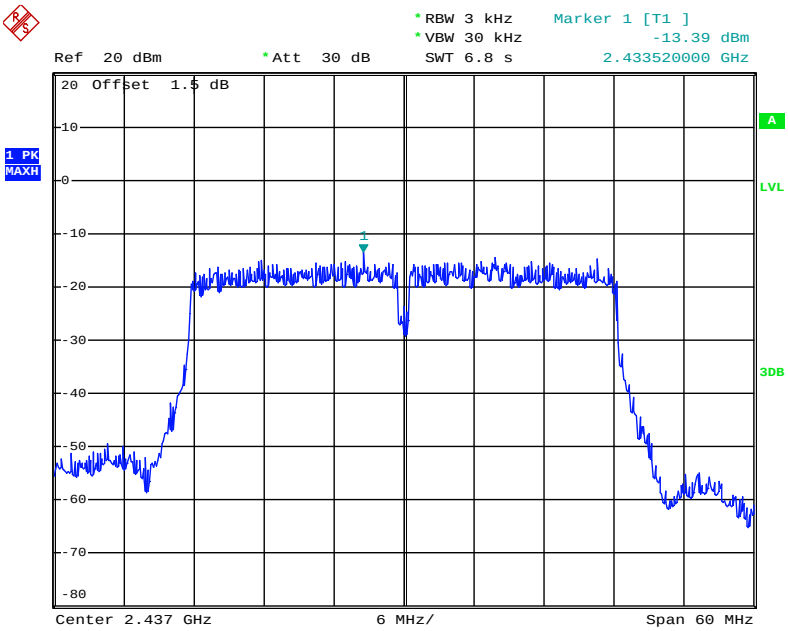
Date: 7.JUL.2015 21:15:41

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



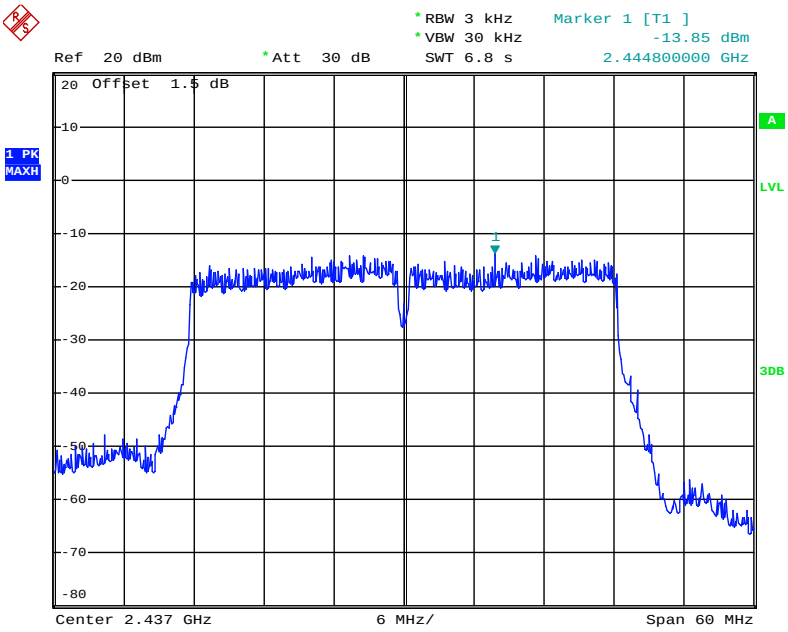
Date: 7.JUL.2015 21:18:46

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



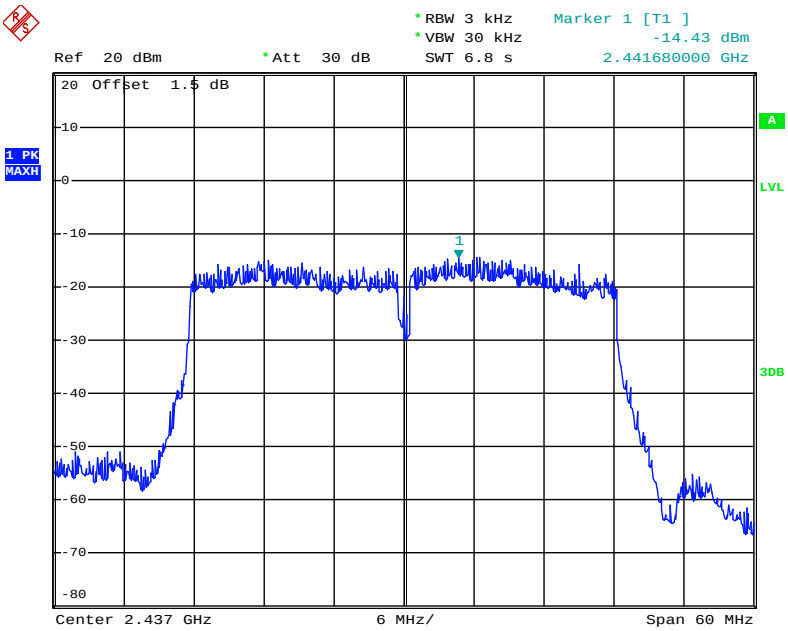
Date: 7.JUL.2015 21:22:02

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



Date: 7.JUL.2015 21:22:21

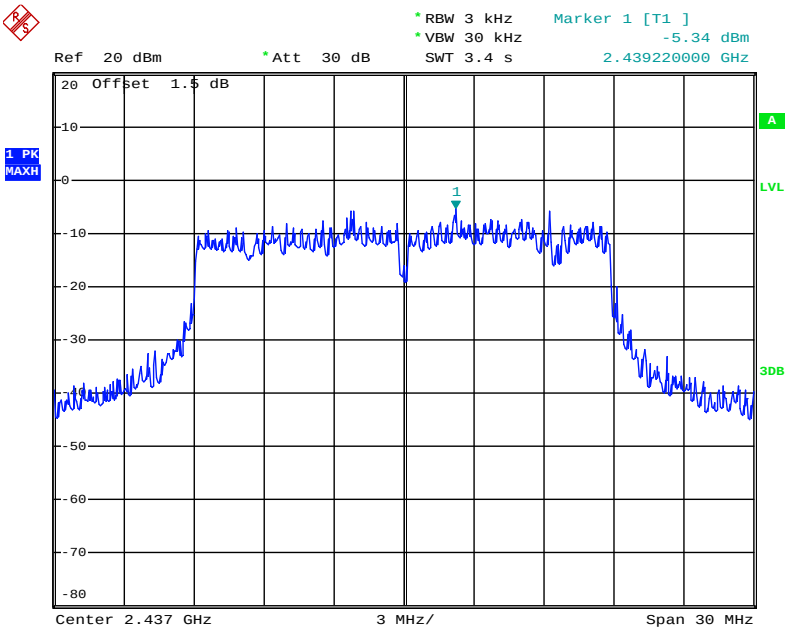
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2437 MHz / Chain 3



Date: 7.JUL.2015 21:22:46

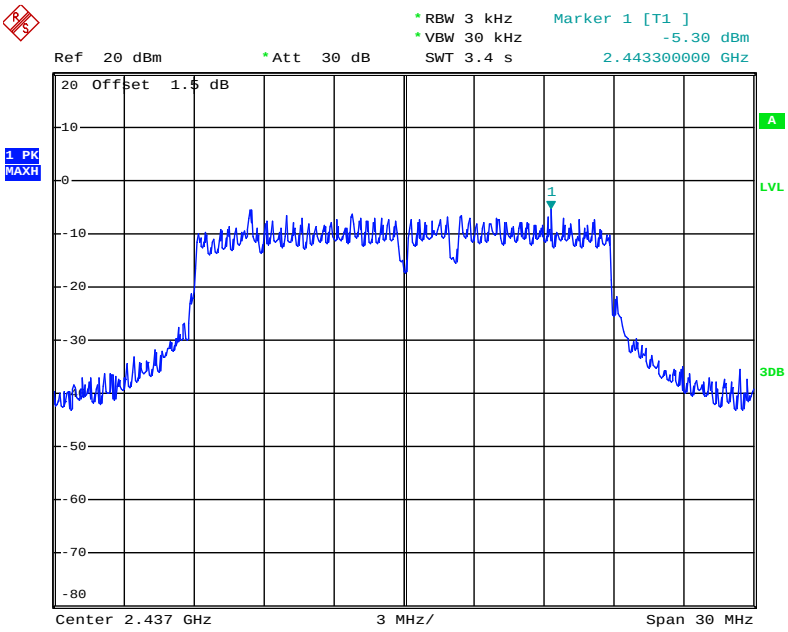
<For Radio 1 Non-beamforming Mode>: 3TX, 2S

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT20 / 2437 MHz / Chain 1



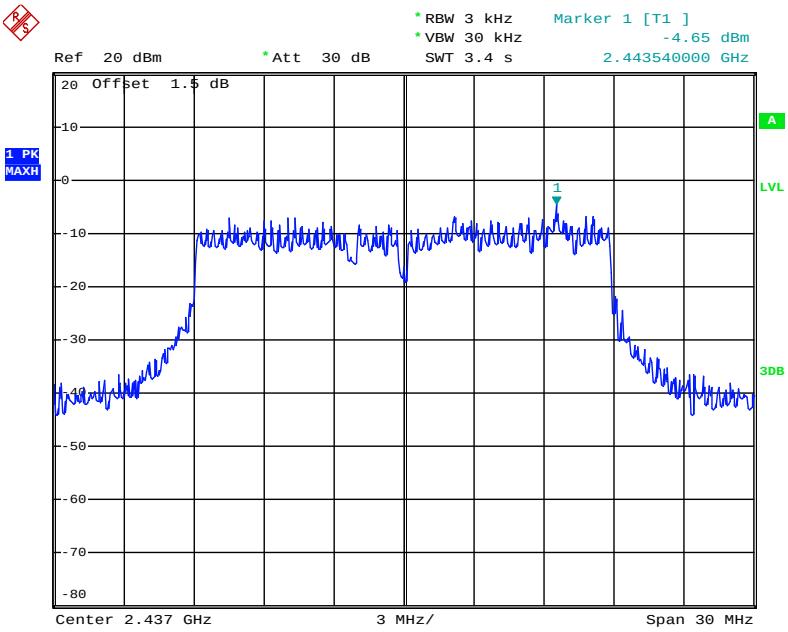
Date: 7.JUL.2015 21:43:09

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT20 / 2437 MHz / Chain 2



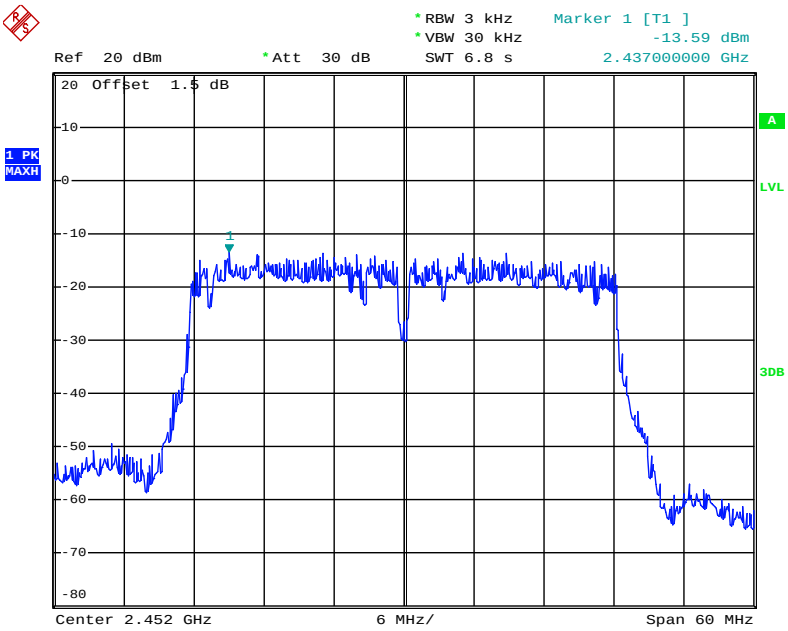
Date: 7.JUL.2015 21:42:41

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT20 / 2437 MHz / Chain 3



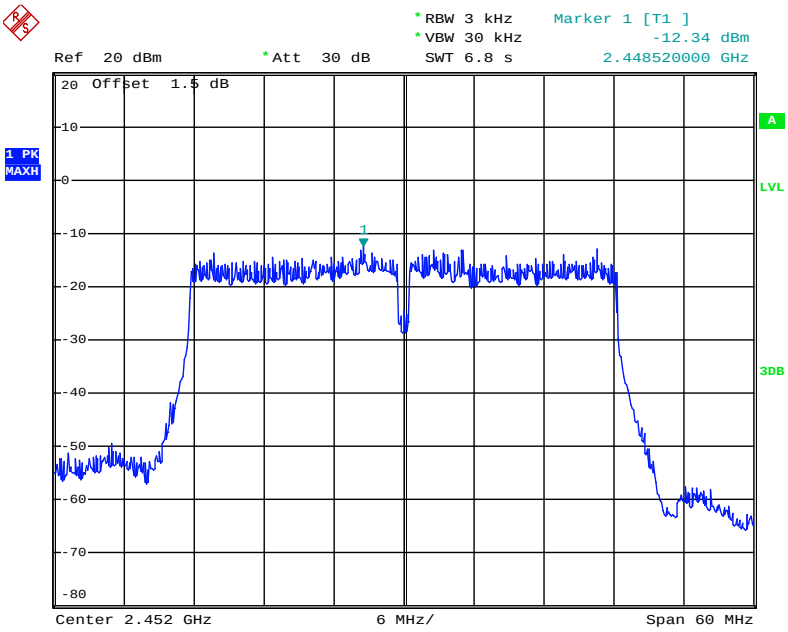
Date: 7.JUL.2015 21:42:20

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT40 / 2452 MHz / Chain 1



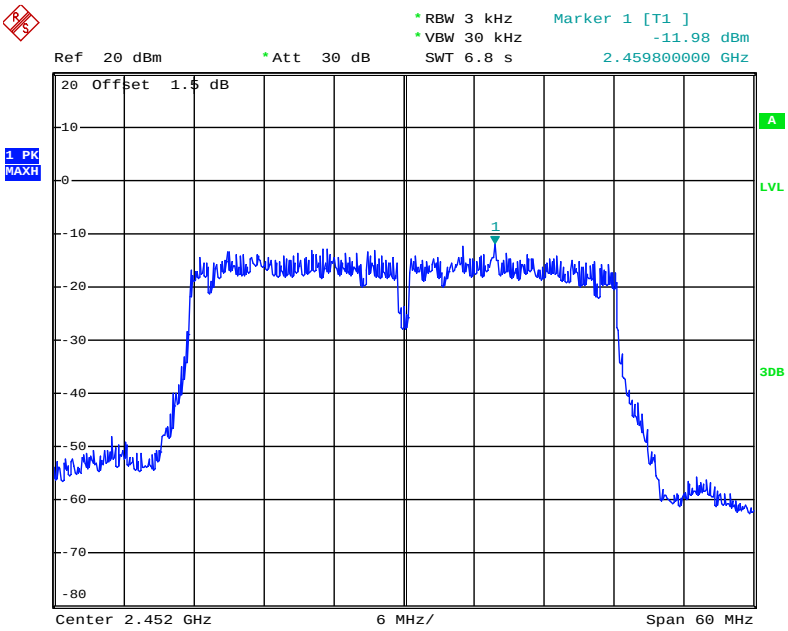
Date: 7.JUL.2015 21:50:07

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT40 / 2452 MHz / Chain 2



Date: 7.JUL.2015 21:49:35

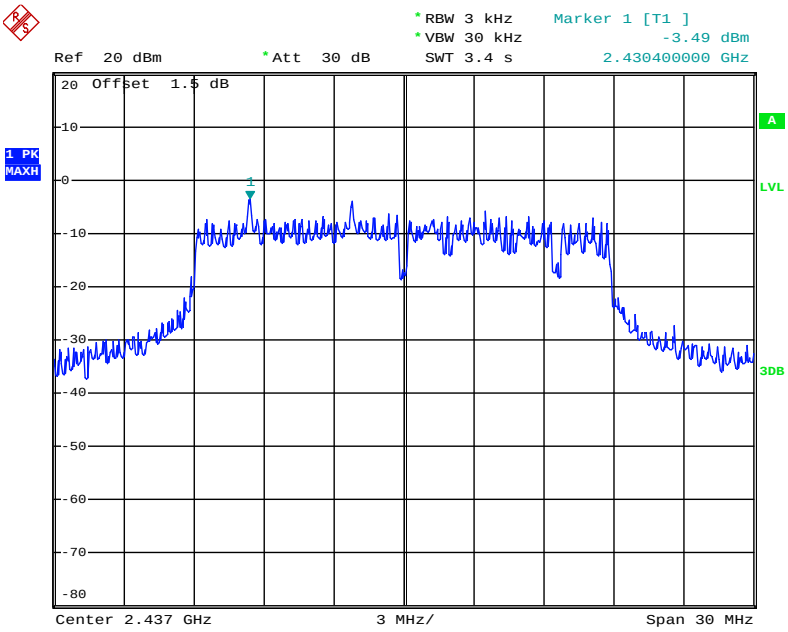
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT40 / 2452 MHz / Chain 3



Date: 7.JUL.2015 21:51:27

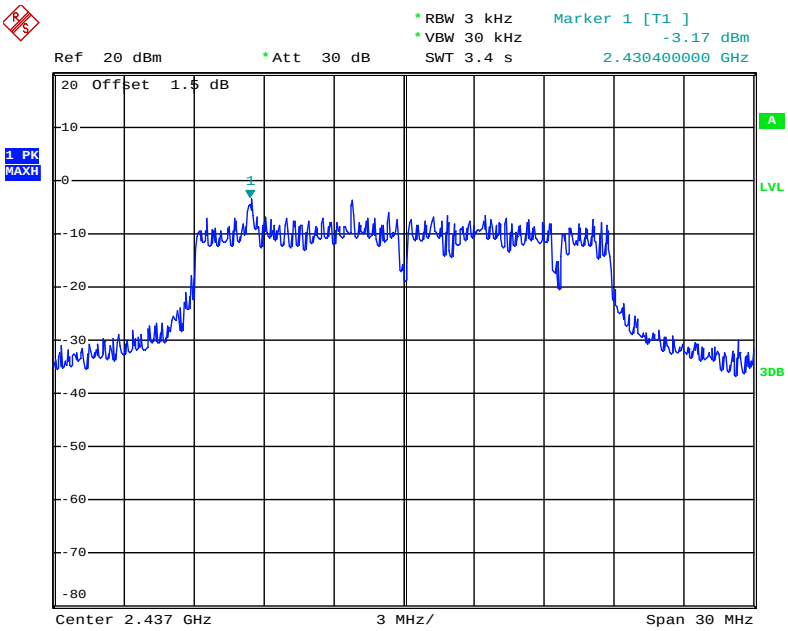
<For Radio 1 Non-beamforming Mode>: 3TX, 3S

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss3 VHT20 / 2437 MHz / Chain 1



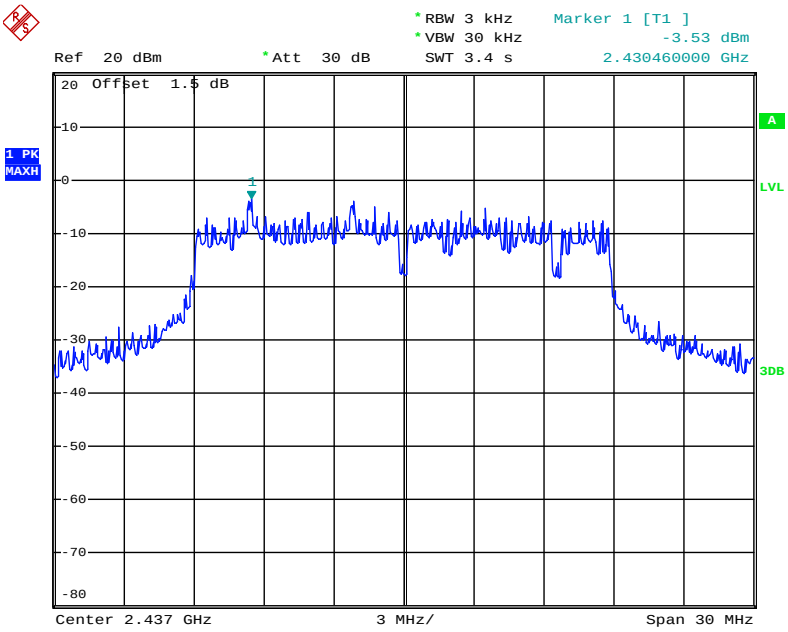
Date: 7.JUL.2015 22:07:37

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss3 VHT20 / 2437 MHz / Chain 2



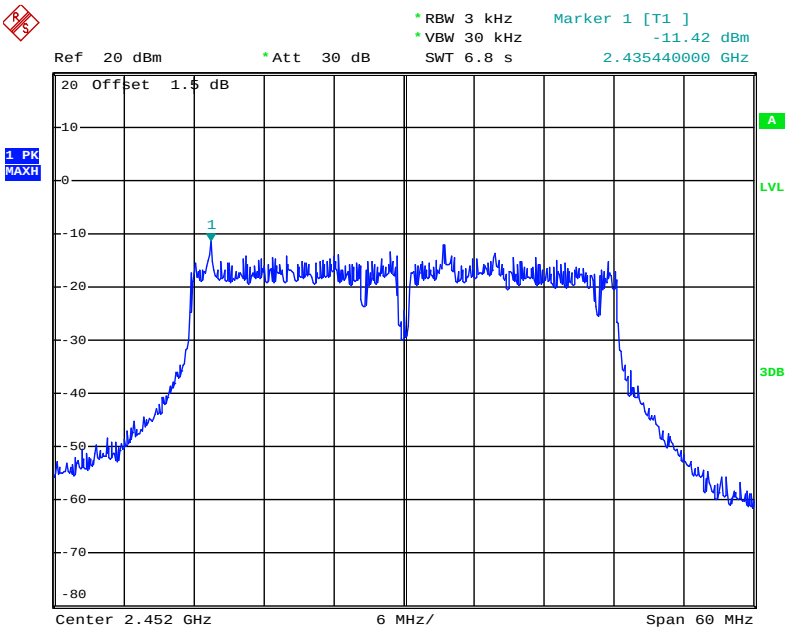
Date: 7.JUL.2015 22:08:27

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss3 VHT20 / 2437 MHz / Chain 3



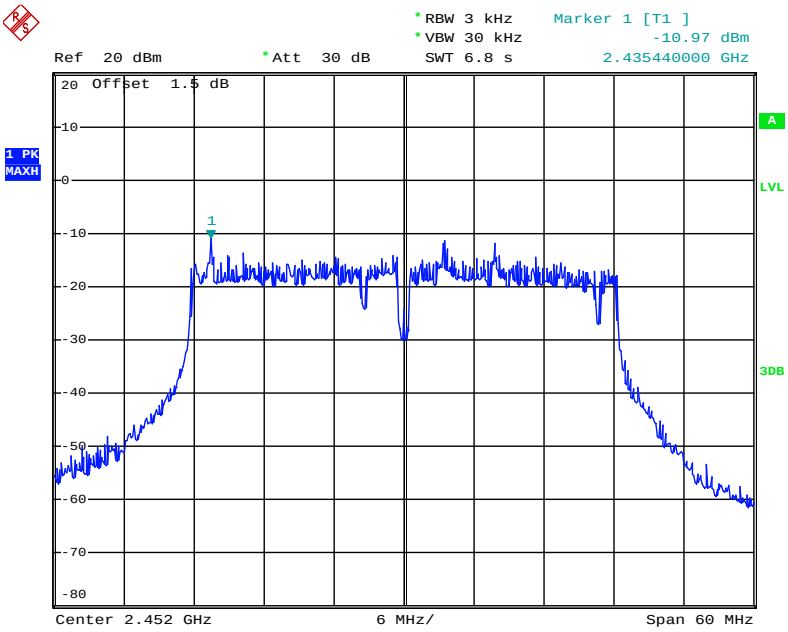
Date: 7.JUL.2015 22:08:11

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss3 VHT40 / 2452 MHz / Chain 1



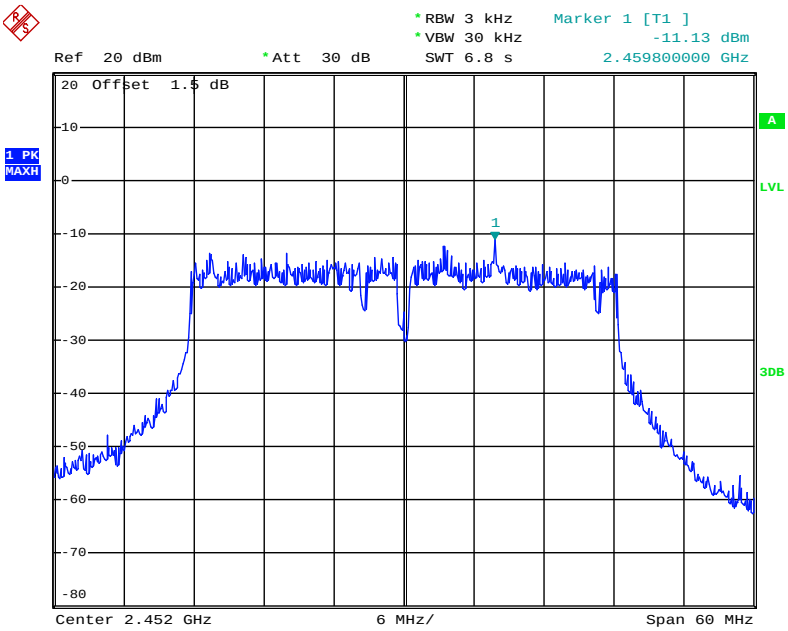
Date: 7.JUL.2015 22:24:51

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss3 VHT40 / 2452 MHz / Chain 2



Date: 7.JUL.2015 22:24:26

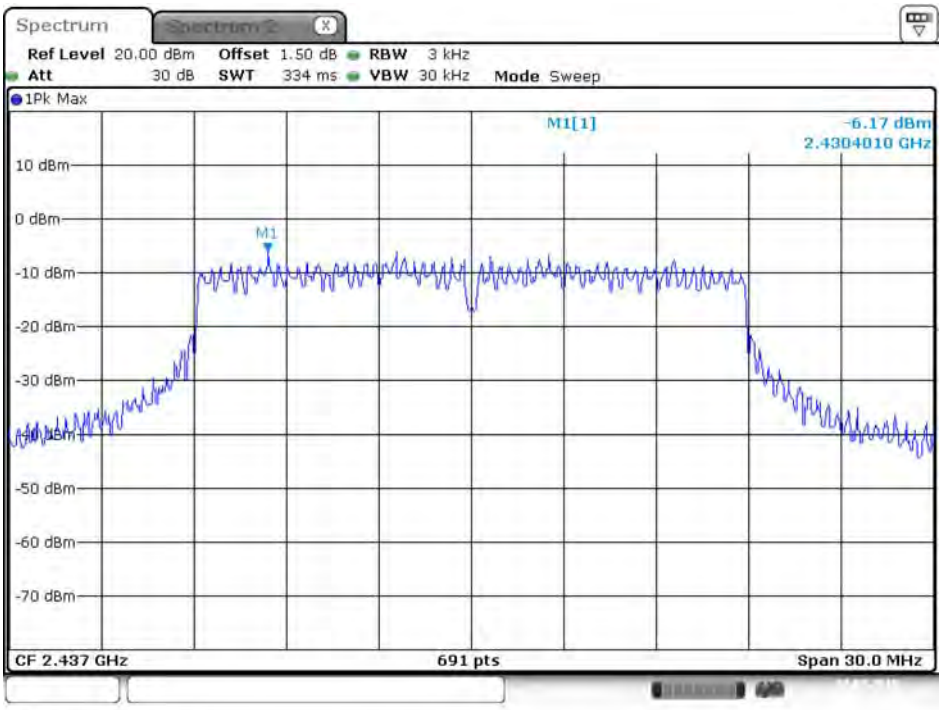
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss3 VHT40 / 2452 MHz / Chain 3



Date: 7.JUL.2015 22:25:09

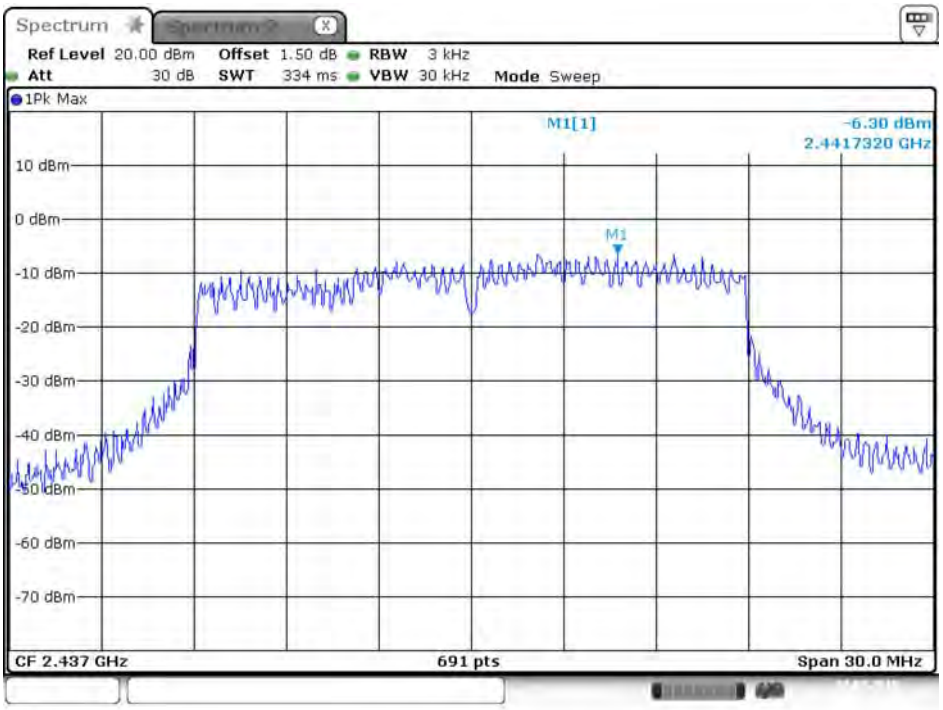
<For Radio 1 Beamforming Mode>: 2TX, 1S

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



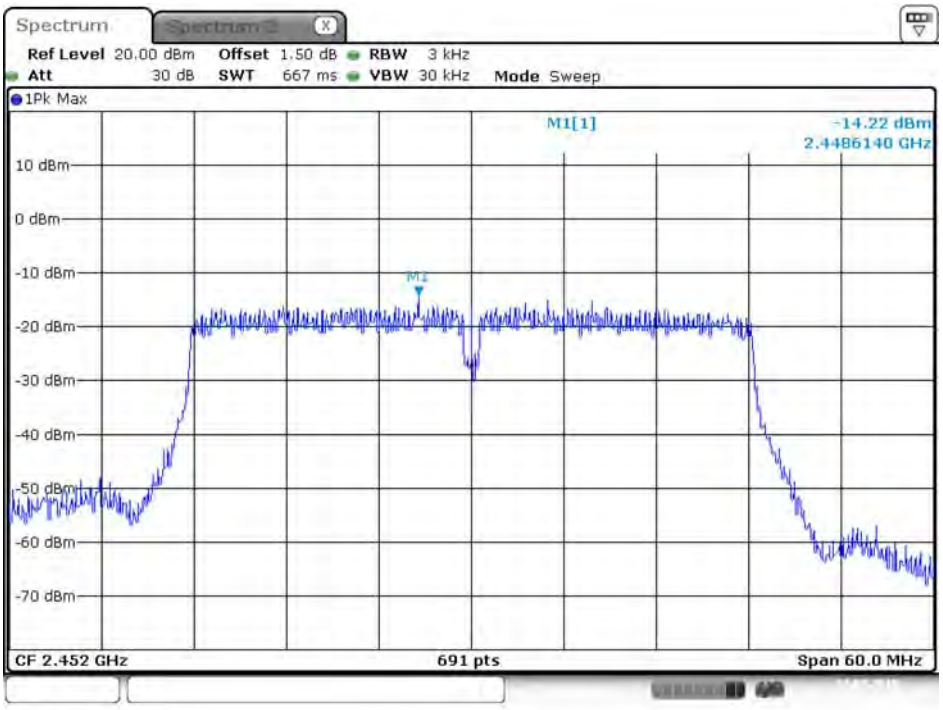
Date: 23.JUL.2015 20:44:51

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



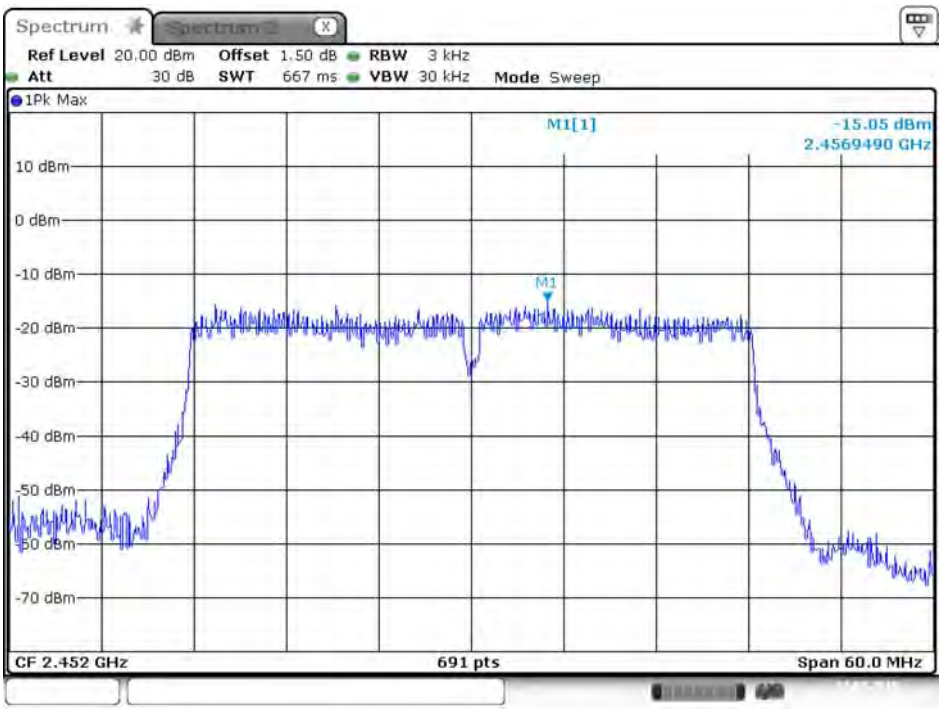
Date: 23.JUL.2015 20:44:16

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



Date: 23.JUL.2015 20:51:21

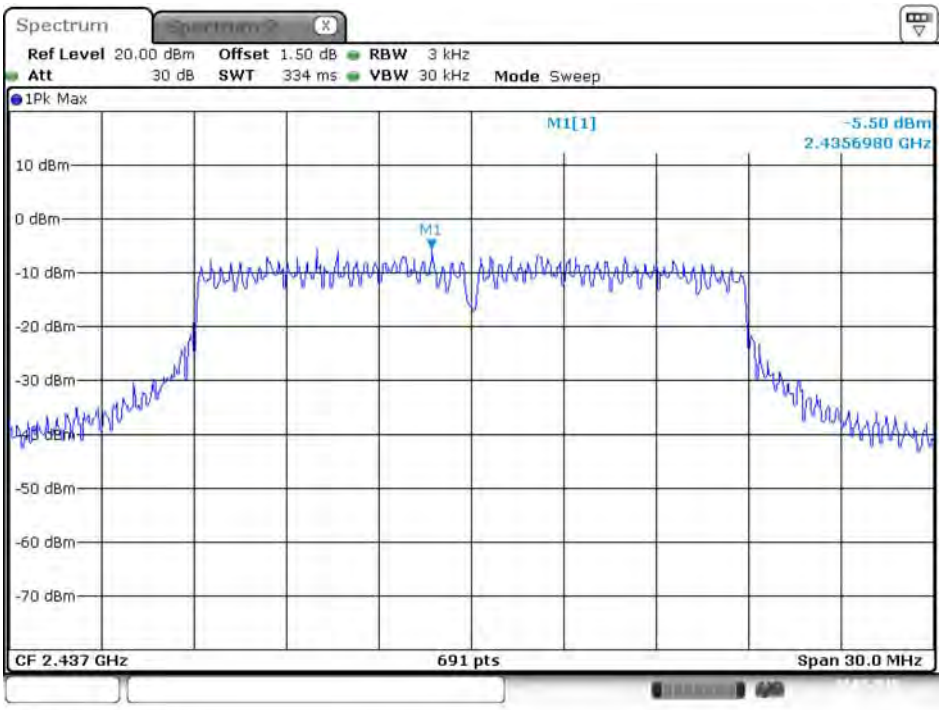
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2452 MHz / Chain 2



Date: 23.JUL.2015 20:50:52

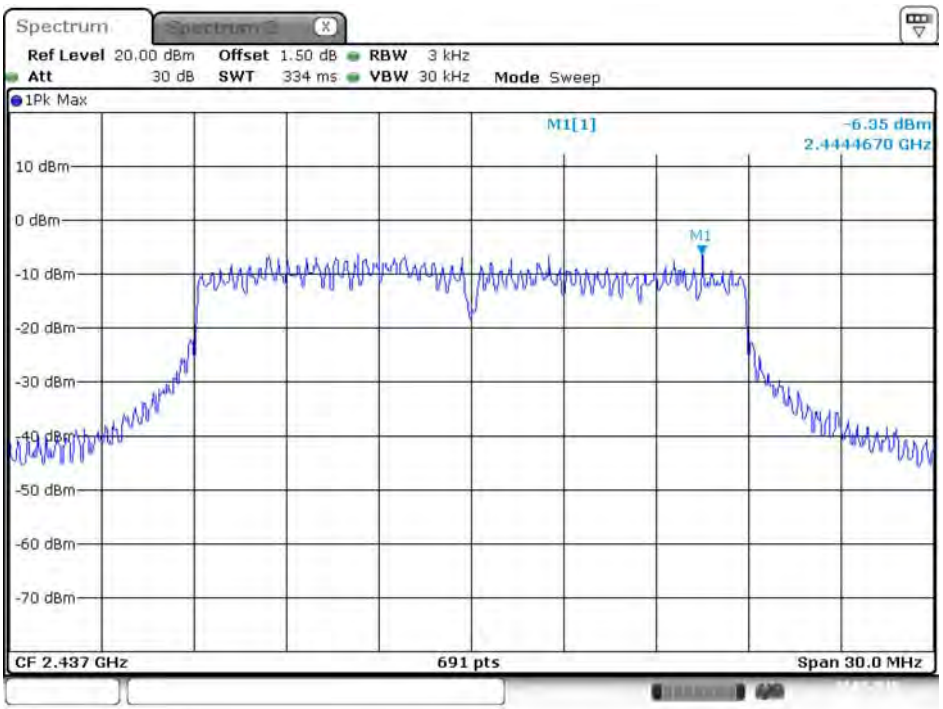
<For Radio 1 Beamforming Mode>: 3TX, 1S

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



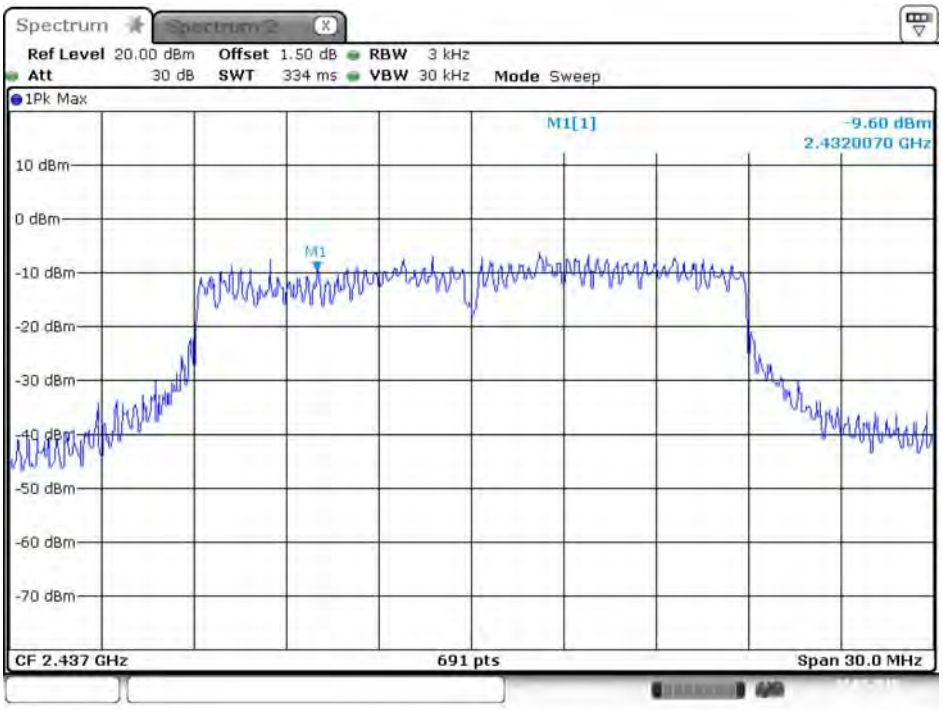
Date: 23.JUL.2015 20:23:59

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



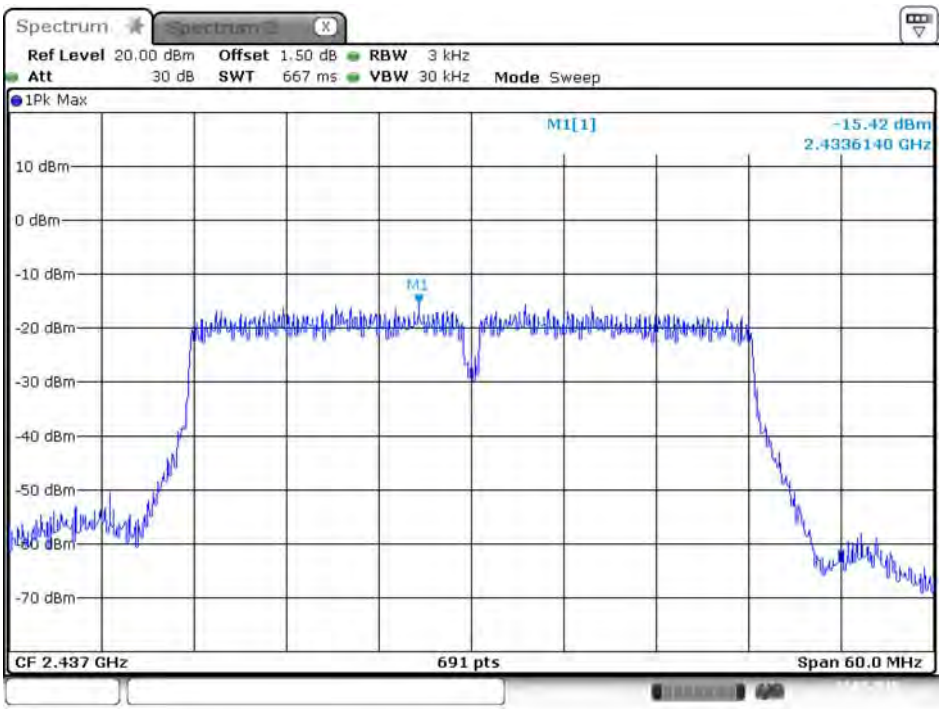
Date: 23.JUL.2015 20:23:15

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



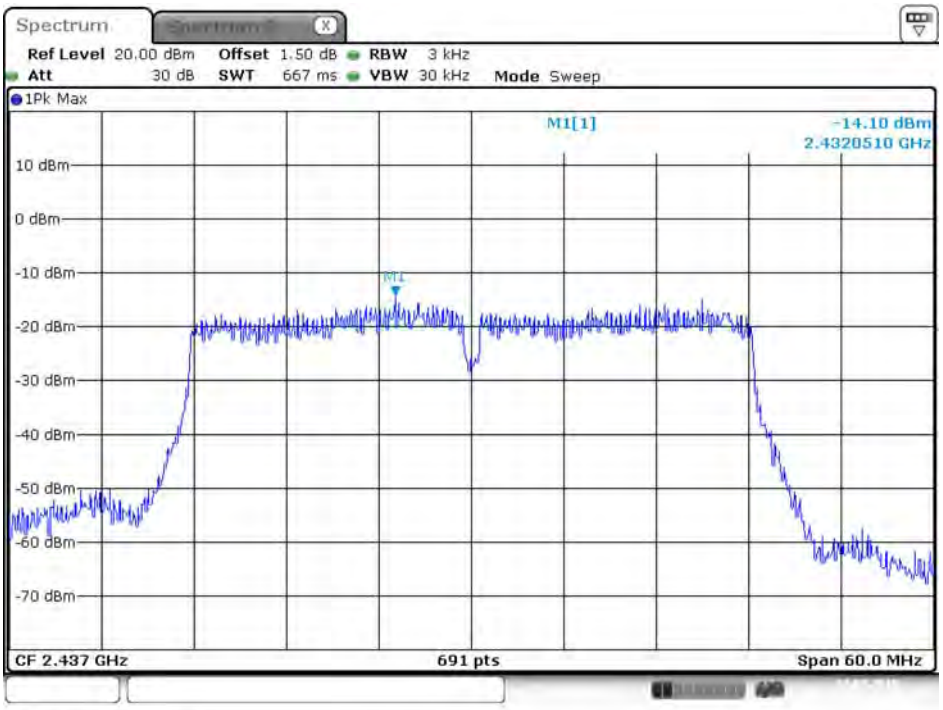
Date: 23.JUL.2015 20:22:27

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



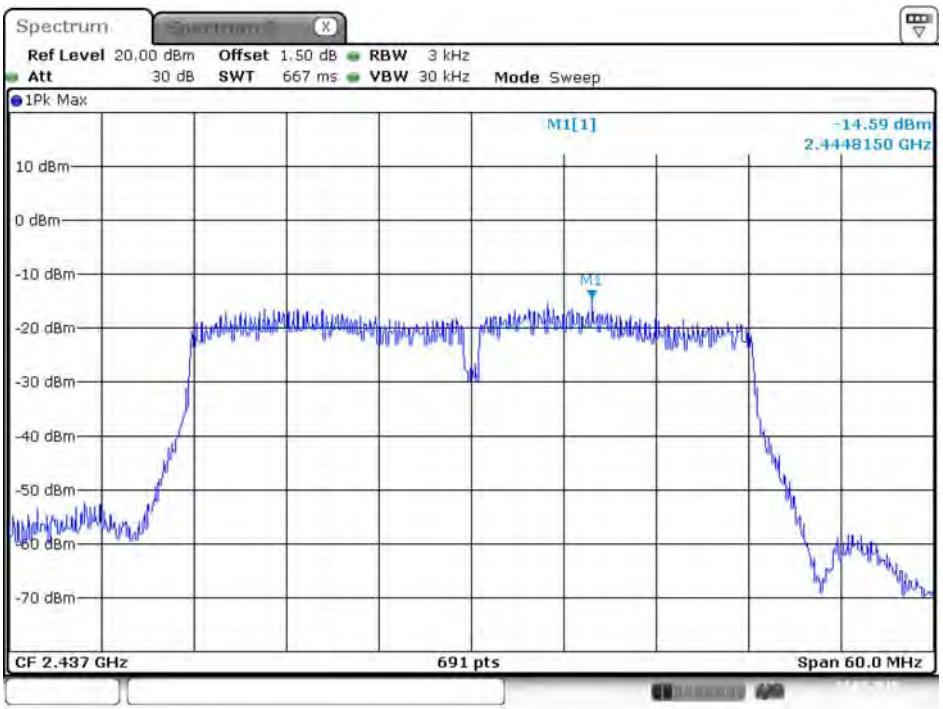
Date: 23.JUL.2015 20:35:44

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



Date: 23.JUL.2015 20:36:31

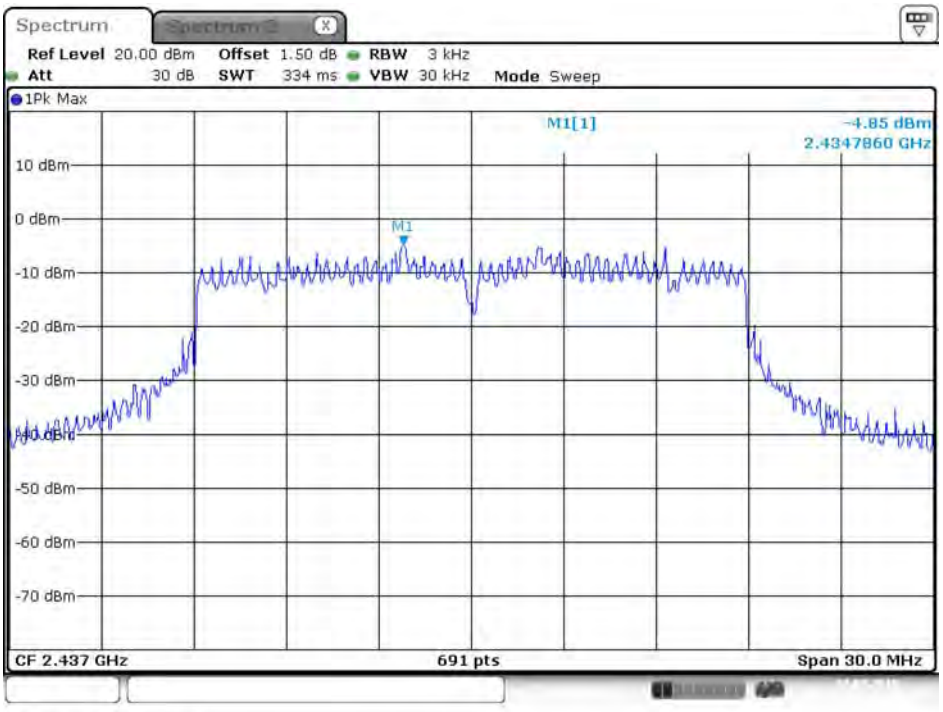
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2437 MHz / Chain 3



Date: 23.JUL.2015 20:37:02

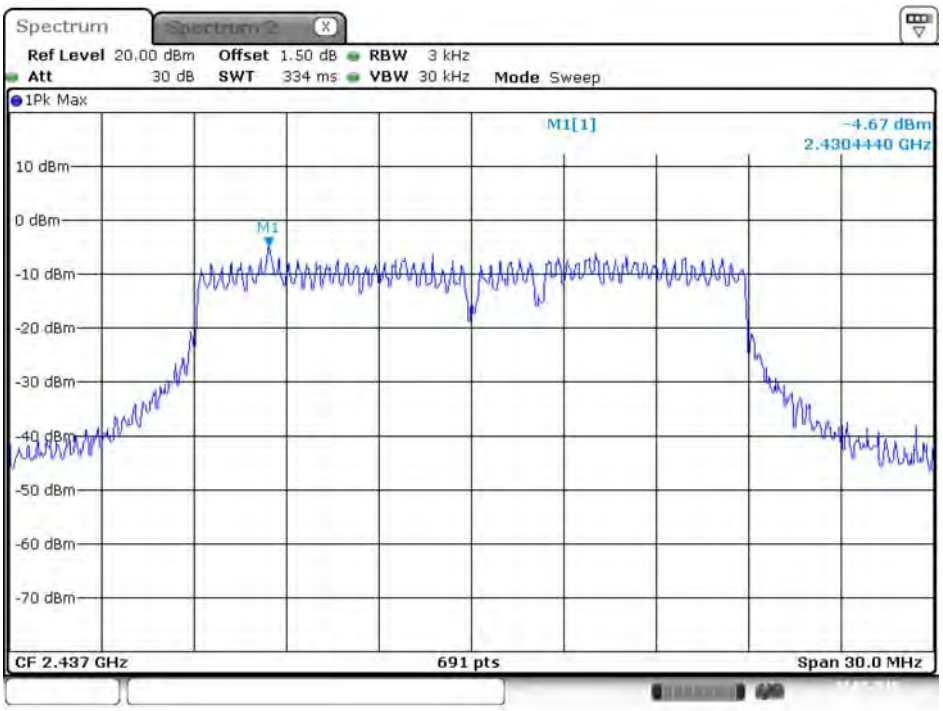
<For Radio 1 Beamforming Mode>: 3TX, 2S

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT20 / 2437 MHz / Chain 1



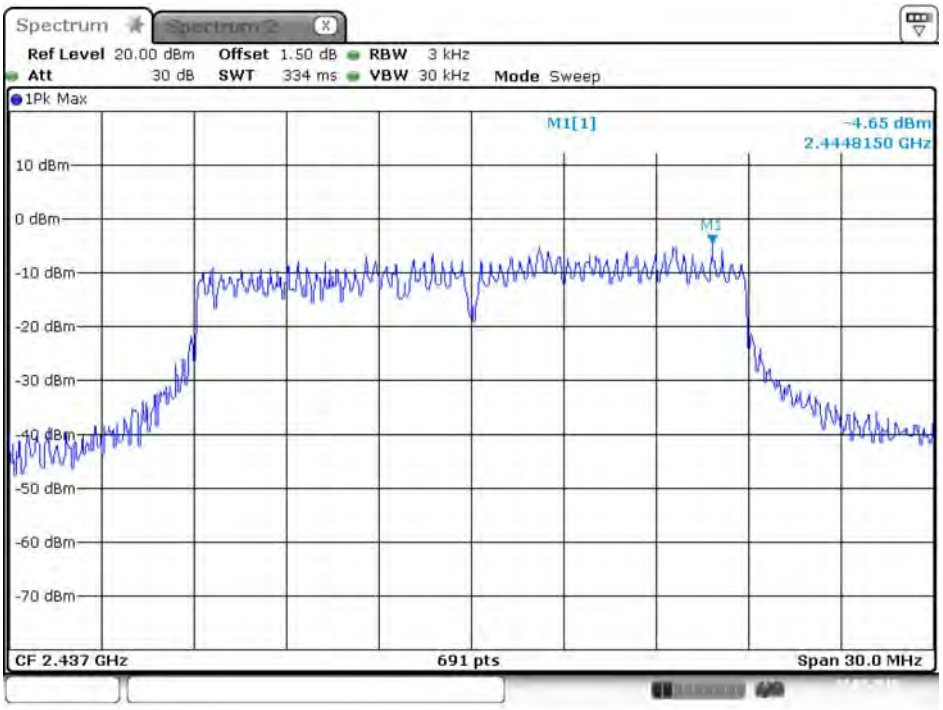
Date: 23.JUL.2015 19:58:41

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT20 / 2437 MHz / Chain 2



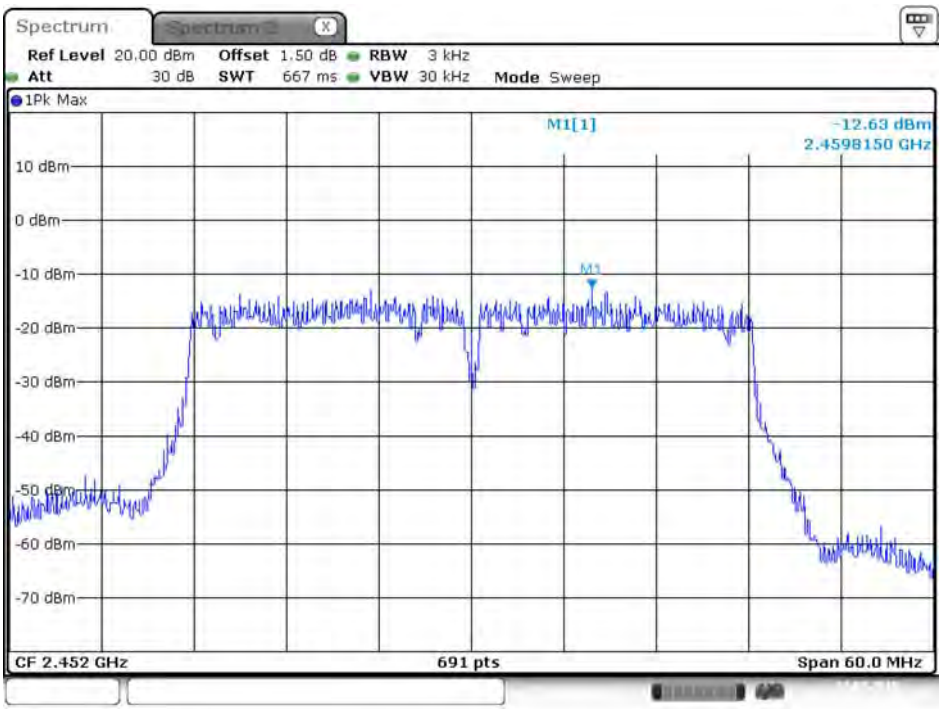
Date: 23.JUL.2015 19:57:52

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT20 / 2437 MHz / Chain 3



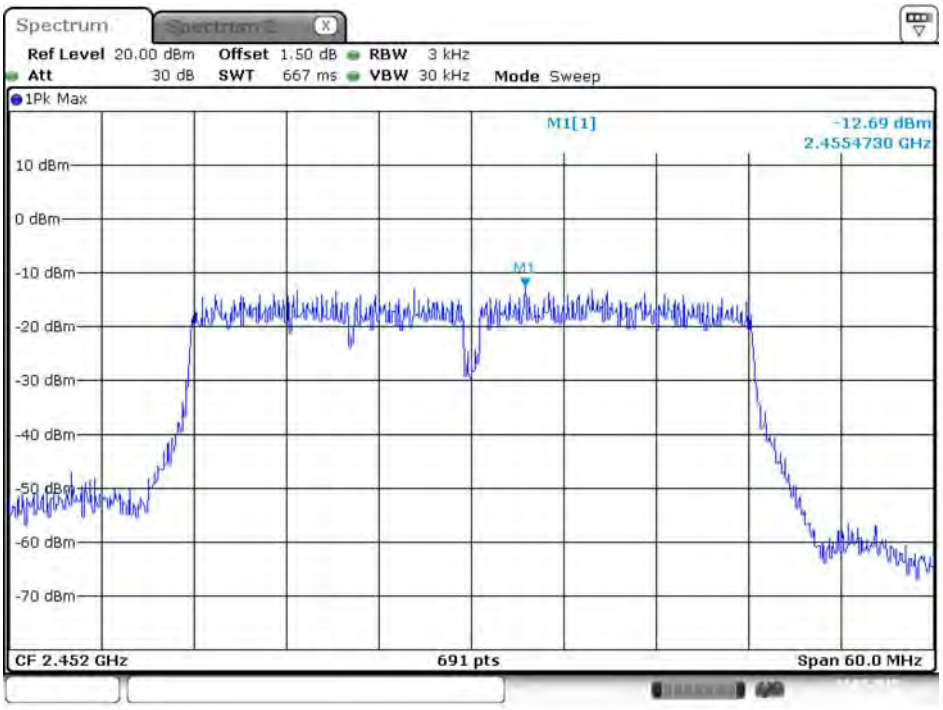
Date: 23.JUL.2015 19:56:48

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT40 / 2452 MHz / Chain 1



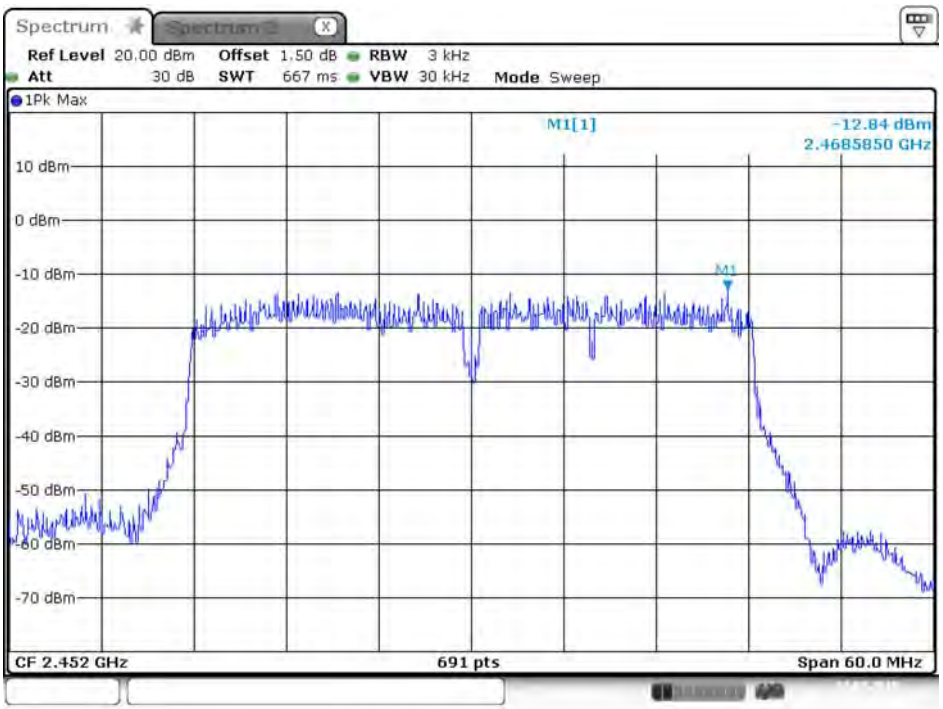
Date: 23.JUL.2015 20:16:28

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT40 / 2452 MHz / Chain 2



Date: 23.JUL.2015 20:15:55

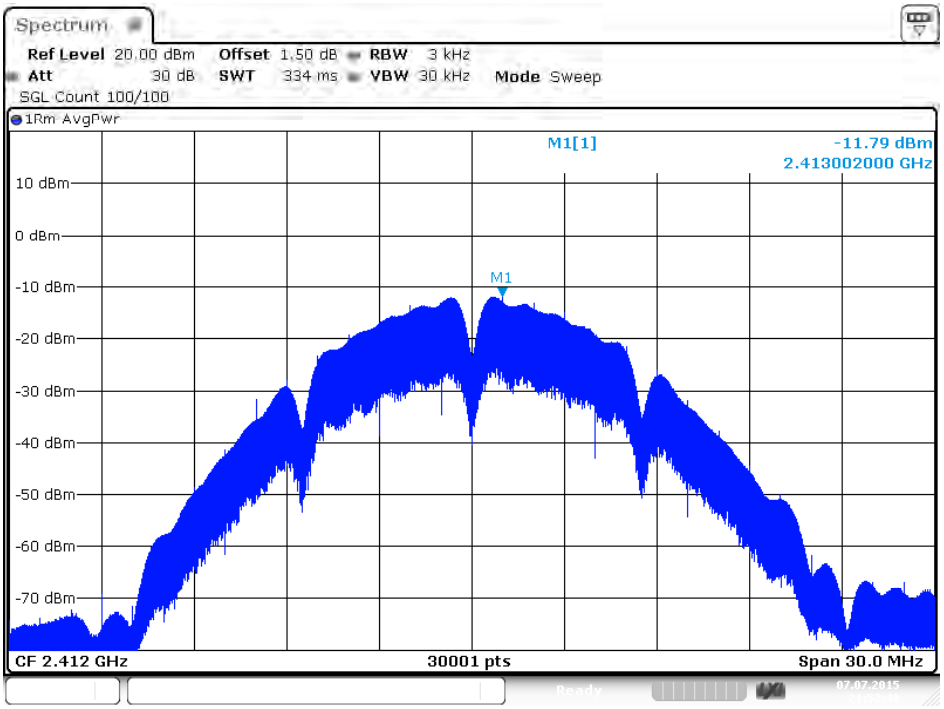
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT40 / 2452 MHz / Chain 3



Date: 23.JUL.2015 20:15:18

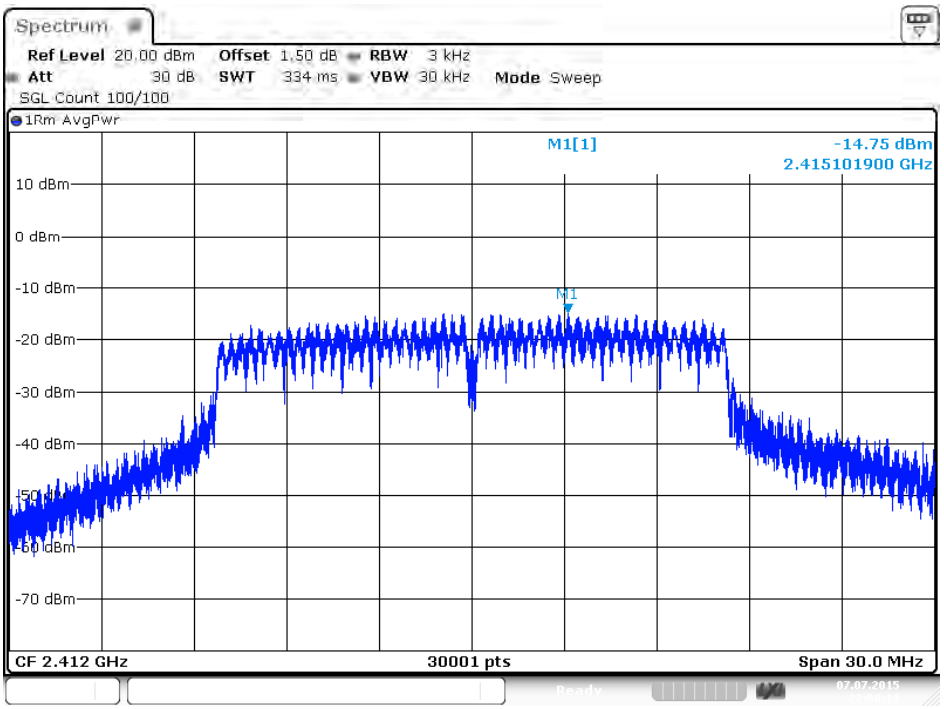
<For Radio 3>

Power Density Plot on Configuration IEEE 802.11b / 2412 MHz / Chain 7



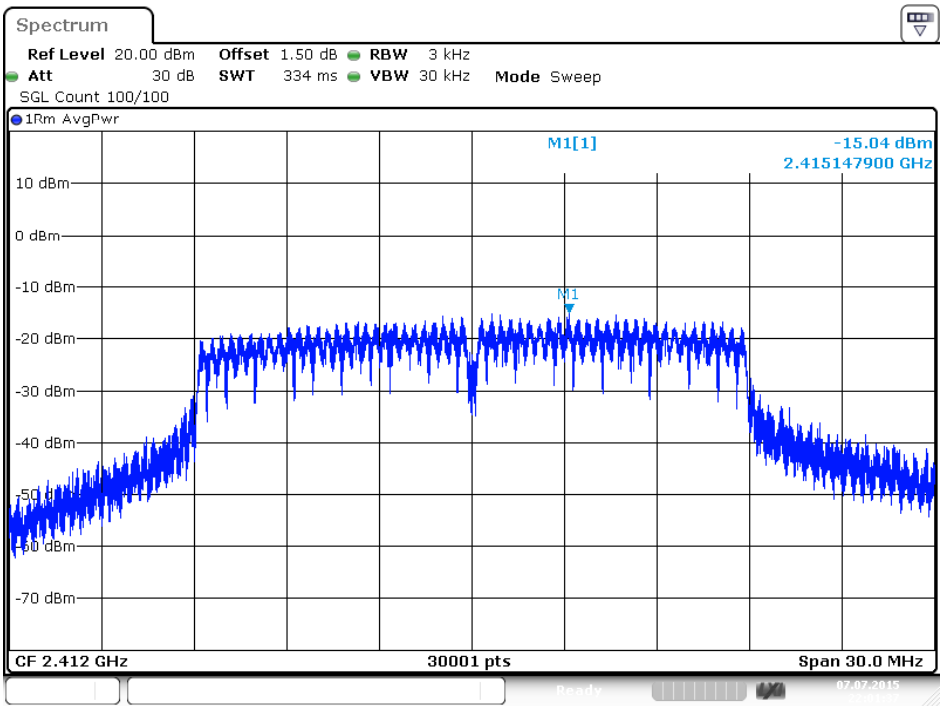
Date: 7.JUL.2015 21:52:40

Power Density Plot on Configuration IEEE 802.11g / 2412 MHz / Chain 7



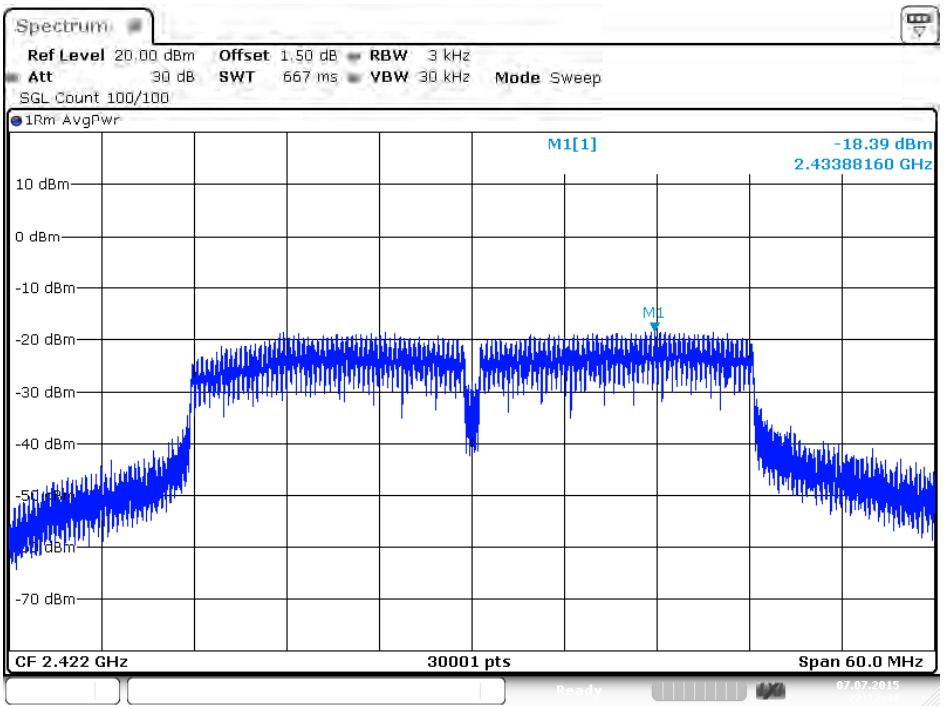
Date: 7.JUL.2015 22:00:13

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 2412 MHz / Chain 7



Date: 7.JUL.2015 22:01:37

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2422 MHz / Chain 7



Date: 7.JUL.2015 22:12:40

4.4. 6dB Spectrum Bandwidth Measurement

4.4.1. Limit

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

4.4.2. Measuring Instruments and Setting

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

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

4.4.3. Test Procedures

For Radiated 6dB Bandwidth Measurement:

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

4.4.4. Test Setup Layout

For Radiated 6dB Bandwidth Measurement:

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

4.4.5. Test Deviation

There is no deviation with the original standard.

4.4.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.4.7. Test Result of 6dB Spectrum Bandwidth

Temperature	25°C	Humidity	55%
Test Engineer	Serway Li		

<For Radio 1 Non-beamforming Mode>: 1TX, 1S

Mode	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11b	2412 MHz	8.96	13.20	500	Complies
	2437 MHz	9.04	13.20	500	Complies
	2462 MHz	8.48	13.20	500	Complies
802.11g	2412 MHz	16.32	16.56	500	Complies
	2437 MHz	16.32	16.92	500	Complies
	2462 MHz	16.32	16.56	500	Complies
802.11ac MCS0/Nss1 VHT20	2412 MHz	17.60	17.76	500	Complies
	2437 MHz	17.20	17.88	500	Complies
	2462 MHz	16.80	17.76	500	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	36.32	36.60	500	Complies
	2437 MHz	36.16	36.40	500	Complies
	2452 MHz	35.04	36.40	500	Complies

Temperature	25°C	Humidity	55%
Test Engineer	Serway Li		

<For Radio 1 Non-beamforming Mode>: 2TX, 1S

Mode	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11b	2412 MHz	6.56	10.68	500	Complies
	2437 MHz	6.64	10.80	500	Complies
	2462 MHz	7.04	10.68	500	Complies
802.11g	2412 MHz	15.68	16.68	500	Complies
	2437 MHz	15.68	16.56	500	Complies
	2462 MHz	15.76	16.68	500	Complies
802.11ac MCS0/Nss1 VHT20	2412 MHz	16.96	17.40	500	Complies
	2437 MHz	16.24	17.52	500	Complies
	2462 MHz	16.40	17.76	500	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	35.20	36.20	500	Complies
	2437 MHz	35.20	36.20	500	Complies
	2452 MHz	35.20	36.60	500	Complies

Temperature	25°C	Humidity	55%
Test Engineer	Serway Li	Test Date	Jul. 07, 2015

<For Radio 1 Non-beamforming Mode>: 2TX, 2S

Mode	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11ac MCS0/Nss2 VHT20	2412 MHz	15.92	17.76	500	Complies
	2437 MHz	15.68	17.88	500	Complies
	2462 MHz	15.68	17.76	500	Complies
802.11ac MCS0/Nss2 VHT40	2422 MHz	31.36	36.80	500	Complies
	2437 MHz	35.20	36.60	500	Complies
	2452 MHz	33.92	36.80	500	Complies

Temperature	25°C	Humidity	55%
Test Engineer	Lucas Huang	Test Date	Jul. 07, 2015

<For Radio 1 Non-beamforming Mode>: 3TX, 1S

Mode	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11b	2412 MHz	4.56	12.36	500	Complies
	2437 MHz	5.52	12.60	500	Complies
	2462 MHz	4.24	11.64	500	Complies
802.11g	2412 MHz	12.56	16.44	500	Complies
	2437 MHz	12.88	16.80	500	Complies
	2462 MHz	11.92	16.56	500	Complies
802.11ac MCS0/Nss1 VHT20	2412 MHz	16.96	17.76	500	Complies
	2437 MHz	13.76	18.00	500	Complies
	2462 MHz	15.12	17.76	500	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	36.32	34.80	500	Complies
	2437 MHz	36.32	34.60	500	Complies
	2452 MHz	31.04	34.40	500	Complies

Temperature	25°C	Humidity	55%
Test Engineer	Lucas Huang	Test Date	Jul. 07, 2015

<For Radio 1 Non-beamforming Mode>: 3TX, 2S

Mode	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11ac MCS0/Nss2 VHT20	2412 MHz	13.84	17.88	500	Complies
	2437 MHz	13.20	17.76	500	Complies
	2462 MHz	16.32	16.80	500	Complies
802.11ac MCS0/Nss2 VHT40	2422 MHz	32.64	37.00	500	Complies
	2437 MHz	32.48	36.60	500	Complies
	2452 MHz	32.64	36.80	500	Complies

Temperature	25°C	Humidity	55%
Test Engineer	Serway Li	Test Date	Jul. 07, 2015

<For Radio 1 Non-beamforming Mode>: 3TX, 3S

Mode	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11ac MCS0/Nss3 VHT20	2412 MHz	17.60	18.00	500	Complies
	2437 MHz	17.68	18.48	500	Complies
	2462 MHz	17.20	18.24	500	Complies
802.11ac MCS0/Nss3 VHT40	2422 MHz	36.48	37.40	500	Complies
	2437 MHz	36.32	37.40	500	Complies
	2452 MHz	36.48	37.40	500	Complies

Temperature	25°C	Humidity	55%
Test Engineer	Eddie Weng	Test Date	Jul. 23, 2015

<For Radio 1 Beamforming Mode>: 2TX, 1S

Mode	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11ac MCS0/Nss1 VHT20	2412 MHz	16.87	17.63	500	Complies
	2437 MHz	15.88	17.63	500	Complies
	2462 MHz	12.87	17.63	500	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	34.44	35.89	500	Complies
	2437 MHz	34.55	37.19	500	Complies
	2452 MHz	34.09	37.77	500	Complies

Temperature	25°C	Humidity	55%
Test Engineer	Eddie Weng	Test Date	Jul. 23, 2015

<For Radio 1 Beamforming Mode>: 3TX, 1S

Mode	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11ac MCS0/Nss1 VHT20	2412 MHz	17.57	17.11	500	Complies
	2437 MHz	14.32	17.89	500	Complies
	2462 MHz	15.13	17.71	500	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	31.54	37.92	500	Complies
	2437 MHz	32.46	38.21	500	Complies
	2452 MHz	31.42	35.75	500	Complies

Temperature	25°C	Humidity	55%
Test Engineer	Eddie Weng	Test Date	Jul. 23, 2015

<For Radio 1 Beamforming Mode>: 3TX, 2S

Mode	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11ac MCS0/Nss2 VHT20	2412 MHz	16.17	17.80	500	Complies
	2437 MHz	14.67	17.71	500	Complies
	2462 MHz	15.71	17.63	500	Complies
802.11ac MCS0/Nss2 VHT40	2422 MHz	31.65	38.35	500	Complies
	2437 MHz	31.65	38.06	500	Complies
	2452 MHz	29.68	38.06	500	Complies

Temperature	25°C	Humidity	55%
Test Engineer	Eddie Weng	Test Date	Jul. 23, 2015

<For Radio 3>

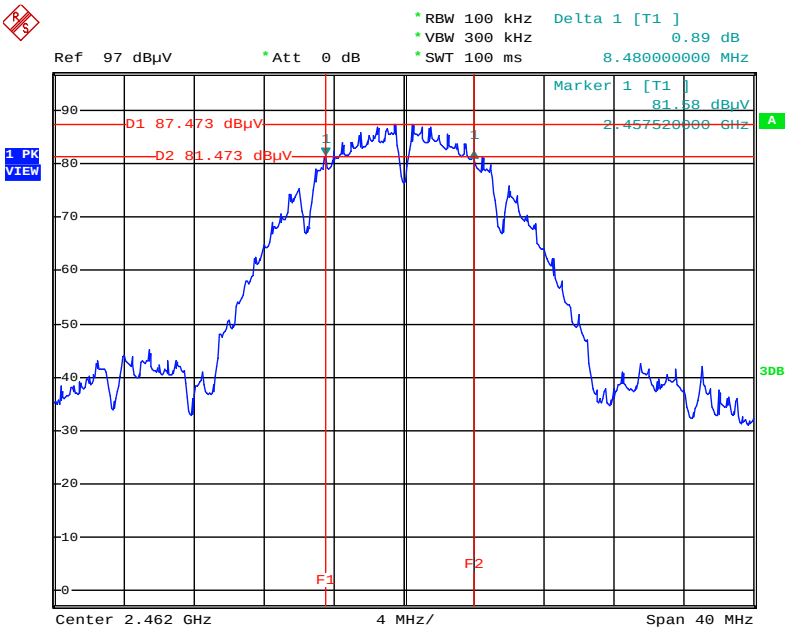
Mode	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11b	2412 MHz	7.07	11.46	500	Complies
	2437 MHz	6.09	12.07	500	Complies
	2462 MHz	7.59	11.98	500	Complies
802.11g	2412 MHz	15.36	17.28	500	Complies
	2437 MHz	15.42	18.41	500	Complies
	2462 MHz	15.65	17.37	500	Complies
802.11ac MCS0/Nss1 VHT20	2412 MHz	15.94	18.32	500	Complies
	2437 MHz	16.81	19.54	500	Complies
	2462 MHz	16.81	18.32	500	Complies
802.11ac MCS0/Nss1 VHT40	2422 MHz	35.71	37.05	500	Complies
	2437 MHz	35.01	36.90	500	Complies
	2452 MHz	35.25	36.90	500	Complies

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

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

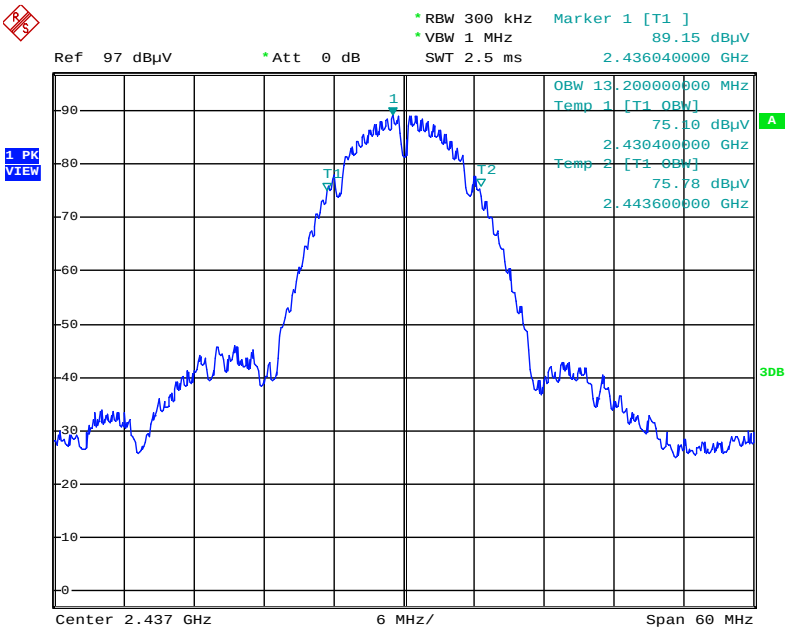
<For Radio 1 Non-beamforming Mode>: 1TX, 1S

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



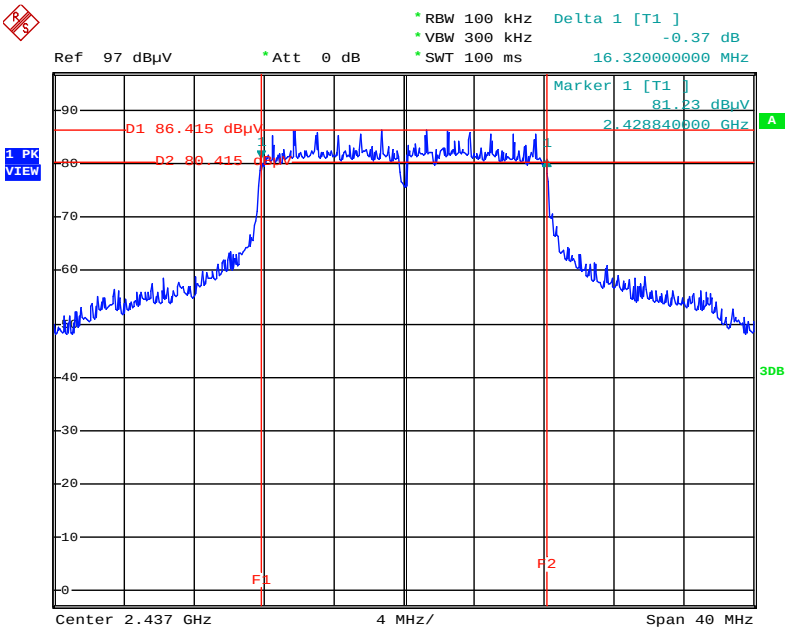
Date: 8.JUL.2015 01:34:58

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



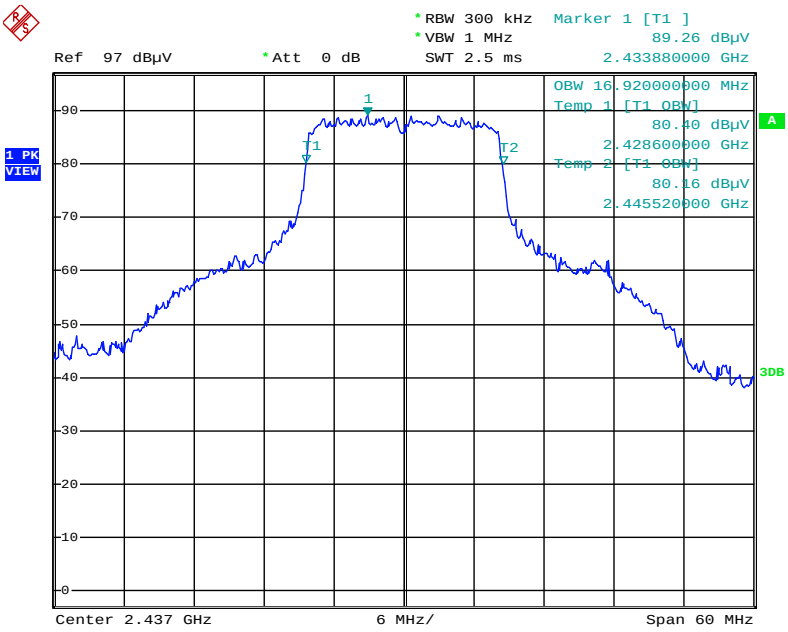
Date: 8.JUL.2015 01:08:43

6 dB Bandwidth Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 1



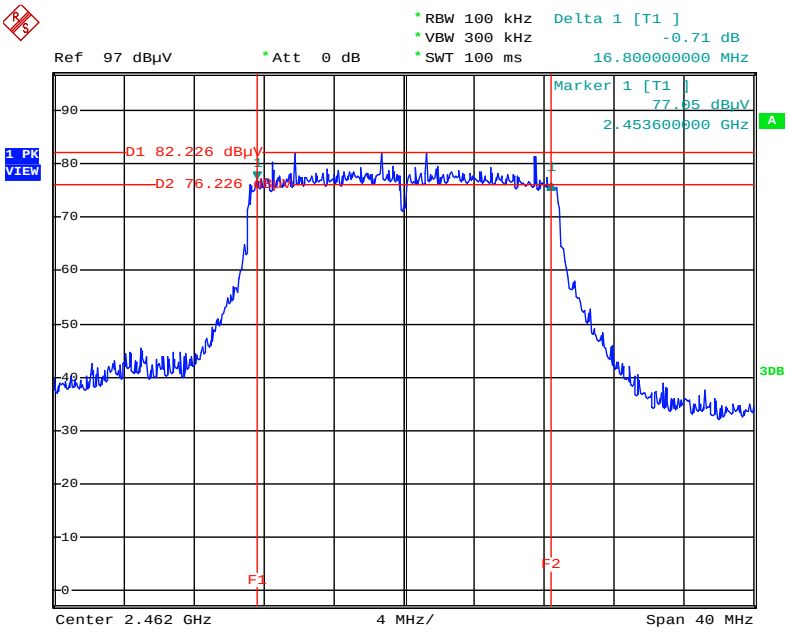
Date: 8.JUL.2015 01:30:58

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



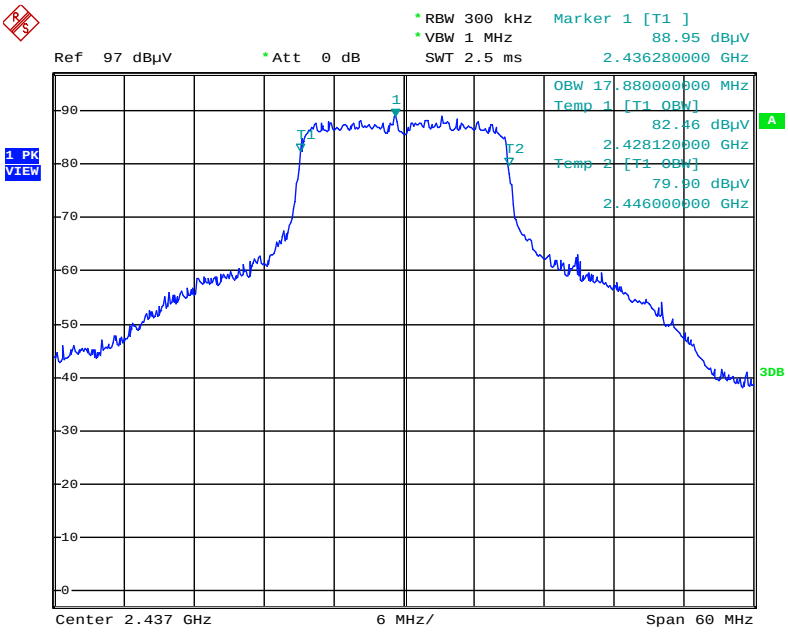
Date: 8.JUL.2015 01:12:13

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



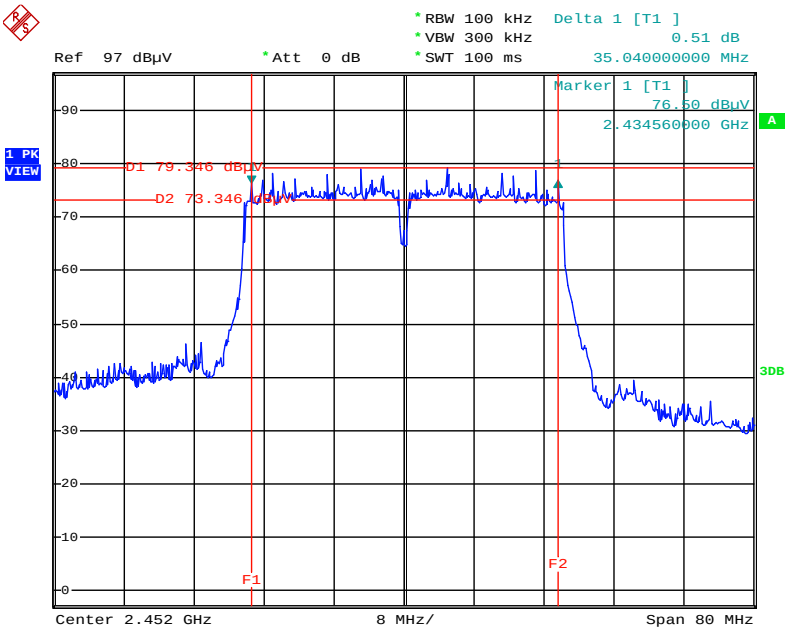
Date: 8.JUL.2015 01:28:43

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



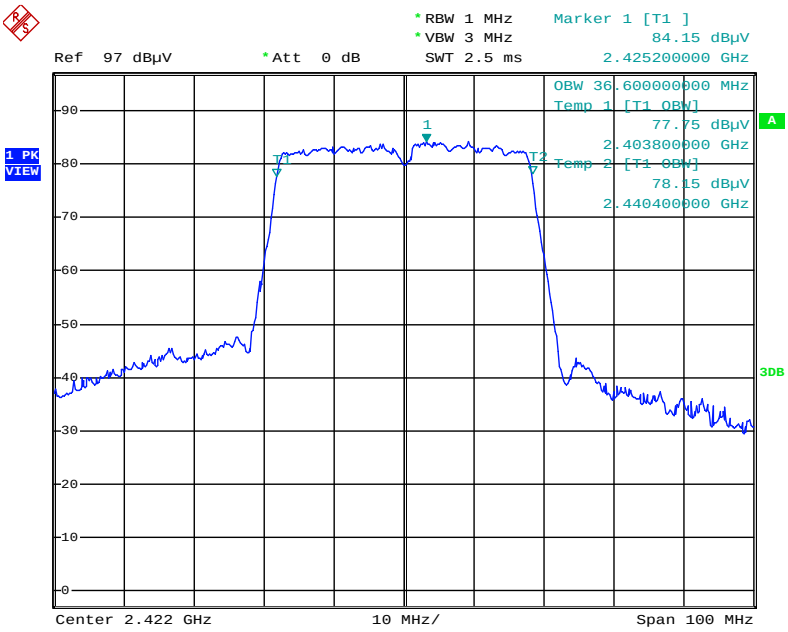
Date: 8.JUL.2015 01:15:37

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



Date: 8.JUL.2015 01:22:37

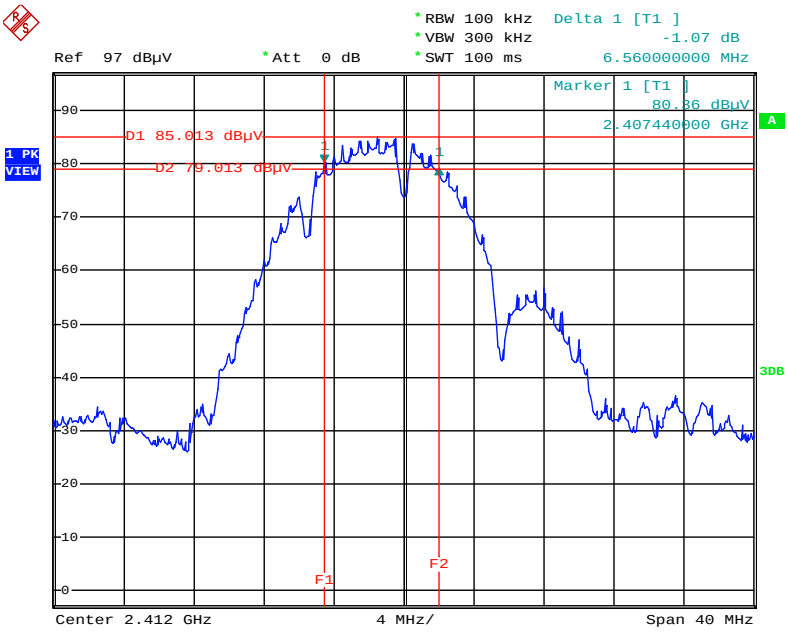
99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2422 MHz / Chain 1



Date: 8.JUL.2015 01:18:34

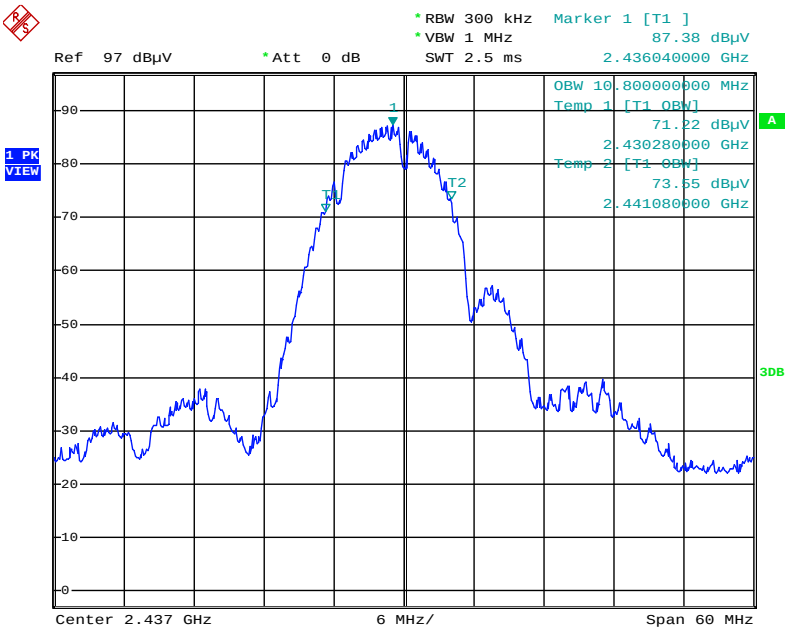
<For Radio 1 Non-beamforming Mode>: 2TX, 1S

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



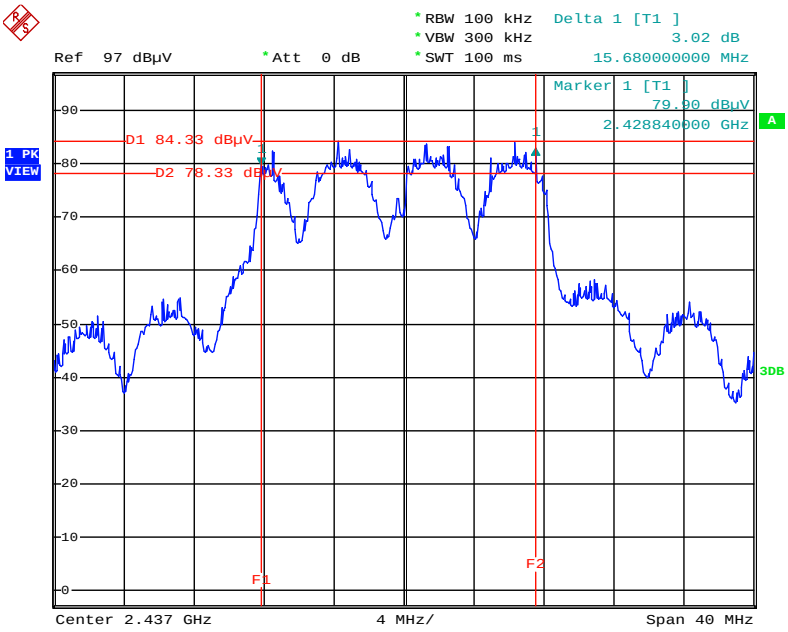
Date: 7.JUL.2015 23:43:00

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



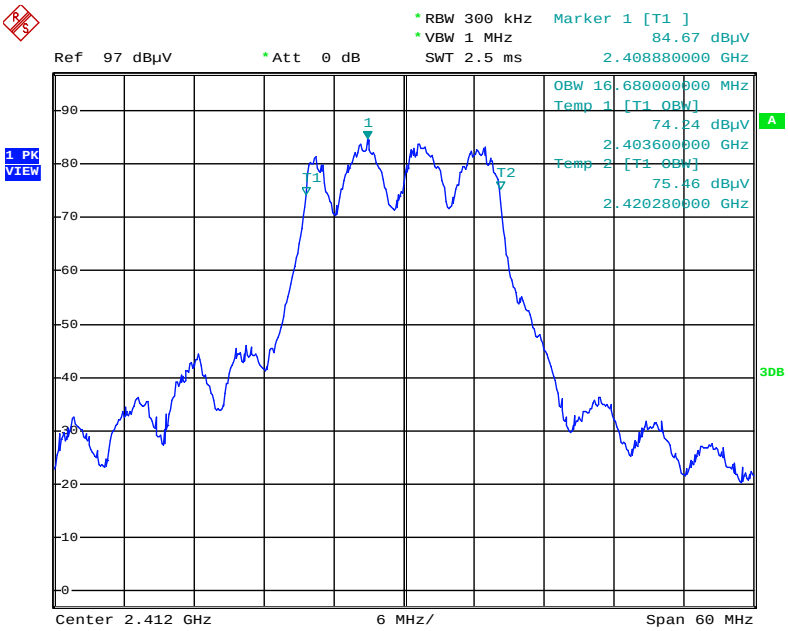
Date: 7.JUL.2015 23:09:39

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



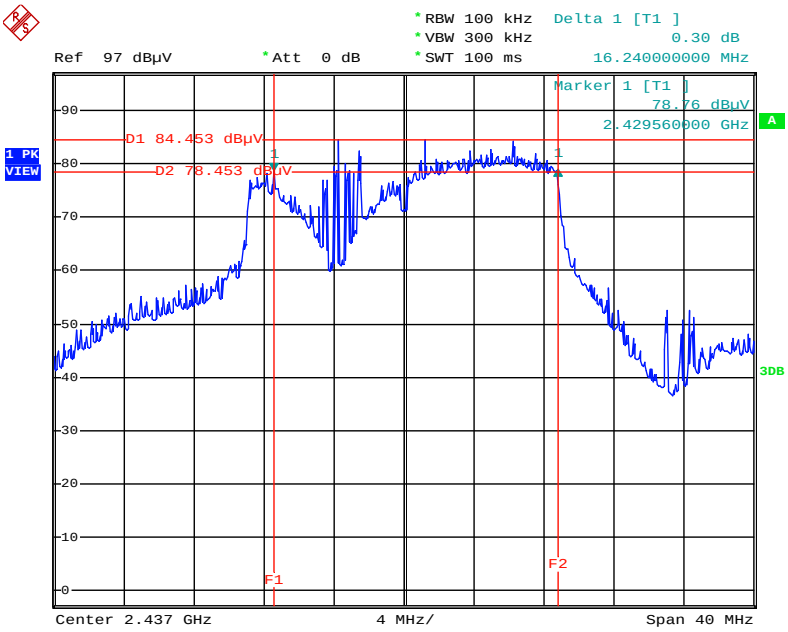
Date: 7.JUL.2015 23:39:31

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



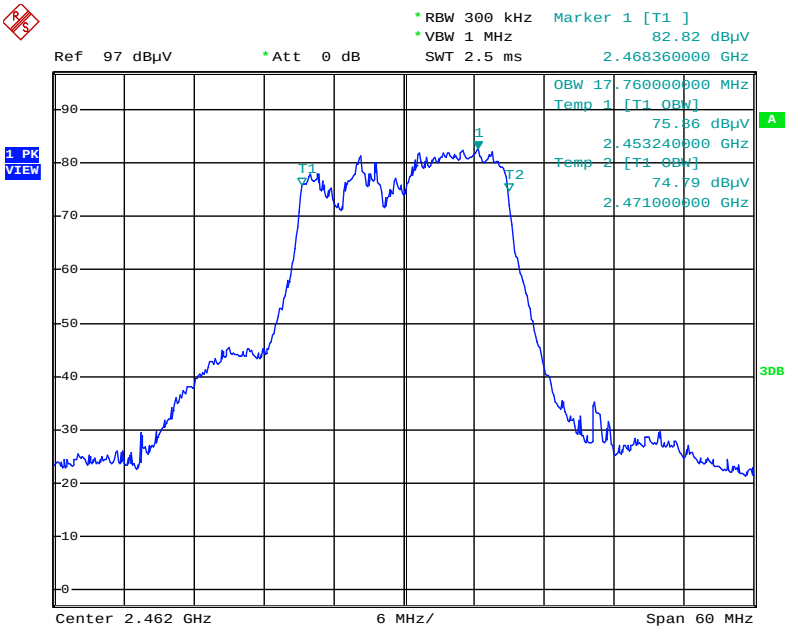
Date: 7.JUL.2015 23:16:33

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 2437 MHz / Chain 1 + Chain 2



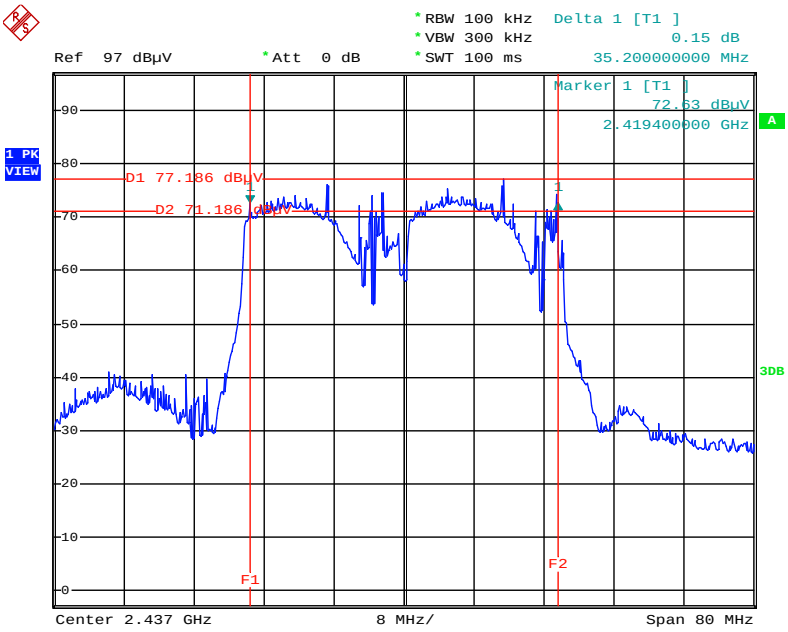
Date: 7.JUL.2015 23:35:11

99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 2462 MHz / Chain 1 + Chain 2



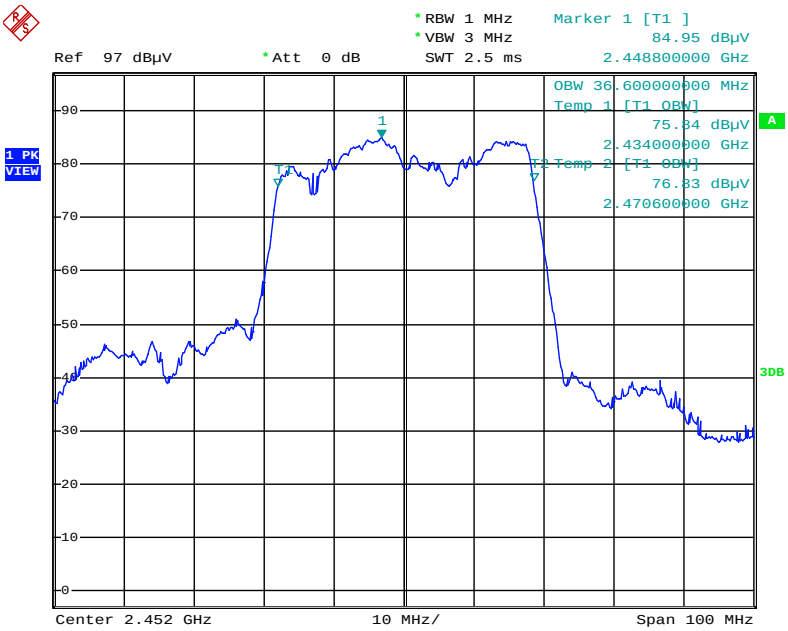
Date: 7.JUL.2015 23:20:27

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2437 MHz / Chain 1 + Chain 2



Date: 7.JUL.2015 23:29:35

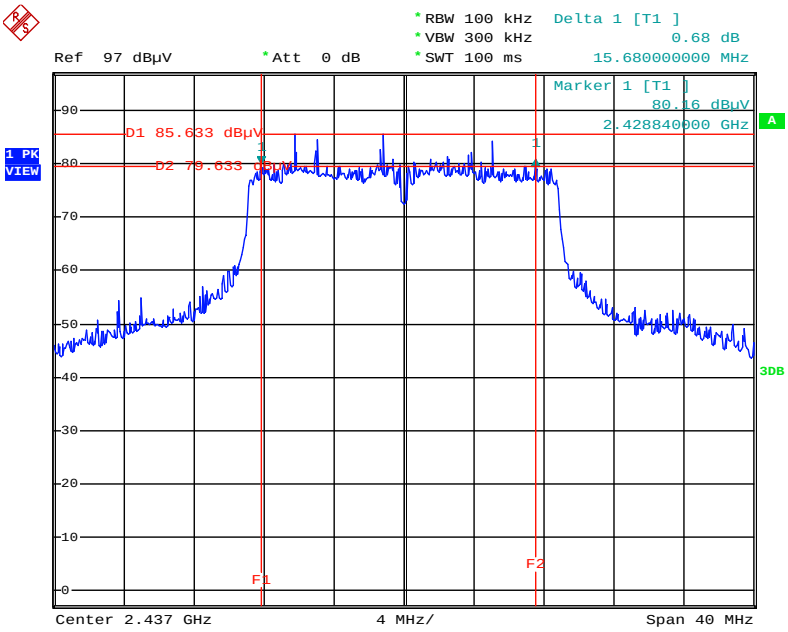
99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2452 MHz / Chain 1 + Chain 2



Date: 7.JUL.2015 23:25:16

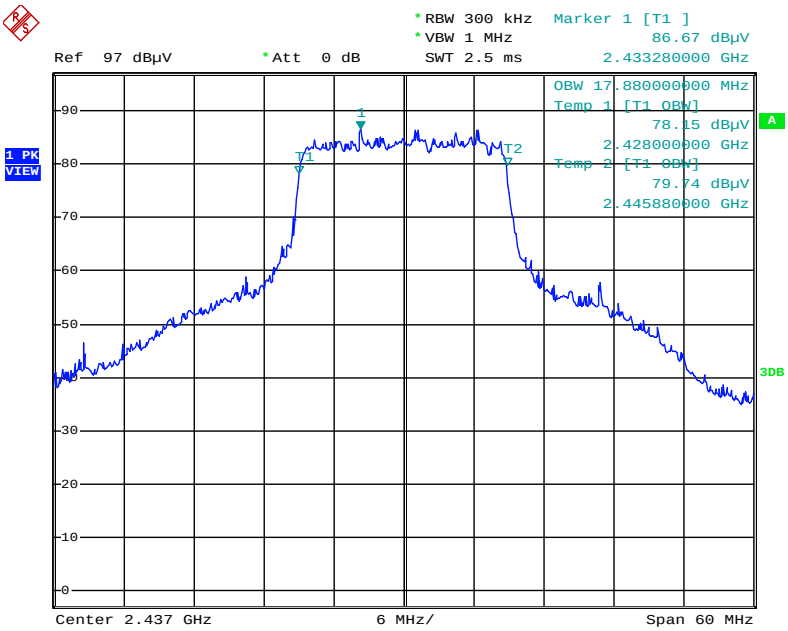
<For Radio 1 Non-beamforming Mode>: 2TX, 2S

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT20 / 2437 MHz / Chain 1 + Chain



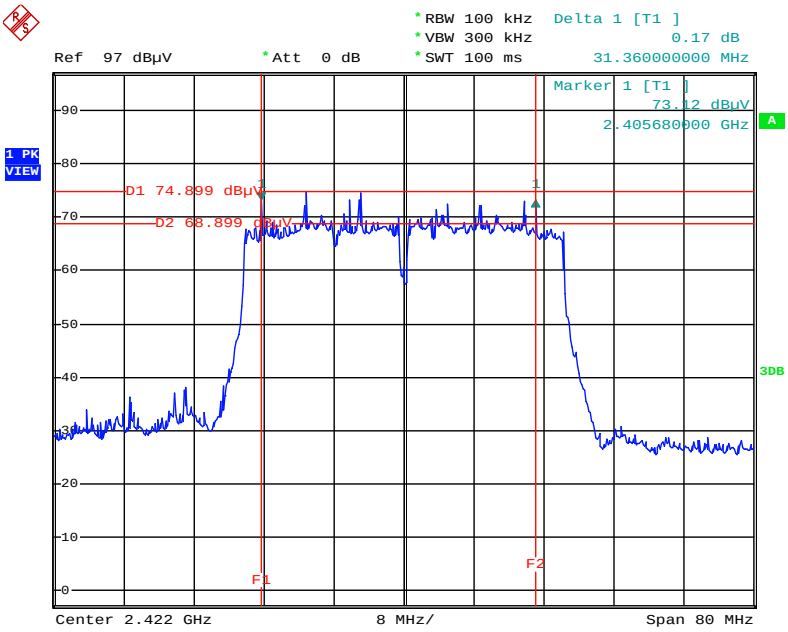
Date: 8.JUL.2015 00:46:37

99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT20 / 2437 MHz / Chain 1 + Chain 2



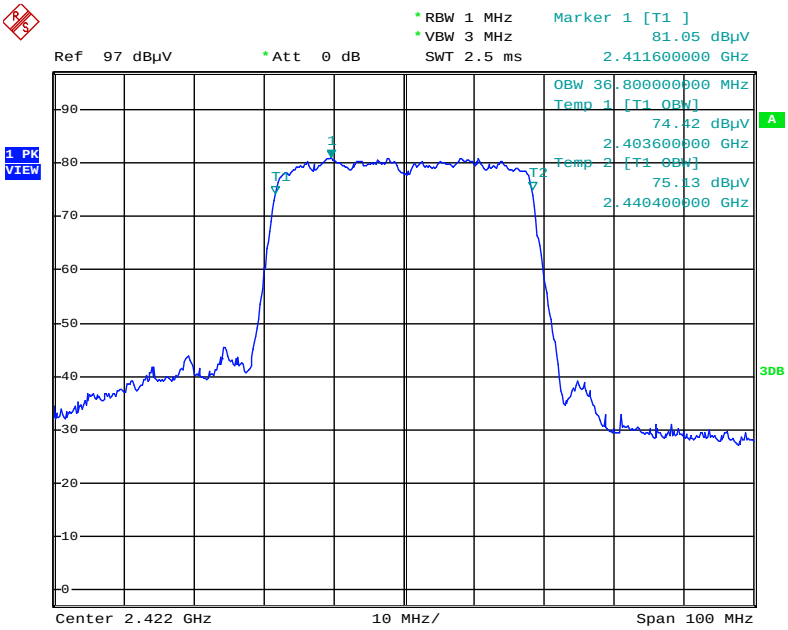
Date: 8.JUL.2015 00:58:47

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT40 / 2422 MHz / Chain 1 + Chain 2



Date: 8.JUL.2015 00:49:28

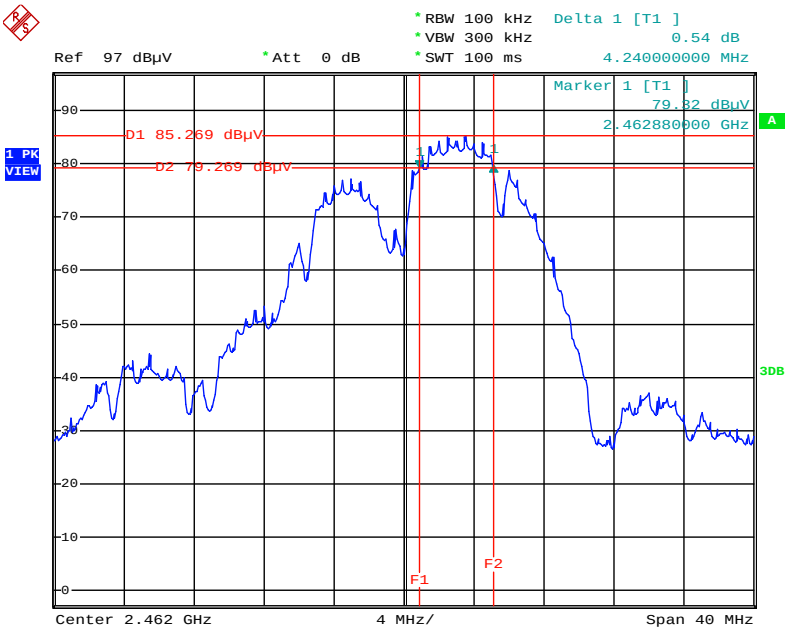
99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT40 / 2422 MHz / Chain 1 + Chain 2



Date: 8.JUL.2015 00:55:40

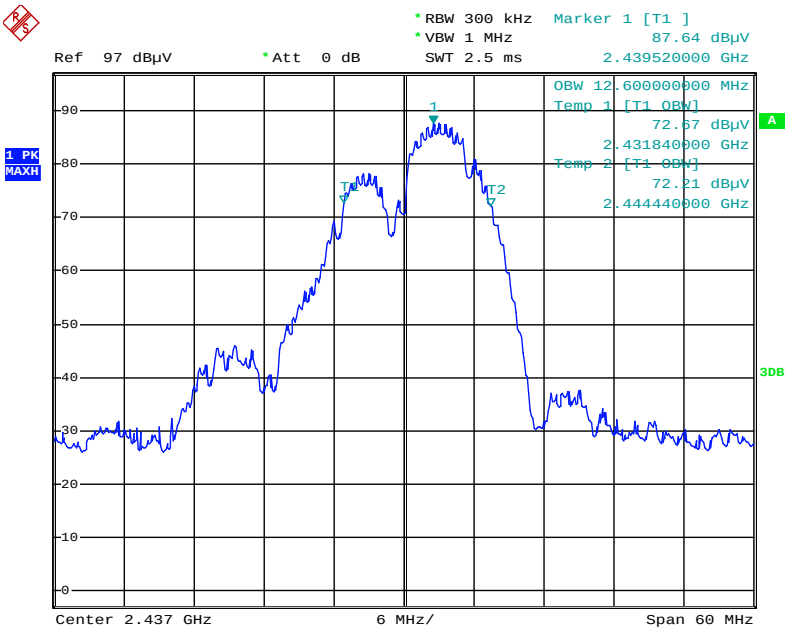
<For Radio 1 Non-beamforming Mode>: 3TX, 1S

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



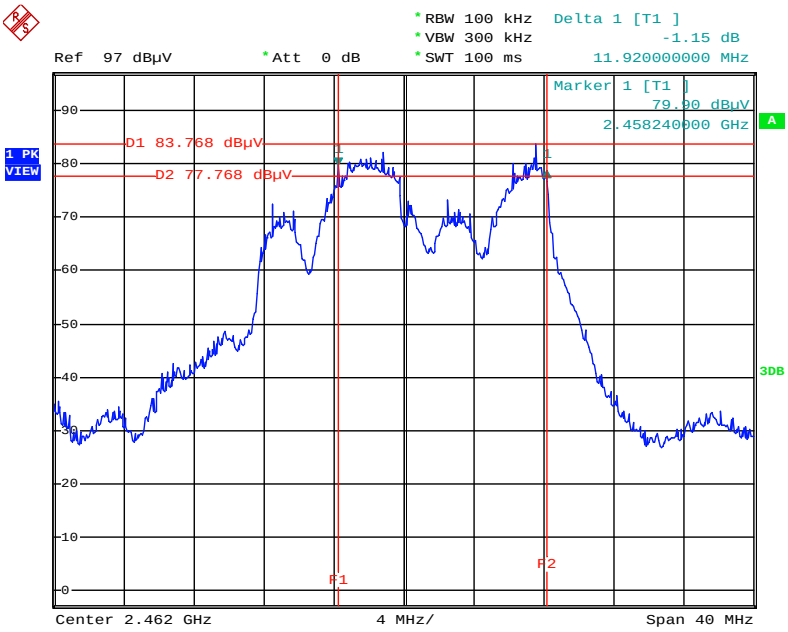
Date: 7.JUL.2015 20:41:11

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



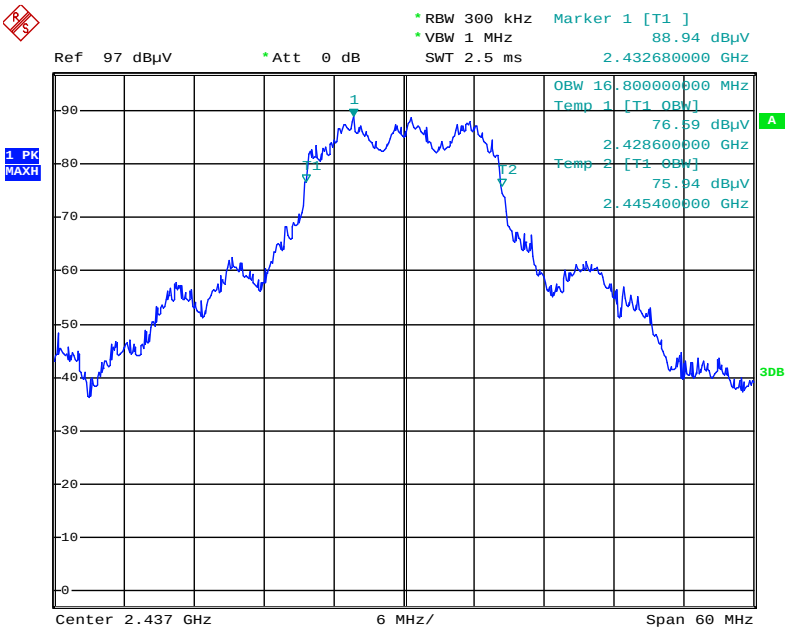
Date: 7.JUL.2015 20:50:32

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



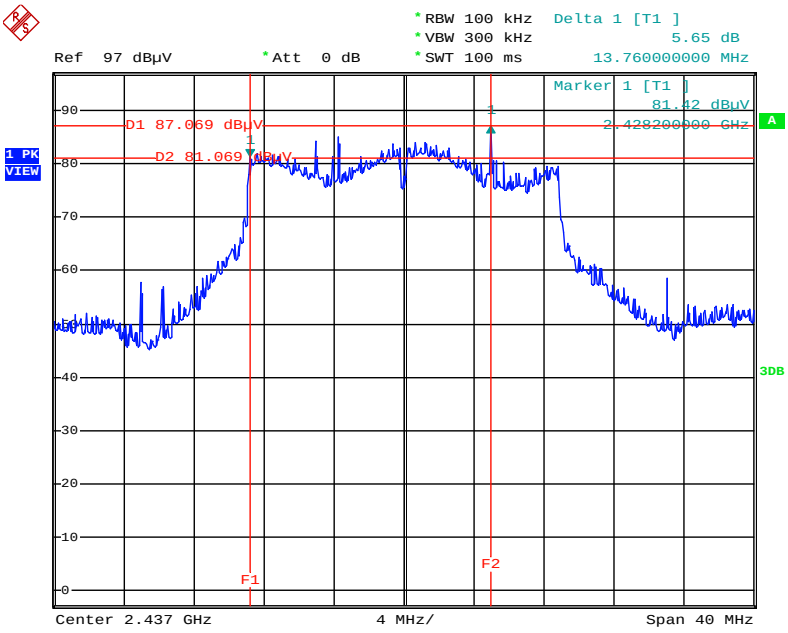
Date: 7.JUL.2015 20:43:32

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



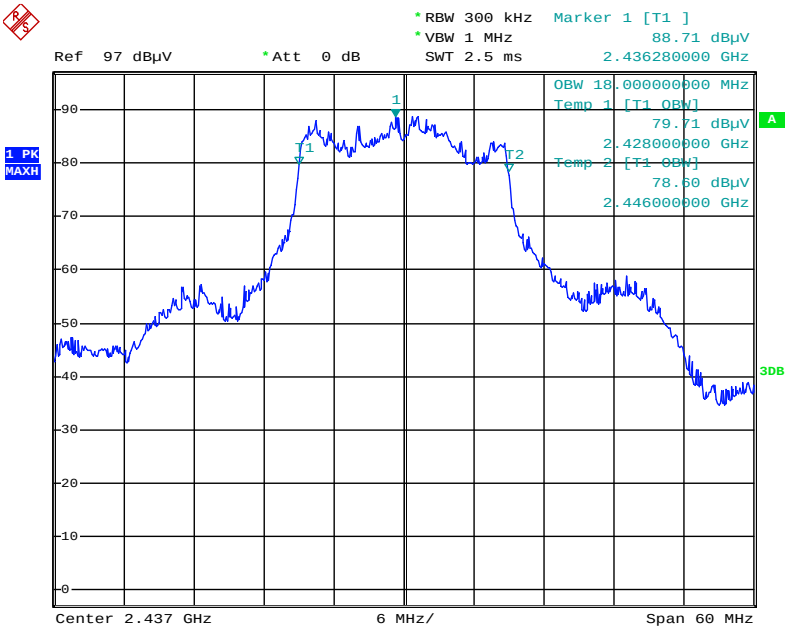
Date: 7.JUL.2015 20:55:54

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 2437 MHz / Chain 1 + Chain 2 + Chain 3



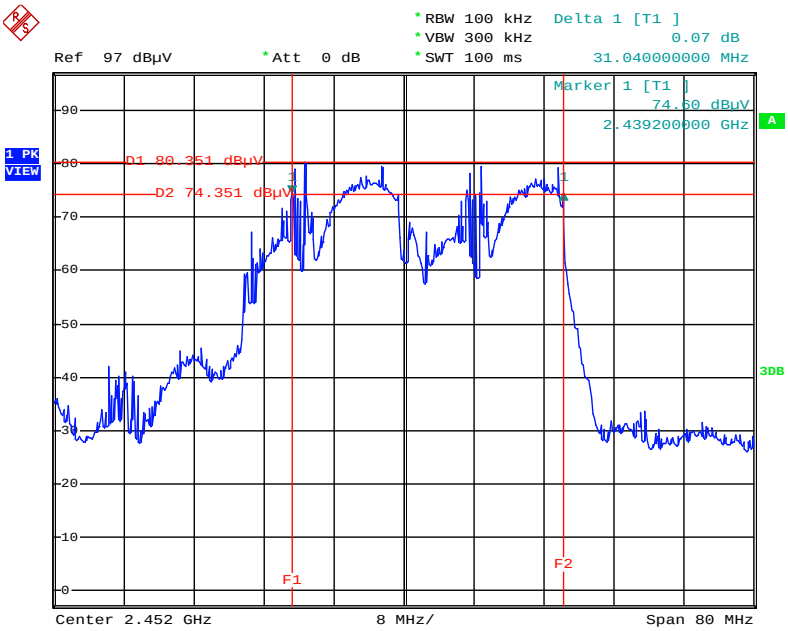
Date: 7.JUL.2015 20:44:48

99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 2437 MHz / Chain 1 + Chain 2 + Chain 3



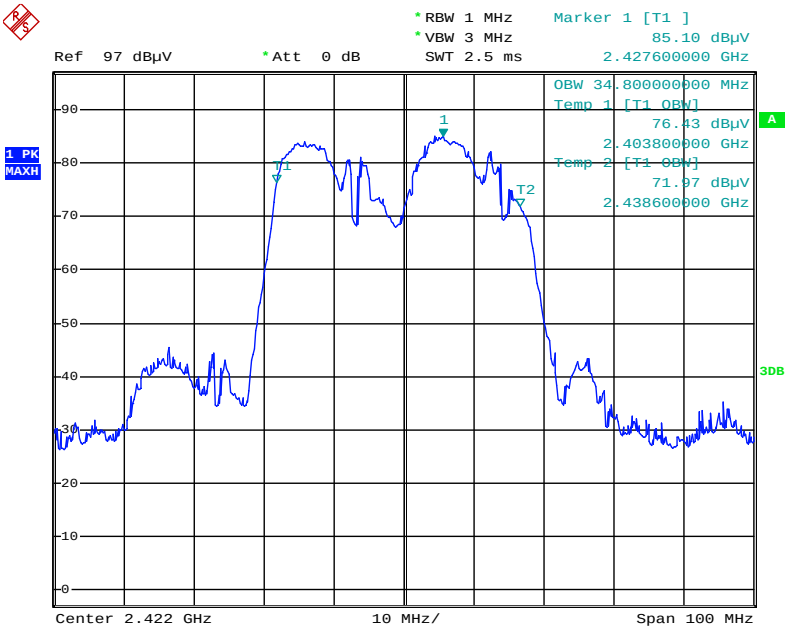
Date: 7.JUL.2015 20:57:15

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2452 MHz / Chain 1 + Chain 2 + Chain 3



Date: 7.JUL.2015 20:47:22

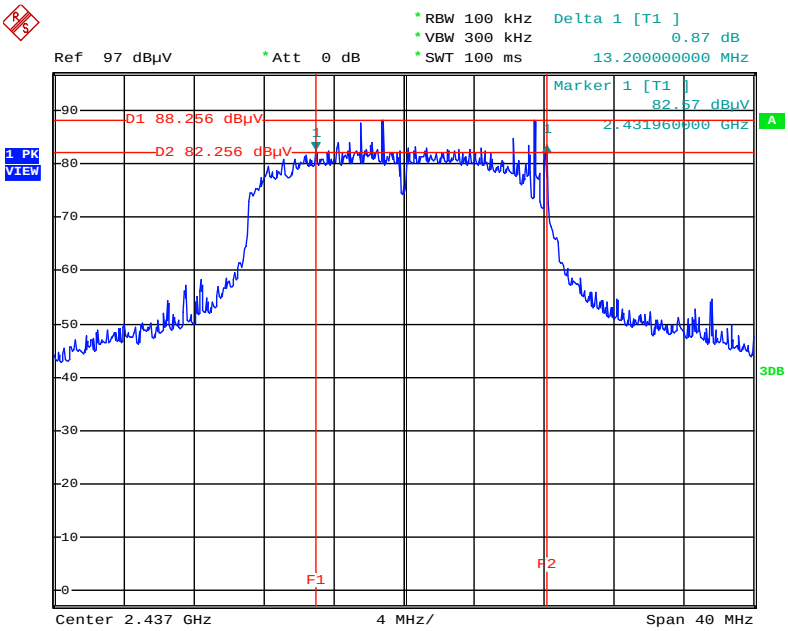
99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2422 MHz / Chain 1 + Chain 2 + Chain 3



Date: 7.JUL.2015 20:58:42

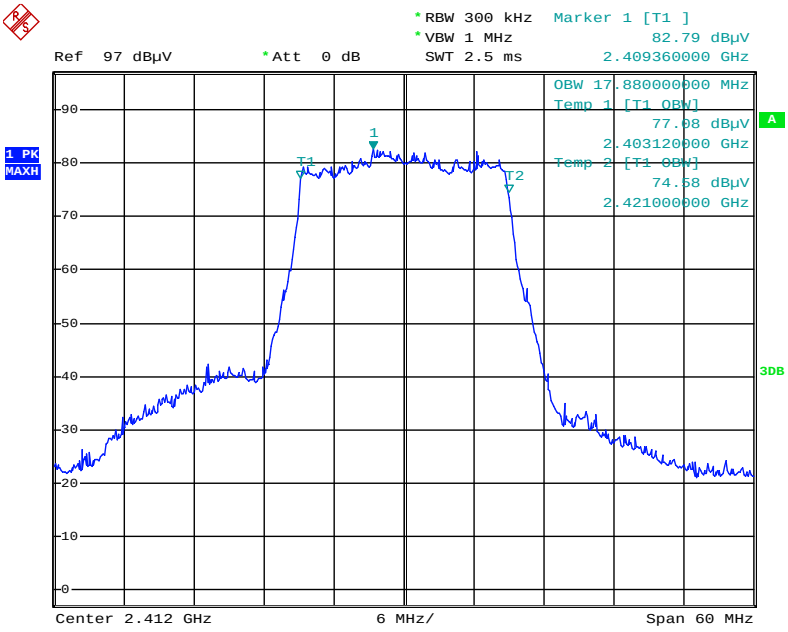
<For Radio 1 Non-beamforming Mode>: 3TX, 2S

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT20 / 2437 MHz / Chain 1 + Chain 2 + Chain 3



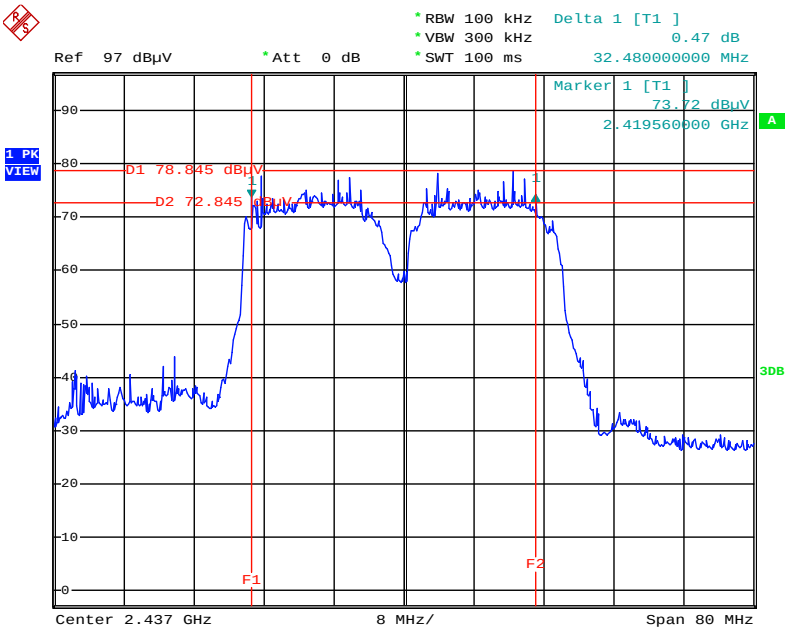
Date: 7.JUL.2015 21:27:53

99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT20 / 2412 MHz / Chain 1 + Chain 2 + Chain 3



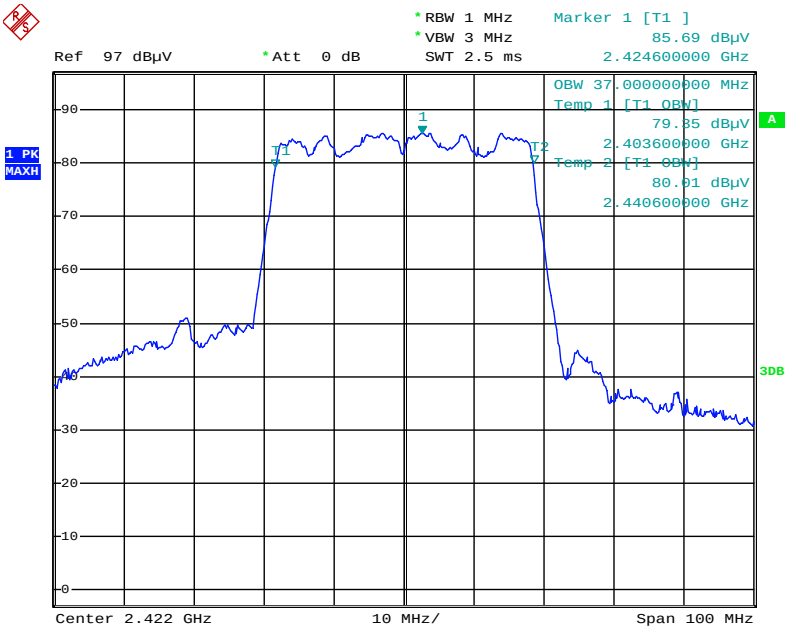
Date: 7.JUL.2015 21:34:22

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT40 / 2437 MHz / Chain 1 + Chain 2 + Chain 3



Date: 7.JUL.2015 21:30:20

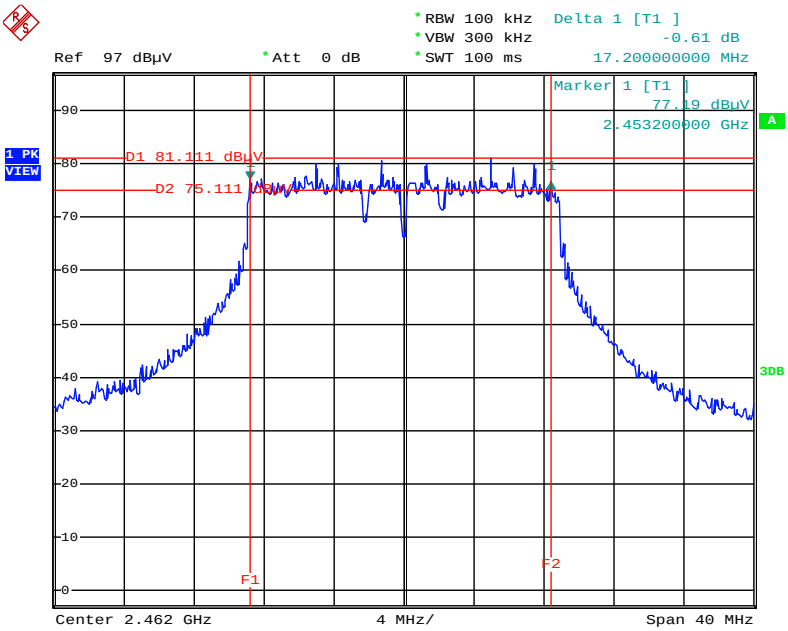
99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT40 / 2422 MHz / Chain 1 + Chain 2 + Chain 3



Date: 7.JUL.2015 21:32:40

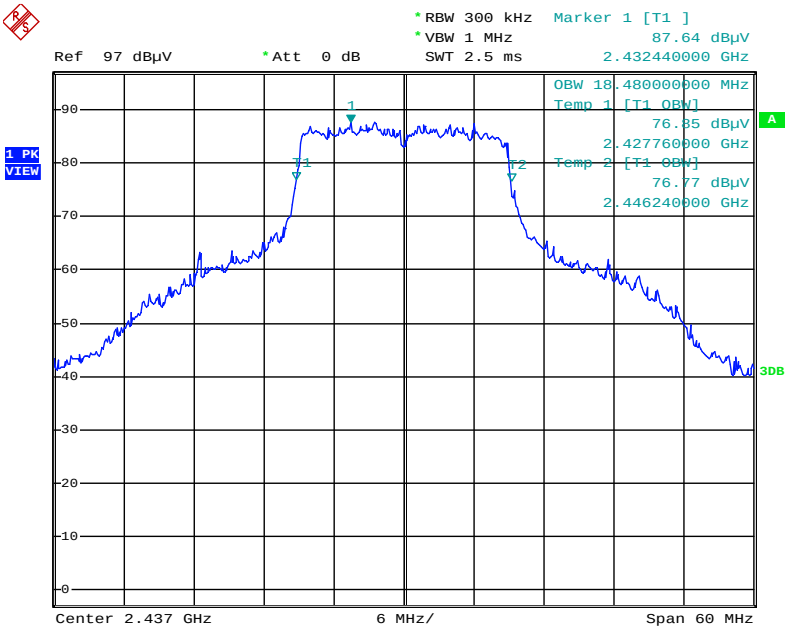
<For Radio 1 Non-beamforming Mode>: 3TX, 3S

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss3 VHT20 / 2462 MHz / Chain 1 + Chain 2 + Chain 3



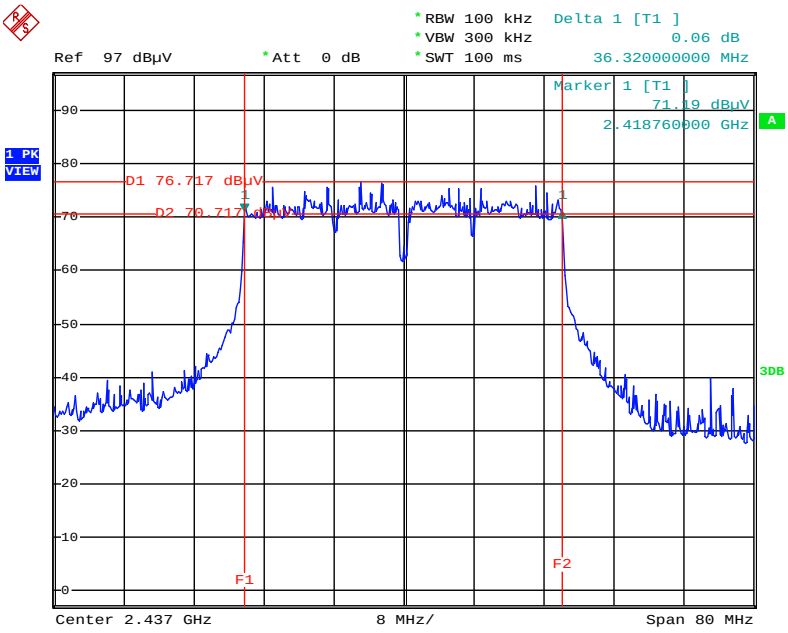
Date: 7.JUL.2015 22:44:34

99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss3 VHT20 / 2437 MHz / Chain 1 + Chain 2 + Chain 3



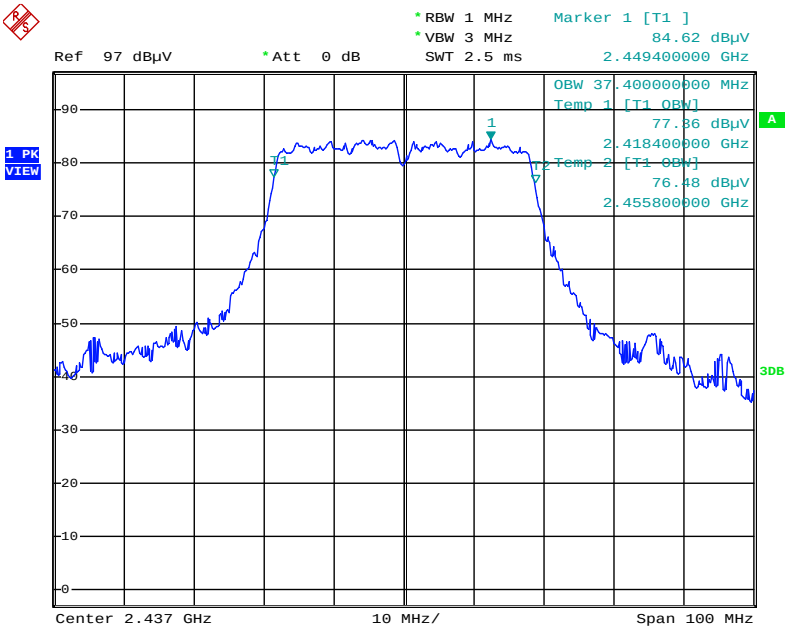
Date: 7.JUL.2015 22:51:28

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss3 VHT40 / 2437 MHz / Chain 1 + Chain 2 + Chain 3



Date: 7.JUL.2015 22:36:13

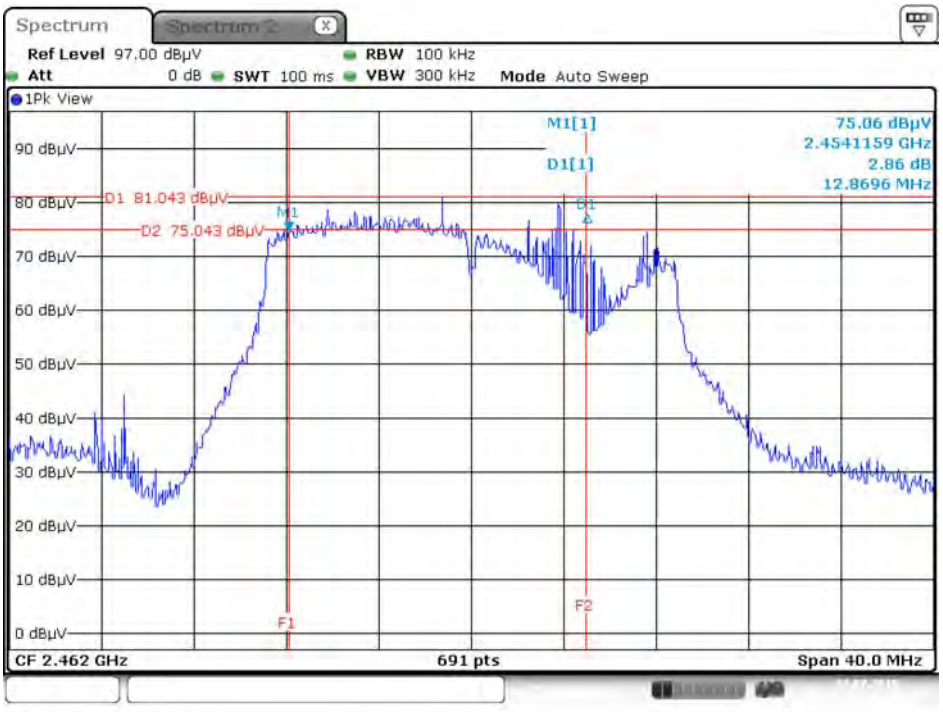
99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss3 VHT40 / 2437 MHz / Chain 1 + Chain 2 + Chain 3



Date: 7.JUL.2015 22:55:52

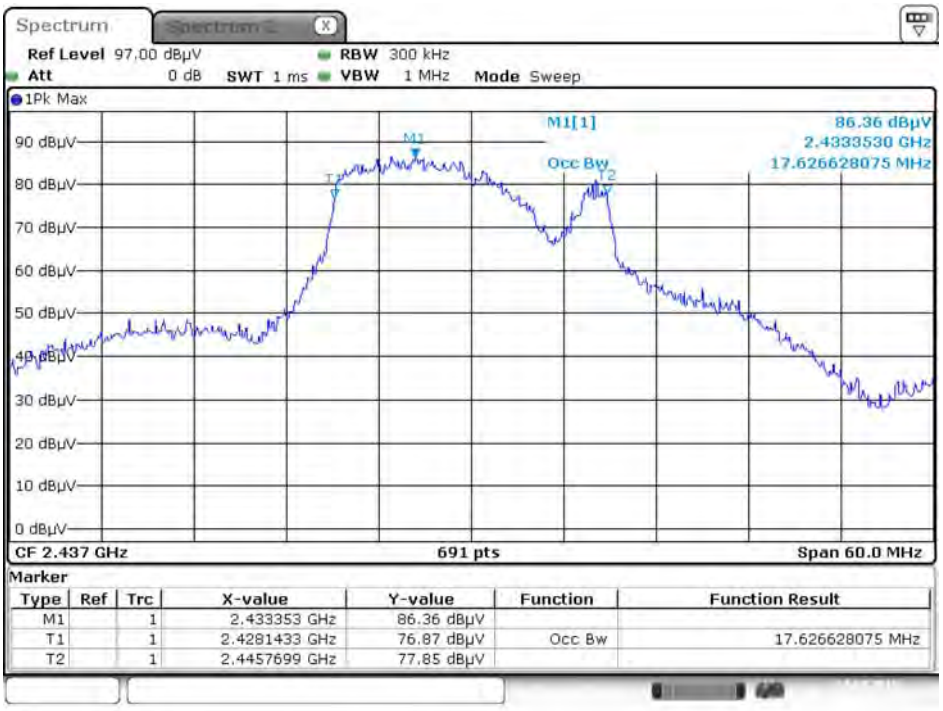
<For Radio 1 Beamforming Mode>: 2TX, 1S

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



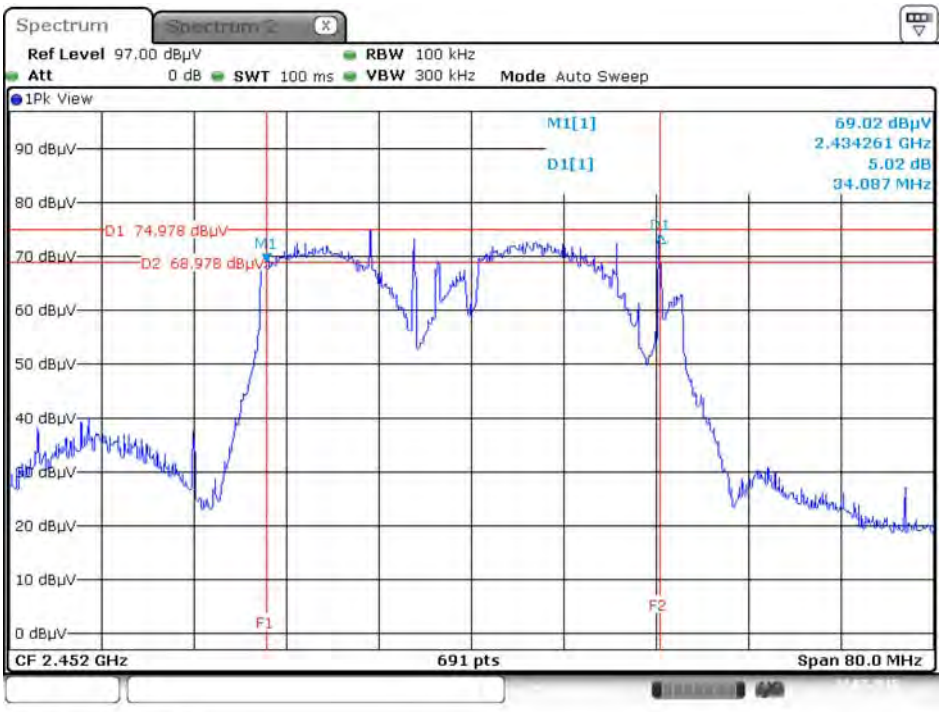
Date: 23.JUL.2015 21:45:58

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



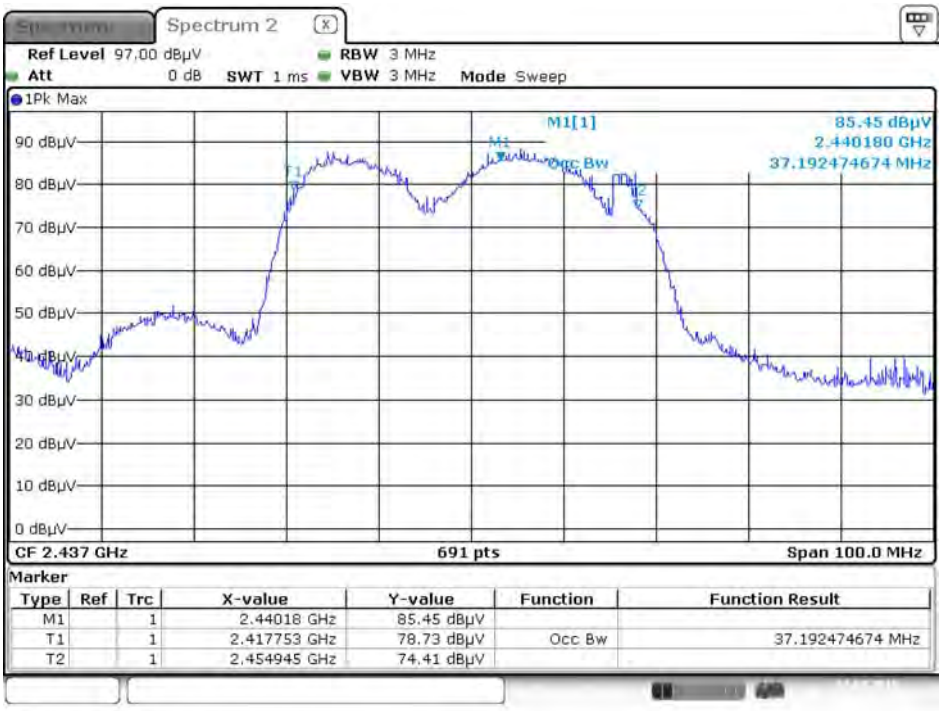
Date: 23.JUL.2015 21:31:28

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2452 MHz / Chain 1 + Chain 2



Date: 23.JUL.2015 21:39:29

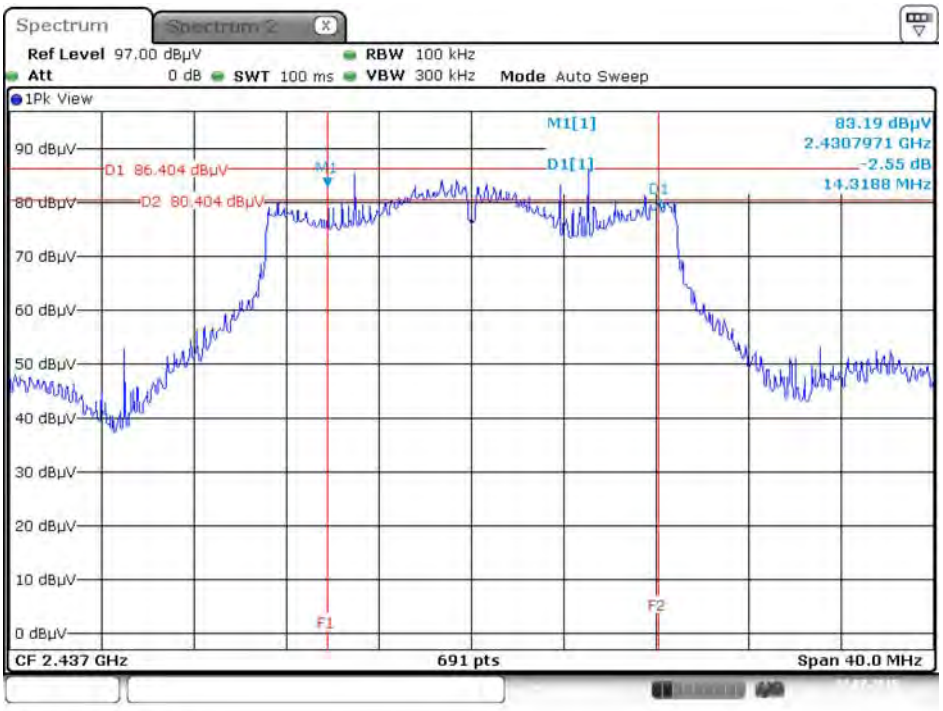
99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2437 MHz / Chain 1 + Chain 2



Date: 23.JUL.2015 21:33:35

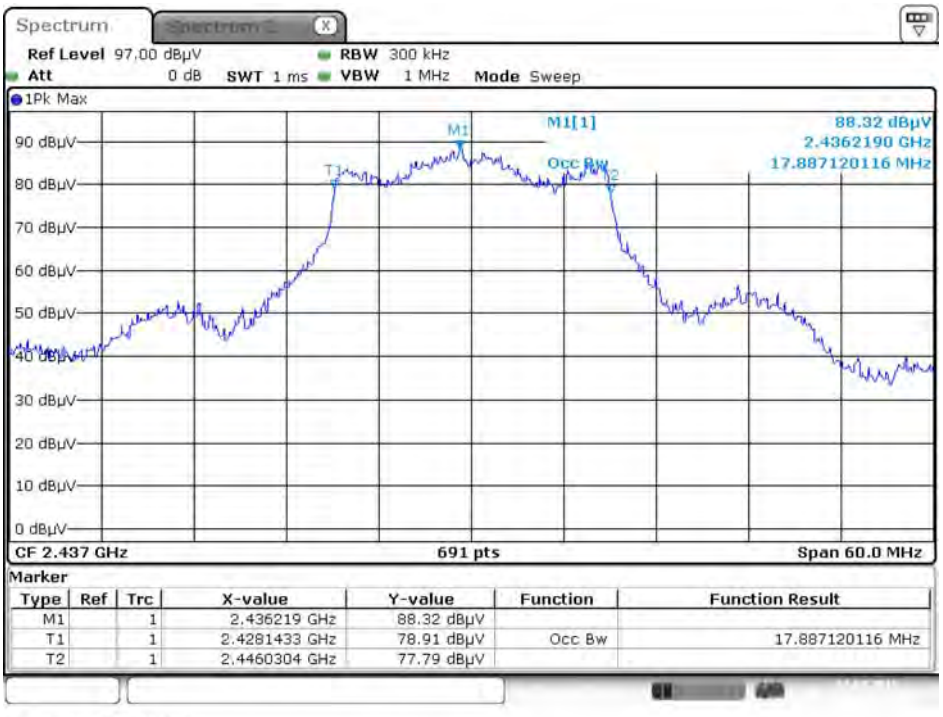
<For Radio 1 Beamforming Mode>: 3TX, 1S

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 2437 MHz / Chain 1 + Chain 2 + Chain 3



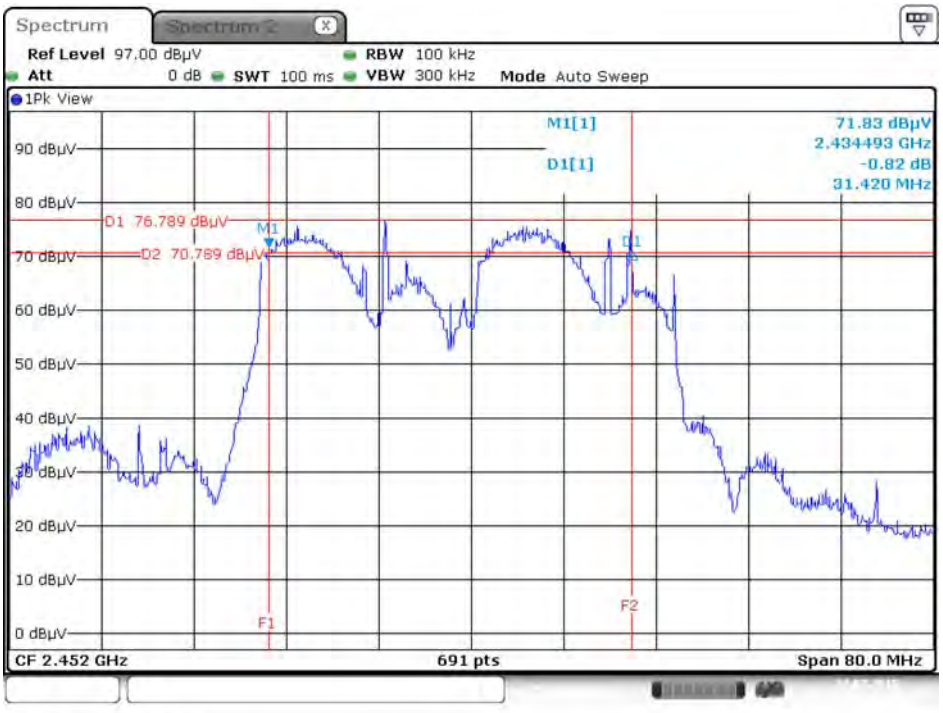
Date: 23.JUL.2015 21:49:38

99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 2437 MHz / Chain 1 + Chain 2 + Chain 3



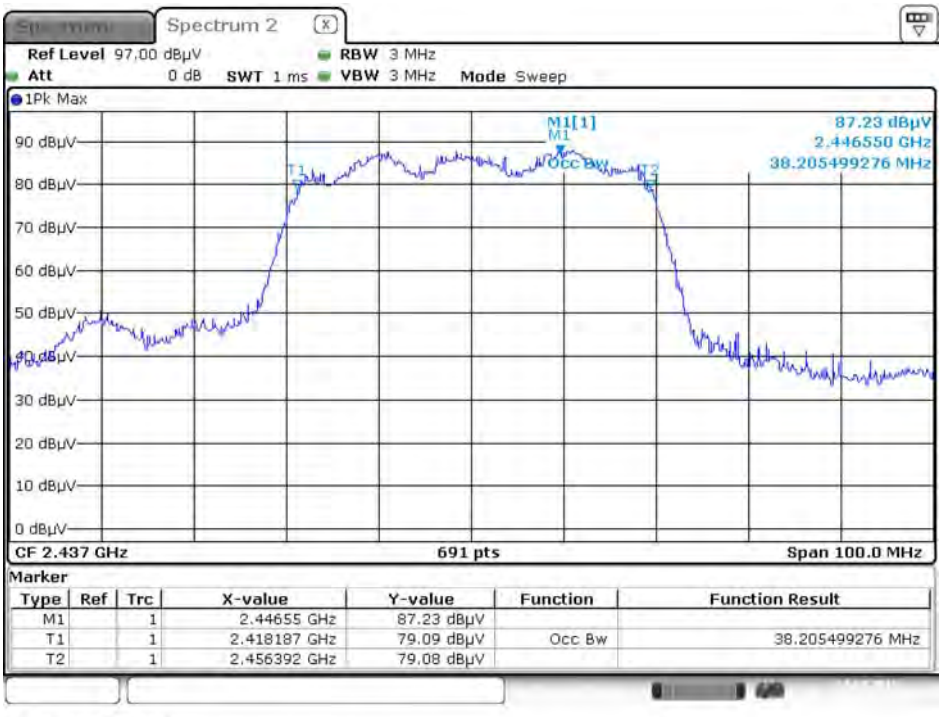
Date: 23.JUL.2015 21:23:54

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2452 MHz / Chain 1 + Chain 2 + Chain 3



Date: 23.JUL.2015 21:53:09

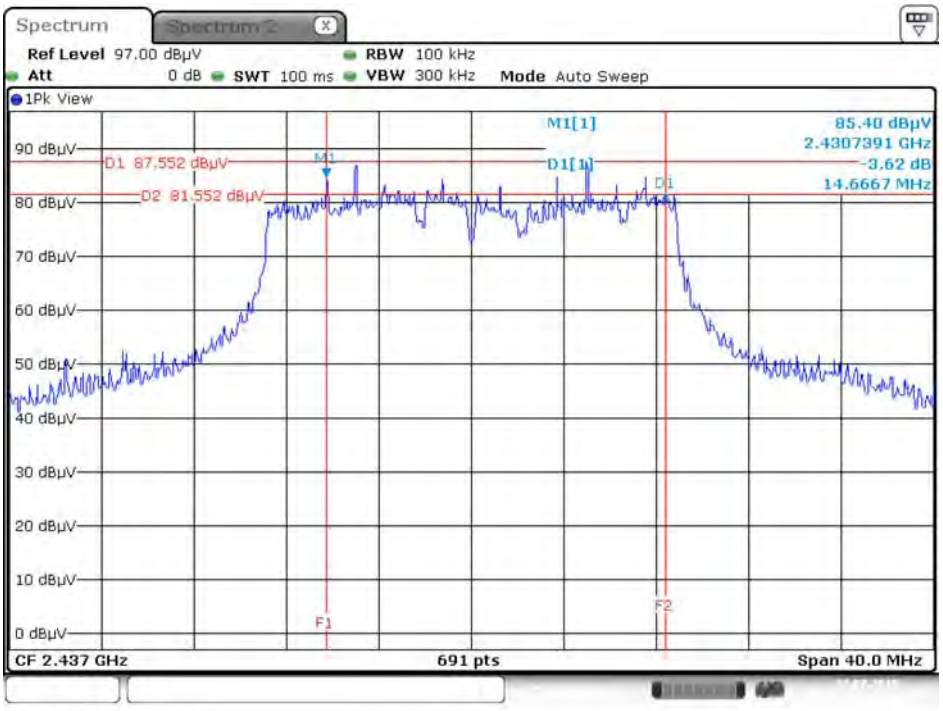
99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2437 MHz / Chain 1 + Chain 2 + Chain 3



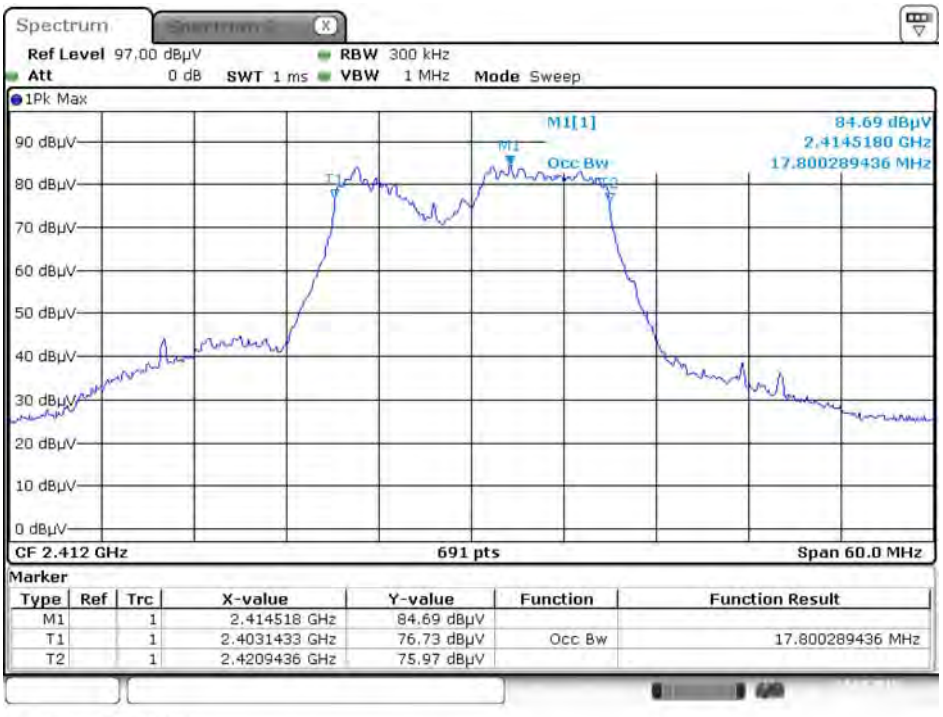
Date: 23.JUL.2015 21:27:14

<For Radio 1 Beamforming Mode>: 3TX, 2S

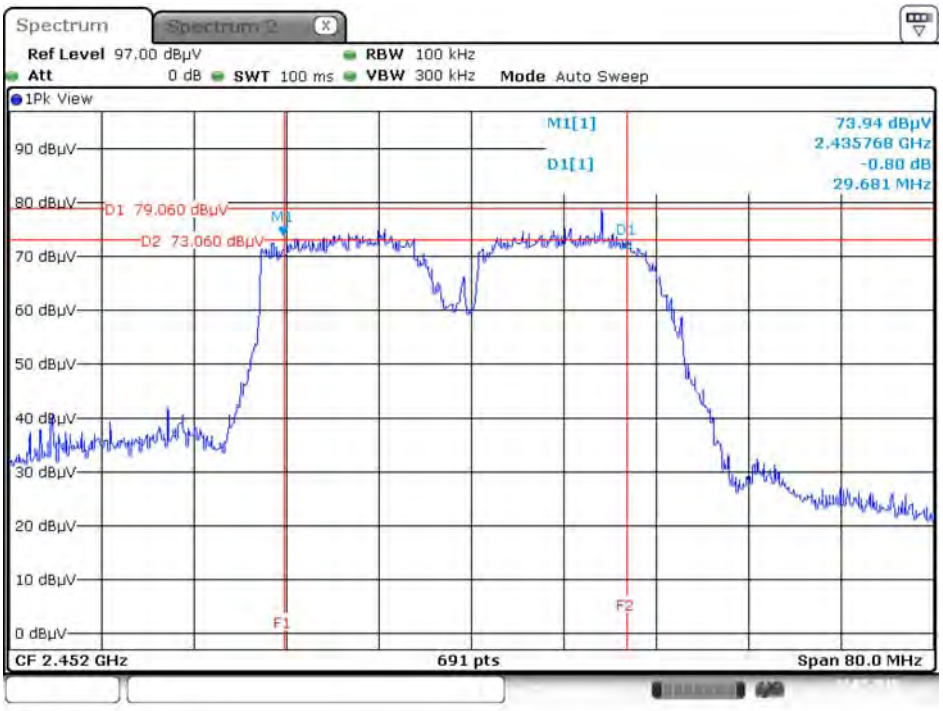
6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT20 / 2437 MHz / Chain 1 + Chain 2 + Chain 3



99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT20 / 2412 MHz / Chain 1 + Chain 2 + Chain 3

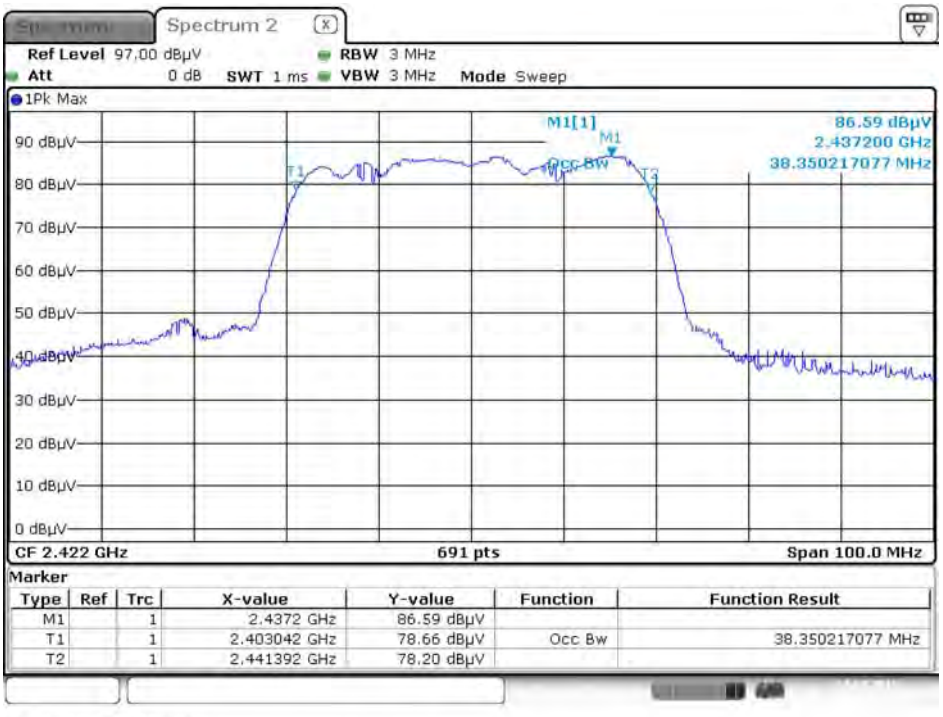


6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT40 / 2452 MHz / Chain 1 + Chain 2 + Chain 3



Date: 23.JUL.2015 22:05:04

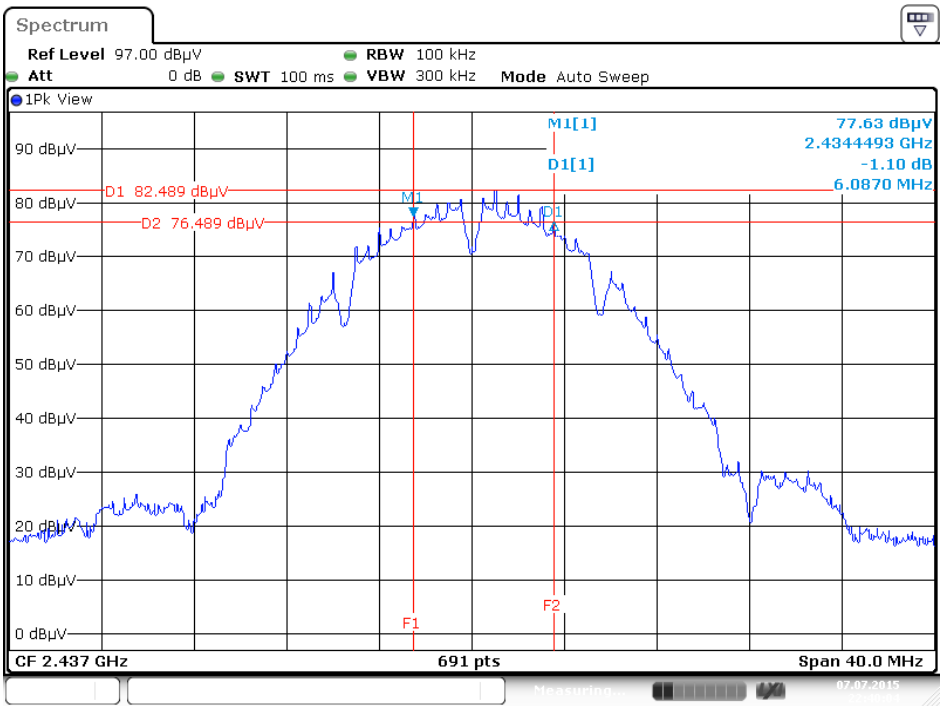
99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT40 / 2422 MHz / Chain 1 + Chain 2 + Chain 3



Date: 23.JUL.2015 21:20:58

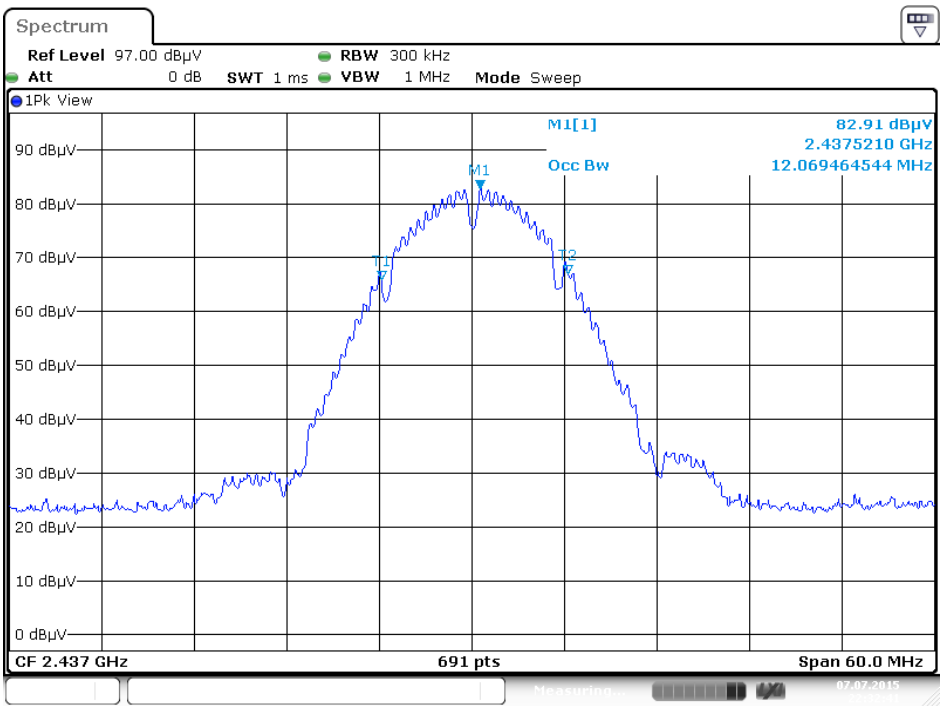
<For Radio 3>

6 dB Bandwidth Plot on Configuration IEEE 802.11b / 2437 MHz / Chain 7



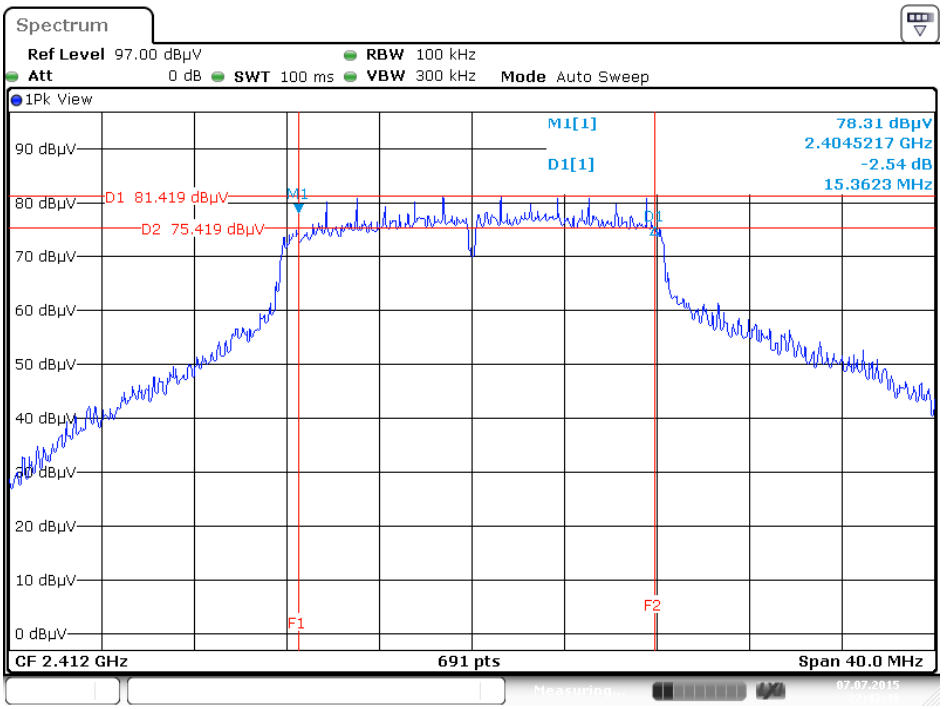
Date: 7.JUL.2015 22:40:04

99% Occupied Bandwidth Plot on Configuration IEEE 802.11b / 2437 MHz / Chain 7



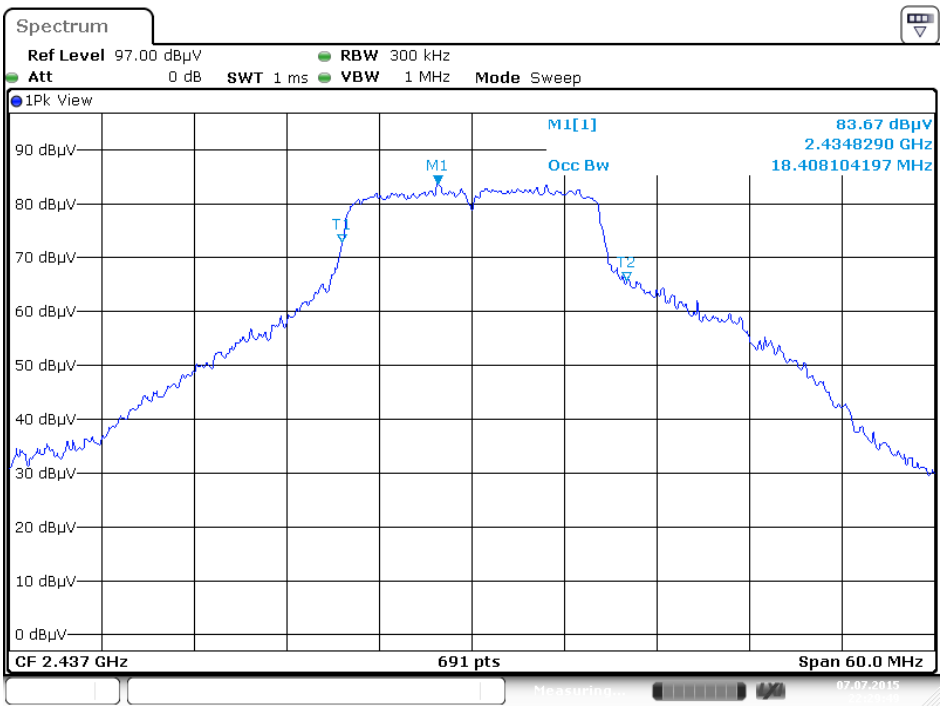
Date: 7.JUL.2015 22:32:41

6 dB Bandwidth Plot on Configuration IEEE 802.11g / 2412 MHz / Chain 7



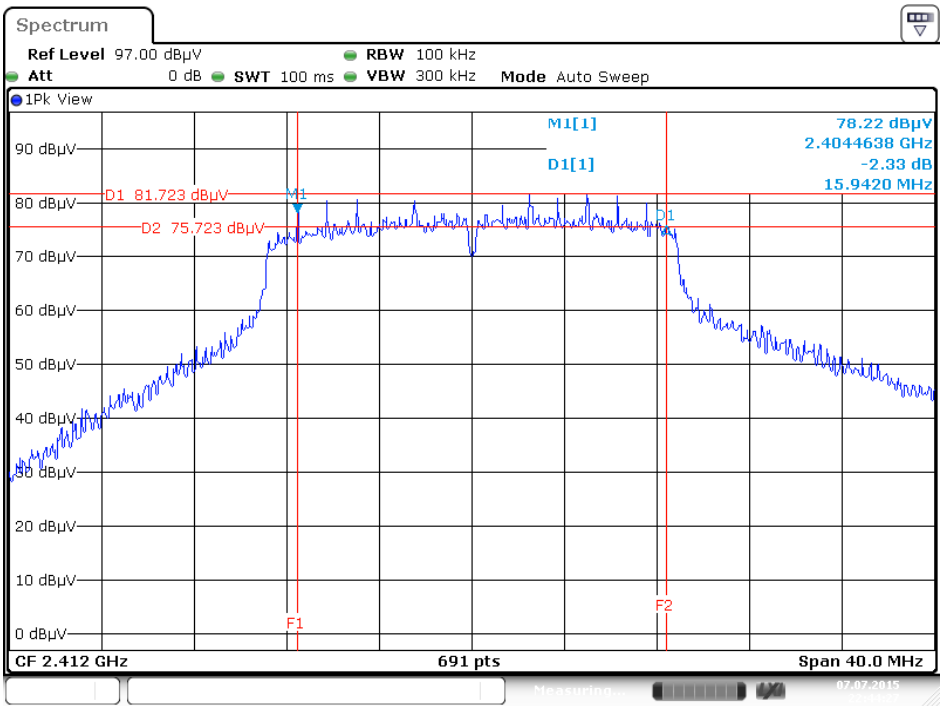
Date: 7.JUL.2015 22:43:49

99% Occupied Bandwidth Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 7



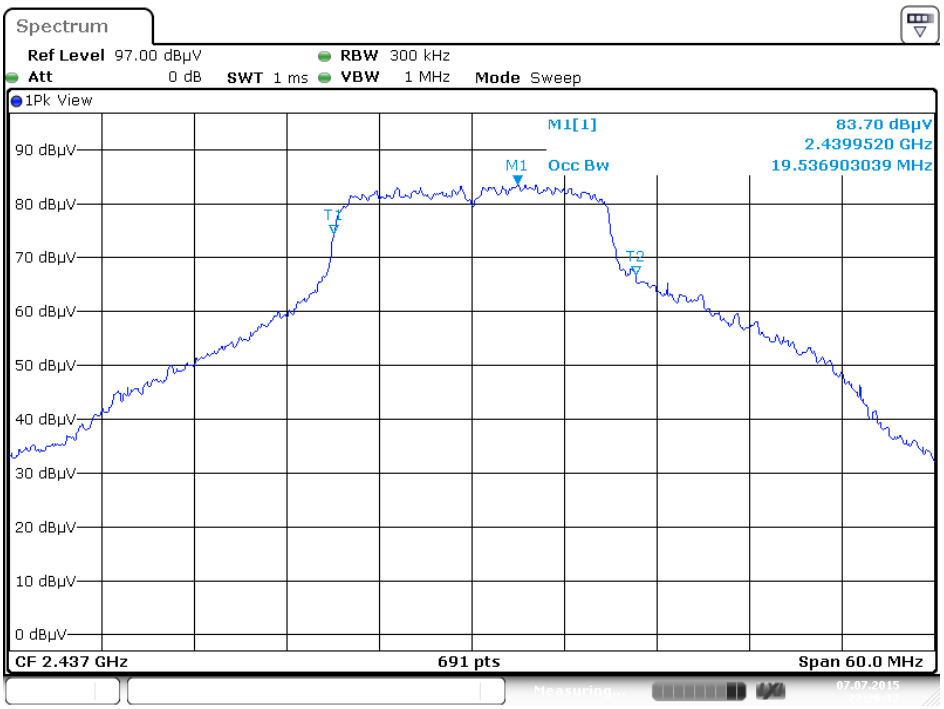
Date: 7.JUL.2015 22:29:49

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 2412 MHz / Chain 7



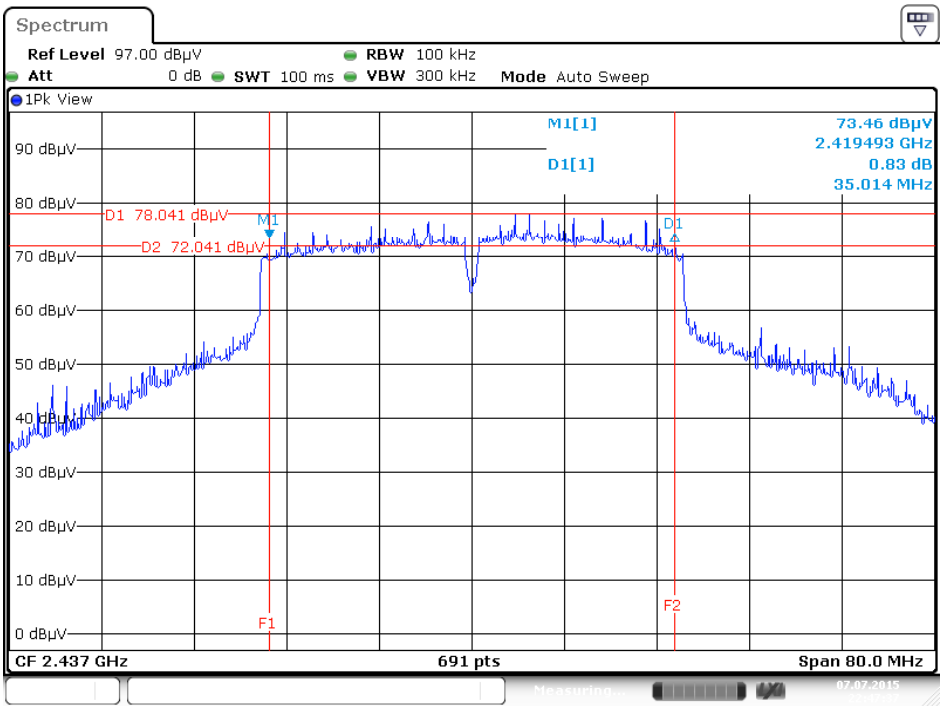
Date: 7.JUL.2015 22:44:27

99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 2437 MHz / Chain 7



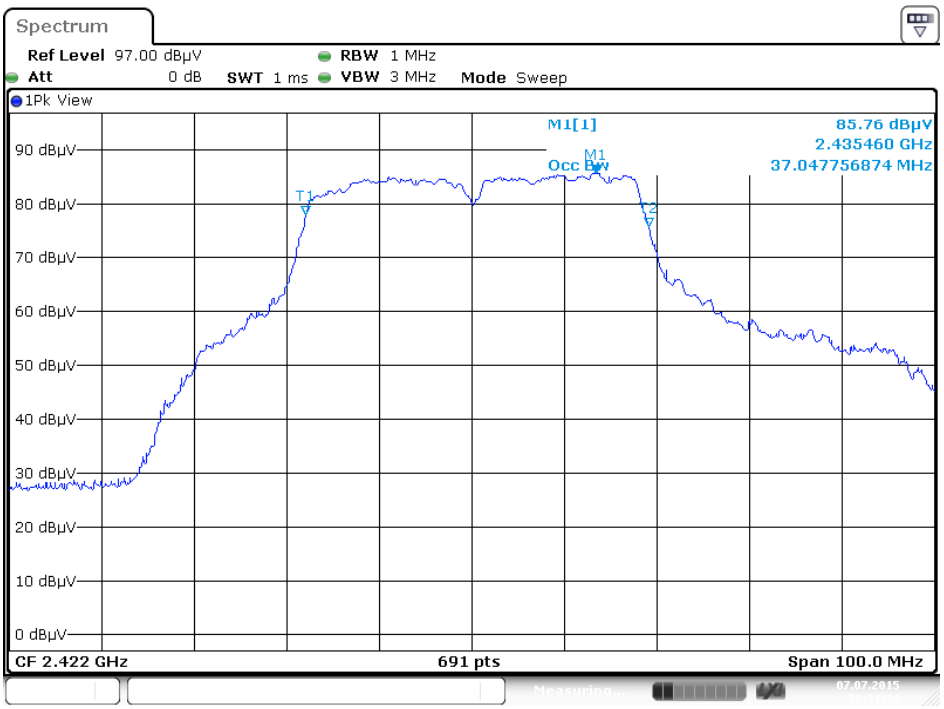
Date: 7.JUL.2015 22:26:12

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2437 MHz / Chain 7



Date: 7.JUL.2015 22:47:37

99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2422 MHz / Chain 7



Date: 7.JUL.2015 22:21:35

4.5. Radiated Emissions Measurement

4.5.1. Limit

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

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

4.5.2. Measuring Instruments and Setting

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

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

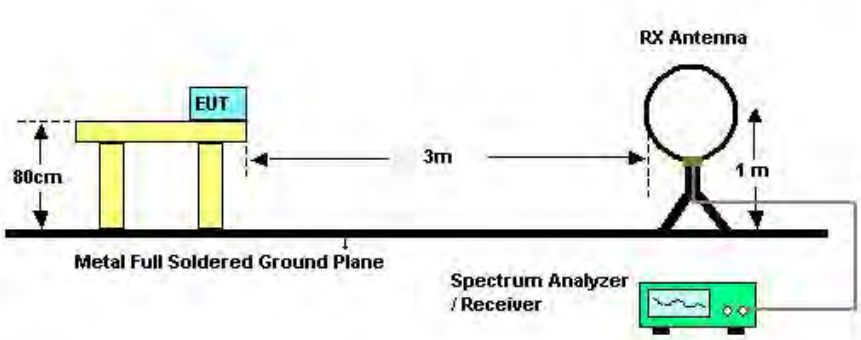
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RBW 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RBW 9kHz for QP
Start ~ Stop Frequency	30MHz~1GHz / RBW 120kHz for QP

4.5.3. Test Procedures

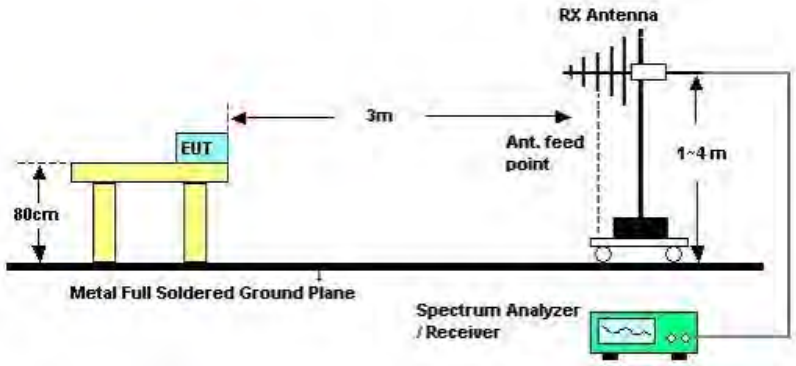
1. Configure the EUT according to ANSI C63.10. The EUT was placed on the top of the turntable 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 1m & 3m far away from the turntable.
2. Power on the EUT and all the supporting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

4.5.4. Test Setup Layout

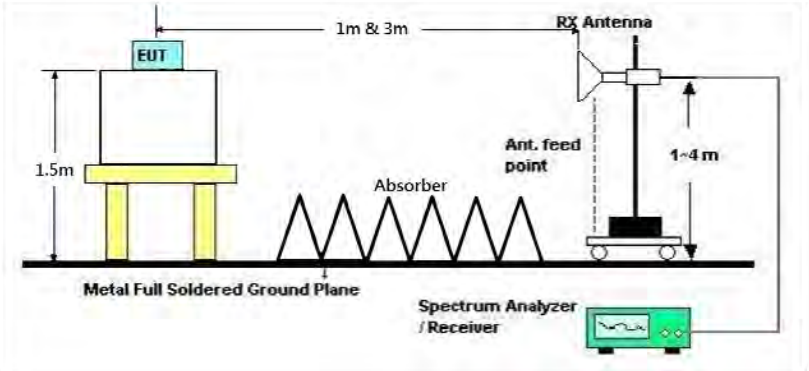
For Radiated Emissions: 9kHz ~30MHz



For Radiated Emissions: 30MHz~1GHz



For Radiated Emissions: Above 1GHz



4.5.5. Test Deviation

There is no deviation with the original standard.

4.5.6. EUT Operation during Test

For Non-beamforming mode:

The EUT was programmed to be in continuously transmitting mode.

For Beamforming mode:

The EUT was programmed to be in beamforming transmitting mode.

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

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung	Configurations	Normal Link / Mode 3
Test Date	Jul. 08, 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.

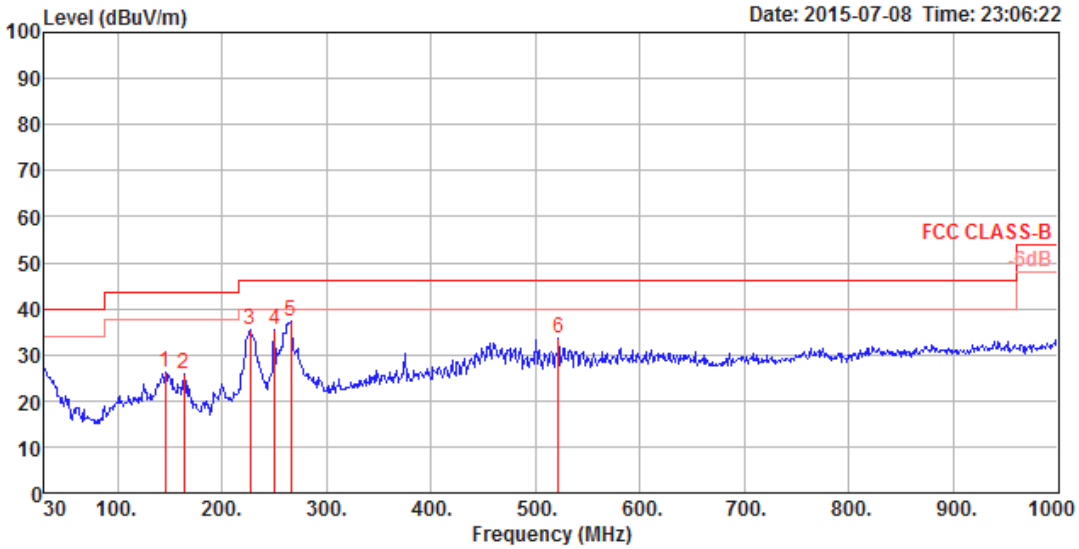
Distance extrapolation factor = 40 log (specific distance / test distance) (dB);

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

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

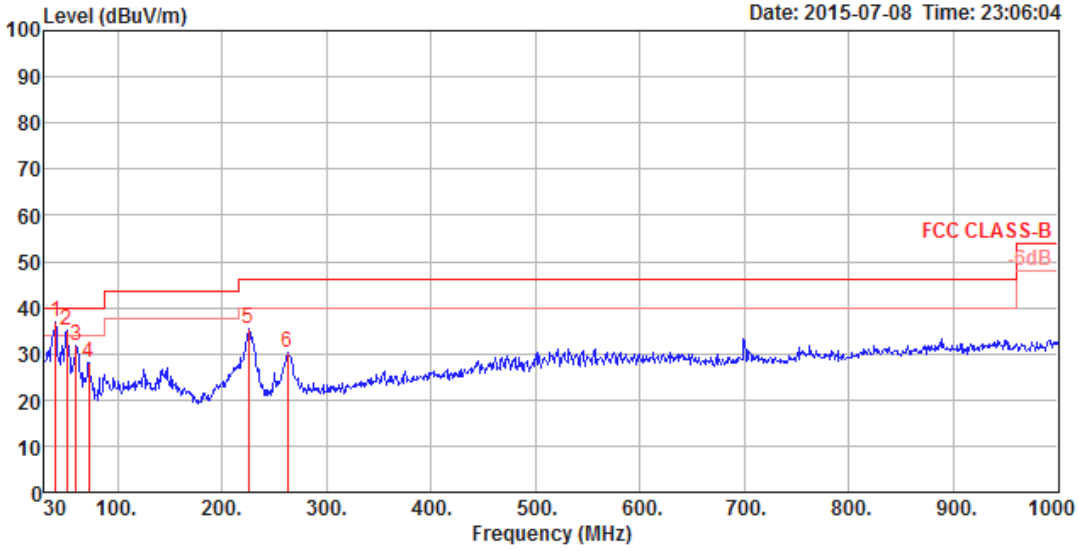
Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung	Configurations	Normal Link / Mode 3

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	145.43	26.29	43.50	-17.21	45.95	1.09	11.61	32.36	200	138	Peak	HORIZONTAL
2	163.86	25.83	43.50	-17.67	46.40	1.17	10.61	32.35	200	138	Peak	HORIZONTAL
3	226.91	35.27	46.00	-10.73	55.13	1.33	11.12	32.31	150	102	Peak	HORIZONTAL
4	250.19	35.46	46.00	-10.54	53.48	1.38	12.90	32.30	200	114	Peak	HORIZONTAL
5	265.71	37.23	46.00	-8.77	54.37	1.42	13.74	32.30	100	102	Peak	HORIZONTAL
6	521.79	33.40	46.00	-12.60	45.63	1.94	18.19	32.36	100	293	Peak	HORIZONTAL

Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	40.67	36.75	40.00	-3.25	54.80	0.67	13.69	32.41	100	239	Peak	VERTICAL
2	51.34	35.21	40.00	-4.79	58.17	0.73	8.72	32.41	125	356	Peak	VERTICAL
3	60.07	31.57	40.00	-8.43	56.30	0.77	6.90	32.40	100	343	Peak	VERTICAL
4	72.68	27.98	40.00	-12.02	52.54	0.83	7.01	32.40	125	165	Peak	VERTICAL
5	224.97	35.44	46.00	-10.56	55.42	1.32	11.02	32.32	100	83	Peak	VERTICAL
6	262.80	30.16	46.00	-15.84	47.23	1.41	13.82	32.30	200	191	Peak	VERTICAL

Note:

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

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

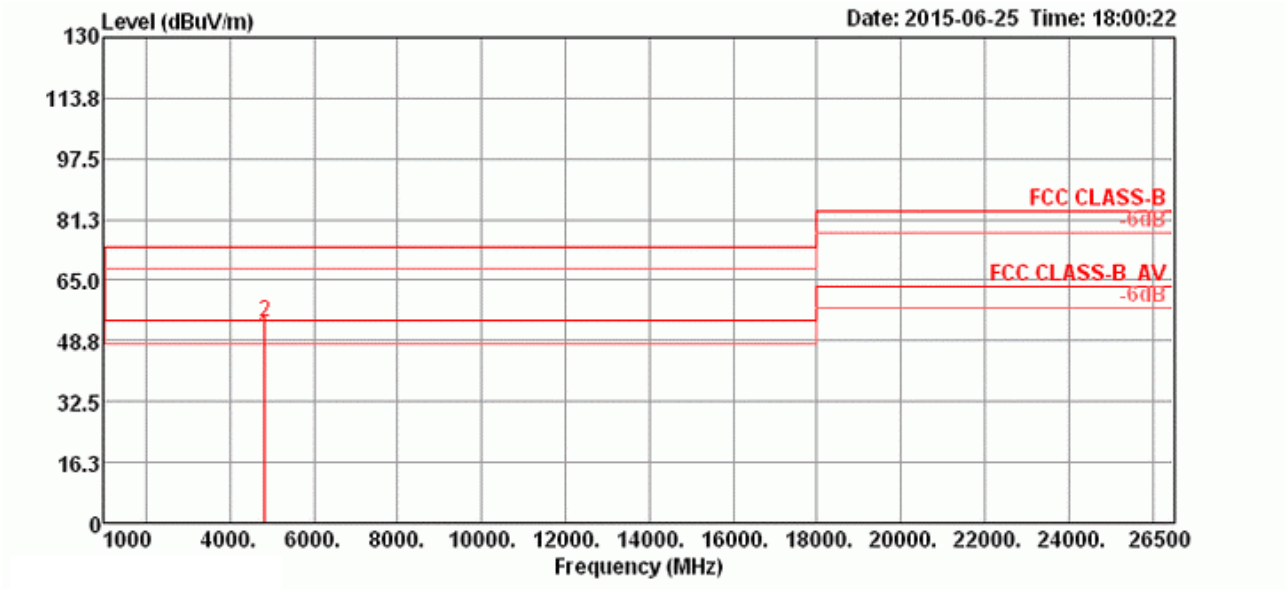
Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

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

<For Radio 1 Non-beamforming Mode>: 3TX, 1S

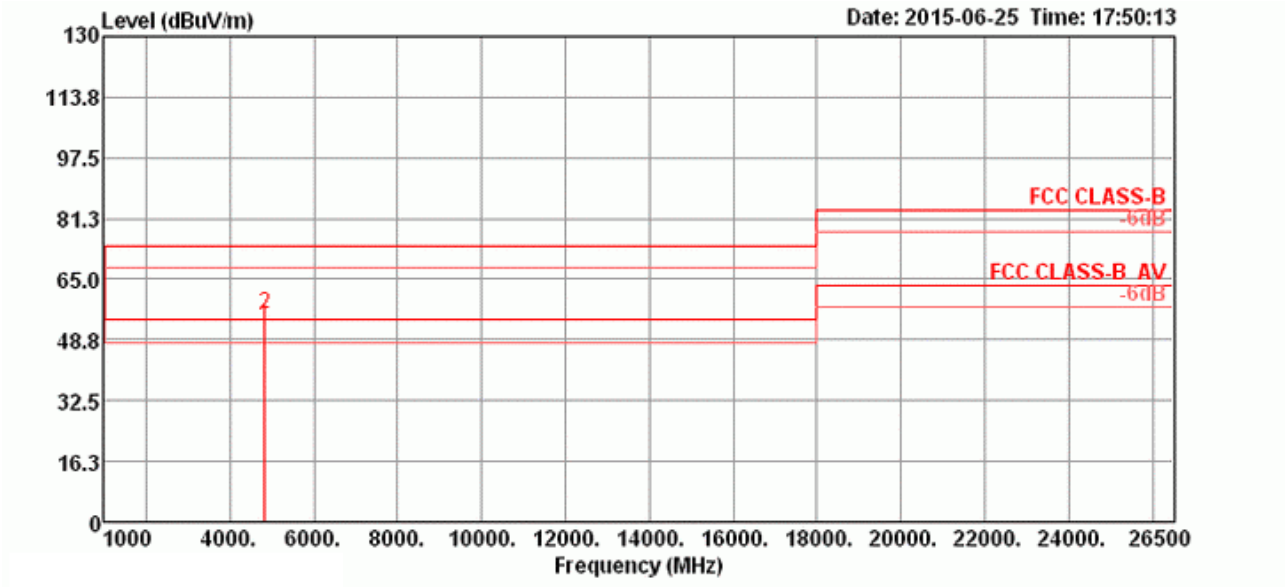
Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung	Configurations	IEEE 802.11b CH 1 / Chain 1 + Chain 2 + Chain 3

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	4823.94	49.87	54.00	-4.13	43.72	6.11	33.12	33.08	Average	107	201	HORIZONTAL
2	4823.96	53.90	74.00	-20.10	47.75	6.11	33.12	33.08	Peak	107	201	HORIZONTAL

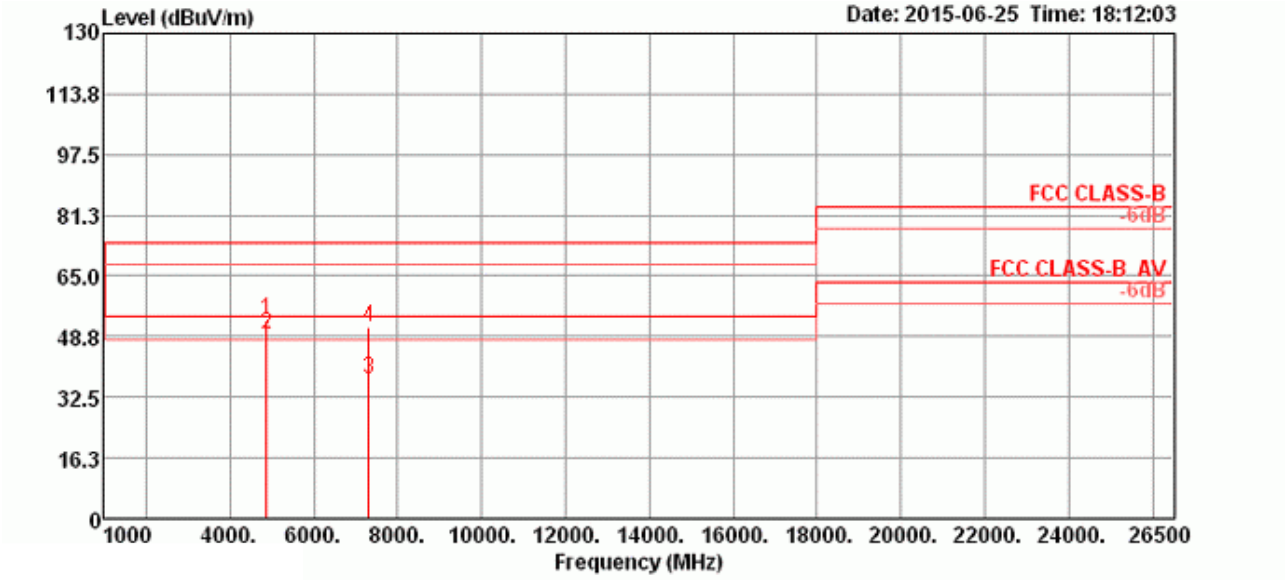
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4823.93	52.15	54.00	-1.85	46.00	6.11	33.12	33.08	Average	112	336	VERTICAL
2	4823.97	55.44	74.00	-18.56	49.29	6.11	33.12	33.08	Peak	112	336	VERTICAL

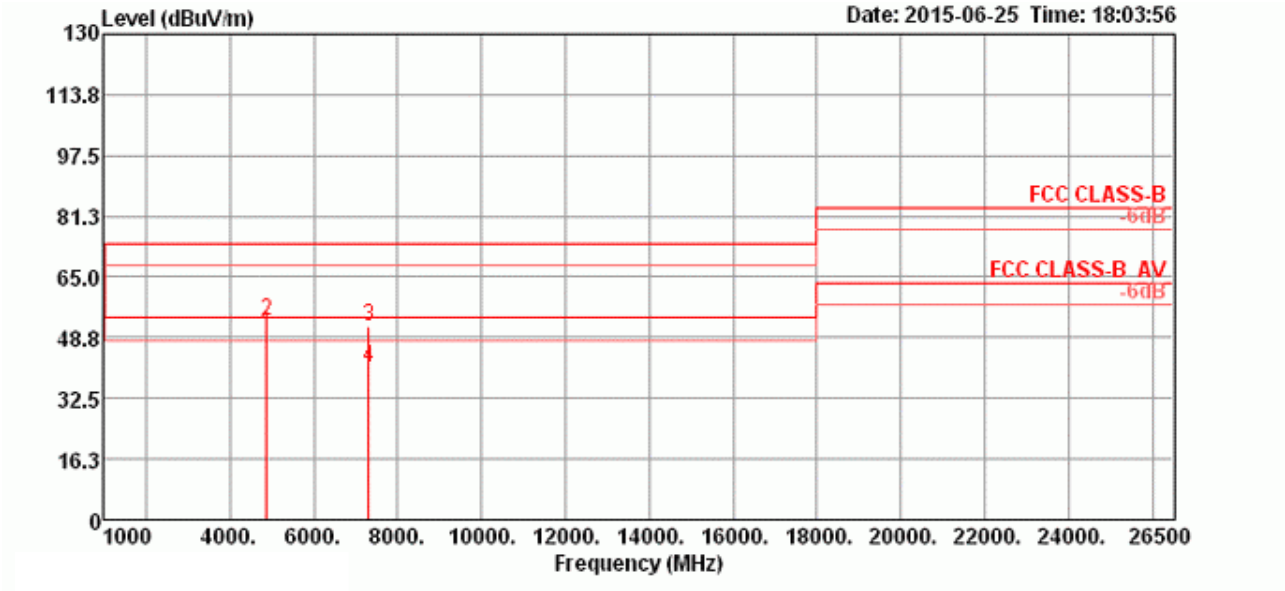
Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung	Configurations	IEEE 802.11b CH 6 / Chain 1 + Chain 2 + Chain 3

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	4873.90	53.19	74.00	-20.81	46.96	6.08	33.23	33.08	Peak	108	199	HORIZONTAL
2	4873.94	49.58	54.00	-4.42	43.35	6.08	33.23	33.08	Average	108	199	HORIZONTAL
3	7308.12	37.37	54.00	-16.63	26.48	8.28	36.08	33.47	Average	102	237	HORIZONTAL
4	7318.69	51.09	74.00	-22.91	40.14	8.30	36.12	33.47	Peak	102	237	HORIZONTAL

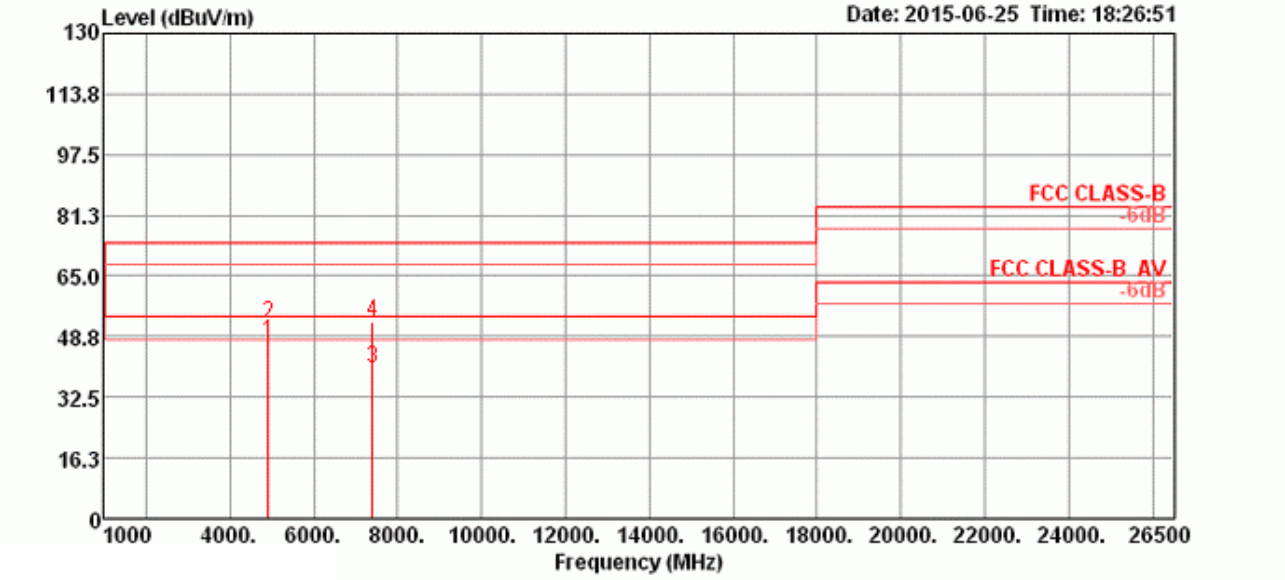
Vertical



	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	4873.94	49.75	54.00	-4.25	43.52	6.08	33.23	33.08	Average	103	193	VERTICAL
2	4873.98	53.46	74.00	-20.54	47.23	6.08	33.23	33.08	Peak	103	193	VERTICAL
3	7308.79	51.86	74.00	-22.14	40.97	8.28	36.08	33.47	Peak	100	342	VERTICAL
4	7309.05	40.56	54.00	-13.44	29.67	8.28	36.08	33.47	Average	100	342	VERTICAL

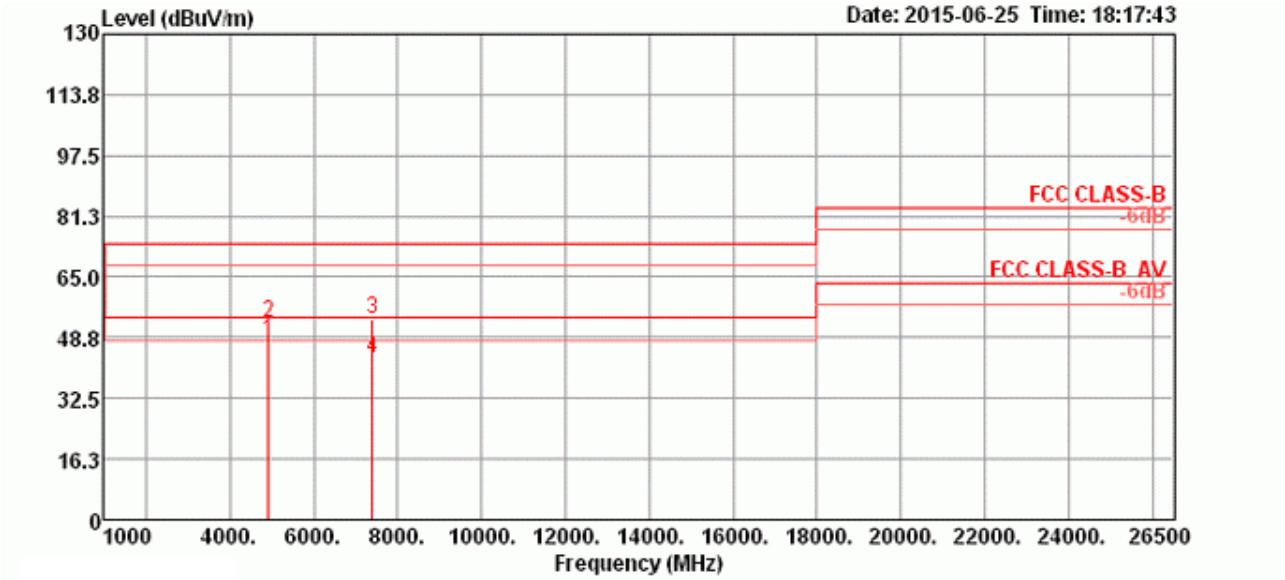
Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung	Configurations	IEEE 802.11b CH 11 / Chain 1 + Chain 2 + Chain 3

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4923.94	47.66	54.00	-6.34	41.32	6.05	33.35	33.06	Average	191	304	HORIZONTAL
2	4923.95	52.26	74.00	-21.74	45.92	6.05	33.35	33.06	Peak	191	304	HORIZONTAL
3	7385.14	40.42	54.00	-13.58	29.30	8.34	36.27	33.49	Average	172	64	HORIZONTAL
4	7385.20	52.63	74.00	-21.37	41.51	8.34	36.27	33.49	Peak	172	64	HORIZONTAL

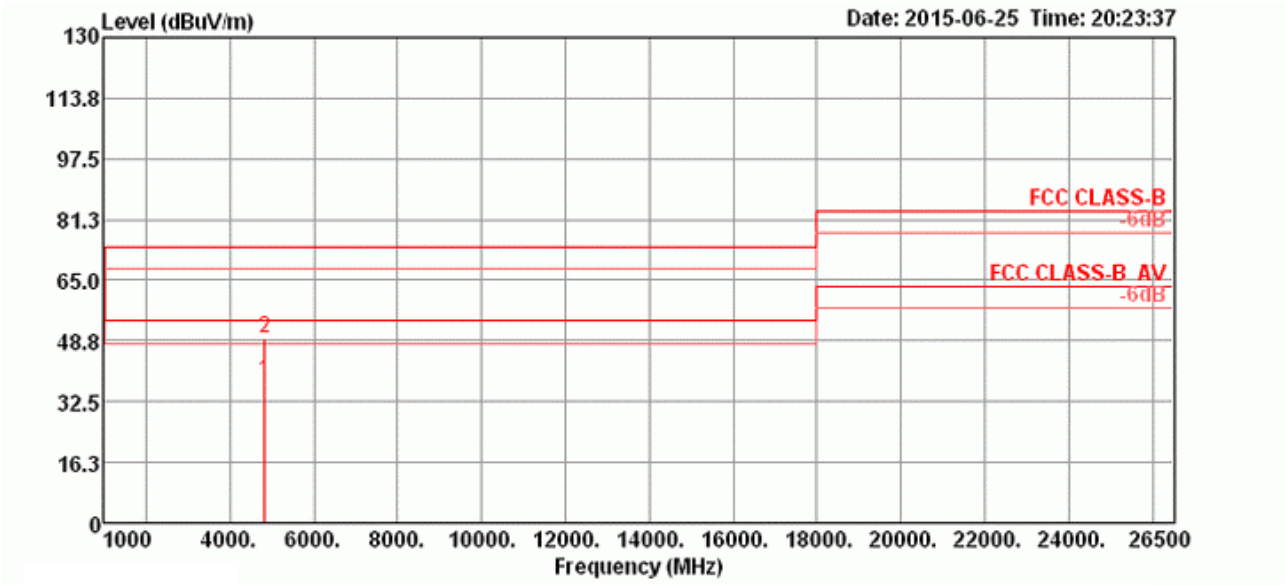
Vertical



	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	47.96	54.00	-6.04	41.62	6.05	33.35	33.06	Average	107	192	VERTICAL
2	4923.97	52.73	74.00	-21.27	46.39	6.05	33.35	33.06	Peak	107	192	VERTICAL
3	7385.10	53.60	74.00	-20.40	42.48	8.34	36.27	33.49	Peak	106	0	VERTICAL
4	7385.23	43.11	54.00	-10.89	31.99	8.34	36.27	33.49	Average	106	0	VERTICAL

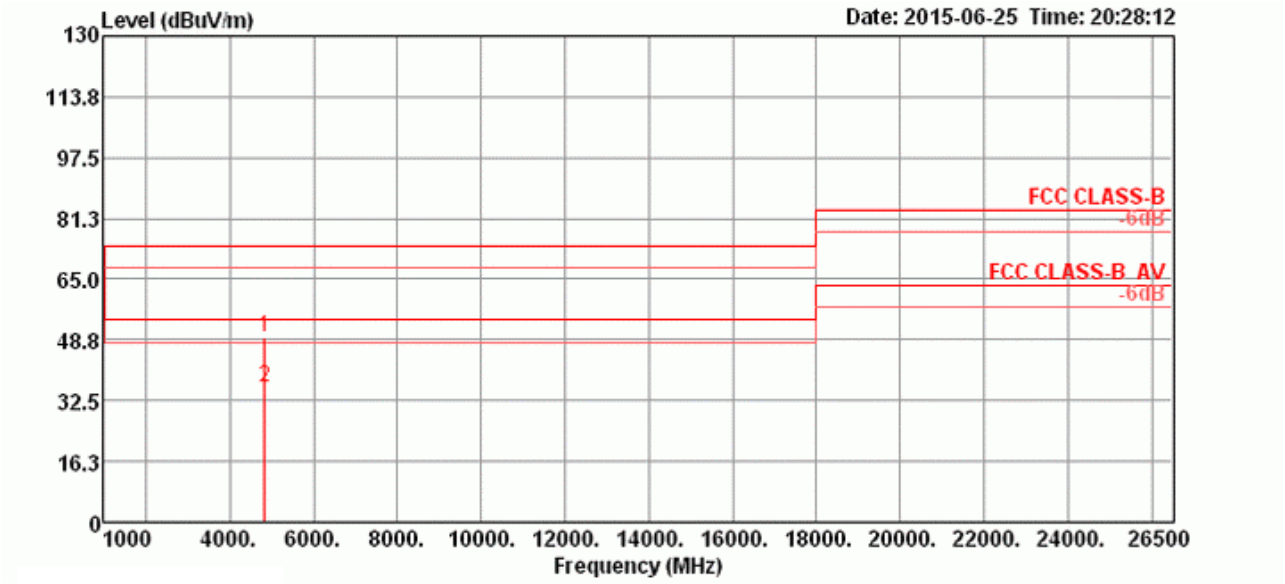
Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung	Configurations	IEEE 802.11g CH 1 / Chain 1 + Chain 2 + Chain 3

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	4823.81	37.69	54.00	-16.31	31.54	6.11	33.12	33.08	Average	175	157	HORIZONTAL
2	4823.99	49.30	74.00	-24.70	43.15	6.11	33.12	33.08	Peak	175	157	HORIZONTAL

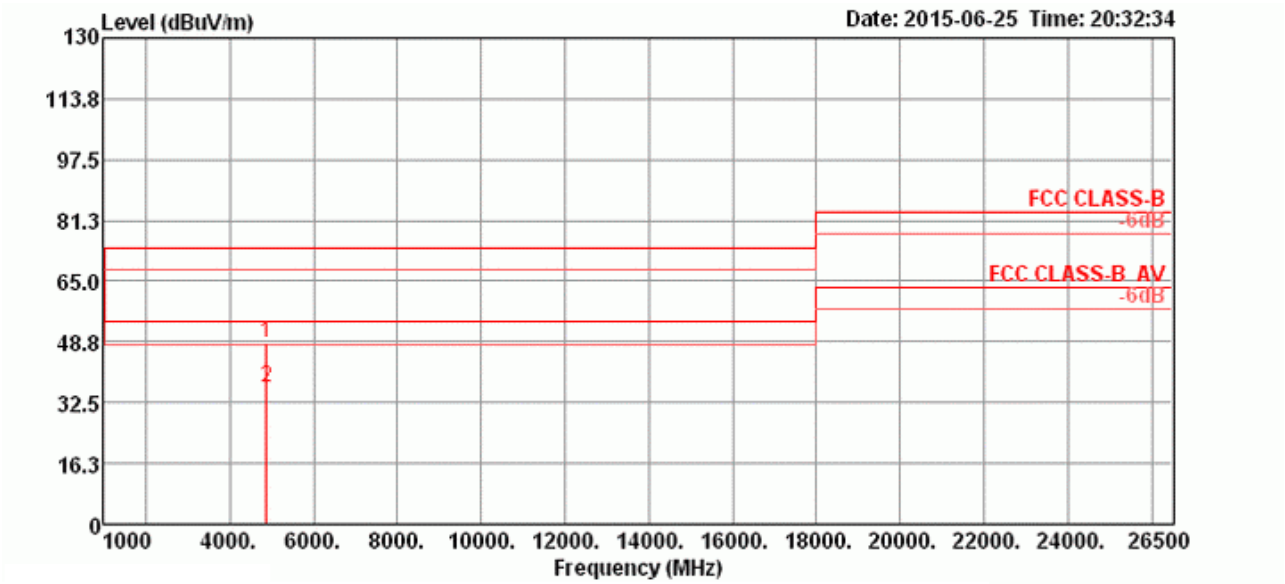
Vertical



	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	4822.51	49.26	74.00	-24.74	43.11	6.11	33.12	33.08	Peak	175	121	VERTICAL
2	4823.87	36.14	54.00	-17.86	29.99	6.11	33.12	33.08	Average	175	121	VERTICAL

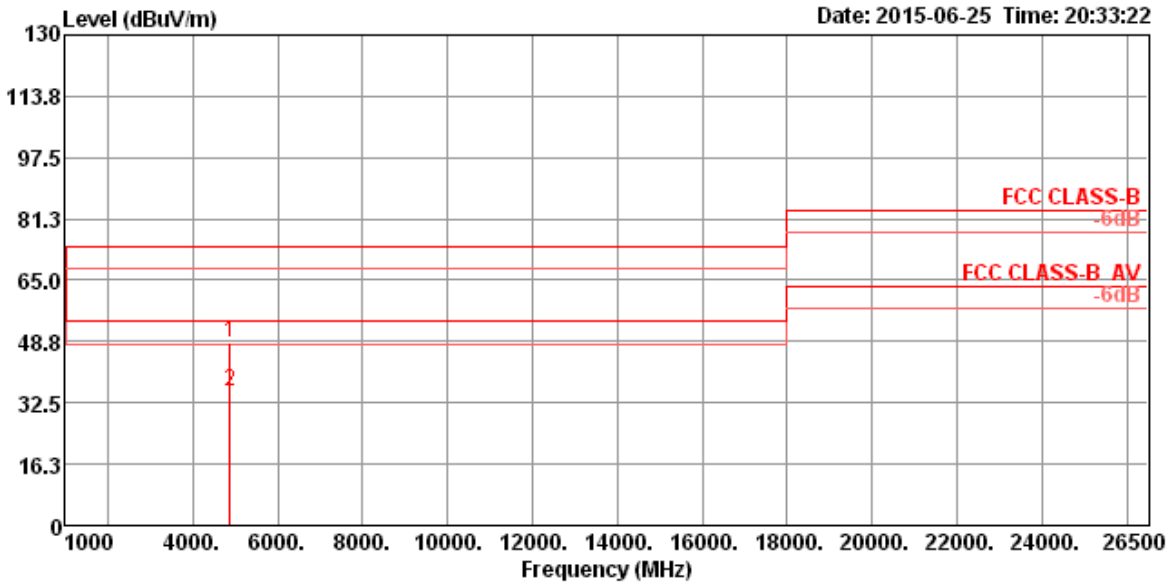
Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung	Configurations	IEEE 802.11g CH 6 / Chain 1 + Chain 2 + Chain 3

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	4873.39	48.60	74.00	-25.40	42.37	6.08	33.23	33.08	Peak	174	40	HORIZONTAL
2	4873.89	36.60	54.00	-17.40	30.37	6.08	33.23	33.08	Average	174	40	HORIZONTAL

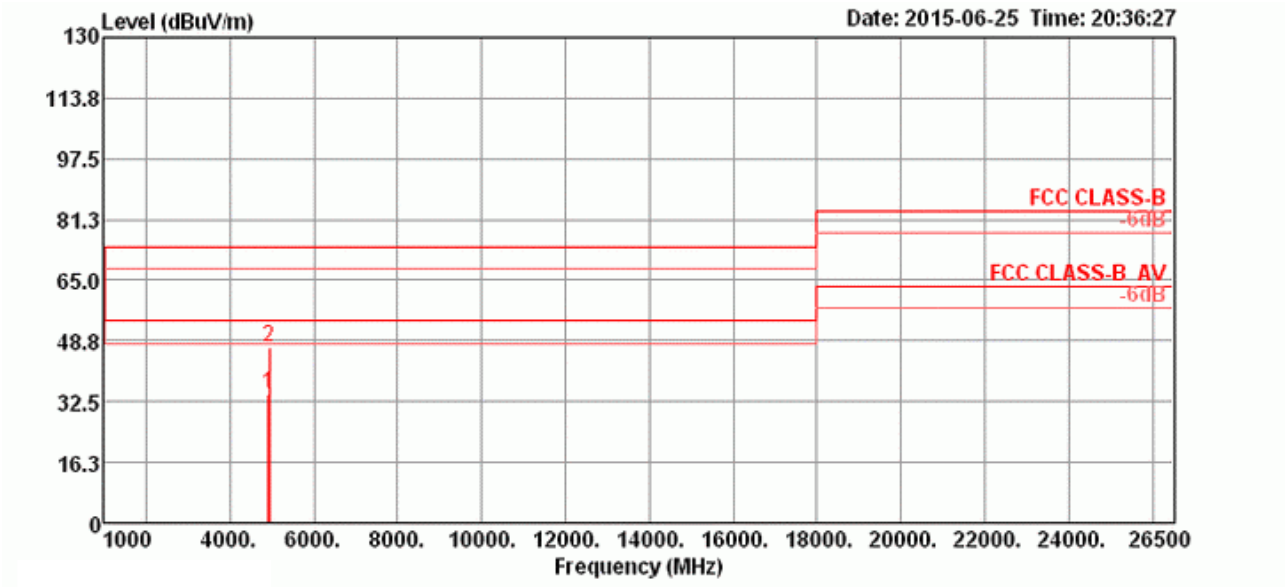
Vertical



	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	4873.62	48.33	74.00	-25.67	42.10	6.08	33.23	33.08	Peak	176	133	VERTICAL
2	4873.70	35.42	54.00	-18.58	29.19	6.08	33.23	33.08	Average	176	133	VERTICAL

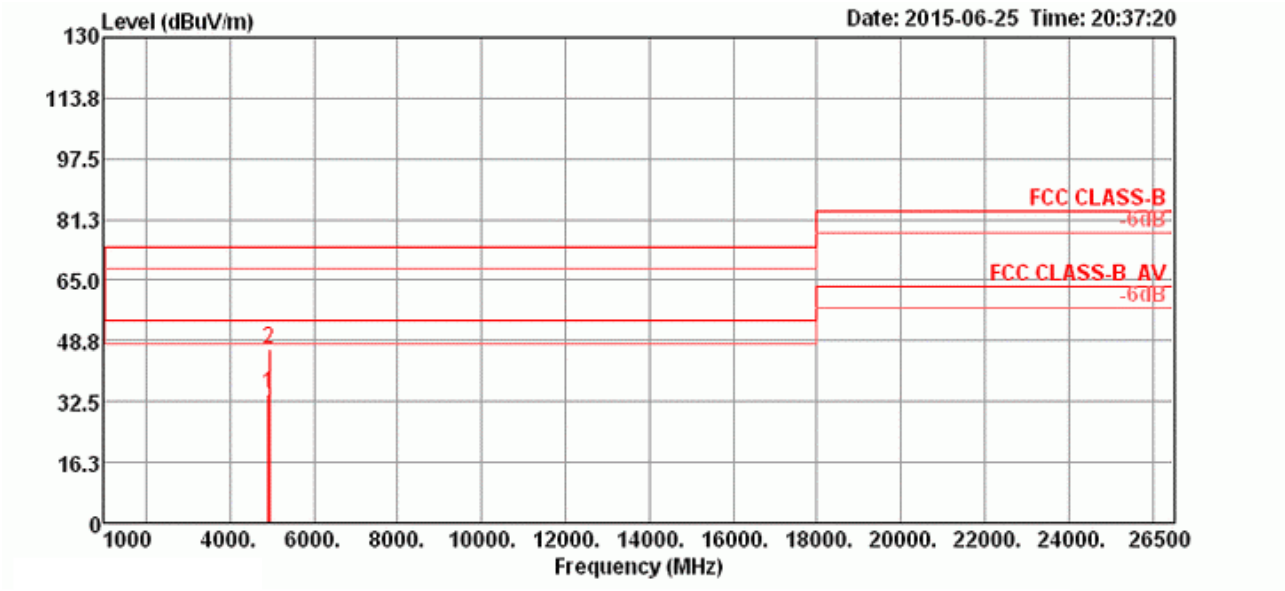
Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung	Configurations	IEEE 802.11g CH 11 / Chain 1 + Chain 2 + Chain 3

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	4923.90	34.31	54.00	-19.69	27.97	6.05	33.35	33.06	Average	179	37	HORIZONTAL
2	4927.80	46.85	74.00	-27.15	40.51	6.05	33.35	33.06	Peak	179	37	HORIZONTAL

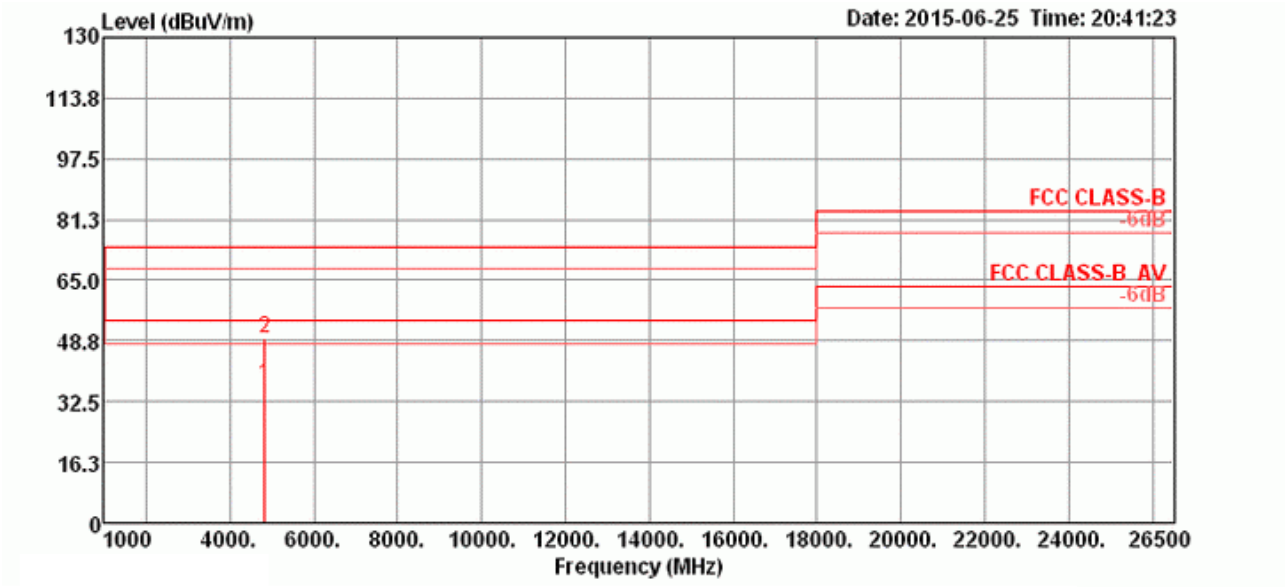
Vertical



	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	4923.84	34.34	54.00	-19.66	28.00	6.05	33.35	33.06	Average	175	82	VERTICAL
2	4927.59	46.39	74.00	-27.61	40.05	6.05	33.35	33.06	Peak	175	82	VERTICAL

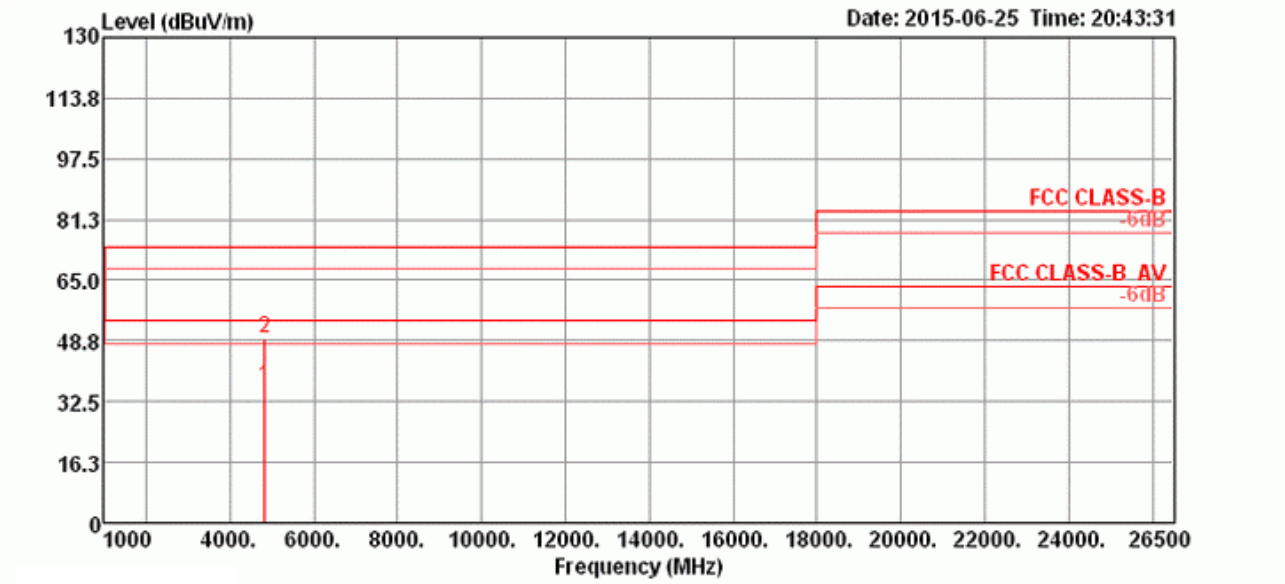
Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 1 / Chain 1 + Chain 2 + Chain 3

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	4821.58	36.82	54.00	-17.18	30.67	6.11	33.12	33.08	Average	171	146	HORIZONTAL
2	4823.63	49.58	74.00	-24.42	43.43	6.11	33.12	33.08	Peak	171	146	HORIZONTAL

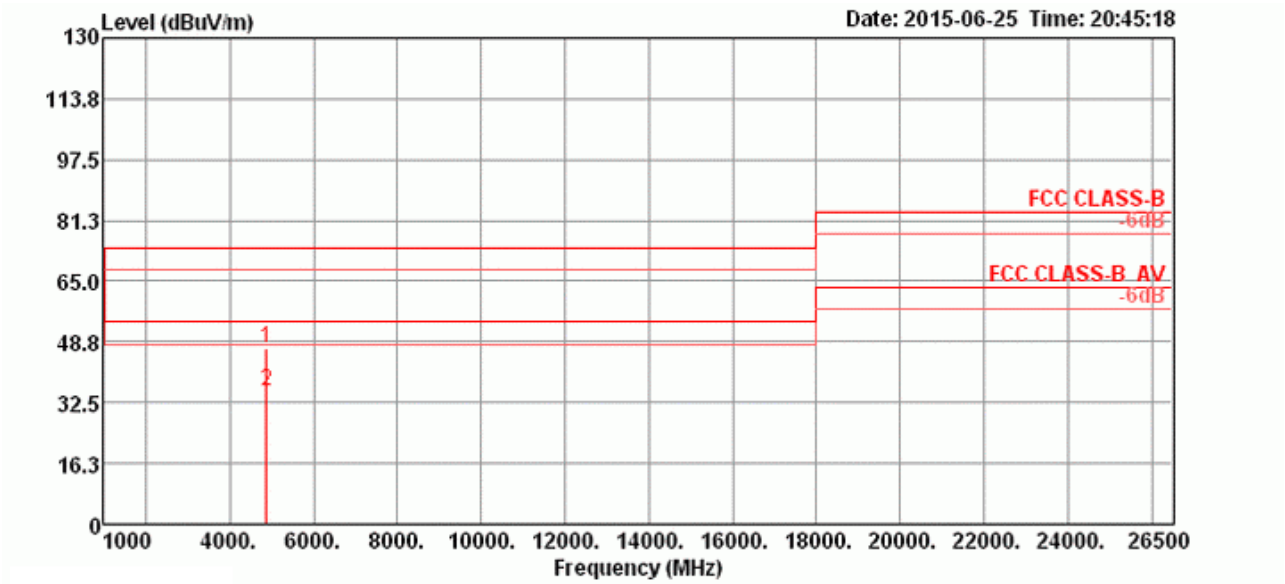
Vertical



	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	4822.70	36.49	54.00	-17.51	30.34	6.11	33.12	33.08	Average	164	90	VERTICAL
2	4823.28	49.54	74.00	-24.46	43.39	6.11	33.12	33.08	Peak	164	90	VERTICAL

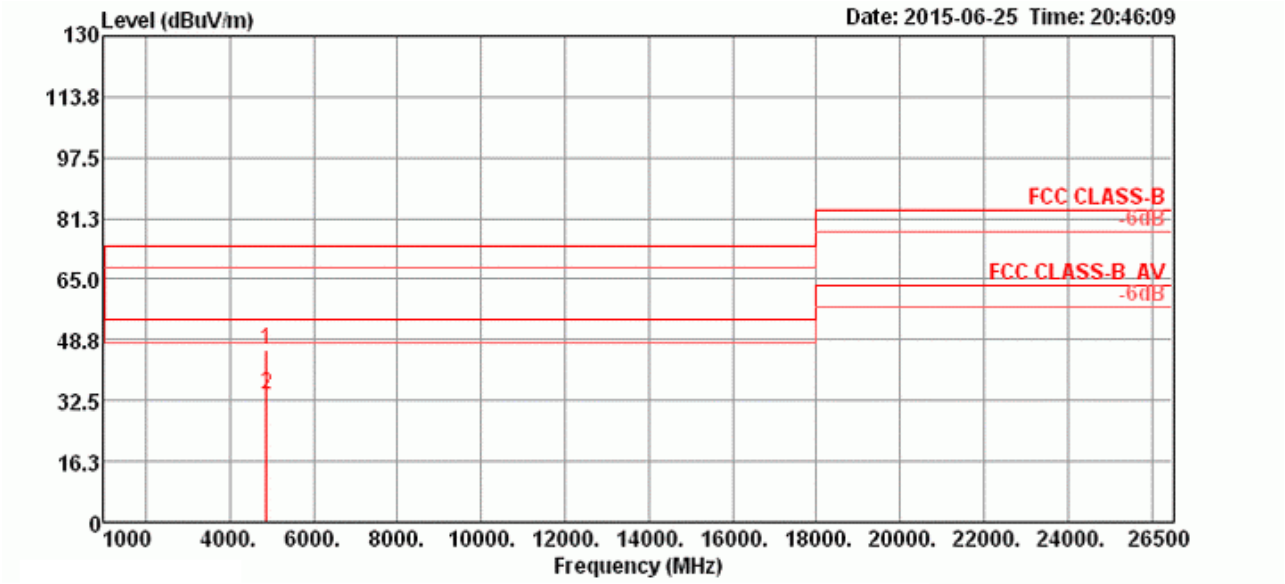
Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 6 / Chain 1 + Chain 2 + Chain 3

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	4871.29	47.13	74.00	-26.87	40.90	6.08	33.23	33.08	Peak	171	333	HORIZONTAL
2	4873.22	35.55	54.00	-18.45	29.32	6.08	33.23	33.08	Average	171	333	HORIZONTAL

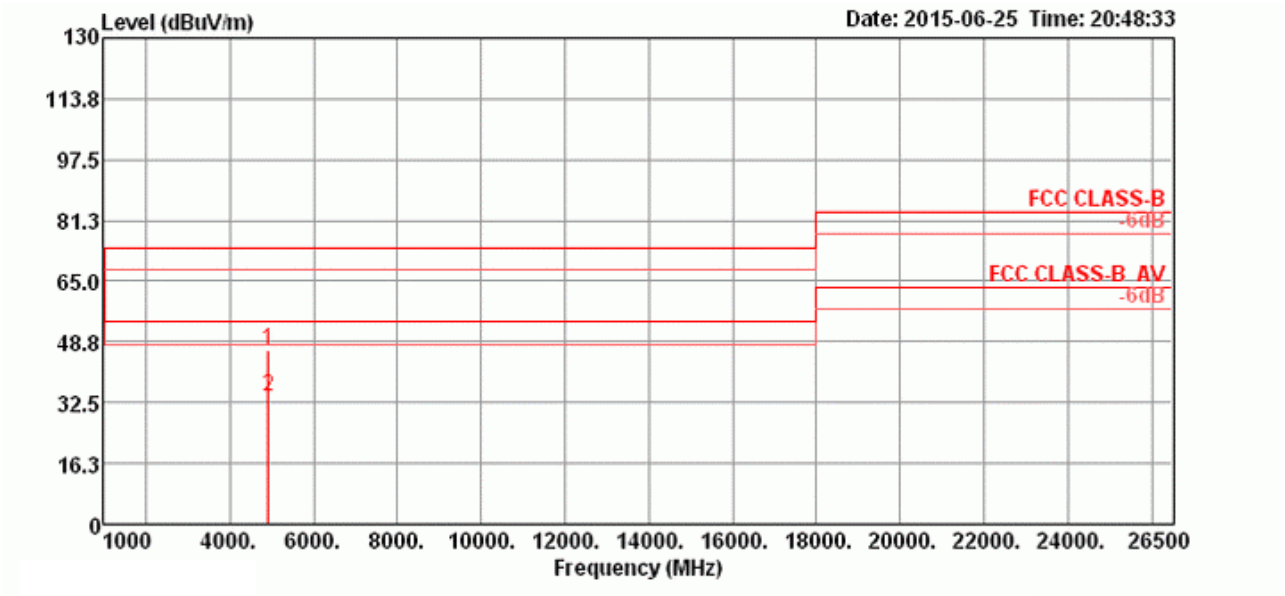
Vertical



	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	4870.65	46.01	74.00	-27.99	39.78	6.08	33.23	33.08	Peak	173	244	VERTICAL
2	4873.54	33.83	54.00	-20.17	27.60	6.08	33.23	33.08	Average	173	244	VERTICAL

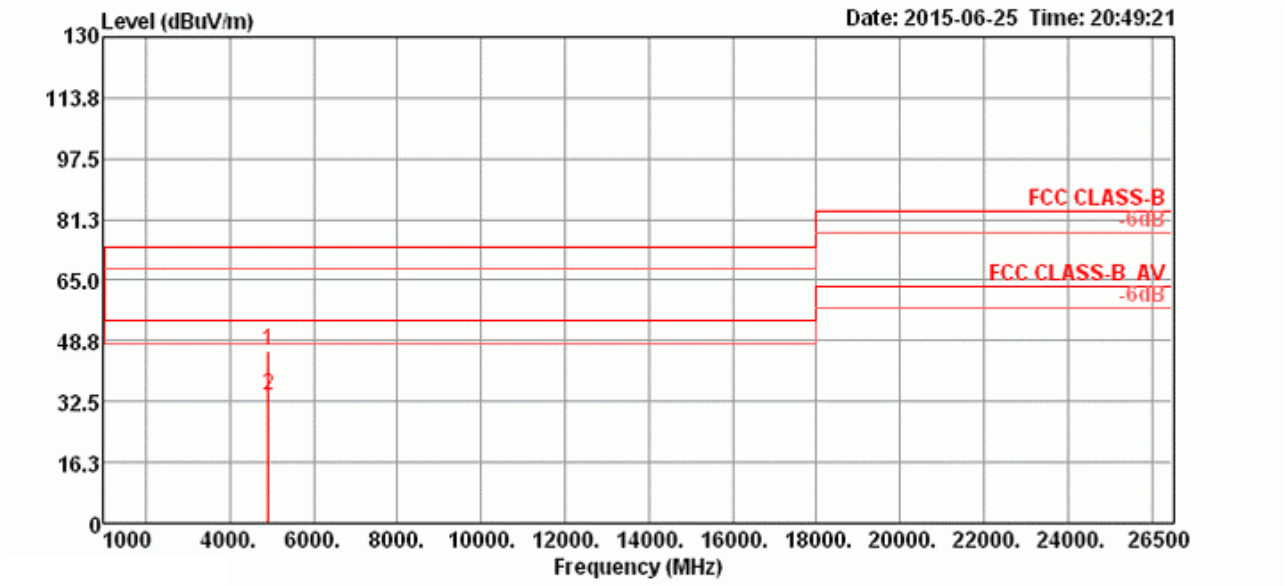
Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 11 / Chain 1 + Chain 2 + Chain 3

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	4923.28	46.53	74.00	-27.47	40.19	6.05	33.35	33.06	Peak	177	41	HORIZONTAL
2	4923.76	34.29	54.00	-19.71	27.95	6.05	33.35	33.06	Average	177	41	HORIZONTAL

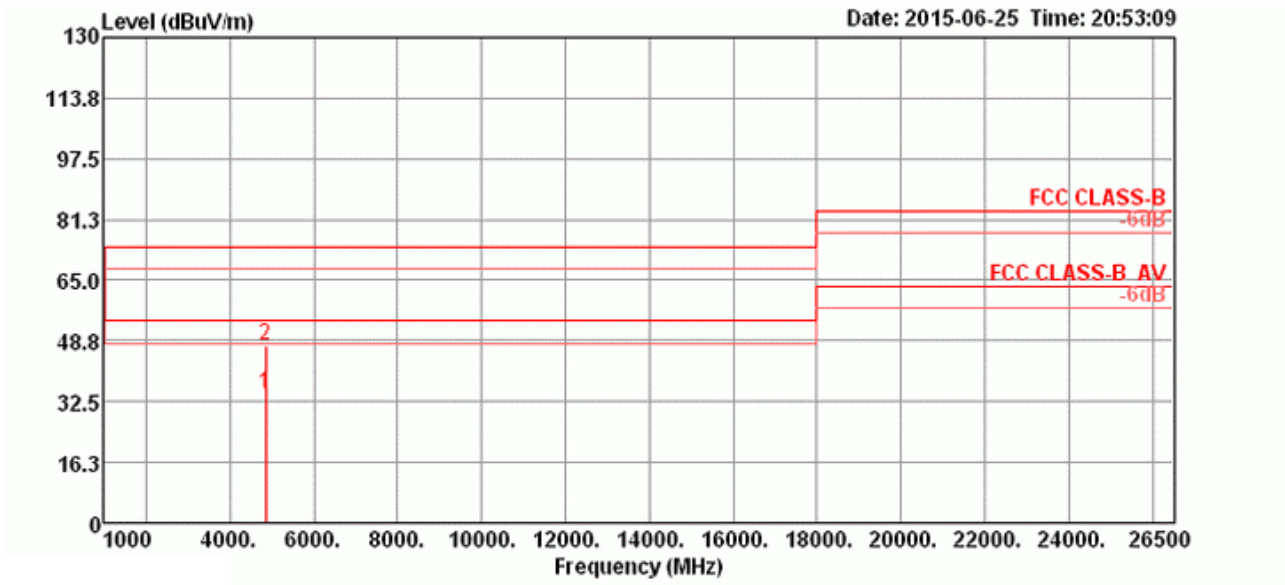
Vertical



	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	4923.31	46.26	74.00	-27.74	39.92	6.05	33.35	33.06	Peak	172	173	VERTICAL
2	4925.73	34.03	54.00	-19.97	27.69	6.05	33.35	33.06	Average	172	173	VERTICAL

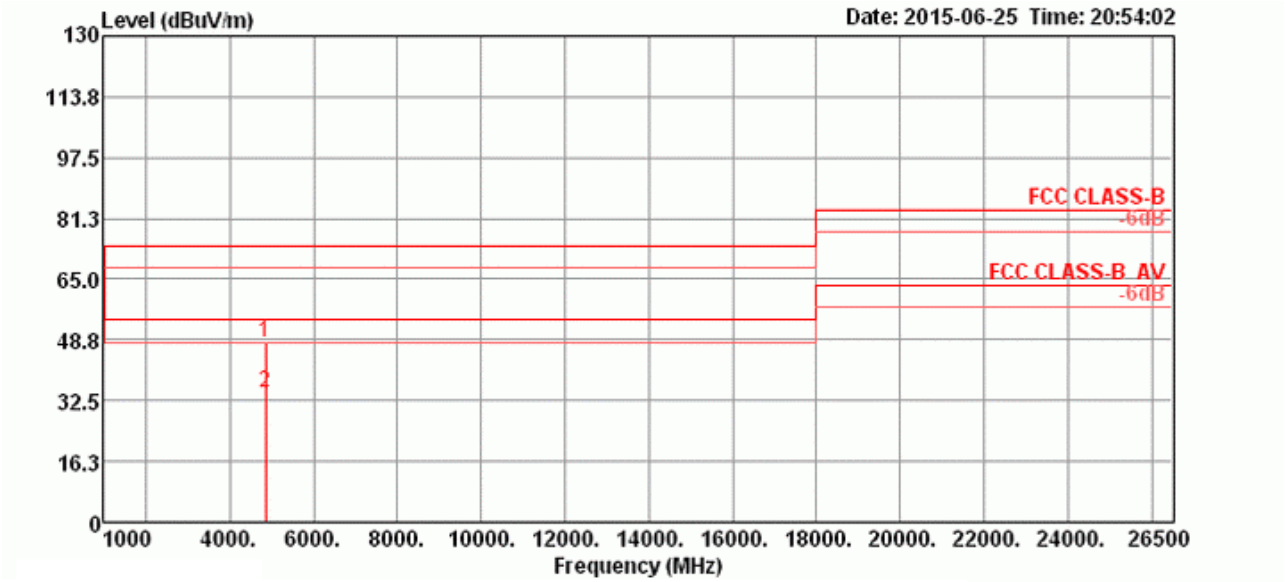
Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 3 / Chain 1 + Chain 2 + Chain 3

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	4844.13	34.50	54.00	-19.50	28.32	6.10	33.16	33.08	Average	178	65	HORIZONTAL
2	4845.17	47.59	74.00	-26.41	41.41	6.10	33.16	33.08	Peak	178	65	HORIZONTAL

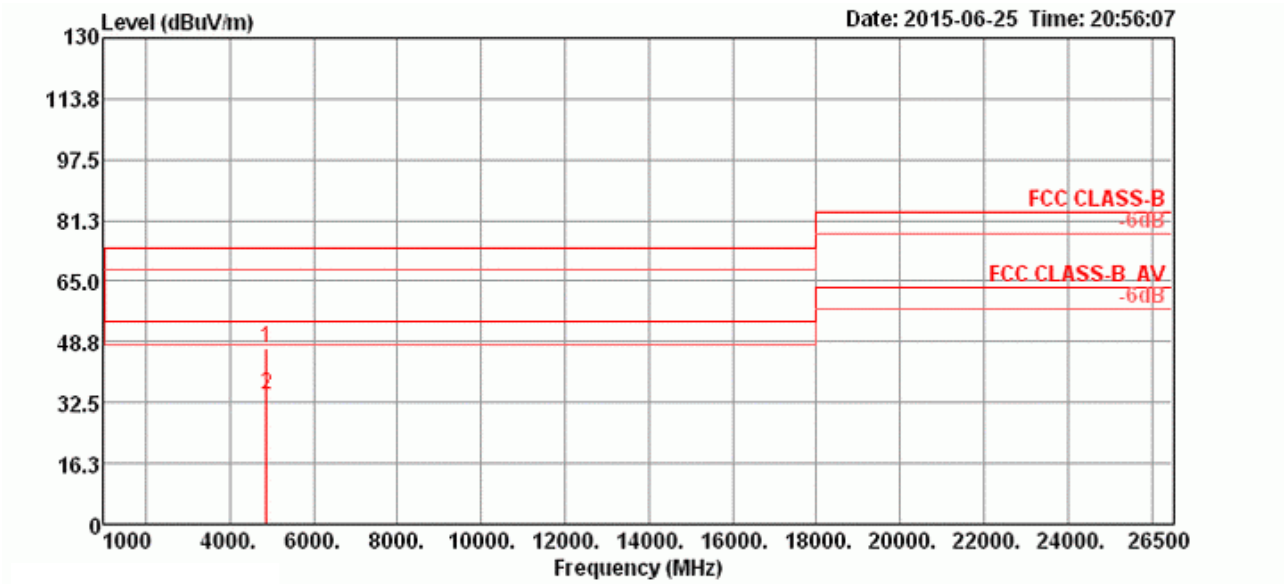
Vertical



	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	4843.20	47.81	74.00	-26.19	41.63	6.10	33.16	33.08	Peak	177	98	VERTICAL
2	4844.14	34.50	54.00	-19.50	28.32	6.10	33.16	33.08	Average	177	98	VERTICAL

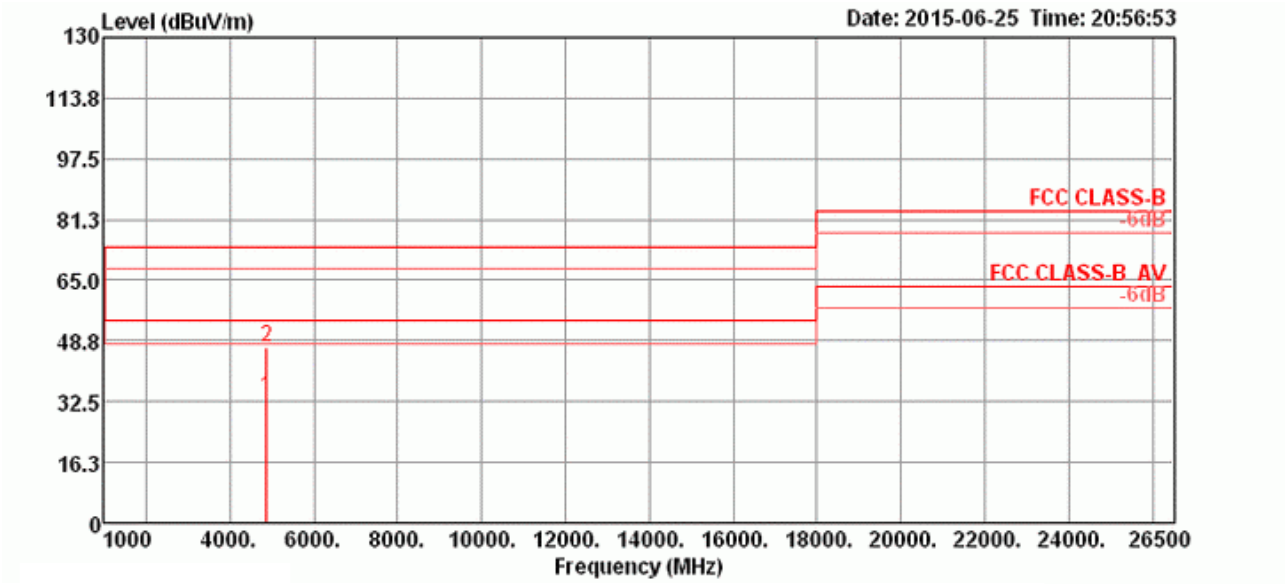
Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 6 / Chain 1 + Chain 2 + Chain 3

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	4873.41	46.84	74.00	-27.16	40.61	6.08	33.23	33.08	Peak	175	45	HORIZONTAL
2	4873.90	34.58	54.00	-19.42	28.35	6.08	33.23	33.08	Average	175	45	HORIZONTAL

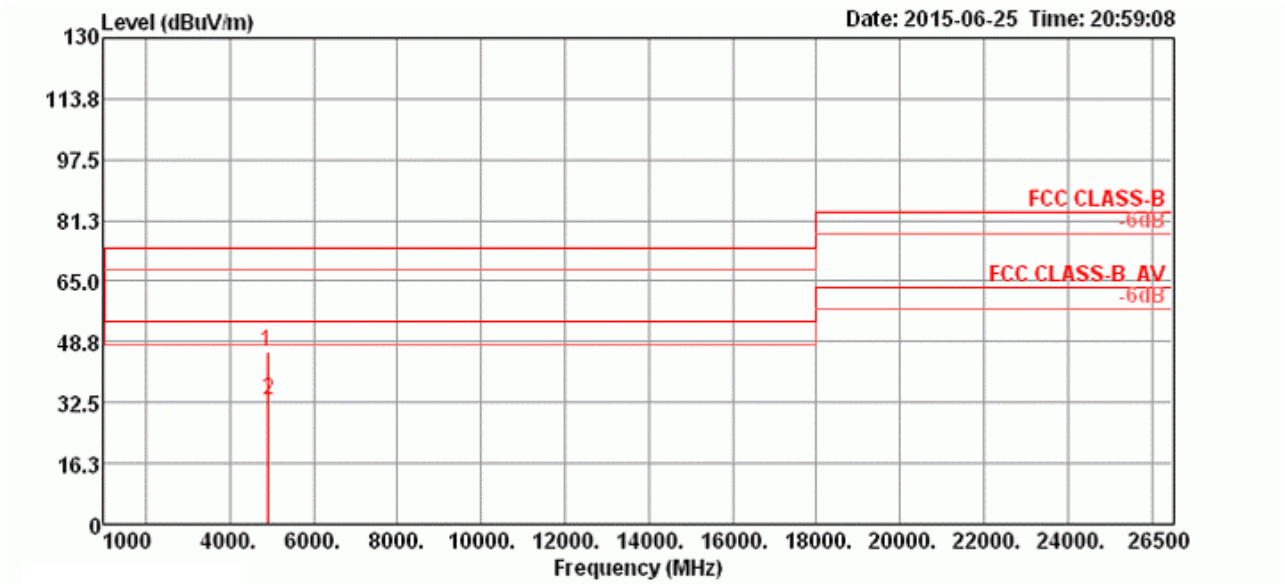
Vertical



	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	4874.18	33.81	54.00	-20.19	27.58	6.08	33.23	33.08	Average	178	148	VERTICAL
2	4875.39	47.01	74.00	-26.99	40.78	6.08	33.23	33.08	Peak	178	148	VERTICAL

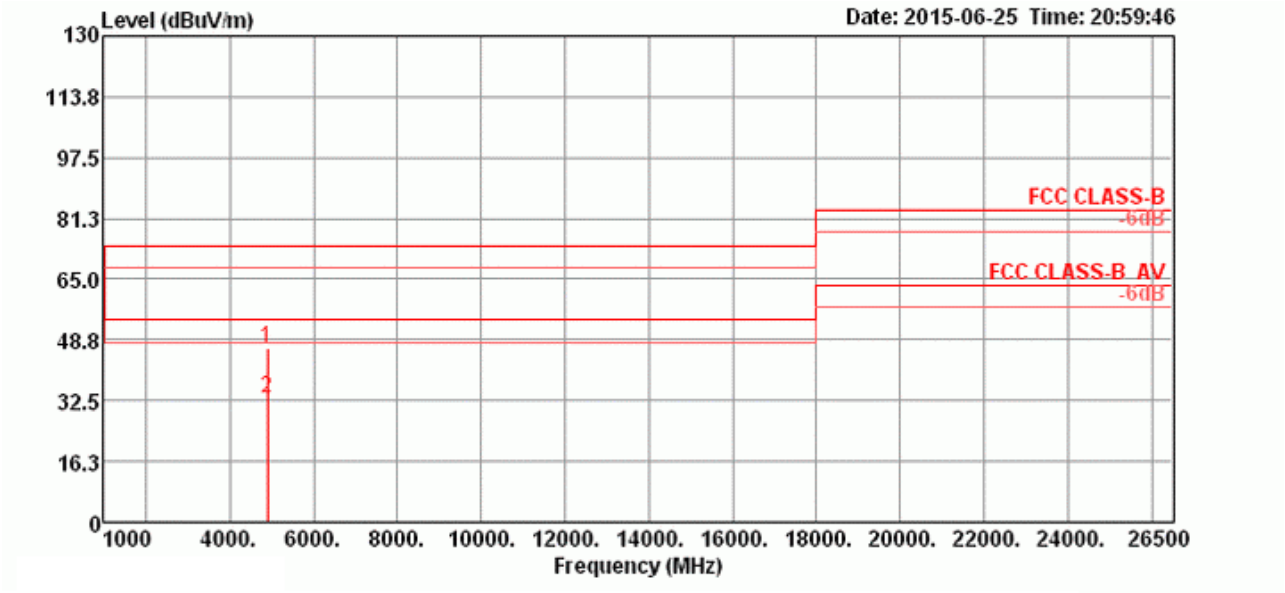
Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 9 / Chain 1 + Chain 2 + Chain 3

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	4904.61	46.13	74.00	-27.87	39.82	6.07	33.31	33.07	Peak	173	158	HORIZONTAL
2	4905.46	33.16	54.00	-20.84	26.85	6.07	33.31	33.07	Average	173	158	HORIZONTAL

Vertical

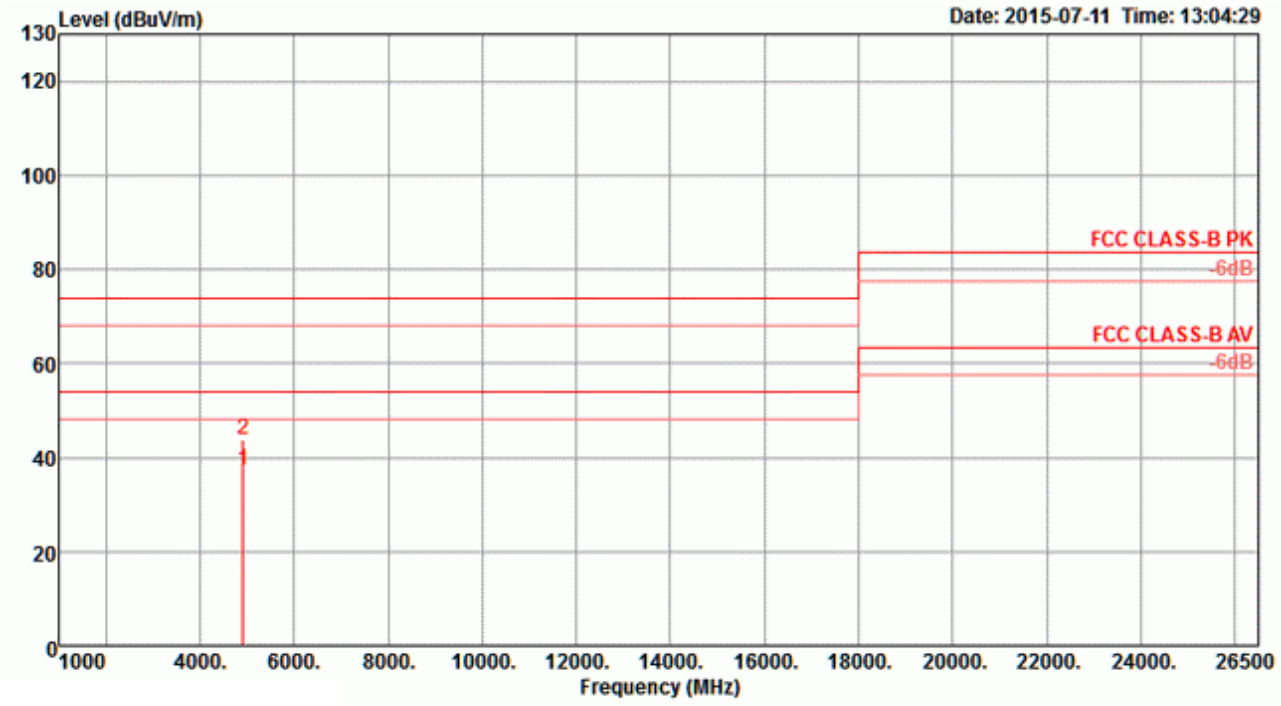


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4903.22	46.35	74.00	-27.65	40.04	6.07	33.31	33.07	Peak	175	203	VERTICAL
2	4903.68	32.95	54.00	-21.05	26.64	6.07	33.31	33.07	Average	175	203	VERTICAL

<For Radio 1 Beamforming Mode>: 3TX, 1S

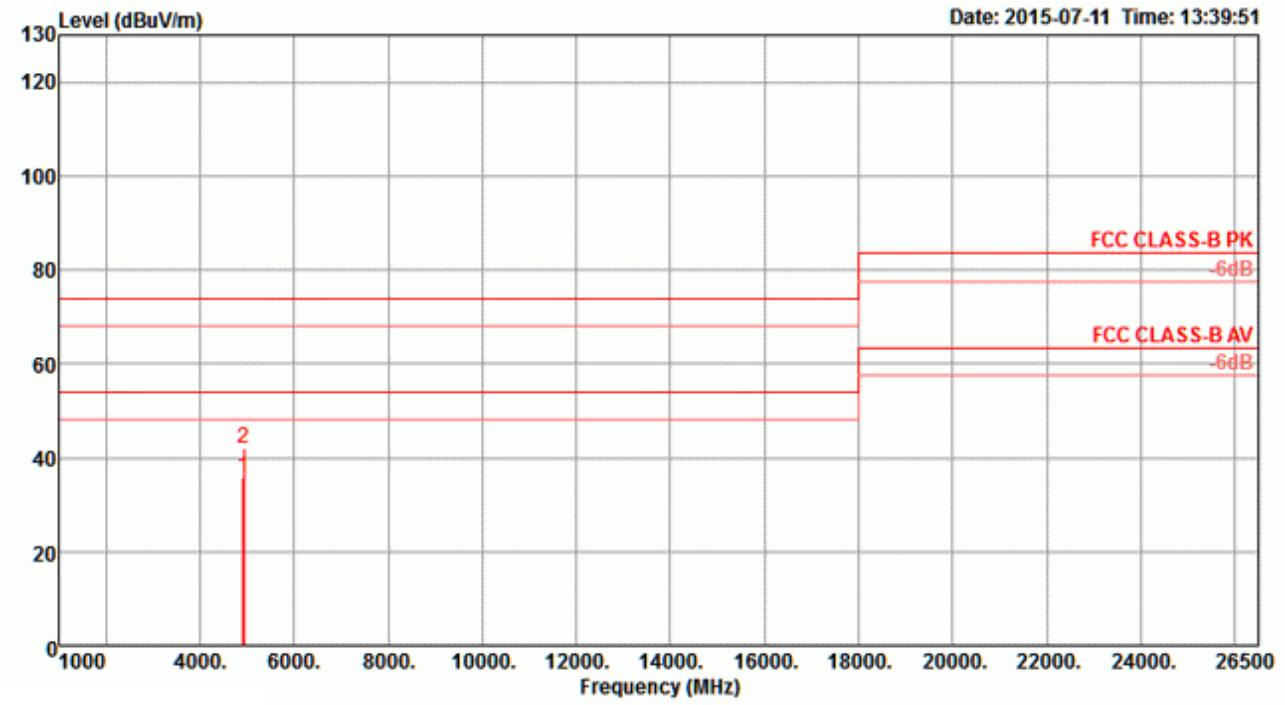
Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 1 / Chain 1 + Chain 2 + Chain 3

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	4923.98	37.45	54.00	-16.55	34.91	4.15	32.88	34.49	318	198	Average	HORIZONTAL
2	4924.08	43.80	74.00	-30.20	41.26	4.15	32.88	34.49	318	198	Peak	HORIZONTAL

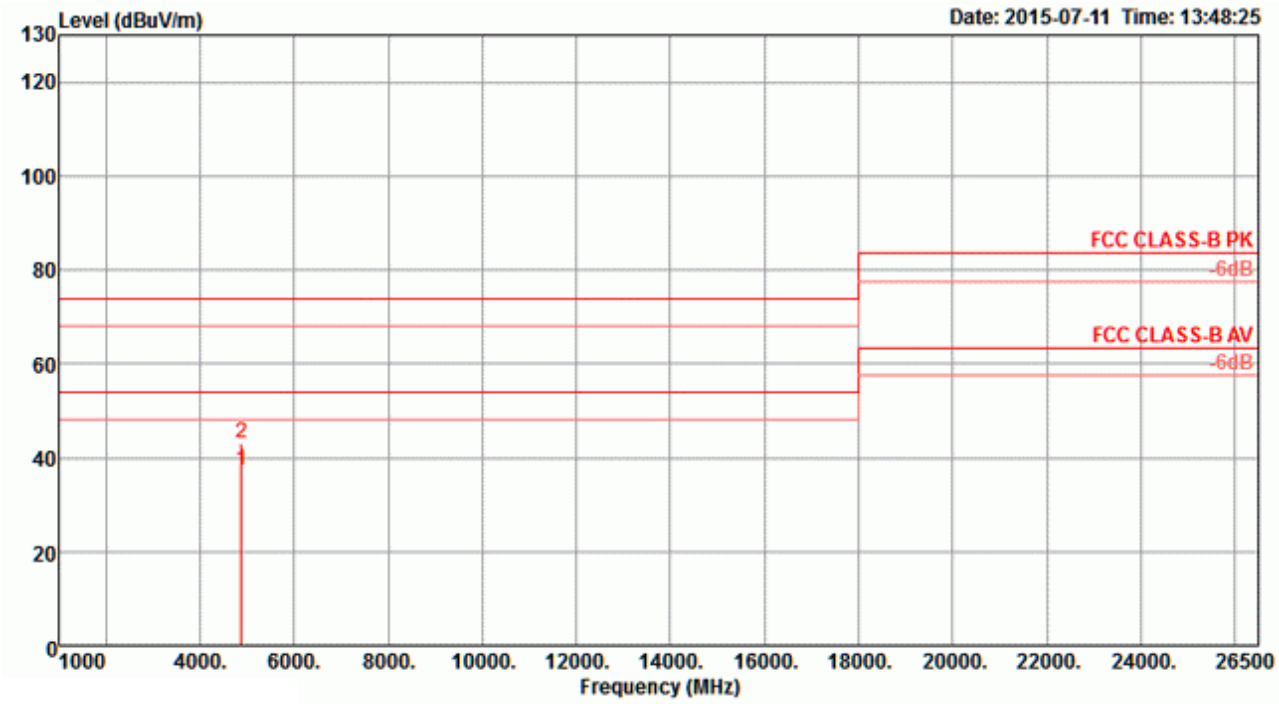
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	4924.02	35.84	54.00	-18.16	33.30	4.15	32.88	34.49	122	189	Average	VERTICAL
2	4927.78	42.16	74.00	-31.84	39.62	4.15	32.88	34.49	122	189	Peak	VERTICAL

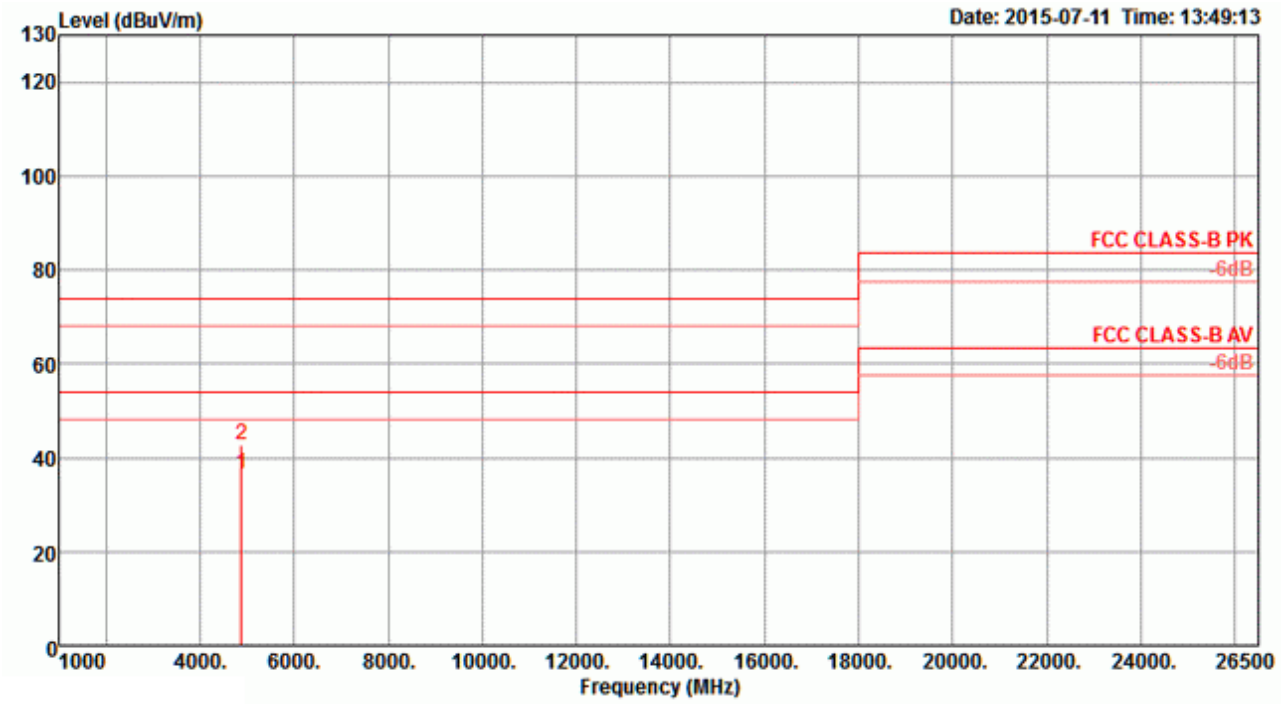
Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 6 / Chain 1 + Chain 2 + Chain 3

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	4874.03	37.40	54.00	-16.60	35.00	4.13	32.78	34.51	61	164	Average	HORIZONTAL
2	4874.05	42.99	74.00	-31.01	40.59	4.13	32.78	34.51	61	164	Peak	HORIZONTAL

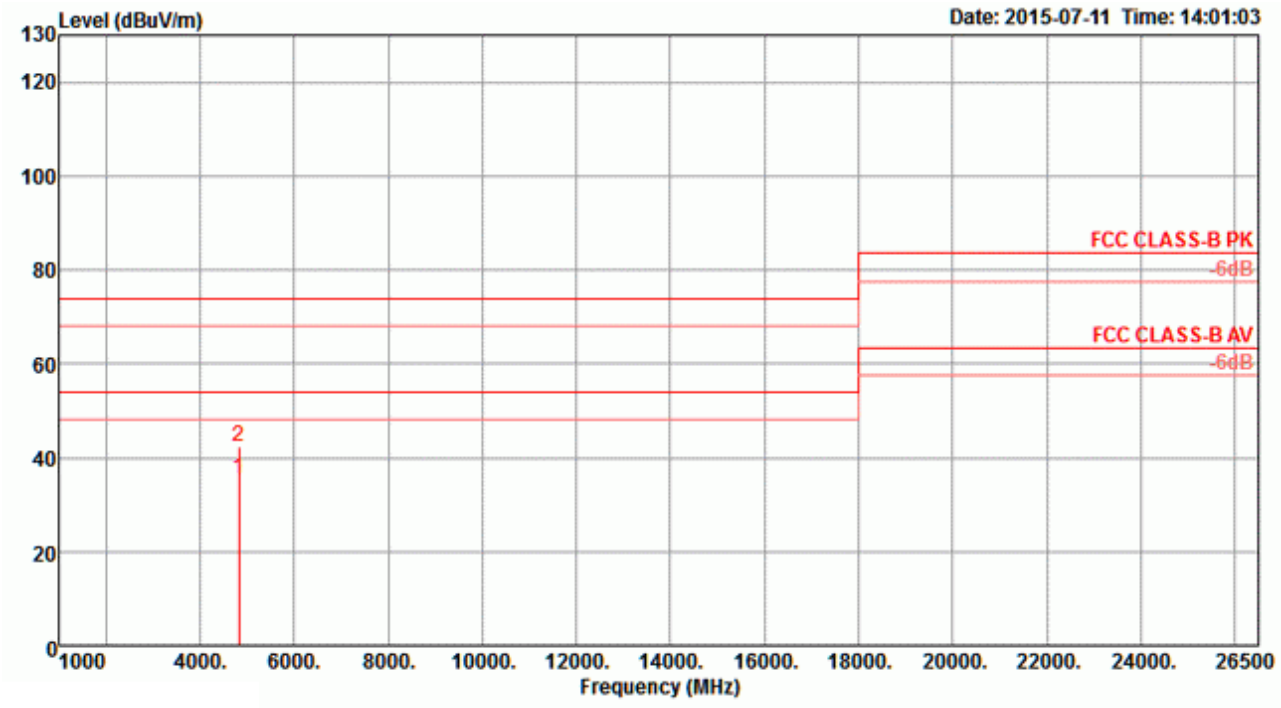
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	4873.97	36.69	54.00	-17.31	34.29	4.13	32.78	34.51	37	164	Average	VERTICAL
2	4874.11	42.80	74.00	-31.20	40.40	4.13	32.78	34.51	37	164	Peak	VERTICAL

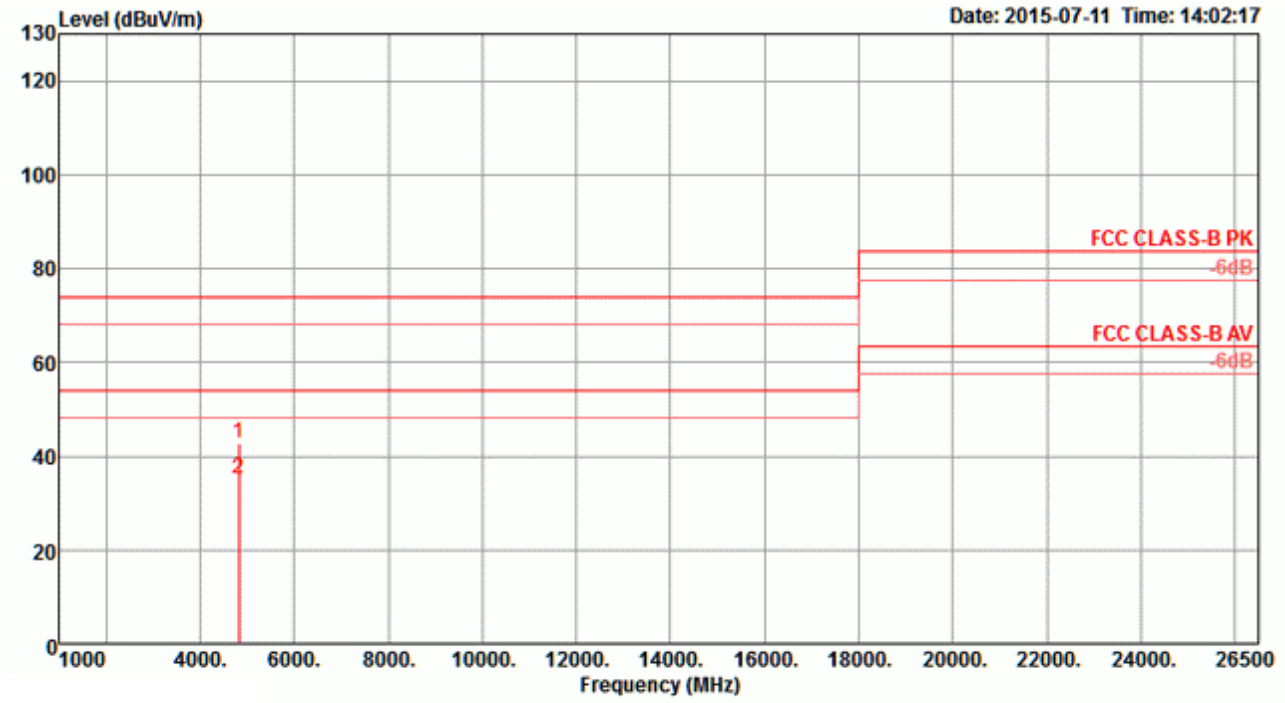
Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 11 / Chain 1 + Chain 2 + Chain 3

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	4823.97	35.58	54.00	-18.42	33.31	4.10	32.69	34.52	196	205	Average	HORIZONTAL
2	4824.03	42.32	74.00	-31.68	40.05	4.10	32.69	34.52	196	205	Peak	HORIZONTAL

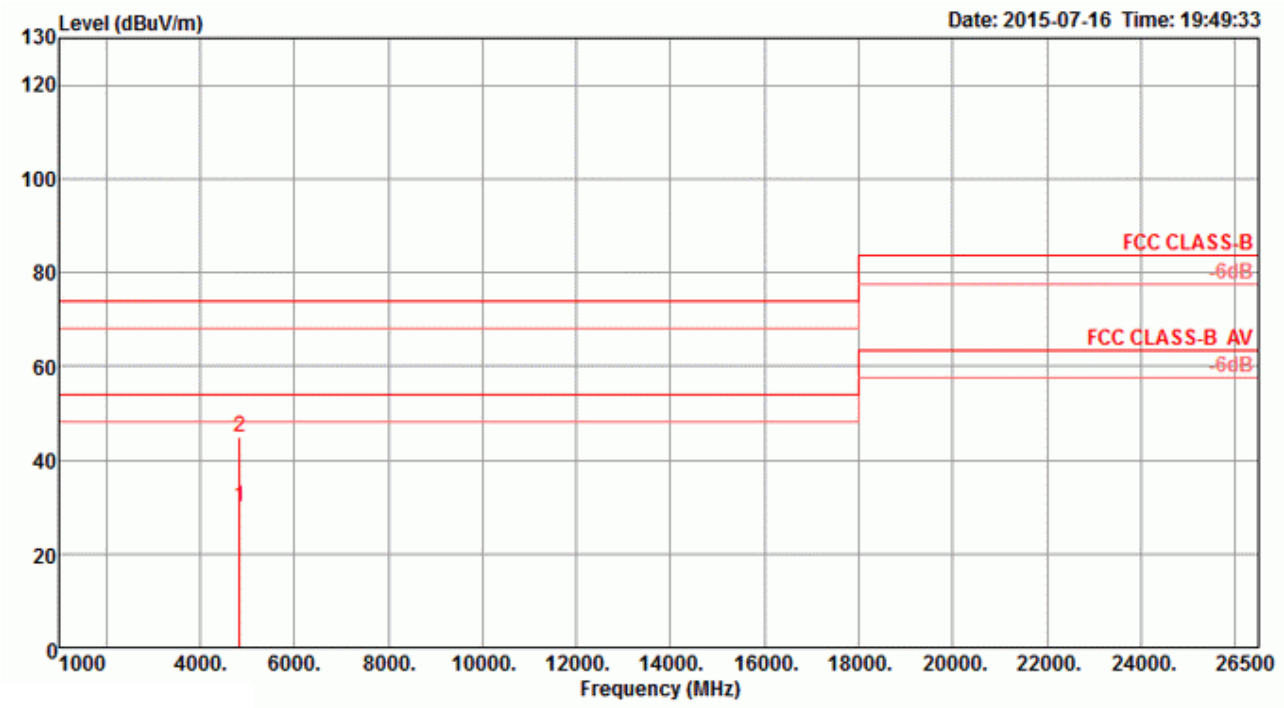
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	4824.03	42.91	74.00	-31.09	40.64	4.10	32.69	34.52	351	188	Peak	VERTICAL
2	4824.16	35.24	54.00	-18.76	32.97	4.10	32.69	34.52	351	188	Average	VERTICAL

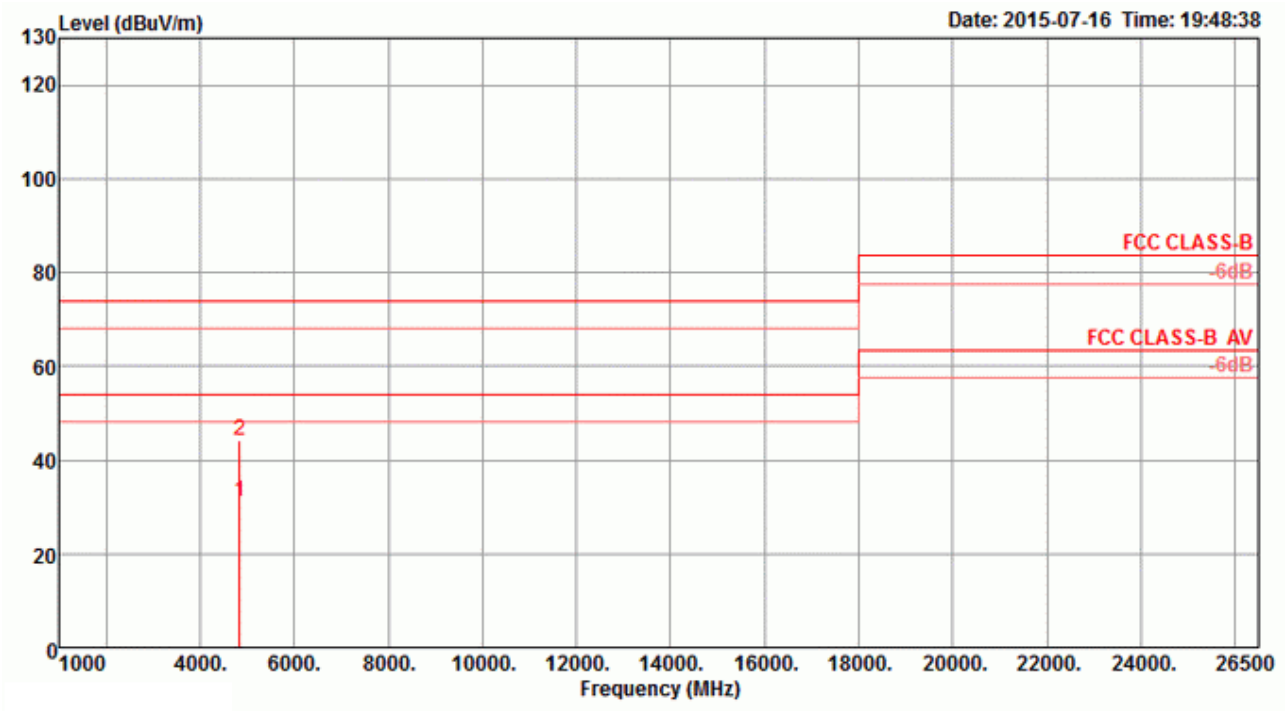
Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 3 / Chain 1 + Chain 2 + Chain 3

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	4844.72	30.15	54.00	-23.85	25.82	5.88	33.46	35.01	Average	165	151	HORIZONTAL
2	4846.44	44.75	74.00	-29.25	40.42	5.88	33.46	35.01	Peak	165	151	HORIZONTAL

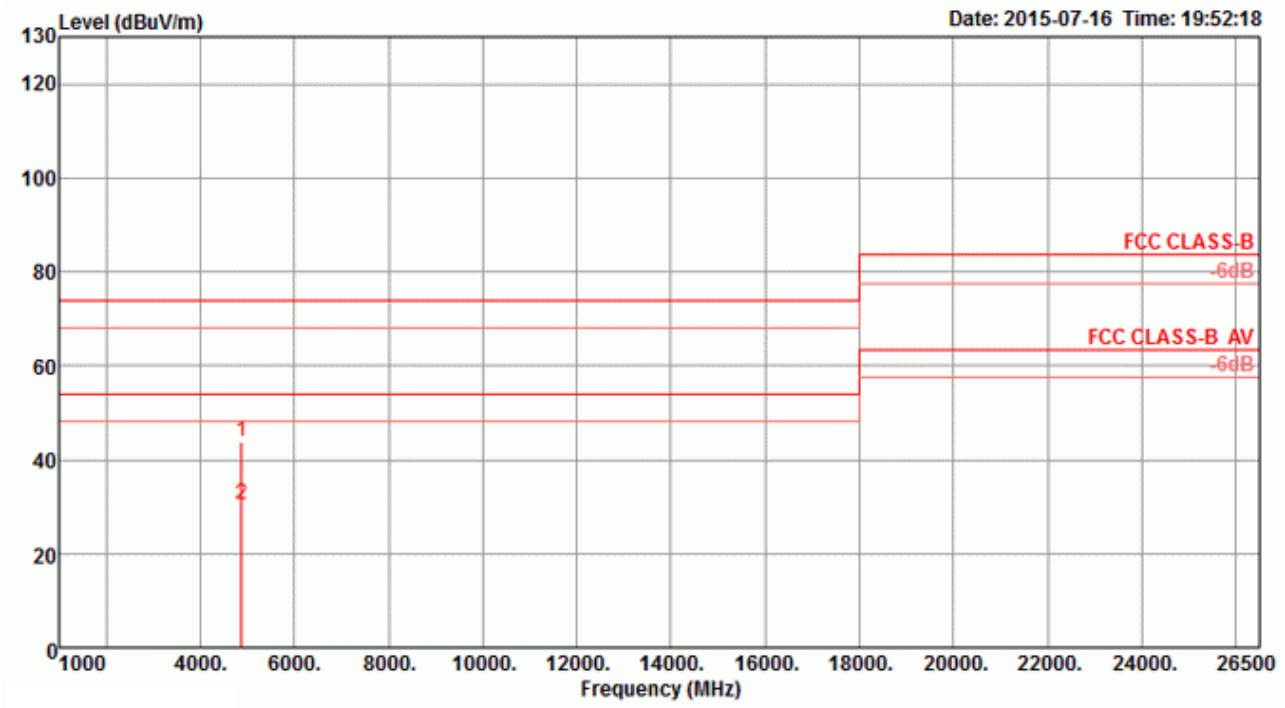
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4842.94	31.24	54.00	-22.76	26.91	5.88	33.46	35.01	Average	165	144	VERTICAL
2	4844.24	44.36	74.00	-29.64	40.03	5.88	33.46	35.01	Peak	165	144	VERTICAL

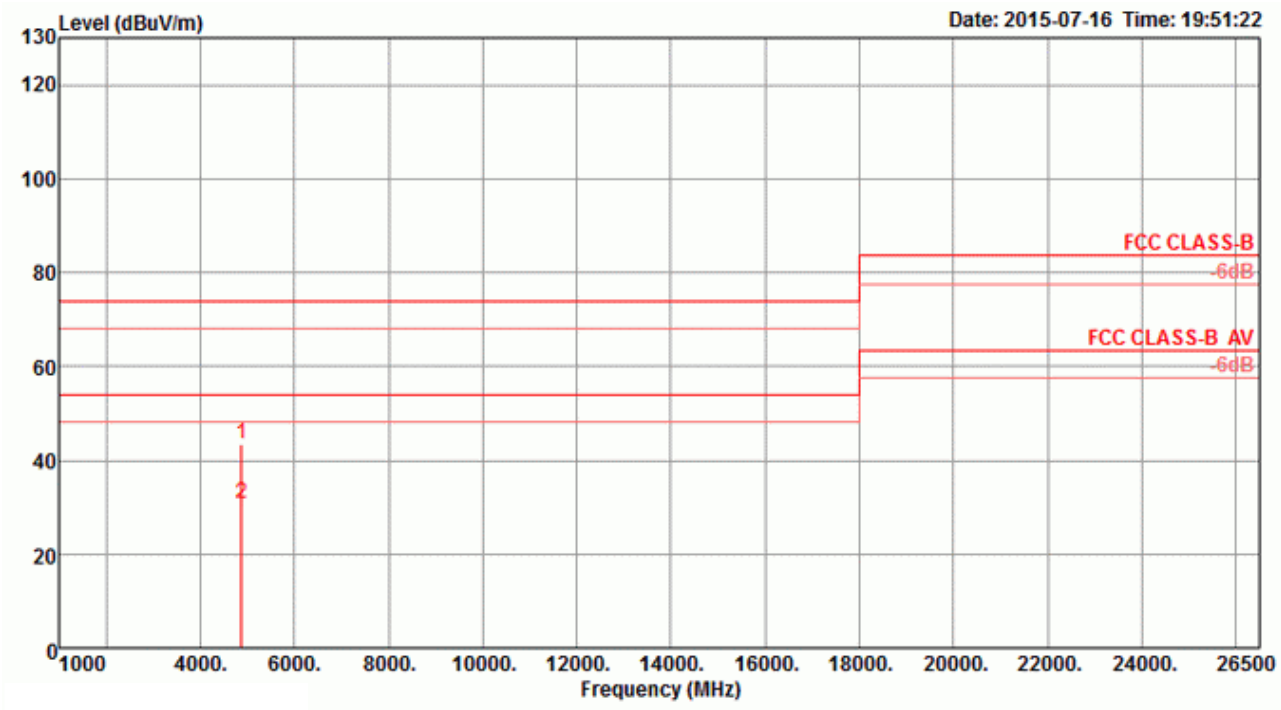
Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 6 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 16, 2015		

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	4873.71	43.74	74.00	-30.26	39.30	5.92	33.53	35.01	Peak	165	174	HORIZONTAL
2	4875.50	30.27	54.00	-23.73	25.83	5.92	33.53	35.01	Average	165	174	HORIZONTAL

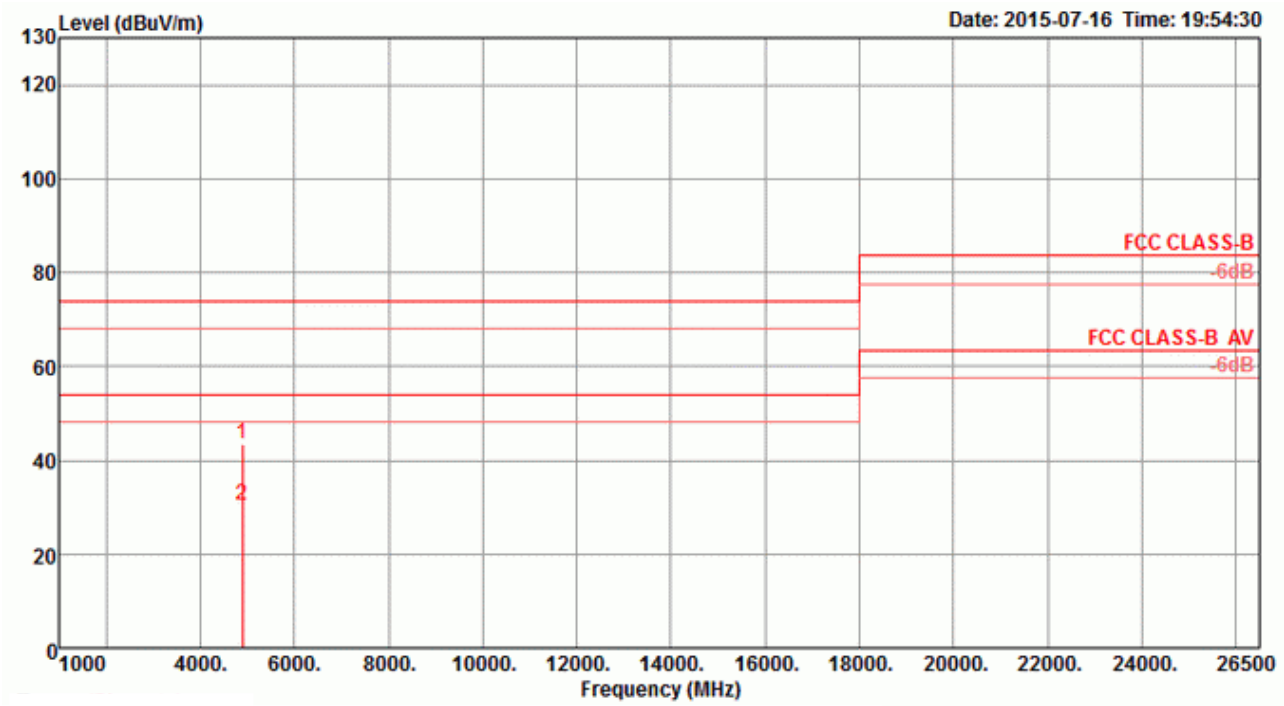
Vertical



	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	4871.62	43.48	74.00	-30.52	39.04	5.92	33.53	35.01	Peak	165	168	VERTICAL
2	4875.91	30.88	54.00	-23.12	26.44	5.92	33.53	35.01	Average	165	168	VERTICAL

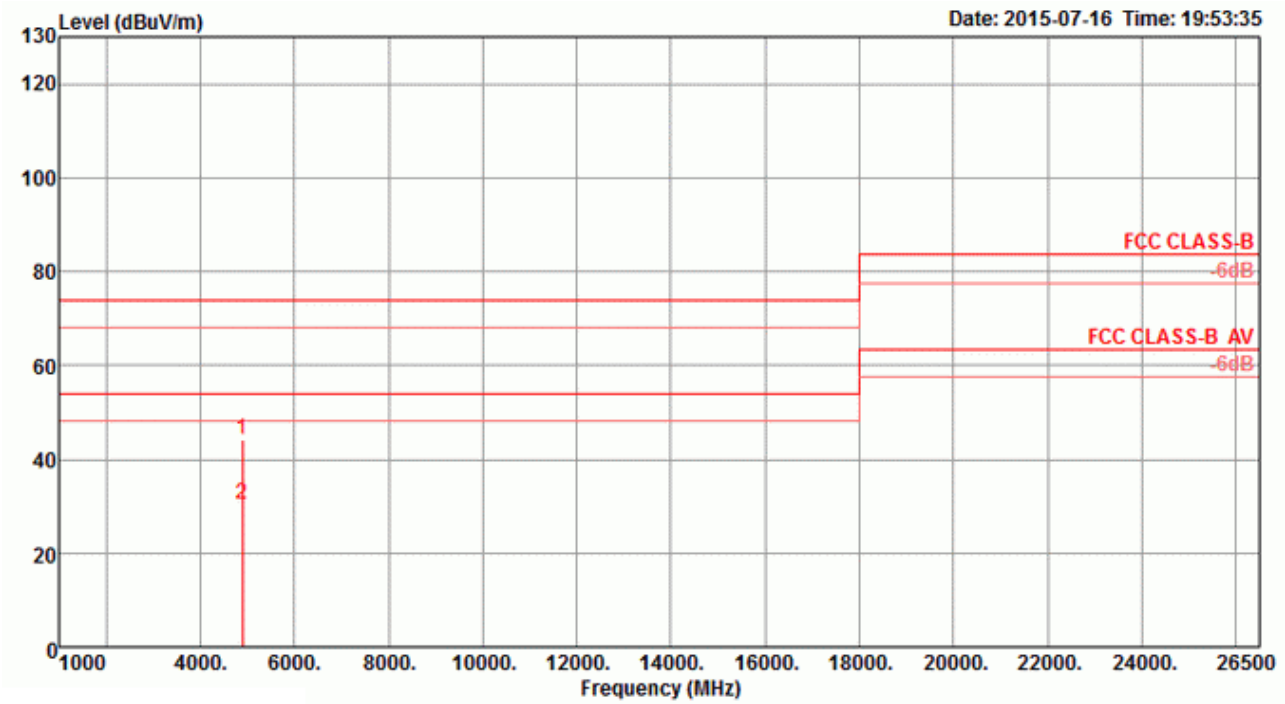
Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 9 / Chain 1 + Chain 2 + Chain 3

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	4904.83	43.56	74.00	-30.44	39.01	5.95	33.61	35.01	Peak	165	142	HORIZONTAL
2	4905.25	30.39	54.00	-23.61	25.84	5.95	33.61	35.01	Average	165	142	HORIZONTAL

Vertical

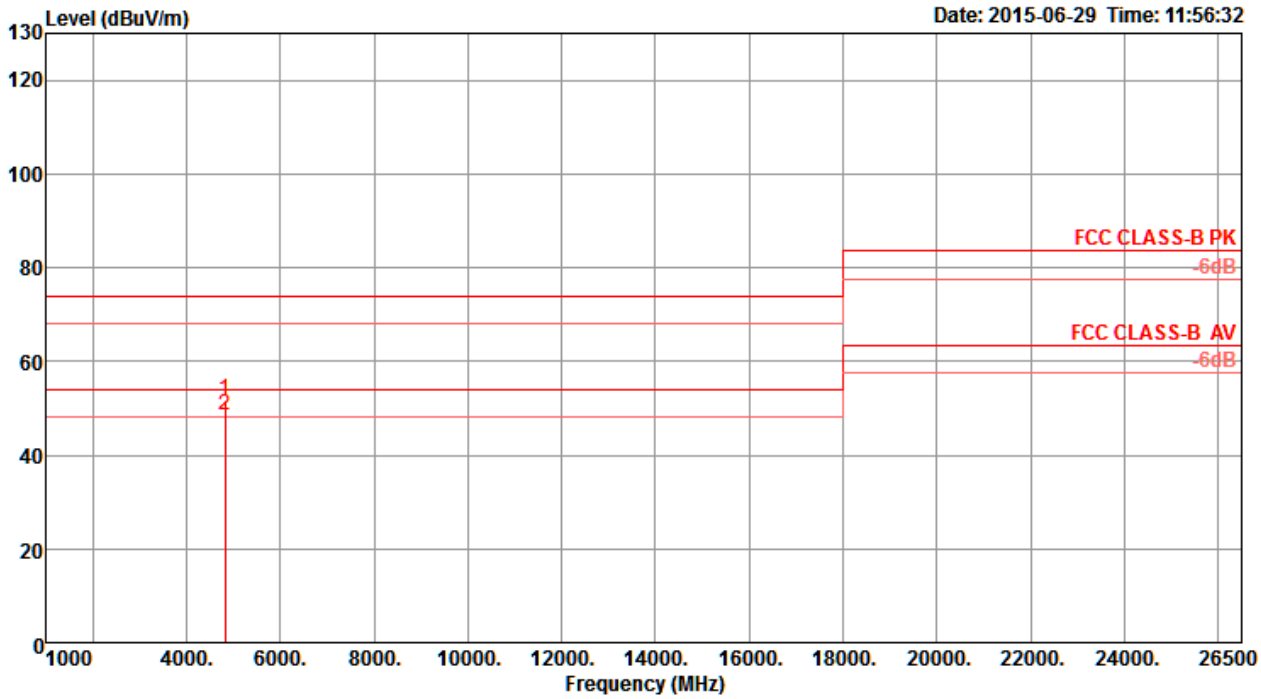


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4904.90	44.01	74.00	-29.99	39.46	5.95	33.61	35.01	Peak	165	166	VERTICAL
2	4904.96	30.29	54.00	-23.71	25.74	5.95	33.61	35.01	Average	165	166	VERTICAL

<For Radio 3>

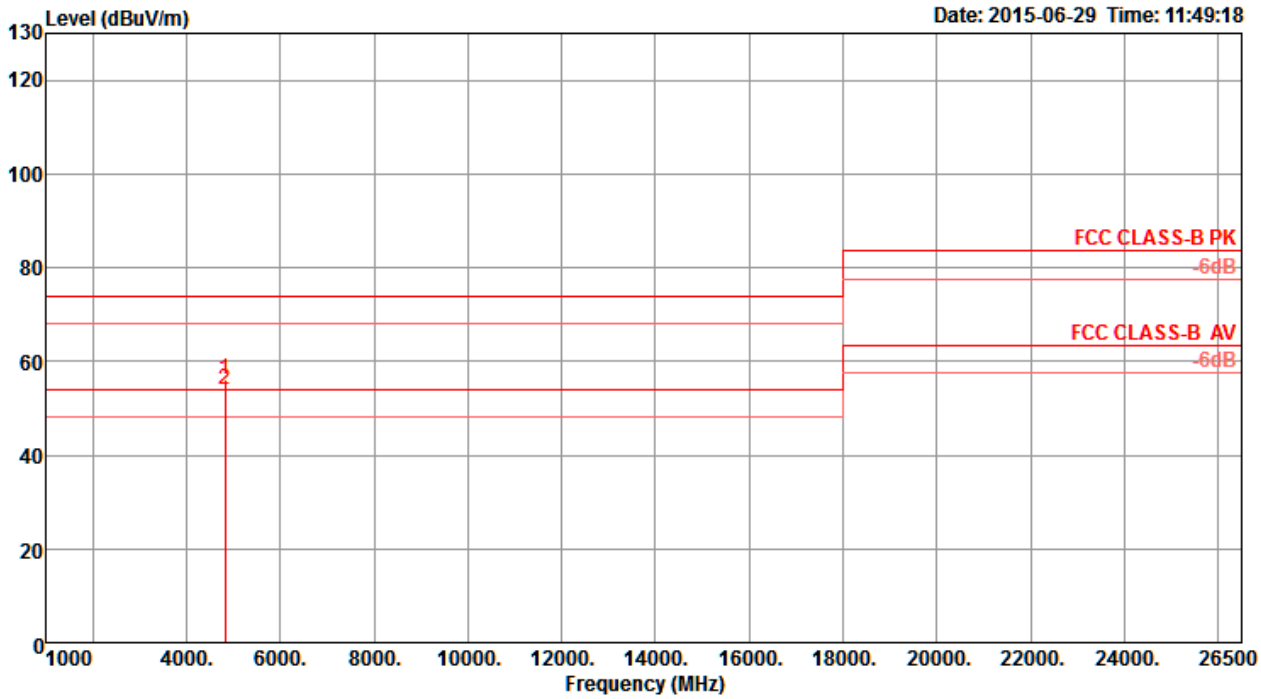
Temperature	22℃	Humidity	55%
Test Engineer	Stim Sung	Configurations	IEEE 802.11b CH 1 / Chain 7

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	4824.06	51.74	74.00	-22.26	49.47	4.10	32.69	34.52	165	210	Peak	HORIZONTAL
2	4824.06	48.58	54.00	-5.42	46.31	4.10	32.69	34.52	165	210	Average	HORIZONTAL

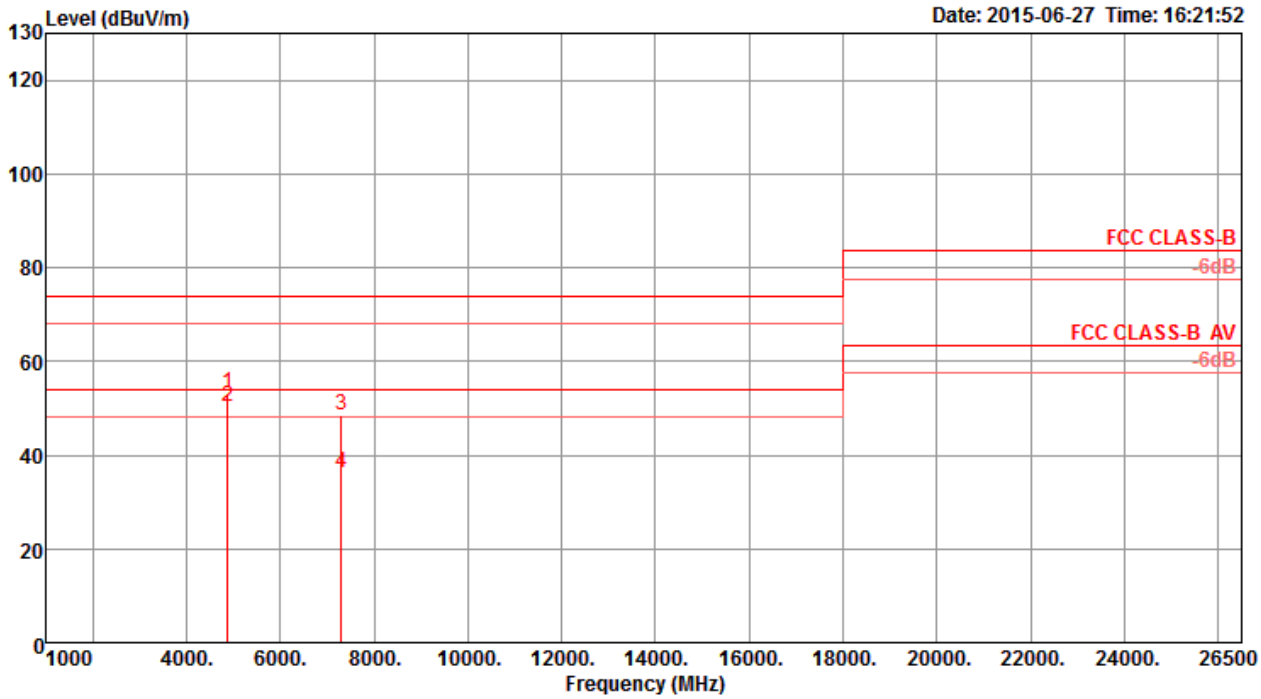
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	4824.00	56.16	74.00	-17.84	53.89	4.10	32.69	34.52	157	208	Peak	VERTICAL
2	4824.00	53.85	54.00	-0.15	51.58	4.10	32.69	34.52	157	208	Average	VERTICAL

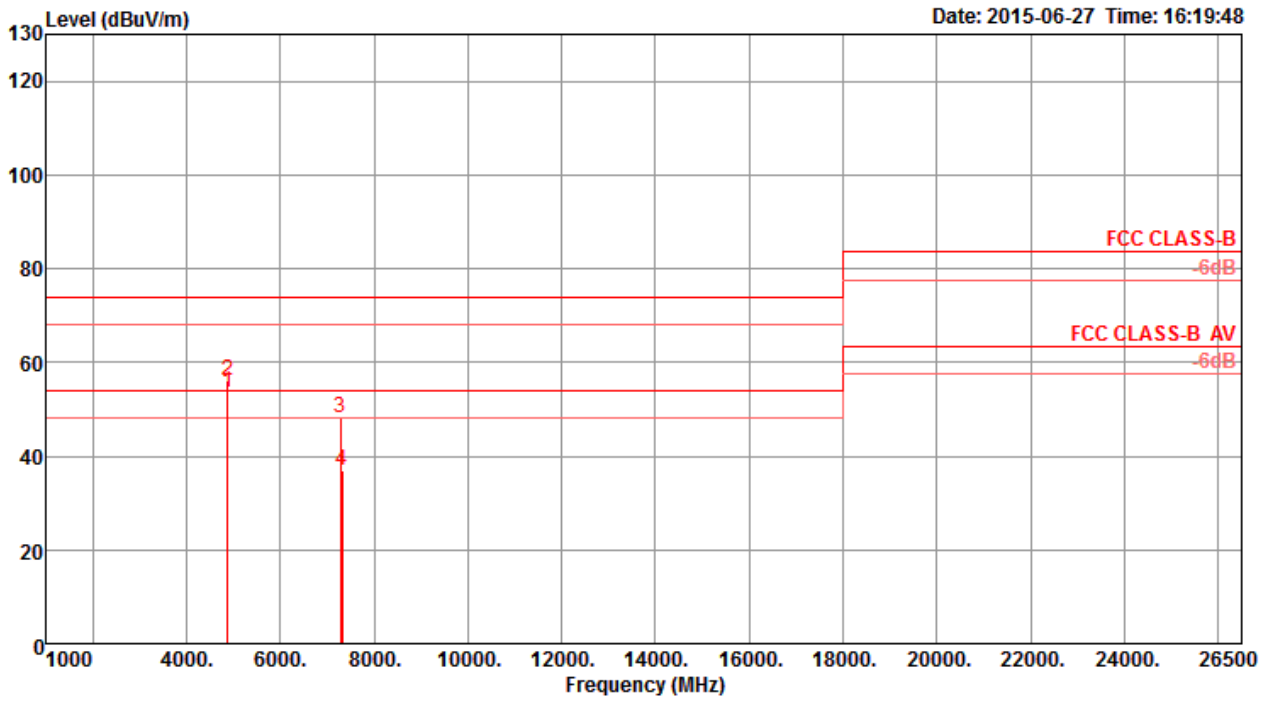
Temperature	22℃	Humidity	55%
Test Engineer	Stim Sung	Configurations	IEEE 802.11b CH 6 / Chain 7

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	4873.99	53.25	74.00	-20.75	48.81	5.92	33.53	35.01	Peak	100	296	HORIZONTAL
2	4874.01	50.28	54.00	-3.72	45.84	5.92	33.53	35.01	Average	100	296	HORIZONTAL
3	7303.29	48.69	74.00	-25.31	40.46	7.13	36.38	35.28	Peak	100	274	HORIZONTAL
4	7310.00	36.37	54.00	-17.63	28.14	7.13	36.38	35.28	Average	100	274	HORIZONTAL

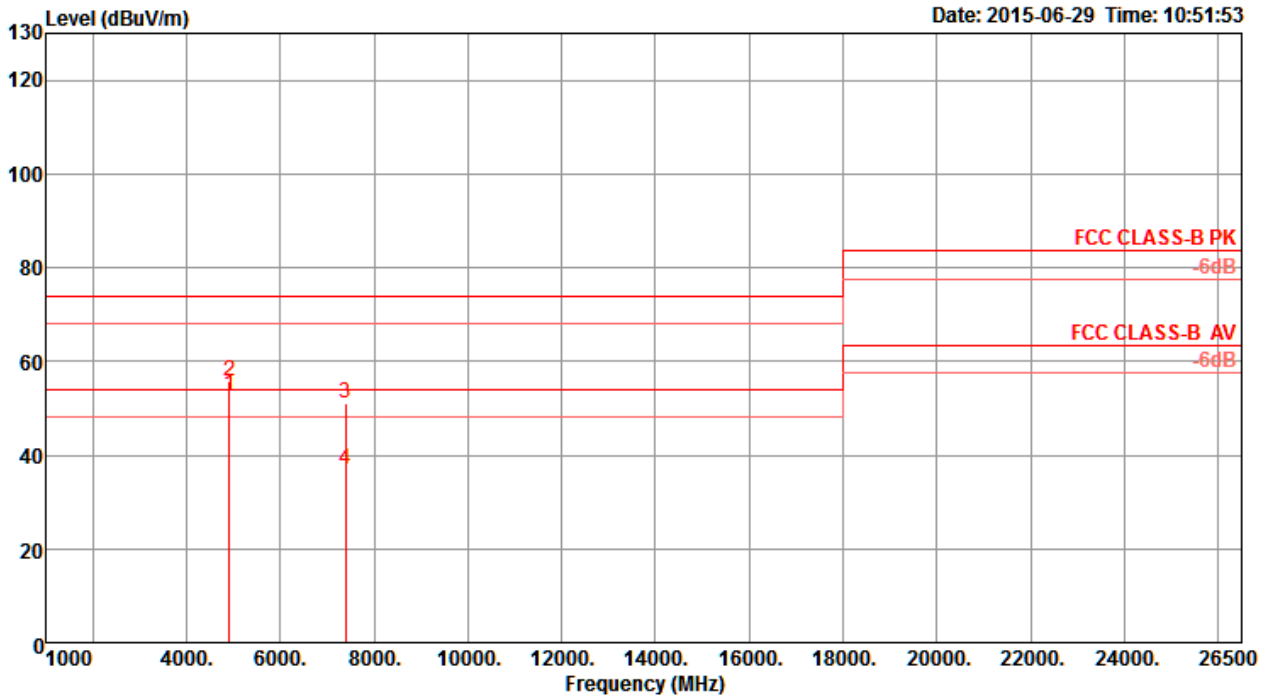
Vertical



	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	4874.00	53.63	54.00	-0.37	49.19	5.92	33.53	35.01	Average	233	336	VERTICAL
2	4874.03	56.24	74.00	-17.76	51.80	5.92	33.53	35.01	Peak	233	336	VERTICAL
3	7292.14	48.26	74.00	-25.74	40.08	7.12	36.34	35.28	Peak	100	29	VERTICAL
4	7312.57	36.95	54.00	-17.05	28.72	7.13	36.38	35.28	Average	100	29	VERTICAL

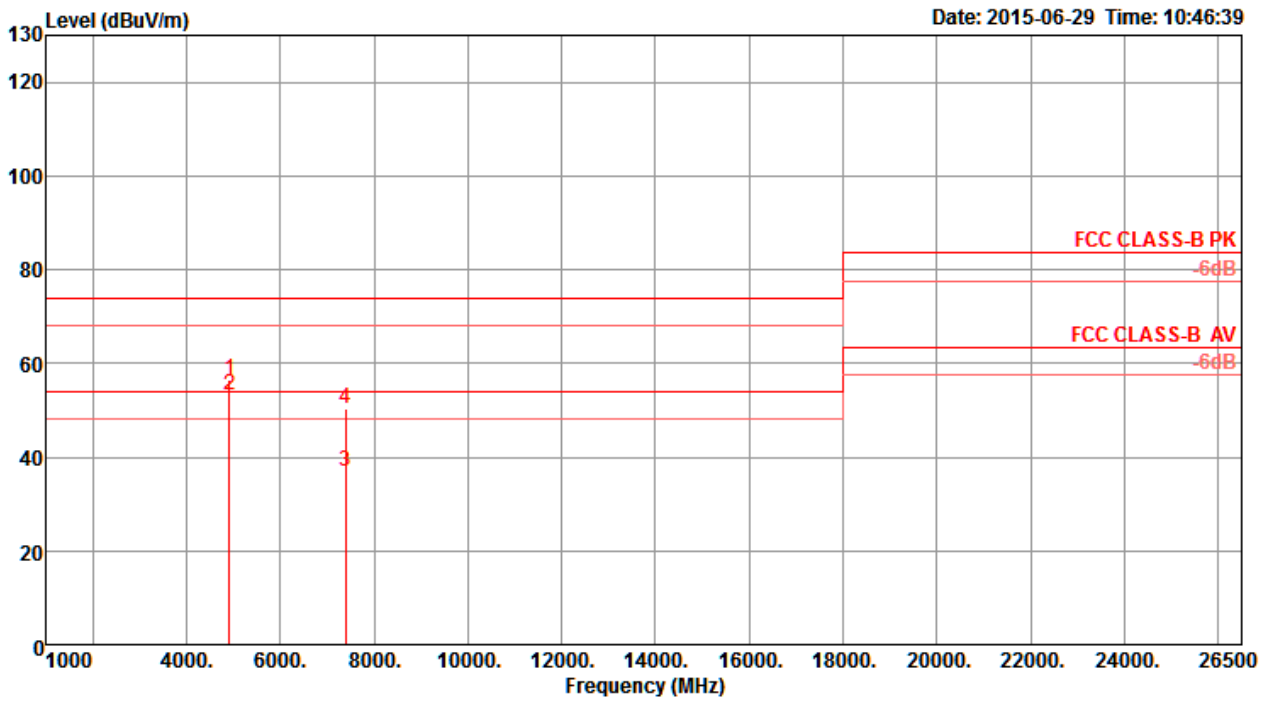
Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung	Configurations	IEEE 802.11b CH 11 / Chain 7

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	4924.01	53.03	54.00	-0.97	50.49	4.15	32.88	34.49	225	176	Average	HORIZONTAL
2	4924.13	55.77	74.00	-18.23	53.23	4.15	32.88	34.49	225	176	Peak	HORIZONTAL
3	7387.25	51.18	74.00	-22.82	43.47	5.12	37.36	34.77	180	155	Peak	HORIZONTAL

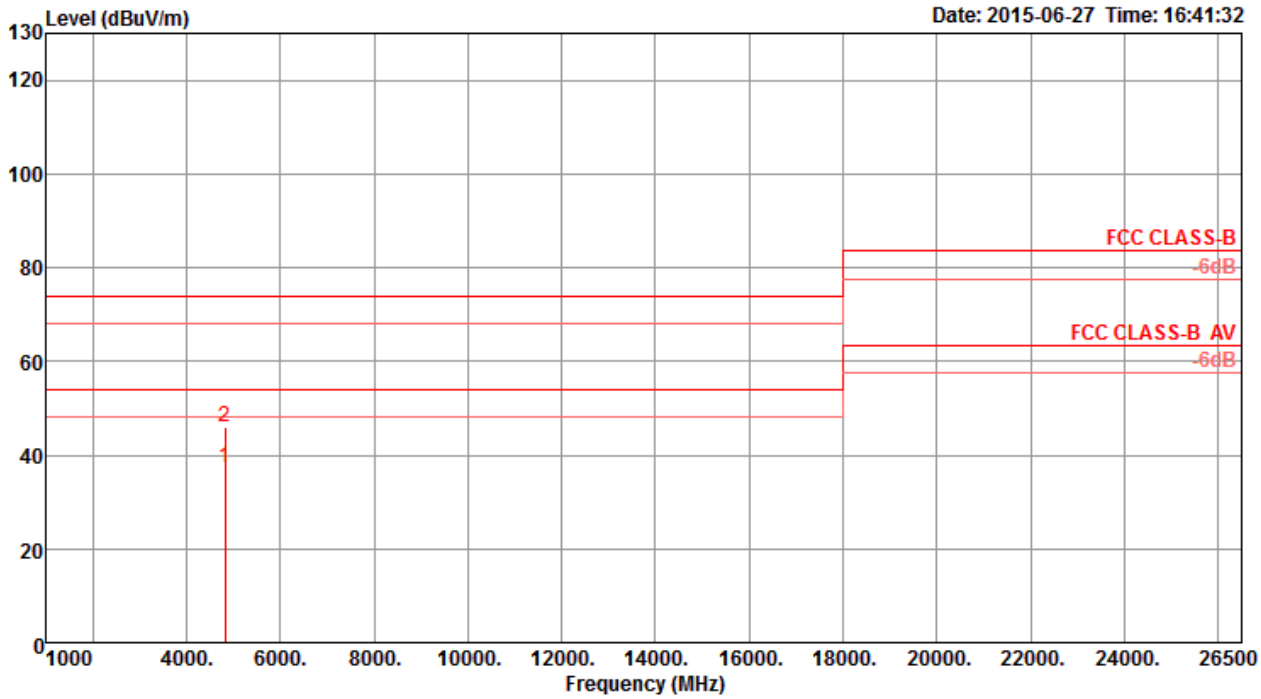
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	4924.03	56.34	74.00	-17.66	53.80	4.15	32.88	34.49	243	184	Peak	VERTICAL
2	4924.03	53.27	54.00	-0.73	50.73	4.15	32.88	34.49	243	184	Average	VERTICAL
3	7390.28	36.93	54.00	-17.07	29.22	5.12	37.36	34.77	212	166	Average	VERTICAL

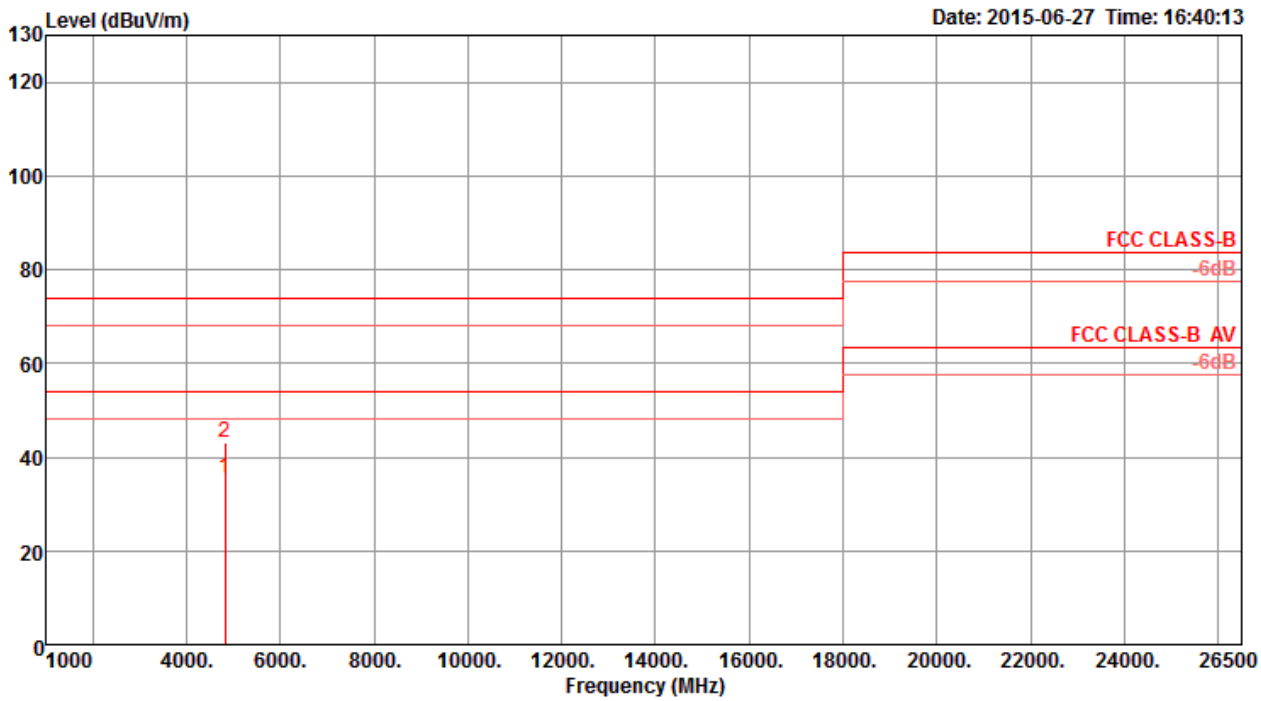
Temperature	22℃	Humidity	55%
Test Engineer	Stim Sung	Configurations	IEEE 802.11g CH 1 / Chain 7

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	4822.86	37.14	54.00	-16.86	32.86	5.87	33.42	35.01	Average	100	253	HORIZONTAL
2	4825.09	46.09	74.00	-27.91	41.81	5.87	33.42	35.01	Peak	100	253	HORIZONTAL

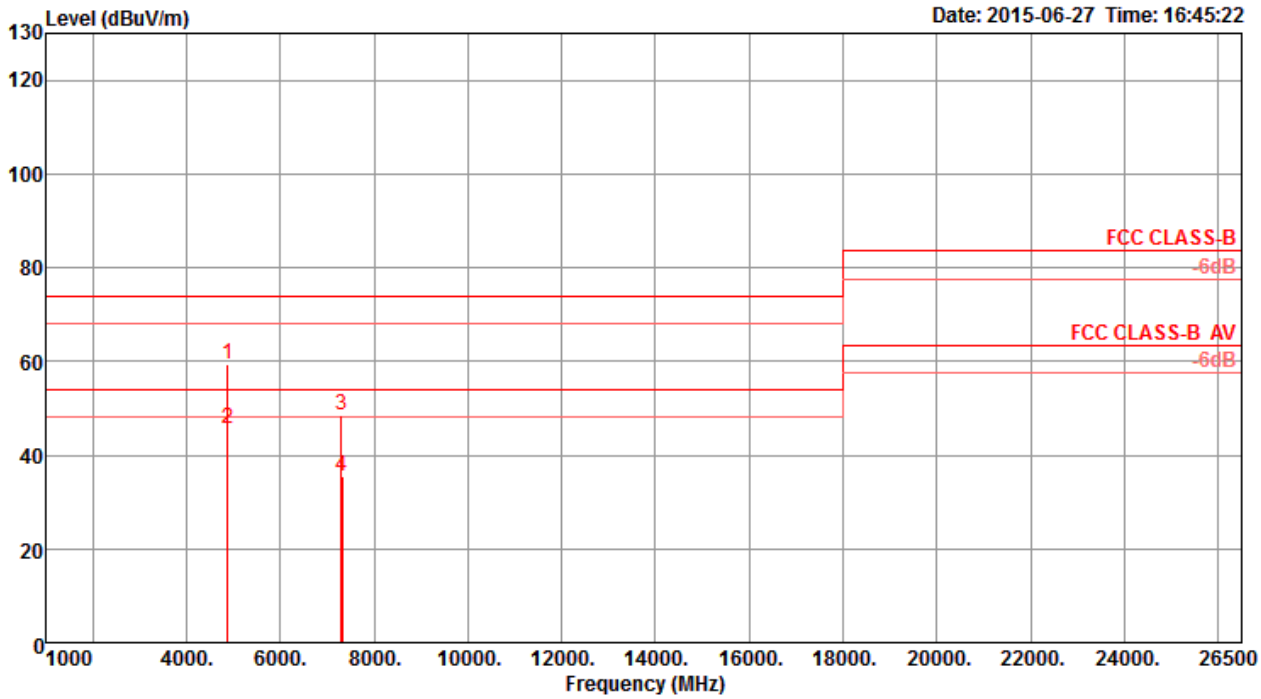
Vertical



	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	4824.94	35.41	54.00	-18.59	31.13	5.87	33.42	35.01	Average	100	350	VERTICAL
2	4824.94	43.23	74.00	-30.77	38.95	5.87	33.42	35.01	Peak	100	350	VERTICAL

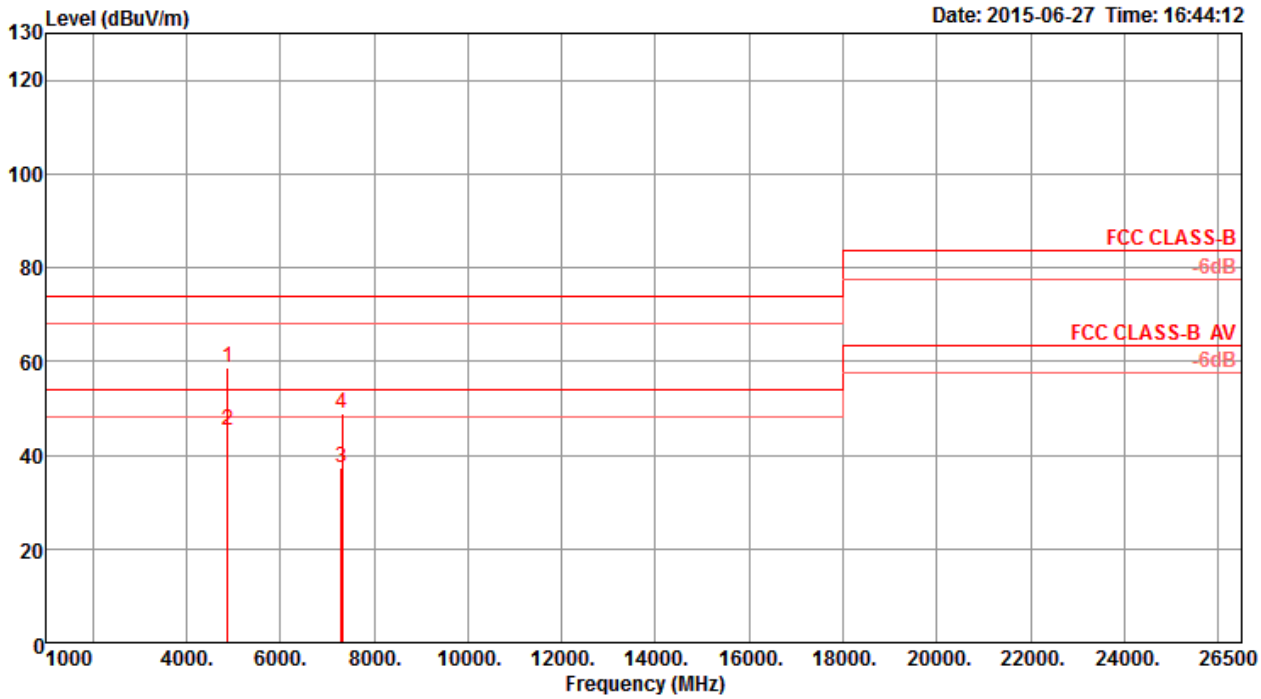
Temperature	22℃	Humidity	55%
Test Engineer	Stim Sung	Configurations	IEEE 802.11g CH 6 / Chain 7

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	4876.79	59.50	74.00	-14.50	55.06	5.92	33.53	35.01	Peak	100	298	HORIZONTAL
2	4879.93	45.76	54.00	-8.24	41.32	5.92	33.53	35.01	Average	100	298	HORIZONTAL
3	7305.64	48.40	74.00	-25.60	40.17	7.13	36.38	35.28	Peak	100	36	HORIZONTAL
4	7312.57	35.57	54.00	-18.43	27.34	7.13	36.38	35.28	Average	100	36	HORIZONTAL

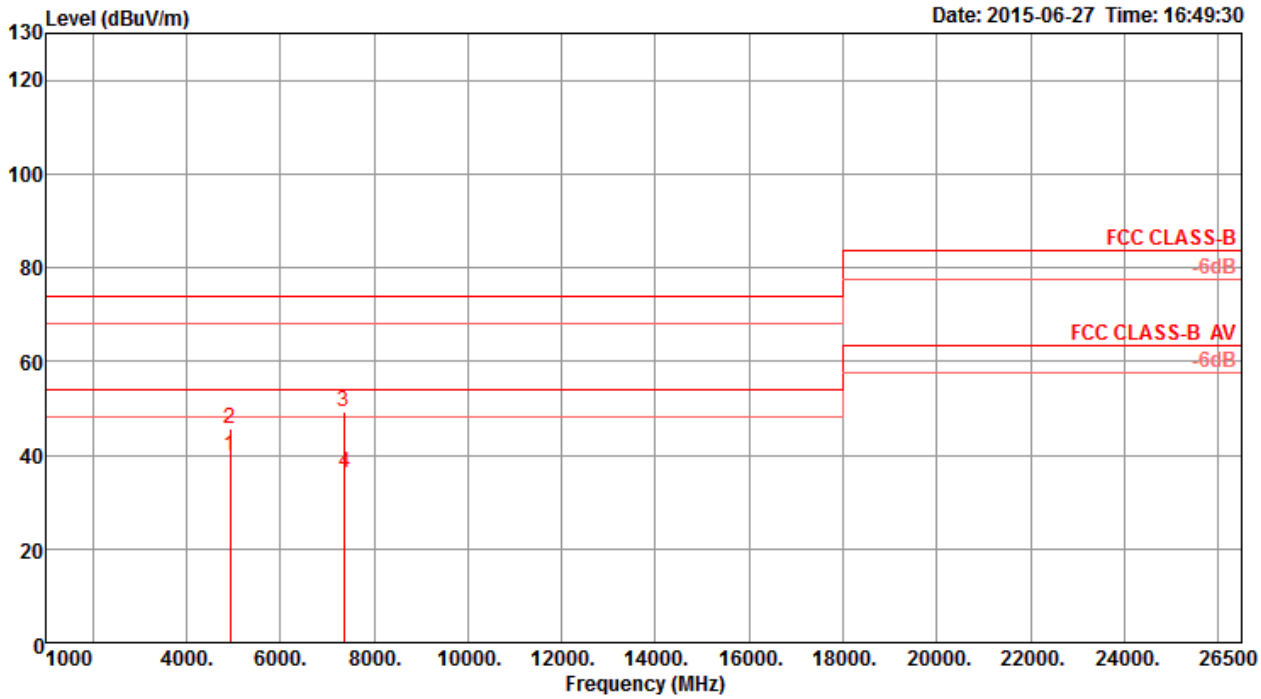
Vertical



	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	4877.00	58.63	74.00	-15.37	54.19	5.92	33.53	35.01	Peak	100	341	VERTICAL
2	4880.14	45.25	54.00	-8.75	40.81	5.92	33.53	35.01	Average	100	341	VERTICAL
3	7310.86	37.48	54.00	-16.52	29.25	7.13	36.38	35.28	Average	100	104	VERTICAL
4	7312.57	49.05	74.00	-24.95	40.82	7.13	36.38	35.28	Peak	100	104	VERTICAL

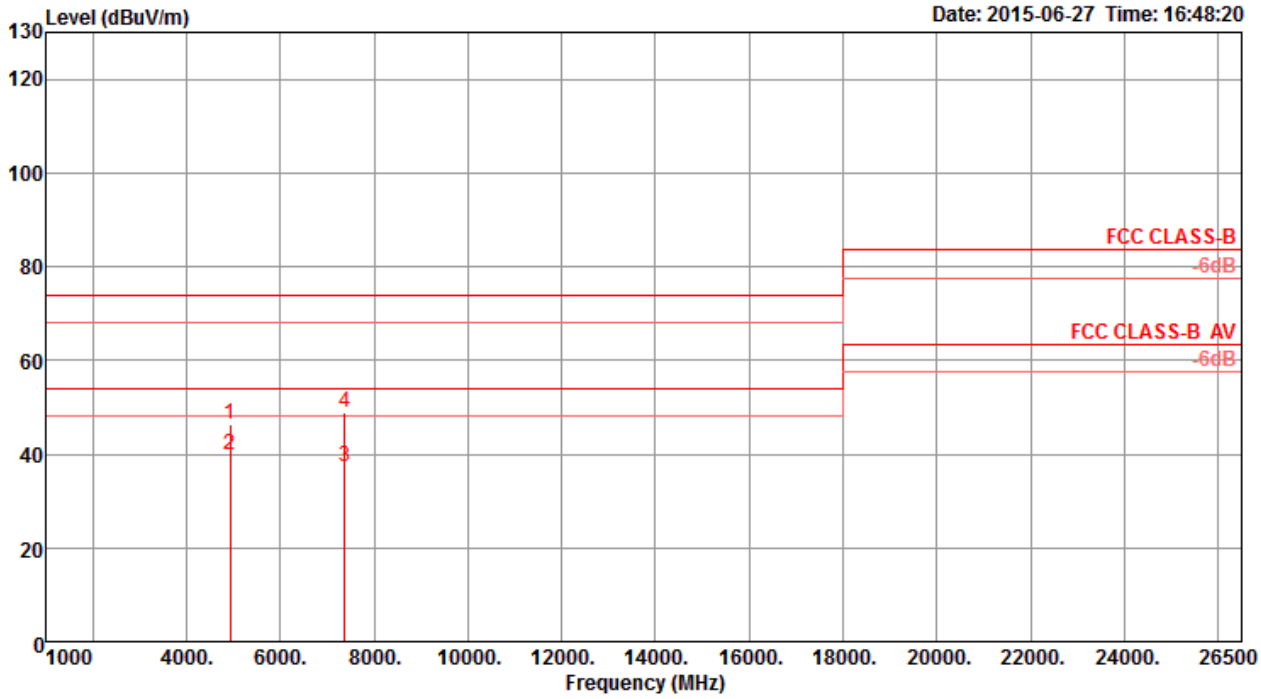
Temperature	22℃	Humidity	55%
Test Engineer	Stim Sung	Configurations	IEEE 802.11g CH 11 / Chain 7

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	4930.00	39.93	54.00	-14.07	35.32	5.97	33.65	35.01	Average	100	254	HORIZONTAL
2	4937.00	45.71	74.00	-28.29	41.05	5.98	33.69	35.01	Peak	100	254	HORIZONTAL
3	7364.71	49.18	74.00	-24.82	40.81	7.16	36.50	35.29	Peak	100	299	HORIZONTAL
4	7379.14	36.08	54.00	-17.92	27.68	7.16	36.53	35.29	Average	100	299	HORIZONTAL

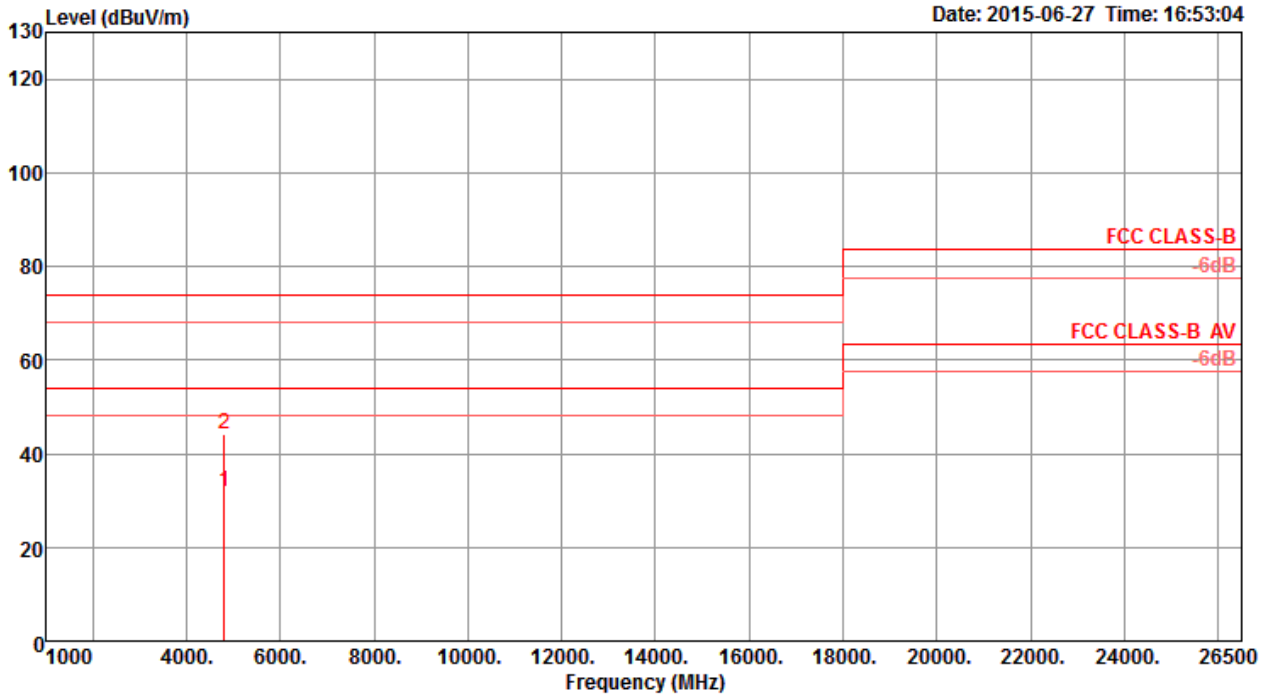
Vertical



	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	4926.79	46.26	74.00	-27.74	41.65	5.97	33.65	35.01	Peak	100	249	VERTICAL
2	4929.64	39.74	54.00	-14.26	35.13	5.97	33.65	35.01	Average	100	249	VERTICAL
3	7367.00	37.32	54.00	-16.68	28.92	7.16	36.53	35.29	Average	100	99	VERTICAL
4	7379.14	48.91	74.00	-25.09	40.51	7.16	36.53	35.29	Peak	100	99	VERTICAL

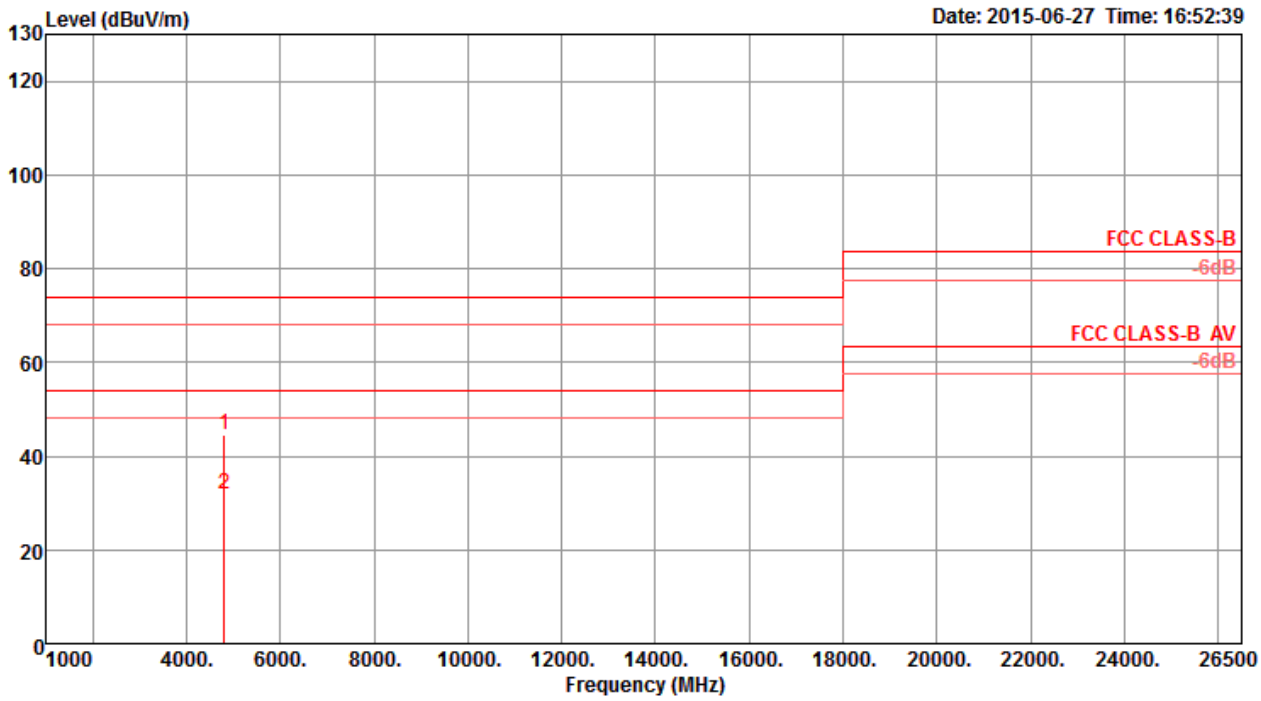
Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 1 / Chain 7
Test Date	Jun. 27 2015		

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	4800.64	31.82	54.00	-22.18	27.60	5.85	33.38	35.01	Average	40	259	HORIZONTAL
2	4802.93	44.35	74.00	-29.65	40.13	5.85	33.38	35.01	Peak	100	259	HORIZONTAL

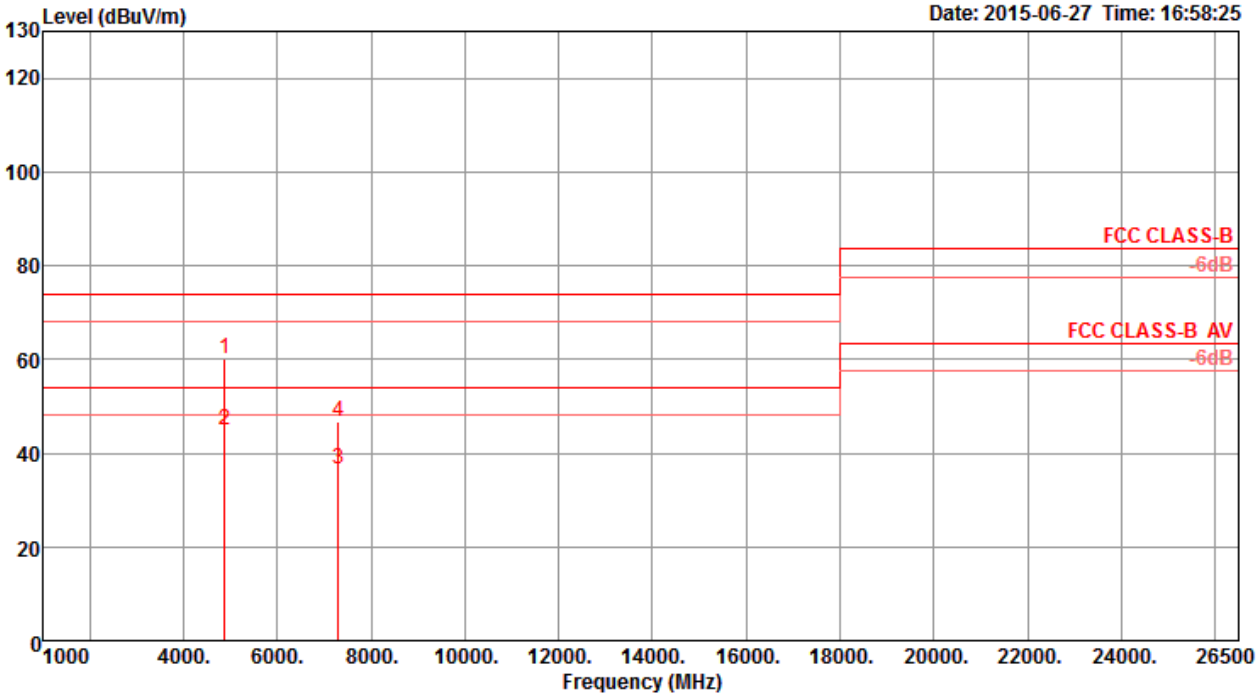
Vertical



	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	4802.71	44.51	74.00	-29.49	40.29	5.85	33.38	35.01	Peak	100	92	VERTICAL
2	4806.21	31.95	54.00	-22.05	27.73	5.85	33.38	35.01	Average	100	92	VERTICAL

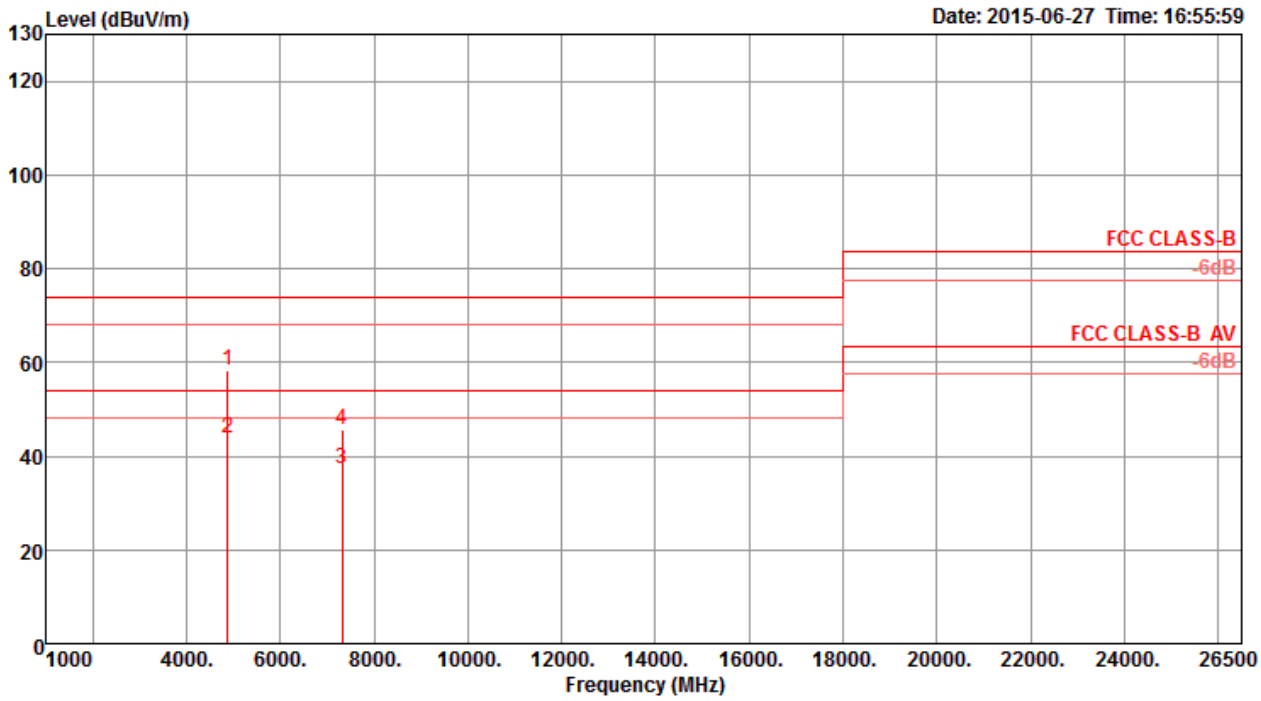
Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 6 / Chain 7

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	4876.57	59.94	74.00	-14.06	55.50	5.92	33.53	35.01	Peak	100	304	HORIZONTAL
2	4879.79	44.73	54.00	-9.27	40.29	5.92	33.53	35.01	Average	100	304	HORIZONTAL
3	7304.93	36.41	54.00	-17.59	28.18	7.13	36.38	35.28	Average	100	147	HORIZONTAL
4	7304.93	46.61	74.00	-27.39	38.38	7.13	36.38	35.28	Peak	100	147	HORIZONTAL

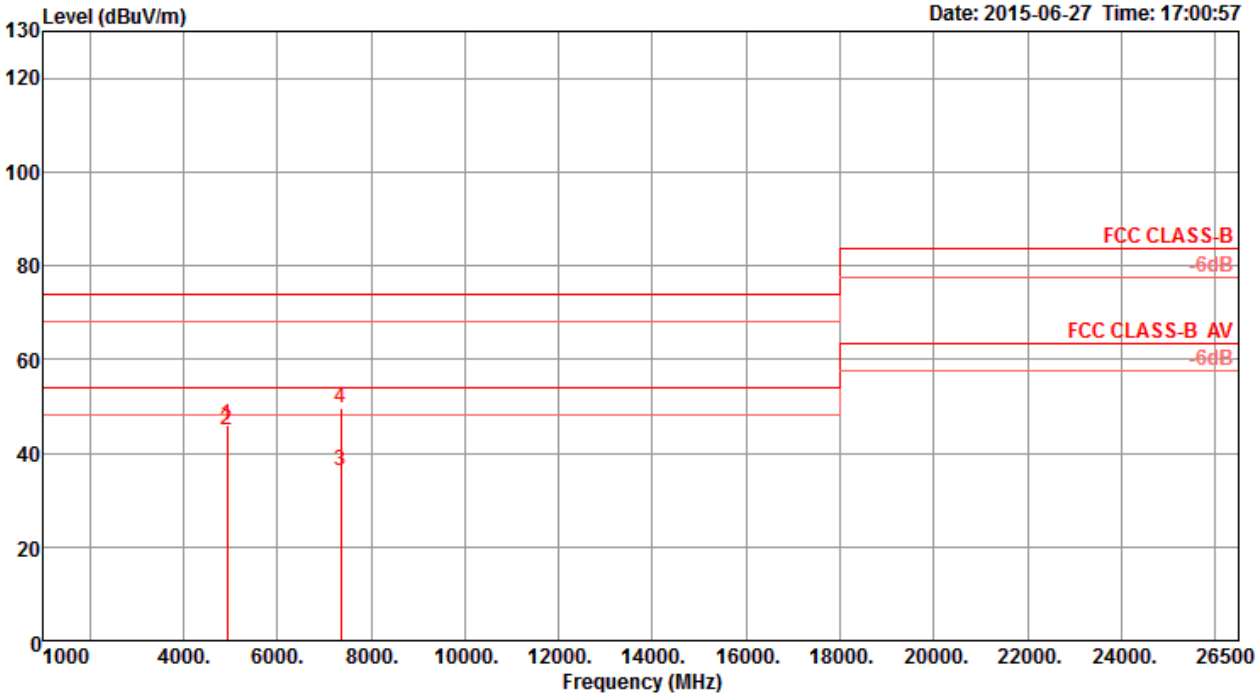
Vertical



	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	4876.50	58.25	74.00	-15.75	53.81	5.92	33.53	35.01	Peak	100	339	VERTICAL
2	4879.93	43.81	54.00	-10.19	39.37	5.92	33.53	35.01	Average	100	339	VERTICAL
3	7317.64	37.43	54.00	-16.57	29.15	7.14	36.42	35.28	Average	100	202	VERTICAL
4	7317.64	45.60	74.00	-28.40	37.32	7.14	36.42	35.28	Peak	100	201	VERTICAL

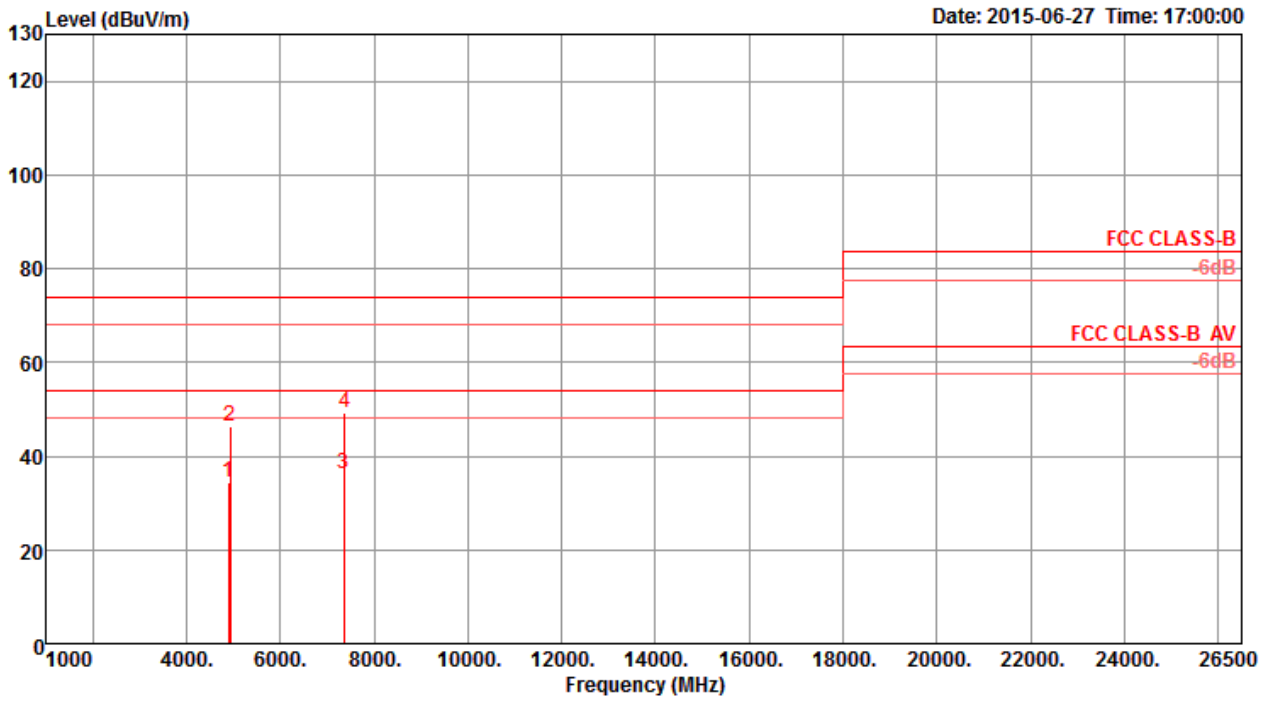
Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 11 / Chain 7

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	4932.57	46.03	54.00	-7.97	41.42	5.97	33.65	35.01	Average	100	94	HORIZONTAL
2	4935.00	44.85	74.00	-29.15	40.24	5.97	33.65	35.01	Peak	100	94	HORIZONTAL
3	7361.71	36.32	54.00	-17.68	27.94	7.16	36.50	35.28	Average	100	3	HORIZONTAL
4	7362.50	49.54	74.00	-24.46	41.17	7.16	36.50	35.29	Peak	100	3	HORIZONTAL

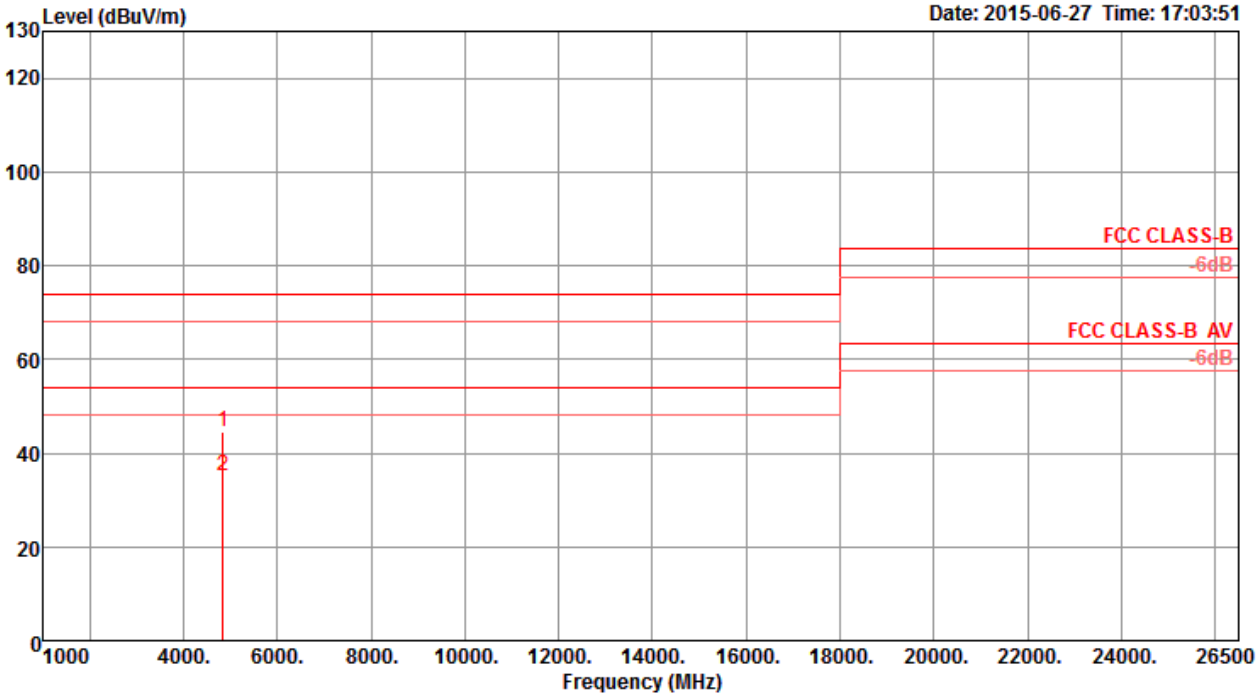
Vertical



	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	4899.00	34.30	54.00	-19.70	29.81	5.93	33.57	35.01	Average	100	328	VERTICAL
2	4927.86	46.44	74.00	-27.56	41.83	5.97	33.65	35.01	Peak	100	328	VERTICAL
3	7363.50	36.35	54.00	-17.65	27.98	7.16	36.50	35.29	Average	100	248	VERTICAL
4	7369.21	49.32	74.00	-24.68	40.92	7.16	36.53	35.29	Peak	100	248	VERTICAL

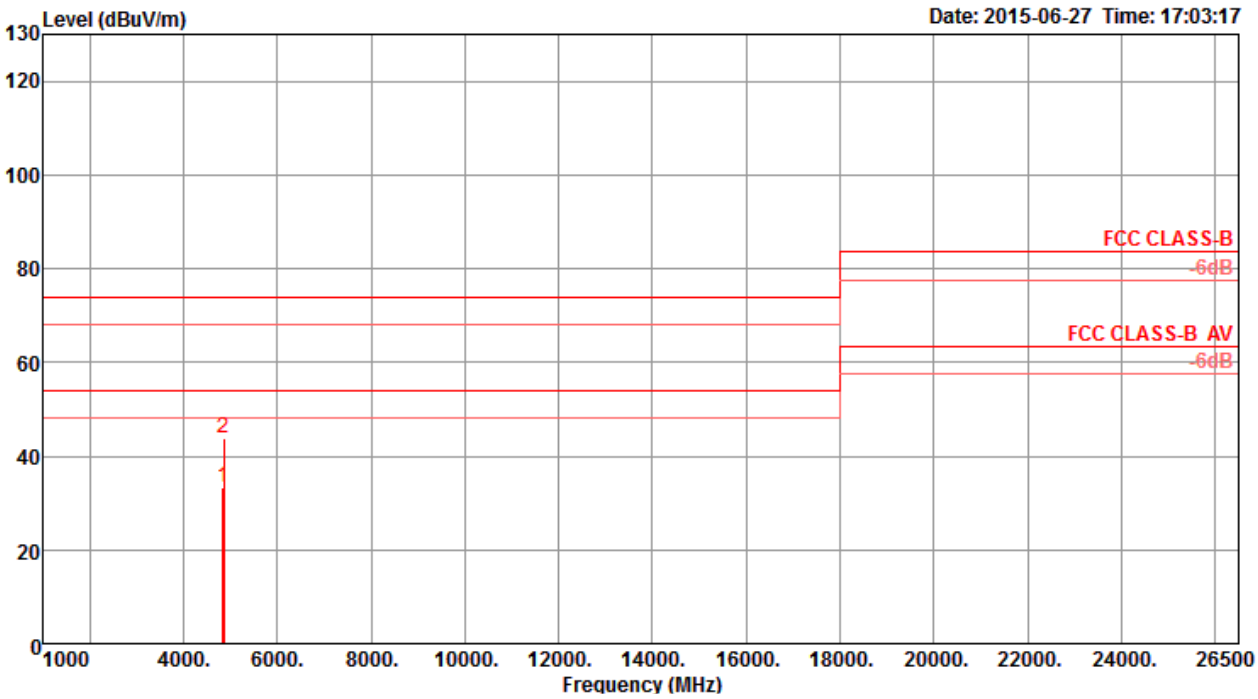
Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 3 / Chain 7

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	4839.36	44.57	74.00	-29.43	40.24	5.88	33.46	35.01	Peak	100	150	HORIZONTAL
2	4844.00	35.28	54.00	-18.72	30.95	5.88	33.46	35.01	Average	100	150	HORIZONTAL

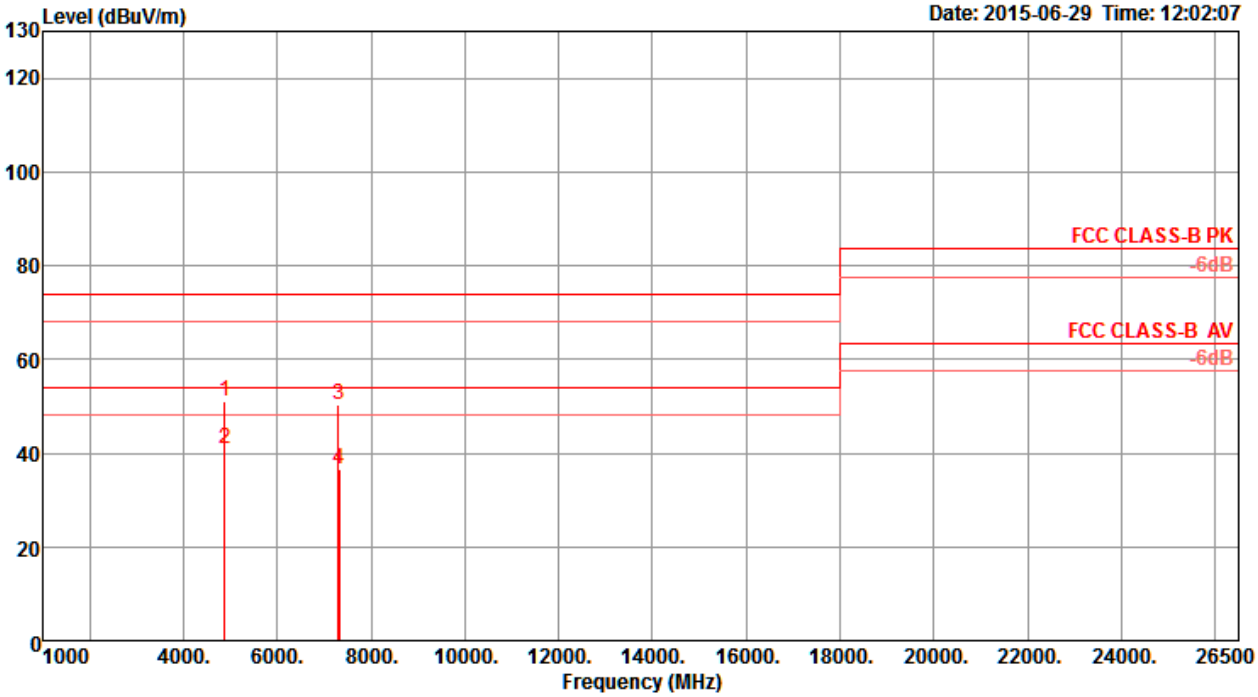
Vertical



	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	4844.00	33.20	54.00	-20.80	28.87	5.88	33.46	35.01	Average	100	303	VERTICAL
2	4866.93	43.99	74.00	-30.01	39.60	5.90	33.50	35.01	Peak	100	303	VERTICAL

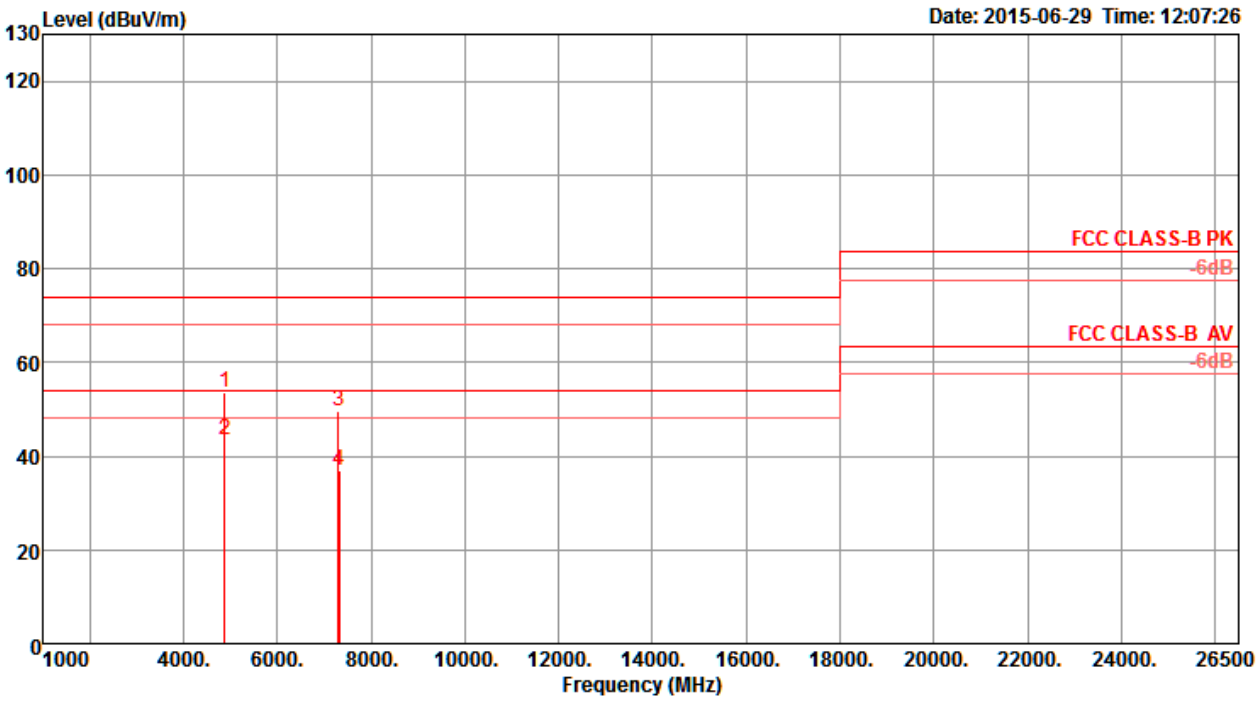
Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 6 / Chain 7

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	4882.90	50.88	74.00	-23.12	48.48	4.13	32.78	34.51	223	182	Peak	HORIZONTAL
2	4882.90	41.01	54.00	-12.99	38.61	4.13	32.78	34.51	223	182	Average	HORIZONTAL
3	7309.12	50.24	74.00	-23.76	42.68	5.09	37.23	34.76	262	118	Peak	HORIZONTAL

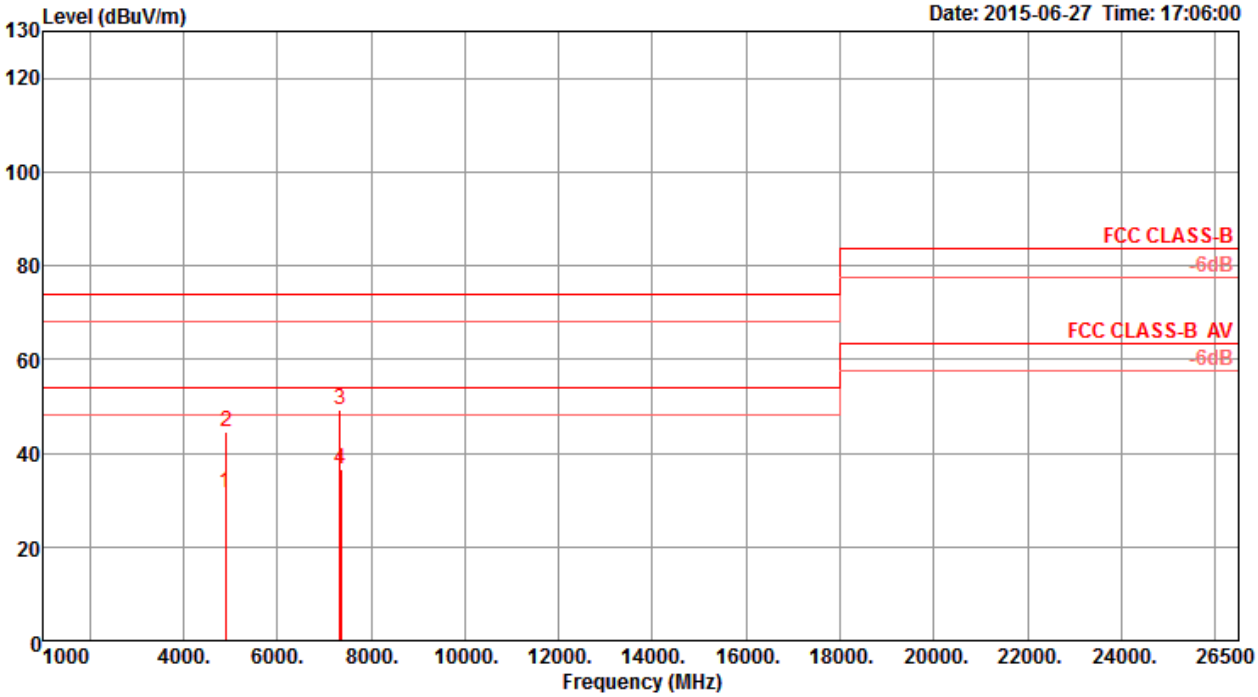
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	4881.96	53.65	74.00	-20.35	51.25	4.13	32.78	34.51	159	199	Peak	VERTICAL
2	4881.96	43.47	54.00	-10.53	41.07	4.13	32.78	34.51	159	199	Average	VERTICAL
3	7303.45	49.79	74.00	-24.21	42.23	5.09	37.23	34.76	318	147	Peak	VERTICAL

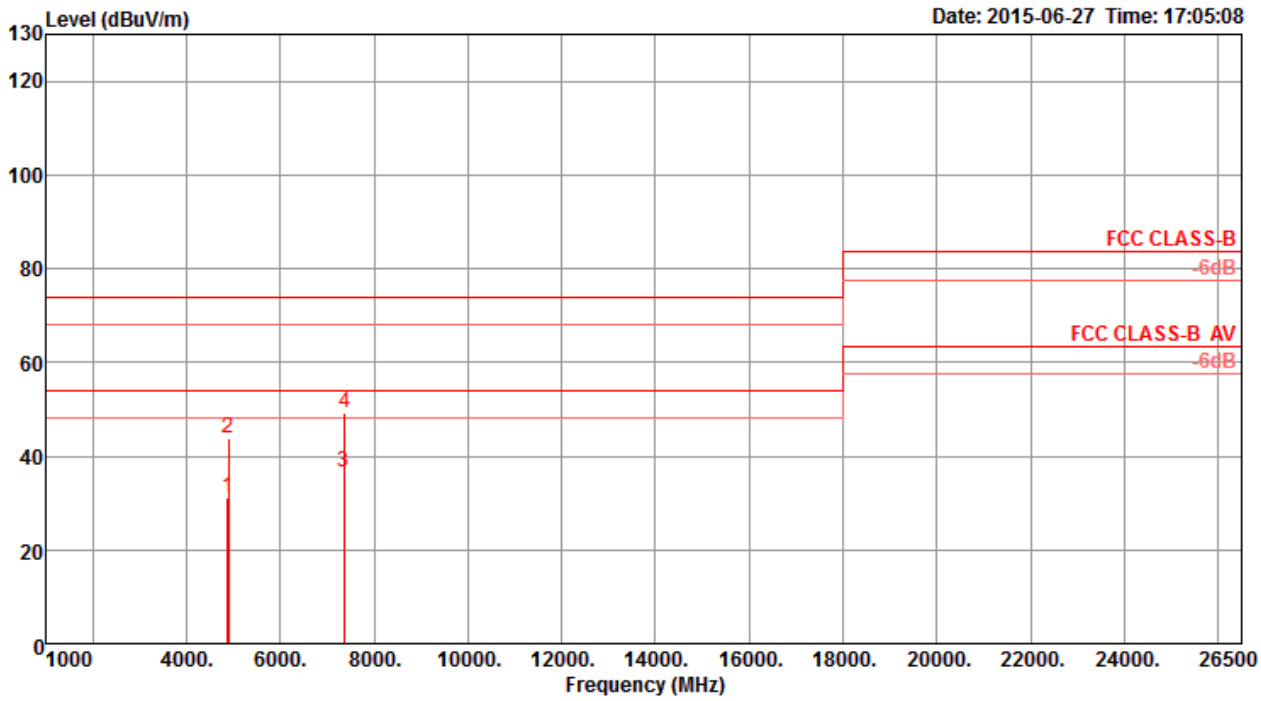
Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 9 / Chain 7

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	4899.29	31.35	54.00	-22.65	26.86	5.93	33.57	35.01	Average	100	65	HORIZONTAL
2	4906.40	44.47	74.00	-29.53	39.92	5.95	33.61	35.01	Peak	100	65	HORIZONTAL
3	7346.86	49.10	74.00	-24.90	40.77	7.15	36.46	35.28	Peak	100	178	HORIZONTAL
4	7361.29	36.45	54.00	-17.55	28.07	7.16	36.50	35.28	Average	100	178	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	4879.00	31.08	54.00	-22.92	26.64	5.92	33.53	35.01	Average	100	189	VERTICAL
2	4899.21	43.65	74.00	-30.35	39.16	5.93	33.57	35.01	Peak	100	189	VERTICAL
3	7353.00	36.39	54.00	-17.61	28.01	7.16	36.50	35.28	Average	100	259	VERTICAL
4	7380.64	49.25	74.00	-24.75	40.85	7.16	36.53	35.29	Peak	100	259	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.