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FCC RADIO TEST REPORT

Applicant's company	**Motorola Solutions, Inc.**
Applicant Address	One Motorola Plaza Holtsville, NY 11742 USA
FCC ID	**UZ7AP7522I**
Manufacturer's company	**Wistron NeWeb Corporation**
Manufacturer Address	20 Park Avenue II, Hsinchu Science Park, Hsinchu 308, Taiwan, R.O.C.

Product Name	Oak Internal
Brand Name	MOTOROLA
Model No.	AP-7522I
Test Rule Part(s)	47 CFR FCC Part 15 Subpart E § 15.407
Test Freq. Range	5250 ~ 5350MHz / 5470 ~ 5725MHz
Received Date	Apr. 15, 2014
Final Test Date	Jul. 25, 2014
Submission Type	Class II Change
Operating Mode	Master and Client (without radar detection function)

Statement

Test result included is for the IEEE 802.11n and IEEE 802.11a/ac 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 C63.10-2009**, **47 CFR FCC Part 15 Subpart E, KDB789033 D02 v01, KDB662911 D01 v02r01, KDB644545 D03 v01.**

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

Testing Laboratory
1190

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History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR441804-07	Rev. 01	Initial issue of report	Nov. 26, 2014

Certificate No.: CB10307127

1. CERTIFICATE OF COMPLIANCE

Product Name	:	Oak Internal
Brand Name	:	MOTOROLA
Model No.	:	AP-7522I
Applicant	:	Motorola Solutions, Inc.
Test Rule Part(s)	:	47 CFR FCC Part 15 Subpart E § 15.407

Sporton International as requested by the applicant to evaluate the EMC performance of the product sample received on Apr. 15, 2014 would like to declare that the tested sample has been evaluated and found to be in compliance with the tested rule parts. The data recorded as well as the test configuration specified is true and accurate for showing the sample's EMC nature.

Sam Chen

SPORTON INTERNATIONAL INC.

2. SUMMARY OF THE TEST RESULT

Applied Standard: 47 CFR FCC Part 15 Subpart E				
Part	**Rule Section**	**Description of Test**	**Result**	**Under Limit**
4.1	15.207	AC Power Line Conducted Emissions	Complies	6.90 dB
4.2	15.407(a)	26dB Spectrum Bandwidth and 99% Occupied Bandwidth	Complies	-
4.3	15.407(a)	Maximum Conducted Output Power	Complies	0.04 dB
4.4	15.407(a)	Power Spectral Density	Complies	0.21 dB
4.5	15.407(b)	Radiated Emissions	Complies	3.83 dB
4.6	15.407(b)	Band Edge Emissions	Complies	1.02 dB
4.7	15.407(g)	Frequency Stability	Complies	-
4.8	15.203	Antenna Requirements	Complies	-

3. GENERAL INFORMATION

3.1. Product Details

IEEE 802.11n/ac

Items	Description
Product Type	WLAN (1TX,2TX/1RX,2RX)
Radio Type	Intentional Transceiver
Power Type	From power adapter or PoE
Modulation	see the below table for IEEE 802.11n/ac
Data Modulation	For 802.11n: OFDM (BPSK / QPSK / 16QAM / 64QAM) For 802.11ac: OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)
Data Rate (Mbps)	see the below table for IEEE 802.11n/ac
Frequency Range	5250 ~ 5350MHz / 5470 ~ 5725MHz
Channel Number	16 for 20MHz bandwidth ; 8 for 40MHz bandwidth 4 for 80MHz bandwidth
Channel Band Width (99%)	For Non-Beamforming Mode: For 1TX Band 2: 802.11ac MCS0/Nss1 (VHT20): 18.72 MHz ; 802.11ac MCS0/Nss1 (VHT40): 37.12 MHz ; 802.11ac MCS0/Nss1 (VHT80): 75.52 MHz Band 3: 802.11ac MCS0/Nss1 (VHT20): 18.56 MHz ; 802.11ac MCS0/Nss1 (VHT40): 36.48 MHz ; 802.11ac MCS0/Nss1 (VHT80): 76.80 MHz For STBC Mode: For 2TX Band 2: 802.11ac MCS0/Nss1 (VHT20): 18.08 MHz ; 802.11ac MCS0/Nss1 (VHT40): 36.80 MHz ; 802.11ac MCS0/Nss1 (VHT80): 76.80MHz Band 3: 802.11ac MCS0/Nss1 (VHT20): 18.08 MHz ; 802.11ac MCS0/Nss1 (VHT40): 36.48 MHz ; 802.11ac MCS0/Nss1 (VHT80): 76.80 MHz

Maximum Conducted Output Power	For Non-Beamforming Mode: For 1TX Band 2: 802.11n MCS0 (HT20): 21.87 dBm ; 802.11n MCS0 (HT40): 21.87 dBm ; 802.11ac MCS0/Nss1 (VHT20): 21.89 dBm ; 802.11ac MCS0/Nss1 (VHT40): 21.83 dBm ; 802.11ac MCS0/Nss1 (VHT80): 14.03 dBm Band 3: 802.11n MCS0 (HT20): 21.78 dBm ; 802.11n MCS0 (HT40): 21.95 dBm ; 802.11ac MCS0/Nss1 (VHT20): 21.96 dBm ; 802.11ac MCS0/Nss1 (VHT40): 21.98 dBm ; 802.11ac MCS0/Nss1 (VHT80): 20.56 dBm For 2TX Band 2: 802.11n MCS0 (HT20): 21.30 dBm ; 802.11n MCS0 (HT40): 23.79 dBm ; 802.11ac MCS0/Nss1 (VHT20): 21.28 dBm ; 802.11ac MCS0/Nss1 (VHT40): 23.85 dBm ; 802.11ac MCS0/Nss1 (VHT80): 16.69 dBm Band 3: 802.11n MCS0 (HT20): 21.25 dBm ; 802.11n MCS0 (HT40): 21.95 dBm ; 802.11ac MCS0/Nss1 (VHT20): 21.17 dBm ; 802.11ac MCS0/Nss1 (VHT40): 21.94 dBm ; 802.11ac MCS0/Nss1 (VHT80): 23.11 dBm For Beamforming Mode: For 2TX Band 2: 802.11ac MCS0/Nss1 (VHT20): 18.57 dBm ; 802.11ac MCS0/Nss1 (VHT40): 19.52 dBm ; 802.11ac MCS0/Nss1 (VHT80): 12.46 dBm Band 3: 802.11ac MCS0/Nss1 (VHT20): 20.51 dBm ; 802.11ac MCS0/Nss1 (VHT40): 19.79 dBm ; 802.11ac MCS0/Nss1 (VHT80): 19.92 dBm

	For STBC Mode: For 2TX Band 2: 802.11n MCS0 (HT20): 23.33 dBm ; 802.11n MCS0 (HT40): 23.94 dBm ; 802.11ac MCS0/Nss1 (VHT20): 23.31 dBm ; 802.11ac MCS0/Nss1 (VHT40): 23.96 dBm ; 802.11ac MCS0/Nss1 (VHT80): 18.57 dBm Band 3: 802.11n MCS0 (HT20): 23.33 dBm ; 802.11n MCS0 (HT40): 23.90 dBm ; 802.11ac MCS0/Nss1 (VHT20): 23.41 dBm ; 802.11ac MCS0/Nss1 (VHT40): 23.83 dBm ; 802.11ac MCS0/Nss1 (VHT80): 23.35 dBm
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3

IEEE 802.11a

Items	Description
Product Type	WLAN (1TX,2TX/1RX,2RX)
Radio Type	Intentional Transceiver
Power Type	From power adapter or PoE
Modulation	OFDM for IEEE 802.11a
Data Modulation	OFDM (BPSK / QPSK / 16QAM / 64QAM)
Data Rate (Mbps)	OFDM (6/9/12/18/24/36/48/54)
Frequency Range	5250 ~ 5350MHz / 5470 ~ 5725MHz
Channel Number	16
Maximum Conducted Output Power	For Non-Beamforming Mode: For 1TX: Band 2: 21.91 dBm ; Band 3: 21.96 dBm For 2TX: Band 2: 21.32 dBm ; Band 3: 21.22 dBm For Beamforming Mode: For 2TX: Band 2: 18.49 dBm ; Band 3: 20.50 dBm
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3

Items	Description	
Communication Mode	☒ IP Based (Load Based)	☐ Frame Based
TPC Function	☒ With TPC	☐ Without TPC
Weather Band (5600~5650MHz)	☒ With 5600~5650MHz	☐ Without 5600~5650MHz
Beamforming Function	☒ With beamforming	☐ Without beamforming

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

Antenna and Band width

Antenna	Single (TX)			Two (TX)		
Band width Mode	20 MHz	40 MHz	80 MHz	20 MHz	40 MHz	80 MHz
IEEE 802.11a	V	X	X	V	X	X
IEEE 802.11n	V	V	X	V	V	X
IEEE 802.11ac	V	V	V	V	V	V

IEEE 11n/ac Spec.

Protocol	Number of Transmit Chains (NTX)	Data Rate / MCS
802.11n (HT20)	1,2	MCS 0-15
802.11n (HT40)	1,2	MCS 0-15
802.11ac (VHT20)	1,2	MCS 0-9/Nss1-2
802.11ac (VHT40)	1,2	MCS 0-9/Nss1-2
802.11ac (VHT80)	1,2	MCS 0-9/Nss1-2

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

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

Note 3: Modulation modes consist of below configuration:
HT20/HT40: IEEE 802.11n, VHT20/VHT40/VHT80: IEEE 802.11ac

3.2. Accessories

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

3.3. Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector	Antenna Gain (dBi)		Cable Loss (dBi)		True Gain (dBi)	
					2.4G	5G	2.4G	5G	2.4G	5G
1	MOTOROLA	BIRCH INT ANT	PIFA Antenna	U.FL	4.13	5.92	-	-	4.13	5.92
2	MOTOROLA	BIRCH INT ANT	PIFA Antenna	U.FL	4.13	5.92	-	-	4.13	5.92
3	MOTOROLA	BIRCH INT ANT	PIFA Antenna	U.FL	4.13	5.92	-	-	4.13	5.92
4	MOTOROLA	BIRCH INT ANT	PIFA Antenna	U.FL	4.13	5.92	-	-	4.13	5.92

Note: The EUT has four antennas of the same type

<For 2.4GHz Band>

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

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

For 1TX

Both Chain 3 and Chain 4 support transmit and receive functions, but only one of them will be used at one time.

After evaluating, Chain 3 has been evaluated to be the worst case, so it's selected to record in this test report.

For 2TX

Chain 3 and Chain 4 could transmit/receive simultaneously.

<For 5GHz Band>

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

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

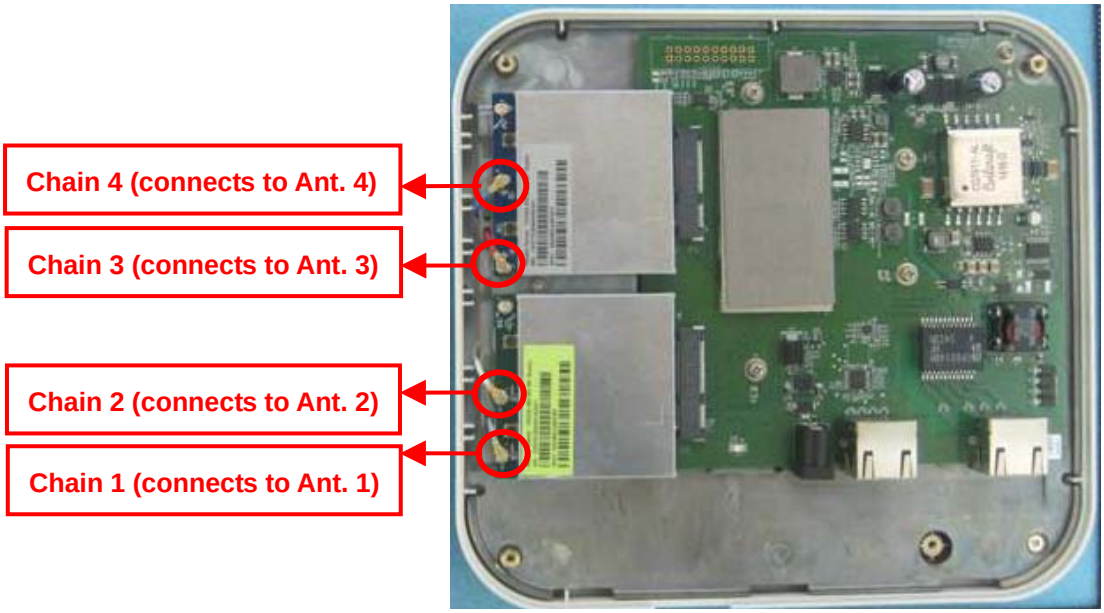
For 1TX

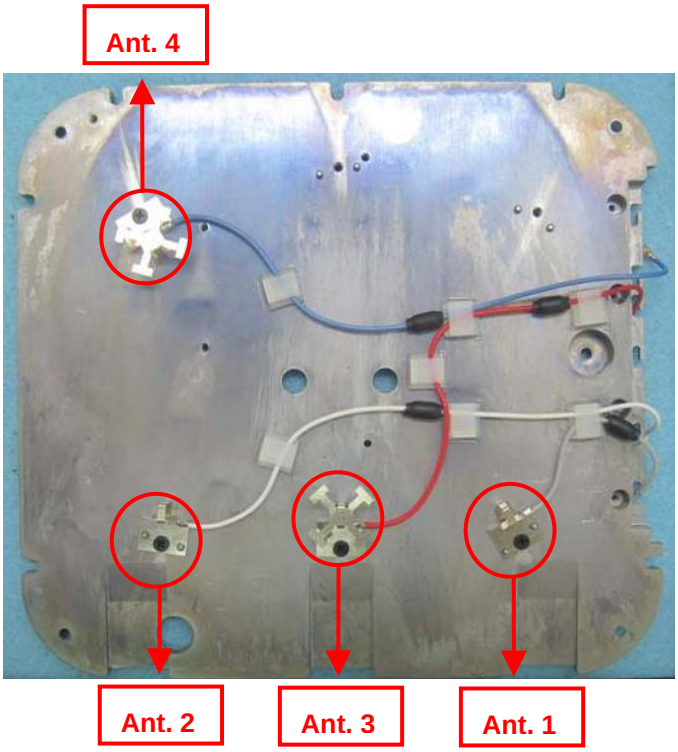
Both Chain 1 and Chain 2 support transmit and receive functions, but only one of them will be used at one time.

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

For 2TX

Chain 1 and Chain 2 could transmit/receive simultaneously.


Chain 4 (connects to Ant. 4)
Chain 3 (connects to Ant. 3)
Chain 2 (connects to Ant. 2)
Chain 1 (connects to Ant. 1)


Ant. 4
Ant. 2
Ant. 3
Ant. 1

3.4. Table for Carrier Frequencies

There are three bandwidth systems.

For 20MHz bandwidth systems, use Channel 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140, 144.

For 40MHz bandwidth systems, use Channel 54, 62, 102, 110, 118, 126, 134, 142.

For 80MHz bandwidth systems, use Channel 58, 106, 122, 138.

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
5250~5350 MHz Band 2	52	5260 MHz	60	5300 MHz
	54	5270 MHz	62	5310 MHz
	56	5280 MHz	64	5320 MHz
	58	5290 MHz	-	-
5470~5725 MHz Band 3	100	5500 MHz	124	5620 MHz
	102	5510 MHz	126	5630 MHz
	104	5520 MHz	128	5640 MHz
	106	5530 MHz	132	5660 MHz
	108	5540 MHz	134	5670 MHz
	110	5550 MHz	136	5680 MHz
	112	5560 MHz	138	5690 MHz
	116	5580 MHz	140	5700 MHz
	118	5590 MHz	142	5710 MHz
	120	5600 MHz	144	5720 MHz
	122	5610 MHz	-	-

3.5. Table for Test Modes

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

Test Items	Mode		Data Rate	Channel	Chain
AC Power Conducted Emission	Normal Link		-	-	-
Max. Conducted Output Power	Non-beamforming Mode				
	11n HT20	Band 2-3	MCS0	52/60/64/100/116/140/144	2 1+2
	11n HT40	Band 2-3	MCS0	54/62/102/110/134/142	2 1+2
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/116/140/144	2 1+2
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/134/142	2 1+2
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122/138	2 1+2
	11a/BPSK	Band 2-3	6Mbps	52/60/64/100/116/140/144	2 1+2
	beamforming Mode				
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/116/140/144	1+2
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/134/142	1+2
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122/138	1+2
	11a/BPSK	Band 2-3	6Mbps	52/60/64/100/116/140/144	1+2
	STBC Mode				
	11n HT20	Band 2-3	MCS0	52/60/64/100/116/140/144	1+2
	11n HT40	Band 2-3	MCS0	54/62/102/110/134/142	1+2
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/116/140/144	1+2

	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/134/142	1+2
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122/138	1+2
Power Spectral Density	Non-beamforming Mode				
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/116/140/144	2 1+2
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/134/142	2 1+2
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122/138	2 1+2
	beamforming Mode				
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/116/140/144	1+2
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/134/142	1+2
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122/138	1+2
	STBC Mode				
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/116/140/144	1+2
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/134/142	1+2
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122/138	1+2
26dB Spectrum Bandwidth 99% Occupied Bandwidth Measurement	Non-beamforming Mode				
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/116/140/144	2
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/134/142	2
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122/138	2
	STBC Mode				
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/116/140/144	1+2
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/134/142	1+2
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122/138	1+2
Radiated Emission Below 1GHz	Normal Link		-	-	-
Radiated Emission Above 1GHz	Non-beamforming Mode				
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/116/140/144	2

	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/134/142	2
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122/138	2
	STBC Mode				
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/116/140/144	1+2
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/134/142	1+2
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122/138	1+2
Band Edge Emission	Non-beamforming Mode				
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/116/140/144	2 1+2
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/134/142	2 1+2
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122/138	2 1+2
	beamforming Mode				
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/116/140/144	1+2
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/134/142	1+2
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122/138	1+2
	STBC Mode				
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/116/140/144	1+2
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/134/142	1+2
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122/138	1+2
Frequency Stability	Un-modulation		-	60/100	1+2

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

The following test modes were performed for all tests:

For Conducted Emission test:

Test Mode 1: Normal Link - EUT + Adapter

Test Mode 2: Normal Link - EUT + PoE

Mode 1 performed as worst case, it was recorded in this report.

For Radiated Emission below 1GHz test:

Test Mode 1: Normal Link - EUT standing + Adapter

Test Mode 2: Normal Link - EUT laying + Adapter

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

Test Mode 3: Normal Link - EUT laying + PoE

Mode 2 performed as worst case, it was recorded in this report.

For Radiated Emission above 1GHz test:

There are two test modes, one is EUT standing, and the other is EUT laying. After evaluating, EUT standing has been evaluated to be the worst case. Consequently, measurements for Radiated Emission above 1GHz test will follow this same test mode.

Test Mode 1: CTX - EUT standing

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

The EUT could be applied with 2.4GHz WLAN function and 5GHz WLAN function; therefore Co-location Maximum Permissible Exposure (Please refer to FA441804-07) and Radiated Emission Co-location (please refer to Appendix B) tests are added for simultaneously transmit between 2.4GHz WLAN function and 5GHz WLAN function.

3.6. Table for Testing Locations

Test Site Location					
Address:	No.8, Lane 724, Bo-ai St., Jhubei City, Hsinchu County 302, Taiwan, R.O.C.				
TEL:	886-3-656-9065				
FAX:	886-3-656-9085				
Test Site No.	**Site Category**	**Location**	**FCC Reg. No.**	**IC File No.**	**VCCI Reg. No**
03CH01-CB	SAC	Hsin Chu	262045	IC 4086D	-
CO01-CB	Conduction	Hsin Chu	262045	IC 4086D	-
TH01-CB	OVEN Room	Hsin Chu	-	-	-

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

3.7. Table for Class II Change

This product is an extension of original one reported under Sporton project number: FR441804-03AB

Below is the table for the change of the product with respect to the original one.

Description	Performance Checking
Add Band 2 and Band 3	All Item test

3.8. Table for Supporting Units

For Test Site No: CO01-CB

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

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

Support Unit	Brand	Model	FCC ID
Notebook	DELL	M1330	E2K4965AGNM
Notebook	DELL	M1340	E2K4965AGNM
Notebook	DELL	E6430	DoC

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

Support Unit	Brand	Model	FCC ID
Notebook	DELL	M1330	E2K4965AGNM

For Test Site No: TH01-CB

Support Unit	Brand	Model	FCC ID
Notebook	DELL	E6220	DoC

3.9. Table for Parameters of Test Software Setting

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

<For Non-Beamforming Mode>

For 1TX

Power Parameters of IEEE 802.11n MCS0 HT20

Test Software Version	MTOOL_2.0.1.0						
Frequency	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz	5720 MHz
MCS0 HT20	81	81	71	68	82	63	82

Power Parameters of IEEE 802.11n MCS0 HT40

Test Software Version	MTOOL_2.0.1.0					
Frequency	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz	5710 MHz
MCS0 HT40	82	54	55	76	68	83

Power Parameters of IEEE 802.11ac MCS0/Nss1 VHT20

Test Software Version	MTOOL_2.0.1.0						
Frequency	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz	5720 MHz
MCS0/Nss1 VHT20	81	81	71	68	82	63	82

Power Parameters of IEEE 802.11ac MCS0/Nss1 VHT40

Test Software Version	MTOOL_2.0.1.0					
Frequency	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz	5710 MHz
MCS0/Nss1 VHT40	82	54	55	76	68	83

Power Parameters of IEEE 802.11ac MCS0/Nss1 VHT80

Test Software Version	MTOOL_2.0.1.0			
Frequency	5290 MHz	5530 MHz	5610 MHz	5690 MHz
MCS0/Nss1 VHT80	51	54	75	80

Power Parameters of IEEE 802.11a

Test Software Version	MTOOL_2.0.1.0						
Frequency	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz	5720 MHz
802.11a	81	81	71	68	82	63	82

For 2TX

Power Parameters of IEEE 802.11n MCS0 HT20

Test Software Version	DOS						
Frequency	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz	5720 MHz
MCS0 HT20	68	68	68	66	68	63	70

Power Parameters of IEEE 802.11n MCS0 HT40

Test Software Version	DOS					
Frequency	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz	5710 MHz
MCS0 HT40	78	54	52	72	68	70

Power Parameters of IEEE 802.11ac MCS0/Nss1 VHT20

Test Software Version	DOS						
Frequency	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz	5720 MHz
MCS0/Nss1 VHT20	68	68	68	66	68	63	70

Power Parameters of IEEE 802.11ac MCS0/Nss1 VHT40

Test Software Version	DOS					
Frequency	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz	5710 MHz
MCS0/Nss1 VHT40	78	54	52	72	68	70

Power Parameters of IEEE 802.11ac MCS0/Nss1 VHT80

Test Software Version	DOS			
Frequency	5290 MHz	5530 MHz	5610 MHz	5690 MHz
MCS0/Nss1 VHT80	49	54	73	78

Power Parameters of IEEE 802.11a

Test Software Version	DOS						
Frequency	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz	5720 MHz
802.11a	68	68	68	66	68	63	70

<For Beamforming Mode>

For 2TX

Power Parameters of IEEE 802.11ac MCS0/Nss1 VHT20

Test Software Version	DOS						
Frequency	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz	5720 MHz
MCS0/Nss1 VHT20	57	56	55	52	53	50	68

Power Parameters of IEEE 802.11ac MCS0/Nss1 VHT40

Test Software Version	DOS					
Frequency	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz	5710 MHz
MCS0/Nss1 VHT40	60	40	40	50	55	64

Power Parameters of IEEE 802.11ac MCS0/Nss1 VHT80

Test Software Version	DOS			
Frequency	5290 MHz	5530 MHz	5610 MHz	5690 MHz
MCS0/Nss1 VHT80	32	38	66	66

<For STBC Mode>

For 2TX

Power Parameters of IEEE 802.11n MCS0 HT20

Test Software Version	DOS						
Frequency	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz	5720 MHz
MCS0 HT20	76	76	70	69	78	64	78

Power Parameters of IEEE 802.11n MCS0 HT40

Test Software Version	DOS					
Frequency	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz	5710 MHz
MCS0 HT40	79	54	56	74	68	80

Power Parameters of IEEE 802.11ac MCS0/Nss1 VHT20

Test Software Version	DOS						
Frequency	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz	5720 MHz
MCS0/Nss1 VHT20	76	76	70	69	78	64	78

Power Parameters of IEEE 802.11ac MCS0/Nss1 VHT40

Test Software Version	DOS					
Frequency	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz	5710 MHz
MCS0/Nss1 VHT40	79	54	54	74	68	80

Power Parameters of IEEE 802.11ac MCS0/Nss1 VHT80

Test Software Version	DOS			
Frequency	5290 MHz	5530 MHz	5610 MHz	5690 MHz
MCS0/Nss1 VHT80	57	52	74	79

3.10. EUT Operation during Test

For non-beamforming mode:

The EUT was programmed to be in continuously transmitting mode.

For beamforming mode:

For Conducted Mode:

The EUT was programmed to be in continuously transmitting mode.

The measured result was added array gain 10*log(2)=3.01dBi as worse case in beamforming mode.

For Radiated Mode:

The EUT was programmed to be in continuously transmitting mode.

The measured result was added array gain 10*log(2)=3.01dBi as worse case in beamforming mode.

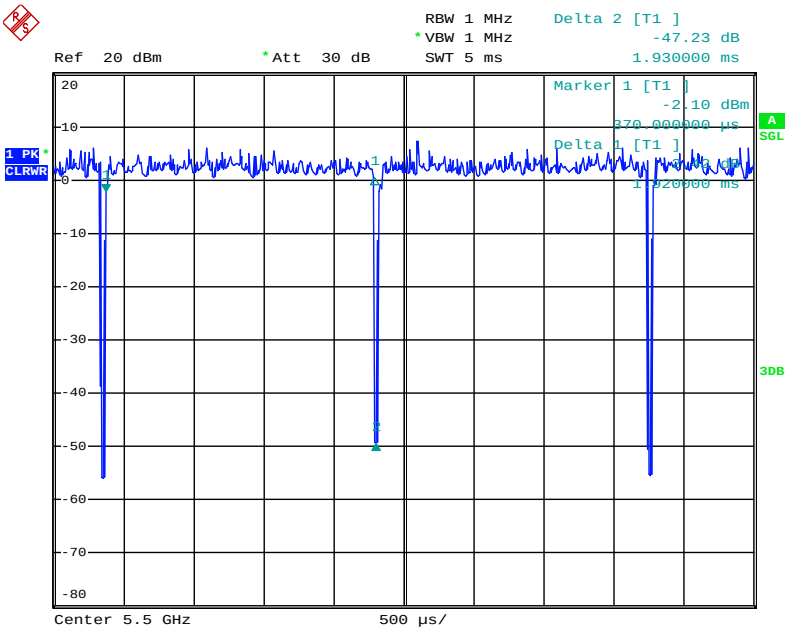
For STBC mode:

For Conducted Mode:

The EUT was programmed to be in continuously transmitting mode.

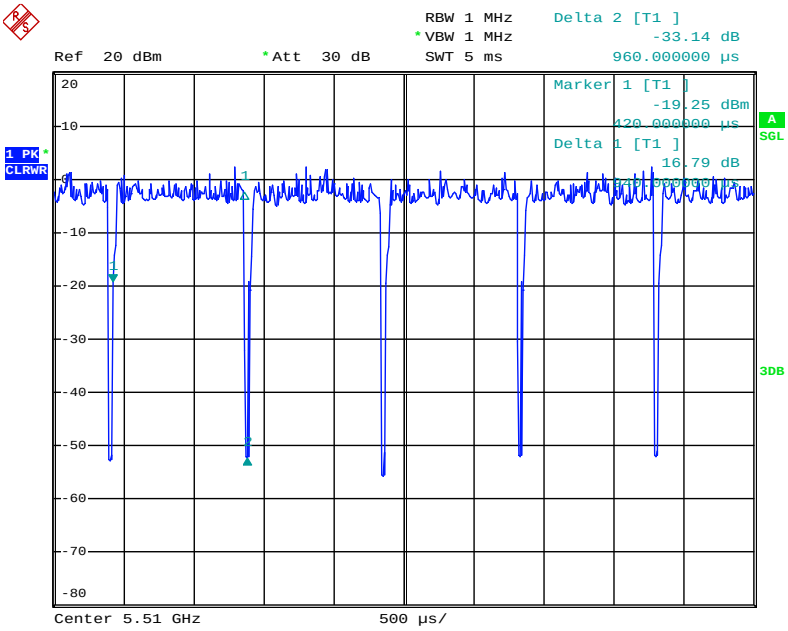
3.11. Duty Cycle

IEEE 802.11n MCS0 HT20



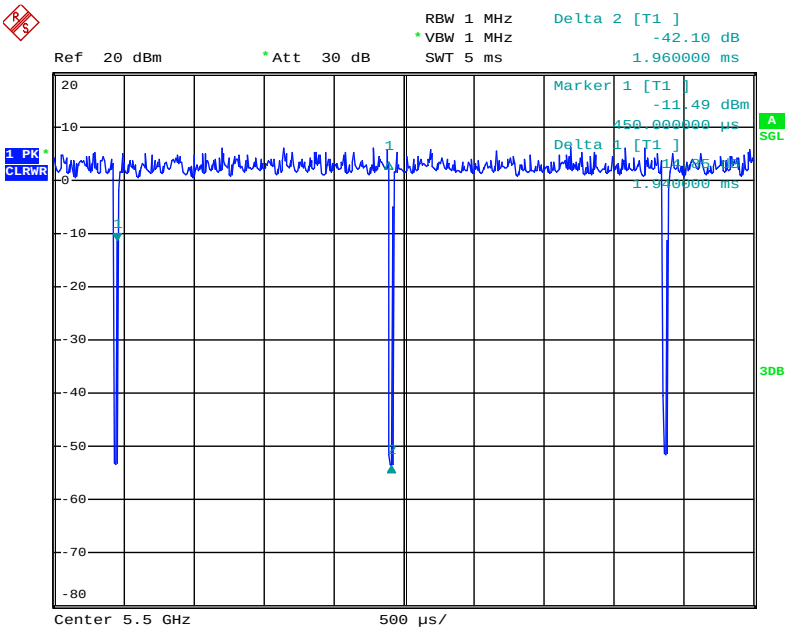
Date: 25.JUL.2014 14:41:40

IEEE 802.11n MCS0 HT40



Date: 25.JUL.2014 14:50:05

IEEE 802.11ac MCS0/Nss1 VHT20



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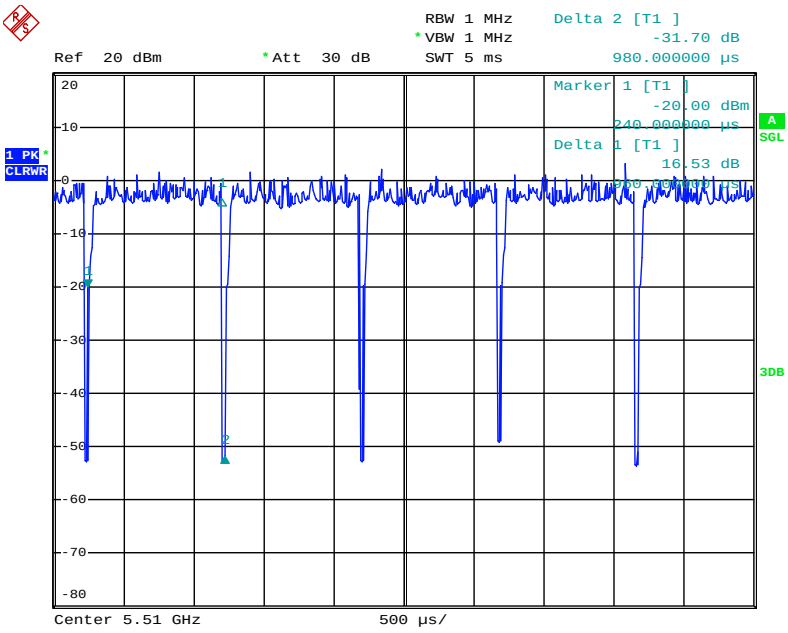
IEEE 802.11ac MCS0/Nss1 VHT40



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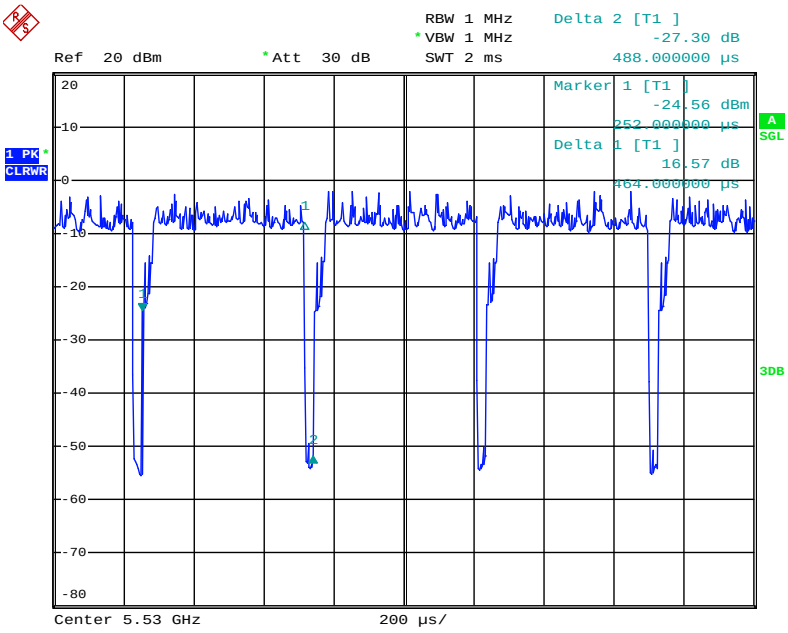
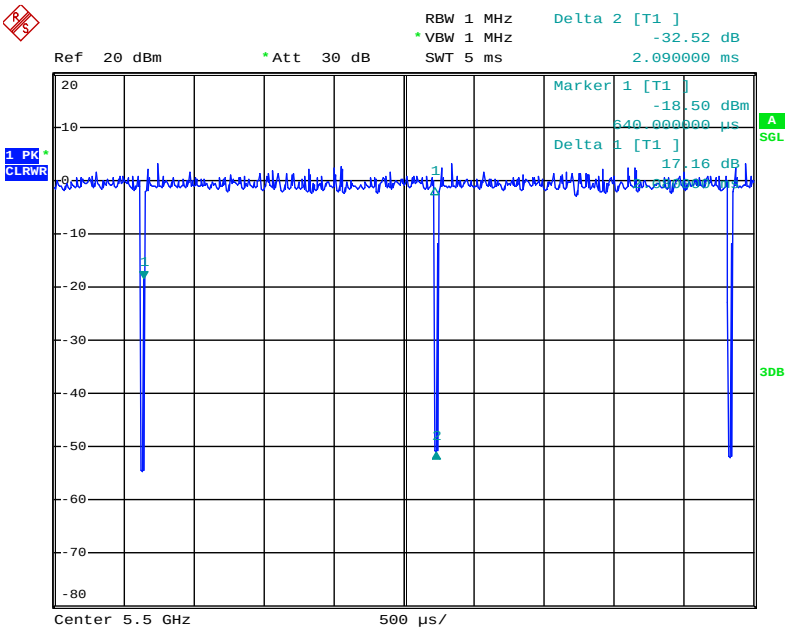
IEEE 802.11ac MCS0/Nss1 VHT80



Date: 25.JUL.2014 14:51:33

IEEE 802.11a

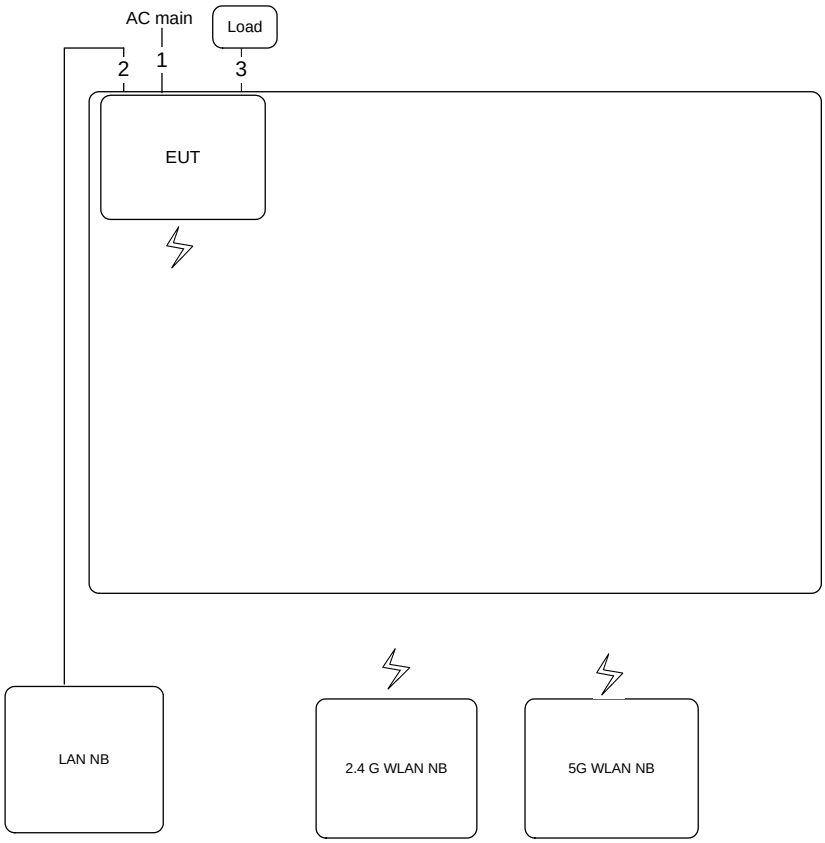


Date: 25.JUL.2014 14:38:26

3.12. Test Configurations

3.12.1. AC Power Line Conduction Emissions Test Configuration

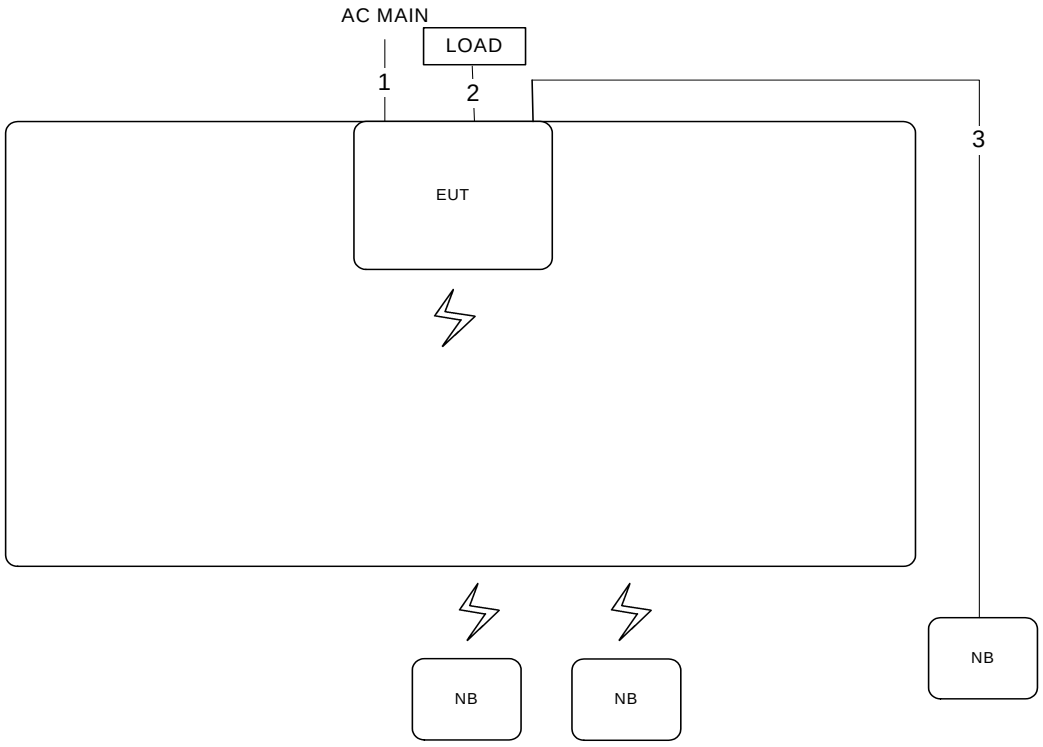
Test Mode: Mode 1



Item	Connection	Shield	Length(m)	Remark
1	AC power cable	No	3.3m	-
2	RJ-45 cable	No	10m	-
3	Console cable	No	1.5m	Load

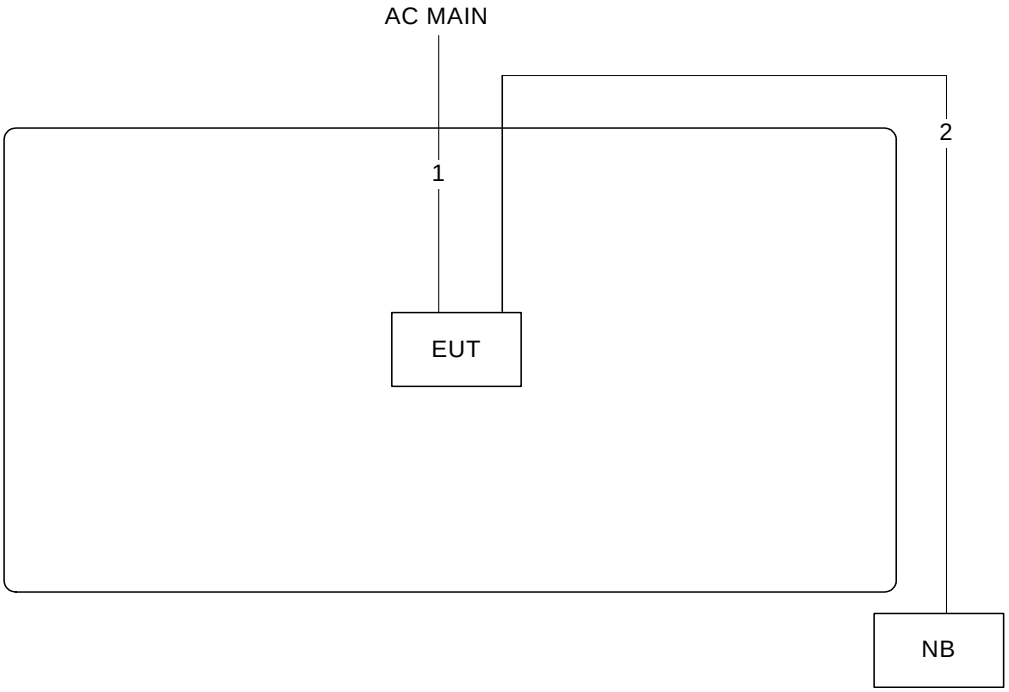
3.12.2. Radiation Emissions Test Configuration

Test Configuration: 30MHz ~1GHz / Test Mode: Mode 2



Item	Connection	Shield	Length(m)	Remark
1	AC power cable	No	3.3m	-
2	Console cable	No	1.5m	Load
3	RJ-45 cable	No	10m	-

Test Configuration: above 1GHz / Test Mode: Mode 1



Item	Connection	Shield	Length(m)
1	AC power cable	No	3.3m
2	RJ-45 cable	No	10m

4. TEST RESULT

4.1. AC Power Line Conducted Emissions Measurement

4.1.1. Limit

For this product that is designed to connect 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

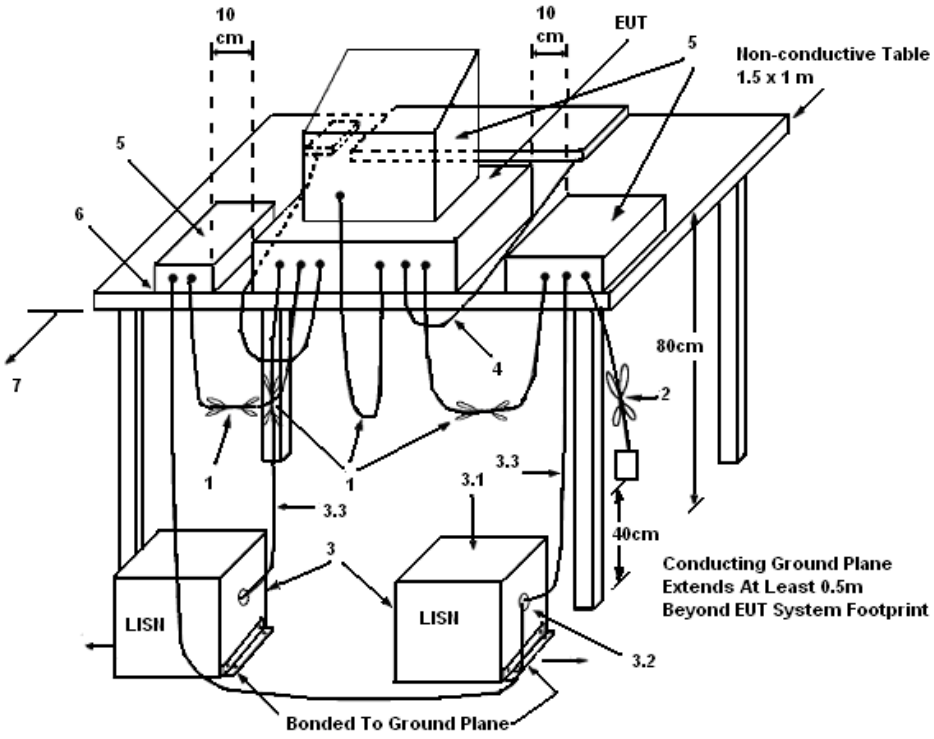
Please refer to section 5 of equipments list in this report. The following table is the setting of the receiver.

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

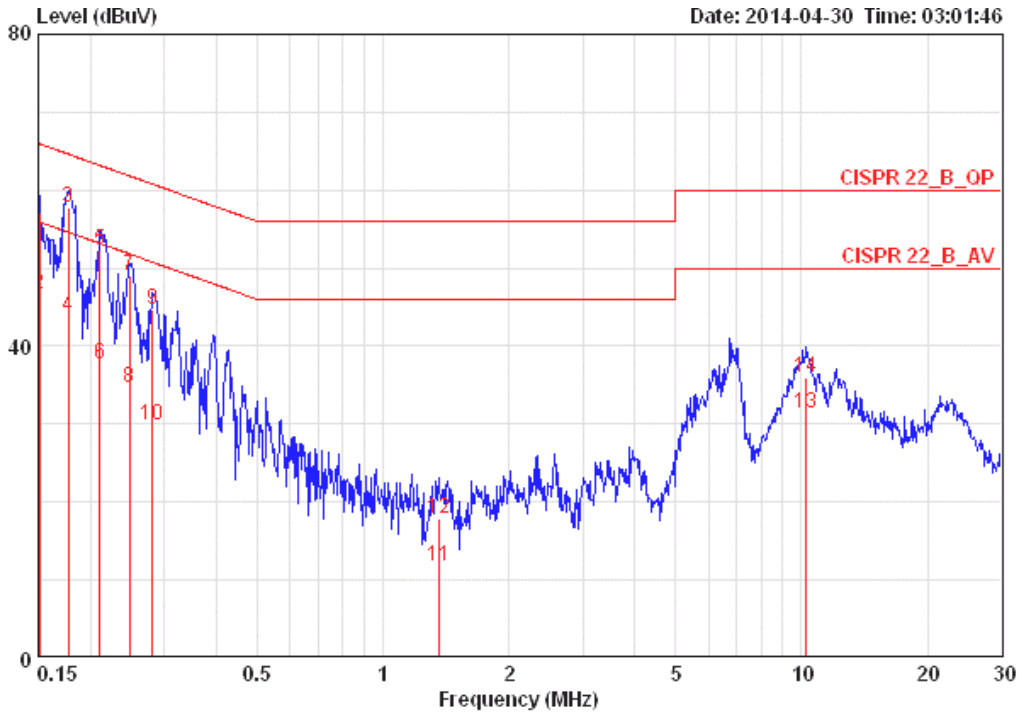
There is no deviation with the original standard.

4.1.6. EUT Operation during Test

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

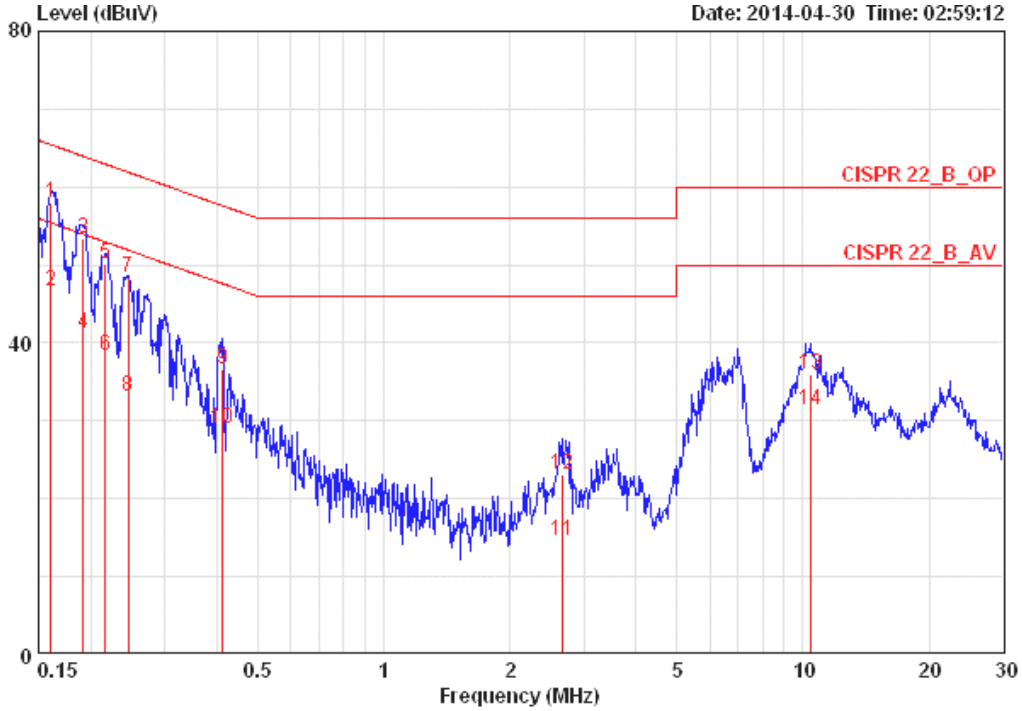
4.1.7. Results of AC Power Line Conducted Emissions Measurement

Temperature	24°C	Humidity	55%
Test Engineer	Parody Lin	Phase	Line
Configuration	Normal Link	Test Mode	Mode 1



	Freq	Level	Over Limit	Limit Line	LISN Factor	Read Level	Cable Loss	Pol/Phase	Remark
	MHz	dBuV	dB	dBuV	dB	dBuV	dB		
1	0.15080	57.11	-8.85	65.96	0.15	56.80	0.16	LINE	QP
2	0.15080	46.55	-9.41	55.96	0.15	46.24	0.16	LINE	AVERAGE
3	0.17678	57.73	-6.90	64.64	0.15	57.42	0.16	LINE	QP
4	0.17678	43.90	-10.73	54.64	0.15	43.59	0.16	LINE	AVERAGE
5	0.21055	52.39	-10.80	63.18	0.15	52.07	0.17	LINE	QP
6	0.21055	37.61	-15.58	53.18	0.15	37.29	0.17	LINE	AVERAGE
7	0.24814	49.00	-12.82	61.82	0.15	48.68	0.17	LINE	QP
8	0.24814	34.69	-17.13	51.82	0.15	34.37	0.17	LINE	AVERAGE
9	0.28178	44.63	-16.13	60.76	0.15	44.31	0.17	LINE	QP
10	0.28178	29.88	-20.88	50.76	0.15	29.56	0.17	LINE	AVERAGE
11	1.359	11.66	-34.34	46.00	0.17	11.27	0.22	LINE	AVERAGE
12	1.359	17.82	-38.18	56.00	0.17	17.43	0.22	LINE	QP
13	10.288	31.36	-18.64	50.00	0.38	30.60	0.39	LINE	AVERAGE
14	10.288	35.95	-24.05	60.00	0.38	35.19	0.39	LINE	QP

Temperature	24°C	Humidity	55%
Test Engineer	Parody Lin	Phase	Neutral
Configuration	Normal Link	Test Mode	Mode 1



	Freq	Level	Over Limit	Limit Line	LISN Factor	Read Level	Cable Loss	Pol/Phase	Remark
	MHz	dBuV	dB	dBuV	dB	dBuV	dB		
1	0.16070	57.92	-7.51	65.43	0.07	57.69	0.16	NEUTRAL	QP
2	0.16070	46.56	-8.87	55.43	0.07	46.33	0.16	NEUTRAL	AVERAGE
3	0.19140	53.34	-10.63	63.98	0.07	53.11	0.16	NEUTRAL	QP
4	0.19140	41.09	-12.88	53.98	0.07	40.86	0.16	NEUTRAL	AVERAGE
5	0.21620	50.08	-12.89	62.96	0.07	49.84	0.17	NEUTRAL	QP
6	0.21620	38.34	-14.63	52.96	0.07	38.10	0.17	NEUTRAL	AVERAGE
7	0.24552	48.38	-13.53	61.91	0.07	48.14	0.17	NEUTRAL	QP
8	0.24552	33.19	-18.72	51.91	0.07	32.95	0.17	NEUTRAL	AVERAGE
9	0.41266	36.64	-20.95	57.59	0.07	36.39	0.18	NEUTRAL	QP
10	0.41266	28.97	-18.62	47.59	0.07	28.72	0.18	NEUTRAL	AVERAGE
11	2.664	14.66	-31.34	46.00	0.12	14.27	0.27	NEUTRAL	AVERAGE
12	2.664	23.08	-32.92	56.00	0.12	22.69	0.27	NEUTRAL	QP
13	10.397	35.91	-24.09	60.00	0.28	35.25	0.39	NEUTRAL	QP
14	10.397	31.40	-18.60	50.00	0.28	30.74	0.39	NEUTRAL	AVERAGE

Note:

Level = Read Level + LISN Factor + Cable Loss.

4.2. 26dB Bandwidth and 99% Occupied Bandwidth Measurement

4.2.1. Limit

No restriction limits.

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 spectrum analyzer.

26dB Bandwidth	
Spectrum Parameters	**Setting**
Attenuation	Auto
Span Frequency	> 26dB Bandwidth
RBW	Approximately 1% of the emission bandwidth
VBW	VBW > 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

4.2.3. Test Procedures

For Radiated 26dB Bandwidth and 99% Occupied Bandwidth Measurement:

1. The transmitter was radiated to the spectrum analyzer in peak hold mode.
2. Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

4.2.4. Test Setup Layout

For Radiated 26dB Bandwidth and 99% Occupied Bandwidth Measurement:

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

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 26dB Bandwidth and 99% Occupied Bandwidth

<For Non-Beamforming Mode>

Temperature	20℃	Humidity	53%
Test Engineer	Jim Huang	Configurations	IEEE 802.11ac

For 1TX

Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
52	5260 MHz	34.72	18.40
60	5300 MHz	32.80	18.72
64	5320 MHz	25.12	18.24
100	5500 MHz	20.80	18.08
116	5580 MHz	35.84	18.56
140	5700 MHz	20.64	18.08
144	5720 MHz	35.20	18.40

Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
54	5270 MHz	65.28	37.12
62	5310 MHz	39.36	36.48
102	5510 MHz	39.68	36.48
110	5550 MHz	43.84	36.48
134	5670 MHz	39.68	36.48
142	5710 MHz	64.00	36.48

Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 2

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
58	5290 MHz	82.56	75.52
106	5530 MHz	81.92	76.80
122	5610 MHz	88.96	76.16
138	5690 MHz	90.88	76.80

<For STBC Mode>

Temperature	20°C	Humidity	53%
Test Engineer	Jim Huang	Configurations	IEEE 802.11ac

For 2TX

Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
52	5260 MHz	20.80	18.08
60	5300 MHz	21.12	18.08
64	5320 MHz	20.64	18.08
100	5500 MHz	20.48	18.08
116	5580 MHz	20.48	18.08
140	5700 MHz	20.48	18.08
144	5720 MHz	21.60	18.08

Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
54	5270 MHz	56.00	36.80
62	5310 MHz	39.04	36.48
102	5510 MHz	39.04	36.48
110	5550 MHz	39.04	36.48
134	5670 MHz	39.04	36.48
142	5710 MHz	39.04	36.48

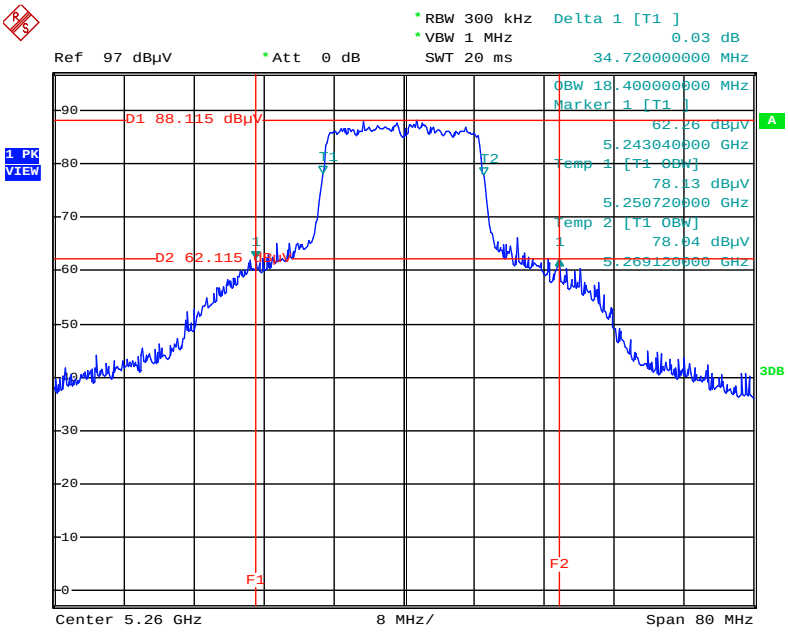
Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
58	5290 MHz	82.56	76.80
106	5530 MHz	82.56	76.80
122	5610 MHz	81.92	76.16
138	5690 MHz	92.16	76.80

<For Non-Beamforming Mode>

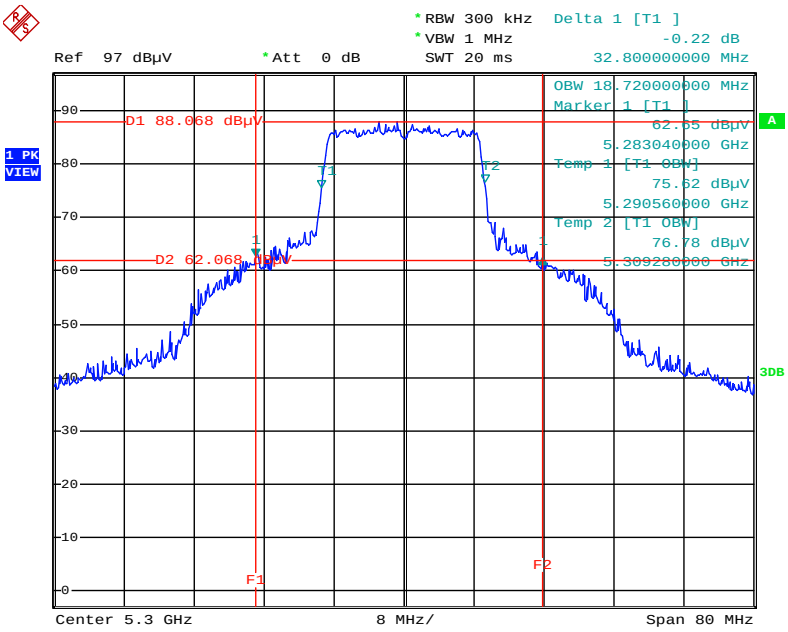
For 1TX

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5260 MHz



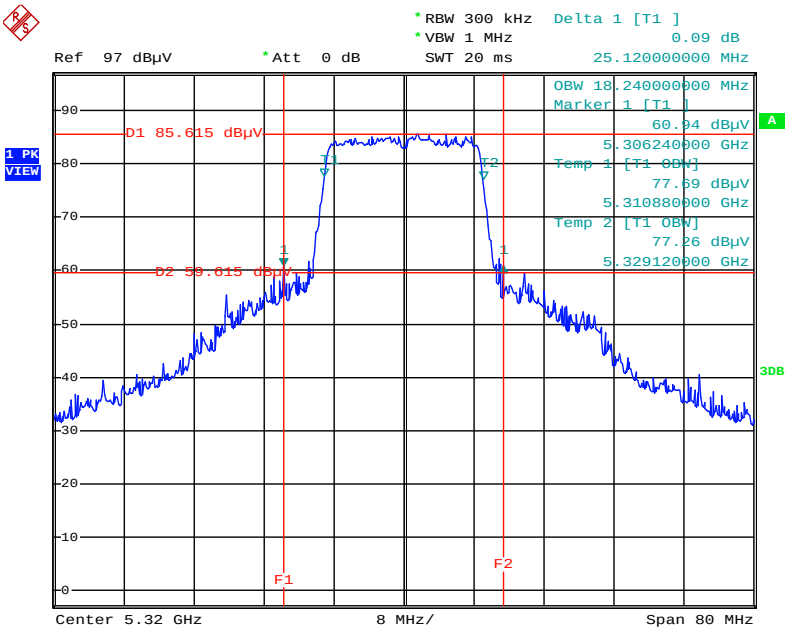
Date: 30.JUN.2014 15:01:37

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5300 MHz



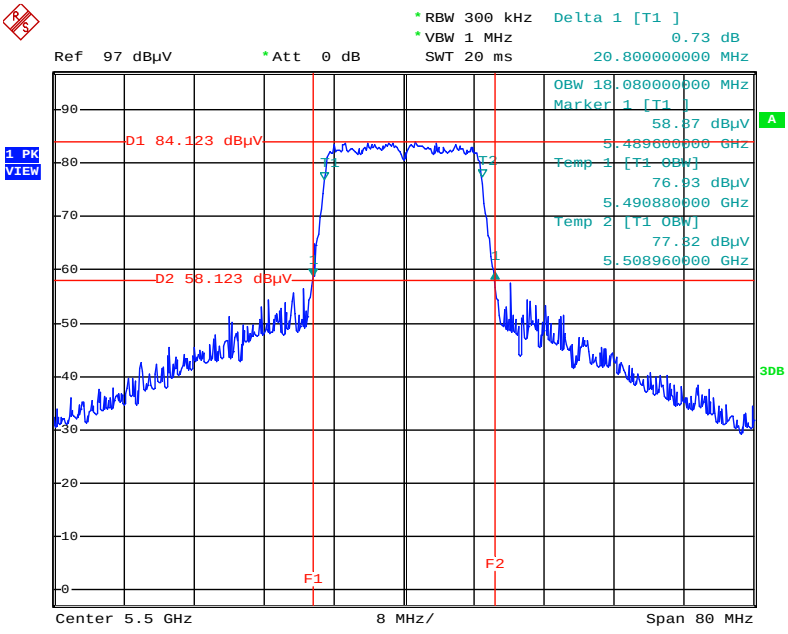
Date: 30.JUN.2014 15:02:27

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5320 MHz



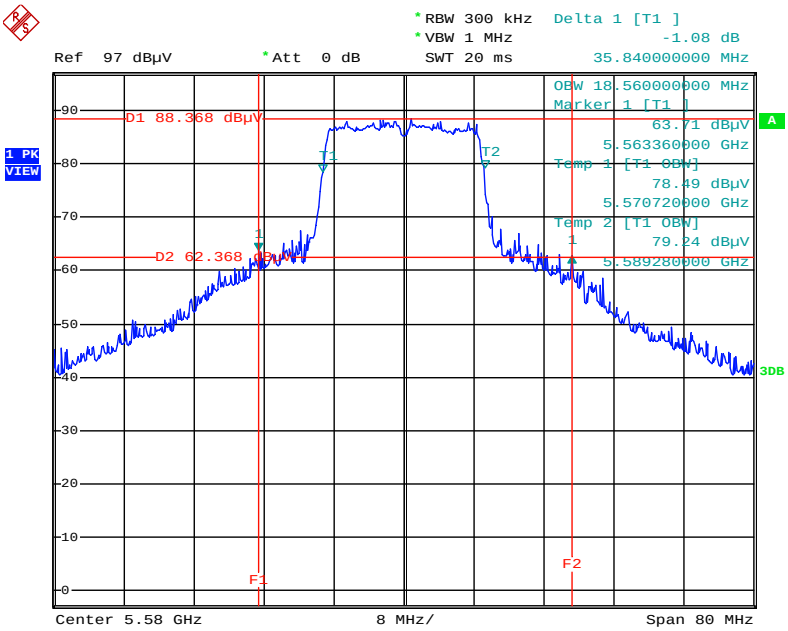
Date: 30.JUN.2014 15:03:06

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5500 MHz



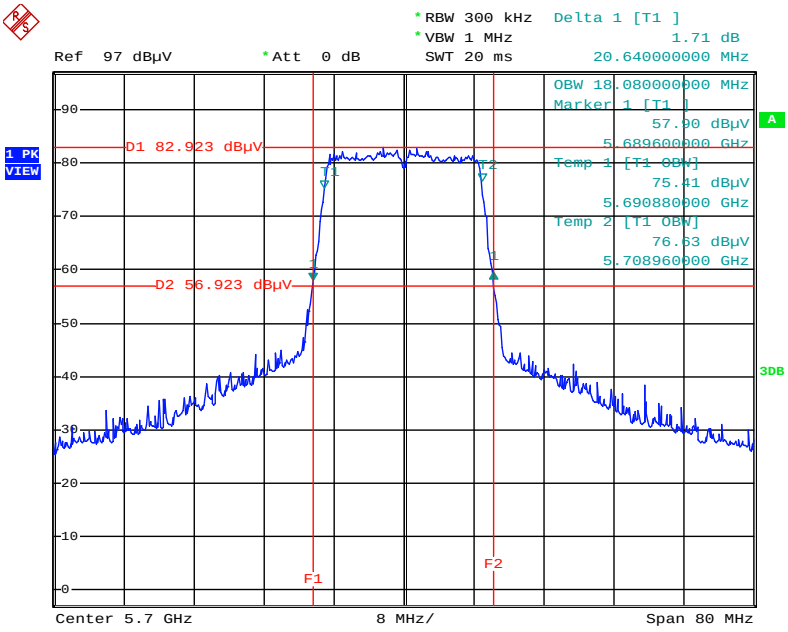
Date: 30.JUN.2014 15:03:45

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5580 MHz



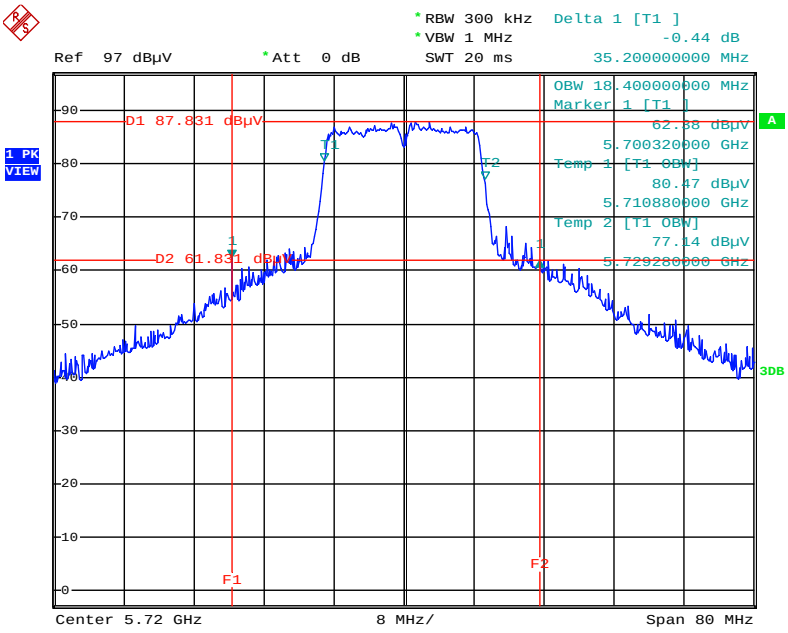
Date: 30.JUN.2014 15:04:37

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5700 MHz



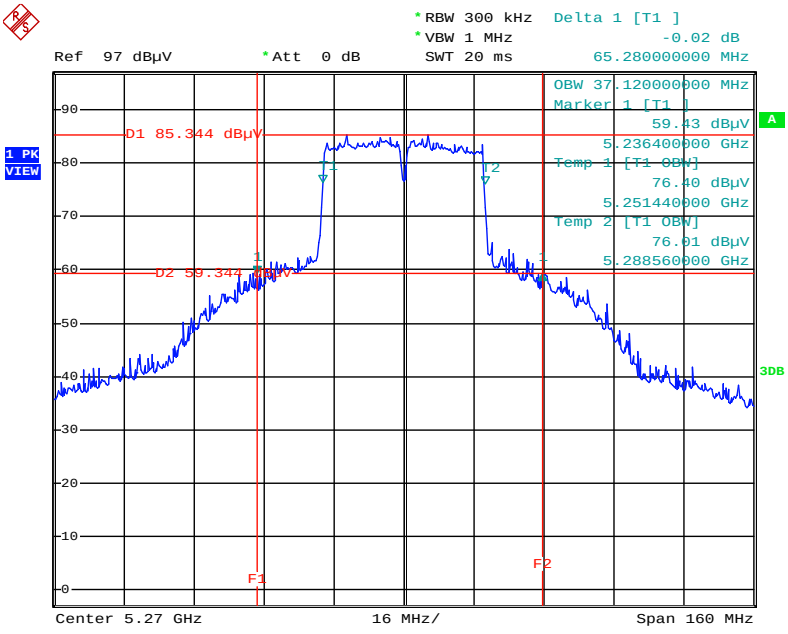
Date: 30.JUN.2014 15:05:21

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5720 MHz



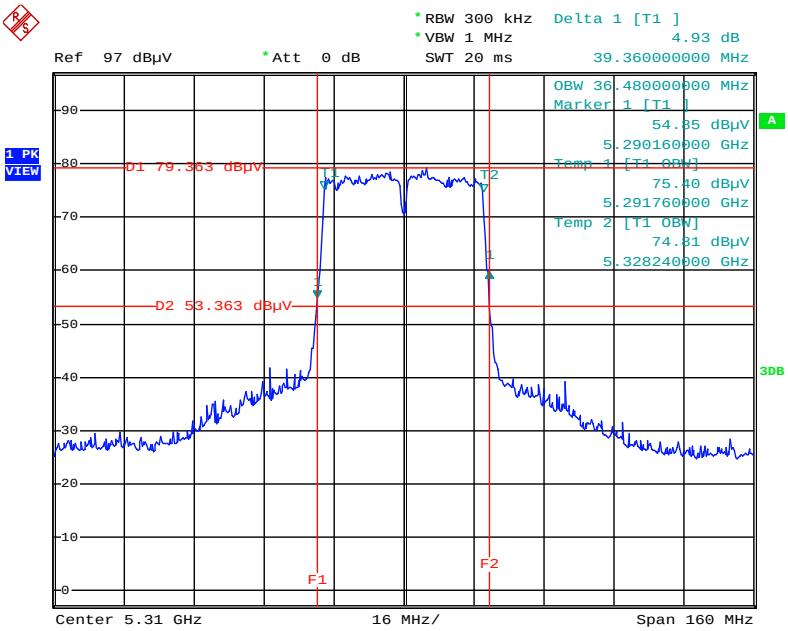
Date: 30.JUN.2014 15:05:59

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2 / 5270 MHz



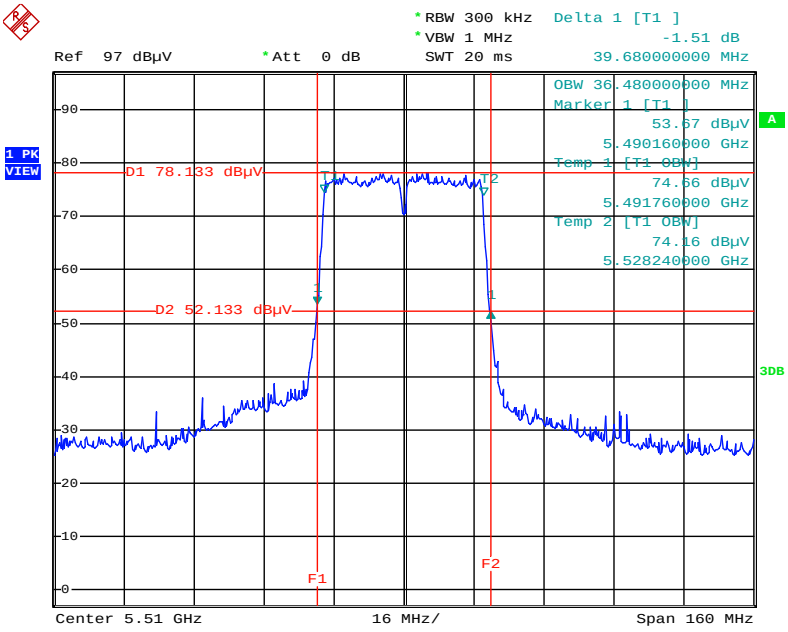
Date: 30.JUN.2014 15:06:59

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2 / 5310 MHz



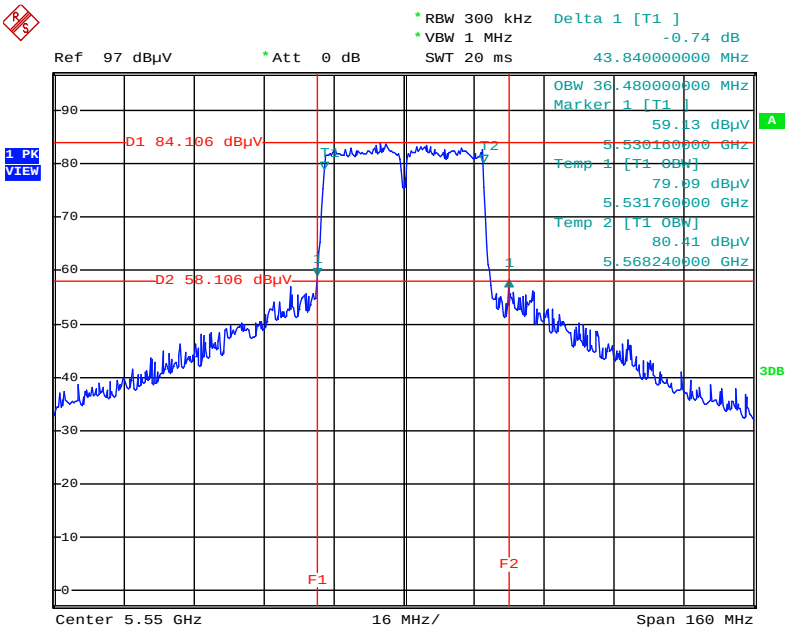
Date: 30.JUN.2014 15:07:44

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2 / 5510 MHz



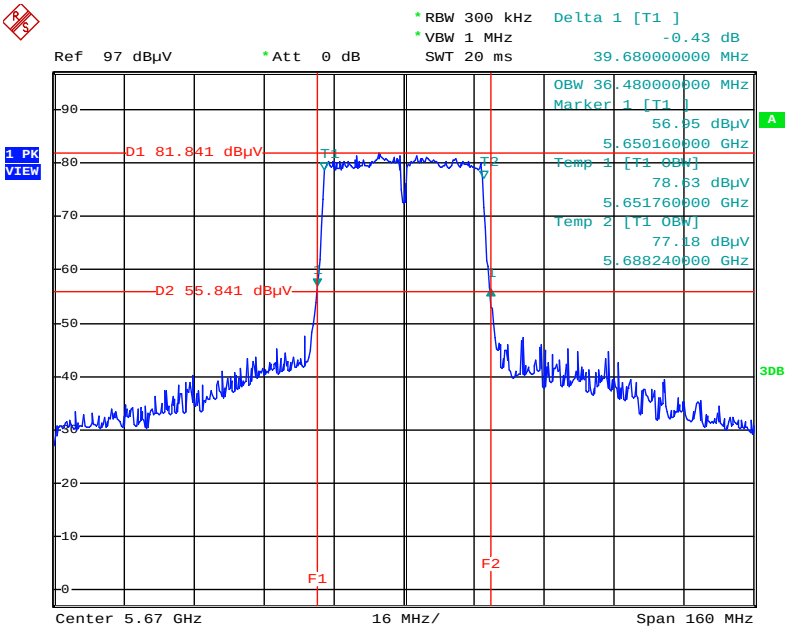
Date: 30.JUN.2014 15:08:19

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2 / 5550 MHz



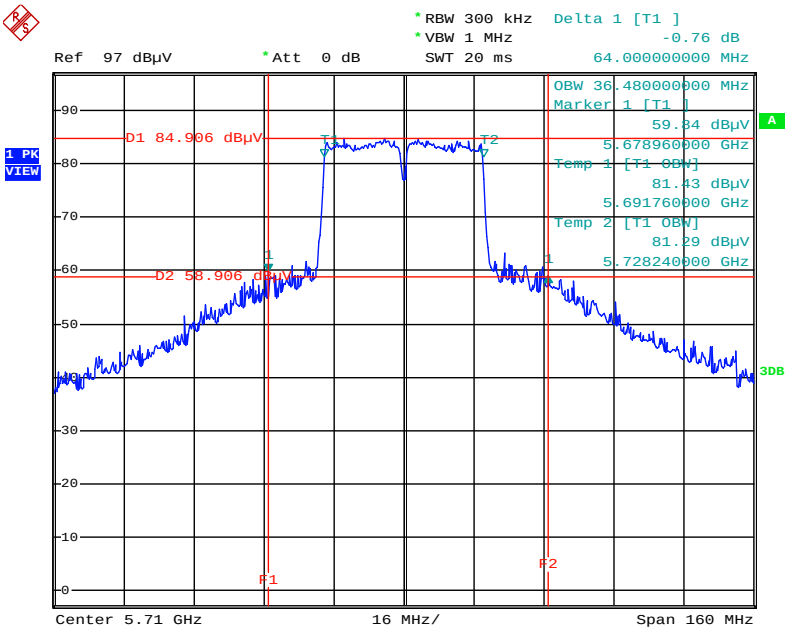
Date: 30.JUN.2014 15:08:55

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2 / 5670 MHz



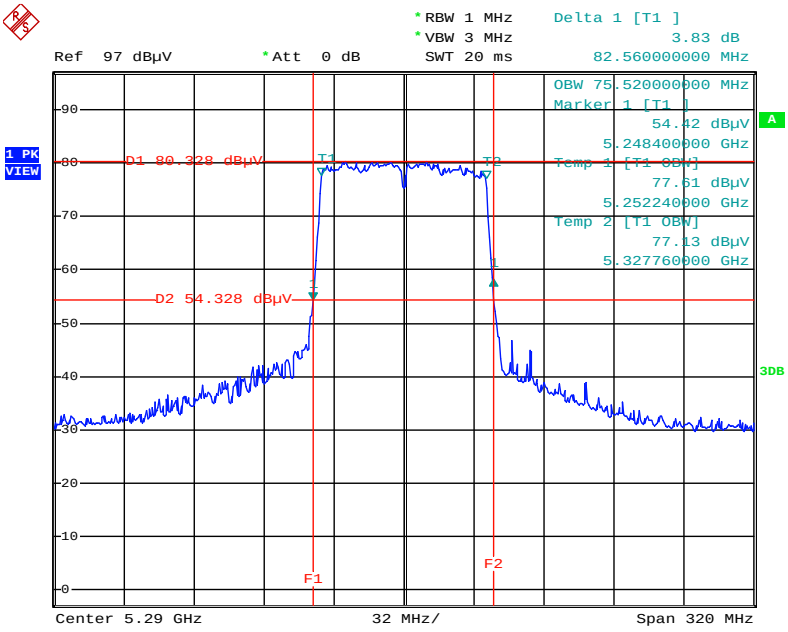
Date: 30.JUN.2014 15:09:34

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2 / 5710 MHz



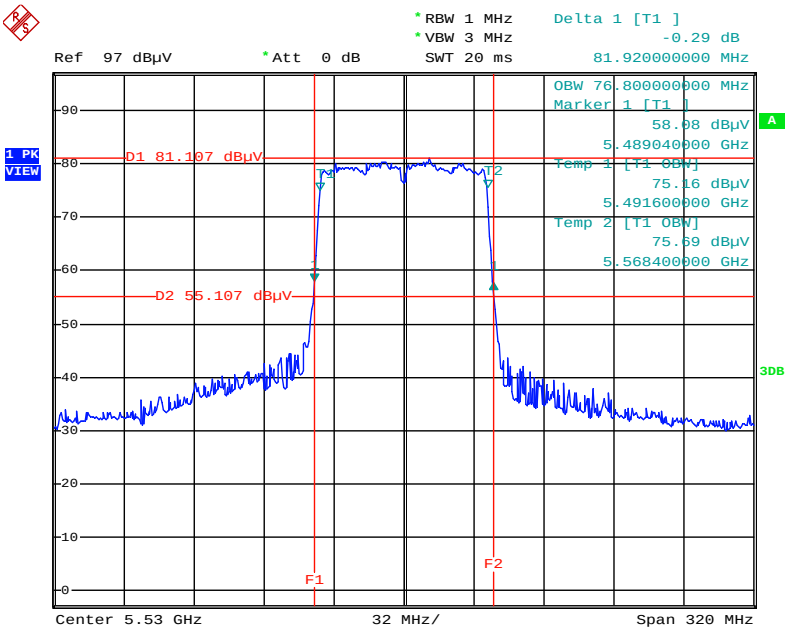
Date: 30.JUN.2014 15:10:12

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 2 / 5290 MHz



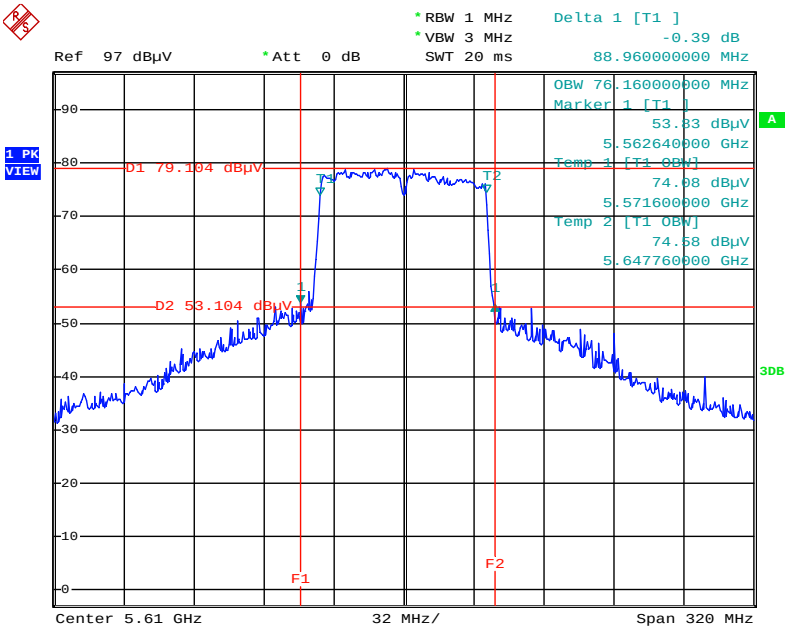
Date: 30.JUN.2014 15:11:23

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 2 / 5530 MHz



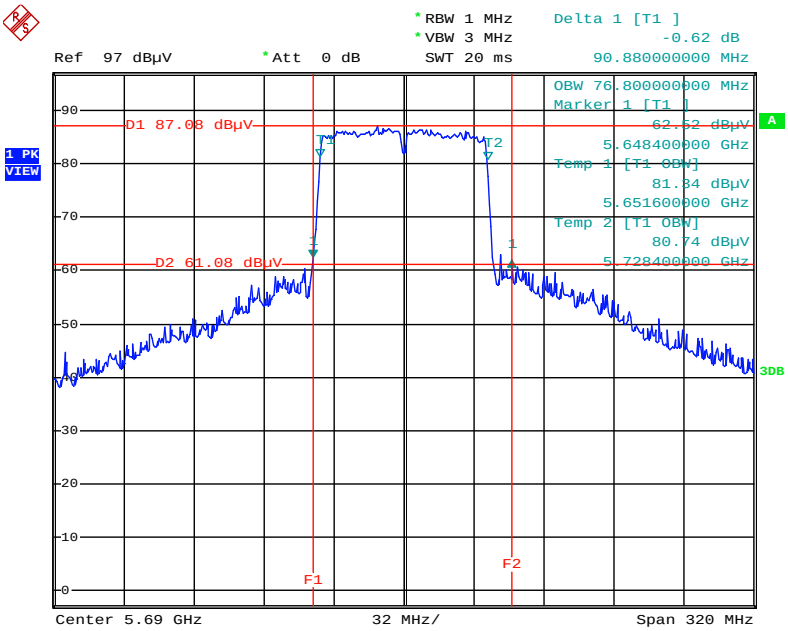
Date: 30.JUN.2014 15:11:55

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 2 / 5610 MHz



Date: 8.JUL.2014 14:26:16

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 2 / 5690 MHz

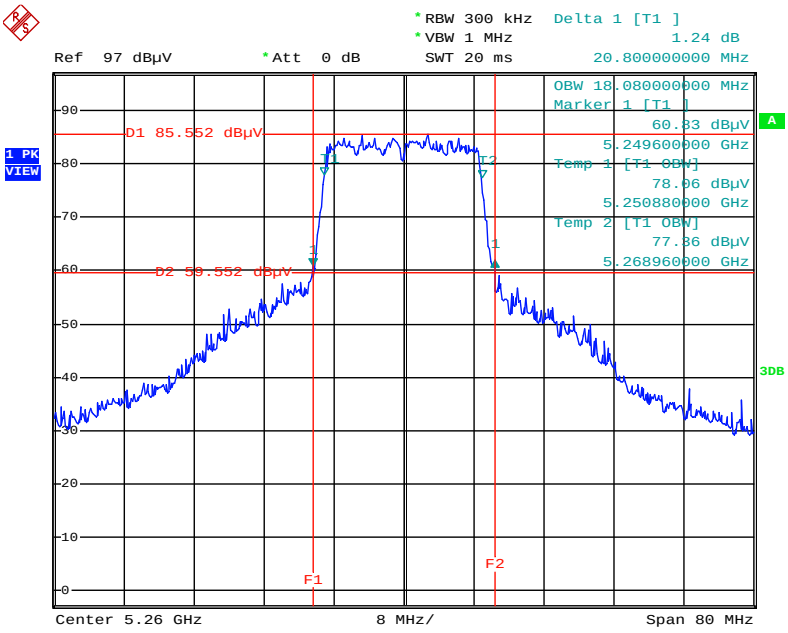


Date: 30.JUN.2014 15:12:46

<For STBC Mode>

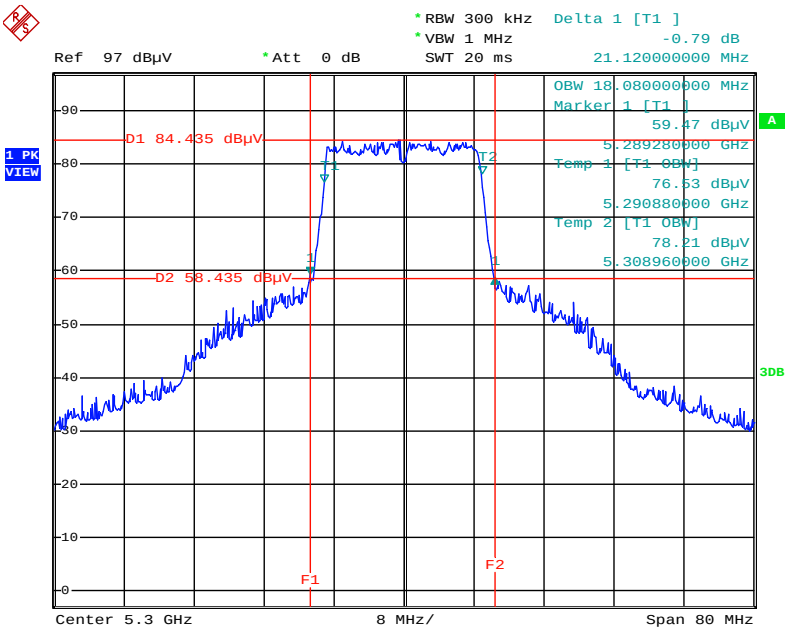
For 2TX

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5260 MHz



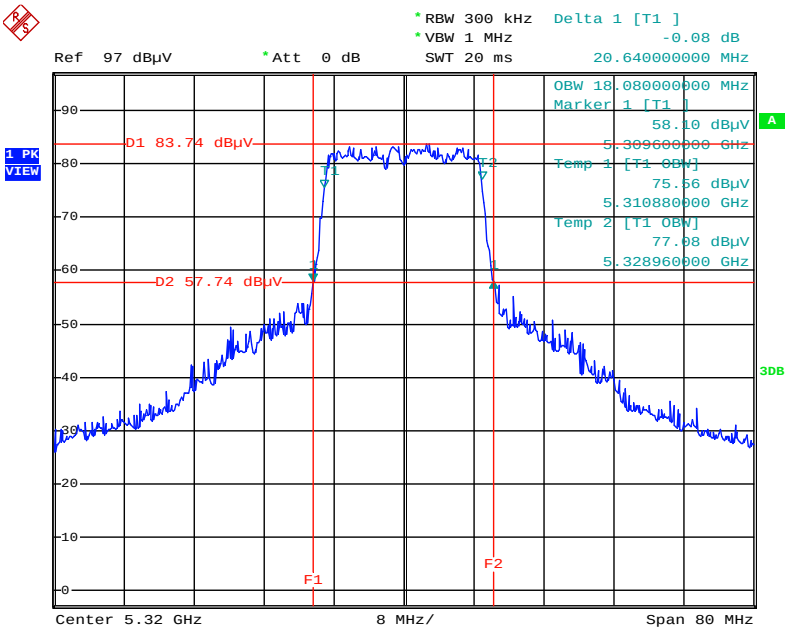
Date: 30.JUN.2014 13:55:20

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5300 MHz



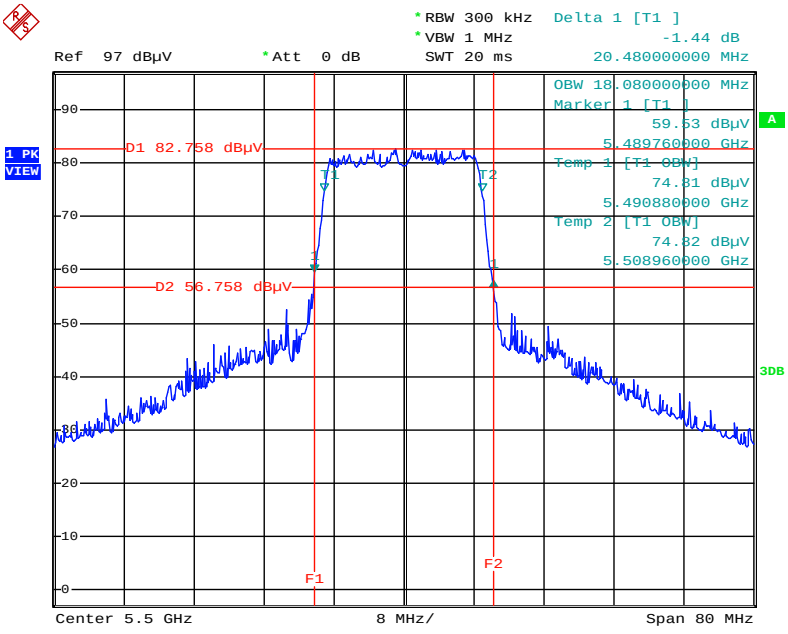
Date: 30.JUN.2014 13:56:11

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5320 MHz



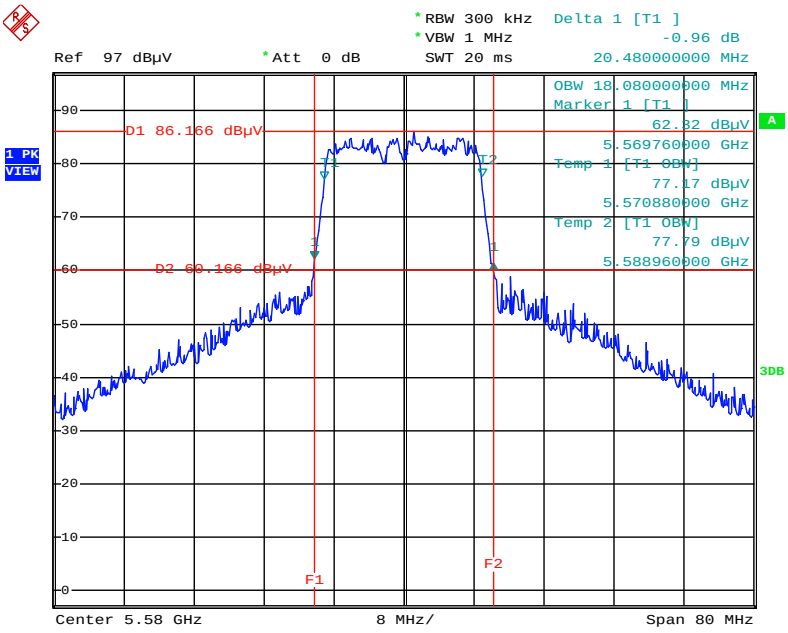
Date: 30.JUN.2014 13:57:35

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5500 MHz



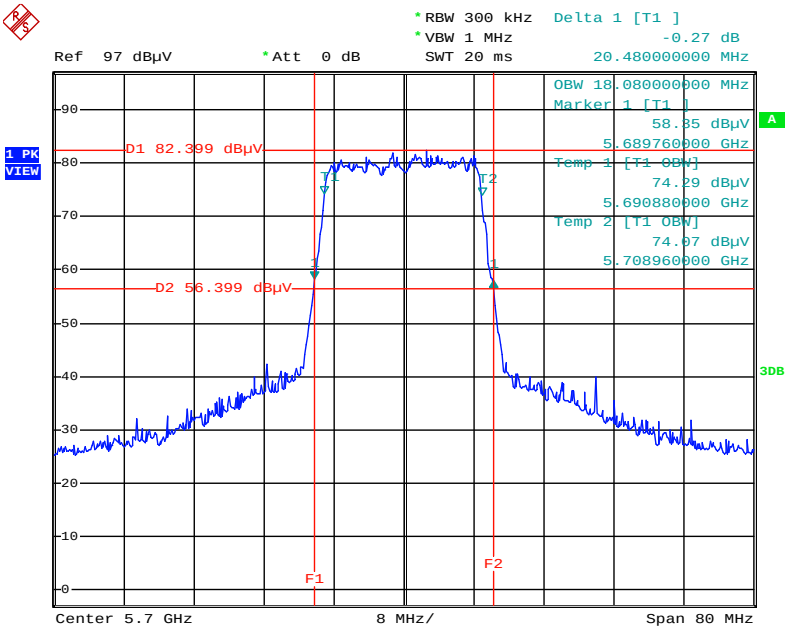
Date: 30.JUN.2014 13:58:45

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5580 MHz



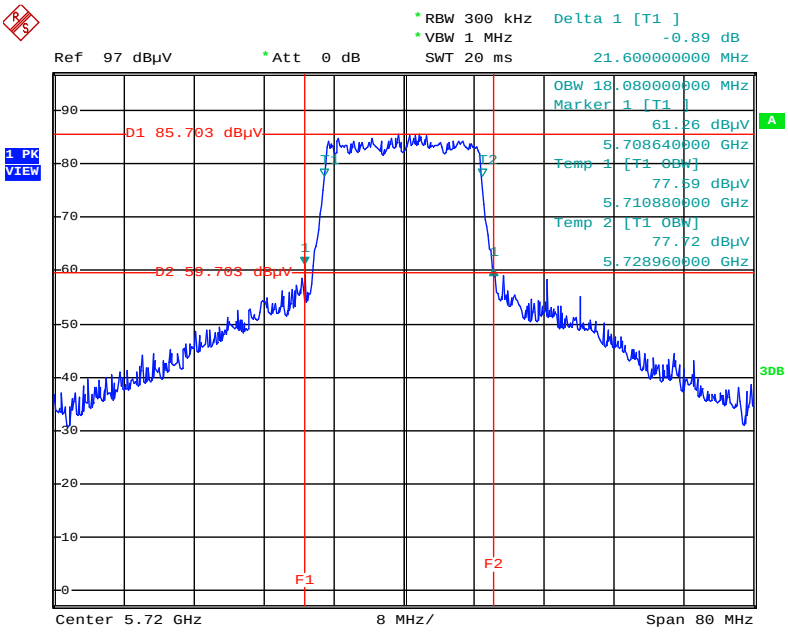
Date: 30.JUN.2014 13:59:34

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5700 MHz



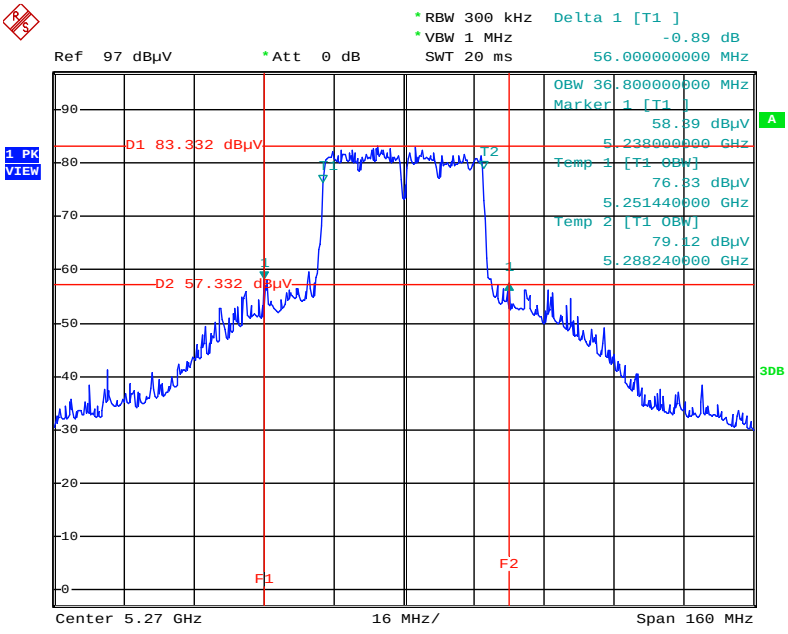
Date: 30.JUN.2014 14:00:37

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5720 MHz



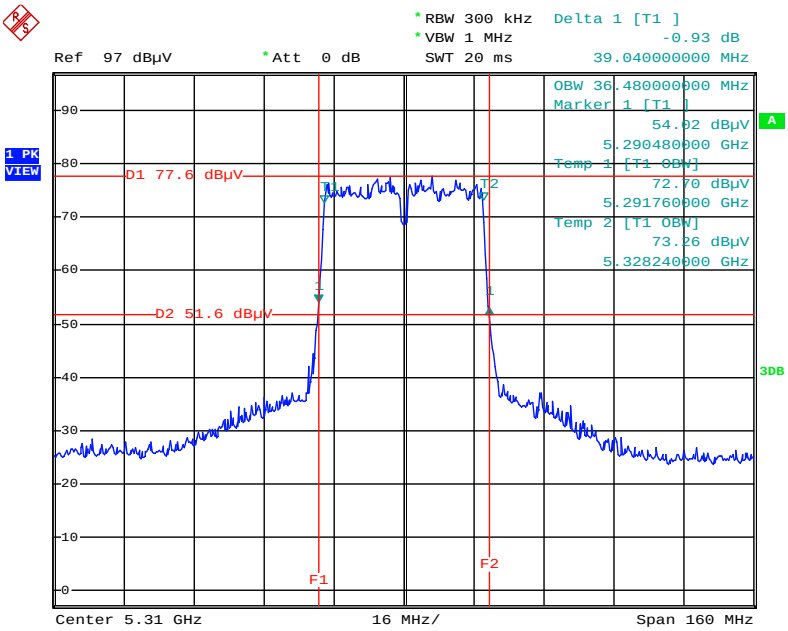
Date: 30.JUN.2014 14:01:19

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5270 MHz



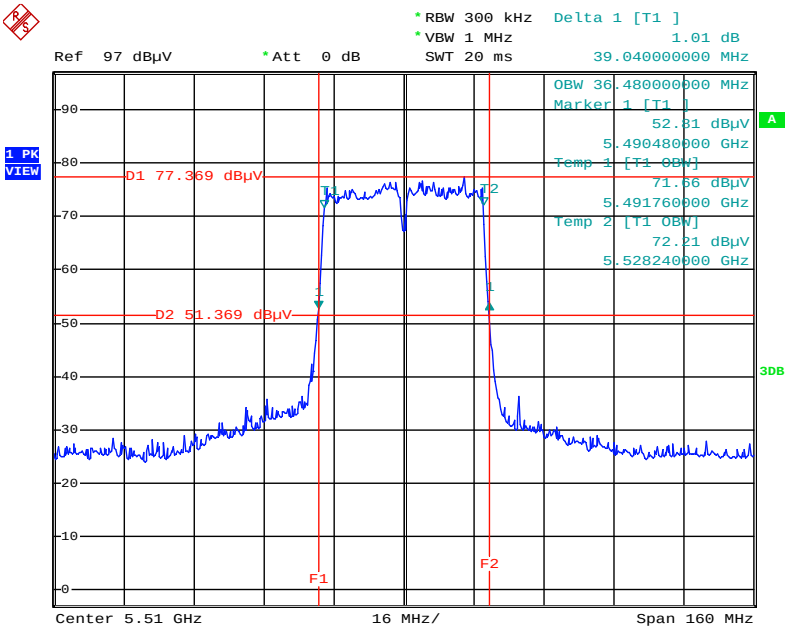
Date: 30.JUN.2014 14:05:28

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5310 MHz



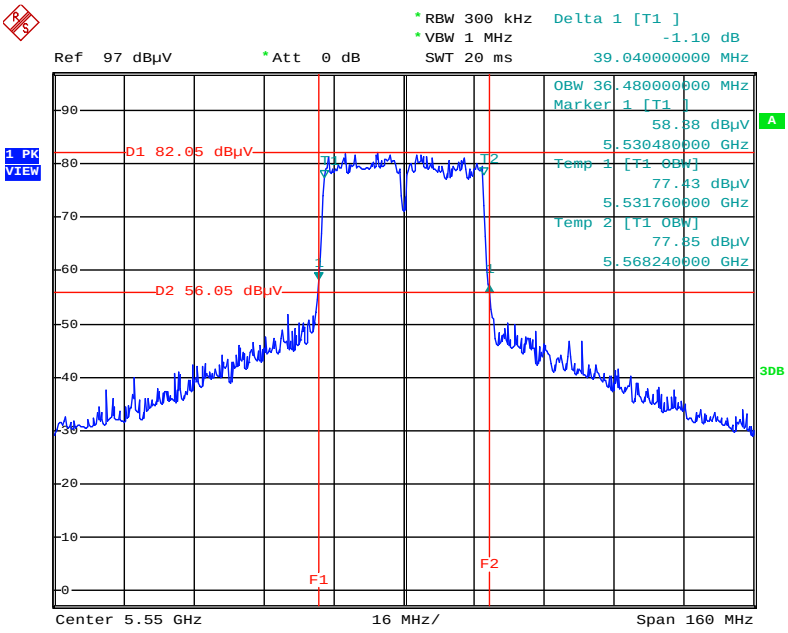
Date: 30.JUN.2014 14:06:22

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5510 MHz



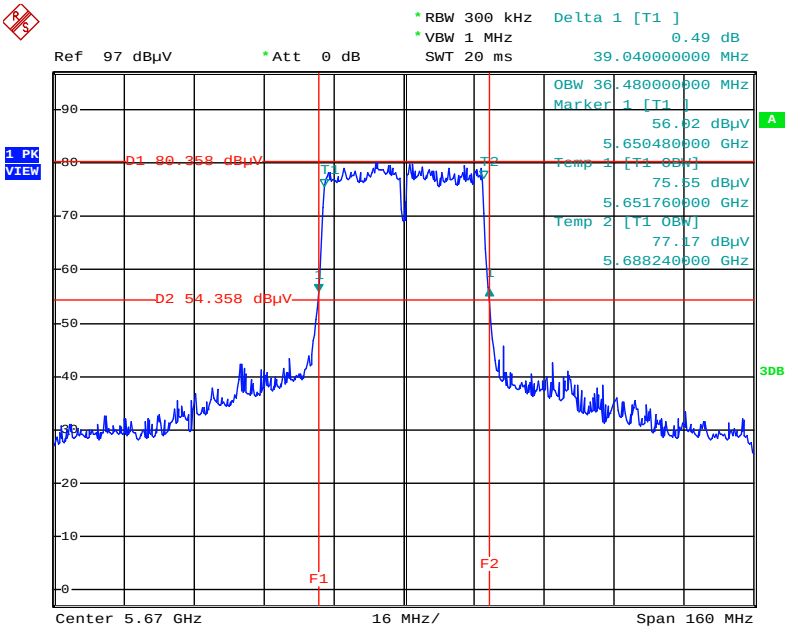
Date: 30.JUN.2014 14:07:14

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5550 MHz



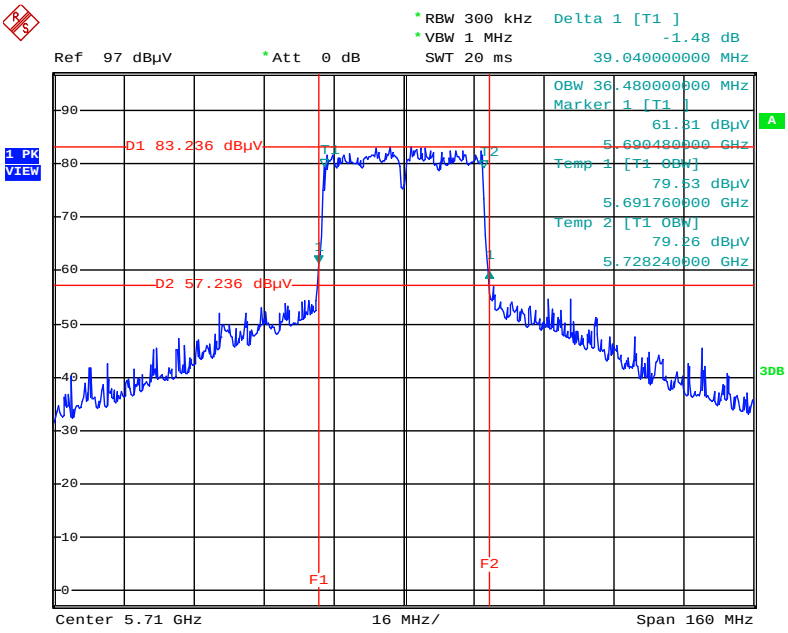
Date: 30.JUN.2014 14:08:07

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5670 MHz



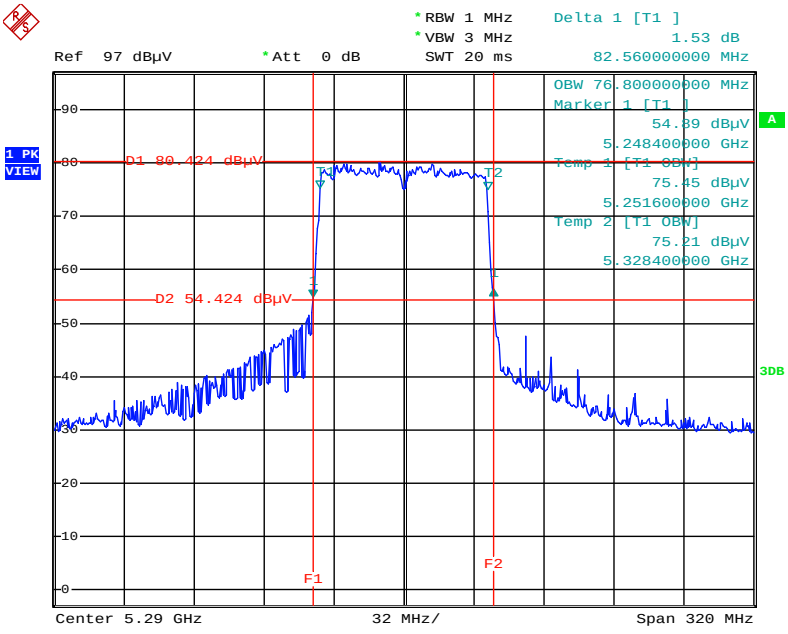
Date: 30.JUN.2014 14:08:57

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5710 MHz



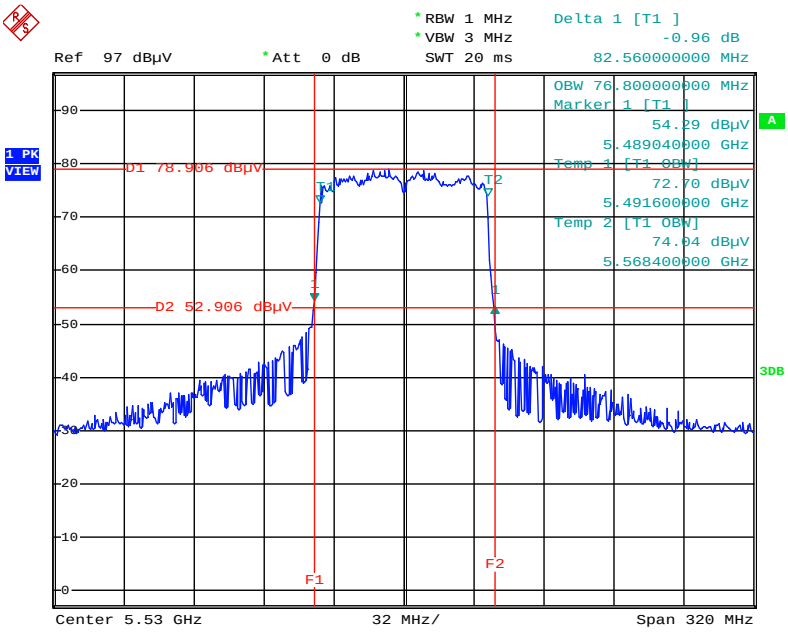
Date: 30.JUN.2014 14:09:45

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5290 MHz



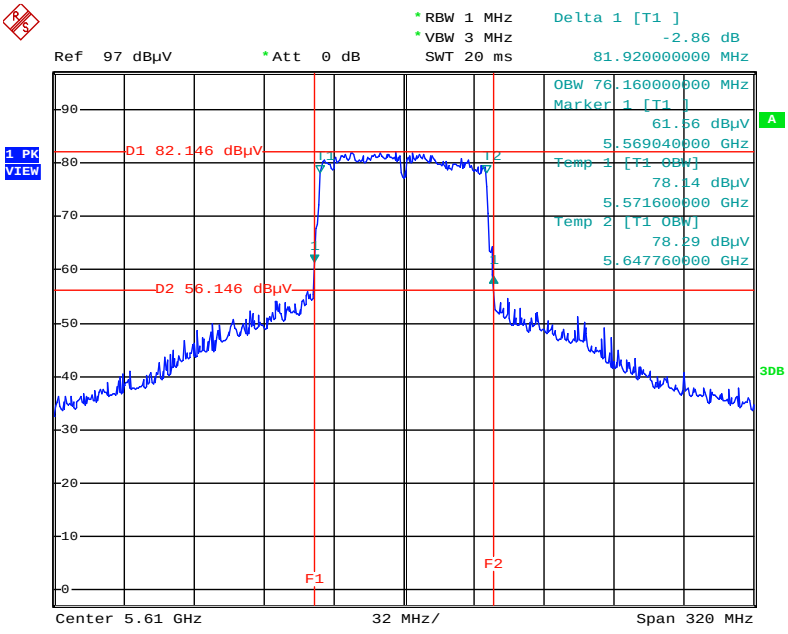
Date: 30.JUN.2014 14:11:14

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5530 MHz



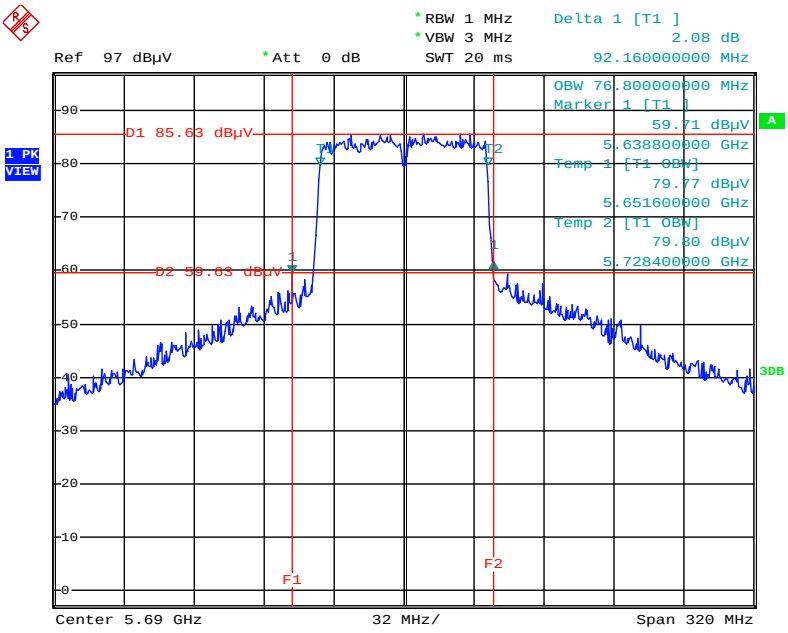
Date: 30.JUN.2014 14:11:57

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5610 MHz



Date: 8.JUL.2014 14:26:54

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5690 MHz



Date: 30.JUN.2014 14:12:42

4.3. Maximum Conducted Output Power Measurement

4.3.1. Limit

For the 5.25-5.35 GHz and 5.470-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW (24dBm) or 11 dBm + 10log B, where B is the 26-dB emission bandwidth in MHz. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

4.3.2. Measuring Instruments and Setting

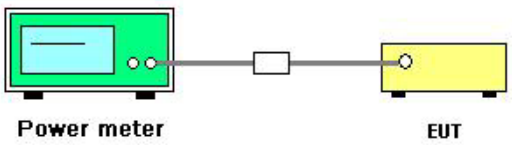
Please refer to section 5 of equipments list in this report The following table is the setting of the power meter.

Power Meter Parameter	Setting
Detector	AVERAGE

4.3.3. Test Procedures

1. The transmitter output (antenna port) was connected to the power meter.
2. Test was performed in accordance with KDB789033 D02 v01 for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - section (E) Maximum conducted output power =>3. Measurement using a Power Meter (PM) =>b) Method PM-G (Measurement using a gated RF average power meter).
3. Multiple antenna systems was performed in accordance with KDB662911 D01 v02r01 Emissions Testing of Transmitters with Multiple Outputs in the Same Band.
4. When measuring maximum conducted output power with multiple antenna systems,add every result of the values by mathematic formula.

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 Maximum Conducted Output Power

<For Non-Beamforming Mode>

Temperature	20°C	Humidity	53%
Test Engineer	Jim Huang	Configurations	IEEE 802.11a/n/ac
Test Date	Jun. 30, 2014		

For 1TX

Configuration IEEE 802.11n MCS0 HT20 / Chain 2

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
52	5260 MHz	21.87	24.00	Complies
60	5300 MHz	21.81	24.00	Complies
64	5320 MHz	19.30	24.00	Complies
100	5500 MHz	18.20	24.00	Complies
116	5580 MHz	21.78	24.00	Complies
140	5700 MHz	16.18	24.00	Complies
144	5720 MHz	21.77	24.00	Complies

Configuration IEEE 802.11n MCS0 HT40 / Chain 2

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
54	5270 MHz	21.87	24.00	Complies
62	5310 MHz	15.23	24.00	Complies
102	5510 MHz	14.73	24.00	Complies
110	5550 MHz	20.07	24.00	Complies
134	5670 MHz	17.91	24.00	Complies
142	5710 MHz	21.95	24.00	Complies

Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
52	5260 MHz	21.89	24.00	Complies
60	5300 MHz	21.75	24.00	Complies
64	5320 MHz	19.39	24.00	Complies
100	5500 MHz	18.11	24.00	Complies
116	5580 MHz	21.75	24.00	Complies
140	5700 MHz	16.12	24.00	Complies
144	5720 MHz	21.96	24.00	Complies

Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
54	5270 MHz	21.83	24.00	Complies
62	5310 MHz	15.36	24.00	Complies
102	5510 MHz	14.84	24.00	Complies
110	5550 MHz	20.06	24.00	Complies
134	5670 MHz	17.81	24.00	Complies
142	5710 MHz	21.98	24.00	Complies

Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 2

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
58	5290 MHz	14.03	24.00	Complies
106	5530 MHz	13.82	24.00	Complies
122	5610 MHz	19.18	24.00	Complies
138	5690 MHz	20.56	24.00	Complies

Configuration IEEE 802.11a / Chain 2

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
52	5260 MHz	21.91	24.00	Complies
60	5300 MHz	21.76	24.00	Complies
64	5320 MHz	19.43	24.00	Complies
100	5500 MHz	18.10	24.00	Complies
116	5580 MHz	21.76	24.00	Complies
140	5700 MHz	16.18	24.00	Complies
144	5720 MHz	21.96	24.00	Complies

Temperature	20°C	Humidity	53%
Test Engineer	Jim Huang	Configurations	IEEE 802.11a/n/ac
Test Date	Jun. 30, 2014		

For 2TX

Configuration IEEE 802.11n MCS0 HT20 / Chain 1 + Chain 2

Channel	Frequency	Conducted Power (dBm)			Max. Limit (dBm)	Result
		Chain 1	Chain 2	Total		
52	5260 MHz	17.90	18.46	21.20	24.00	Complies
60	5300 MHz	17.97	18.58	21.30	24.00	Complies
64	5320 MHz	17.80	18.49	21.17	24.00	Complies
100	5500 MHz	17.22	17.58	20.41	24.00	Complies
116	5580 MHz	17.64	17.77	20.72	24.00	Complies
140	5700 MHz	16.37	16.25	19.32	24.00	Complies
144	5720 MHz	18.16	18.31	21.25	24.00	Complies

Configuration IEEE 802.11n MCS0 HT40 / Chain 1 + Chain 2

Channel	Frequency	Conducted Power (dBm)			Max. Limit (dBm)	Result
		Chain 1	Chain 2	Total		
54	5270 MHz	20.59	20.97	23.79	24.00	Complies
62	5310 MHz	14.89	15.50	18.22	24.00	Complies
102	5510 MHz	14.18	14.05	17.13	24.00	Complies
110	5550 MHz	18.75	19.13	21.95	24.00	Complies
134	5670 MHz	17.57	17.96	20.78	24.00	Complies
142	5710 MHz	18.36	18.31	21.35	24.00	Complies

Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2

Channel	Frequency	Conducted Power (dBm)			Max. Limit (dBm)	Result
		Chain 1	Chain 2	Total		
52	5260 MHz	17.92	18.48	21.22	24.00	Complies
60	5300 MHz	17.96	18.55	21.28	24.00	Complies
64	5320 MHz	17.96	18.51	21.25	24.00	Complies
100	5500 MHz	17.34	17.58	20.47	24.00	Complies
116	5580 MHz	17.52	17.88	20.71	24.00	Complies
140	5700 MHz	16.31	16.10	19.22	24.00	Complies
144	5720 MHz	18.11	18.20	21.17	24.00	Complies

Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2

Channel	Frequency	Conducted Power (dBm)			Max. Limit (dBm)	Result
		Chain 1	Chain 2	Total		
54	5270 MHz	20.71	20.97	23.85	24.00	Complies
62	5310 MHz	14.78	15.24	18.03	24.00	Complies
102	5510 MHz	14.28	13.88	17.09	24.00	Complies
110	5550 MHz	18.66	19.18	21.94	24.00	Complies
134	5670 MHz	17.51	17.87	20.70	24.00	Complies
142	5710 MHz	18.29	18.28	21.30	24.00	Complies

Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2

Channel	Frequency	Conducted Power (dBm)			Max. Limit (dBm)	Result
		Chain 1	Chain 2	Total		
58	5290 MHz	13.14	14.16	16.69	24.00	Complies
106	5530 MHz	13.91	14.46	17.20	24.00	Complies
122	5610 MHz	17.97	19.16	21.62	24.00	Complies
138	5690 MHz	19.67	20.49	23.11	24.00	Complies

Configuration IEEE 802.11a / Chain 1 + Chain 2

Channel	Frequency	Conducted Power (dBm)			Max. Limit (dBm)	Result
		Chain 1	Chain 2	Total		
52	5260 MHz	17.90	18.61	21.28	24.00	Complies
60	5300 MHz	17.93	18.66	21.32	24.00	Complies
64	5320 MHz	17.81	18.53	21.20	24.00	Complies
100	5500 MHz	17.22	17.59	20.42	24.00	Complies
116	5580 MHz	17.56	17.93	20.76	24.00	Complies
140	5700 MHz	16.36	16.30	19.34	24.00	Complies
144	5720 MHz	18.05	18.36	21.22	24.00	Complies

<For Beamforming Mode>

Temperature	20°C	Humidity	53%
Test Engineer	Jim Huang	Configurations	IEEE 802.11a/ac
Test Date	Jun. 30, 2014		

For 2TX

Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2

Channel	Frequency	Conducted Power (dBm)			Max. Limit (dBm)	Result
		Chain 1	Chain 2	Total		
52	5260 MHz	15.24	15.85	18.57	21.07	Complies
60	5300 MHz	15.05	15.51	18.30	21.07	Complies
64	5320 MHz	14.87	15.34	18.12	21.07	Complies
100	5500 MHz	14.00	13.90	16.96	21.07	Complies
116	5580 MHz	14.03	13.76	16.91	21.07	Complies
140	5700 MHz	13.11	12.85	15.99	21.07	Complies
144	5720 MHz	17.37	17.63	20.51	21.07	Complies

Note: Directional gain=G_{ANT}+10log(N_{ANT}/Nss)=8.93dBi >6dBi,So Power Limit =24-(8.93-6)=21.07dBm

Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2

Channel	Frequency	Conducted Power (dBm)			Max. Limit (dBm)	Result
		Chain 1	Chain 2	Total		
54	5270 MHz	16.28	16.73	19.52	21.07	Complies
62	5310 MHz	11.12	11.49	14.32	21.07	Complies
102	5510 MHz	11.52	10.49	14.05	21.07	Complies
110	5550 MHz	13.47	13.27	16.38	21.07	Complies
134	5670 MHz	14.70	14.56	17.64	21.07	Complies
142	5710 MHz	16.92	16.63	19.79	21.07	Complies

Note: Directional gain=G_{ANT}+10log(N_{ANT}/Nss)=8.93dBi >6dBi,So Power Limit =24-(8.93-6)=21.07dBm

Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2

Channel	Frequency	Conducted Power (dBm)			Max. Limit (dBm)	Result
		Chain 1	Chain 2	Total		
58	5290 MHz	8.96	9.89	12.46	21.07	Complies
106	5530 MHz	10.52	10.81	13.68	21.07	Complies
122	5610 MHz	16.09	17.21	19.70	21.07	Complies
138	5690 MHz	16.52	17.26	19.92	21.07	Complies

Note: Directional gain=G_{ANT}+10log(N_{ANT}/Nss)=8.93dBi >6dBi,So Power Limit =24-(8.93-6)=21.07dBm

Configuration IEEE 802.11a / Chain 1 + Chain 2

Channel	Frequency	Conducted Power (dBm)			Max. Limit (dBm)	Result
		Chain 1	Chain 2	Total		
52	5260 MHz	15.13	15.81	18.49	21.07	Complies
60	5300 MHz	15.08	15.44	18.27	21.07	Complies
64	5320 MHz	14.79	15.32	18.07	21.07	Complies
100	5500 MHz	13.87	13.88	16.89	21.07	Complies
116	5580 MHz	14.06	13.68	16.88	21.07	Complies
140	5700 MHz	13.02	12.81	15.93	21.07	Complies
144	5720 MHz	17.32	17.66	20.50	21.07	Complies

Note: Directional gain=G_{ANT}+10log(N_{ANT}/Nss)=8.93dBi >6dBi,So Power Limit =24-(8.93-6)=21.07dBm

<For STBC Mode>

Temperature	20°C	Humidity	53%
Test Engineer	Jim Huang	Configurations	IEEE 802.11n/ac
Test Date	Jun. 30, 2014		

For 2TX

Configuration IEEE 802.11n MCS0 HT20 / Chain 1 + Chain 2

Channel	Frequency	Conducted Power (dBm)			Max. Limit (dBm)	Result
		Chain 1	Chain 2	Total		
52	5260 MHz	20.17	20.46	23.33	24.00	Complies
60	5300 MHz	19.98	20.46	23.24	24.00	Complies
64	5320 MHz	18.46	18.91	21.70	24.00	Complies
100	5500 MHz	18.20	18.29	21.26	24.00	Complies
116	5580 MHz	20.06	20.56	23.33	24.00	Complies
140	5700 MHz	16.56	16.60	19.59	24.00	Complies
144	5720 MHz	20.00	20.60	23.32	24.00	Complies

Configuration IEEE 802.11n MCS0 HT40 / Chain 1 + Chain 2

Channel	Frequency	Conducted Power (dBm)			Max. Limit (dBm)	Result
		Chain 1	Chain 2	Total		
54	5270 MHz	20.75	21.11	23.94	24.00	Complies
62	5310 MHz	14.83	15.32	18.09	24.00	Complies
102	5510 MHz	15.24	15.04	18.15	24.00	Complies
110	5550 MHz	18.93	19.63	22.30	24.00	Complies
134	5670 MHz	17.53	17.96	20.76	24.00	Complies
142	5710 MHz	20.71	21.07	23.90	24.00	Complies

Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2

Channel	Frequency	Conducted Power (dBm)			Max. Limit (dBm)	Result
		Chain 1	Chain 2	Total		
52	5260 MHz	20.11	20.49	23.31	24.00	Complies
60	5300 MHz	20.05	20.43	23.25	24.00	Complies
64	5320 MHz	18.53	18.99	21.78	24.00	Complies
100	5500 MHz	18.26	18.24	21.26	24.00	Complies
116	5580 MHz	20.15	20.64	23.41	24.00	Complies
140	5700 MHz	16.58	16.62	19.61	24.00	Complies
144	5720 MHz	20.07	20.65	23.38	24.00	Complies

Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2

Channel	Frequency	Conducted Power (dBm)			Max. Limit (dBm)	Result
		Chain 1	Chain 2	Total		
54	5270 MHz	20.77	21.12	23.96	24.00	Complies
62	5310 MHz	14.78	15.28	18.05	24.00	Complies
102	5510 MHz	15.62	14.65	18.17	24.00	Complies
110	5550 MHz	18.99	19.67	22.35	24.00	Complies
134	5670 MHz	17.43	17.83	20.64	24.00	Complies
142	5710 MHz	20.75	20.88	23.83	24.00	Complies

Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2

Channel	Frequency	Conducted Power (dBm)			Max. Limit (dBm)	Result
		Chain 1	Chain 2	Total		
58	5290 MHz	15.01	16.05	18.57	24.00	Complies
106	5530 MHz	13.53	14.02	16.79	24.00	Complies
122	5610 MHz	18.28	19.53	21.96	24.00	Complies
138	5690 MHz	19.88	20.76	23.35	24.00	Complies

4.4. Power Spectral Density Measurement

4.4.1. Limit

The power spectral density is defined as the highest level of power in dBm per MHz generated by the transmitter within the power envelope. The following table is power spectral density limits and decrease power density limit rule refer to section 4.3.1.

Frequency Range	Power Spectral Density limit (dBm/MHz)
5.25-5.35 GHz	11
5.470-5.725 GHz	11

4.4.2. Measuring Instruments and Setting

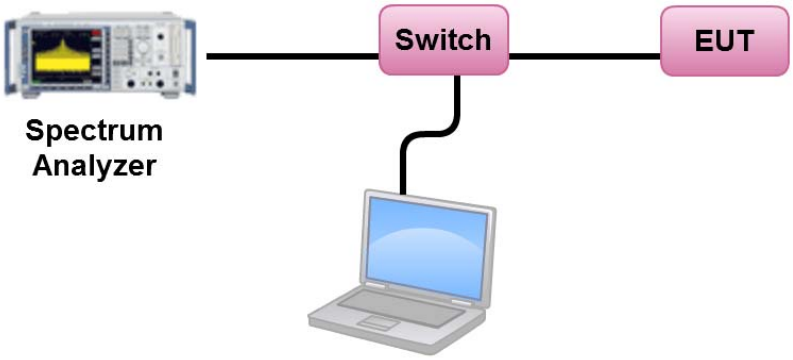
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Encompass the entire emissions bandwidth (EBW) of the signal
RBW	1000 kHz
VBW	3000 kHz
Detector	RMS
Trace	AVERAGE
Sweep Time	Auto
Trace Average	100 times

4.4.3. Test Procedures

1. The transmitter output (antenna port) was connected RF switch to the spectrum analyzer.
2. Test was performed in accordance with KDB789033 D02 v01 for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - section (F) Maximum Power Spectral Density (PSD).
3. Multiple antenna systems was performed in accordance KDB662911 D01 v02r01 in-Band Power Spectral Density (PSD) Measurements (a) Measure and sum the spectra across the outputs.
4. When measuring first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3 and so on up to the Nth output to obtain the value for the first frequency bin of the summed spectrum. The summed spectrum value for each of the other frequency bins is computed in the same way.

4.4.4. Test Setup Layout



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 Power Spectral Density

<For Non-Beamforming Mode>

Temperature	20°C	Humidity	53%
Test Engineer	Jim Huang	Configurations	IEEE 802.11ac
Test Date	Jun. 30, 2014		

For 1TX

Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2

Channel	Frequency	Total Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
52	5260 MHz	8.06	11.00	Complies
60	5300 MHz	8.24	11.00	Complies
64	5320 MHz	5.79	11.00	Complies
100	5500 MHz	5.17	11.00	Complies
116	5580 MHz	8.53	11.00	Complies
140	5700 MHz	2.23	11.00	Complies
144	5720 MHz	8.06	11.00	Complies

Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2

Channel	Frequency	Total Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
54	5270 MHz	5.32	11.00	Complies
62	5310 MHz	-0.92	11.00	Complies
102	5510 MHz	-0.94	11.00	Complies
110	5550 MHz	3.77	11.00	Complies
134	5670 MHz	1.12	11.00	Complies
142	5710 MHz	5.35	11.00	Complies

Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 2

Channel	Frequency	Total Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
58	5290 MHz	-5.09	11.00	Complies
106	5530 MHz	-4.88	11.00	Complies
122	5610 MHz	-0.43	11.00	Complies
138	5690 MHz	0.57	11.00	Complies

Temperature	20°C	Humidity	53%
Test Engineer	Jim Huang	Configurations	IEEE 802.11ac
Test Date	Jun. 30, 2014		

For 2TX

Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2

Channel	Frequency	Total Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
52	5260 MHz	7.86	8.07	Complies
60	5300 MHz	7.83	8.07	Complies
64	5320 MHz	7.77	8.07	Complies
100	5500 MHz	7.28	8.07	Complies
116	5580 MHz	7.45	8.07	Complies
140	5700 MHz	5.74	8.07	Complies
144	5720 MHz	7.79	8.07	Complies

Note: Directional gain=G_{ANT}+10log(N_{ANT}/Nss) =8.93dBi >6dBi,So Band2 Limit =11-(8.93-6)=8.07dBm/MHz
=8.93dBi >6dBi,So Band3 Limit =11-(8.93-6)=8.07dBm/MHz

Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2

Channel	Frequency	Total Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
54	5270 MHz	7.32	8.07	Complies
62	5310 MHz	1.71	8.07	Complies
102	5510 MHz	0.61	8.07	Complies
110	5550 MHz	5.53	8.07	Complies
134	5670 MHz	4.39	8.07	Complies
142	5710 MHz	4.78	8.07	Complies

Note: Directional gain=G_{ANT}+10log(N_{ANT}/Nss) =8.93dBi >6dBi,So Band2 Limit =11-(8.93-6)=8.07dBm/MHz
=8.93dBi >6dBi,So Band3 Limit =11-(8.93-6)=8.07dBm/MHz

Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2

Channel	Frequency	Total Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
58	5290 MHz	-2.11	8.07	Complies
106	5530 MHz	-1.85	8.07	Complies
122	5610 MHz	2.63	8.07	Complies
138	5690 MHz	3.85	8.07	Complies

Note: Directional gain=G_{ANT}+10log(N_{ANT}/Nss) =8.93dBi >6dBi,So Band2 Limit =11-(8.93-6)=8.07dBm/MHz
=8.93dBi >6dBi,So Band3 Limit =11-(8.93-6)=8.07dBm/MHz

<For Beamforming Mode>

Temperature	20°C	Humidity	53%
Test Engineer	Jim Huang	Configurations	IEEE 802.11ac
Test Date	Jun. 30, 2014		

For 2TX

Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2

Channel	Frequency	Total Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
52	5260 MHz	5.53	8.07	Complies
60	5300 MHz	5.14	8.07	Complies
64	5320 MHz	5.09	8.07	Complies
100	5500 MHz	3.68	8.07	Complies
116	5580 MHz	3.44	8.07	Complies
140	5700 MHz	2.39	8.07	Complies
144	5720 MHz	7.27	8.07	Complies

Note: Directional gain=G_{ANT}+10log(N_{ANT}/Nss)=8.93dBi >6dBi,So Band2 Limit =11-(8.93-6)=8.07dBm/MHz
=8.93dBi >6dBi,So Band3 Limit =11-(8.93-6)=8.07dBm/MHz

Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2

Channel	Frequency	Total Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
54	5270 MHz	3.61	8.07	Complies
62	5310 MHz	-1.58	8.07	Complies
102	5510 MHz	-2.63	8.07	Complies
110	5550 MHz	0.03	8.07	Complies
134	5670 MHz	1.05	8.07	Complies
142	5710 MHz	3.04	8.07	Complies

Note: Directional gain=G_{ANT}+10log(N_{ANT}/Nss)=8.93dBi >6dBi,So Band2 Limit =11-(8.93-6)=8.07dBm/MHz
=8.93dBi >6dBi,So Band3 Limit =11-(8.93-6)=8.07dBm/MHz

Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2

Channel	Frequency	Total Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
58	5290 MHz	-6.22	8.07	Complies
106	5530 MHz	-5.43	8.07	Complies
122	5610 MHz	0.79	8.07	Complies
138	5690 MHz	0.64	8.07	Complies

Note: Directional gain=G_{ANT}+10log(N_{ANT}/Nss)=8.93dBi >6dBi,So Band2 Limit =11-(8.93-6)=8.07dBm/MHz

=8.93dBi >6dBi,So Band3 Limit =11-(8.93-6)=8.07dBm/MHz

<For STBC Mode>

Temperature	20°C	Humidity	53%
Test Engineer	Jim Huang	Configurations	IEEE 802.11ac
Test Date	Jun. 30, 2014		

For 2TX

Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2

Channel	Frequency	Total Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
52	5260 MHz	9.80	11.00	Complies
60	5300 MHz	9.64	11.00	Complies
64	5320 MHz	8.24	11.00	Complies
100	5500 MHz	7.87	11.00	Complies
116	5580 MHz	10.26	11.00	Complies
140	5700 MHz	6.08	11.00	Complies
144	5720 MHz	9.99	11.00	Complies

Note: Directional gain=G_{ANT}+10log(N_{ANT}/Nss) =5.92dBi <6dBi, so the limit doesn't reduce.

Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2

Channel	Frequency	Total Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
54	5270 MHz	3.61	11.00	Complies
62	5310 MHz	1.86	11.00	Complies
102	5510 MHz	1.41	11.00	Complies
110	5550 MHz	6.24	11.00	Complies
134	5670 MHz	4.38	11.00	Complies
142	5710 MHz	7.28	11.00	Complies

Note: Directional gain=G_{ANT}+10log(N_{ANT}/Nss) =5.92dBi <6dBi, so the limit doesn't reduce.

Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2

Channel	Frequency	Total Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
58	5290 MHz	-0.48	11.00	Complies
106	5530 MHz	-2.31	11.00	Complies
122	5610 MHz	2.91	11.00	Complies
138	5690 MHz	3.91	11.00	Complies

Note: Directional gain=G_{ANT}+10log(N_{ANT}/Nss) =5.92dBi <6dBi, so the limit doesn't reduce.

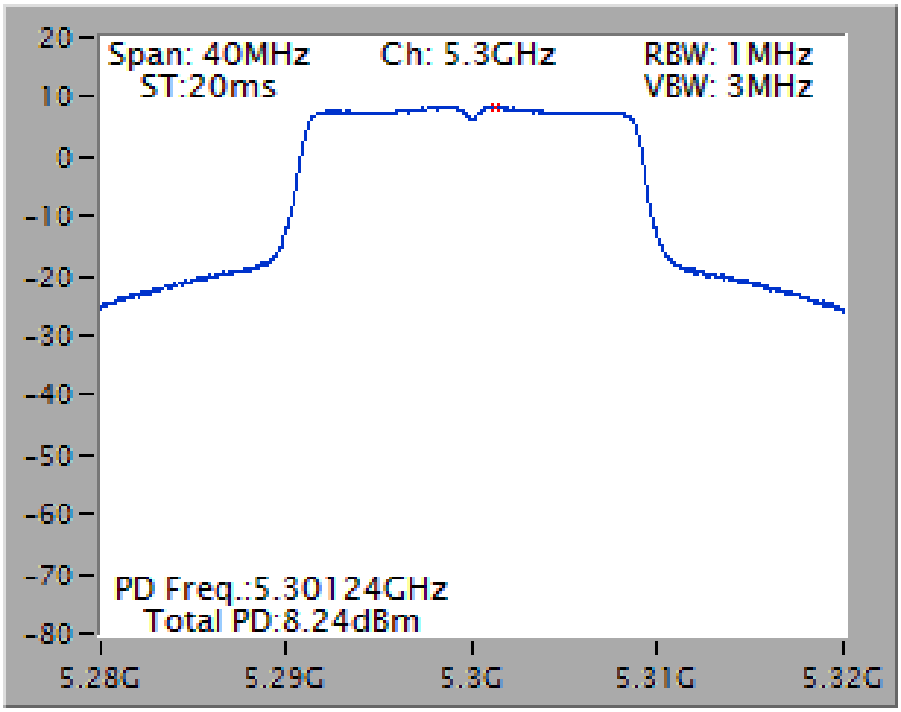
Note: All the test values were listed in the report.

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

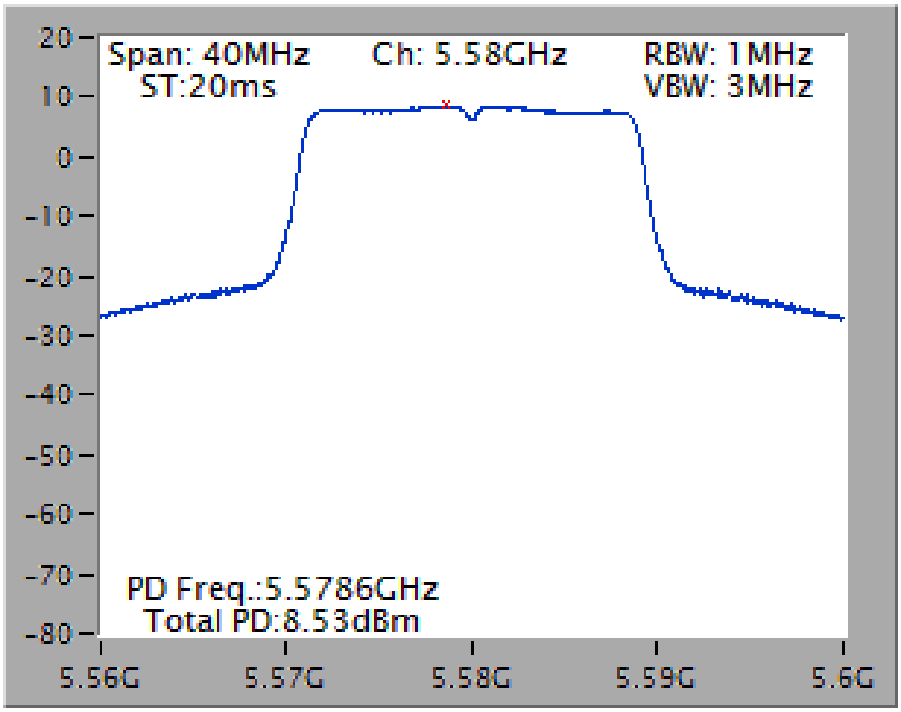
<For Non-Beamforming Mode>

For 1TX

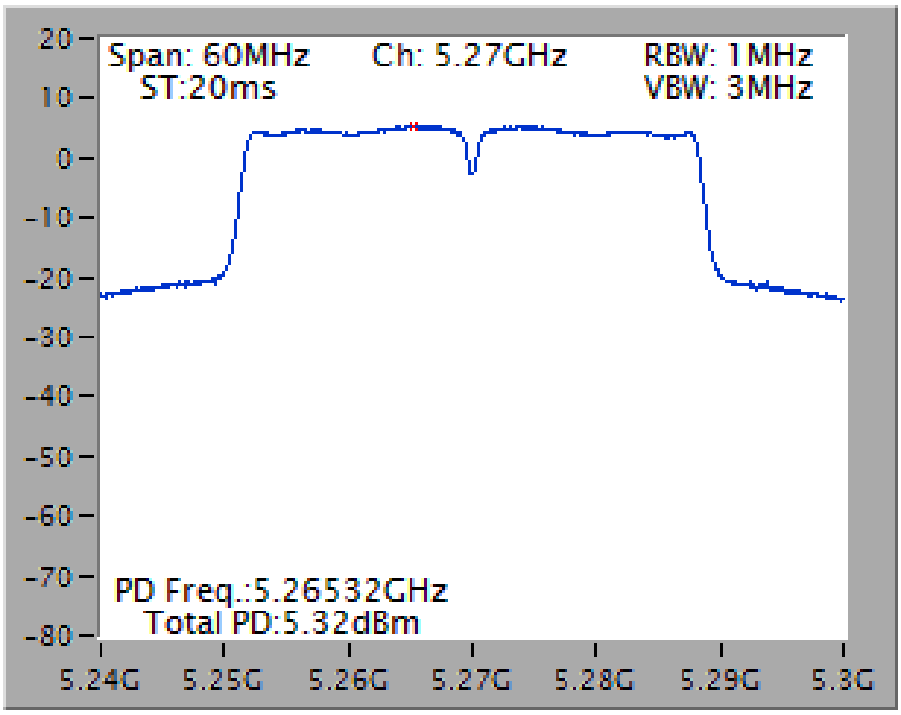
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5300 MHz



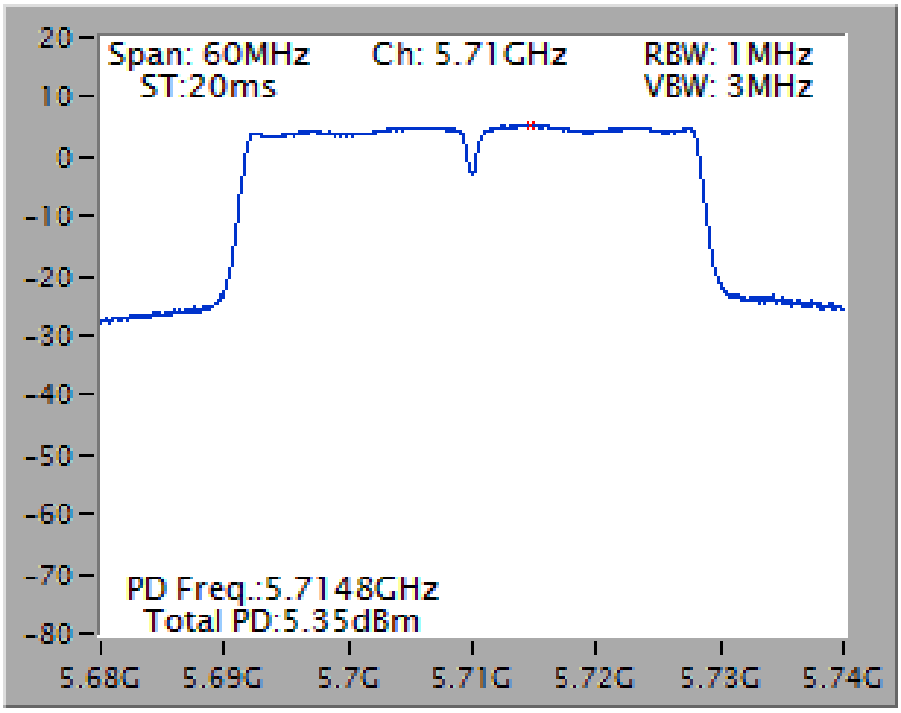
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5580 MHz



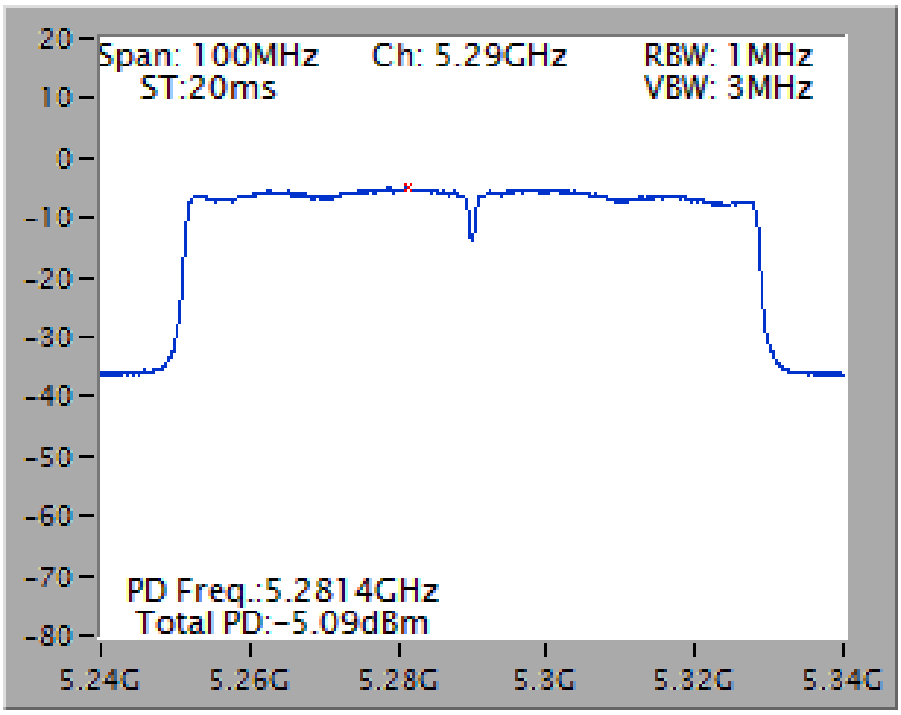
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2 / 5270 MHz



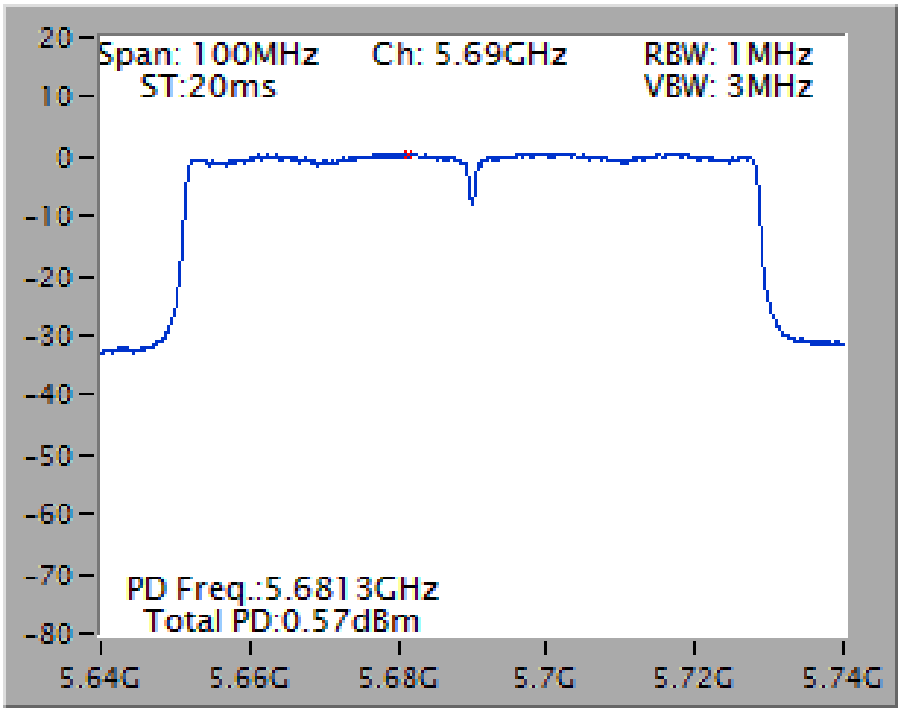
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2 / 5710 MHz



Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 2 / 5290 MHz

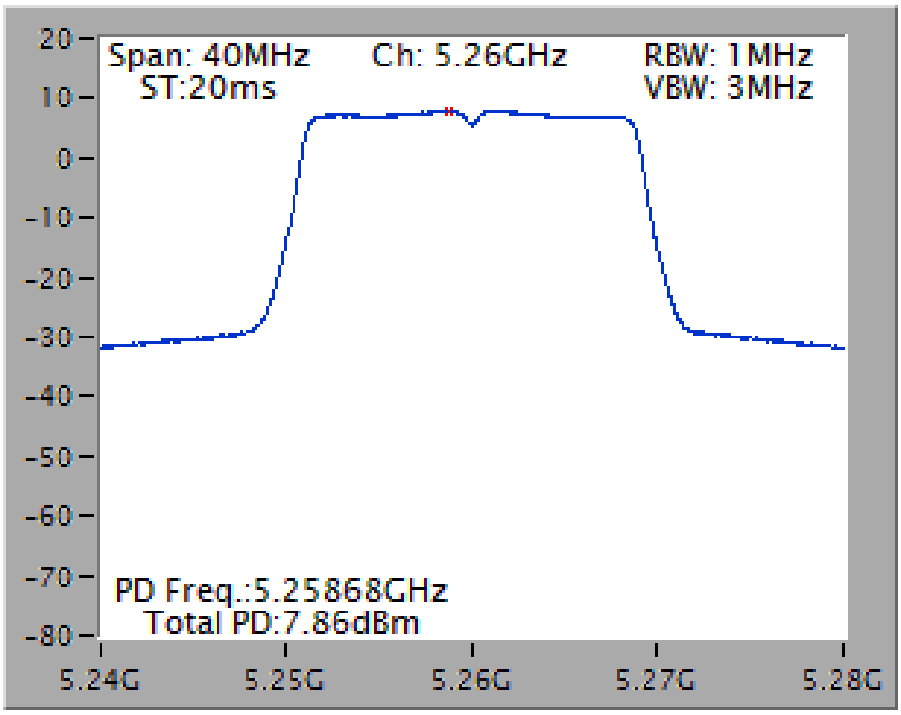


Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 2 / 5690 MHz

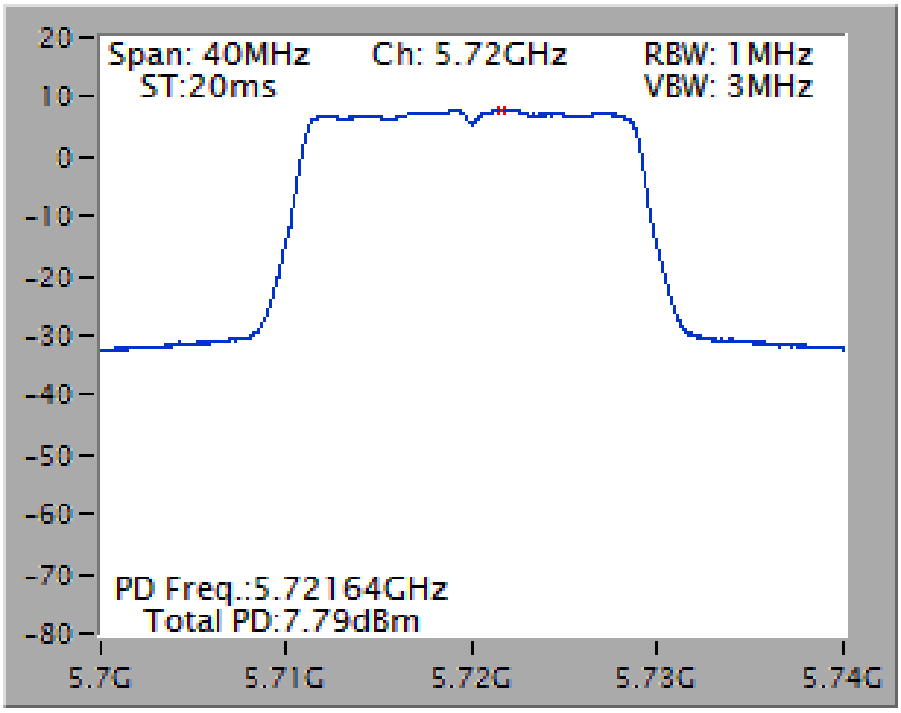


For 2TX

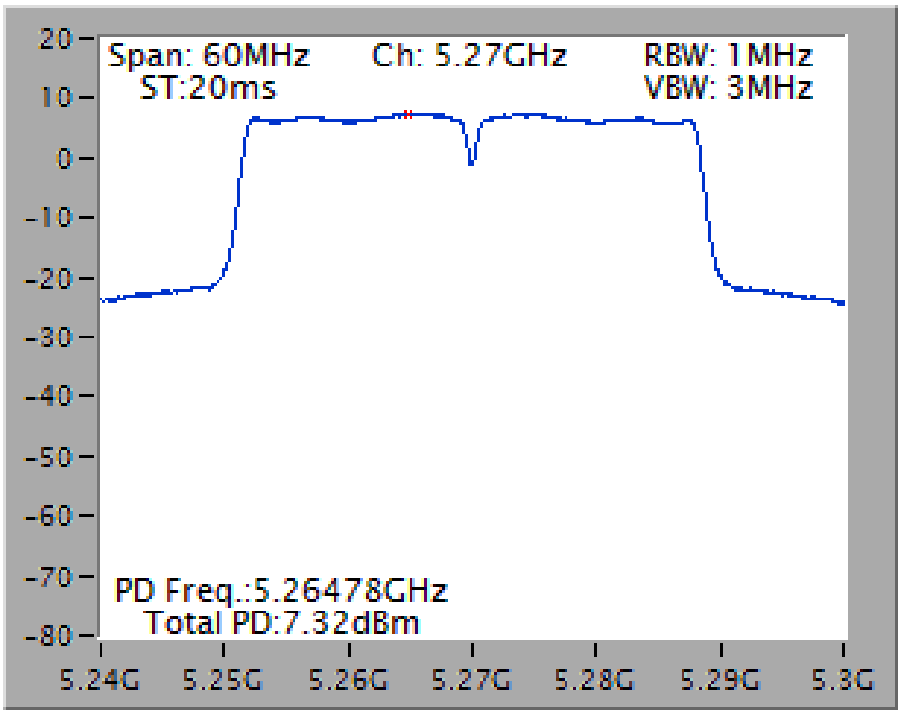
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5260 MHz



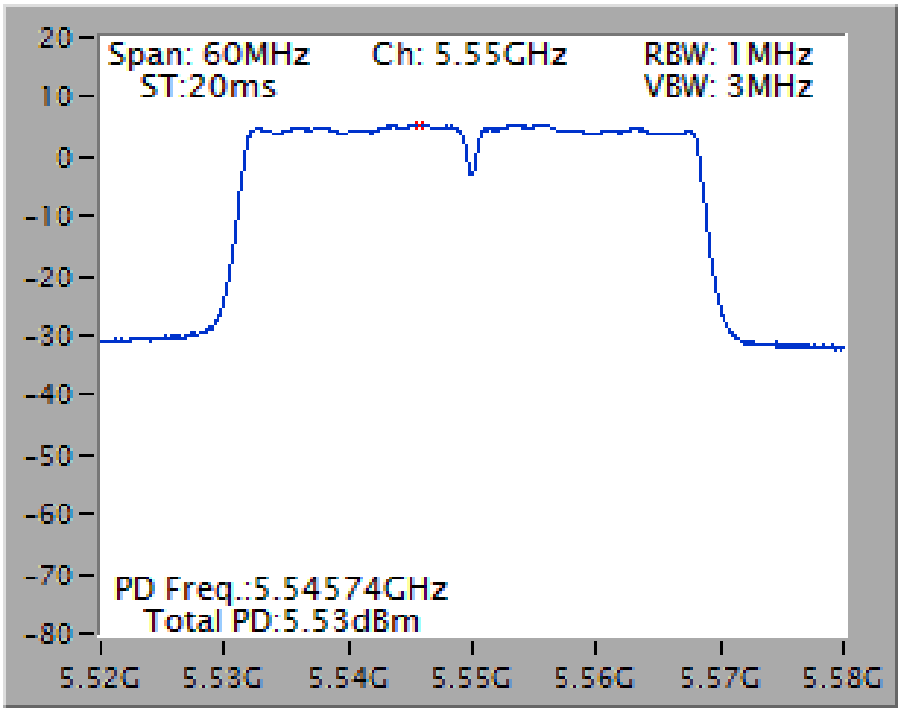
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5720 MHz



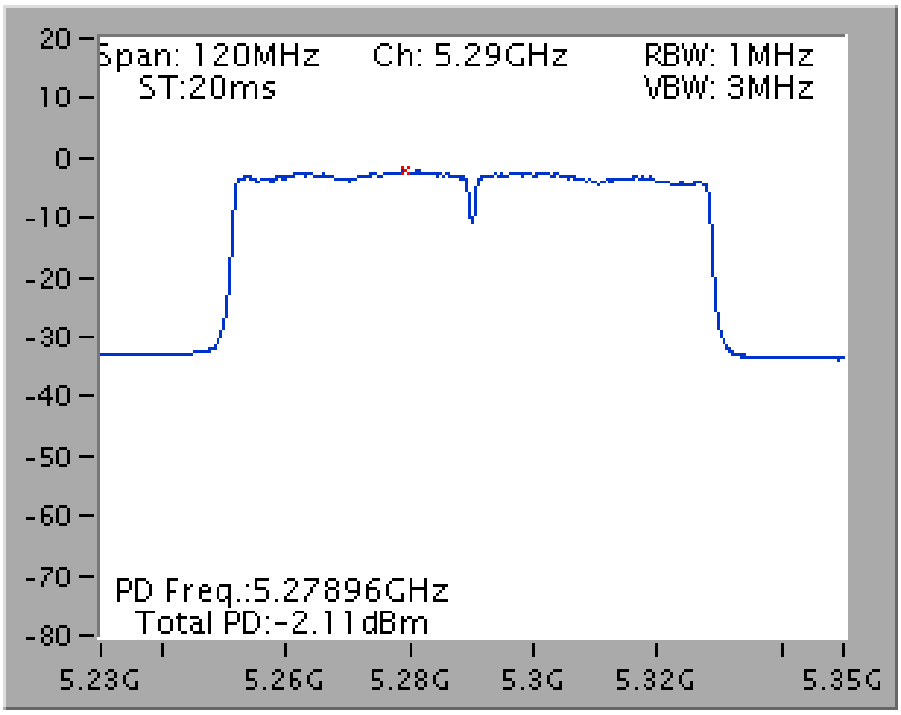
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5270 MHz



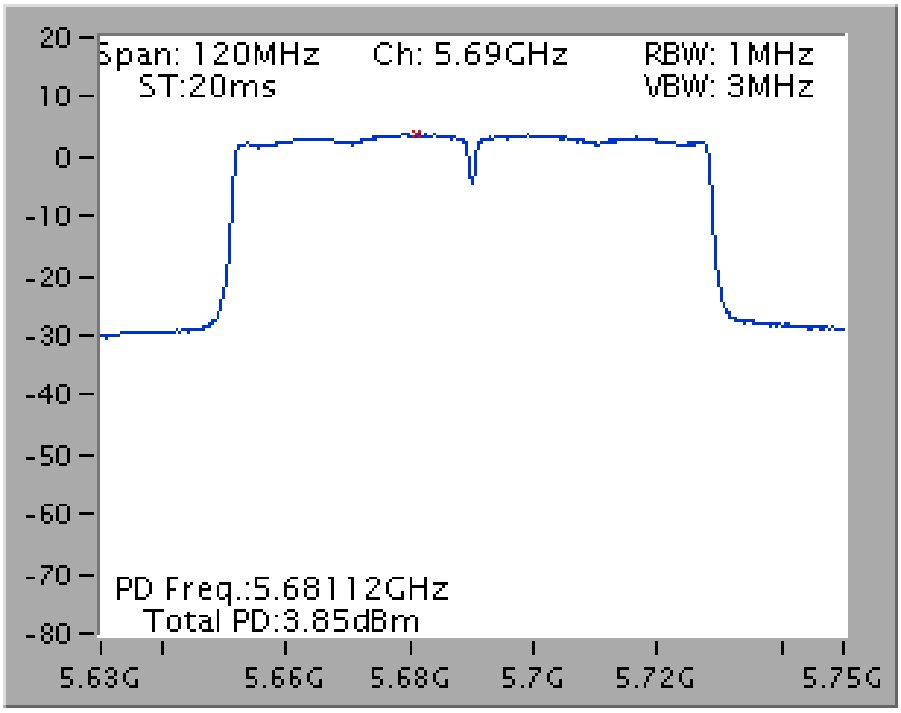
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5550 MHz



Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5290 MHz



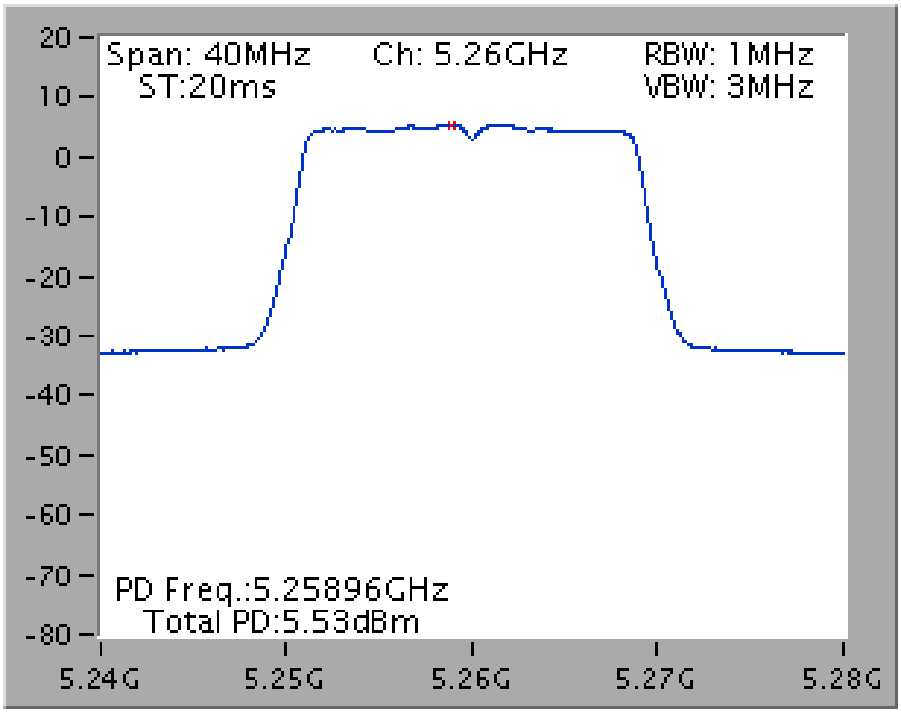
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5690 MHz



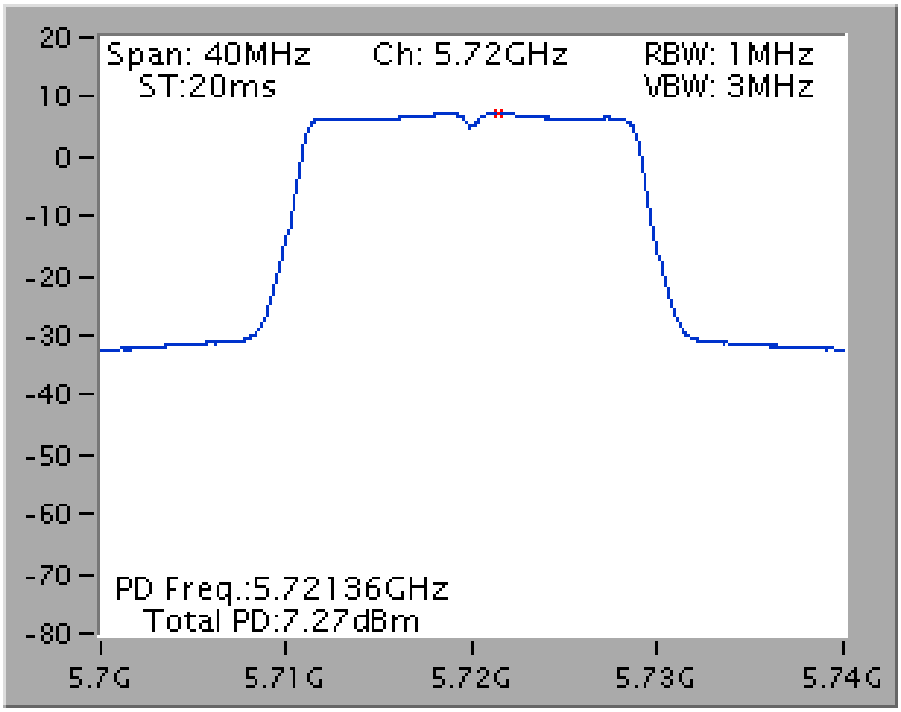
<For Beamforming Mode>

For 2TX

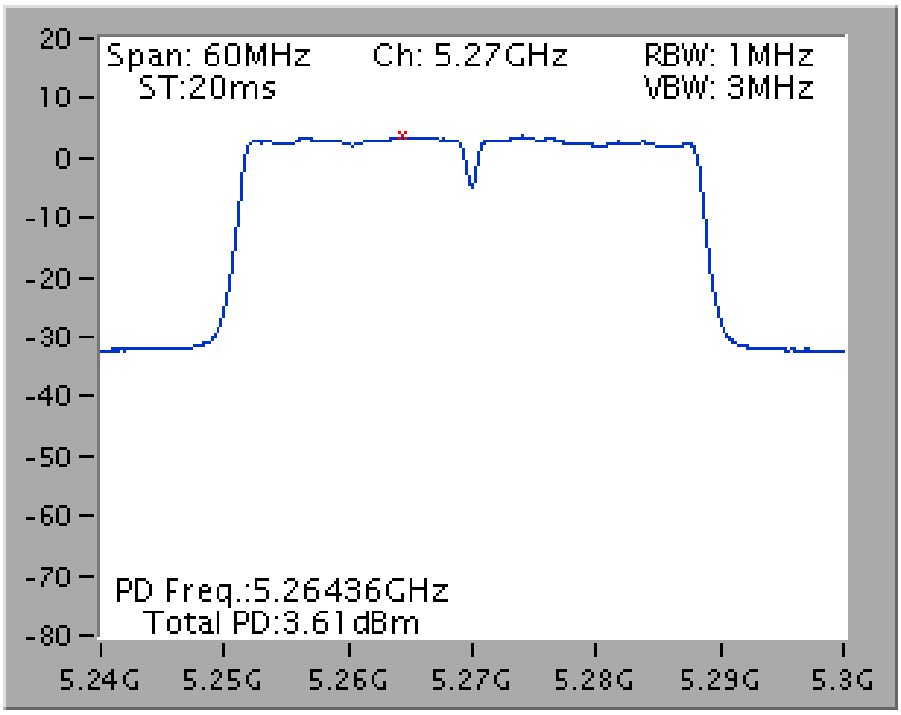
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5260 MHz



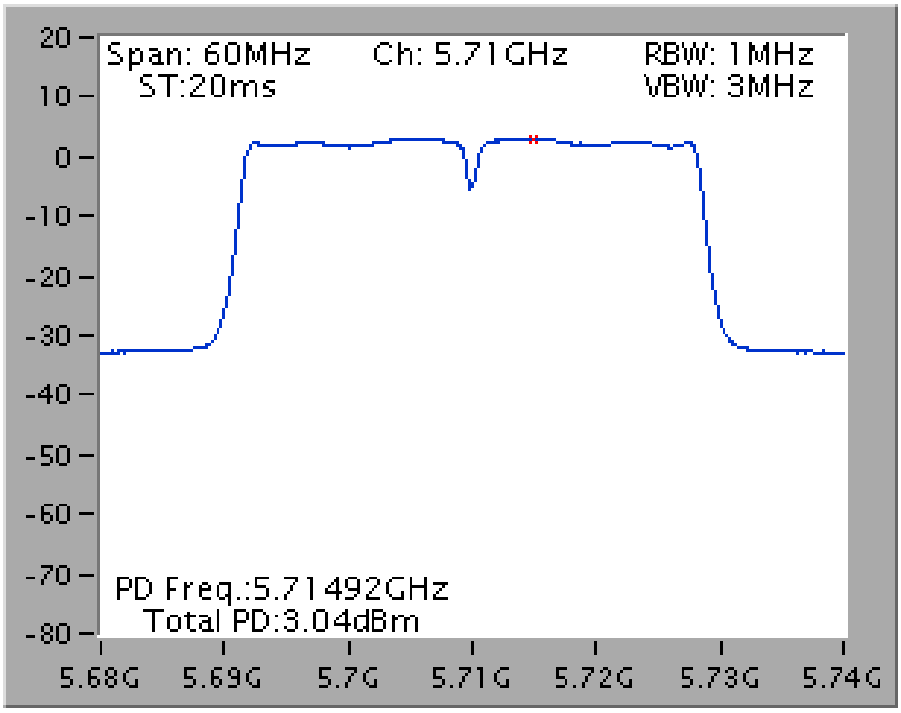
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5720 MHz



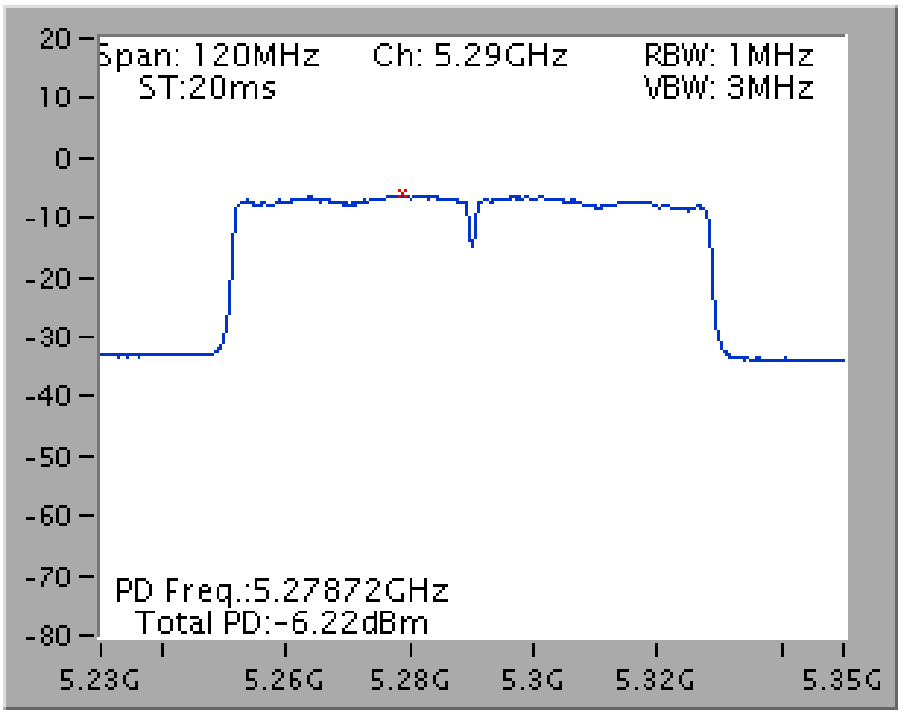
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5270 MHz



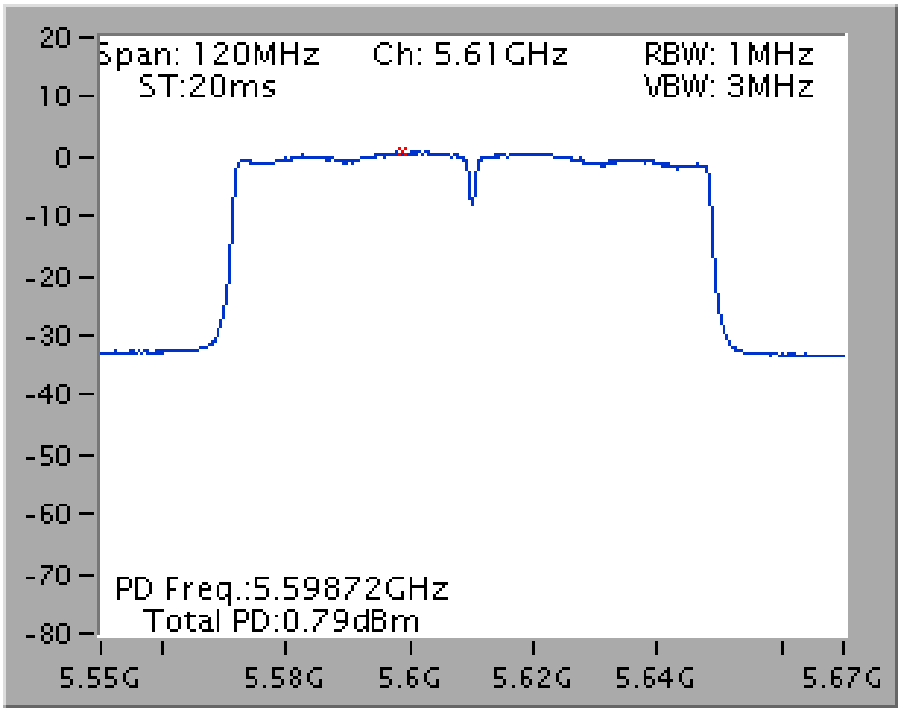
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5710 MHz



Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5290 MHz



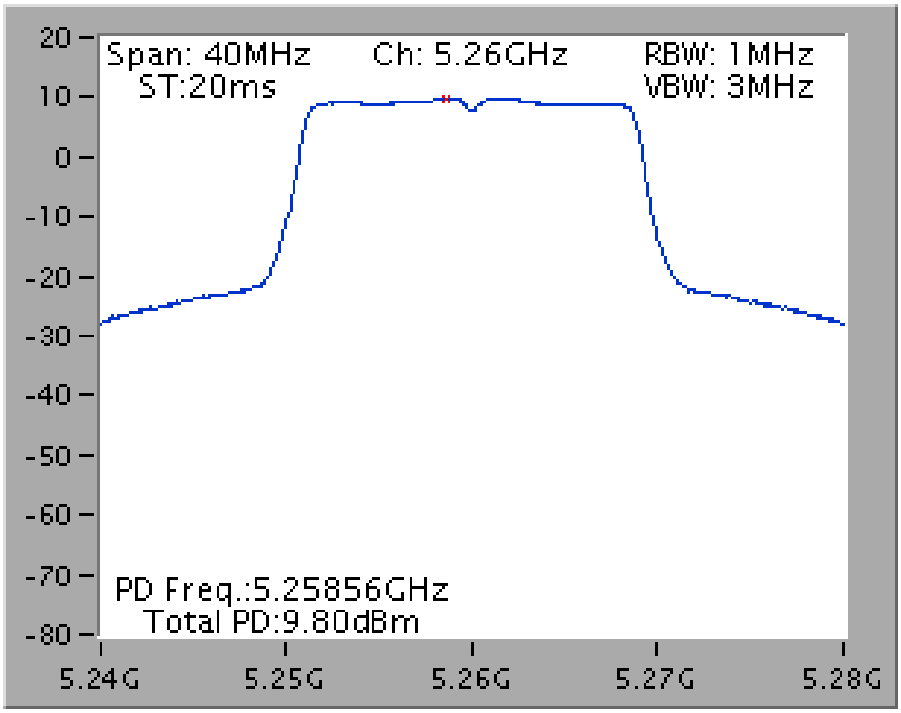
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 / 5610 MHz



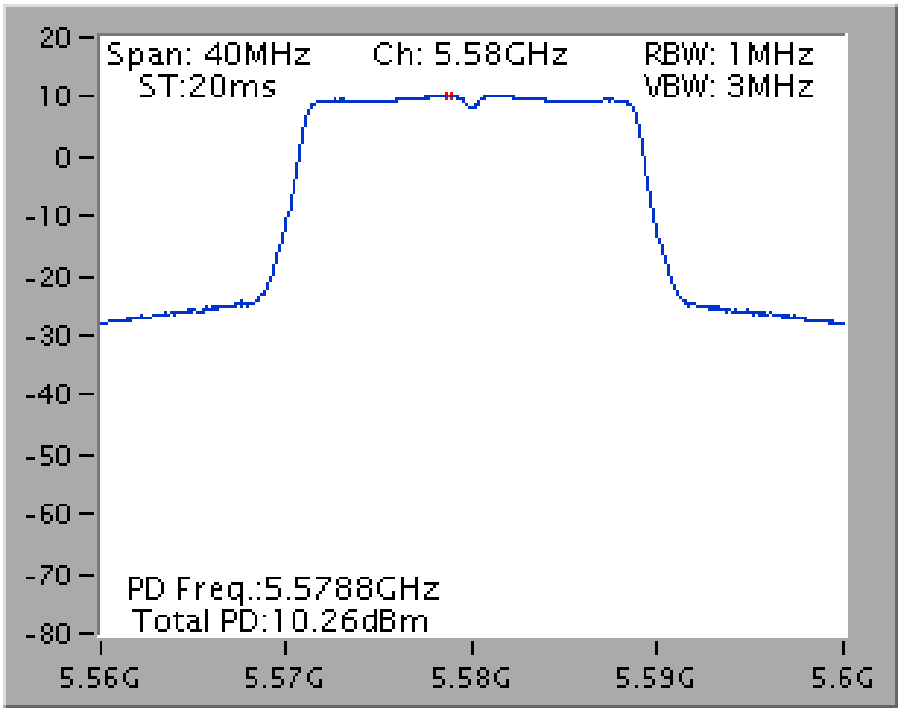
<For STBC Mode>

For 2TX

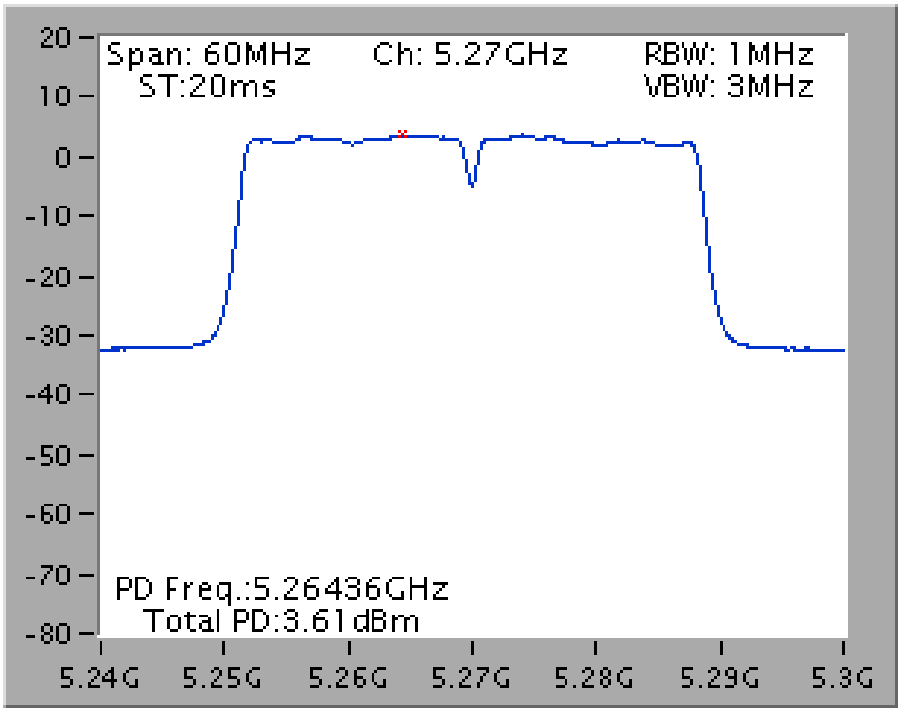
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5260 MHz



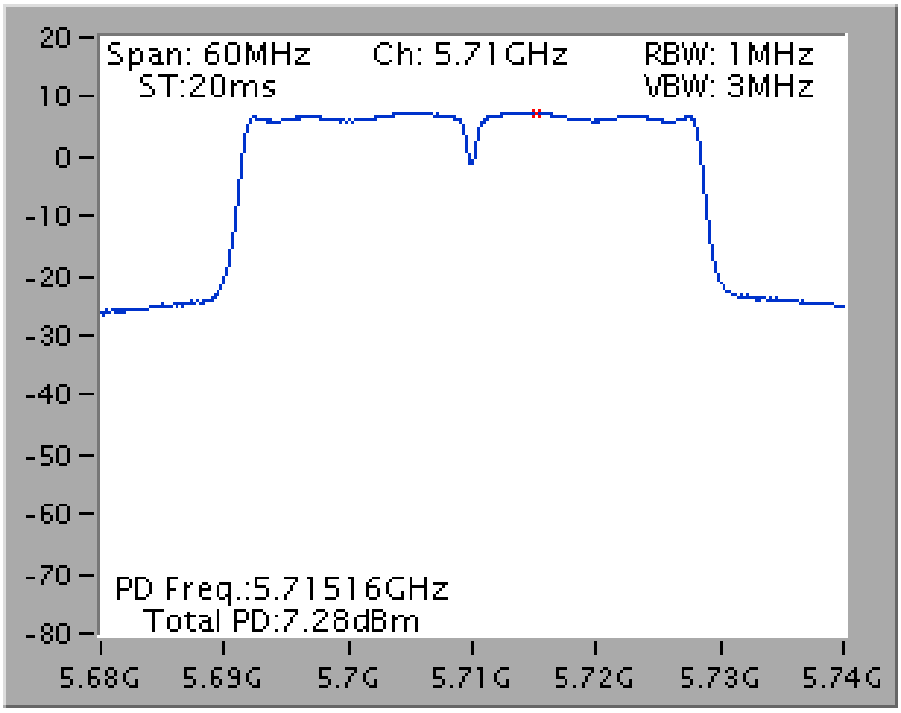
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5580 MHz



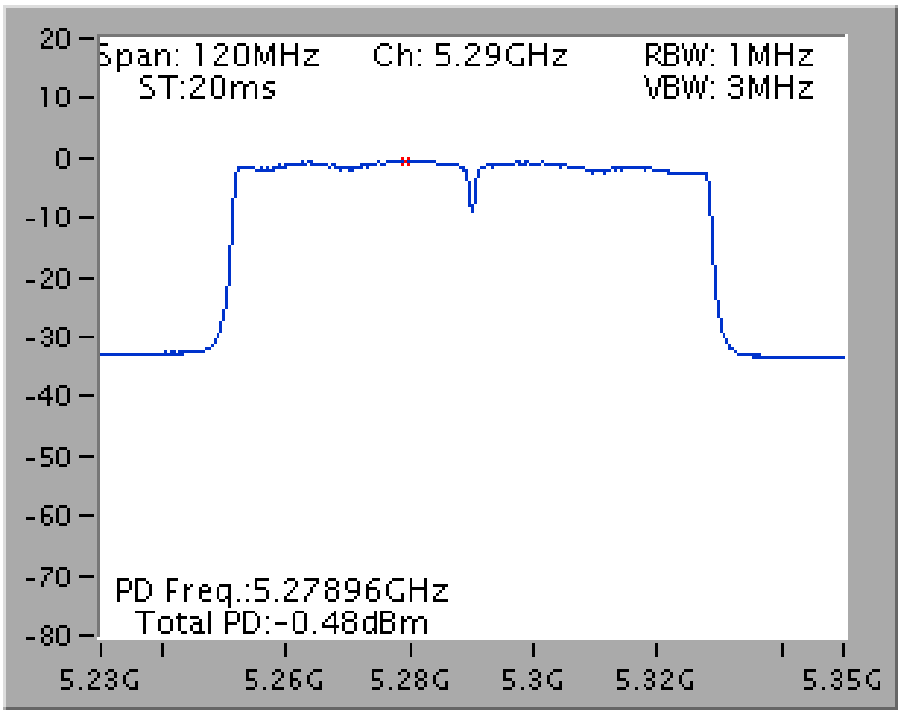
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5270 MHz



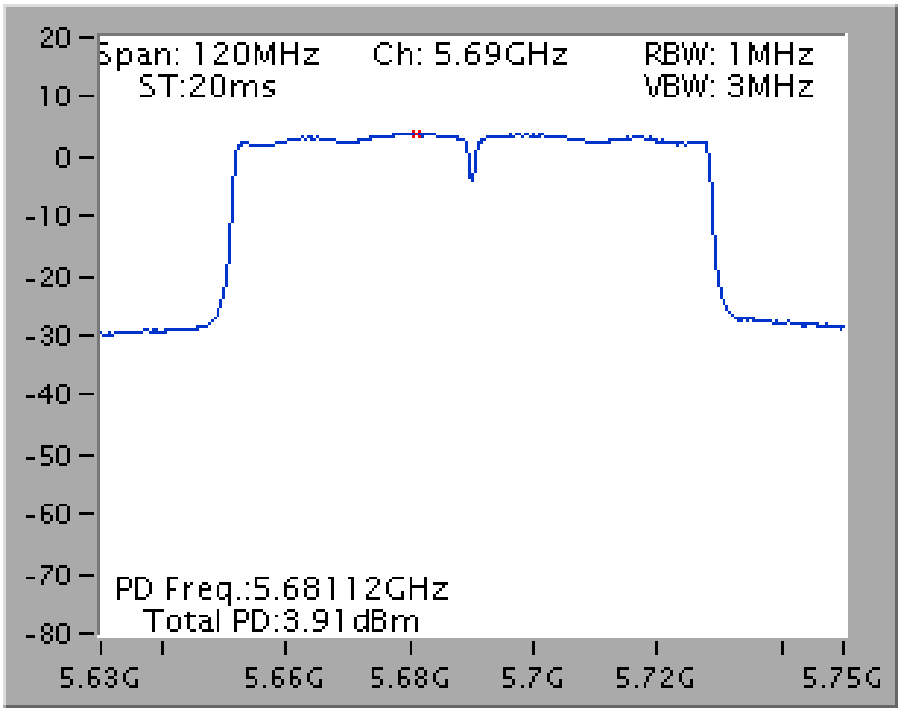
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5710 MHz



Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5290 MHz



Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5690 MHz



4.5. Radiated Emissions Measurement

4.5.1. Limit

For transmitters operating in the 5.25-5.35 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

For transmitters operating in the 5.470-5.725 GHz band: all emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

In addition, 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	40 GHz
RBW / VBW (Emission in restricted band)	1MHz / 3MHz for Peak, 1MHz / 10Hz for Average
RBW / VBW (Emission in non-restricted band)	1MHz / 3MHz for peak

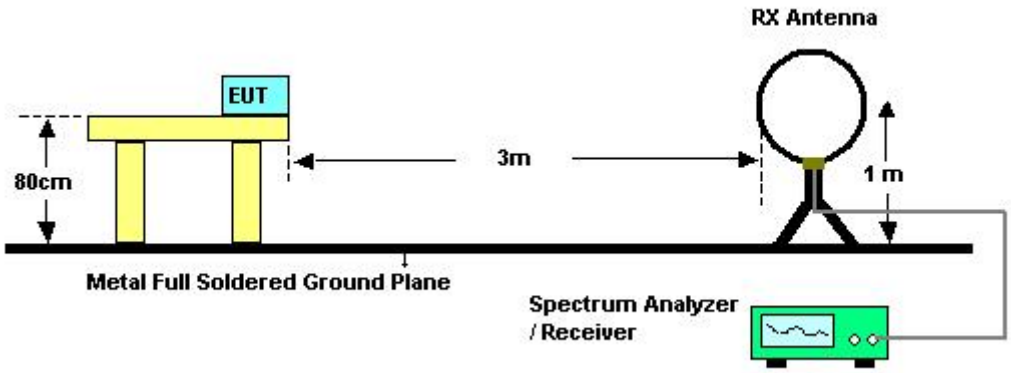
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RBW 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RBW 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RBW 120kHz for QP

4.5.3. Test Procedures

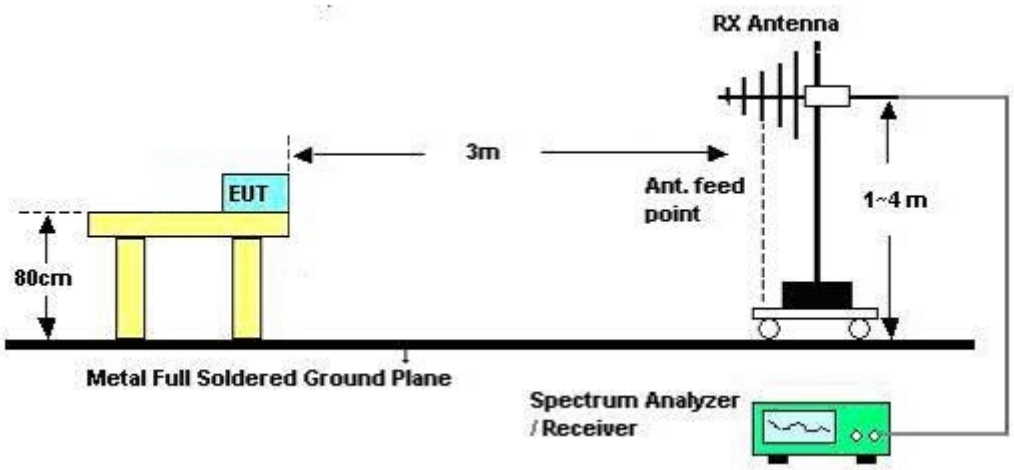
1. Configure the EUT according to ANSI C63.10. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. For emissions above 1GHz, use 1MHz VBW and RBW for peak reading. Then 1MHz RBW and 10Hz 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

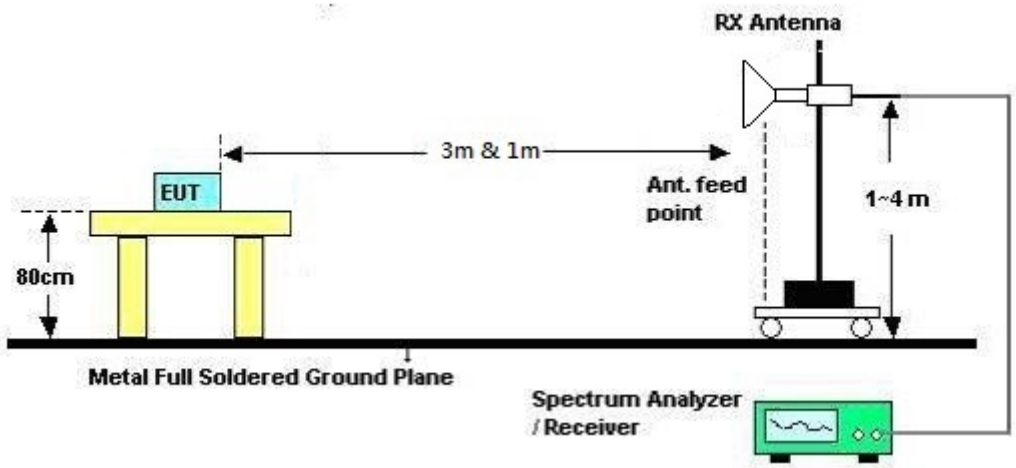
For Radiated Emissions: 9kHz ~30MHz



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 STBC mode:

The EUT was programmed to be in continuously transmitting mode.

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

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	Normal Link
Test Date	Apr. 26, 2014	Test Mode	Mode 2

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

Note:

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

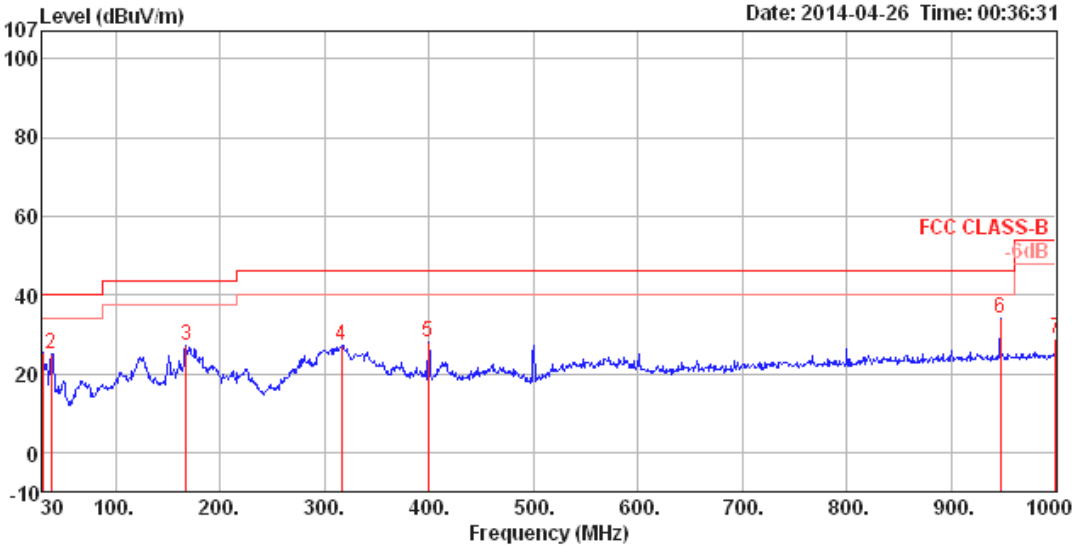
Distance extrapolation factor = 40 log (specific distance / test distance) (dB);

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

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

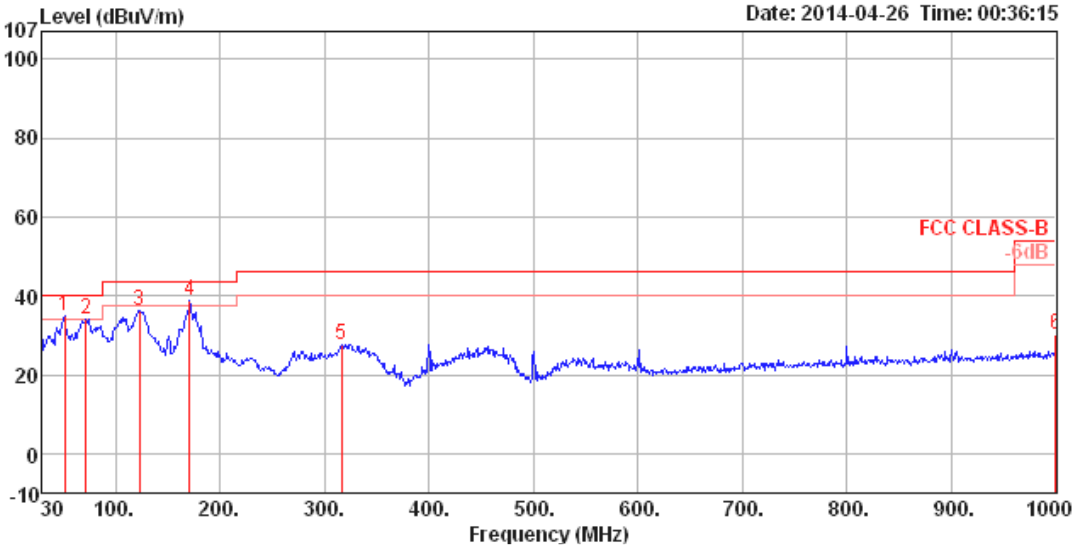
Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	Normal Link
Test Mode	Mode 2		

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	30.00	25.32	40.00	-14.68	38.51	0.64	17.98	31.81	100	138	HORIZONTAL	Peak
2	38.73	24.96	40.00	-15.04	43.01	0.73	13.10	31.88	100	56	HORIZONTAL	Peak
3	167.74	27.08	43.50	-16.42	47.79	1.57	9.25	31.53	150	195	HORIZONTAL	Peak
4	316.15	27.04	46.00	-18.96	42.76	2.17	13.51	31.40	125	191	HORIZONTAL	Peak
5	399.57	27.78	46.00	-18.22	40.89	2.49	15.86	31.46	125	184	HORIZONTAL	Peak
6	946.65	34.02	46.00	-11.98	40.18	4.07	20.89	31.12	100	214	HORIZONTAL	Peak
7	1000.00	28.76	54.00	-25.24	34.29	4.21	21.44	31.18	125	218	HORIZONTAL	Peak

Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	51.34	34.79	40.00	-5.21	58.58	0.85	7.15	31.79	125	188	VERTICAL	Peak
2	71.71	34.09	40.00	-5.91	59.34	1.01	5.49	31.75	125	200	VERTICAL	Peak
3	123.12	36.21	43.50	-7.29	54.79	1.31	11.67	31.56	100	262	VERTICAL	Peak
4	170.65	38.72	43.50	-4.78	59.61	1.59	9.04	31.52	125	158	VERTICAL	Peak
5	316.15	27.53	46.00	-18.47	43.25	2.17	13.51	31.40	200	182	VERTICAL	Peak
6	1000.00	30.01	54.00	-23.99	35.54	4.21	21.44	31.18	150	3	VERTICAL	Peak

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~40GHz)

<For Non-Beamforming Mode>

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 52 / Chain 2 / 1TX
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	15776.66	55.86	74.00	-18.14	44.37	7.93	38.48	34.92	Peak	356	100	HORIZONTAL
2	15780.02	43.89	54.00	-10.11	32.42	7.93	38.48	34.94	Average	356	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	15777.36	44.14	54.00	-9.86	32.67	7.93	38.48	34.94	Average	22	100	VERTICAL
2	15779.34	58.17	74.00	-15.83	46.70	7.93	38.48	34.94	Peak	22	100	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 60 / Chain 2 / 1TX
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	10598.12	56.61	74.00	-17.39	46.63	6.60	38.38	35.00	Peak	58	100	HORIZONTAL
2	10599.62	42.42	54.00	-11.58	32.44	6.60	38.38	35.00	Average	58	100	HORIZONTAL
3	15895.30	59.15	74.00	-14.85	47.83	7.97	38.38	35.03	Peak	344	121	HORIZONTAL
4	15900.38	44.67	54.00	-9.33	33.35	7.97	38.38	35.03	Average	344	121	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	10599.80	38.44	54.00	-15.56	28.46	6.60	38.38	35.00	Average	276	100	VERTICAL
2	10601.38	52.82	74.00	-21.18	42.83	6.60	38.38	34.99	Peak	276	100	VERTICAL
3	15897.94	56.30	74.00	-17.70	44.98	7.97	38.38	35.03	Peak	12	119	VERTICAL
4	15903.02	42.80	54.00	-11.20	31.48	7.98	38.37	35.03	Average	12	119	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 64 / Chain 2 / 1TX
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	10639.84	39.66	54.00	-14.34	29.67	6.59	38.37	34.97	Average	58	153	HORIZONTAL
2	10640.24	53.20	74.00	-20.80	43.21	6.59	38.37	34.97	Peak	58	153	HORIZONTAL
3	15956.56	40.95	54.00	-13.05	29.72	8.00	38.33	35.10	Average	340	100	HORIZONTAL
4	15958.52	54.25	74.00	-19.75	43.02	8.00	38.33	35.10	Peak	340	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	10639.90	37.73	54.00	-16.27	27.74	6.59	38.37	34.97	Average	355	100	VERTICAL
2	10642.74	51.34	74.00	-22.66	41.35	6.59	38.37	34.97	Peak	355	100	VERTICAL
3	15959.48	54.22	74.00	-19.78	42.99	8.00	38.33	35.10	Peak	5	100	VERTICAL
4	15965.00	40.90	54.00	-13.10	29.67	8.00	38.33	35.10	Average	5	100	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 100 / Chain 2 / 1TX
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	10995.04	50.43	74.00	-23.57	40.38	6.46	38.30	34.71	Peak	292	100	HORIZONTAL
2	10999.98	37.24	54.00	-16.76	27.19	6.46	38.30	34.71	Average	292	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	10998.34	50.53	74.00	-23.47	40.48	6.46	38.30	34.71	Peak	59	100	VERTICAL
2	11002.70	36.87	54.00	-17.13	26.82	6.46	38.30	34.71	Average	59	100	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 116 / Chain 2 / 1TX
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	11161.10	42.77	54.00	-11.23	32.60	6.56	38.30	34.69	Average	72	107	HORIZONTAL
2	11163.16	56.10	74.00	-17.90	45.93	6.56	38.30	34.69	Peak	72	107	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	11158.42	42.09	54.00	-11.91	31.92	6.56	38.30	34.69	Average	33	104	VERTICAL
2	11159.44	56.31	74.00	-17.69	46.14	6.56	38.30	34.69	Peak	33	104	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 140 / Chain 2 / 1TX
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	11398.06	49.70	74.00	-24.30	39.38	6.69	38.30	34.67	Peak	320	100	HORIZONTAL
2	11400.60	36.17	54.00	-17.83	25.85	6.69	38.30	34.67	Average	320	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	11395.52	36.19	54.00	-17.81	25.87	6.69	38.30	34.67	Average	131	100	VERTICAL
2	11395.74	50.16	74.00	-23.84	39.84	6.69	38.30	34.67	Peak	131	100	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 144 / Chain 2 / 1TX
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	11439.36	60.34	74.00	-13.66	50.00	6.71	38.30	34.67	Peak	58	125	HORIZONTAL
2	11441.00	45.37	54.00	-8.63	35.03	6.71	38.30	34.67	Average	58	125	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	11442.82	58.24	74.00	-15.76	47.90	6.71	38.30	34.67	Peak	354	123	VERTICAL
2	11443.58	43.32	54.00	-10.68	32.98	6.71	38.30	34.67	Average	354	123	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 54 / Chain 2 / 1TX
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	15805.14	41.03	54.00	-12.97	29.60	7.95	38.45	34.97	Average	328	100	HORIZONTAL
2	15805.86	54.06	74.00	-19.94	42.63	7.95	38.45	34.97	Peak	328	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	15805.56	41.07	54.00	-12.93	29.64	7.95	38.45	34.97	Average	61	100	VERTICAL
2	15811.86	54.59	74.00	-19.41	43.16	7.95	38.45	34.97	Peak	61	100	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 62 / Chain 2 / 1TX
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	10620.02	37.80	54.00	-16.20	27.81	6.60	38.38	34.99	Average	260	100	HORIZONTAL
2	10621.84	50.79	74.00	-23.21	40.80	6.60	38.38	34.99	Peak	260	100	HORIZONTAL
3	15925.56	41.11	54.00	-12.89	29.81	7.99	38.36	35.05	Average	141	100	HORIZONTAL
4	15934.54	53.91	74.00	-20.09	42.66	7.99	38.34	35.08	Peak	141	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	10619.92	37.52	54.00	-16.48	27.53	6.60	38.38	34.99	Average	58	100	VERTICAL
2	10623.68	50.99	74.00	-23.01	41.00	6.60	38.38	34.99	Peak	58	100	VERTICAL
3	15925.62	40.97	54.00	-13.03	29.67	7.99	38.36	35.05	Average	252	100	VERTICAL
4	15932.90	53.89	74.00	-20.11	42.62	7.99	38.36	35.08	Peak	252	100	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 102 / Chain 2 / 1TX
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	11017.84	50.61	74.00	-23.39	40.55	6.47	38.30	34.71	Peak	350	100	HORIZONTAL
2	11019.86	37.42	54.00	-16.58	27.36	6.47	38.30	34.71	Average	350	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	11018.16	50.74	74.00	-23.26	40.68	6.47	38.30	34.71	Peak	144	100	VERTICAL
2	11024.86	36.89	54.00	-17.11	26.82	6.48	38.30	34.71	Average	144	100	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 110 / Chain 2 / 1TX
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	11098.36	38.08	54.00	-15.92	27.96	6.52	38.30	34.70	Average	10	100	HORIZONTAL
2	11102.02	51.02	74.00	-22.98	40.90	6.52	38.30	34.70	Peak	10	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	11098.38	37.80	54.00	-16.20	27.68	6.52	38.30	34.70	Average	285	100	VERTICAL
2	11104.08	52.02	74.00	-21.98	41.90	6.52	38.30	34.70	Peak	285	100	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 134 / Chain 2 / 1TX
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	11338.06	49.77	74.00	-24.23	39.50	6.65	38.30	34.68	Peak	291	100	HORIZONTAL
2	11338.84	36.47	54.00	-17.53	26.20	6.65	38.30	34.68	Average	291	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	11341.18	36.06	54.00	-17.94	25.78	6.65	38.30	34.67	Average	61	100	VERTICAL
2	11344.32	49.67	74.00	-24.33	39.39	6.65	38.30	34.67	Peak	61	100	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 142 / Chain 2 / 1TX
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	11419.24	56.61	74.00	-17.39	46.28	6.70	38.30	34.67	Peak	56	132	HORIZONTAL
2	11421.16	41.85	54.00	-12.15	31.52	6.70	38.30	34.67	Average	56	132	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	11418.28	41.19	54.00	-12.81	30.86	6.70	38.30	34.67	Average	354	149	VERTICAL
2	11419.72	55.48	74.00	-18.52	45.15	6.70	38.30	34.67	Peak	354	149	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 58 / Chain 2 / 1TX
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	15865.08	53.42	74.00	-20.58	42.06	7.96	38.41	35.01	Peak	87	100	HORIZONTAL
2	15869.48	40.28	54.00	-13.72	28.92	7.97	38.40	35.01	Average	87	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	15866.84	40.42	54.00	-13.58	29.06	7.97	38.40	35.01	Average	204	100	VERTICAL
2	15873.32	53.37	74.00	-20.63	42.01	7.97	38.40	35.01	Peak	204	100	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 106 / Chain 2 / 1TX
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	11059.20	51.14	74.00	-22.86	41.04	6.50	38.30	34.70	Peak	178	100	HORIZONTAL
2	11059.96	37.55	54.00	-16.45	27.45	6.50	38.30	34.70	Average	178	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	11060.88	37.41	54.00	-16.59	27.31	6.50	38.30	34.70	Average	280	100	VERTICAL
2	11062.44	51.04	74.00	-22.96	40.94	6.50	38.30	34.70	Peak	280	100	VERTICAL

Temperature	24℃	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 122 / Chain 2 / 1TX
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	11230.10	52.14	74.00	-21.86	41.93	6.60	38.30	34.69	Peak	251	100	HORIZONTAL
2	11238.83	37.91	54.00	-16.09	27.69	6.60	38.30	34.68	Average	251	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	11239.31	52.03	74.00	-21.97	41.81	6.60	38.30	34.68	Peak	123	100	VERTICAL
2	11244.28	38.13	54.00	-15.87	27.90	6.61	38.30	34.68	Average	123	100	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 138 / Chain 2 / 1TX
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	11375.10	50.91	74.00	-23.09	40.61	6.67	38.30	34.67	Peak	345	100	HORIZONTAL
2	11375.96	37.09	54.00	-16.91	26.79	6.67	38.30	34.67	Average	345	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	11377.86	50.37	74.00	-23.63	40.07	6.67	38.30	34.67	Peak	22	100	VERTICAL
2	11379.40	36.78	54.00	-17.22	26.47	6.68	38.30	34.67	Average	22	100	VERTICAL

Note:

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

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

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

<For STBC Mode>

Temperature	24℃	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 52 / Chain 1 + Chain 2 / 2TX
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	15779.00	44.47	54.00	-9.53	33.00	7.93	38.48	34.94	Average	350	100	HORIZONTAL
2	15781.40	58.81	74.00	-15.19	47.34	7.93	38.48	34.94	Peak	350	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	15780.00	44.72	54.00	-9.28	33.25	7.93	38.48	34.94	Average	20	100	VERTICAL
2	15780.56	58.79	74.00	-15.21	47.32	7.93	38.48	34.94	Peak	20	100	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 60 / Chain 1 + Chain 2 / 2TX
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	10600.28	45.41	54.00	-8.59	35.43	6.60	38.38	35.00	Average	75	150	HORIZONTAL
2	10601.84	59.99	74.00	-14.01	50.00	6.60	38.38	34.99	Peak	75	150	HORIZONTAL
3	15897.80	58.63	74.00	-15.37	47.31	7.97	38.38	35.03	Peak	24	100	HORIZONTAL
4	15902.96	44.39	54.00	-9.61	33.07	7.98	38.37	35.03	Average	24	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	10598.60	54.38	74.00	-19.62	44.40	6.60	38.38	35.00	Peak	11	145	VERTICAL
2	10599.92	41.06	54.00	-12.94	31.08	6.60	38.38	35.00	Average	11	145	VERTICAL
3	15901.12	42.98	54.00	-11.02	31.66	7.98	38.37	35.03	Average	344	100	VERTICAL
4	15908.64	56.70	74.00	-17.30	45.40	7.98	38.37	35.05	Peak	344	100	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 64 / Chain 1 + Chain 2 / 2TX
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	10640.58	52.48	74.00	-21.52	42.49	6.59	38.37	34.97	Peak	71	100	HORIZONTAL
2	10642.68	38.71	54.00	-15.29	28.72	6.59	38.37	34.97	Average	71	100	HORIZONTAL
3	15956.54	41.68	54.00	-12.32	30.45	8.00	38.33	35.10	Average	332	100	HORIZONTAL
4	15962.98	55.58	74.00	-18.42	44.35	8.00	38.33	35.10	Peak	332	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	10639.90	51.69	74.00	-22.31	41.70	6.59	38.37	34.97	Peak	291	100	VERTICAL
2	10639.96	38.48	54.00	-15.52	28.49	6.59	38.37	34.97	Average	291	100	VERTICAL
3	15961.58	55.42	74.00	-18.58	44.19	8.00	38.33	35.10	Peak	23	100	VERTICAL
4	15964.98	41.70	54.00	-12.30	30.47	8.00	38.33	35.10	Average	23	100	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 100 / Chain 1 + Chain 2 / 2TX
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	10999.84	54.63	74.00	-19.37	44.58	6.46	38.30	34.71	Peak	44	100	HORIZONTAL
2	10999.98	39.44	54.00	-14.56	29.39	6.46	38.30	34.71	Average	44	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	10997.50	53.16	74.00	-20.84	43.11	6.46	38.30	34.71	Peak	19	100	VERTICAL
2	10999.92	38.74	54.00	-15.26	28.69	6.46	38.30	34.71	Average	19	100	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 116 / Chain 1 + Chain 2 / 2TX
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	11159.64	64.37	74.00	-9.63	54.20	6.56	38.30	34.69	Peak	44	102	HORIZONTAL
2	11159.84	50.17	54.00	-3.83	40.00	6.56	38.30	34.69	Average	44	102	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	11159.96	46.27	54.00	-7.73	36.10	6.56	38.30	34.69	Average	14	104	VERTICAL
2	11160.00	61.01	74.00	-12.99	50.84	6.56	38.30	34.69	Peak	14	104	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 140 / Chain 1 + Chain 2 / 2TX
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	11401.66	37.47	54.00	-16.53	27.15	6.69	38.30	34.67	Average	135	100	HORIZONTAL
2	11403.18	50.04	74.00	-23.96	39.72	6.69	38.30	34.67	Peak	135	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	11398.96	50.60	74.00	-23.40	40.28	6.69	38.30	34.67	Peak	262	100	VERTICAL
2	11402.28	36.66	54.00	-17.34	26.34	6.69	38.30	34.67	Average	262	100	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 144 / Chain 1 + Chain 2 / 2TX
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	11439.88	49.37	54.00	-4.63	39.03	6.71	38.30	34.67	Average	81	116	HORIZONTAL
2	11439.92	64.45	74.00	-9.55	54.11	6.71	38.30	34.67	Peak	81	116	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	11440.80	47.93	54.00	-6.07	37.59	6.71	38.30	34.67	Average	20	100	VERTICAL
2	11443.28	63.16	74.00	-10.84	52.82	6.71	38.30	34.67	Peak	20	100	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 54 / Chain 1 + Chain 2 / 2TX
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	15806.16	41.59	54.00	-12.41	30.16	7.95	38.45	34.97	Average	332	100	HORIZONTAL
2	15810.96	55.50	74.00	-18.50	44.07	7.95	38.45	34.97	Peak	332	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	15805.40	41.46	54.00	-12.54	30.03	7.95	38.45	34.97	Average	62	100	VERTICAL
2	15808.32	54.87	74.00	-19.13	43.44	7.95	38.45	34.97	Peak	62	100	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 62 / Chain 1 + Chain 2 / 2TX
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	10619.06	52.50	74.00	-21.50	42.51	6.60	38.38	34.99	Peak	82	100	HORIZONTAL
2	10619.86	38.32	54.00	-15.68	28.33	6.60	38.38	34.99	Average	82	100	HORIZONTAL
3	15925.94	42.04	54.00	-11.96	30.74	7.99	38.36	35.05	Average	274	100	HORIZONTAL
4	15933.28	56.08	74.00	-17.92	44.81	7.99	38.36	35.08	Peak	274	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	10619.72	52.43	74.00	-21.57	42.44	6.60	38.38	34.99	Peak	351	100	VERTICAL
2	10619.86	38.57	54.00	-15.43	28.58	6.60	38.38	34.99	Average	351	100	VERTICAL
3	15927.12	55.34	74.00	-18.66	44.04	7.99	38.36	35.05	Peak	57	100	VERTICAL
4	15928.64	41.99	54.00	-12.01	30.69	7.99	38.36	35.05	Average	57	100	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 102 / Chain 1 + Chain 2 / 2TX
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	11016.24	50.99	74.00	-23.01	40.93	6.47	38.30	34.71	Peak	22	100	HORIZONTAL
2	11019.84	37.16	54.00	-16.84	27.10	6.47	38.30	34.71	Average	22	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	11016.88	50.56	74.00	-23.44	40.50	6.47	38.30	34.71	Peak	272	100	VERTICAL
2	11022.60	37.13	54.00	-16.87	27.06	6.48	38.30	34.71	Average	272	100	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 110 / Chain 1 + Chain 2 / 2TX
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	11099.40	55.60	74.00	-18.40	45.48	6.52	38.30	34.70	Peak	357	100	HORIZONTAL
2	11100.16	40.82	54.00	-13.18	30.70	6.52	38.30	34.70	Average	357	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	11099.22	39.73	54.00	-14.27	29.61	6.52	38.30	34.70	Average	72	100	VERTICAL
2	11100.00	55.39	74.00	-18.61	45.27	6.52	38.30	34.70	Peak	72	100	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 134 / Chain 1 + Chain 2 / 2TX
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	11338.60	51.98	74.00	-22.02	41.71	6.65	38.30	34.68	Peak	39	100	HORIZONTAL
2	11339.86	37.69	54.00	-16.31	27.42	6.65	38.30	34.68	Average	39	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	11336.14	51.20	74.00	-22.80	40.93	6.65	38.30	34.68	Peak	331	100	VERTICAL
2	11342.44	37.33	54.00	-16.67	27.05	6.65	38.30	34.67	Average	331	100	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 142 / Chain 1 + Chain 2 / 2TX
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	11419.88	42.19	54.00	-11.81	31.86	6.70	38.30	34.67	Average	35	172	HORIZONTAL
2	11419.94	57.17	74.00	-16.83	46.84	6.70	38.30	34.67	Peak	35	172	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	11419.94	58.94	74.00	-15.06	48.61	6.70	38.30	34.67	Peak	22	100	VERTICAL
2	11420.68	42.96	54.00	-11.04	32.63	6.70	38.30	34.67	Average	22	100	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 58 / Chain 1 + Chain 2 / 2TX
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	15865.08	54.73	74.00	-19.27	43.37	7.96	38.41	35.01	Peak	100	100	HORIZONTAL
2	15869.62	41.29	54.00	-12.71	29.93	7.97	38.40	35.01	Average	100	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	15865.08	54.73	74.00	-19.27	43.37	7.96	38.41	35.01	Peak	100	100	HORIZONTAL
2	15869.62	41.29	54.00	-12.71	29.93	7.97	38.40	35.01	Average	100	100	HORIZONTAL

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 106 / Chain 1 + Chain 2 / 2TX
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	11061.02	51.46	74.00	-22.54	41.36	6.50	38.30	34.70	Peak	336	100	HORIZONTAL
2	11062.20	37.80	54.00	-16.20	27.70	6.50	38.30	34.70	Average	336	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	11058.80	52.23	74.00	-21.77	42.13	6.50	38.30	34.70	Peak	44	100	VERTICAL
2	11062.14	37.80	54.00	-16.20	27.70	6.50	38.30	34.70	Average	44	100	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 122 / Chain 1 + Chain 2 / 2TX
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	11237.15	38.29	54.00	-15.71	28.08	6.60	38.30	34.69	Average	279	100	HORIZONTAL
2	11239.07	52.13	74.00	-21.87	41.91	6.60	38.30	34.68	Peak	279	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	11213.24	52.19	74.00	-21.81	41.99	6.59	38.30	34.69	Peak	126	100	VERTICAL
2	11227.44	37.71	54.00	-16.29	27.50	6.60	38.30	34.69	Average	126	100	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 138 / Chain 1 + Chain 2 / 2TX
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	11376.80	53.64	74.00	-20.36	43.34	6.67	38.30	34.67	Peak	38	100	HORIZONTAL
2	11376.80	39.22	54.00	-14.78	28.92	6.67	38.30	34.67	Average	38	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	11375.00	38.67	54.00	-15.33	28.37	6.67	38.30	34.67	Average	358	100	VERTICAL
2	11382.20	52.60	74.00	-21.40	42.29	6.68	38.30	34.67	Peak	358	100	VERTICAL

Note:

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

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

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

4.6. Band Edge Emissions Measurement

4.6.1. Limit

For transmitters operating in the 5.25-5.35 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

For transmitters operating in the 5.470-5.725 GHz band: all emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

In addition, In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

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

4.6.2. Measuring Instruments and Setting

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

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	100 MHz
RBW / VBW (Emission in restricted band)	1MHz / 3MHz for Peak, 1MHz / 10Hz for Average
RBW / VBW (Emission in non-restricted band)	1MHz / 3MHz for Peak

4.6.3. Test Procedures

1. The test procedure is the same as section 4.5.3, only the frequency range investigated is limited to 100MHz around bandedges.

4.6.4. Test Setup Layout

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

4.6.5. Test Deviation

There is no deviation with the original standard.

4.6.6. EUT Operation during Test

For Non-beamforming mode:

The EUT was programmed to be in continuously transmitting mode.

For beamforming mode:

The EUT was programmed to be in beamforming transmitting mode.

For STBC mode:

The EUT was programmed to be in continuously transmitting mode.

4.6.7. Test Result of Band Edge and Fundamental Emissions

<For Non-Beamforming Mode>

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 52, 60, 64 / Chain 2 / 1TX
Test Date	Jun. 05, 2014		

Channel 52

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5141.03	63.81	74.00	-10.19	60.86	4.34	33.14	34.53	Peak	239	131	HORIZONTAL
2	5141.67	52.32	54.00	-1.68	49.37	4.34	33.14	34.53	Average	239	131	HORIZONTAL
3	5258.72	119.90			116.68	4.42	33.33	34.53	Peak	239	131	HORIZONTAL
4	5258.72	109.42			106.20	4.42	33.33	34.53	Average	239	131	HORIZONTAL
5	5417.95	63.65	74.00	-10.35	60.09	4.52	33.57	34.53	Peak	239	131	HORIZONTAL
6	5418.33	52.50	54.00	-1.50	48.94	4.52	33.57	34.53	Average	239	131	HORIZONTAL

Item 3, 4 are the fundamental frequency at 5260 MHz.

Channel 60

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5138.46	50.00	54.00	-4.00	47.09	4.33	33.11	34.53	Average	230	108	HORIZONTAL
2	5139.10	61.33	74.00	-12.67	58.42	4.33	33.11	34.53	Peak	230	108	HORIZONTAL
3	5298.08	118.56			115.27	4.44	33.38	34.53	Peak	230	108	HORIZONTAL
4	5301.28	108.40			105.11	4.44	33.38	34.53	Average	230	108	HORIZONTAL
5	5350.00	67.04	74.00	-6.96	63.64	4.47	33.46	34.53	Peak	230	108	HORIZONTAL
6	5350.00	52.69	54.00	-1.31	49.29	4.47	33.46	34.53	Average	230	108	HORIZONTAL

Item 3, 4 are the fundamental frequency at 5300 MHz.

Channel 64

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5318.56	116.21			112.88	4.45	33.41	34.53	Peak	230	107	HORIZONTAL
2	5318.72	105.01			101.68	4.45	33.41	34.53	Average	230	107	HORIZONTAL
3	5350.00	52.54	54.00	-1.46	49.14	4.47	33.46	34.53	Average	230	107	HORIZONTAL
4	5350.16	69.55	74.00	-4.45	66.15	4.47	33.46	34.53	Peak	230	107	HORIZONTAL

Item 1, 2 are the fundamental frequency at 5320 MHz.

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 100, 116, 140 / Chain 2 / 1TX
Test Date	Jun. 05, 2014		

Channel 100

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5378.27	48.87	54.00	-5.13	45.40	4.49	33.51	34.53	Average	241	125	HORIZONTAL
2	5381.64	61.47	74.00	-12.53	58.00	4.49	33.51	34.53	Peak	241	125	HORIZONTAL
3	5470.00	71.19	74.00	-2.81	67.52	4.55	33.65	34.53	Peak	241	125	HORIZONTAL
4	5470.00	52.73	54.00	-1.27	49.06	4.55	33.65	34.53	Average	241	125	HORIZONTAL
5	5498.56	106.99			103.25	4.57	33.70	34.53	Average	241	125	HORIZONTAL
6	5501.92	117.36			113.62	4.57	33.70	34.53	Peak	241	125	HORIZONTAL

Item 5, 6 are the fundamental frequency at 5500 MHz.

Channel 116

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5420.90	52.56	54.00	-1.44	49.00	4.52	33.57	34.53	Average	241	121	HORIZONTAL
2	5421.54	64.20	74.00	-9.80	60.64	4.52	33.57	34.53	Peak	241	121	HORIZONTAL
3	5462.56	51.05	54.00	-2.95	47.38	4.55	33.65	34.53	Average	241	121	HORIZONTAL
4	5466.15	63.05	74.00	-10.95	59.38	4.55	33.65	34.53	Peak	241	121	HORIZONTAL
5	5578.72	111.96			107.98	4.62	33.91	34.55	Average	241	121	HORIZONTAL
6	5579.36	122.73			118.75	4.62	33.91	34.55	Peak	241	121	HORIZONTAL

Item 5, 6 are the fundamental frequency at 5580 MHz.

Channel 140

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5699.04	104.43			100.03	4.70	34.27	34.57	Average	241	121	HORIZONTAL
2	5705.13	116.02			111.57	4.71	34.32	34.58	Peak	241	121	HORIZONTAL
3	5725.00	52.47	54.00	-1.53	47.96	4.72	34.37	34.58	Average	241	121	HORIZONTAL
4	5725.16	72.85	74.00	-1.15	68.34	4.72	34.37	34.58	Peak	241	121	HORIZONTAL

Item 1, 2 are the fundamental frequency at 5700 MHz.

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 144 / Chain 2 / 1TX
Test Date	Jun. 05, 2014		

Channel 144

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5721.28	110.91			106.40	4.72	34.37	34.58	Average	238	121	HORIZONTAL
2	5724.49	122.67			118.16	4.72	34.37	34.58	Peak	238	121	HORIZONTAL
3	5874.36	66.05	68.20	-2.15	60.99	4.82	34.84	34.60	Peak	238	121	HORIZONTAL

Item 1, 2 are the fundamental frequency at 5720 MHz.

Temperature	24℃	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 54, 62 / Chain 2 / 1TX
Test Date	Jun. 05, 2014		

Channel 54

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5146.15	50.38	54.00	-3.62	47.43	4.34	33.14	34.53	Average	239	133	HORIZONTAL
2	5148.72	64.04	74.00	-9.96	61.09	4.34	33.14	34.53	Peak	239	133	HORIZONTAL
3	5273.85	104.09			100.87	4.42	33.33	34.53	Average	239	133	HORIZONTAL
4	5276.41	115.72			112.47	4.43	33.35	34.53	Peak	239	133	HORIZONTAL
5	5350.64	67.01	74.00	-6.99	63.61	4.47	33.46	34.53	Peak	239	133	HORIZONTAL
6	5351.28	52.70	54.00	-1.30	49.30	4.47	33.46	34.53	Average	239	133	HORIZONTAL

Item 3, 4 are the fundamental frequency at 5270 MHz.

Channel 62

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5314.81	98.41			95.08	4.45	33.41	34.53	Average	239	134	HORIZONTAL
2	5318.01	110.54			107.21	4.45	33.41	34.53	Peak	239	134	HORIZONTAL
3	5350.00	68.59	74.00	-5.41	65.19	4.47	33.46	34.53	Peak	239	134	HORIZONTAL
4	5350.00	52.76	54.00	-1.24	49.36	4.47	33.46	34.53	Average	239	134	HORIZONTAL

Item 1, 2 are the fundamental frequency at 5310 MHz.

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 102, 110 / Chain 2 / 1TX
Test Date	Jun. 05, 2014		

Channel 102

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5460.00	67.17	74.00	-6.83	63.54	4.54	33.62	34.53	Peak	241	125	HORIZONTAL
2	5460.00	47.47	54.00	-6.53	43.84	4.54	33.62	34.53	Average	241	125	HORIZONTAL
3	5469.04	67.68	74.00	-6.32	64.01	4.55	33.65	34.53	Peak	241	125	HORIZONTAL
4	5470.00	52.62	54.00	-1.38	48.95	4.55	33.65	34.53	Average	241	125	HORIZONTAL
5	5513.85	99.77			95.97	4.58	33.75	34.53	Average	241	125	HORIZONTAL
6	5515.45	112.45			108.65	4.58	33.75	34.53	Peak	241	125	HORIZONTAL

Item 5, 6 are the fundamental frequency at 5510 MHz.

Channel 110

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5432.44	65.80	74.00	-8.20	62.21	4.53	33.59	34.53	Peak	239	125	HORIZONTAL
2	5434.36	52.25	54.00	-1.75	48.66	4.53	33.59	34.53	Average	239	125	HORIZONTAL
3	5468.72	52.82	54.00	-1.18	49.15	4.55	33.65	34.53	Average	239	125	HORIZONTAL
4	5470.00	69.57	74.00	-4.43	65.90	4.55	33.65	34.53	Peak	239	125	HORIZONTAL
5	5551.92	118.02			114.10	4.60	33.86	34.54	Peak	239	125	HORIZONTAL
6	5555.13	105.70			101.78	4.60	33.86	34.54	Average	239	125	HORIZONTAL

Item 5, 6 are the fundamental frequency at 5550 MHz.

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH134, 142 / Chain 2 / 1TX
Test Date	Jun. 05, 2014		

Channel 134

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5663.59	114.16			109.88	4.67	34.17	34.56	Peak	240	121	HORIZONTAL
2	5665.19	103.35			99.07	4.67	34.17	34.56	Average	240	121	HORIZONTAL
3	5725.00	72.87	74.00	-1.13	68.36	4.72	34.37	34.58	Peak	240	121	HORIZONTAL
4	5732.37	52.90	54.00	-1.10	48.39	4.72	34.37	34.58	Average	240	121	HORIZONTAL

Item 1, 2 are the fundamental frequency at 5670 MHz.

Channel 142

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5704.87	119.27			114.82	4.71	34.32	34.58	Peak	239	120	HORIZONTAL
2	5705.51	107.18			102.73	4.71	34.32	34.58	Average	239	120	HORIZONTAL
3	5854.49	67.15	68.20	-1.05	62.15	4.81	34.79	34.60	Peak	239	120	HORIZONTAL

Item 1, 2 are the fundamental frequency at 5710 MHz.

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 58, 106 / Chain 2 / 1TX
Test Date	Jun. 05, 2014		

Channel 58

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5277.18	92.66			89.41	4.43	33.35	34.53	Average	239	132	HORIZONTAL
2	5287.44	107.01			103.76	4.43	33.35	34.53	Peak	239	132	HORIZONTAL
3	5350.00	70.49	74.00	-3.51	67.09	4.47	33.46	34.53	Peak	239	132	HORIZONTAL
4	5350.00	52.67	54.00	-1.33	49.27	4.47	33.46	34.53	Average	239	132	HORIZONTAL

Item 1, 2 are the fundamental frequency at 5290 MHz.

Channel 106

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5460.00	64.98	74.00	-9.02	61.35	4.54	33.62	34.53	Peak	240	125	HORIZONTAL
2	5460.00	50.99	54.00	-3.01	47.36	4.54	33.62	34.53	Average	240	125	HORIZONTAL
3	5469.36	70.87	74.00	-3.13	67.20	4.55	33.65	34.53	Peak	240	125	HORIZONTAL
4	5470.00	52.78	54.00	-1.22	49.11	4.55	33.65	34.53	Average	240	125	HORIZONTAL
5	5540.90	108.42			104.57	4.59	33.80	34.54	Peak	240	125	HORIZONTAL
6	5541.54	94.94			91.09	4.59	33.80	34.54	Average	240	125	HORIZONTAL

Item 5, 6 are the fundamental frequency at 5530 MHz.

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 122, 138 / Chain 2 / 1TX
Test Date	Jun. 05, 2014 ~ Jun. 11, 2014		

Channel 122

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5460.00	61.16	74.00	-12.84	57.53	4.54	33.62	34.53	Peak	60	126	HORIZONTAL
2	5460.00	48.95	54.00	-5.05	45.32	4.54	33.62	34.53	Average	60	126	HORIZONTAL
3	5470.00	62.49	74.00	-11.51	58.82	4.55	33.65	34.53	Peak	60	126	HORIZONTAL
4	5470.00	49.54	54.00	-4.46	45.87	4.55	33.65	34.53	Average	60	126	HORIZONTAL
5	5597.00	96.49			92.45	4.63	33.96	34.55	Average	60	126	HORIZONTAL
6	5616.00	109.92			105.77	4.65	34.06	34.56	Peak	60	126	HORIZONTAL
7	5725.00	52.98	54.00	-1.02	48.47	4.72	34.37	34.58	Average	60	126	HORIZONTAL
8	5728.00	69.05	74.00	-4.95	64.54	4.72	34.37	34.58	Peak	60	126	HORIZONTAL

Item 5, 6 are the fundamental frequency at 5610 MHz.

Channel 138

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5681.67	100.17			95.84	4.68	34.22	34.57	Average	240	121	HORIZONTAL
2	5686.80	113.43			109.03	4.70	34.27	34.57	Peak	240	121	HORIZONTAL
3	5850.64	52.75	54.00	-1.25	47.82	4.80	34.73	34.60	Average	240	121	HORIZONTAL
4	5853.21	68.74	74.00	-5.26	63.81	4.80	34.73	34.60	Peak	240	121	HORIZONTAL

Item 1, 2 are the fundamental frequency at 5690 MHz.

Note:

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

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

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 52, 60, 64 / Chain 1 + Chain 2 / 2TX
Test Date	Jun. 04, 2014		

Channel 52

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5141.19	64.79	74.00	-9.21	61.84	4.34	33.14	34.53	Peak	53	112	HORIZONTAL
2	5141.19	52.54	54.00	-1.46	49.59	4.34	33.14	34.53	Average	53	112	HORIZONTAL
3	5259.20	120.68			117.46	4.42	33.33	34.53	Peak	53	112	HORIZONTAL
4	5259.20	110.17			106.95	4.42	33.33	34.53	Average	53	112	HORIZONTAL
5	5379.65	51.90	54.00	-2.10	48.43	4.49	33.51	34.53	Average	53	112	HORIZONTAL
6	5380.45	62.83	74.00	-11.17	59.36	4.49	33.51	34.53	Peak	53	112	HORIZONTAL

Item 3, 4 are the fundamental frequency at 5260 MHz.

Channel 60

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5141.19	52.64	54.00	-1.36	49.69	4.34	33.14	34.53	Average	58	113	HORIZONTAL
2	5143.59	63.29	74.00	-10.71	60.34	4.34	33.14	34.53	Peak	58	113	HORIZONTAL
3	5299.20	119.91			116.62	4.44	33.38	34.53	Peak	58	113	HORIZONTAL
4	5299.20	109.45			106.16	4.44	33.38	34.53	Average	58	113	HORIZONTAL
5	5459.78	62.26	74.00	-11.74	58.63	4.54	33.62	34.53	Peak	58	113	HORIZONTAL
6	5459.78	51.54	54.00	-2.46	47.91	4.54	33.62	34.53	Average	58	113	HORIZONTAL

Item 3, 4 are the fundamental frequency at 5300 MHz.

Channel 64

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5150.00	54.70	74.00	-19.30	51.75	4.34	33.14	34.53	Peak	56	124	HORIZONTAL
2	5150.00	48.08	54.00	-5.92	45.13	4.34	33.14	34.53	Average	56	124	HORIZONTAL
3	5321.60	117.52			114.19	4.45	33.41	34.53	Peak	56	124	HORIZONTAL
4	5321.60	107.48			104.15	4.45	33.41	34.53	Average	56	124	HORIZONTAL
5	5350.00	67.97	74.00	-6.03	64.57	4.47	33.46	34.53	Peak	56	124	HORIZONTAL
6	5350.00	52.48	54.00	-1.52	49.08	4.47	33.46	34.53	Average	56	124	HORIZONTAL

Item 3, 4 are the fundamental frequency at 5320 MHz.

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 100, 116, 140 / Chain 1 + Chain 2 / 2TX
Test Date	Jun. 04, 2014		

Channel 100

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5378.27	49.89	54.00	-4.11	46.42	4.49	33.51	34.53	Average	295	130	HORIZONTAL
2	5385.48	61.88	74.00	-12.12	58.41	4.49	33.51	34.53	Peak	295	130	HORIZONTAL
3	5468.40	69.25	74.00	-4.75	65.58	4.55	33.65	34.53	Peak	295	130	HORIZONTAL
4	5470.00	52.32	54.00	-1.68	48.65	4.55	33.65	34.53	Average	295	130	HORIZONTAL
5	5499.20	118.32			114.58	4.57	33.70	34.53	Peak	295	130	HORIZONTAL
6	5500.80	107.87			104.13	4.57	33.70	34.53	Average	295	130	HORIZONTAL
7	5729.01	50.04	54.00	-3.96	45.53	4.72	34.37	34.58	Average	295	130	HORIZONTAL
8	5732.21	62.03	74.00	-11.97	57.52	4.72	34.37	34.58	Peak	295	130	HORIZONTAL

Item 5, 6 are the fundamental frequency at 5500 MHz.

Channel 116

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5458.40	63.40	74.00	-10.60	59.77	4.54	33.62	34.53	Peak	292	127	HORIZONTAL
2	5458.40	52.91	54.00	-1.09	49.28	4.54	33.62	34.53	Average	292	127	HORIZONTAL
3	5465.99	62.93	74.00	-11.07	59.26	4.55	33.65	34.53	Peak	292	127	HORIZONTAL
4	5468.40	52.08	54.00	-1.92	48.41	4.55	33.65	34.53	Average	292	127	HORIZONTAL
5	5578.40	118.60			114.62	4.62	33.91	34.55	Peak	292	127	HORIZONTAL
6	5579.20	108.59			104.61	4.62	33.91	34.55	Average	292	127	HORIZONTAL
7	5739.42	51.89	54.00	-2.11	47.32	4.73	34.42	34.58	Average	292	127	HORIZONTAL
8	5741.83	63.03	74.00	-10.97	58.46	4.73	34.42	34.58	Peak	292	127	HORIZONTAL

Item 5, 6 are the fundamental frequency at 5580 MHz.

Channel 140

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5699.20	116.45			112.05	4.70	34.27	34.57	Peak	285	126	HORIZONTAL
2	5701.60	105.98			101.52	4.71	34.32	34.57	Average	285	126	HORIZONTAL
3	5725.00	72.98	74.00	-1.02	68.47	4.72	34.37	34.58	Peak	285	126	HORIZONTAL
4	5725.00	52.83	54.00	-1.17	48.32	4.72	34.37	34.58	Average	285	126	HORIZONTAL

Item 1, 2 are the fundamental frequency at 5700 MHz.

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 144 / Chain 1 + Chain 2 / 2TX
Test Date	Jun. 06, 2014		

Channel 144

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5719.20	112.00			107.49	4.72	34.37	34.58	Average	241	122	HORIZONTAL
2	5721.60	124.37			119.86	4.72	34.37	34.58	Peak	241	122	HORIZONTAL
3	5872.44	66.65	68.20	-1.55	61.59	4.82	34.84	34.60	Peak	241	122	HORIZONTAL

Item 1, 2 are the fundamental frequency at 5720 MHz.

Temperature	24℃	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 54, 62 / Chain 1 + Chain 2 / 2TX
Test Date	Jun. 04, 2014		

Channel 54

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5126.76	62.53	74.00	-11.47	59.62	4.33	33.11	34.53	Peak	57	111	HORIZONTAL
2	5148.40	50.60	54.00	-3.40	47.65	4.34	33.14	34.53	Average	57	111	HORIZONTAL
3	5274.01	117.56			114.34	4.42	33.33	34.53	Peak	57	111	HORIZONTAL
4	5274.01	106.09			102.87	4.42	33.33	34.53	Average	57	111	HORIZONTAL
5	5350.80	52.63	54.00	-1.37	49.23	4.47	33.46	34.53	Average	57	111	HORIZONTAL
6	5351.60	66.76	74.00	-7.24	63.36	4.47	33.46	34.53	Peak	57	111	HORIZONTAL

Item 3, 4 are the fundamental frequency at 5270 MHz.

Channel 62

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5145.99	60.07	74.00	-13.93	57.12	4.34	33.14	34.53	Peak	59	111	HORIZONTAL
2	5148.40	47.75	54.00	-6.25	44.80	4.34	33.14	34.53	Average	59	111	HORIZONTAL
3	5314.01	99.72			96.39	4.45	33.41	34.53	Average	59	111	HORIZONTAL
4	5314.81	111.58			108.25	4.45	33.41	34.53	Peak	59	111	HORIZONTAL
5	5350.00	52.74	54.00	-1.26	49.34	4.47	33.46	34.53	Average	59	111	HORIZONTAL
6	5350.80	65.31	74.00	-8.69	61.91	4.47	33.46	34.53	Peak	59	111	HORIZONTAL

Item 3, 4 are the fundamental frequency at 5310 MHz.

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 102, 110 / Chain 1 + Chain 2 / 2TX
Test Date	Jun. 04, 2014 ~ Jun. 05, 2014		

Channel 102

	Freq	Level	Limit Line	Over Limit	Read Level	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		deg	cm	
1	5458.40	62.17	74.00	-11.83	58.54	33.62	Peak	297	129	HORIZONTAL
2	5460.00	48.03	54.00	-5.97	44.40	33.62	Average	297	129	HORIZONTAL
3	5468.40	68.87	74.00	-5.13	65.20	33.65	Peak	297	129	HORIZONTAL
4	5468.40	52.48	54.00	-1.52	48.81	33.65	Average	297	129	HORIZONTAL
5	5505.99	112.09			108.35	33.70	Peak	297	129	HORIZONTAL
6	5514.01	101.13			97.33	33.75	Average	297	129	HORIZONTAL

Item 5, 6 are the fundamental frequency at 5510 MHz.

Channel 110

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5458.40	63.94	74.00	-10.06	60.31	4.54	33.62	34.53	Peak	73	130	HORIZONTAL
2	5460.00	50.71	54.00	-3.29	47.08	4.54	33.62	34.53	Average	73	130	HORIZONTAL
3	5468.40	72.57	74.00	-1.43	68.90	4.55	33.65	34.53	Peak	73	130	HORIZONTAL
4	5468.40	52.19	54.00	-1.81	48.52	4.55	33.65	34.53	Average	73	130	HORIZONTAL
5	5554.01	105.48			101.56	4.60	33.86	34.54	Average	73	130	HORIZONTAL
6	5556.41	118.35			114.43	4.60	33.86	34.54	Peak	73	130	HORIZONTAL
7	5725.00	48.28	54.00	-5.72	43.77	4.72	34.37	34.58	Average	73	130	HORIZONTAL
8	5727.40	60.76	74.00	-13.24	56.25	4.72	34.37	34.58	Peak	73	130	HORIZONTAL

Item 5, 6 are the fundamental frequency at 5550 MHz.

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH134, 142 / Chain 1 + Chain 2 / 2TX
Test Date	Jun. 05, 2014 ~ Jun. 06, 2014		

Channel 134

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5664.39	102.63			98.35	4.67	34.17	34.56	Average	58	185	HORIZONTAL
2	5674.81	114.24			109.90	4.68	34.22	34.56	Peak	58	185	HORIZONTAL
3	5725.80	72.61	74.00	-1.39	68.10	4.72	34.37	34.58	Peak	58	185	HORIZONTAL
4	5794.71	52.13	54.00	-1.87	47.38	4.76	34.58	34.59	Average	58	185	HORIZONTAL

Item 1, 2 are the fundamental frequency at 5670 MHz.

Channel 142

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5696.38	121.05			116.65	4.70	34.27	34.57	Peak	243	123	HORIZONTAL
2	5714.01	109.25			104.80	4.71	34.32	34.58	Average	243	123	HORIZONTAL
3	5854.01	66.81	68.20	-1.39	61.81	4.81	34.79	34.60	Peak	243	123	HORIZONTAL

Item 1, 2 are the fundamental frequency at 5710 MHz.

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 58, 106 / Chain 1 + Chain 2 / 2TX
Test Date	Jun. 05, 2014		

Channel 58

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5149.20	44.81	54.00	-9.19	41.86	4.34	33.14	34.53	Average	59	123	HORIZONTAL
2	5150.00	57.94	74.00	-16.06	54.99	4.34	33.14	34.53	Peak	59	123	HORIZONTAL
3	5278.78	94.38			91.13	4.43	33.35	34.53	Average	59	123	HORIZONTAL
4	5281.19	107.05			103.80	4.43	33.35	34.53	Peak	59	123	HORIZONTAL
5	5351.60	52.71	54.00	-1.29	49.31	4.47	33.46	34.53	Average	59	123	HORIZONTAL
6	5356.41	69.05	74.00	-4.95	65.65	4.47	33.46	34.53	Peak	59	123	HORIZONTAL

Item 3, 4 are the fundamental frequency at 5290 MHz.

Channel 106

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5451.99	67.09	74.00	-6.91	63.46	4.54	33.62	34.53	Peak	44	194	HORIZONTAL
2	5460.00	51.14	54.00	-2.86	47.51	4.54	33.62	34.53	Average	44	194	HORIZONTAL
3	5467.60	66.14	74.00	-7.86	62.47	4.55	33.65	34.53	Peak	44	194	HORIZONTAL
4	5470.00	52.66	54.00	-1.34	48.99	4.55	33.65	34.53	Average	44	194	HORIZONTAL
5	5534.81	94.58			90.73	4.59	33.80	34.54	Average	44	194	HORIZONTAL
6	5537.21	107.38			103.53	4.59	33.80	34.54	Peak	44	194	HORIZONTAL

Item 5, 6 are the fundamental frequency at 5530 MHz.

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 122, 138 / Chain 1 + Chain 2 / 2TX
Test Date	Jun. 06, 2014 ~ Jun. 11, 2014		

Channel 122

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5460.00	61.65	74.00	-12.35	58.02	4.54	33.62	34.53	Peak	57	126	HORIZONTAL
2	5460.00	49.46	54.00	-4.54	45.83	4.54	33.62	34.53	Average	57	126	HORIZONTAL
3	5466.00	64.49	74.00	-9.51	60.82	4.55	33.65	34.53	Peak	57	126	HORIZONTAL
4	5470.00	50.19	54.00	-3.81	46.52	4.55	33.65	34.53	Average	57	126	HORIZONTAL
5	5619.00	98.86			94.71	4.65	34.06	34.56	Average	57	126	HORIZONTAL
6	5624.00	112.10			107.95	4.65	34.06	34.56	Peak	57	126	HORIZONTAL
7	5725.00	52.74	54.00	-1.26	48.23	4.72	34.37	34.58	Average	57	126	HORIZONTAL
8	5730.00	69.77	74.00	-4.23	65.26	4.72	34.37	34.58	Peak	57	126	HORIZONTAL

Item 5, 6 are the fundamental frequency at 5610 MHz.

Channel 138

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5698.81	102.04			97.64	4.70	34.27	34.57	Average	245	125	HORIZONTAL
2	5702.02	114.77			110.31	4.71	34.32	34.57	Peak	245	125	HORIZONTAL
3	5850.00	52.52	54.00	-1.48	47.59	4.80	34.73	34.60	Average	245	125	HORIZONTAL
4	5854.81	68.14	74.00	-5.86	63.14	4.81	34.79	34.60	Peak	245	125	HORIZONTAL

Item 1, 2 are the fundamental frequency at 5690 MHz.

Note:

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

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

<For Beamforming Mode>

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 52, 60, 64 / Chain 1 + Chain 2 / 2TX
Test Date	Jun. 05, 2014		

Channel 52

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5140.39	64.06	74.00	-9.94	61.11	4.34	33.14	34.53	Peak	53	112	HORIZONTAL
2	5141.19	52.44	54.00	-1.56	49.49	4.34	33.14	34.53	Average	53	112	HORIZONTAL
3	5255.99	119.15			115.98	4.40	33.30	34.53	Peak	53	112	HORIZONTAL
4	5259.20	109.49			106.27	4.42	33.33	34.53	Average	53	112	HORIZONTAL
5	5371.64	63.21	74.00	-10.79	59.77	4.48	33.49	34.53	Peak	53	112	HORIZONTAL
6	5419.71	52.14	54.00	-1.86	48.58	4.52	33.57	34.53	Average	53	112	HORIZONTAL

Item 3, 4 are the fundamental frequency at 5260 MHz.

Channel 60

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5141.19	64.26	74.00	-9.74	61.31	4.34	33.14	34.53	Peak	58	113	HORIZONTAL
2	5141.19	52.64	54.00	-1.36	49.69	4.34	33.14	34.53	Average	343	113	HORIZONTAL
3	5298.40	118.15			114.86	4.44	33.38	34.53	Peak	58	113	HORIZONTAL
4	5299.20	108.71			105.42	4.44	33.38	34.53	Average	58	113	HORIZONTAL
5	5376.44	62.51	74.00	-11.49	59.07	4.48	33.49	34.53	Peak	58	113	HORIZONTAL
6	5377.24	50.35	54.00	-3.65	46.91	4.48	33.49	34.53	Average	58	113	HORIZONTAL

Item 3, 4 are the fundamental frequency at 5300 MHz.

Channel 64

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5150.00	57.90	74.00	-16.10	54.95	4.34	33.14	34.53	Peak	56	126	HORIZONTAL
2	5150.00	50.01	54.00	-3.99	47.06	4.34	33.14	34.53	Average	56	126	HORIZONTAL
3	5311.99	114.62			111.29	4.45	33.41	34.53	Peak	56	126	HORIZONTAL
4	5319.20	108.26			104.93	4.45	33.41	34.53	Average	56	126	HORIZONTAL
5	5350.00	66.80	74.00	-7.20	63.40	4.47	33.46	34.53	Peak	56	126	HORIZONTAL
6	5350.00	52.82	54.00	-1.18	49.42	4.47	33.46	34.53	Average	56	126	HORIZONTAL

Item 3, 4 are the fundamental frequency at 5320 MHz.

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 100, 116, 140 / Chain 1 + Chain 2 / 2TX
Test Date	Jun. 05, 2014		

Channel 100

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5037.82	52.46	54.00	-1.54	49.74	4.27	32.98	34.53	Average	295	130	HORIZONTAL
2	5042.63	62.88	74.00	-11.12	60.16	4.27	32.98	34.53	Peak	295	130	HORIZONTAL
3	5381.47	51.21	54.00	-2.79	47.74	4.49	33.51	34.53	Average	295	130	HORIZONTAL
4	5382.05	63.08	74.00	-10.92	59.61	4.49	33.51	34.53	Peak	295	130	HORIZONTAL
5	5470.00	61.69	68.20	-6.51	58.02	4.55	33.65	34.53	Peak	295	130	HORIZONTAL
6	5496.80	114.75			111.01	4.57	33.70	34.53	Peak	295	130	HORIZONTAL
7	5501.60	108.10			104.36	4.57	33.70	34.53	Average	295	130	HORIZONTAL
8	5960.39	63.57	68.20	-4.63	58.21	4.88	35.10	34.62	Peak	295	130	HORIZONTAL

Item 6, 7 are the fundamental frequency at 5500 MHz.

Channel 116

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5114.23	52.96	54.00	-1.04	50.08	4.32	33.09	34.53	Average	292	127	HORIZONTAL
2	5116.35	63.28	74.00	-10.72	60.40	4.32	33.09	34.53	Peak	292	127	HORIZONTAL
3	5421.92	51.36	54.00	-2.64	47.80	4.52	33.57	34.53	Average	292	127	HORIZONTAL
4	5427.95	62.13	74.00	-11.87	58.57	4.52	33.57	34.53	Peak	292	127	HORIZONTAL
5	5466.80	62.88	74.00	-11.12	59.21	4.55	33.65	34.53	Peak	292	127	HORIZONTAL
6	5578.40	108.18			104.20	4.62	33.91	34.55	Average	292	127	HORIZONTAL
7	5584.81	115.18			111.14	4.63	33.96	34.55	Peak	292	127	HORIZONTAL
8	5812.37	62.97	74.00	-11.03	58.17	4.77	34.63	34.60	Peak	292	127	HORIZONTAL

Item 6, 7 are the fundamental frequency at 5580 MHz.

Channel 140

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5701.60	107.25			102.79	4.71	34.32	34.57	Average	285	126	HORIZONTAL
2	5704.01	115.63			111.17	4.71	34.32	34.57	Peak	285	126	HORIZONTAL
3	5725.00	64.81	74.00	-9.19	60.30	4.72	34.37	34.58	Peak	285	126	HORIZONTAL
4	5817.15	52.87	54.00	-1.13	48.07	4.77	34.63	34.60	Average	285	126	HORIZONTAL

Item 1, 2 are the fundamental frequency at 5700 MHz.

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 144 / Chain 1 + Chain 2 / 2TX
Test Date	Jun. 06, 2014		

Channel 144

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5714.39	123.69			119.24	4.71	34.32	34.58	Peak	241	122	HORIZONTAL
2	5721.60	112.18			107.67	4.72	34.37	34.58	Average	241	122	HORIZONTAL
3	5878.05	66.76	68.20	-1.44	61.70	4.82	34.84	34.60	Peak	241	122	HORIZONTAL

Item 1, 2 are the fundamental frequency at 5720 MHz.

Temperature	24℃	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 54, 62 / Chain 1 + Chain 2 / 2TX
Test Date	Jun. 05, 2014		

Channel 54

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5148.40	62.77	74.00	-11.23	59.82	4.34	33.14	34.53	Peak	58	111	HORIZONTAL
2	5148.40	51.91	54.00	-2.09	48.96	4.34	33.14	34.53	Average	58	111	HORIZONTAL
3	5274.01	116.10			112.88	4.42	33.33	34.53	Peak	58	111	HORIZONTAL
4	5274.01	107.28			104.06	4.42	33.33	34.53	Average	58	111	HORIZONTAL
5	5351.60	65.27	74.00	-8.73	61.87	4.47	33.46	34.53	Peak	58	111	HORIZONTAL
6	5351.60	52.57	54.00	-1.43	49.17	4.47	33.46	34.53	Average	58	111	HORIZONTAL

Item 3, 4 are the fundamental frequency at 5270 MHz.

Channel 62

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5305.99	112.58			109.29	4.44	33.38	34.53	Peak	59	111	HORIZONTAL
2	5314.01	101.46			98.13	4.45	33.41	34.53	Average	59	111	HORIZONTAL
3	5351.60	67.20	74.00	-6.80	63.80	4.47	33.46	34.53	Peak	59	111	HORIZONTAL
4	5351.60	52.78	54.00	-1.22	49.38	4.47	33.46	34.53	Average	59	111	HORIZONTAL

Item 1, 2 are the fundamental frequency at 5310 MHz.

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 102, 110 / Chain 1 + Chain 2 / 2TX
Test Date	Jun. 05, 2014		

Channel 102

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5460.00	61.51	74.00	-12.49	57.88	4.54	33.62	34.53	Peak	297	129	HORIZONTAL
2	5460.00	48.69	54.00	-5.31	45.06	4.54	33.62	34.53	Average	297	129	HORIZONTAL
3	5468.40	65.30	74.00	-8.70	61.63	4.55	33.65	34.53	Peak	297	129	HORIZONTAL
4	5468.40	52.43	54.00	-1.57	48.76	4.55	33.65	34.53	Average	297	129	HORIZONTAL
5	5505.99	102.04			98.30	4.57	33.70	34.53	Average	297	129	HORIZONTAL
6	5514.01	112.70			108.90	4.58	33.75	34.53	Peak	297	129	HORIZONTAL

Item 5, 6 are the fundamental frequency at 5510 MHz.

Channel 110

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5423.14	64.36	74.00	-9.64	60.80	4.52	33.57	34.53	Peak	73	110	HORIZONTAL
2	5425.55	52.48	54.00	-1.52	48.92	4.52	33.57	34.53	Average	73	110	HORIZONTAL
3	5467.60	61.88	74.00	-12.12	58.21	4.55	33.65	34.53	Peak	73	110	HORIZONTAL
4	5468.40	50.25	54.00	-3.75	46.58	4.55	33.65	34.53	Average	73	110	HORIZONTAL
5	5546.80	114.41			110.56	4.59	33.80	34.54	Peak	73	110	HORIZONTAL
6	5554.01	103.38			99.46	4.60	33.86	34.54	Average	73	110	HORIZONTAL

Item 5, 6 are the fundamental frequency at 5550 MHz.

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH134, 142 / Chain 1 + Chain 2 / 2TX
Test Date	Jun. 05, 2014 ~ Jun. 06, 2014		

Channel 134

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5664.39	104.80			100.52	4.67	34.17	34.56	Average	58	185	HORIZONTAL
2	5672.40	115.39			111.05	4.68	34.22	34.56	Peak	58	185	HORIZONTAL
3	5731.41	67.85	74.00	-6.15	63.34	4.72	34.37	34.58	Peak	58	185	HORIZONTAL
4	5744.23	52.95	54.00	-1.05	48.38	4.73	34.42	34.58	Average	58	185	HORIZONTAL

Item 1, 2 are the fundamental frequency at 5670 MHz.

Channel 142

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5706.80	119.86			115.41	4.71	34.32	34.58	Peak	243	123	HORIZONTAL
2	5714.01	107.81			103.36	4.71	34.32	34.58	Average	243	123	HORIZONTAL
3	5857.21	66.72	68.20	-1.48	61.72	4.81	34.79	34.60	Peak	243	123	HORIZONTAL

Item 1, 2 are the fundamental frequency at 5710 MHz.

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 58, 106 / Chain 1 + Chain 2 / 2TX
Test Date	Jun. 05, 2014		

Channel 58

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5150.00	60.02	74.00	-13.98	57.07	4.34	33.14	34.53	Peak	59	123	HORIZONTAL
2	5150.00	46.55	54.00	-7.45	43.60	4.34	33.14	34.53	Average	59	123	HORIZONTAL
3	5276.38	108.57			105.32	4.43	33.35	34.53	Peak	59	123	HORIZONTAL
4	5278.78	95.63			92.38	4.43	33.35	34.53	Average	59	123	HORIZONTAL
5	5350.00	72.27	74.00	-1.73	68.87	4.47	33.46	34.53	Peak	59	123	HORIZONTAL
6	5351.60	52.51	54.00	-1.49	49.11	4.47	33.46	34.53	Average	59	123	HORIZONTAL

Item 3, 4 are the fundamental frequency at 5290 MHz.

Channel 106

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5454.39	66.00	74.00	-8.00	62.37	4.54	33.62	34.53	Peak	44	194	HORIZONTAL
2	5459.20	51.42	54.00	-2.58	47.79	4.54	33.62	34.53	Average	44	194	HORIZONTAL
3	5470.00	68.20	74.00	-5.80	64.53	4.55	33.65	34.53	Peak	44	194	HORIZONTAL
4	5470.00	52.83	54.00	-1.17	49.16	4.55	33.65	34.53	Average	44	194	HORIZONTAL
5	5534.81	95.45			91.60	4.59	33.80	34.54	Average	44	194	HORIZONTAL
6	5537.21	108.10			104.25	4.59	33.80	34.54	Peak	44	194	HORIZONTAL

Item 5, 6 are the fundamental frequency at 5530 MHz.

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 122, 138 / Chain 1 + Chain 2 / 2TX
Test Date	Jun. 06, 2014 ~ Jun. 11, 2014		

Channel 122

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5453.59	61.85	74.00	-12.15	58.22	4.54	33.62	34.53	Peak	52	125	HORIZONTAL
2	5460.00	48.36	54.00	-5.64	44.73	4.54	33.62	34.53	Average	52	125	HORIZONTAL
3	5468.40	48.94	54.00	-5.06	45.27	4.55	33.65	34.53	Average	52	125	HORIZONTAL
4	5470.00	59.88	74.00	-14.12	56.21	4.55	33.65	34.53	Peak	52	125	HORIZONTAL
5	5597.18	114.04			110.00	4.63	33.96	34.55	Peak	52	125	HORIZONTAL
6	5619.62	99.85			95.70	4.65	34.06	34.56	Average	52	125	HORIZONTAL
7	5725.00	52.87	54.00	-1.13	48.36	4.72	34.37	34.58	Average	52	125	HORIZONTAL
8	5731.41	70.29	74.00	-3.71	65.78	4.72	34.37	34.58	Peak	52	125	HORIZONTAL

Item 5, 6 are the fundamental frequency at 5610 MHz.

Channel 138

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5684.39	117.42			113.02	4.70	34.27	34.57	Peak	245	125	HORIZONTAL
2	5698.81	104.08			99.68	4.70	34.27	34.57	Average	245	125	HORIZONTAL
3	5850.00	63.79	74.00	-10.21	58.86	4.80	34.73	34.60	Peak	245	125	HORIZONTAL
4	5851.60	52.86	54.00	-1.14	47.93	4.80	34.73	34.60	Average	245	125	HORIZONTAL

Item 1, 2 are the fundamental frequency at 5690 MHz.

Note:

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

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

<For STBC Mode>

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 52, 60, 64 / Chain 1 + Chain 2 / 2TX
Test Date	Jun. 05, 2014		

Channel 52

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5140.80	51.77	54.00	-2.23	48.82	4.34	33.14	34.53	Average	55	110	HORIZONTAL
2	5144.23	64.85	74.00	-9.15	61.90	4.34	33.14	34.53	Peak	55	110	HORIZONTAL
3	5260.64	121.12			117.90	4.42	33.33	34.53	Peak	55	110	HORIZONTAL
4	5260.64	109.34			106.12	4.42	33.33	34.53	Average	55	110	HORIZONTAL
5	5382.40	52.67	54.00	-1.33	49.20	4.49	33.51	34.53	Average	55	110	HORIZONTAL
6	5387.18	65.76	74.00	-8.24	62.29	4.49	33.51	34.53	Peak	55	110	HORIZONTAL

Item 3, 4 are the fundamental frequency at 5260 MHz.

Channel 60

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5294.23	120.55			117.26	4.44	33.38	34.53	Peak	58	108	HORIZONTAL
2	5306.40	108.85			105.56	4.44	33.38	34.53	Average	58	108	HORIZONTAL
3	5350.00	67.98	74.00	-6.02	64.58	4.47	33.46	34.53	Peak	58	108	HORIZONTAL
4	5350.00	52.98	54.00	-1.02	49.58	4.47	33.46	34.53	Average	58	108	HORIZONTAL

Item 1, 2 are the fundamental frequency at 5300 MHz.

Channel 64

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5321.12	117.20			113.87	4.45	33.41	34.53	Peak	52	107	HORIZONTAL
2	5321.12	105.40			102.07	4.45	33.41	34.53	Average	52	107	HORIZONTAL
3	5350.00	70.72	74.00	-3.28	67.32	4.47	33.46	34.53	Peak	52	107	HORIZONTAL
4	5350.00	52.63	54.00	-1.37	49.23	4.47	33.46	34.53	Average	52	107	HORIZONTAL

Item 1, 2 are the fundamental frequency at 5320 MHz.

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 100, 116, 140 / Chain 1 + Chain 2 / 2TX
Test Date	Jun. 05, 2014		

Channel 100

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5379.23	61.91	74.00	-12.09	58.44	4.49	33.51	34.53	Peak	53	198	HORIZONTAL
2	5382.12	49.03	54.00	-4.97	45.56	4.49	33.51	34.53	Average	53	198	HORIZONTAL
3	5470.00	71.97	74.00	-2.03	68.30	4.55	33.65	34.53	Peak	53	198	HORIZONTAL
4	5470.00	52.60	54.00	-1.40	48.93	4.55	33.65	34.53	Average	53	198	HORIZONTAL
5	5499.04	117.20			113.46	4.57	33.70	34.53	Peak	53	198	HORIZONTAL
6	5502.40	105.94			102.20	4.57	33.70	34.53	Average	53	198	HORIZONTAL

Item 5, 6 are the fundamental frequency at 5500 MHz.

Channel 116

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5114.74	63.56	74.00	-10.44	60.68	4.32	33.09	34.53	Peak	48	104	HORIZONTAL
2	5119.55	51.75	54.00	-2.25	48.87	4.32	33.09	34.53	Average	48	104	HORIZONTAL
3	5421.54	52.87	54.00	-1.13	49.31	4.52	33.57	34.53	Average	48	104	HORIZONTAL
4	5423.14	64.77	74.00	-9.23	61.21	4.52	33.57	34.53	Peak	48	104	HORIZONTAL
5	5578.40	122.95			118.97	4.62	33.91	34.55	Peak	48	104	HORIZONTAL
6	5581.60	111.44			107.40	4.63	33.96	34.55	Average	48	104	HORIZONTAL

Item 5, 6 are the fundamental frequency at 5580 MHz.

Channel 140

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5698.56	116.25			111.85	4.70	34.27	34.57	Peak	54	100	HORIZONTAL
2	5702.08	104.19			99.73	4.71	34.32	34.57	Average	54	100	HORIZONTAL
3	5725.00	52.36	54.00	-1.64	47.85	4.72	34.37	34.58	Average	54	100	HORIZONTAL
4	5725.96	72.90	74.00	-1.10	68.39	4.72	34.37	34.58	Peak	54	100	HORIZONTAL

Item 1, 2 are the fundamental frequency at 5700 MHz.

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 144 / Chain 1 + Chain 2 / 2TX
Test Date	Jun. 06, 2014		

Channel 144

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5721.60	122.87			118.36	4.72	34.37	34.58	Peak	248	123	HORIZONTAL
2	5726.41	111.59			107.08	4.72	34.37	34.58	Average	248	123	HORIZONTAL
3	5874.84	66.75	68.20	-1.45	61.69	4.82	34.84	34.60	Peak	248	123	HORIZONTAL

Item 1, 2 are the fundamental frequency at 5720 MHz.

Temperature	24℃	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 54, 62 / Chain 1 + Chain 2 / 2TX
Test Date	Jun. 05, 2014		

Channel 54

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5146.80	63.76	74.00	-10.24	60.81	4.34	33.14	34.53	Peak	58	122	HORIZONTAL
2	5146.80	50.08	54.00	-3.92	47.13	4.34	33.14	34.53	Average	58	122	HORIZONTAL
3	5266.80	117.71			114.49	4.42	33.33	34.53	Peak	58	122	HORIZONTAL
4	5266.80	106.03			102.81	4.42	33.33	34.53	Average	58	122	HORIZONTAL
5	5350.00	67.68	74.00	-6.32	64.28	4.47	33.46	34.53	Peak	58	122	HORIZONTAL
6	5350.00	52.56	54.00	-1.44	49.16	4.47	33.46	34.53	Average	58	122	HORIZONTAL
7	5709.00	51.52	54.00	-2.48	47.07	4.71	34.32	34.58	Average	58	122	HORIZONTAL
8	5710.58	58.45	74.00	-15.55	54.00	4.71	34.32	34.58	Peak	58	122	HORIZONTAL

Item 3, 4 are the fundamental frequency at 5270 MHz.

Channel 62

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5306.47	111.32			108.03	4.44	33.38	34.53	Peak	58	111	HORIZONTAL
2	5306.47	99.56			96.27	4.44	33.38	34.53	Average	58	111	HORIZONTAL
3	5350.00	52.80	54.00	-1.20	49.40	4.47	33.46	34.53	Average	58	111	HORIZONTAL
4	5350.64	68.21	74.00	-5.79	64.81	4.47	33.46	34.53	Peak	58	111	HORIZONTAL

Item 1, 2 are the fundamental frequency at 5310 MHz.

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 102, 110 / Chain 1 + Chain 2 / 2TX
Test Date	Jun. 05, 2014		

Channel 102

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5458.40	67.32	74.00	-6.68	63.69	4.54	33.62	34.53	Peak	239	129	HORIZONTAL
2	5460.00	47.62	54.00	-6.38	43.99	4.54	33.62	34.53	Average	239	129	HORIZONTAL
3	5468.40	66.75	74.00	-7.25	63.08	4.55	33.65	34.53	Peak	239	129	HORIZONTAL
4	5470.00	52.89	54.00	-1.11	49.22	4.55	33.65	34.53	Average	239	129	HORIZONTAL
5	5505.83	112.38			108.64	4.57	33.70	34.53	Peak	239	129	HORIZONTAL
6	5506.47	100.61			96.87	4.57	33.70	34.53	Average	239	129	HORIZONTAL

Item 5, 6 are the fundamental frequency at 5510 MHz.

Channel 110

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5454.87	67.59	74.00	-6.41	63.96	4.54	33.62	34.53	Peak	240	126	HORIZONTAL
2	5457.44	51.06	54.00	-2.94	47.43	4.54	33.62	34.53	Average	240	126	HORIZONTAL
3	5466.80	52.65	54.00	-1.35	48.98	4.55	33.65	34.53	Average	240	126	HORIZONTAL
4	5470.00	69.35	74.00	-4.65	65.68	4.55	33.65	34.53	Peak	240	126	HORIZONTAL
5	5545.51	119.04			115.19	4.59	33.80	34.54	Peak	240	126	HORIZONTAL
6	5546.80	105.50			101.65	4.59	33.80	34.54	Average	240	126	HORIZONTAL

Item 5, 6 are the fundamental frequency at 5550 MHz.

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH134, 142 / Chain 1 + Chain 2 / 2TX
Test Date	Jun. 05, 2014 ~ Jun. 06, 2014		

Channel 134

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5664.55	116.53			112.25	4.67	34.17	34.56	Peak	240	122	HORIZONTAL
2	5666.47	103.68			99.40	4.67	34.17	34.56	Average	240	122	HORIZONTAL
3	5725.00	72.21	74.00	-1.79	67.70	4.72	34.37	34.58	Peak	240	122	HORIZONTAL
4	5725.00	52.76	54.00	-1.24	48.25	4.72	34.37	34.58	Average	240	122	HORIZONTAL

Item 1, 2 are the fundamental frequency at 5670 MHz.

Channel 142

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5706.80	119.41			114.96	4.71	34.32	34.58	Peak	248	124	HORIZONTAL
2	5706.80	106.92			102.47	4.71	34.32	34.58	Average	248	124	HORIZONTAL
3	5853.21	66.86	68.20	-1.34	61.93	4.80	34.73	34.60	Peak	248	124	HORIZONTAL

Item 1, 2 are the fundamental frequency at 5710 MHz.

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 58, 106 / Chain 1 + Chain 2 / 2TX
Test Date	Jun. 05, 2014		

Channel 58

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5298.97	99.88			96.59	4.44	33.38	34.53	Peak	140	100	VERTICAL
2	5302.18	86.49			83.20	4.44	33.38	34.53	Average	140	100	VERTICAL
3	5350.00	47.50	54.00	-6.50	44.10	4.47	33.46	34.53	Average	140	100	VERTICAL
4	5351.28	62.38	74.00	-11.62	58.98	4.47	33.46	34.53	Peak	140	100	VERTICAL

Item 1, 2 are the fundamental frequency at 5290 MHz.

Channel 106

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5458.72	68.69	74.00	-5.31	65.06	4.54	33.62	34.53	Peak	239	125	HORIZONTAL
2	5458.72	51.24	54.00	-2.76	47.61	4.54	33.62	34.53	Average	239	125	HORIZONTAL
3	5469.36	71.05	74.00	-2.95	67.38	4.55	33.65	34.53	Peak	239	125	HORIZONTAL
4	5470.00	52.77	54.00	-1.23	49.10	4.55	33.65	34.53	Average	239	125	HORIZONTAL
5	5531.92	109.47			105.62	4.59	33.80	34.54	Peak	239	125	HORIZONTAL
6	5540.90	95.52			91.67	4.59	33.80	34.54	Average	239	125	HORIZONTAL

Item 5, 6 are the fundamental frequency at 5530 MHz.

Temperature	24°C	Humidity	56%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 122, 138 / Chain 1 + Chain 2 / 2TX
Test Date	Jun. 06, 2014 ~ Jun. 11, 2014		

Channel 122

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5460.00	62.41	74.00	-11.59	58.78	4.54	33.62	34.53	Peak	49	104	HORIZONTAL
2	5460.00	49.68	54.00	-4.32	46.05	4.54	33.62	34.53	Average	49	104	HORIZONTAL
3	5469.00	67.73	74.00	-6.27	64.06	4.55	33.65	34.53	Peak	49	104	HORIZONTAL
4	5470.00	51.04	54.00	-2.96	47.37	4.55	33.65	34.53	Average	49	104	HORIZONTAL
5	5619.00	110.93			106.78	4.65	34.06	34.56	Peak	49	104	HORIZONTAL
6	5622.00	97.66			93.51	4.65	34.06	34.56	Average	49	104	HORIZONTAL
7	5725.00	52.91	54.00	-1.09	48.40	4.72	34.37	34.58	Average	49	104	HORIZONTAL
8	5726.00	69.92	74.00	-4.08	65.41	4.72	34.37	34.58	Peak	49	104	HORIZONTAL

Item 5, 6 are the fundamental frequency at 5610 MHz.

Channel 138

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	5663.56	114.66			110.38	4.67	34.17	34.56	Peak	239	122	HORIZONTAL
2	5683.59	100.83			96.43	4.70	34.27	34.57	Average	239	122	HORIZONTAL
3	5852.40	52.52	54.00	-1.48	47.59	4.80	34.73	34.60	Average	239	122	HORIZONTAL
4	5853.21	69.01	74.00	-4.99	64.08	4.80	34.73	34.60	Peak	239	122	HORIZONTAL

Item 1, 2 are the fundamental frequency at 5690 MHz.

Note:

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

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

4.7. Frequency Stability Measurement

4.7.1. Limit

In-band emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

The transmitter center frequency tolerance shall be ± 20 ppm maximum for the 5 GHz band (IEEE 802.11n specification).

4.7.2. Measuring Instruments and Setting

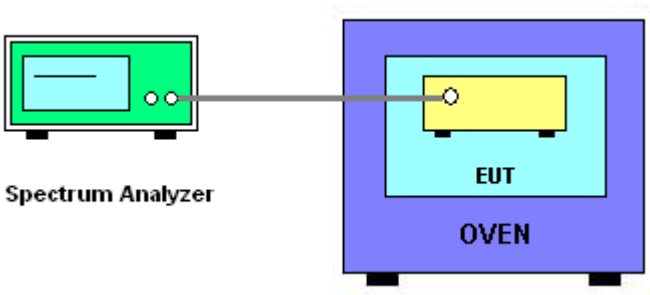
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Entire absence of modulation emissions bandwidth
RBW	10 kHz
VBW	10 kHz
Sweep Time	Auto

4.7.3. Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyzer.
2. EUT have transmitted absence of modulation signal and fixed channelize.
3. Set the spectrum analyzer span to view the entire absence of modulation emissions bandwidth.
4. Set RBW = 10 kHz, VBW = 10 kHz with peak detector and maxhold settings.
5. fc is declaring of channel frequency. Then the frequency error formula is (fc-f)/fc × 10^6 ppm and the limit is less than ±20ppm (IEEE 802.11nspecification).
6. The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value
7. Extreme temperature is 0°C~40°C.

4.7.4. Test Setup Layout



4.7.5. Test Deviation

There is no deviation with the original standard.

4.7.6. EUT Operation during Test

The EUT was programmed to be in continuously un-modulation transmitting mode.

4.7.7. Test Result of Frequency Stability

Temperature	20°C	Humidity	53%
Test Engineer	Jim Huang	Test Date	Jun. 30, 2014

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)	
(V)	5300 MHz	5500 MHz
126.50	5300.0246	5500.0387
110.00	5300.0251	5500.0410
93.50	5300.0256	5500.0432
Max. Deviation (MHz)	**0.025600**	**0.043200**
Max. Deviation (ppm)	**4.83**	**7.85**

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)	
(°C)	5300 MHz	5500 MHz
0	5300.0238	5500.0560
10	5300.0244	5500.0490
20	5300.0251	5500.0410
30	5300.0266	5500.0330
40	5300.0271	5500.0240
Max. Deviation (MHz)	**0.027100**	**0.056000**
Max. Deviation (ppm)	**5.11**	**10.18**

4.8. Antenna Requirements

4.8.1. Limit

Except for special regulations, the Low-power Radio-frequency Devices must not be equipped with any jacket for installing an antenna with extension cable. An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed.

4.8.2. Antenna Connector Construction

Please refer to section 3.3 in this test report; antenna connector complied with the requirements.

5. LIST OF MEASURING EQUIPMENTS

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
EMI Test Receiver	R&S	ESCS 30	100355	9 kHz ~ 2.75 GHz	Apr. 23, 2014	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-16-2	04083	150 kHz ~ 100 MHz	Nov. 23, 2013	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127478	9kHz ~ 30MHz	Nov. 11, 2013	Conduction (CO01-CB)
COND Cable	Woken	Cable	01	150 kHz ~ 30 MHz	Dec. 04, 2013	Conduction (CO01-CB)
Software	Audix	E3	5.410e	-	N.C.R.	Conduction (CO01-CB)
BILOG ANTENNA	Schaffner	CBL6112B	2928	30MHz ~ 2GHz	Dec. 27, 2013	Radiation (03CH01-CB)
Loop Antenna	Teseq	HLA 6120	24155	9 kHz - 30 MHz	Nov. 05, 2012*	Radiation (03CH01-CB)
Horn Antenna	EMCO	3115	00075790	750MHz~18GHz	Nov. 01, 2013	Radiation (03CH01-CB)
Horn Antenna	SCHWARZBEAK	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Dec. 17, 2013	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8447D	2944A10991	0.1MHz ~ 1.3GHz	Nov. 12, 2013	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Dec. 16, 2013	Radiation (03CH01-CB)
Pre-Amplifier	WM	TF-130N-R1	923365	26GHz ~ 40GHz	Oct. 23, 2013	Radiation (03CH01-CB)
Spectrum analyzer	R&S	FSP40	100019	9kHz~40GHz	Dec. 02, 2013	Radiation (03CH01-CB)
EMI Test Receiver	Agilent	N9038A	MY52260123	9kHz ~ 8GHz	Dec. 12, 2013	Radiation (03CH01-CB)
Turn Table	INN CO	CO 2000	N/A	0 ~ 360 degree	N.C.R.	Radiation (03CH01-CB)
Antenna Mast	INN CO	CO2000	N/A	1 m - 4 m	N.C.R.	Radiation (03CH01-CB)
RF Cable-low	Woken	Low Cable-1	N/A	30 MHz - 1 GHz	Nov. 17, 2013	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-3	N/A	1 GHz - 40 GHz	Nov. 17, 2013	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-4	N/A	1 GHz - 40 GHz	Nov. 17, 2013	Radiation (03CH01-CB)
Signal analyzer	R&S	FSV40	100979	9kHz~40GHz	Nov. 29, 2013	Conducted (TH01-CB)
Temp. and Humidity Chamber	Ten Billion	TTH-D3SP	TBN-931011	-30~100 degree	Jun. 03, 2014	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-7	-	1 GHz – 26.5 GHz	Nov. 17, 2013	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-8	-	1 GHz – 26.5 GHz	Nov. 17, 2013	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-9	-	1 GHz – 26.5 GHz	Nov. 17, 2013	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-10	-	1 GHz – 26.5 GHz	Nov. 17, 2013	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-11	-	1 GHz – 26.5 GHz	Nov. 17, 2013	Conducted (TH01-CB)

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Power Sensor	Anritsu	MA2411B	0917223	300MHz~40GHz	Sep. 18, 2013	Conducted (TH01-CB)
Power Meter	Anritsu	ML2495A	1035008	300MHz~40GHz	Sep. 18, 2013	Conducted (TH01-CB)

Note: Calibration Interval of instruments listed above is one year.

"*" Calibration Interval of instruments listed above is two years.

NCR means Non-Calibration required.

6. MEASUREMENT UNCERTAINTY

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	2.4 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	3.6 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	3.7 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	3.5 dB	Confidence levels of 95%
Conducted Emission	1.7 dB	Confidence levels of 95%